Auburn Landfill Gas Electric Generators and Anaerobic Digester Energy Facilities Auburn, New York

Final Environmental Assessment

DOE/EA-1624

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List of Acronyms and Abbreviations

AADT	Annual Average Daily Traffic
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
CAA	Clean Air Act
CESQG	Conditionally Exempt Small Quantity Generator
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon Dioxide
CWA	Clean Water Act
^oF	degrees Fahrenheit
dBA	Decibel, A-weighted scale
DOE	United States Department of Energy
EA	Environmental Assessment
EAF	Environmental Assessment Form
EERE	DOE's Office of Energy Efficiency and Renewable Energy
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FONSI	Finding of No Significant Impact
FR	Federal Register
H_2S	Hydrogen sulfide
HAPs	Hazardous Air Pollutants
HVAC	Heating, Ventilation and Air Conditioning
I-81	Interstate 81
I-90	Interstate 90
ITP	Industrial Technologies Program
LFG	Landfill Gas
MBTU/hr	Million British thermal units/hour
MVA	Mega (million) Volt-Ampere
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NETL	National Energy Technology Laboratory
NFIP	National Flood Insurance Program

NO_2	Nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NYCRR	New York Codes, Rules, and Regulations
NY-ISO	New York Independent System Operators
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
NYSECL	New York State Environmental Conservation Law
NYSEG	New York State Electric & Gas
O_3	Ozone
OSHA	Occupational Safety & Health Act
Pb	Lead
PM	Particulate matter
PM_{10}	Particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of 2.5 microns or less
ppbv	parts per billion by volume
ppm	parts per million
PTE	Potential to Emit
R_2SiO	Siloxane
ROD	Record of Decision
Rte 34	State Route 34
Rte 5	State Route 5
SCADA	Supervisory Control and Data Acquisition System
SEQR	State Environmental Quality Review
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasure
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
uG/m^3	Micro-gram/cubic meter
US 20	U.S. Highway 20
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WPCP	Auburn Water Pollution Control Plant

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared by the U.S. Department of Energy (DOE), in accordance with: National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [USC] 4321 *et seq*.); the Council on Environmental Quality (CEQ) Regulations (Title 40, Code of Federal Regulations [CFR], Parts 1500-1508); and DOE's NEPA Implementing Procedures (Title 10, CFR, Part 1021). This EA evaluates the potential impacts from the construction and operation of a centralized anaerobic digester facility to process municipal wastewater sludge into energy and to utilize landfill gas (LFG) to produce up to 3.18 Megawatts (MW) of renewable electric power, to be located in Auburn, New York (hereafter referred to as the "Auburn Energy Project," the "project" or the "Plant").

The Proposed Action is for DOE to provide partial funding through a cooperative agreement with the City of Auburn (hereafter referred to as "City" or "Auburn") for the design and construction of the Plant. If approved, DOE would provide $1,340,447 (approximately 8 % of the total cost of the project). The Plant would be constructed, owned and operated by CH-Auburn Energy (hereafter referred to as "CH-Auburn") under an energy services agreement with the City. Under this agreement the electric and heat output from the Plant would be purchased by the City for a period of 15 years, after which the ownership of the Plant would transfer to the City. The City would be responsible for the supply of wastewater sludge (feedstock for the anaerobic digester) and LFG to the Plant, and disposal of the liquid effluent and solids end product (i.e., biosolids) from the Plant's anaerobic digester.

The purpose of this EA is to determine if the project would potentially cause significant adverse impacts to the environment. If potentially significant adverse impacts are identified and, if they cannot be mitigated or avoided, then a more detailed Environmental Impact Statement (EIS) would be required. If no significant impacts are identified, a Finding of No Significant Impact (FONSI) would be prepared by DOE and made available to the public before DOE provides funds for construction (see Section 1.3 for a more detailed discussion on the NEPA process).

The purpose of the project is to demonstrate the viability of recovering resources (i.e., LFG and biogas from processed wastewater sludge) that would otherwise be wasted and to demonstrate the environmental and economic benefits of such a project. The Plant would produce renewable electricity and heat for use by the City and local businesses. Processing of wastewater sludge in an advanced anaerobic digester system would also allow the City to minimize operation of its wastewater sludge incinerator – currently being used to treat sludge from Auburn and nearby communities. See Section 1.2 for a full description on the purpose and need for the project.

This EA follows the organization established by the CEQ regulations (40 CFR, Parts 1500-1508) and includes the following sections:

- Section 1 – Introduction
- Section 2 – Description of Proposed Action and No Action Alternatives
- Section 3 – Existing Conditions and Environmental Consequences
- Section 4 – Distribution List

- Section 5 – References
- Section 6 – List of Preparers
- Appendices A through E

1.1 BACKGROUND

The project is located on approximately 3.16 acres of land in Auburn (Cayuga County), New York, 30 miles west of Syracuse (see Figure 1-1). The Plant would be located on land owned by the City and adjacent the existing Auburn Water Pollution Control Plant (WPCP). The Auburn landfill is located less than a mile north of the project site (see Figure 1-2). Gas from the Auburn landfill is currently being recovered and, depending on fuel costs, is used as an alternate fuel to natural gas for the WPCP's sludge incinerator.

Figure 1-1. General Location of Project (Auburn, New York)

Figure 1-2. Project Site Location in Auburn, New York

Biogas would be produced in the proposed anaerobic digester system by processing daily approximately 30 tons of municipal wastewater sludge from the City of Auburn and an additional 220 tons of municipal wastewater sludge from nearby communities. Upon commissioning of the Plant, the City of Auburn intends to shut down or curtail the processing of sludge in its incinerator and to direct most or all of its LFG and dewatered sludge to the Plant. The Plant would utilize the LFG and biogas to fuel the proposed cogeneration system to generate electricity. The Plant would cogenerate up to 3.18 MW of electric power and an almost equal energy equivalent of heat (approximately 4,600 Million British thermal units/hour [MBtu/hr]) for use by the Plant, the City of Auburn and local businesses.

The project would be a collaborative effort between CH-Auburn and the City of Auburn. CH-Auburn would be responsible for the construction of the Plant and would be the owner and operator of the Plant over a 15-year period. The City would be the supplier of LFG and wastewater sludge, purchaser of energy produced, and wastewater sludge owner. The City would be responsible for processing and/or disposing of the biosolids that would be generated from the anaerobic digester system. Chapter 2 of the EA provides a more detailed description on the major elements of this project.

1.2 PURPOSE AND NEED

This project would be consistent with DOE's missions to ensure energy availability and to develop domestic renewable energy resources. The lead organization for the Proposed Action, the National Energy Technology Laboratory (NETL), is dedicated to the research, development, and technology transfer of renewable energy and energy efficiency technologies. This project falls under the Industrial Technology Program (ITP) under DOE's Office of Energy Efficiency and Renewable Energy (EERE), and is one of many projects to help the EERE accomplish its mission of strengthening the nation's energy security, environmental quality, and economic vitality.

The ITP's programmatic mission is to improve the energy intensity of the U.S. industrial sector through a coordinated program of research and development, validation, and dissemination of energy efficiency technologies and operating practices. The program partners with industry and its many stakeholders to reduce the nation's reliance on foreign energy sources, reduce environmental impacts, increase the use of renewable energy sources, improve competitiveness, and improve the quality of life for the nation's workers, families, and communities.

*The **Industrial Technologies Program** works with U.S. industry to improve industrial energy efficiency and environmental performance. The program invests in high-risk, high-value R&D to reduce industrial energy use while stimulating productivity and growth. Results of this investment are seen in the many program-funded technologies in the marketplace today. Read about these technologies and others expected to break into the market over the next few years by going to the ITP Web site: http://www.eere.energy.gov/industry/about/index.html*

DOE's purpose of supporting this project is to fund cost-shared research and development projects to develop innovative technologies that, when deployed commercially, will enable the U.S. industry to reduce natural gas requirements for chemical feedstocks, increase utilization of opportunity fuels, and expand the use of combined heat and power applications. The Auburn Energy Project would be consistent with the objectives of the Program by:

- Demonstrating energy self-reliance by increasing the utilization of opportunity fuels – by using gas from a landfill and processed wastewater sludge, the project would demonstrate the effectiveness of using local resources that would otherwise be wasted, reduce the dependence on limited energy resources (i.e., natural gas), and provide combined heat and power to local users;
- Providing economic security by providing industries and communities affordable, reliable fuel sources – the project could provide incentives to emerging and existing businesses by providing reduced energy costs, which in turn could potentially provide long-term socioeconomic benefits to the Auburn community;
- Improving the quality of life by providing an alternative to fossil fuels – the combustion of fossil fuels is a primary source of greenhouse gases and is a contributor of air, water, and land pollution. Electricity generation from processed wastes would displace electricity from fossil fuels. Thus, successful demonstration of this energy system could result in widespread commercialization of similar technologies and provide significant reduction in the nation's greenhouse gases.

The Plant would allow the City of Auburn to move closer to its goal of energy independence. The City has been a visionary and recognized leader in energy self-reliance and continues to be an example for other communities that are seeking energy independence and/or reduced dependency on fossil fuel. The existing LFG recovery and utilization system at the City's landfill provides an example of the City's leadership in energy independence. Since the LFG utilization project commenced operation in early 2002, the City of Auburn has saved an average

$24,000 per month by using recovered LFG to offset the use of natural gas to burn its sludge incinerator at the Auburn WPCP (B&L, 2003). In 2004, the City of Auburn received a Local Government Achievement Award from the New York Conference of Mayors for this LFG extraction project.

The Auburn Energy Project would connect into the same LFG recovery system in order to fuel the Plant to generate electricity and potentially provide heat energy to local businesses. The Plant would be the first in the nation that combines LFG and biogas production to create renewable energy, lower energy costs, and provide new economic opportunities – a model that many communities could study and potentially adopt. Potential widespread adoption of this or similar models could eventually provide significant reductions in CO_2 emissions by offsetting fossil fuel use and help the nation achieve its goals for greenhouse gas reductions.

Thus, the goals of this project would be twofold: (1) to demonstrate and promote the viability and effectiveness of technologies that meet DOE's mission to strengthen national energy security, environmental quality, and economic vitality; and (2) to allow the City of Auburn continue its leadership in energy independence and demonstrate a viable model for other communities to adopt.

1.3 COMPLIANCE WITH NEPA, LAWS AND EXECUTIVE ORDERS

DOE/NETL prepared this EA to provide the public and responsible agencies with information about the project and its potential effects on the local and regional environment. NEPA requires federal agencies to take into account the potential consequences of their actions on both the natural and human environments as part of their planning and decision-making processes (Figure 1-3).

If the findings of the EA indicate that no significant impacts would occur as a result of the Proposed Action, then the determination is formalized in a FONSI. The responsible lead agency circulates the EA and publicizes the FONSI. The NEPA process is complete when the FONSI is executed.

For this project DOE is the federal agency for evaluating potential impacts under NEPA and must determine whether to provide funding. As required by NEPA, this EA examines the expected individual and cumulative impacts of the project. DOE is the only federal agency with responsibility to approve or deny the partial funding for the project, and therefore, is the lead agency responsible for the preparation of this EA.

NEPA promotes a decision-making process that is open to the public, and public comments on this EA are solicited and encouraged. To ensure that there are ample opportunities for public comment, DOE follows the NEPA Implementing Procedures (10 CFR 1021) by publicly announcing the availability of the Draft EA in local media, making copies of the Draft EA available to the public, providing a 30-day comment period on the Draft EA, and – if no significant adverse impacts have been identified – summarizing the findings of the EA in a FONSI.

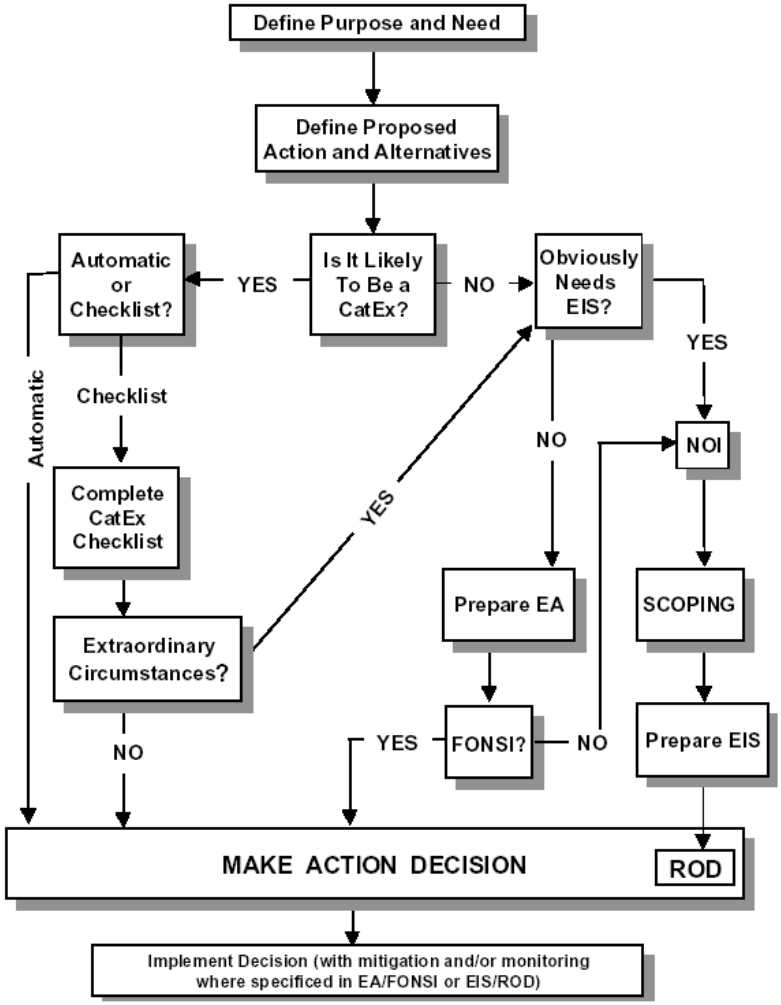


Figure 1-3 The NEPA Process

The state of New York has a similar environmental procedure to NEPA, known as the State Environmental Quality Review (SEQR) (see Figure 1-4) (NYSDEC, 2008a). The state requires most projects or activities proposed by a state or local government to conduct an environmental impact assessment as prescribed by New York Codes, Rules and Regulations (NYCRR) – 6 NYCRR Part 617, "State Environmental Quality Review (SEQR)." The SEQR requires that the sponsoring or approving governmental body (i.e., the "lead agency") to identify and mitigate significant environmental impacts of the activity it is proposing by using an Environmental Assessment Form (EAF). There is no one agency that enforces SEQR – the state's legislature makes the SEQR process self-enforcing. In other words, each agency of government is responsible to see that it meets its own obligations to comply. Although the New York State Department of Environmental Conservation (NYSDEC) is charged with issuing regulations regarding the SEQR process, NYSDEC has no authority to review the implementation of SEQR by other agencies.

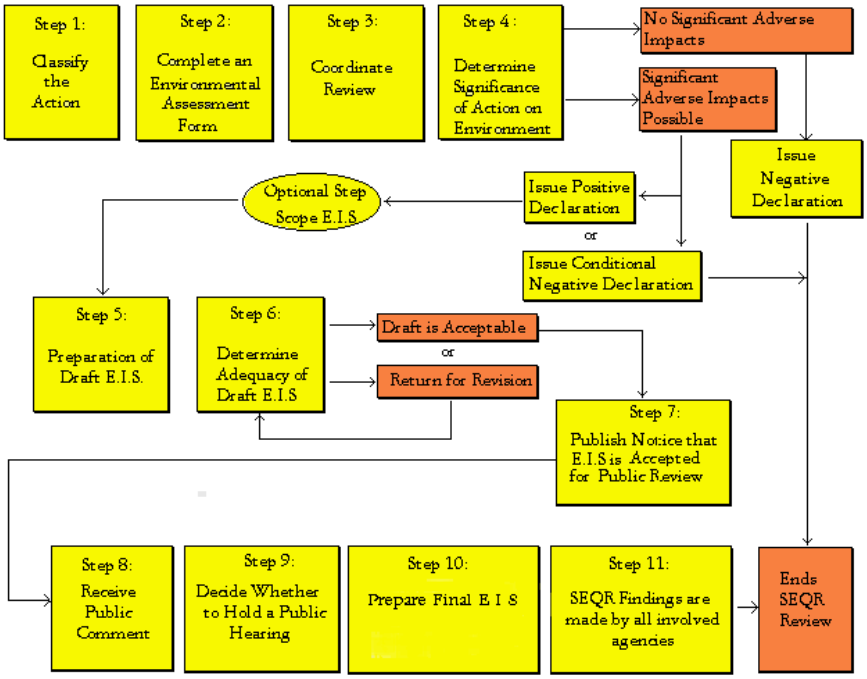


Figure 1-4. The SEQR Process for the State of New York (NYSDEC, 2008a)

For this project, the City of Auburn is the lead agency for the SEQR process and CH-Auburn is the preparer of the EAF. To date, CH-Auburn has completed the EAF and has received comments on the EAF from the City's Planning Board and the NYSDEC. Based on an evaluation of the comments and the EAF, the City determined that the project would not have any significant adverse environmental impacts, and therefore, issued a Negative Declaration for the project in compliance with the SEQR regulations. The Negative Declaration is provided in Appendix A for reference.

1.4 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This assessment analyzes the potential environmental and socioeconomic impacts that would result from implementation of the Proposed Action and No Action alternatives, and evaluates the potential individual and cumulative effects of the Proposed Action. Depending on the affected environment discussed, the region of influence considered is generally limited to the property boundaries of the project site, City of Auburn, Cayuga County, or the Seneca River Watershed. In instances where mitigation measures may lessen any potentially adverse impacts (e.g., construction Best Management Practices [BMPs]), such measures that would further minimize environmental impacts are identified in the EA.

While it is possible, though unlikely, that the Auburn Energy Project could be implemented without DOE financial assistance, that scenario would not provide for a meaningful No Action Alternative analysis (i.e., no DOE funding), as it would be identical to the Proposed Action. For purposes of this assessment, the EA therefore evaluates, as the No Action Alternative, the potential impacts that would occur if the Plant were not built and operated.

DOE has obtained and reviewed the SEQR EAF (CH-Auburn, 2008) with all attachments as submitted by the City of Auburn in May 2008 for the project. Various resource determinations were made in the SEQR (e.g., determination of 100-year floodplain, wetlands, and listed-species – these determinations are included in Appendices C, D, and E, respectively). However, as appropriate, additional or supplemental information available from state, regional, and local sources was reviewed by DOE to confirm and/or supplement the determinations made in the SEQR EAF. Additionally, DOE conducted a site investigation of the project area to supplement analyses of physical site features, such as confirming existing wetlands and vegetation features.

General notification letters for this EA will be sent to several federal, state, and local agencies – on behalf of DOE/NETL for solicitation of their comments – as listed in Chapter 4, Distribution List, of this EA. Appendix B includes correspondence letters received from the following agencies during the SEQR EAF process:

- U.S. Fish and Wildlife Service
- New York State Office of Parks, Recreation and Historical Preservation
- New York Natural Heritage Program (New York State Department of Environmental Conservation)

The following resource areas have been identified for study within this EA and are discussed in Section 3.2 (Existing Conditions and Environmental Consequences): land use; aesthetics; soils and geology; cultural resources; water resources; biological resources; air quality; wastewater; waste management; traffic and transportation; noise; socioeconomics and environmental justice; and public health and safety.

2.0 PROPOSED ACTION AND NO ACTION ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the Proposed Action and No Action alternatives analyzed in this EA for the Auburn Landfill Gas and Digester Gas Energy Facilities, to be located at the Auburn WPCP. As described in Chapter 1, CEQ's regulations direct all federal agencies to use the NEPA process to identify and assess the reasonable alternatives to proposed actions that would avoid or minimize adverse effects of these actions upon the quality of the human environment (40 CFR 1500.2(e)).

2.2 PROPOSED ACTION

Under the Proposed Action DOE would provide the City of Auburn financial assistance to construct and operate a centralized anaerobic digester facility to process municipal wastewater sludge into biogas and to use this fuel and LFG (currently being recovered from the Auburn landfill) to produce renewable electric power. This project would be located in Auburn, Cayuga County, NY at a 3.16-acre city-owned site at the Auburn WPCP. The Congressionally-directed funding of $1,340,447 (approximately 8% of total project cost) would be consistent with DOE's goals under the auspices of the Industrial Technology Program of providing research, development, and demonstration of energy efficient and renewable technologies. The Plant would cogenerate approximately 3 MW of electric power and an almost equal energy equivalent of heat (approximately 4,600 MBtu/hr) for use by the Plant, the City and local businesses.

2.3 PROJECT BACKGROUND

CH-Auburn, a subsidiary of CH Energy Group, entered into a 15-year energy agreement with the City of Auburn to supply the City with a portion of its electricity needs by constructing and operating a 3-MWplant at the Auburn WPCP. The Plant would include an anaerobic digester to convert wastewater sludge into biogas for electric generation and sale of reduced-cost electricity to the City. The Plant would also use the existing LFG recovery system to generate electrical power. CH-Auburn would be the owner and operator of the Plant and would arrange for construction of the project. The City would be the supplier of LFG and wastewater sludge, purchaser of energy produced, and wastewater sludge owner. The City would be responsible for disposal of the biosolids (generated from processed, i.e., "digested" sludge) through contracts with external transport companies. The liquid effluent (also from the digested sludge) would be directed to the Auburn WPCP for treatment. At the end of the 15-year contract, the City would acquire the Plant.

Wastewater sludge or **biosolids** are processed wastewater solids that meet rigorous standards allowing safe reuse for beneficial purposes (EPA, 2004). **Digestion** is a form of sludge stabilization where the volatile material in sludge can decompose naturally and number of pathogens, biochemical oxygen demand, and potential for odor production are reduced. **Anaerobic digestion** (digestion without air in an enclosed tank) has the added benefit of producing **biogas**, a mixture of gases, that comprises **methane** (CH_4) and carbon dioxide (CO_2) making up more than 90% of the total. Methane is a combustible gas which determines the energy content of the biogas.

Upon completion, the Plant would cogenerate both electric power and heat utilizing: 1) biogas that would be produced in an anaerobic digester system processing daily approximately 30 tons of municipal wastewater sludge from the City of Auburn and an additional 220 tons of

wastewater sludge from nearby communities, and 2) LFG from the existing Auburn landfill located near the project site (less than a mile north of the project site).

Approximately 1-MW of power would be generated by biogas from the anaerobic digester and approximately 2-MW from the LFG. The Plant would cogenerate a combined 3-MW of electric power and an almost equal energy equivalent of heat (approximately 4,600 MBtu/hr) for use by the Plant, the City, and businesses in the nearby Auburn Technology Park adjacent the eastern edge of the proposed site.

Currently, the City processes wastewater sludge from other communities in its incinerator. Since 2002, the City's sludge incinerator has been running on natural gas and LFG that is recovered from the nearby landfill. Historically, the incinerator has processed 120 tons of wastewater sludge daily (CH-Auburn, 2008). It is anticipated that during operations of the Plant, the processing of sludge in the incinerator would either cease or greatly reduce as most or all of the LFG and dewatered sludge would be sent to the Plant. However, the City intends to maintain the incinerator as a backup facility for the wastewater sludge processing of the Plant during periods of emergencies or maintenance.

2.4 DESCRIPTION OF THE PROPOSED PROJECT

2.4.1 Overview of Major Project Components

2.4.1.1 Primary Tasks

The following major tasks would be undertaken for the construction of the Plant (CH-Auburn, 2008):

- Design, construct, and commission an anaerobic digester system to process incoming wastewater sludge – the anaerobic digester system would receive and process dewatered sludge from the Auburn WPCP to produce biogas for the cogeneration of electric power and heat.
- Design and install new equipment to optimize LFG production and delivery to the Plant – new LFG piping and control equipment would be installed on the existing LFG delivery system to redirect the LFG flow to the Plant. This task would include the balancing of the existing wells to optimize quantity and quality of LFG delivered to the Plant, and the potential improvement of an existing LFG blower and compressor to ensure reliability of LFG delivery.
- Design and install fuel handling and conditioning system to upgrade and deliver LFG and biogas to the proposed electric cogeneration system – the fuel system would: (a) interconnect the LFG Plant piping to the City's existing LFG distribution system; (b) interconnect the LFG and biogas piping systems to the gas conditioning equipment installed at the Plant; (c) condition the biogas and LFG as an acceptable fuel for a electric cogeneration system; and (d) control the delivery of the conditioned fuel to the Plant's cogeneration system.
- Install a 3.18-MW cogeneration system at the Energy Station – an existing maintenance building located on the lot of the project area would be retrofitted to house the Energy Station. The Energy Station would consist of three Jenbacher model cogeneration unit engine generators to provide 3.18 MW of energy. The

proposed cogeneration system would be equipped with heat recovery systems and controls.

- Interconnect the proposed Energy Station with the existing city-owned electric distribution system and local grid – an overhead city-owned 5 MVA electric distribution system would be constructed onsite to deliver power to a city-owned electric distribution substation (located at the Auburn WPCP) and the local distribution grid.

MVA: Mega (million) Volt-Ampere. A Volt-Ampere is equivalent to a Watt for non reactive circuits. Hence 5 MVA is equivalent to 5 Mega Watts (5 MW).

- Install a thermal energy distribution system – heat recovery systems installed on the cogeneration system would be integrated into a high temperature hot water header. New piping and associated installations would distribute the heat to thermal circuits of the anaerobic digester and to City customers located in the abutting Auburn Technology Park.

Upon commissioning of the Plant, the City would intend to shut down or curtail the processing of sludge in its incinerator and to direct most or all of its LFG and dewatered sludge to the newly constructed Plant. The planned incinerator shutdown, or reduction in use, and the start up of the Plant's digester system and the cogeneration system would be coordinated to ensure proper operation and conformance with the Auburn WPCP's permit requirements, existing City contracts for sludge disposal and operational protocol of the WPCP. Regardless of the final incinerator operating plan, the City intends to maintain the incinerator as a backup facility for the wastewater sludge processing of the proposed Plant.

2.4.1.2 Project Site

Auburn is located in upper New York state, approximately 30 miles west of Syracuse, and is primarily accessible via U.S. Highway 20 (US 20), State Routes 34 and 5 (Rte 34 and Rte 5) (see Figure 1-1). The Plant would be located on 3.16 acres of land adjacent the Auburn WPCP, which is accessed via Allen Street.

Figure 2-1 shows the location of the proposed site and its surrounding site features. The majority of the project site is located on an existing developed lot at the Auburn WPCP and is surrounded by vegetation, such as small trees, shrubs, and grass. A maintenance building, which houses various equipment for the Auburn WPCP, is located on the lot and would be retrofitted to include the Energy Station. The surrounding region generally comprises commercial and industrial sites. The Auburn Technology Park is directly adjacent the eastern and northern boundaries of the proposed site. The Auburn landfill is located less than a mile north of the site and is directly accessible from the project site via a small dirt road (see Figure 1-2). The closest residential property to the project site is located approximately 1,500 feet south of the site on Case Avenue.

Existing utility lines that serve the Auburn WPCP are the LFG, natural gas, potable water, electrical, wastewater and storm sewer lines. An electrical substation is located at the Auburn WPCP, approximately 750 feet south of the project site (see Figure 2-1).

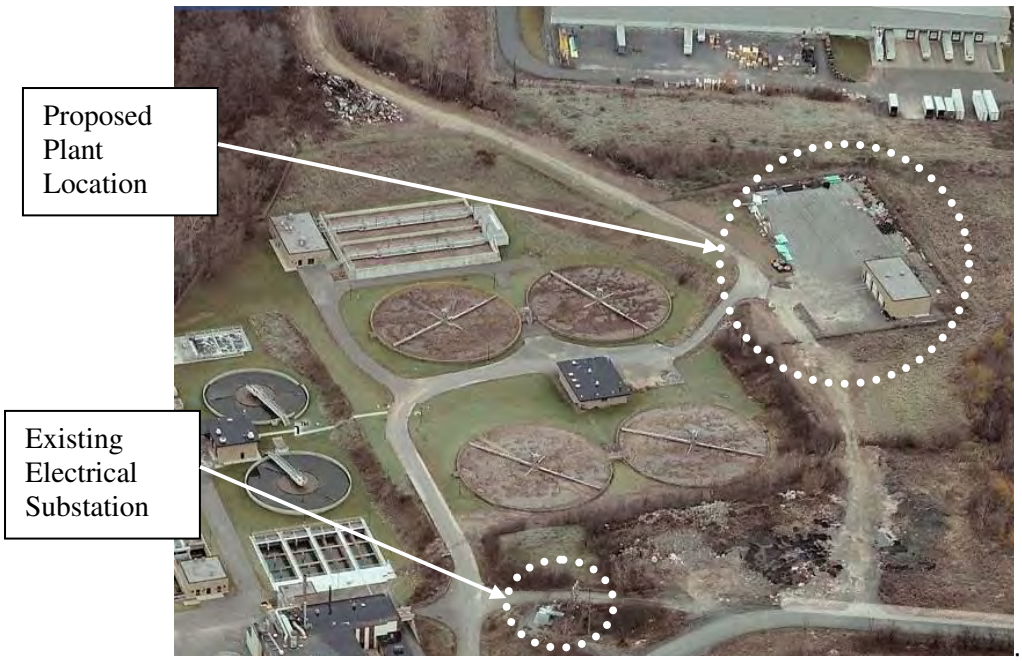


Figure 2-1. Project Site

2.4.1.3 Site Layout of the Proposed Plant

A satellite photograph showing a conceptual overlay of the Plant's facilities is shown in Figure 2-2. Figure 2-3 illustrates a conceptual layout of the Plant. Note that connections to existing natural gas, LFG, and wastewater pipelines would generally be contained within the boundary of project site. A high voltage distribution line would be constructed from the project site to the existing electrical substation at the Auburn WPCP (see Figure 2-1 and Section 2.4.1.1). Equipment, processes and facilities are discussed in more detail in Section 2.4.2.

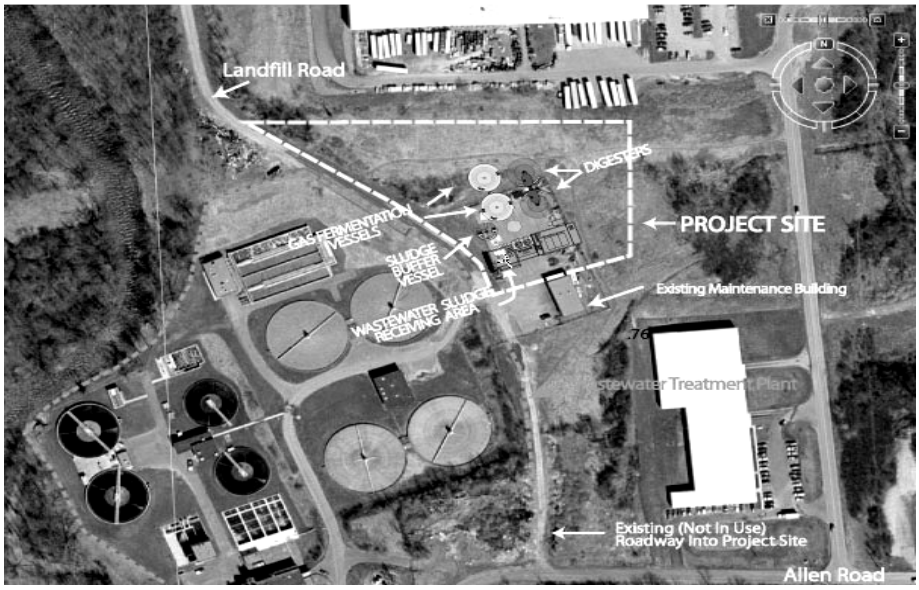
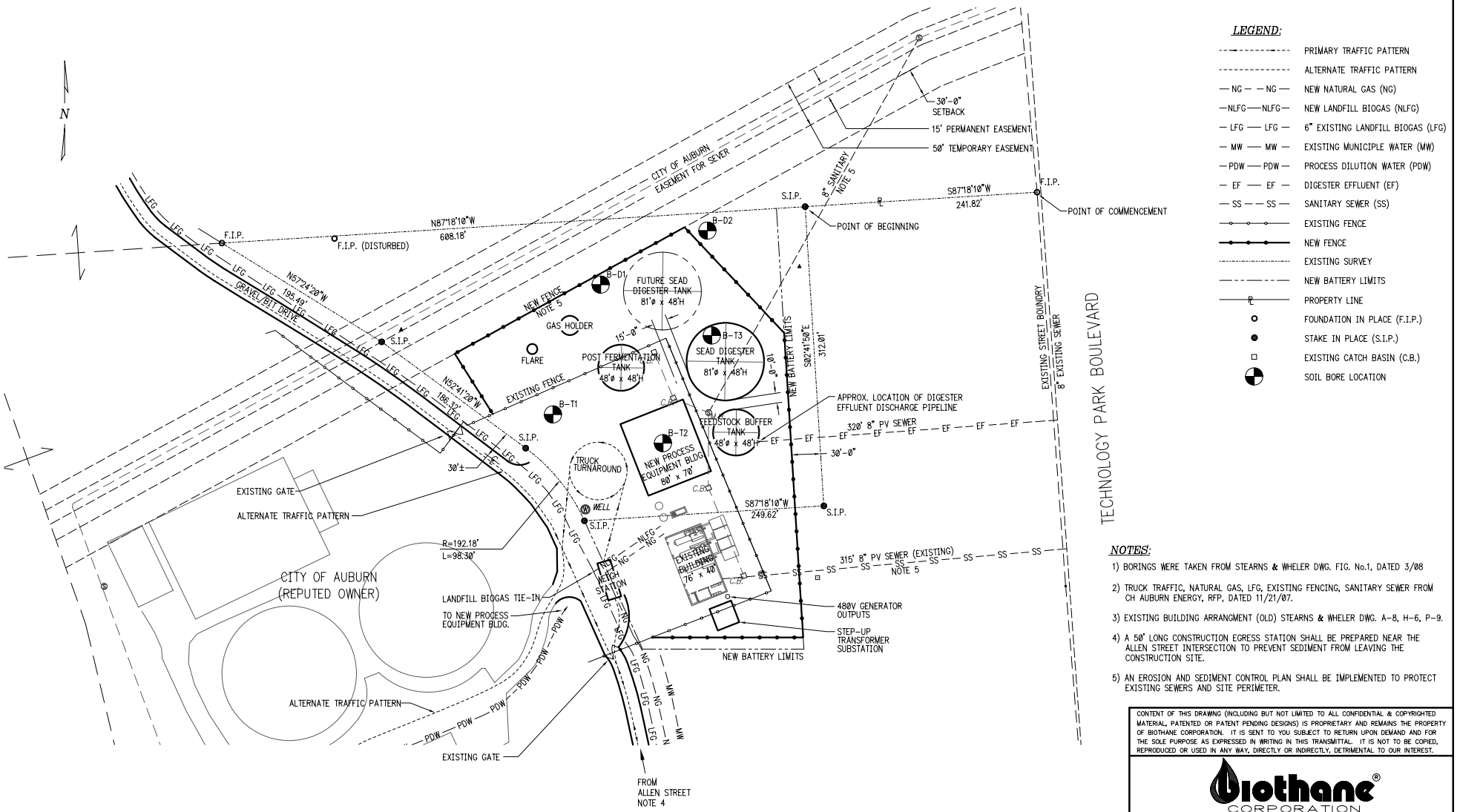


Figure 2-2. Overlay of Conceptual Layout of the Proposed Facilities and Project Boundary on Aerial Image (note, final layout may vary slightly) (CH-Auburn, 2008)



LEGEND:

- PRIMARY TRAFFIC PATTERN
- ALTERNATE TRAFFIC PATTERN
- NG — NG — NEW NATURAL GAS (NG)
- NLFG — NLFG — NEW LANDFILL BIOGAS (NLFG)
- LFG — LFG — 6" EXISTING LANDFILL BIOGAS (LFG)
- MW — MW — EXISTING MUNICIPLE WATER (MW)
- PDW — PDW — PROCESS DILUTION WATER (PDW)
- EF — EF — DIGESTER EFFLUENT (EF)
- SS — SS — SANITARY SEWER (SS)
- EXISTING FENCE
- NEW FENCE
- EXISTING SURVEY
- NEW BATTERY LIMITS
- PROPERTY LINE
- FOUNDATION IN PLACE (F.I.P.)
- STAKE IN PLACE (S.I.P.)
- EXISTING CATCH BASIN (C.B.)
- SOIL BORE LOCATION

NOTES:

1) BORINGS WERE TAKEN FROM STEARNS & WHELER DWG. FIG. No.1, DATED 3/08
2) TRUCK TRAFFIC, NATURAL GAS, LFG, EXISTING FENCING, SANITARY SEWER FROM CH AUBURN ENERGY, RFP, DATED 11/21/07.
3) EXISTING BUILDING ARRANGMENT (OLD) STEARNS & WHELER DWG. A-8, H-6, P-9.
4) A 50' LONG CONSTRUCTION EGRESS STATION SHALL BE PREPARED NEAR THE ALLEN STREET INTERSECTION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
5) AN EROSION AND SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED TO PROTECT EXISTING SEWERS AND SITE PERIMETER.

Biothane® CORPORATION

TITLE: PRELIMINARY SITE LAYOUT
AUBURN REGIONAL DIGESTER
FOR: CH - AUBURN ENERGY, LLC
AUBURN, NY

NO.	REVISION	BY	CHCK	APP'D	DATE
0	ISSUED FOR REVIEW	OBK	EWW	GTR	8/12/08

DRAWN BY: OBK
CHECKED: EWW
APPROVED: GTR
SCALE: 1"=100'-0"
FIRST ISSUE DATE: 7/22/08
DRAWING NO. B-5789.802
REV. 0

Figure 2-3. Preliminary Site Layout of Proposed Facilities (Biothane Corp., 2008a)

7-23-2008/15:11/B5789802.dwg

2.4.2 Operation

There would be three main activities at the Plant: (1) production of biogas from anaerobic digesters and associated equipment; (2) integration of the City's existing LFG collection and delivery system with the Plant's Fuel Conditioning and Management System, and (3) production of electric power and heat from three electric cogenerators fueled by the digester biogas and LFG. Figures 2-4 and 2-5 illustrate the Plant's processes.

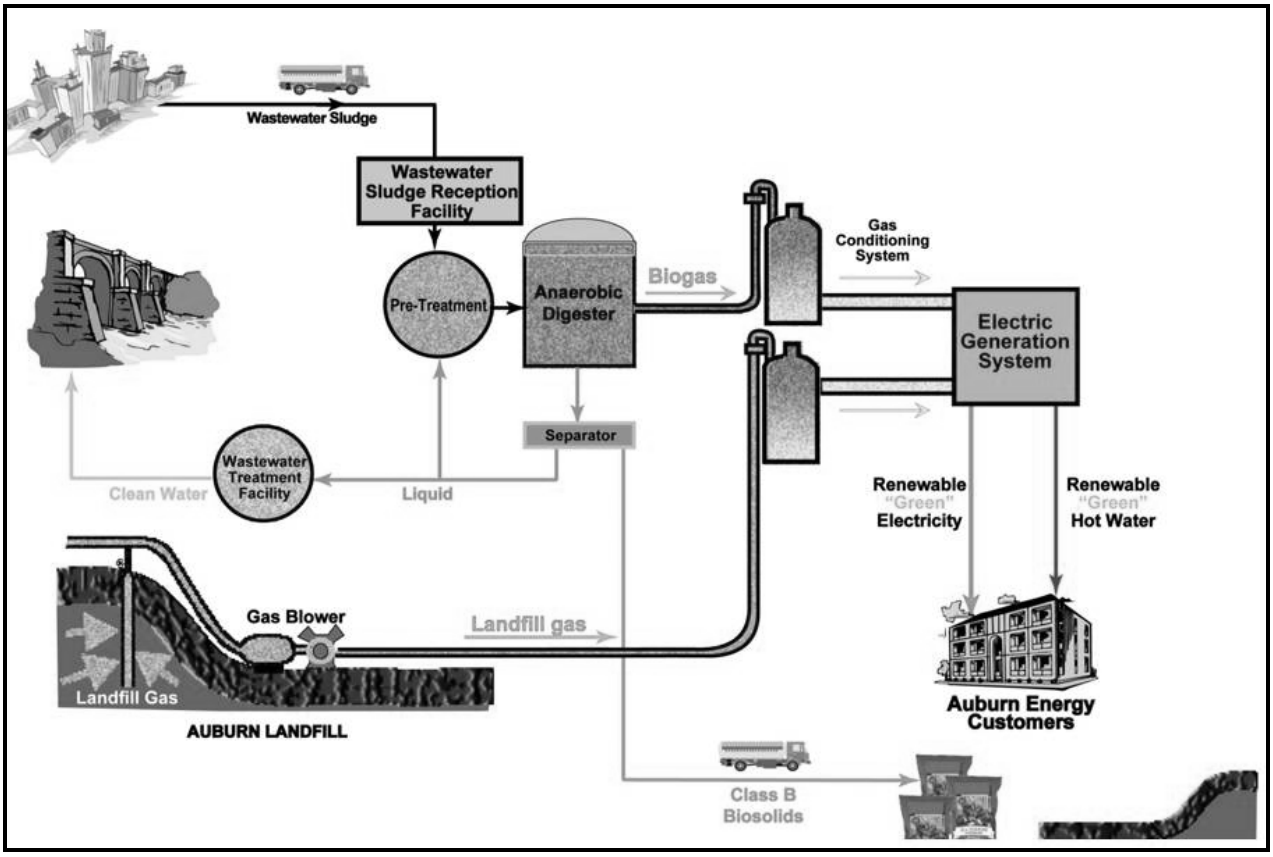


Figure 2-4. Auburn Energy Project – Plant Processes (CH-Auburn, 2008)

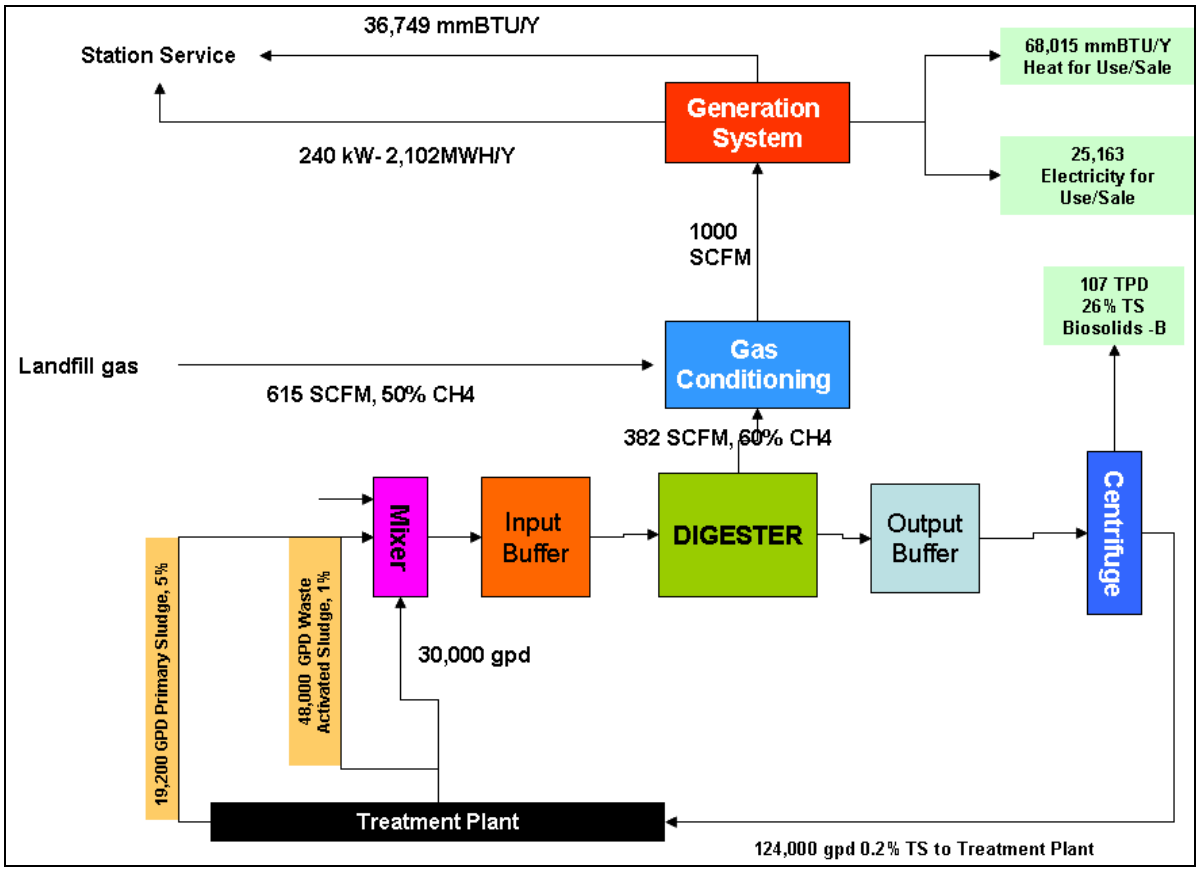


Figure 2-5. Schematic of Inputs and Outputs of Plant Processes (ECOTS, 2008)

2.4.2.1 Facility Processes and Equipment

Operations at the Plant are discussed in this section in the context of the processes involved and associated facilities and equipment. Some of these facilities would be within an insulated industrial-grade structure called the Process Building. With the exception of the Receiving Station and Solids Separation Station – where an operator is needed for the loading and unloading of transport vehicles – the Plant would be automated and would typically operate with limited personnel intervention. Plant personnel would provide the daily management and monitoring of quality, performance, and health and safety of workers and would perform maintenance and service responsibilities. The Plant would operate seven days a week, 24 hours a day, except during temporary maintenance activities. Approximately three employees would be required for the operation of the Plant.

A. Deliveries to the Receiving Station

The Plant would receive and process approximately 30 tons of wastewater sludge from the City of Auburn and 220 tons of wastewater sludge from nearby communities. A preliminary list of sludge quality requirements for operations would include the following:

i. The Plant would only accept polymerized caked wastewater sludge. The type of polymers used in dewatering of sludge would be specified and approved by CH-Auburn and would be included in the City's contracts with the municipalities and/or transport companies.

ii. The wastewater sludge would be approximately 18 to 24% dry matter, with the dry matter consisting of approximately 65 to 75% volatile solids.

iii. The sludge would conform to State Pollutant Discharge Elimination System (SPDES) permit requirements.

iv. The sludge would be no more than 3 to 5 days old upon arrival at the Plant.

v. Sludge would be free of non-organics such as glass, plastics, metal, bones, etc.

vi. Sludge would be free of long straws and other non-biodegradable materials.

vii. Any sludge that is anaerobically-treated would not be accepted.

viii. Lime-stabilized sludge would not be accepted.

ix. The sludge would be free of toxic materials that inhibit anaerobic digestion and gas production, such as bioagents (e.g., antibiotics, toxic waste, etc.) and disinfectants (e.g., creosol, phenol, material with heavy concentrations of arsenic).

x. The Plant would not accept any sludge that is classified as hazardous waste.

xi. Prior to contracting for the transport of sludge to the Plant, a Toxicity Characteristic Leaching Procedure (TCLP) analysis of a composite sample would be completed by the wastewater sludge transport company and submitted to CH-Auburn to confirm compatibility with the digester processing. The report would be updated annually and sent to CH-Auburn as part of the City's contract with the municipalities or transport companies.

xii. The transport companies would comply with all New York State and federal regulations related to wastewater sludge (see iii.).

The Receiving Station would have outdoor receiving bins with a buffer capacity of 150 tons, where transport vehicles unload the wastewater sludge into a below-grade storage bin. The receiving bins would be equipped with moving floors to feed the mixing equipment. The unloading area would be outdoors and would be equipped with bin covers that would be opened when a vehicle is in position to unload the wastewater sludge. The bin doors would be closed once the delivery is completed. The bin doors would control odor, machinery noise from the equipment below the receiving area and dust that may be generated during unloading and material movement.

After unloading at the Receiving Station, the trucks would be directed to the Solids Separation Station loading area to be loaded with end product biosolids from the anaerobic digester. The trucks would ship the biosolids to outsourced sites for processing and/or disposal. These transport vehicles would be selected under a pre-arranged plan and would minimize the number of vehicles entering and exiting the Plant. All transport vehicles leaving the Plant site would exit via pre-established traffic routes (discussed later in Section 2.4.2.3, Delivery of Sludge and Biosolids to and from the Plant).

Except for the unloading area, the Receiving Station would be automated. Because the storage bin and processing equipment below the unloading area would be enclosed, the air temperature, pressure and quality would be monitored and maintained to ensure safe working conditions for employees that may need to enter the equipment area for repairs or maintenance (e.g., confined space safety requirements), and to minimize release of odorous emissions from the facility. The exhaust air from the Receiving Station would be treated and conditioned by the

Plant's odor control equipment before being released to the atmosphere (see Section 2.4.2.2, Balance of Plant Systems).

B. Pre-Treatment and Mixing Station

Once in the storage bin, the material would pass through an in-line macerator to decrease the particle size of the organic material. The macerator would also act as a stone and solids deflector. These materials would be gathered and removed manually as necessary and, depending on their type, would either be added to the solid effluents or sent to a landfill.

Mixing equipment would mix the wastewater sludge with approximately 30,000 gallons per day of process water – i.e., wastewater to be taken from the Auburn WPCP's primary clarifier effluent – to reduce the solids concentration of the wastewater sludge to the required solids range of the anaerobic digester. (The actual amount of process water needed depends on final digester technology selection and is unknown at this time.) In addition to the 30,000 gallons per day of primary clarifier effluent, the digester would also take from the Auburn WPCP approximately 19,200 gallons per day of primary sludge influent and 48,000 gallons per day of activated sludge for a total of approximately 97,200 gallons per day of input sludge for the digester. See Figure 2-5 for inputs and outputs of Plant processes.

The mixer(s) would break down the wastewater sludge agglomerates and create a fluidized material pumped to the sludge buffer vessel (see "C"), to be heated and conditioned for digester operations. Exhaust air from the mixer(s) would be treated and conditioned in the Plant's odor control equipment before being released to the atmosphere (see Section 2.4.2.2, Balance of Plant Systems).

C. Sludge Buffer Vessel

The sludge buffer vessel would be an above ground, covered, sealed, and insulated storage vessel and would have a storage capacity of four days to allow continuous operation during weekends, holidays, or in the event of transportation interruption. From the sludge buffer vessel, the fluidized sludge would be pumped to the digester in metered doses, approximately 10 to 16 times per day and controlled by an automated control system.

D. Digester Vessels

The fluidized wastewater sludge would enter the digester at approximately 68ºF. The digester would operate at mesophilic temperatures between 95°F and 105°F. Once inside the digester, the fluidized wastewater sludge would be heated to 97ºF and processed over the course of approximately 12 to 30 days depending on the final digester technology selected. The digestion process and biogas production would begin as soon as fresh feed reaches 80ºF. Once the feed cycle is complete, the substrate would be mixed in such a way that it would destroy both surface scum and sediment layers and fully blend the mixture.

The design details of the anaerobic digester are not available at this time because of proprietary issues and final selection of technology has not yet been determined. However, it is anticipated that the proposed digester would incorporate Shear Enhanced Anaerobic Digestion (SEAD) technology (see Figure 2-6) (Biothane Corp., 2008b). Depending on final digester technology selected, the digester would produce 382 standard cubic feet per minute (approximately 555,000 standard cubic feet per day) of biogas and approximately 150,000 gallons of processed sludge daily (ECOTS, 2008). See Figure 2-5 for inputs and outputs of Plant processes.

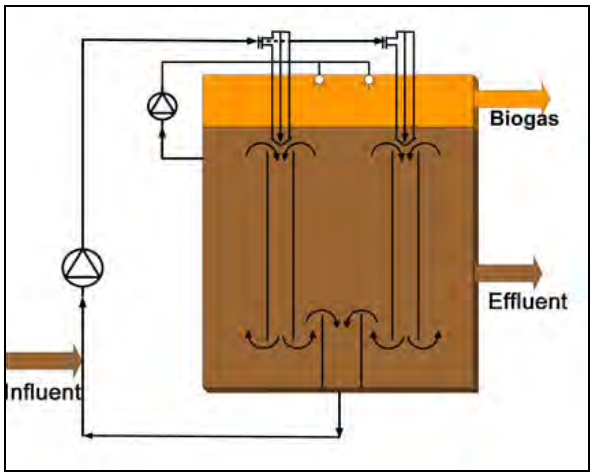


Figure 2-6. Schematic of a SEAD Digester (Biothane Corp., 2008b)

E. Post Fermentation Vessel

Once digested, the wastewater sludge would exit the digester and be directed to the heated post fermentation vessel, where it would continue to off-gas and stabilize before being separated into solids and liquids. The biogas would be transferred to a gas holder, which would hold up to three hours of biogas. The stored biogas would be used to supplement gas production when production of the gas is lower than the Energy Station requirements. The gas holder would be made of special non-permeable material and would be attached above the post fermentation vessel or be an independent component, depending on the final digester technology selected.

The digested or processed wastewater sludge —commonly referred to as digestate— would remain in the post fermentation vessel for up to six days, where upon stabilization it would be pumped to the Solids Separation Station (see "F"). The biogas would be stored in the gas holder system and transferred by the automated control system through gas delivery piping to the Fuel Conditioning and Management Systems (see "G") at the Energy Station (see "H").

F. Solids Separation Station

The Plant would post-process approximately 150,000 gallons of processed sludge every day (depending upon the final digester selection), which would be pumped directly into the solids separator equipment. The solids separator equipment would be adjusted to separate the processed wastewater sludge into two streams: 1) stabilized Class B biosolids with the desired moisture content (approximately 107 tons per day); and 2) liquid effluent (approximately 124,000 gallons per day). After being processed in the digesters, the biosolids and the liquid effluent would be lower in pathogen count and have a reduced biological oxygen demand (BOD) level than any unprocessed wastewater sludge being delivered to the facility. See Figure 2-5 for inputs and outputs of Plant processes.

Class B biosolids have less stringent standards for treatment than Class A biosolids (40 CFR 503) and contain small but compliant amounts of bacteria. Class B pathogen requirements (40 CFR 503.32(b)(2) through (b)(4)) ensure that pathogens have been reduced to levels that protect public health and the environment and include certain restrictions for crop harvesting, grazing animals and public contact. As is true of their Class A counterpart, Class B biosolids are treated in a wastewater treatment facility and undergo heating, composting, digestion or increased pH processes before leaving the plant. When exposed to the natural environment as a fertilizer, heat, wind and soil microbes naturally stabilize the biosolids.

The separation equipment would be mounted on a mezzanine floor allowing the biosolids to fall by gravity into a transport container. When the transport container is full, the separation equipment would shut down and the container would be transported offsite for final processing and/or disposal, thus eliminating storage at the Plant (see "A" and Section 2.4.2.3 for transport of biosolids offsite). The liquid effluent from the separation process would be piped to the Auburn WPCP for treatment before being discharged to the Owasco River.

The separation equipment would be installed in an enclosed station with air exchange to ensure operator safety. Negative pressure would be maintained to control release of odorous emissions. Exhaust air would be directed to the Plant's odor treatment equipment for deodorizing before it would be released to the atmosphere. The room would have sloped floors and drains to collect liquid spillage and any leachate from the digestate in a gathering basin. The collected liquids would be periodically pumped to the sludge buffer vessel (see "C") for reprocessing.

G. Fuel Conditioning and Management System

The biogas from the gas holder and the LFG delivered from the LFG system would enter the Energy Station via the Fuel Conditioning and Management System. This system would prepare the gases to fuel the Jenbacher generators installed at the Energy Station.

An engineering study by Stearns & Wheler showed that the landfill is currently capable of delivering 550 cubic feet per minute of LFG (with approximately 50% methane at the present time) to the existing incinerator (Stearns & Wheler, 2007 and CH-Auburn, 2008). The study concludes that the LFG production will increase over the next ten (10) years, eventually starting to taper off in 2017. The study also concluded that adequate LFG would be available through the Plant's 15-year agreement period.

LFG from Auburn Landfill: The study by Stearns & Wheler measured 55% CH_4 and 38% CO_2 in the City LFG. This study also determined that LFG supply would remain adequate through the Plant's 15-year agreement.

Siloxane: A chemical compound composed of units of the form R_2SiO, where R is a hydrogen atom or a hydrocarbon group, Si = Silicon atom, O = Oxygen atom.

The study included recent measurements that were shown to have a significant concentration of siloxane (2,520 parts per billion by volume) which would need to be reduced to satisfy the requirements of the cogeneration system manufacturer. The biogas would have a significant concentration of hydrogen sulfide (H_2S) and moisture, which would likewise need to be reduced to meet the manufacturer's specifications. H_2S would be scrubbed from the biogas to a concentration below 100 parts per million. The LFG would be conditioned with a similar system.

The Fuel Conditioning and Management System would also incorporate "Particle Gas Cleaning" equipment and a "Dehydration System" which would be used to further prepare the gas for use in the cogeneration system. Appropriate safety systems would be adopted to ensure compliance to national, state, and local codes, as well as industry practices.

H. Energy Station

Conditioned biogas and LFG would be delivered from the Fuel Conditioning and Management System as fuel for a combined heat and power system ("Cogeneration System") comprising three General Electric Jenbacher model engine generators at the Energy Station, which would be housed in the

Cogeneration unit: General Electric, Jenbacher model JMS 320-GS-B.L. Each engine is rated at 1,057 kW, 4,160 volts, 3-phase, 1.0PF, with a thermal output of 4,627 MBTU/hr. (CH-Auburn, 2008)

existing maintenance building – to be retrofitted to accommodate the Station. The generating systems would produce both electricity and hot water – the Energy Station would provide up to 3.18 MW of electric power and approximately 4,627 MBTU/hr of recoverable heat.

An overhead city-owned 5 MVA electric distribution system would be constructed onsite to deliver power to a city-owned electric distribution substation (located at the Auburn WPCP, about 750 feet south of the project site – see Figure 2-1) and the local distribution grid – New York State Electric & Gas (NYSEG). The existing substation would be modified to match the distribution system electrical design. If New York Independent System Operators (NY-ISO) determines that the interconnection is covered under the Federal Energy Regulatory Commission's (FERC) jurisdiction, then the design and construction of the interconnection system would be coordinated through an NY-ISO pre-determined process to be approved by NYSEG. If NY-ISO determines that FERC jurisdiction does not apply, then the interconnection system design would be directly coordinated with and approved by NYSEG.

Piping and associated installations would also distribute the heat to thermal circuits of the anaerobic digester of the Plant, and hot water to local customers located in the abutting Auburn Technology Park. Connection to an existing natural gas line (currently being used as fuel to the incinerator) would be implemented to use the natural gas as a fuel backup (see "I").

I. Fuel and Process Water Piping

The Plant would include the following pipeline systems to support its operation:

- Landfill Gas Delivery System – a new LFG delivery pipeline would be constructed to interconnect the existing LFG collection and delivery system to the Plant's Fuel Conditioning and Management System and the cogeneration system. The interconnection equipment would include a bypass valve to divert all or part of the LFG delivery from the Plant to the Auburn WPCP incinerator as a processing backup for the Plant.
- Process Water Delivery Systems – the Plant would include a pipeline system to transport approximately 30,000 gallons per day (depending on final digester technology selection) of wastewater from the Auburn WPCP's primary clarifier effluent to the digesters for mixing with the delivered dewatered sludge. In addition to the 30,000 gallons per day of primary clarifier effluent, the digester would also take from the Auburn WPCP approximately 19,200 gallons per day of primary sludge influent and 48,000 gallons per day of activated sludge for the digester. The pipeline design and construction would conform to applicable regulations and codes regulating the movement of wastewater. A separate pipeline would be constructed to transfer the separated liquid effluents (2-3% dry matter) from the Solids Separation Station back to the Auburn WPCP for final treatment and disposal. See Figure 2-5 for inputs and outputs of Plant processes.
- Natural Gas Pipeline – a pipeline connection to an existing natural gas pipeline at the Auburn WPCP would be constructed to use the natural gas as backup fuel during a biogas and/or LFG quantity or quality deficiency or outage. The natural gas pipeline would have a supply delivery capacity equal to the cogeneration system requirements.

- Safety Flare – any excess biogas that may be present during operation of the Plant (e.g., emergencies or planned maintenance) would be disposed via a Safety Flare. This flare would combust the biogas being delivered to the Energy Station automatically when excess gas is present or the gas delivery system is interrupted. (A similar automated safety flare already exists on the City LFG delivery system, and this flare would not be reconstructed or modified, since it is appropriately-sized and permitted for the proposed LFG delivery system for the Plant.)

J. Pumping Station

The Plant's pumps and related equipment for the wastewater sludge slurry, process wastewater, effluent from the separation process and the wastewater collected in floor drains would be installed in a Pumping Station with controls for pumps and related equipment. Remote monitoring equipment for the Pumping Station would be installed in a Control Room (see "K"). The Pumping Station would include adequate work space for maintenance as well as machinery and appropriate lifting equipment to remove and replace heavy equipment. The Pumping Station would also include a small number of small processing vessels that would be used for pre-/post-treatment of the sludge slurry, dosing, and other functions.

K. Control Room for Computerized Supervision of Process and Control of Operations

A control room would be built in the Process Building for the computerized supervisory control and data acquisition system (SCADA) and other computerized equipment.

L. Laboratory

The Process Building would include a laboratory to store samples of wastewater sludge and to perform basic tests.

2.4.2.2 Balance of Plant Systems

The balance of proposed plant systems include the following:

"Balance of plant" means those systems, components, and structures that together comprise a complete facility.

Odor Treatment Equipment

Odor treatment equipment would treat the vented air from the Plant's vessels generated by the changing liquid levels within the vessels and exhaust air from the Process Building. The potential sources for odor problems could be from the anaerobic digester, the post fermentation vessel, the sludge Receiving Station, the final effluent solids storage bin, and the influent tank. The digester and post fermentation tank would be completely sealed vessels and connected to the biogas system to minimize potential odor issues.

The main sources for odor potential would be from sludge unloading at the Receiving Station, biosolids loading at the Solids Separation Station, and from the influent tank. The system being considered for this project would be designed to handle these potential odorous areas via a set of air vacuum take-off points located at the odor sources, followed by treatment in a mulch pit biofilter (Biothane Corp., 2008c).

The odor air vacuum points would consist of a series of open ended polyvinyl chloride (PVC) draw-off pipes strategically placed at and around the Receiving Station and the Solids Separation Station. These draw-off points would be under slight negative pressure and would locally vacuum potential odorous air to the biofilter. The slight vacuum on the draw-off pipes would be accomplished through the use of a fiberglass reinforced plastic fan that directs the

odorous air from the draw-off points to the biofilter. For the influent tank, the first level of odor air abatement would be the covering of the tank. The second level would consist of a vent flange in the cover that would be connected to the odor air system, thereby directing any odorous air in that tank to the biofilter.

Another key aspect to the odor air system is that each major potential odor area would be individually-controlled for the amount of air that is drawn from an area. This would allow the system to be tuned in the field, both at the Plant start-up and during operation, to draw off the most amount of air from the area that is emanating the most odor.

The ultimate treatment of the odorous air would be completed in a mulch pit biofilter. The biofilter is an upflow filter where the odorous air is sent through a series of headers at the bottom of the filter. These headers would have orifices to allow the air to be distributed evenly across the length and width of the biofilter. The biofilter itself would consist of a layer of stone above the influent header covered by another layer of mulch. The rock and the mulch would act as carrier for the bacteria. The bacteria that grow in the biofilter would then eliminate the odorous compounds in the air.

Plant Control System

All operations and measurements at the Plant would be automated and, with the exception of the loading/unloading station, would use a continuous supervisory control and data acquisition system (SCADA).

Metering, Monitoring and Documentation Systems

The Plant would be operated using both a computerized performance reporting and documentation system and manual daily logs to ensure that monitoring and other management activities are performed correctly.

2.4.2.3 Delivery of Sludge and Biosolids to and from the Plant

An existing road – currently being used by the City of Auburn for deliveries of wastewater sludge to the incinerator – would be reconstructed to provide access to the Plant from Allen Street. The access road would have a gated entrance with access restricted to Plant personnel, sludge transport vehicles and authorized visitors. The road infrastructure would be built with the following considerations in mind:

- Properly designed traffic lanes for vehicle traffic in and out of facility;
- Appropriate turning radius for transport vehicles;
- Parking area for transport vehicles waiting to unload delivered wastewater sludge or to load processed wastewater sludge (biosolids);
- Parking area for employee and visitor vehicles; and
- Marked pedestrian walkways across roadway.

Wastewater Sludge Delivery to the Plant

It is estimated that wastewater sludge being delivered to the Plant would increase the existing number of deliveries to the Auburn WPCP by six vehicles per day. During normal operations, each weekday Monday to Friday, eight to ten deliveries of dewatered wastewater sludge would arrive at the Receiving Station. The delivery vehicles would operate between 6 a.m. and 4 p.m.

The five days of deliveries would provide sufficient feedstock for seven days of processing operations.

The Process Building would have two outdoor offloading/unloading bays. The vehicles would enter when the unloading bay is vacant. Upon entry, the drivers would park the delivery trucks at the designated marked location at the Plant and unload the wastewater sludge. To ensure proper operation of the Plant and safety of the public welfare, the Plant plans to adopt the following policies and practices:

- The transport company would be required to comply with local community ordinances and the Plant policies.
- The delivery routes would be managed as discussed later in this section.
- All applicable federal, state and local transportation laws would be fully complied with.
- Wastewater sludge delivery schedules would be approximately ten hours per day, five days per week (Monday-Friday) and are distributed throughout the day to reduce the potential for congestion and community inconvenience.

Biosolids Delivery from the Plant

After unloading of wastewater sludge deliveries, based on a pre-arranged plan, transport vehicles selected under the plan would be instructed to move from the Receiving Station to the Solids Separation Station loading area where vehicles would be loaded with biosolids for transport from the Plant. The biosolids would be transported for further classification, further processing, and/or disposal. All transport vehicles would leave the Plant site via pre-established traffic routes, as discussed later in this section.

Transportation Routes

The City of Auburn would be the supplier of the wastewater sludge for the Plant. The City plans to contract for the additional wastewater sludge needed by the Plant with State of New York-licensed wastewater sludge transport companies and/or municipalities. It is anticipated that the municipal sources of the sludge would vary over the lifetime of the Plant, but are expected to be communities near the City of Auburn. The contracting of the wastewater sludge would be completed just prior to the commercial operation of the Plant. Preliminary discussions with various wastewater sludge transport companies have indicated that adequate quantities of sludge would exist for the Plant (ECOTS, 2007).

The transport company and municipalities that currently deliver wastewater sludge to the Auburn WPCP incinerator are responsible for any spills, leaks or similar problems that occur during transit. It is anticipated that the City would follow a similar contracting procedure for future wastewater sludge supply for the Plant. Eight to ten transport vehicles per day would deliver the wastewater sludge to the Plant. The deliveries would be made between the hours of 6 a.m. and 4 p.m. and would be spread across the day to minimize any potential congestion and inconvenience in the community. The start and end times of the delivery schedule may change slightly depending on seasonal traffic patterns.

As shown in Figures 2-8 and 2-9, the route entering the City that is anticipated to carry the largest volume of wastewater sludge transport vehicles to the Plant begins at the exit of I-90 and travels south on Rte 34 (i.e., North Street), turns right/west onto York Street, turns left/south onto N. Division Street, turns right/west onto Allen Street, and then accesses the Plant's entrance on

the north side of Allen Street. Other highways that may carry some wastewater sludge transport vehicles from south of the City include US 20, Rte 5 and Rte 34.

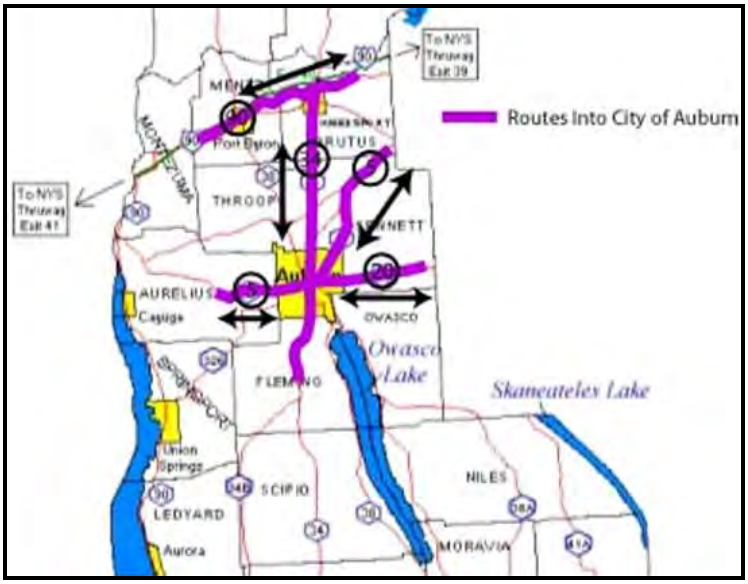


Figure 2-8. Anticipated Delivery Routes into Auburn, NY

Figure 2-9. Delivery Route to Plant

2.4.3 Construction

Construction is expected to take place between nine (9) and 16 months. It is estimated that up to 15 people would be working at the site at any given time. Construction would occur in two major phases:

Phase 1 – the generators would be initially installed to run on the existing LFG. The construction would be geared to initially construct the Energy Station and the electrical and thermal distribution system. This construction would allow the City to operate the Plant with the existing LFG from the Auburn landfill. This phase of the project is expected to be completed in the first quarter of 2009. Construction activities under this phase would consist of:

- Installation of the lines for connecting the existing LFG piping to the Plant.
- Installation of the gas conditioning system.
- Installation of the line to connect the existing natural gas line at the WPCP to the Plant.
- Retrofitting the existing maintenance building to accommodate the Energy Station.
- Installation of the cogeneration system and heat recovery circuits in the Energy Station.
- Installation of the monitoring and control systems to operate the energy systems.
- Modification of the air handling system and HVAC system.
- Construction of electrical systems, switchgear, substation and the electrical wiring to connect the generators with the existing electrical system at the WPCP and the local electrical distribution system.

Phase 2 – includes the construction of the sludge handling and processing facilities, tie-in of the required utilities, and installation of the balance of plant systems. This phase of the project is expected to be completed in the fourth quarter of 2009. Construction activities under this phase would consist of:

- Preparation of site for construction (i.e., clearing and grading).
- Construction of the sludge receiving and handling area.
- Installation of the piping system for the effluent and sludge to and from the Auburn WPCP.
- Installation of the sludge mixing systems.
- Construction of the feedstock buffer tank, the digester and the post treatment tank.
- Installation of the solids separation equipment.
- Installation of biofilter and the odor control system.
- Installation of the remaining balance of plant systems.
- System integration and commissioning of the digester.

The proposed location for the Plant was selected to minimize clearing and grading activities and construction costs. The project site is mostly developed (almost 100% previously cleared) and would require minimal grading for Phase 2 construction. Upon completion, the Plant and the associated on-site support activities would cover approximately three acres, including buffer zones. This site is also currently equipped with existing catch basins and lines that drain into the

City's stormwater system. These basins would be used and protected per mitigation requirements listed in a General Permit – required prior to any construction activities as listed under the state's stormwater regulations (i.e., the State Pollutant Discharge Elimination System, SPDES). The City would develop a Stormwater Pollution Prevention Plan (SWPPP) per local jurisdictional requirements.

2.5 NO ACTION ALTERNATIVE

The No Action Alternative is required under Section 1502.14(d) of NEPA and DOE implementing regulations (40 CFR 1021.321(c)). A No Action Alternative is considered in this EA and provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the Proposed Action. Under the No Action Alternative, DOE would not provide funding for the construction and operation of the Plant. To create the basis for a meaningful analysis, it is assumed under the No Action Alternative that the proposed project would not be undertaken, no construction or operations of the Plant would ensue at the proposed site or at an alternative site, no other alternative at the proposed site would be implemented, and that the proposed site would remain unchanged. It is possible that the City of Auburn and CH-Auburn could construct the Plant or pursue another use for the proposed site using other funds independent of DOE. However, this scenario is unlikely as DOE funding is a critical component of this project and the project would likely not go forward without DOE's financial support.

3.0 EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

3.1 GENERAL SITE DESCRIPTION

The project is located in the northwest corner of the City of Auburn, at the Auburn WPCP and adjacent the Auburn Technology Park to the east (see Figure 1-2). The majority of the Plant's facilities would be located on an existing, developed lot (see Figures 2-1 and 2-2). On-site and surrounding natural features mainly consist of disturbed soils and small trees and brushes.

The Auburn landfill is located less than one mile north of the site and is directly accessible to the project site via a small gravel road. The Auburn WPCP discharges treated effluent from an outfall at the Owasco River, which flows in a south to north direction and adjacent the WPCP to the west. The project site is accessible via Allen Street – wastewater sludge deliveries to the WPCP are limited to accessing the site via York Street to N. Division Street and then to Allen Street.

The surrounding area is characterized by industrial and commercial activities along N. Division Street and York Street. A few residential properties are located along N. Division Street (just east of project site), but the majority of community neighborhoods in the region reside east of N. Division Street and south of Case Avenue. The closest residential property is located on Case Avenue, approximately 900 feet southeast of the Auburn WPCP and 1,500 feet south of the project site.

3.2 EXISTING ENVIRONMENT AND CONSEQUENCES OF THE PROPOSED ACTION

3.2.1 Land Use

3.2.1.1 Existing Conditions

The project site is located on city property at the Auburn WPCP, which is zoned for waste processing activities and is located adjacent the Auburn Technology Park. The site currently occupies a developed lot that includes a maintenance building which houses equipment for the Auburn WPCP. Utility lines for natural gas, LFG, stormwater, wastewater and potable water already exist on or adjacent the project property (see Figure 2-3). An electric substation is located at the WPCP, 750 feet south of the project site (see Figures 2-1 and 2-3).

The project region consists of many commercial and industrial businesses. New York State has designated two square miles of the City of Auburn as a targeted Empire Zone, which includes the Auburn Technology Park. The Empire Zone is a specially designated area in which the state encourages business growth and development by way of tax credits and exemptions, utility rate reductions, and priority attention from the state agencies that play a role in economic development (City of Auburn, 2008a). NUCOR is the largest steel producer in the U.S. and has a production plant in Auburn located on York Street, within the New York State Empire Zone. The area also includes McQuay International (an HVAC manufacturer), Mack Studios (a commercial graphics manufacturer), directly north and south of the project site, respectively.

The predominant land uses within a quarter mile of the project location include: the Auburn landfill and areas zoned for industrial uses. The closest residential properties to the project site

are located approximately 1,500 feet south of the site on Case Avenue, and Casey Park, a recreational center that includes sports fields, is located 2,200 feet east of the project site. The land to the west is undeveloped, is owned by the City of Auburn, and is bounded by the Owasco River to the east.

3.2.1.2 Environmental Consequences of Proposed Action

Construction

The project site is zoned as an Industrial Park – a building permit would be required from the City. Construction of the Plant is expected to result in negligible impacts to surrounding land uses as it would generally be compatible with and would not conflict with surrounding industrial and commercial land uses. Construction activities (including construction of utility lines) may cause some minor and temporary traffic delays to current sludge deliveries to the Auburn WPCP, but the project is not expected to conflict with neighboring land uses as all utility lines needed for the project would either be located within or adjacent the project site.

Operation

Since the Auburn Energy Project would be located on property zoned as Industrial and adjacent an existing sewage treatment plant, it is expected that the Plant would be compatible with neighboring land uses and there would be no conflicts with other land use planning. The operational-related activities that would occur at the Plant would not substantially change the nature of the land use in the area, and therefore, no significant adverse impacts are expected to occur with respect to land use. In fact, one of the objectives of the project is to provide heat to local industries, which would support one of the City's goals to attract businesses to the Empire Zone, and thus, the project would be beneficial for the purposes of regional land use planning.

3.2.1.3 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, no changes to land use would occur at the project site. It is assumed that the site would not be used for any other purposes other than those that might be associated with the Auburn WPCP. The site would remain an empty, developed lot and would not impact nearby land uses. The opportunity to attract and keep businesses at the Auburn Technology Park and support the City's plans to attract and keep businesses at the Technology Park by offering reduced energy costs would not occur.

3.2.2 Aesthetics

3.2.2.1 Existing Conditions

The Auburn Energy Project would be located in an industrial setting, surrounded by a wastewater treatment plant and other industrial sites. Most of the buildings at the Auburn WPCP are one story tall and typical of sewage treatment plants. The treatment plant's aeration tanks and sedimentation chambers are located at surface level. The McQuay International and Mack Studio manufacturing facilities include large single-story warehouses and workers/visitors from these facilities, including the WPCP, have direct views of the project site. The closest residential property to the project site is located approximately 1,500 feet to the south on Case Avenue. Depending on the season when vegetation from trees and bushes vary in density, a few homes along Case Avenue may currently have views of the Mack Studio warehouse and the Auburn WPCP.

3.2.2.2 Environmental Consequences of the Proposed Action

Construction Impacts

The construction of the Plant would result in short-term, localized adverse aesthetic impacts to neighboring land uses that have direct views of the project site. During construction there may be some aesthetic effects as heavy equipment is used, soil is disturbed, and noise and dust may temporarily degrade the aesthetic quality of the site. However, because adjacent land uses are already industrial in nature and the existing site is located on land designated for waste treatment activities, the degree of aesthetic change would be negligible.

Construction traffic and equipment noise would potentially have minor impacts on nearby residential areas; however, these residences are at a fair distance where any aesthetic impacts would greatly diminish. Furthermore, these effects would be sporadic, limited to the construction phase (up to 16 months), and restricted to an area that is already predominantly industrial. Therefore, the Plant would not pose any significant adverse impacts to the aesthetic quality of nearby residential areas.

Operation Impacts

The tallest structures of the Auburn Energy Project would range from approximately 53 to 67 feet high. The digester tanks would be the largest structures, at about 57 feet high and 62 feet in diameter. The proposed sludge buffer vessel, Fuel Conditioning and Management System and digesters would be much higher and more visible than the proposed Process Building. The areas with the greatest aesthetic impacts would be the adjacent manufacturing businesses with direct views of the Plant's facilities; however, these impacts would be negligible as surrounding buildings are in similar industrial context.

Although trees to the west, east and southeast would likely shield most of the digesters, the top of the gas dome would likely be visible from surrounding areas and may be visible to a few residential properties along Case Avenue. The long-term aesthetics impact is expected to be minor to these residential neighborhoods, as the project would be located in an area that is already set in an industrial context.

3.2.2.3 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, no structures would be constructed and existing aesthetic and scenic conditions would remain unchanged.

3.2.3 Geology and Soils

3.2.3.1 Existing Conditions

The Auburn Energy Project lies in the Finger Lakes region of upstate New York, characterized by several north-south trending, elongated lakes which are located south of Auburn. The lakes were surmised to have formed from melt water from glaciers that filled the valleys that were carved during the last ice age. The glacial deposits left by the glaciers covers Early to Middle Devonian sedimentary rocks, which are primarily limestone, with a shale formation located slightly north of the project site.

The majority of the site overlies an existing paved lot. The soils within the project boundary are largely filled land, similar to those found around the Auburn WPCP facility (Stearns & Wheler, 2008a). A Phase I environmental site assessment indicated that the soils surrounding the

project site were primarily Darien silt loam, which has moderately fine to fine textures (Stearns & Wheler, 2008b). These soils are not considered hydric. The Natural Resources Conservation Survey (NRCS) labeled the soils as Cazenovia silt loam, 2 to 8% slopes (USDA, 2008). The soil survey also labeled the Cazenovia silt loam as prime farmland soil. The Cazenovia silt loam's parent material consists of loamy till that contains limestone with a mixture of reddish clay. Based on historical soil boring data, the Phase I report determined that the depth to bedrock at the project site ranges from 30 to 40 feet (Stearns & Wheler, 2008b).

3.2.3.2 Environmental Consequences of the Proposed Action

Construction Impacts

Construction of the Plant would require breaking through the existing lot to install the building foundation. This disturbance could temporarily create dust from wind erosion and may also require removal of the soil displaced by the foundations and for clearing and grading activities. Soil disturbance could also result in increased erosion potential from loss of ground cover and exposure of bare soils to precipitation and runoff. The total disturbed area would be kept to the minimum necessary to complete the work (up to 3.16 acres total and up to 1.27 acres of vegetation removal) and would be confined to the final site boundaries.

The soil type at the project site is considered by NRCS as a prime farmland soil (USDA, 2008); however, a significant portion of the site has already been paved over, so on-site soils have already been removed from productive use. In addition, the project site would be located in an area used for industrial activities, so future farming practices at the site are not anticipated.

Minor impacts to soils are expected as existing soils have already been disturbed throughout much of the proposed project site through previous land clearing activities. Furthermore, potential impacts would be controlled or avoided through the use of appropriate Best Management Practices (BMPs) and soil stabilization/revegetation techniques during and after the construction phase. Appropriate BMPs would be required per the SPDES permit (discussed later in Section 3.2.6, Water Resources) and selected based on site specific conditions. These could include, but would not be limited to, sediment barriers (silt fence or straw bales), a detention pond, and establishment of improved construction entrances. The bedrock and geology would not be affected by construction of the Auburn Energy Project as it is located approximately 30 to 40 feet below the project site (Stearns & Wheler, 2008b). Potential temporary impacts to water quality due to soil erosion that could result are discussed in Section 3.2.6.2.

Operation Impacts

There would be no impacts to the geology or soils due to operation of the Plant. The use of post-construction stormwater BMPs, as established by the SPDES permit (see Section 3.2.6, Water Resources) would reduce potential impacts from erosion and stormwater runoff. Thus, any long-term impacts to soils would be negligible.

3.2.3.3 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, no construction or excavation of land would take place. The land, in its current condition, would remain in place, and therefore, the geologic features would remain undisturbed and no impacts from increased soil erosion and associated sediment-laden runoff to downstream waterways would occur.

3.2.4 Cultural Resources

3.2.4.1 Existing Conditions

National Historic Preservation Act Sections 106 and 110 (16 USC 470 *et seq*.) and NEPA regulations require all construction receiving federal funding to identify the potential prehistoric and historic cultural resources in an area. The regulations also state the need to determine what potential adverse impacts could occur if the Proposed Action was completed.

Cayuga County was part of a large parcel of land that the state of New York bought from the Onondaga Indian Nation in 1788 and the Cayuga Nation in 1789. The City of Auburn was first settled by Col. John L. Hardenberg in 1793. Since its settlement, the area has been important for industry and invention, being the site of new businesses by John D. Rockefeller and Isaac Singer, the founder of the Singer Sewing Machine company. By 1900, the City of Auburn had 350 manufacturing plants and employed over 6,000 people (Cayuga County, 2008).

There are several houses either eligible or on the National Register for Historic Places (NRHP) list (NRHP, 2008). Nineteen buildings and one district are found within Auburn's city limits. The closest building to the project site is the William and Mary Hosmer House (29 Washington Street), which is approximately 1.3 miles from the project site. There are no other houses or structures within a mile of the project site on or considered eligible for the list.

3.2.4.2 Environmental Consequences of the Proposed Action

There are no known archaeological resources on the project site. In addition, most of the project site is paved and the majority of soils found at the project site were determined to be soils from filled land (Stearns & Wheler, 2008a). As the soils have been previously disturbed, there is a low potential for archaeological artifacts to be located at the proposed site and it is assumed that there would be no impacts to archaeological resources.

The site is not located adjacent to any NRHP-listed sites. As stated above, there are no NRHP-listed structures within a mile of the proposed site. In a letter from the New York State Office of Parks, Recreation and Historic Preservation (see Appendix B), the Office determined that the project would "have No Impact upon cultural resources in or eligible for inclusion in the state and National Register of Historic Places" (OPRHP, 2008).

3.2.4.3 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, ground disturbance associated with construction would not occur, and in situ resources would remain in place. No structures would be built, and therefore, no NRHP or NRHP-eligible structures would be impacted.

3.2.5 Air Quality

3.2.5.1 Existing Conditions

The principal framework for national, State, and local efforts to protect air quality in the United States is the Clean Air Act (CAA) (42 USC §§ 7401–7642). Under the CAA, the U.S. Environmental Protection Agency (EPA) has set health-based standards known as National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered to be key indicators of air quality, namely, carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead (Pb), and two categories of particulate matter, PM_{10} and $PM_{2.5}$ – PM with an aerodynamic diameter of 10 and 2.5 microns or less, respectively. National secondary

ambient air quality standards define levels of air quality judged necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. In addition, National Emissions Standards for Hazardous Air Pollutants (NESHAPs) are the emissions standards set by the EPA for hazardous air pollutants (HAPs) not covered by NAAQS that may cause an increase in fatalities or in serious, irreversible, or incapacitating illness. The EPA is also responsible for ensuring that air quality standards are met or attained in cooperation with State, Tribal, and local governments through national strategies to control air pollutant emissions.

As delegated by the EPA, the State of New York is responsible for protecting the state's air quality. In turn, the NYSDEC is responsible for interpreting and implementing those statutes pertaining to the control of air pollution. Pertinent regulations are found in Chapter III –Air Resources, of the New York State Register and Official Compilation of Codes, Rules and Regulations of the State of New York, and in Title 6 of the NYCRR. Ambient air quality standards for the state and federal NAAQS are shown in Table 3-1.

Areas that meet the NAAQS are said to be in "attainment." The air quality in attainment areas is managed under the Prevention of Significant Deterioration Program of the CAA. The goal of this program is to maintain a level of air quality that continues to meet the standards. Areas that do not meet one or more of the standards are designated as "nonattainment" areas for criteria pollutant(s). For regulatory purposes, remote or sparsely populated areas that have not been monitored for air quality are listed as "unclassified" and are considered to be in attainment. In common with greater part of the State of New York, Cayuga County is in attainment for all NAAQS, as is an extended region of influence represented by the Central New York Intrastate Air Quality Control Region in which this county lies.

Table 3-1. New York State Air Quality Standards and Federal Air Quality Standards (NAAQS)

Pollutant	Avg. Period	Federal Air Quality Standards (NAAQS)				New York State Standards[1]	
		Primary Standard		Secondary Standard			
		Level [3]	Statistic [2]	Level	Statistic	Level	Statistic
Carbon Monoxide (CO)	8-hour	9 ppm	Maximum	None		9 ppm	Maximum
	1-hour	35 ppm	Maximum			35 ppm	Maximum
Lead (Pb) [4]	Quarterly Average	1.5 µg/m³	Maximum	Same as Primary		None	
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm	Arithmetic Mean	Same as Primary		0.05 ppm	Arithmetic Mean
Total Suspended Particulates (TSP) [5]	12 consecutive months	None		None		75 µg/m³	Geometric Mean
	24-hours	260 µg/m³	Maximum	150 µg/m³	Maximum	250 µg/m³	Maximum
Particulate Matter (PM_{10}) [6]	24-hour	150 µg/m³	Maximum	Same as Primary		None	
Particulate Matter ($PM_{2.5}$)	Annual	15 µg/m³	Arithmetic Mean	Same as Primary		None	
	24-hour	35 µg/m³ [7]	3 year avg	Same as Primary			
Ozone (O_3) [8]	8-hour (2008 std)	0.075 ppm	3 year avg	Same as Primary		None	
	8-hour (1997 std)	0.08 ppm	3 year avg	Same as Primary		0.08 ppm	Maximum
	1-hour	0.12 ppm	Not Applicable in NY	Same as Primary		0.12 ppm	Maximum
Sulfur Dioxide (SO_2)	Annual	0.03 ppm	Arithmetic Mean	None		0.03 ppm	Arithmetic Mean
	24-hour	0.14 ppm	Maximum			0.14 ppm	Maximum
	3-hour	None		0.5 ppm	Maximum	0.50 ppm	Maximum
Hydrocarbons (non-methane)	3-hour (6-9 a.m.)	None		None		0.24 ppm	Maximum

[1] New York State also has standards for beryllium, fluorides, hydrogen sulfide, and "settleable" particulates (particulates with sufficient deposition velocity not to remain airborne). Ambient monitoring for these pollutants is not currently conducted.

[2] All maximum values are concentrations not to be exceeded more than once per calendar year. (Federal 1 hour Ozone Standard not to be exceeded more than three days in three calendar years).

[3] Gaseous concentrations for Federal standards are corrected to a reference temperature of 25°C and to a reference pressure of 760 millimeters of mercury.

[4] Federal standard for lead not yet officially adopted by NY, but is currently being applied to determine compliance status.

[5] New York State also has 30, 60, and 90-day standards as well as geometric mean standards of 45, 55, and 65 µg/m³ in Part 257 of NYCRR. While these TSP standards have been superseded by the above PM_{10} standards, TSP measurements may still serve as surrogates to PM_{10} measurements in the determination of compliance status.

[6] Federal standard for PM_{10} not yet officially adopted by NY, but is currently being applied to determine compliance status.

[7] Federal standard was changed from 65 to 35 µg/m³ on December 17, 2006. Compliance with the Federal standard is determined by using the average of 98th percentile 24-hour value during the past three years, which cannot exceed 35 µg/m³.

[8] Former NY Standard for ozone of 0.08 parts per million (ppm) was not officially revised via regulatory process to coincide with the Federal standard of 0.12 ppm which is currently being applied by NY to determine compliance status. Compliance with the Federal 8 hour standards is determined by using the average of the 4th highest daily value during the past three years - which cannot exceed 0.084 ppm or 0.075 ppm.

Source: NYSDEC, 2008b

Table 3-2 lists the emission in Cayuga County in 2001 for the air pollutants CO, nitrogen oxides (NO_x), PM_{10}, $PM_{2.5}$, SO_2 and volatile organic compounds (VOCs).

Table 3-2. Air Pollutant Emissions in 2001 in Cayuga County, NY (tons per year)

	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC
Area Source Emissions, tons per year	30,936	4,266	6,901	1,801	810	4,908
Point Source Emissions, tons per year	346	680	93	89	326	58
Total Emissions, tons per year	31,282	4,946	6,994	1,890	1,136	4,964

Source: EPA, 2001.

3.2.5.2 Environmental Consequences of Proposed Action

Construction

Construction of the Plant would produce short-term, low-level, intermittent, and transient emissions of CO, $PM_{2.5}$, and NO_x, $PM_{2.5}$, and CO from vehicles, and trucks and the operation of construction machinery, as well as $PM_{2.5}$ and PM_{10} associated with earth and material movements that would be associated with land clearing and other activities. Appreciable impacts on ambient air pollution concentrations from vehicle emissions are expected to be minor because traffic increase from construction and personal vehicles would be small and temporary and most of the construction equipment are expected to stay onsite until the construction phase is over. Thus, construction activities would not be expected to produce a significant degradation of ambient air quality.

Operations

New Source Review under Prevention of Significant Deterioration requirements is required under Title V of the CAA where a major source or modification is planned for attainment and unclassifiable areas. A new source is major if it has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specified major source thresholds which are predicated on the source's industrial category (e.g., 100 or 250 tons per year). Air pollutant emissions from the Plant would be substantially below these triggering limits, and the source would not be viewed as a major new source. A pre-construction Title V operating permit application (Permit ID: 7-0501-00134/00001, Facility DEC ID: 7050100134) has been prepared and submitted to the NYSDEC pursuant to 6 NYCRR 201-6.3(d) for the Plant (Stearns & Wheler, 2008c).

The permit application pertains to the construction of a new facility and construction of new emissions units. The emission sources at the Plant would include three generators (Jenbacher

Model J320-GS-BL systems) and a safety flare for digester biogas when the digester biogases. The sulfur concentrations in the biogases generated from the landfill and sludge digesters would be pretreated in a closed loop desulfurization process to reduce the sulfur concentration in the biogas fuel.

In the event that the generators would not be operated, such as during periods of maintenance activities, a valve in the landfill pipeline would be closed and the LFG would be flared at the landfill, which is currently permitted under the City of Auburn Landfill air permit (Permit ID: 7-0501-00042/00004). The digester gases would be flared at the facility in its un-pretreated form.

Table 3-3 shows the Potential to Emit (PTE) total annual emissions estimated from the three generators detailed in the permit application, assuming 8,760 hours per year of operations. No other emission data from other Plant sources are included in this permit application.

Table 3-3. Annual Air Pollutant Emissions from Three Generators

Pollutant	Potential to Emit (tons/yr)
$PM_{2.5}$	0.0099
PM_{10}	0.0099
Particulate Matter (PM)	1.28
Sulfur Dioxide (SO_2)	9.403
Nitrogen Oxides (NO_x)	25.52
Carbon Monoxide (CO)	127.58
Volatile Organic Compounds (VOCs)	15.13
Hazardous Air Pollutants (HAPs)	9.26

Note: PTE based on 8,760 hours per year of operation; Source: Stearns & Wheler, 2008c.

The operations of the Plant would be undertaken in compliance with the Title V air permit that would be issued by NYSDEC. The *de minimus* natures of these PTE emissions are such that no significant impacts would be anticipated to occur. Compliance monitoring and recordkeeping would be conducted according to the terms and conditions contained in the air permit and would require all quality assurance requirements found in applicable regulations. Pursuant to the permit and plant procedures, BMPs would be undertaken, and no additional specific mitigation measures would become necessary.

It is not anticipated that the small number of trucks per day (i.e., eight to ten truck deliveries anticipated per day) would produce any significant impact on air quality. Road surfaces are paved and any dust generation would be minimal. Sludge and biosolid materials that would be exposed for short periods during outside loading and unloading would be solid and moisture-containing and would not be anticipated to contribute to the generation of particulates or dust, and thus, no significant impacts to ambient air quality would be anticipated to occur.

LFG would be flared at the Auburn landfill as permitted under the City's landfill air permit (Permit ID: 7-051-00042/00004). Digester gases (i.e., biogas) would be flared at the Plant in untreated form for a maximum of 200 hours per year, as would be permitted under the Plant Permit. No significant impacts on air quality would be anticipated from these flaring operations.

Eliminating or reducing the use of the Auburn WPCP would reduce the adverse impact on air quality associated with emissions released during the burning wastewater sludge and provide a beneficial impact to public health conditions.

Conformity

The CAA requires each state to produce and regularly update a State Implementation Plan (SIP) that includes a description of control strategies or measures to deal with pollution, for areas that fail to achieve NAAQS. A SIP is a plan developed at the state level that outlines how the state will comply with air quality standards; and a SIP is enforceable by the EPA. Section 176(c) of the CAA requires that federal actions conform to the appropriate SIP. The final rule for "Determining Conformity of Federal Actions to State or Federal Implementation Plans" (Conformity Rule) was promulgated by the EPA on November 30, 1993 (58 FR 63214) and took effect on January 31, 1994 (40 CFR Parts 6, 51, and 93). This "Conformity" rule established the conformity criteria and procedures necessary to ensure that federal actions conform to the SIP and meet the provisions of the CAA. (Because DOE, as a federal agency, would have a role in the project as a funding sponsor, the Proposed Action is considered to be a federal action.)

In general, this rule ensures that all criteria air pollutant emissions and VOCs are specifically identified and accounted for in the SIP's attainment or maintenance demonstration and conform to a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. If the action were undertaken in a federally classified nonattainment or maintenance area, the provisions of the final rule for conformity would apply. Because, this Plant would be located in an attainment area for all criteria air pollutants and would also not be in a *maintenance area*, the provisions for a conformity determination would not apply to this project.

Maintenance Area - an area that has been redesignated by EPA from nonattainment to attainment of the NAAQS for a criteria air pollutant pursuant to a request submitted by the state to the EPA. The state then submits a revision to the SIP for a 10-year maintenance plan that details how the maintenance area will maintain attainment.

Odor

Regulation of air pollution odors occurs indirectly through the Nuisance Law, which is based on the right of all landowners to be free from unreasonable interference to enjoy their property. Odor control measurements, as part of BMPs, have been included in the Plant design to eliminate the nuisance odors typically associated with a wastewater sludge processing facility (see Section 2.4.2.2, Balance of Plant Systems). The odor control measures include: i) bin lids prevent the wastewater sludge unloading area odors from escaping to the atmosphere from the sludge storage area; ii) odor control equipment that processes and treats the vented air from the Plant's vessels generated by the changing liquid levels within the vessels; iii) similar odor control equipment for the exhaust air from equipment; iv) operating procedures that focus on odor control, and iv) negative pressures where necessary to control odor release. The Plant's odor control equipment, the odor control would focus on operating procedures and fully enclosed operations in buildings and piping systems (except for the wastewater sludge unloading area) that would minimize the potential release of odors to the atmosphere.

These odor control measures would minimize potential for the Plant to be a nuisance to the nearby commercial and industrial businesses in the Auburn Technology Park, as well as to the

closest residence, which is located on Case Avenue approximately 1,500 feet south of the project site. Thus, minor impacts from odors are expected.

Global Climate Change

In its Fourth Assessment Report (IPCC, 2007), the Intergovernmental Panel on Climate Change stated that warming of the earth's climate system is unequivocal, and that the warming is very likely due to anthropogenic greenhouse gas concentrations. The most abundant, anthropogenic greenhouse gas is CO_2, and fossil fuel burning is the primary contributor to increasing concentrations of CO_2. Because CO_2 is stable in the atmosphere and essentially uniformly mixed, climatic impact does not depend on the geographic location of sources. Therefore, an increase of CO_2 emissions at a specific source effectively alters CO_2 concentrations to the extent that it contributes to the global total of fossil fuel burning that increases global CO_2 concentrations. Anthropogenic emissions of CO_2 from fossil fuel combustion are recognized as a significant source of greenhouse gases that enhance radiative forcing and contribute to global warming and climate change.

This project will primarily utilize non-fossil fuel renewable energy sources. Methane (CH_4) in the LFG from the existing landfill and in the biogas from wastewater sludge would be converted to CO_2 during combustion in cogenerator engines yielding recoverable electric energy and heat. CH_4 has a global warming potential over a 100-year horizon that is approximately 21 times greater than CO_2. Net CO_2 emissions would be reduced to the extent that electric power generated by this project would replace electric power otherwise generated using non-renewable fossil fuels. As a result, there would be a net positive benefit towards ameliorating global climate change.

3.2.5.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built. Therefore, no direct impacts on air quality would be anticipated to occur and the *status quo* would remain. However, in the event that the Plant was not built, those benefits associated with the use of renewable energy benefits would be denied. Non-renewable sources such as fossil energy for the generation of the electric energy and heat that the proposed Plant would have otherwise generated, would continue to be used and any associated impacts, such as those upon air quality and global climate change, would continue. Also, the continued use of the sludge incinerator would also mean continued emissions from this source.

3.2.6 Water Resources

3.2.6.1 Existing Conditions

Surface Water

The proposed project area is located within the Seneca River Watershed, downstream the Owasco Lake Watershed. Although the City of Auburn does not lie within the Owasco Lake Watershed, Auburn residents rely on Owasco Lake and its watershed for numerous public health, economic, and recreational needs. Therefore, under the New York State Health Code, Section 1100, the City is responsible for enforcement of the Watershed Rules and Regulations (Cayuga County, 2003).

Water from Owasco Lake flows north and exits the north end of the lake through the Owasco River. Lake Owasco's elevation and exiting flowrate are controlled by the State Dam (owned

and operated by the City of Auburn), which is located approximately two miles downstream from the north end of the lake on the Owasco River and upstream of the Auburn WPCP discharge outlet (Owasco River Outlet). The City is required to maintain a minimum flow in the river to assimilate effluent from the Auburn WPCP (OurLake, 2008a). The Owasco River flows north, passing the Auburn WPCP, and eventually drains into the Seneca River. The Seneca River is a large river that flows east and drains about 8,960 square kilometers of central New York to the Oswego River, and subsequently into Lake Ontario (OurLake, 2008b).

Stormwater runoff from the project site tends to run in a southerly direction. Four existing storm drains exist at the project area (see Figure 2-3). A discharge pipe is located near the southwest corner of the site and drains runoff from the site into a swale-like feature consisting of small brushes and trees (see Figure 2-1). Runoff from the site ultimately drains into the Owasco River, which flows adjacent the Auburn WPCP.

The Auburn WPCP currently discharges its treated effluent via the Owasco River Outlet in accordance with an approved SPDES permit (#NY0021903), which expires in May of 2010. Under this permit the WPCP is allowed to discharge 20 million gallons of effluent per day (Storrs, 2008a). Where the Owasco River Outlet discharges, the NYSDEC classifies that waterway as a "Class C" waterway. Class C waterway status means that the waterway must be suitable for fish propagation and survival. Also, the water quality shall be suitable for primary and secondary contact recreation, although other factors may limit these uses. Water quality at the Owasco River Outlet has generally shown improvement in the past. This improvement can be attributed to the completion of an upgrade to the City of Auburn's WPCP in 1995, which included activated sludge treatment, phosphorous removal, post aeration, and ultra-violet disinfection (NYSDEC, 2008c).

The laboratory within the Auburn WPCP conducts bacterial testing to ensure the water quality of the discharge (City of Auburn, 2008b). A minimum flow of 30 cubic feet per second, controlled upstream by the State Dam, is needed at all times for the Owasco River Outlet to provide biological assimilation of the WPCP effluent (Cayuga County, 2003).

The State of New York controls its wastewater and stormwater discharges in accordance with CWA regulations under an NYSDEC-enforced program known as the State Pollutant Discharge Elimination System (SPDES). Under this program, the NYSDEC also requires that an SPDES General Permit for Stormwater Discharges from Construction Activity be obtained prior to the commencement of any construction activity that disturbs one or more acres of land (NYSDEC, 2008d).

Groundwater

There are no sole source aquifers, potentially productive aquifers or private wells within 500 feet of the property. Although bedrock formations are a significant source of groundwater supply, the most productive aquifers in New York are generally located in unconsolidated sediments, such as sand and/or gravel deposits (USGS, 2008a).

The project site does lie above the New York and New England carbonate-rock aquifers, which are not primary aquifers. Aquifers in carbonate rocks are most extensive in the eastern United States. Consolidated bedrock aquifers in this area are in consolidated rocks of sedimentary, igneous, and metamorphic origin. These consolidated rocks yield water primarily from bedding planes, fractures, joints, and faults, rather than from intergranular pores.

Carbonate rocks generally yield more water than other types of consolidated rocks because carbonate rocks are subject to dissolution by slightly acidic groundwater (USGS, 2008b).

The project site is not located within an Interim Wellhead Protection Area or a current or potential drinking water source area (NYSDEC, 2008e). The average annual depth to groundwater is approximately 10 to 11 feet below ground (CH-Auburn, 2008).

Floodplains and Wetlands

According to a Flood Insurance Rate Map accessed through the Federal Emergency Management Agency's (FEMA) Web site, there are no FEMA-designated floodplains or floodways located on the project site (see Appendix B) (FEMA, 2007a). The site falls within "Zone X," which is an area determined to be outside the 500- and 100-year floodplains. The site is located approximately 500 feet to the east of the nearest 100-year floodplain, which is associated with the Owasco River Outlet. This floodplain information was verified utilizing the available FEMA flood map numbers 36011C0303E and 36011C0305E and panel numbers 303 of 635 and 305 of 635, respectively. Both maps are dated August 2, 2007 (FEMA, 2007b).

The U.S. Army Corps of Engineers (USACE) protects wetlands under Section 404 of the Clean Water Act (CWA), irrespective of size (USACE, 2008). Wetlands under the jurisdiction of the USACE are termed "*waters of the U.S.*" The definition and treatment of isolated wetlands has been impacted during the past decade, primarily by two Supreme Court Decisions, Solid Waste Agency of Northern Cook County vs. U.S. Army Corps of Engineers (SWANCC vs U.S. COE) and the Ramapos vs. U.S. decisions. These decisions have removed the USACE's oversight of isolated wetlands. It now falls under a motley collection of state and local laws in all 50 states with varying degrees of protection (USACE, 2008).

Article 24 of the New York State Environmental Conservation Law (NYSECL) requires that wetlands must appear on the state's freshwater wetland maps in order to be subject to regulation by the State of New York (NYSC, 2008). To be protected under the Freshwater Wetlands Act, a wetland must be 12.4 acres (5 hectares) or larger. Wetlands smaller than this may be protected if they are considered of unusual local importance. Around every regulated wetland is an adjacent area of 100 feet that is also protected to provide a buffer for the wetland. The New York State Freshwater Wetland Maps for Cayuga County did not indicate any state-regulated wetlands on or within 500 feet of the subject site (NYSDEC, 2008f). Therefore, no state-regulated wetlands or adjacent areas occur on the site.

A wetlands investigation by Stearns & Wheler was conducted on April 2, 2008 (see Appendix C). The purpose of the investigation was to identify the extent of *waters of the U.S.*, in accordance with the provisions listed in the USACE Wetlands Delineation Manual (USACE, 1987). This delineation manual requires three criteria be present in order for an area to qualify as a jurisdictional water resource: hydrophytic vegetation, hydric soils, and wetland hydrology. The investigation located a small patch of hydrophytic vegetation in an isolated depression about six feet across on the southern portion of the site, which was inundated with 15 centimeters of water; however, hydric soils were not found and the vegetation feature was isolated. An isolated wetland to the east of the subject site was also identified. However, the wetland was not on the project site. Because federal regulations do not regulate beyond the wetland boundary, it was determined that the project site is not subject to federal wetland jurisdiction as a result of this off-site, isolated wetland (Stearns & Wheler, 2008a). On July 30, 2008 DOE also conducted a site visit, which confirmed the findings in Stearns & Wheler's wetland investigation.

3.2.6.2 Environmental Consequences of Proposed Action

Construction

The layout of the Plant and its supporting infrastructure would not encroach on any surface waters or their existing buffers. Because no 100- or 500-year floodplains were identified at the project site, construction would not occur within any designated floodplains, and therefore, would have no impact on upstream floodplain elevations or downstream flood conveyance. Also, the site does not contain any state or federal jurisdictional wetlands or regulated 100-foot wetland buffer areas. Therefore, the proposed construction activities would not impact any wetlands and would not require permits under Sections 401 and 404 of the CWA or under NYSECL Article 24 (Stearns & Wheler, 2008a).

Initial construction activities on the project site would involve preparing the area for major construction work. This initial work would consist of clearing brush and trees and leveling and grading areas and would result in the disturbance and exposure of soils and increased runoff. Runoff from the site can lead to increased erosion of exposed soils and subsequently result in increased sediments and turbidity in downstream waterways. Thus, during storm events, the Owasco River may experience an increased sediment load due to the erosion of exposed soils during construction. Also, an accidental discharge of pollutants into the Owasco River may occur from a hazardous material spill, if not properly contained and immediately cleaned up.

In accordance with regulations under the CWA and SPDES, a General Permit for Construction Activities would need to be obtained from NYSDEC prior to construction. The permit application requires the development of a Storm Water Pollution Prevention Plan (SWPPP) that identifies erosion prevention and sediment BMPs, such as those identified in the New York Standards and Specifications for Erosion and Sediment Controls (NYSDEC, 2005). In addition, the SWPPP must identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges.

Any stormwater runoff discharged both during and post construction must meet all NYSDEC Stormwater regulations per SPDES permit. It is anticipated that the existing storm drain system would remain and would be protected and used pre- and post-construction. Adherence to proper stormwater management and BMPs during construction, as identified in the SWPPP, would minimize erosion and sediment impacts and water quality degradation of receiving waters (i.e., the Owasco River) and the Seneca River Watershed, and therefore, impacts to surface water resources would be minor.

Operation

Although most of the Plant's layout would be on top of an existing lot, the project would increase some amount of impervious surface at the project site (less than an acre). Therefore, some increase in stormwater runoff would occur. As previously described, pollutants could be deposited into the Owasco River if a hazardous material spill were to occur without being cleaned up properly. Also, the Owasco River would experience a slightly higher peak flow as a result of increased stormwater runoff and the discharge of additional effluent, which could cause minor alterations to the channel morphology.

The proposed facility would use the existing stormwater system and water quality impacts to runoff would be mitigated as prescribed per SPDES permit requirements to prevent downstream impacts. The SWPPP would include plans for quarterly monitoring and reporting of stormwater

discharge quality. It is anticipated that because the net increase of impervious area would be small and adherence to the SWPPP and SPDES permit would be conducted, the impacts to water resources would be minor.

The liquid effluent returned back to the Auburn WPCP would have minimum odor, would be lower in pathogens, and would have reduced levels of organically-bound nutrients and biological oxygen demand (BOD) because of the digester process. Thus, it is expected that impacts to the operations of the Auburn WPCP and water quality of the effluent from the WPCP would be minor and that the Auburn WPCP would continue to operate under the same stormwater NPDES permit issued by the NYSDEC (impacts to the Auburn WPCP are discussed further in Section 3.2.8, Wastewater). Furthermore, because the returned effluent to the Auburn WPCP is expected to be of improved quality, overall water quality impacts to the Seneca River Watershed are expected to be beneficial (i.e., lower pathogens and BOD).

3.2.6.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built and operations at the Auburn WPCP would continue as is. Thus, surface water quality would remain *status quo* as the Auburn WPCP would continue its operations and discharges to the Owasco River under the current established SPDES permit. No construction activities or land development would occur at the site, and therefore, no impacts to floodplains, wetlands, groundwater, or stormwater would occur. No water quality improvements from reduced pathogens and BOD via the proposed digester would occur.

3.2.7 Biological Resources

3.2.7.1 Existing Conditions

The project site is within an existing industrial area, approximately 3.16 acres in size and consists of half an acre of existing paved impervious surfaces. The remaining area consists of brushland, mowed/mixed grasses consisting primarily of goldenrod (*Solidago sp.*), one narrow hedgerow of Eastern cottonwood (*Populus deltoides*), and box elder (*Acer negundo*) along the northern edge of the property. As discussed above, the majority of the immediate project area consists of previously developed land. See Figure 2-2, which shows an aerial image of a conceptual Plant layout over the current land cover.

Diversity for wildlife populations occurring on the proposed project site is limited due to previous development, as well as the existing uses. Nearby resident upland species would include whitetail deer, coyote, fox, raccoon, opossum, woodchuck, cottontail rabbit, skunk, meadow vole, gray and red squirrel, muskrat, mink, beaver, and black bear (Cayuga County, 2000). Aquatic species living near the Owasco River Outlet include a diverse fish community consisting of sport fish species such as large and smallmouth bass, crappie, sauger, walleye and catfish (FishingNotes, 2008).

In response to a consultation letter that was submitted to the Division of Fish, Wildlife & Marine Resources at NYSDEC by the City of Auburn, the Division reviewed its New York Natural Heritage Program database with respect to the project area and "found no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of your site" (see Appendix B for consultation and correspondence letters) (NYSDEC, 2008g). The USFWS also responded to a consultation letter by the City and instructed the City to access the USFWS Web site to review

the list of endangered, threatened, proposed and candidate species for Cayuga County (USFWS, 2008). Both agencies recommended further site investigations in order to make appropriate state- or federal-listed species determinations as required under the Endangered Species Act.

A resource review and site investigation was conducted by Stearns & Wheler to perform a listed species determination for the project site – the findings of the study are outlined in a memo dated May 1, 2008 (see Appendix E) (Stearns & Wheler, 2008d). According to the study, the NYSDEC's Online Resource Mapper, which displays the known distribution of species, did not indicate any state-listed species on or in the vicinity of the proposed project area. The study notes that the USFWS Web site identifies three species having known or likely occurrences in Cayuga County: the bog turtle (*Clemmys muhlenbergi*), bald eagle (*Haliaeetus leucocephalus*) (no longer listed under the Endangered Species Act, as of August 2007), and Indiana bat (*Myotis sodalis*).

The investigation determined that existing vegetation at the project site does not provide suitable habitat to support any of the aforementioned species. Furthermore, plants located at the project site during the investigation were not included on any state or federal list. In summary, the investigation did not reveal any significant habitats for listed species, or any evidence that the site would support state-listed species of special concern, threatened or endangered species. The site visit conducted by DOE in July 2008 generally noted similar observations and confirmed the findings of this study.

3.2.7.2 Environmental Consequences of Proposed Action

Construction

Impacts to biological resources generally occur because of habitat modification, land disturbance, disturbance to or taking of rare, threatened, or endangered species, or exposure to environmental contaminants. No impacts to state- or federally-listed threatened or endangered species are anticipated to occur since site investigations did not reveal any evidence that the site currently supports any listed species. Impacts from the loss of terrestrial wildlife habitats would be negligible as the project site consists of low-quality vegetative habitat, is already intensively developed and largely paved over, and exists in an area generally characterized as industrial. Impacts to aquatic species and habitat are expected to be minor as erosion and sediment BMPs and appropriate stormwater management measures would be implemented during construction to minimize adverse impacts to water quality. Therefore, impacts to wildlife would not be considered significant as a result of construction activities.

Operation

Impacts from the loss of terrestrial wildlife habitats would be negligible as the area is already partially developed, located in an industrial-zoned area, existing vegetative habitats are of low quality, and no evidence from site investigations revealed that the site currently supports any listed species. Thus, impacts to wildlife during Plant operations are expected to be minor.

Off-site wastewater sludge being delivered to the Plant would be required to meet SPDES permit requirements under Federal 503 and applicable New York State requirements and the digested effluent coming from the digester (via the Solids Separation Station) would be lower in pathogens and BOD. Therefore, the effluent that would be discharged into the Owasco River Outlet from the Auburn WPCP is expected to be of improved quality and would be beneficial to aquatic life.

3.2.7.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, ground disturbance associated with construction and land development would not occur. Thus, no impacts to wildlife or vegetation would occur. Additionally, the No Action Alternative would not result in any impacts to threatened or endangered species found in the vicinity of the area.

3.2.8 Wastewater

3.2.8.1 Existing Conditions

The Auburn WPCP is responsible for treating and purifying wastewater that is channeled through the City's sewerage system. The WPCP facility comprises primary, secondary and tertiary treatment. During high flow events (i.e., high precipitation) excess influent water that cannot be handled by the facility is sent to an overflow retention facility for storage until the flows subside and it is then pumped to the Influent Building. During extensive periods of high flows, the facility sometimes (though infrequently) must chemically-treat the influent and discharge into the Owasco River (City of Auburn, 2008b).

The sewage treatment facility has the capacity to treat 25 million gallons per day and averages approximately eight (8) million gallons per day (Storrs, 2008b). Historically, no capacity issues have been experienced by the sewage plant. After treatment through the Auburn WPCP, the treated effluent is discharged into the Owasco River via an outfall (as discussed in Section 3.2.6, Water Resources). The remaining sludge is sent to the Auburn WPCP's solids handling building where the sludge is stored and then incinerated.

Depending on fuel costs, methane gas from the Auburn landfill (less than one mile north of the WPCP) is used as an alternate fuel to natural gas for the WPCP's incinerator. The ash produced from the incineration of sludge is suctioned from the base of the incinerator up into an ash silo and is then transported and disposed of at the nearby landfill.

The WPCP also accepts waste from septage haulers and outside wastewater sludge for incineration from several surrounding communities. Currently, the City is processing the following approximate amounts of sludge weekly from nearby communities: 120 tons from Amsterdam, NY; 40 tons from Guilderland, NY; and 56 tons from Skaneateles, NY (CH-Auburn, 2008).

3.2.8.2 Environmental Consequences of Proposed Action

Construction

During construction, small amounts of municipal wastewater would be generated and is expected to result in negligible impacts to operations at the Auburn WPCP.

Operation

During operations, the Plant plans to intercept approximately 30 tons of the City's sludge (instead of being processed in the incinerator) and 220 tons from nearby communities, as feedstock for the proposed anaerobic digester (see Figure 2-4). The quality of the sludge being delivered to the Plant would be required to conform with the SPDES permit requirements under Federal 503 and applicable New York State requirements.

The Plant would construct a pipeline system to intercept approximately 30,000 gallons per day of primary clarifier effluent, 19,200 gallons per day of primary sludge, and 48,000 gallons per day of activated sludge from the Auburn WPCP for use in the proposed anaerobic digester (amount would depend on final selection of digester technology). The pipeline design and construction would be required to conform to applicable regulations and codes regulating the movement of wastewater. The intercepted influent would be directed to the proposed Pretreatment and Mixing Station where it would be mixed with wastewater sludge to reduce solids concentration of the sludge to within the specified solids range of the anaerobic digester as required by the manufacturer's specifications.

After processing of the sludge via the anaerobic digester, the digested sludge would then be separated into stabilized Class B biosolids (20 to 30% dry matter) and liquid effluent (2 to 3% dry matter). It is anticipated that the Plant would produce approximately 150,000 gallons per day of digested sludge from the digester, depending on the final digester technology selected. After separation, the Class B biosolids (approximately 107 tons per day) would be transported offsite for further processing or disposal. A separate pipeline would be constructed to transfer the separated liquid effluent (approximately 124,000 gallons per day)from the Solids Separation Station back to the Auburn WPCP for treatment and discharge. This net increase of wastewater effluent returned to the WPCP would be approximately 25,000 gallons per day, which represents 0.3% of the WPCP's current average daily flow and less than 0.1% of its total handling capacity. See Figure 2-5 for inputs and outputs of Plant processes.

Although it is not expected that there would be any changes necessary to the Auburn WPCP's SPDES operating permit, an engineering report – based on the final digester design data – would be prepared and shared with NYSDEC concerning potential connection points for the influent and effluent from the new digester and resolve any potential changes to the WPCP's SPDES permit or operations.

Because of treatment from the anaerobic digester, the effluent being returned to the WPCP is expected to have minimum odor, be lower in pathogens, and have reduced levels of organically-bound nutrients and BOD, and thus, would not significantly impact the operations of the Auburn WPCP. Also, it is expected that the WPCP would be able to handle the additional load of effluent being returned from the digester as there are no capacity issues currently experienced at the WPCP and the net volume of effluent returned to the sewage plant from the proposed Plant would be well below the WPCP's existing handling capacity. Therefore, potential impacts to operations of the Auburn WPCP would be minor and it is expected the WPCP would operate under the same SPDES permit.

3.2.8.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built and the Auburn WPCP would continue its current activities. The WPCP would continue receiving sludge from neighboring communities for process in the incinerator and the incinerator would continue being fueled by natural gas and LFG. Therefore, no impacts to the Auburn WPCP would occur.

3.2.9 Waste Management

3.2.9.1 Existing Conditions

The City's Solid Waste Management Center is responsible for managing the collection and disposal of solid waste for the City and from other communities in Cayuga County. The City owns two landfills, which are both located near the project site (City of Auburn, 2008c):

- Landfill #1 – approximately 50 acres in size (closed); and
- Landfill #2 –began accepting waste in September 1992 and is permitted by NYSDEC to accept up to 63,000 tons per year of waste.

The City is currently implementing an active landfill gas recovery facility, which consists of piping the LFG to the Auburn WPCP. The LFG is used as an alternate fuel to purchased natural gas for its sludge incinerator. In addition to economic benefits, the LFG system provides for active control of landfill gas emissions in compliance with state and federal air pollution control regulations (e.g., CAA).

Phase I and II environmental site assessments conducted in February and March 2008, respectively, did not identify the presence of any hazardous substances on the project site (Stearns & Wheler, 2008b and e).

3.2.9.2 Environmental Consequences of Proposed Action

Construction

During construction, minor amounts of typical construction refuse and debris would be generated and would need to be disposed of properly. Since no buildings or other structures currently exist at the site, no demolition would be necessary. However, the site is currently covered with asphalt and concrete, some or all of which would likely need to be removed and disposed of prior to construction. In addition, areas of soil would need to be excavated in order to install the building's foundation and utilities. Soil excavation would result in the generation of nonhazardous waste and would be required to be managed and disposed of at an appropriate landfill that accepts construction waste. The amount of municipal solid waste generated during construction is anticipated to be minor and would not significantly affect the capacity of the Auburn landfill.

Small amounts of potentially hazardous waste materials (e.g., waste oils, solvents, and paints) would be generated during construction. Hazardous waste generated during construction would be properly managed and stored on site in accordance with the Resource Conservation and Recovery Act (RCRA). Preventative measures, such as providing fencing around the construction site, establishing contained storage areas, responding immediately to spills, and controlling the flow of construction equipment and personnel would help reduce the potential for a release to occur.

The quantity and type of hazardous waste that would be generated during construction would be limited to typical construction-related waste streams commonly accepted by licensed Treatment, Storage and Disposal facilities for hazardous waste, and commercially-available treatment or disposal would be available. Thus, impacts from hazardous wastes are expected to be minor.

Operation

During operation of the Plant, it is expected that small amounts of municipal solid waste would be generated and would not significantly impact the capacity of the Auburn landfill. Upon commissioning of the Plant, the City plans to direct most or all of the Auburn landfill's LFG to the Plant, but this would not impact the existing operations of the landfill. The existing safety flare for the landfill would remain in place and no additional capacity requirements would be needed for the flare.

No hazardous wastes would be generated from process systems of the Plant. The anaerobic digester would produce biogas and digested sludge that would be separated into Class B biosolids (20 to 30% dry matter) and liquid effluents (2 to 3% dry matter). The exact output of Class B biosolids is dependent upon the final digester technology selected for the Plant, which is not available at this time due to proprietary issues with the design of the digester technology. However, it is expected that the biosolids would be biologically stable and consist of minimum odor and a reduced pathogen count. The biosolids would be loaded on trucks and shipped to outsourced sites for further waste classification and then processing and/or appropriate disposal, while the liquid effluents would be returned to the Auburn WPCP for additional treatment before being discharged into the Owasco River (see Sections 3.2.6 and 3.2.8 for potential impacts to Water Resources and Wastewater, respectively). The Plant would not accept any sludge that is classified as hazardous waste.

Site operations would require the use of some regulated or hazardous materials for maintenance, such as minor amounts of cleaners and lubricants and the resulting hazardous wastes would require proper disposal or recycling. Although the exact amount of hazardous waste generation is not known at this time, it is expected that the proposed facility would qualify as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste as defined by RCRA. A CESQG is defined as a facility that does not generate more than 100 kilograms (approximately 220 pounds or 27 gallons) of hazardous waste per month (NYSDEC, 2008h). As a CESQG, the Plant would be required to:

- Identify hazardous wastes;
- Comply with storage quantity limits;
- Ensure proper treatment and/or disposal of hazardous waste that is with one of the following:
    - A state or federally regulated hazardous waste management treatment, storage, or disposal facility.
    - A landfill permitted by the state of New York to manage municipal or industrial solid waste.
    - A facility that uses, reuses, or legitimately recycles the waste.
    - A universal waste handler.
    - A licensed hazardous waste hauler.

Spill prevention and containment measures and flare placement would be designed to reduce potential impacts from accidental spills and fuel production and storage. Therefore, it is expected that, following RCRA requirements for CESQG, potential impacts from hazardous wastes would not be significant.

3.2.9.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built and the Auburn landfill would continue its current activities, including the operation of its LFG recovery and utilization system to fuel the incinerator, as is. There would be no additional waste generated, and no new hazardous substances would be stored onsite. Therefore, no impacts to waste management would occur from the No Action Alternative.

3.2.10 Transportation and Traffic

3.2.10.1 Existing Conditions

As shown in Figure 1-1, I-90 and US 20 are the primary east-west arterials that traverse Cayuga County and serve the project area. I-81 is a major north-south arterial, approximately 20 miles east of Auburn via US 20. Primary routes into Auburn include US 20, Rte 34, and Rte 5, which provide the City's main link to the regional highway system.

Figure 3-1 shows the primary local travel routes to the project site and annual average daily traffic (AADT) counts along these routes. The travel counts were taken from the 2003 Traffic Volume Report for Cayuga County (NYSDOT, 2003), which provides traffic counts for state and county roads. Trucks accessing the project site typically travel on Rte 34, which is a rural two-lane road.

Annual Average Daily Traffic (AADT) represents the average daily number of vehicles traveling in both directions over a designated section of highway. Note that the AADT varies depending on the vehicle mix, day of the week, and seasonality.

As Figure 3-1 indicates, the epicenter of the busiest traffic volumes in Auburn seems to occur in the area surrounding the convergence of state routes (e.g., intersections of Rte 5 and US 20 with Rtes 38 and 34). Typical traffic conditions in this area was observed during the afternoon rush hour (around 5 p.m.) along Arterial East/West (i.e., overlap of Rte 5 and US 20) near the intersection of Rte 34. The traffic was observed to be steadily heavy and moderate cueing and delays occurred at traffic lights, most likely due to commuter traffic. Traffic also appeared to include minor to moderate amounts of trucks on US 20 and Rte 34.

The City of Auburn's municipal code – §285-30-Truck Route System (amended 10-21-1993 by Ord. No 35-1992; 4-14-1994 by Ord. No. 15-1994) – establishes the City's truck route system upon which all trucks, tractors and tractor-trailer combinations having a combined gross weight of vehicle plus load in excess of five tons are permitted to travel and operate on, which includes York Street, N. Division Street, and Allen Street near the project site (City of Auburn, 2008d). Furthermore, to address concerns about commercial traffic, the City operates a Commercial Vehicle Enforcement Agency that is responsible for ensuring the proper use of the City's truck route system. This agency verifies that commercial transporters are not using unauthorized travel routes through the City. This service also ensures that vehicles have proper covering on loads and follow the applicable weight limit restrictions.

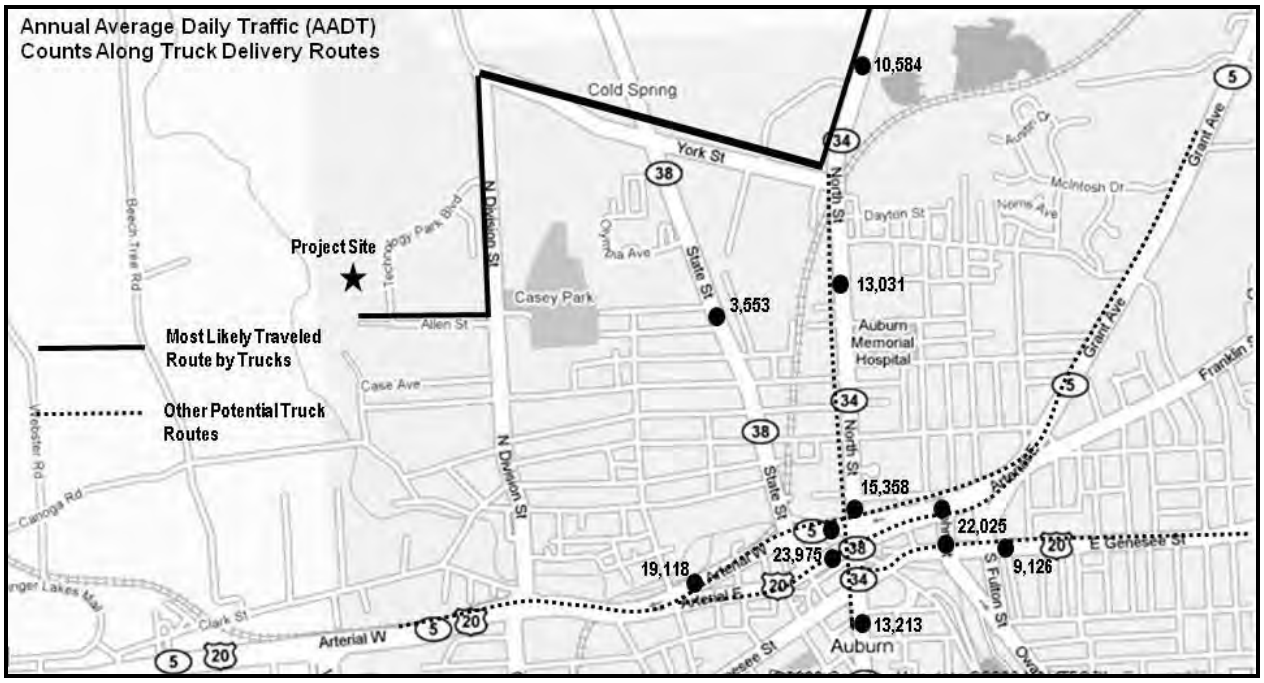


Figure 3-1. Routes to Project Site and Annual Average Daily Traffic (AADT) Counts

The City of Auburn is currently reconstructing York Street from N. Division Street to Chase Street to better support the truck traffic using the City's designated truck routes. This reconstruction will help eliminate congestion and improve the traffic flow for this area as York Street supports many industrial and commercial businesses.

Septic waste and wastewater sludge from nearby communities are currently being delivered to the Auburn WPCP for sewage treatment and processing in the incinerator. To access the sewage plant, this truck traffic travels along streets that are part of the City's designated truck system (from Rte 34 to York Street, N. Division Street, Allen Street, and then to the sewage plant as shown in Figure 3-1). Since the area surrounding the project site serves many commercial and industrial businesses (e.g., Auburn Technology Park) these streets often experience truck and commuter traffic.

At the present time, the City is processing the following approximate amounts of sludge weekly: 120 tons from Amsterdam, NY per week; 40 tons from Guilderland, NY per week; and 56 tons from Skaneateles, NY per week. The 216 tons of wastewater sludge results in about seven (7) truck deliveries per week to the Auburn WPCP. The City is currently operating its incinerator on a reduced schedule because of the high cost of fuel. However, according to City personnel at the Auburn WPCP, prior to the recent fuel increases, the incinerator had been receiving approximately 120 tons of wastewater sludge *daily*, or about four (4) transport vehicles per day, with the deliveries made five days a week (Monday-Friday).

3.2.10.2 Environmental Consequences of Proposed Action

Construction

The same roads that trucks currently use to access the Auburn WPCP would also be used by construction vehicles to the project site (i.e., Rte 34, York Street, N. Division Street, and Allen Street). Project-generated traffic volumes during construction would be produced by employees

commuting to and from the project site, as well as by material suppliers and heavy construction service vehicles. The total work force during construction would be about 15 workers at any given time, and these workers would most likely be phased in (e.g., initially with structural engineers, excavators and concrete workers).

Generally, construction impacts to existing transportation resources would be temporary and localized (i.e., limited to proximity of project site). Construction vehicles and workers would add to existing local traffic and would potentially cause minor congestion and higher traffic noise and vehicle emission levels along the routes. The roads most impacted would be those shown as typical truck routes in Figure 3-1, namely Rte 34, York Street and N. Division Street. However, because construction vehicles/equipment would be at its peak volume during the beginning and ending of the construction phase (once the construction vehicles and equipment are in the project area they would remain in place during the construction phase – up to 16 months), it is expected that these impacts would be temporary and cause minor impacts on the local traffic.

Commuter traffic from the construction workers are expected to be minor in comparison to existing traffic volumes as workers would be phased in and it is assumed that some workers would commute together, and thus, reduce total number of vehicles traveling to the project site. Because the project site has a fairly large, open paved area, it is anticipated that adequate space would be available to stage equipment and vehicles; thus, impacts to the circulation of and access to the project area would be negligible.

Operation

The majority of traffic-related impacts during operation would result from the transport of wastewater sludge to the Plant and biosolids from the Plant. To minimize the number of deliveries entering and exiting the Plant, the same vehicles delivering wastewater sludge to the Plant would also be used to transport the stabilized wastewater sludge (i.e., the biosolids) from the Plant for further processing or disposal. During normal operations, the Plant would receive between eight (8) to ten (10) deliveries of dewatered wastewater sludge per day (Monday-Friday). The delivery vehicles would operate between the hours of 6 a.m. and 4 p.m., with start and end times changing slightly depending on seasonal traffic patterns.

Approximately three new employees would be required for the operation of the Plant. The number of personal vehicles from proposed personnel is considered small and would not result in a significant impact to existing traffic conditions.

The access road would have a gated entrance with access restricted to Plant personnel, sludge transport vehicles and authorized visitors. All delivery vehicles would be required to check in with Plant personnel upon arrival at the Plant. The vehicle drivers would then receive instructions on when to proceed to the Receiving Station in the Process Building. If the Receiving Station is occupied, the vehicles would wait in a designated parking area until such time when the driver is instructed to proceed to the Receiving Station entrance. After unloading, based on a pre-arranged plan, transport vehicles selected under a contracted plan with the transport companies would be instructed to move to the Solids Separation Station loading area, where they would be loaded with biosolids and would exit the Plant.

As previously stated, the truck deliveries to and from the Plant would use the same routes currently being used for sludge deliveries to the Auburn WPCP as shown in Figure 3-1. The route that is anticipated to carry the largest volume of wastewater sludge transport vehicles to the

Plant is from north of the City - trucks would exit I-90 onto Rte 34 and travel south into Auburn. Other highways that may carry some wastewater sludge transport vehicles from south of Auburn include US 20, Rte 5 and Rte 34.

Historically, the number of daily sludge deliveries to the Auburn WPCP has been about four (4) trucks per day (CH-Auburn, 2008). The Plant would intercept sludge that would have been delivered to the incinerator. Operation of the Plant would require about eight (8) to 10 trucks of sludge per day. Therefore, the net increase of daily truck deliveries to the Plant would be approximately six trucks. The additional truck volume would mainly add to the existing traffic volumes on Rte 34, York Street and N. Division Street. This increase of truck traffic is expected to have minor impacts to baseline traffic conditions as the truck deliveries would be distributed over a ten-hour period (Monday through Friday) to minimize the potential for traffic congestion.

3.2.10.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, the Plant would not be constructed and the additional truck deliveries would not occur. It is expected that sludge would continue to be delivered from neighboring communities for processing in the incinerator, and thus, current truck traffic conditions would remain the same. As a result, the No Action Alternative would maintain the *status quo* with respect to future traffic conditions in Auburn.

3.2.11 Noise

3.2.11.1 Existing Conditions

Background

Noise, simply defined as unwanted sound, can have an adverse effect on humans and their activities, as well as on the natural environment. The impact of noise is highly dependent upon the characteristics of the noise (e.g., loudness, pitch, time of day, and duration) and the sensitivity (or perception) of the noise receptor. The standard unit of sound amplitude measurement is the decibel (dB); however, since the human ear is not equally sensitive to sound at all frequencies, the A-weighted scale (dBA) is typically used to measure noise as it relates human sensitivity. The EPA has classified noise levels for several common sounds along with typical human responses or perceptions for these noises (Table 3-4).

Sound travel over distance is acted upon by many factors. Temperature, humidity, wind direction, barriers, and absorbent materials, such as soft ground and light snow, are all factors in how sound will be perceived at different distances. The most significant way that noise is attenuated is from the divergence of sound waves with distance (attenuation by divergence). In general, this mechanism results in a 6 dBA decrease in the sound level with every doubling of distance from a point source (i.e., rate of dBA decrease from the source is based on a logarithmic scale). For example, the 84 dBA average sound level at 50 feet – associated with clearing and grading during construction – would be attenuated to 78 dBA at 100 feet, 72 dBA at 200 feet, and to 66 dBA at 400 feet.

Table 3-4. Noise Levels for Common Sounds

Sources*	Noise Level (dBA)	Response
Carrier deck, jet operation	140	Painfully loud
Live rock music	130	Limits amplified speech
New York subway station	90	Hearing damage (8 hours)
Dishwasher	80	Annoying
Freeway traffic (50 ft)	70	Telephone use difficult
Air conditioning unit (20 ft)	60	Intrusive
Light auto traffic (100 ft)	50	Quiet
Breathing	10	Just audible
Silence	0	Threshold of hearing

*Noise levels decrease with distance from the source and are reduced by barriers, both man-made (e.g., sound walls) and natural (forested areas, hills, etc.).

The Auburn Municipal Code sets the general standard for noise that is unreasonable or excessive, while the Auburn Police Department is responsible for enforcing the city's noise ordinance. No noise level thresholds are explicitly stated in the City's Municipal Code; however, according to the "City of Auburn Noise Ordinance" the following acts are considered to be unlawful for any person to make, continue or cause to be made (City of Auburn, 2008d):

- Any of the following activities when occurring in close proximity to residents between 10:00 p.m. and 7:00 a.m.: the warming up or idling of buses, trucks or tractors and the unnecessary or unreasonable or repeated idling, acceleration or deceleration or starting and stopping of automobiles or motorcycles.
- The operation of construction equipment between the hours of 8:00 p.m. and 7:00 a.m. on any day or at any time on Sunday. Such equipment includes, but is not limited to, pile drivers, pneumatic hammers, derricks, dredges, tractors, earth-moving equipment and other similar construction equipment.

Sensitive Receptors and Existing Noise Levels

Certain land uses, facilities, and the people associated with these noise levels are more sensitive to a given level of noise than other uses. Such "sensitive receptors" might include schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, hiking trails, and some species of threatened or endangered wildlife. The closest sensitive receptor is a residential property located 1,500 feet south of the project site on Case Avenue (see Figure 3-1). Although the majority of land uses along the local streets to access the site comprise industrial and commercial sites, there are a few residences on N. Division Street and York Street.

The project site is located in a highly developed region that supports many industrial and commercial activities. Land uses abutting the project site include the Auburn Technology Park, zoned as Industrial (see also Section 3.2.1, Land Use). Regionally, the largest contributors to ambient noise levels in the proximity of the project site are vehicular traffic along N. Division Street and York Street as a result of workers commuting and delivery trucks traveling to/from the industrial and commercial businesses. At the project site, the greatest contributors to on-site noise levels are the occasional sludge delivery trucks and equipment from the Auburn WPCP. On-site noise levels from activities at the Auburn WPCP are occasional and mostly contained

onsite, and therefore, result in minor and temporary increases in sound levels to nearby residential areas. No noise data is available for the project area; however, it is assumed that surrounding noise levels are occasionally around 75 dBA from high traffic levels during the morning and early evening peak commute travel times and around 55 dBA during ambient conditions (refer to Table 3-4 for common sound levels).

3.2.11.2 Environmental Consequences of Proposed Action

Construction

During the construction phase, the noise would be localized, intermittent, and temporary. Increases in noise levels during construction would mainly result from the use of heavy construction equipment (e.g., bulldozers, scrapers, dump trucks, and concrete mixers). Given the equipment needs of the construction phase, the typical noise levels onsite would be expected to remain within the range of 75 to 90 dBA. Construction noise levels onsite would primarily be limited to the immediate vicinity of the project site and would mainly impact the health of the construction workers. However, adherence to appropriate Occupational Safety & Health Act (OSHA) standards would protect the workforce from excessive noise.

Construction would occur during daylight hours (i.e., between 7 a.m. and 5 p.m). Nearby employees and residents could notice construction-related noise, but the resulting sound levels would be confined to daytime hours. These temporary and minor construction-related noise impacts would occur from 9 to 16 months.

Since the distance to the closest residential area is approximately 1,500 feet, it is expected that any incremental noise increase from construction work would significantly attenuate with distance and because of vegetation and building structures located between the project site and the residences. Thus, incremental increases in sound levels would not be significantly discernable above and beyond existing noise conditions at any of the sensitive receptors. Furthermore, construction activities would be scheduled during daytime hours, when many people are at work and away from home (i.e., between 7 a.m. and 5 p.m.) and would not occur during hours specified in the Auburn Municipal Code deemed as violating the noise ordinance (i.e., between 8 p.m. and 7 a.m. and no hours on Sunday).

Operations

It is expected that normal operation of the Plant would result in sound levels similar to those currently generated at the Auburn WPCP and surrounding industrial and commercial businesses. Noise concerns are viewed from two perspectives: from the perspective of personnel from inside the proposed Process Building and from the perspective of sensitive receptors from outside the proposed facilities.

The main sources of noise would be from the mechanical equipment and generators. The portion of the Process Building that would house the mechanical equipment includes the unloading stations, process pumps, and dewatering equipment. The main noise source from this part of the facility would be the process pumps. It is assumed that the sound levels produced from the process pumps would not be different from existing noise levels currently experienced at the Auburn WPCP and no noise abatement equipment would be necessary for this part of the Process Building (Biothane, Corp., 2008c).

The other major source of noise would be from the Energy Station. The generators, without any type of noise mitigation, would produce sound levels above 100 dBA. Specific noise

mitigation measures for this equipment are unknown at this time – the specific mitigation methods needed to reduce the noise levels of equipment to the sound levels would depend on final design and selection of specific equipment. It is expected, though, that the final Plant design would incorporate specific noise abatement features. This area would be designated as a hearing protection area and hearing protection devices would be provided per OSHA standards to ensure the safety of employees.

The main source for noise impacts to receptors outside the proposed facilities would be from the exhaust air from the electrical generators. Although specific noise mitigation is not available at this time, it is likely that noise abatement would implement the use of silencers for the exhaust system (Biothane Corp., 2008c). The silencers would be of industry standard and would ensure minimal noise nuisance to the surrounding community.

Furthermore, the Process Building housing the cogeneration system would include materials that would reduce surface irradiations (heat and sound), and thus, significantly attenuate noise. Exhaust fans, biogas safety flare and similar equipment would be selected with the consideration of minimizing resulting noise levels. During final equipment selection and design of the Plant, one of many objectives is to ensure that the Plant would operate at a continuous sound level that would not be of nuisance to residential areas. Thus, it is anticipated that because potential noise levels from the proposed facilities would significantly attenuate with distance, any incremental noise increases from the Plant would not be discernable to any residential properties.

Truck deliveries to and from the Plant would also be a principal contributor to increased noise levels as noise would be generated during loading/unloading activities at the Plant and from vehicle-related noise along the travel routes. These noise impacts are expected to be minor and intermittent in that the estimated eight to ten deliveries per day (a net increase of six deliveries when compared to existing conditions – see Section 3.2.10 for transportation and traffic-related impacts) would be distributed throughout a 10-hour work day (between 6 a.m. and 4 p.m., Monday through Friday) and would not significantly increase the noise levels above and beyond current noise level characteristic of the region (i.e., high industrial and commercial activities).

3.2.11.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built, and increased noise levels associated with construction activities, operation of the Plant equipment , and vehicular traffic would not occur. Thus, no noise impacts would occur from the No Action Alternative and the current noise conditions would remain *status quo*.

3.2.12 Public Health and Safety

3.2.12.1 Existing Conditions

The existing Auburn sewage plant stores a limited number of materials and chemicals which could potentially pose a health and safety risk to employees and surrounding communities; however, the WPCP has been in operation without major incidents over the past 50 years, and has safety procedures and features in place throughout its facilities to ensure safe operation and minor risk to workers and surrounding areas (e.g., an SPCC plan). Current operational risks due to the accidental release of process gases are minor. The safety flare for the LFG is used as a relief device for venting and destroying gases from the gasifier during emergency conditions and power system shutdowns.

The Auburn WPCP also processes wastewater sludge from the City and from nearby communities. Associated emissions from the incineration of wastewater sludge continue to impact local air quality.

As with most municipal wastewater facilities and solid waste landfills, concerns with associated odors are almost always inevitable. Precise documentation of the strength and nature of an odor is generally unavailable because of the large number of odorants involved and their effects on each other. Regulation of air pollution odors occurs indirectly through the "Abatement of Nuisances Ordinance" under the City's municipal codes, which is based on the right of all landowners to be free from unreasonable interference to enjoy their property. In the past, odor complaints from nearby residences regarding the Auburn WPCP and nearby landfill have generally been minor.

Existing operational noise levels at the Auburn WPCP are considered to be within the range of light industrial activities and well below OSHA limits of workers being exposed to not more than 90 dBA over an eight-hour workday. The occasional delivery of wastewater sludge in trucks increases the noise level to approximately 75 dBA on site; however, this is temporary and does not occur frequently at the Auburn WPCP. See Section 3.2.11 for information on existing noise conditions.

3.2.12.2 Environmental Consequences of Proposed Action

Construction

Potential occupational health and safety risks during construction of the Plant are expected to be typical of risks for any other industrial/commercial construction sites. These include, but are not limited to: the movement of heavy objects, including construction equipment; slips, trips, and falls; the risk of fire or explosion from general construction activities (e.g., welding); and spills and exposures related to the storage and handling of chemicals and disposal of hazardous waste. The health and safety of construction workers would be protected by adherence to accepted work standards and regulations set forth by OSHA (29 CFR 1910, and 29 CF 1926).

Given the relatively small size of the project (i.e., less than 5 acres), the risks during construction would be comparable to a routine industrial project involving concrete, structural, and electrical work. All personnel involved with construction activities would be properly trained and required to comply with OSHA regulations and industrial material handling. Thus, it is expected that minor adverse safety impacts may occur during construction as following OSHA procedures would minimize the risk for injuries.

Operations

Overall adverse impacts to human health and safety are not expected to be significant. Primary concerns to human health and safety at the project area include air emissions, chemicals stored onsite, and process gases (i.e., natural gas and recovered LFG).

It is anticipated that the potential air quality impacts to public health would be minor and that elimination or reduced use of the incinerator and use of the LFG would improve local air conditions. Section 3.2.5 discusses impacts to air quality and the National and state ambient air quality standards that represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare within a reasonable margin of safety.

Appropriate safety systems would be in the final Plant design to ensure compliance to national, state, and local codes. The majority of systems and equipment at the Plant would require minimal personnel intervention. The Plant would be automated with the exception of the loading/unloading stations, and would operate 24 hours a day, 365 days per year. To ensure proper functioning of equipment and to minimize risks to workers and the public, the computerized supervisory control and data acquisition system (SCADA) would provide the following:

- Continuous monitoring of operating parameters;
- Overall plant supervision and control;
- Overall supervision of security systems with manual over-rides for emergencies;
- Alarms and paging of Plant operator when unexpected events or operational problems occur;
- Recording of process parameters such as temperature, pressure, flow quantities, pH, electric output as well as graphical representations of the operation;
- Data memory storage for 60 days or more; and
- Remote internet monitoring and diagnostics capability, with secure authorization and access codes.

Storage facilities for the materials required to operate the facility, would be designed to minimize worker/public health risks, including being designed for spill containment and the control of releases. Material Safety Data Sheets and Personal Protective Equipment requirements would be made readily accessible to workers to ensure that employees are prepared to handle any required chemicals.

A new LFG delivery pipeline would be constructed to interconnect the City's existing LFG collection and delivery system to the Plant's Fuel Conditioning and Management System. Usage of the existing safety flare at the City's LFG system as a relief device for venting and destroying gases from the gasifier during emergency would continue for the operation of the Plant – no additional LFG flare capacity would be required. A similar safety flare would be used to dispose of any excess biogas that may be present during operation of the Plant, emergencies, or planned maintenance.

Odor control methods would be included in the Plant design to eliminate the nuisance odors typically associated with a wastewater sludge processing facility and is not expected to significantly contribute to odors already existing from the existing wastewater facility and

landfill. Impacts from potential odor and planned odor control measures are discussed in more detail in Section 3.2.5.

The Plant would be designed to mitigate potential noise sources and is not expected to result in any significant incremental increase to existing noise conditions. The increase in truck deliveries to the Auburn WPCP would cause increases in noise levels, but because the deliveries would be distributed over a 10-hour workday, it is expected that the impacts to would be minor and temporary. See Section 3.2.11 for impacts to existing noise conditions.

3.2.12.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built, and increased safety risks associated with construction activities would not occur. There would be no air quality impacts from operation of the Plant; however, incinerator use would continue and these emissions would continue to impact the air quality in the area. Other potential risks to public health, such as increased noise and odor levels would not occur. As a result, the No Action Alternative would maintain the *status quo* with respect to future public health and safety conditions.

3.2.13 Socioeconomics and Environmental Justice

3.2.13.1 Existing Conditions

The project site is located on the outskirts of Auburn, which is the county seat of Cayuga County, a largely rural county in western New York state. The population of Auburn was estimated at 27,317 in 2007 by the U.S. Census Bureau (U.S. Census Bureau, 2008), which accounts for approximately 34% of the total population of Cayuga County (Table 3-5). Although the population increased steadily between 1990 and 2007, nationwide as well as within New York state, both the City of Auburn and Cayuga County lost population during this period.

Table 3-5. Comparative Population (1990-2007)

Area	1990 Population	2000 Population	Percent change (1990-2000)	2007 Population Estimates	Percent change (2000-2007)
Auburn	31,258	28,574	-8.7%	27,317	-4.4%
Cayuga County	82,313	81,963	-0.4%	80,066	-2.3%
New York	17,990,455	18,976,457	5.4%	19,297,729	1.7%
United States	248,709,873	281,421,906	13.1%	301,621,157	7.2%

Source: U.S. Census Bureau, 2008.

The population of Cayuga County is much more ethnically homogenous than the state of New York or the United States as a whole (Table 3-6). While the City of Auburn is slightly more ethnically diverse than the County, the communities in the local project area are as homogenous, or more, than the county. Minorities constitute no more than 7.6% of the total population in Cayuga County; in the immediate neighborhood of the project area, this percentage is even lower at 5.7%. Further, data from the 2007 Population Estimates indicate that the ethnic composition of Cayuga County has remained essentially unchanged between 2000 and 2007 (U.S. Census Bureau, 2008).

While poverty levels in Cayuga County were comparable to the United States in 1999, a higher percentage of both individuals and families living in the City of Auburn were below

poverty levels (Table 3-7). However, residents in the immediate neighborhood of the project area had significantly fewer incomes below poverty level compared to the city or county, or even the nation as a whole. Data from the 2006 American Community Survey indicates that whle poverty levels increased slightly in the United States, they decreased in New York (U.S. Census Bureau, 2008). Within Cayuga County, while the number of individuals living below poverty levels decreased to 10.6%, the number of families with incomes below poverty thresholds increased to 8.7%. Overall, poverty rates in the project area have not changed substantially between 1999 and 2006, and remain higher than the national average.

Table 3-6. Composition of Population (2000)

Area	Tract 413, BG 5	Tract 413	Auburn	Cayuga County	New York	United States
White Alone	94.3%	92.0%	87.4%	92.4%	61.9%	69.1%
Black or African American	1.2%	3.4%	7.6%	4.0%	15.9%	12.3%
Hispanic or Latino	3.9%	2.3%	2.6%	1.8%	14.0%	11.7%
Other Minorities	0.6%	2.3%	2.4%	1.8%	8.2%	6.9%

Source: U.S. Census Bureau, 2008.

Table 3-7. Poverty Rates (1999)

Percentage of Incomes Below Poverty Level	Tract 413, BG 5	Tract 413	Auburn	Cayuga County	New York	United States
Individuals	0.9%	15.2%	16.5%	11.1%	14.6%	12.4%
Families	N/A	N/A	12.5%	7.8%	11.5%	9.2%

Source: U.S. Census Bureau, 2008

Housing availability in Auburn and Cayuga County in 2000 compared favorably with national and statewide figures (Table 3-8). While Cayuga County had a higher percentage of owner-occupied housing than New York and the U.S. as a whole, the city of Auburn had a percentage of renter-occupied homes comparable to New York, and significantly higher than the national average. Local rental rates and home values were considerably lower than state-wide and national averages. No significant changes occurred between 2000 and 2006.

Table 3-8. Housing Characteristics, 2000

Characteristic	Auburn	Cayuga County	New York	U.S.
Housing Units	12,637	35,477	7,679,307	115,904,641
Vacancy Rate (%)	9.7%	13.9%	8.1%	9.0%
Owner Occupied (%)	51.9%	72.1%	52.9%	66.2%
Renter Occupied (%)	48.1%	27.9%	47.1%	33.8%
Median Value (Owner-Occupied)	$66,000	$75,300	$148,700	$119,600
Median Contract Rent	$475	$482	$672	$602

Source: U.S. Census Bureau, 2008.

The total civilian labor force in Cayuga County in 2006 consisted of approximately 41,137 persons, while the unemployment rate was 5.9% (Table 3-9). This unemployment rate compares favorably with the state of New York, where the unemployment rate in 2006 was 6.5%, and with

the United States as a whole, where unemployment rate was 6.4%. The median income in Cayuga County in 2006 was significantly lower than the median income for New York or for the United States as a whole. The major employers in Cayuga County were: the education, health, and social services sector (22%); manufacturing (19.4%); and the retail trade sector (13.5%) (U.S. Census Bureau, 2008).

Table 3-9. Labor Force and Employment Characteristics, 2006

Characteristic	Cayuga County	New York	U.S.
Civilian Labor Force	41,137	9,636,401	151,203,992
Percentage Unemployed	5.9%	6.5%	6.4%
Median Per Capita Income	$21,170	$28,024	$21,587

Note: 2006 data not available for Auburn. Source: U.S. Census Bureau, 2008

3.2.13.2 Environmental Consequences of Proposed Action

Construction

The project site is zoned as an industrial site, with no housing or commercial facilities that would need to be demolished. Construction of the proposed project would require approximately 15 workers at any given time to be onsite for 9 to 16 months. It is expected that these workers could be hired from the available labor pool in the project area, which is sufficiently large to absorb this demand without negatively impacting labor availability. If necessary, temporary workers would be hired from outside the project area, and they would be housed either in existing accommodations or in temporary trailer or similar housing. Regional businesses would likely receive a minor stimulus from the increased spending if construction workers were brought in from outside the local area. Because the number of construction workers is relatively small, impacts on the local economy and housing market would be negligible.

Operation

Operation of the Plant is expected to result in the creation of three full-time jobs. This would likely result in a small, but beneficial, impact on the regional economy by providing additional employment opportunities and increasing indirect spending on local businesses. In addition, the Plant would provide electricity and heat to businesses located in the Auburn Technology Park adjacent to the Plant. The availability of low-cost energy may attract additional businesses to the industrial park, and/or help retain businesses that would otherwise consider relocating to other, more favorable locations.

Furthermore, it is anticipated that the owners of the Plant (CH-Auburn) would sell electricity to the City of Auburn. It is expected that the cost of energy from the project would be lower than what the City or local businesses currently pay. Thus, the availability of electricity at lower rates is likely to provide the City of Auburn energy savings and associated economic development benefits to the local economy, such as boosting consumer spending and/or attracting more residents to Auburn. Also, the Plant would allow the City to reduce or discontinue usage of the Auburn WPCP incinerator, thus reducing the use of fossil fuels and lowering operating and maintenance costs of the incinerator.

It is not expected that operation of the Plant would have any significant impacts on housing or labor pools, because of the relatively low number of new jobs that would be created. The project site is located adjacent an existing sewage treatment facility; thus, any incremental

changes to odor and noise would be negligible in comparison to existing conditions. Thus, operational impacts on local housing values are expected to be minor, as impacts from air emissions, noise, and traffic are considered minor (see Sections 3.2.5, 3.2.11, and 3.2.10, respectively, on these topics).

Finally, there is little likelihood of the project having any disproportionate adverse impacts on minorities or below-poverty individuals and families. As stated previously, the immediate neighborhood of the project site has lower ethnic diversity and very few families or individuals who are below the poverty line. Therefore, it is not expected that any minority populations or below-poverty level households would face adverse environmental consequences disproportionate to their level of representation in the local population, and therefore, no environmental justice issues would occur as a result of the project.

3.2.13.3 Environmental Consequences of No Action Alternative

Under the No Action Alternative, it is assumed that the Plant would not be built, and impacts to socioeconomic conditions would not occur, including potential beneficial impacts on the local economy resulting from lower energy costs and associated increase in new businesses at the Auburn Technology Park.

3.3 CUMULATIVE IMPACTS OF THE PROPOSED ACTION

The CEQ regulations implementing NEPA require the consideration of cumulative impacts as part of the process (40 CFR 1508.7):

"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time."

This section analyzes potential cumulative impacts to selected resource areas described in Section 3.2. The effects associated with the Plant are analyzed in combination for their incremental contribution to cumulative effects when added to impacts from other planned and reasonably foreseeable actions. For an affected resource area, each reasonably foreseeable future action, including the Proposed Action, adds an increment to the total (cumulative) impact. For this analysis, the past and present effects are accounted for in the existing baseline of the affected environment section (Section 3.2) of this EA.

For future actions to be relevant to the cumulative effects analysis, the actions must affect resources (be the cause of some type of effect whether beneficial or adverse) within the region of influence for the analysis. The region of influence for this project, as stated in Section 1.4 (Scope of the EA), is within property boundaries, Cayuga County, City of Auburn or Seneca River Watershed, depending on the environmental resource area.

A review of the City's Planning Board meeting notes for the years 2007 and 2008 was conducted to identify any potential projects that could add interact with the Proposed Action and lead to cumulative impacts. The meeting notes indicated that there are plans for the development of 30 single-family homes and a community building on a six-acre undeveloped area at 252 North Street (approximately two miles east of the project site) (City of Auburn, 2007 and 2008e).

Other projects that could contribute to cumulative impacts with respect to the Proposed Action include various transportation projects. Over the past decade, the Auburn City Council has secured Capital Projects and Grants, which in turn has allowed the City to reinvest in many areas. Primary efforts have been in funding transportation projects. The largest projects the City has adopted from their 2005-2006 Capital Improvement Program (City of Auburn, 2008f) were centered on highway reconstruction efforts, which included:

- Connector Road (between Rte 34 and Rte 5) – included within the City's Comprehensive Plan, efforts have been underway to build a new connector road between Rte 5 (Grant Avenue) and Rte 34 (North Street). This new facility would service the northwest corner of the City by increasing the available truck traffic access to the City's industrial/economic development sites.
- York Street Reconstruction – reconstruction of one of the major industrial corridors of the City that runs from Rte 34 (North Street) west to the city limit at the Auburn landfill and Technology Park. The design process has begun and it has been proposed that York Street merge with the new Connector Road at the North Street intersection.

Projects listed under the NYSDOT's Statewide Transportation Improvement Program included the reconstruction of Rte 34, between Arterial East/West (i.e., where Rtes 5 and 20 overlap) to the Auburn north city limit (NYSDOT, 2008a). Project development began in Fall 2007 and construction is expected to begin and end in Spring 2013 and Fall 2013, respectively (NYSDOT, 2008b).

No development – with the exception of what has been disclosed within this EA as part of the Proposed Action – is proposed to take place at the Auburn WPCP within the foreseeable future. There are no other known major projects planned by federal, state, county, or municipal authorities in the project area. However, the City continues to find ways to attract businesses to the area, especially at the Auburn Technology Park. According to the City's Office of Planning and Economic Development (discussed in Section 3.2.1, Land Use), the Auburn Technology Park is located in an area dedicated to attract and retain businesses (i.e., the Empire Zone).

In light of the reasonably foreseeable future actions that could interact with the Proposed Action (as discussed above) and contribute to cumulative impacts, the following resources could potentially incur cumulative effects: water resources; transportation; socioeconomics, and air quality.

During both the construction and operational phases of the Proposed Action, cumulative impacts to surface water in the Seneca River Watershed may occur from increased land development. The conversion of undeveloped land to developed land typically means an increase in impervious areas, which in turn results in increased stormwater runoff. Increased runoff can also erode earth at a greater rate, thus degrading downstream waterways as runoff carries higher amounts of sediments and soil and miscellaneous non-point sources (e.g., vehicle leaks and de-icing products). These impacts can be minimized through the adoption of properly designed stormwater management measures and BMPs for erosion and sediment control. The reasonably foreseeable future actions discussed above would take place in the Seneca River Watershed. In the long-term, though, it is expected that the Plant's contribution to cumulative adverse impacts to the watershed would be minor as the project area is relatively small and would incorporate BMPs and appropriate stormwater management controls per its SPDES permit. Furthermore, the project could have an overall beneficial effect from the reduction of pathogen and BOD levels in the WPCP's effluent and enhance water quality in the watershed.

Cumulative impacts could also arise from changes in socioeconomic factors (e.g., increased population and businesses) and transportation resources that would be induced through implementation of the Proposed Action. With the opportunity of reduced energy costs, the Plant may enhance development of the Auburn Technology Park and the City of Auburn and stimulate the growth of the local economy and population. An increased population would add demands on local resources, such as available housing, the labor pool and transportation resources.

The scale of the project and potential development at the Technology Park would be consistent with planning and economic development goals of the City. As discussed in Section 3.2.12, Auburn and Cayuga County have experienced declines in population over the past several years and seem to have an adequate labor force and housing availability to accommodate any potential growth from such development. Therefore, cumulative socioeconomic impacts are expected to generate net beneficial impacts (e.g., increased local economy and reduced energy costs to Auburn) from the project.

During operation of the Plant, cumulative adverse impacts associated with increased traffic could occur. The potential housing development on North Street and new businesses at Technology Park could add to increased traffic delays and associated increased noise levels, traffic risks and vehicle emissions in the surrounding area, especially along North Street (Rte 34) and near the intersection of York Street and Rte 34. Thus, increased traffic impacts from the Plant would be most felt during peak commute hours in the northwest corner of Auburn as this

area already supports most of the City's industrial activities. The eight (8) to 10 daily truck deliveries to the Plant would occur over a 10-hour period (6 a.m. to 4 p.m.) and would not likely add significant delays to traffic conditions in the long-term. Additionally, the planned connector road and reconstructions of York Street and Rte 34 could help improve the City's traffic flow and minimize traffic congestion and associated impacts in the long-term.

Cumulative adverse air impacts would result from continuous emissions from the Plant and from vehicle emissions. On an airshed level, the state of New York takes into account the effects of past, present, and reasonably foreseeable emissions during the development of the SIP (as discussed in Section 3.2.5.2). The state accounts for all significant stationary, area, and mobile emission sources in the development of the SIP. Estimated emissions generated by the Plant and from increased traffic would be *de minimus* and would not be regionally significant. Therefore, it is not anticipated that the Proposed Action would contribute significantly to adverse cumulative effects to air quality. Locally, the project has the potential to provide improved air quality as the incinerator would be operating on a reduced schedule and the LFG (that may not have been used to fuel the incinerator) would be used to fuel the Plant. On an even larger scale, the project has the potential to contribute long-term, major beneficial impacts towards the future reduction of domestic and global CO_2 emissions by providing a viable model for renewable energy projects which other local governments can adopt. Thus, it is likely that there could be some substantial air quality benefits by reducing the use of fossil-fuel dependent energy generation, and consequently, reducing the overall amounts of CO_2 emissions nationwide.

4.0 DISTRIBUTION LIST

- Sandra Doran, U.S. Fish & Wildlife Service (New York Field Office) – U.S. Department of the Interior
- U.S. Army Corps of Engineers (Civil Works Office) – Auburn Field Office
- Grace Musumeci, Environmental Review Section – U.S. Environmental Protection Agency (Region 2)
- Ruth L. Pierpoint – New York State Office of Parks, Recreation and Historical Preservation
- Tara Seonane – Division Fish, Wildlife & Marine Resources; New York Natural Heritage Program; New York State Department of Environmental Conservation
- John Feltman – Division of Environmental Permits Region 7; New York State Department of Environmental Conservation
- Cayuga County Department of Planning and Development
- Auburn City Council
- Dan Hill, Cayuga Nation
- Jeanne Shenandoah, Onondaga Nation

- Reading Rooms:
  - Auburn Water Pollution Control Plant
    35 Bradley Street
    Auburn, New York 13021
  - Seymour Public Library
    176-178 Genesee Street
    Auburn, New York 13021
  - Memorial City Hall
    24 South Street
    Auburn, New York 13021

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36 CFR Part 800. "Protection of Historic Properties." Code of Federal Regulations.

40 CFR Part 6. "Procedures for Implementing the Requirements of the Council on Environmental Quality on the National Environmental Policy Act." Code of Federal Regulations.

40 CFR 52.21. "Prevention of Significant Deterioration of Air Quality." U.S. Environmental Protection Agency. Code of Federal Regulations.

40 CFR Part 60. "Standard of Performance for New Stationary Sources. U.S. Environmental Protection Agency." Code of Federal Regulations.

40 CFR Part 61. "National Emission Standards for Hazardous Air Pollutants." U.S. Environmental Protection Agency. Code of Federal Regulations.

40 CFR Part 63. "National Emission Standards for Hazardous Air Pollutants for Source Categories." U.S. Environmental Protection Agency. Code of Federal Regulations.

40 CFR Part 93. "Determining Conformity of Federal Actions to State or Federal Implementation Plans." U.S. Environmental Protection Agency. Code of Federal Regulations.

40 CFR Parts 1500-1508. "National Environmental Policy Act Implementing Regulations." The Council on Environmental Quality. Code of Federal Regulations.

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6.0 LIST OF PREPARERS

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B.S., Civil Engineering
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Jamie Martin-McNaughton – Environmental Scientist
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Five years of geological field work experience, figure generation, and NEPA documentation.

Samir Qadir – Environmental Scientist
M.S., Environmental Policy
B.S., Engineering
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Stacey Schueler – Environmental Scientist
B.S., Environmental Science
Six years of experience in site remediation, natural resource studies and NEPA documentation.

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Appendix A
City of Auburn Council Resolution

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12A

COUNCIL RESOLUTION NO. 88 OF 2008

DECLARING LEAD AGENCY, CLASSIFYING PROJECT AND DETERMINING SIGNIFICANCE OF ENVIRONMENTAL IMPACTS PURSUANT TO THE NEW YORK STATE ENVIRONMENTAL QUALITY REVIEW ACT

By Councilor Grancy July 24, 2008

WHEREAS, the City of Auburn (the "City") has entered into a joint venture with CH Energy Group, Inc. and its affiliate, CH-Auburn Energy, LLC, for the construction of landfill gas electric generators and anaerobic digester energy facilities for which the City will be the fuel supplier (landfill gas and wastewater sludge), purchaser of energy produced, and wastewater sludge owner (the "Project"); and

WHEREAS, in its Resolution #177 dated August 9, 2007, the City Council of the City of Auburn (the "City Council") authorized the Mayor to enter into an agreement with CH Energy Group, Inc. for the design, building, ownership and operation of an electric power generation facility on land located in the City at 35 Bradley Street, which land is owned by the City; and

WHEREAS, City Council desires to complete the environmental impact review of the Project, and thereafter, to determine whether to reconfirm the authorizations set forth in Resolution #177 of 2007; and

WHEREAS, pursuant to Article 8 of the Environmental Conservation Law, as amended, the New York State Environmental Quality Review Act (the "SEQR Act") and the regulations adopted pursuant thereto by DEC, being 6 NYCRR Part 617, as amended (the "Regulations"), the City desires to comply with the SEQR Act and the Regulations with respect to the Project; and

1446574.2 7/17/2008

WHEREAS, the City Council desires to be "lead agency" for the Project, as this term is defined in the Regulations, and has consulted with the City of Auburn Planning Board (the "Planning Board") and the New York State Department of Environmental Conservation ("DEC"), the two other "involved agencies," as this term is defined in the Regulations, and the Planning Board and DEC have indicated their agreement to the City Council's designation as lead agency; and

WHEREAS, to assist the City Council in determining whether the Project may have any significant adverse environmental impacts, CH-Auburn Energy, LLC prepared Part 1 of a Full Environmental Assessment Form for the Project with supplemental environmental documentation attached (the "EAF"), which was discussed by the City Council at this meeting, and a copy of which is on file at City Hall; and

WHEREAS, the City has provided a copy of the EAF to the Planning Board and DEC and has solicited its comments on the Project and the EAF; and

WHEREAS, the City Council has considered the comments of the Planning Board dated June 3, 2008 and the comments of DEC issued July 9, 2008 regarding the potential environmental impacts of the Project; and

WHEREAS, the City Council has considered the potential adverse environmental impacts of the Project using the criteria specified in Section 617.7 of the Regulations; and

WHEREAS, pursuant to the Regulations, the City Council has examined the EAF, and such other information as has been deemed appropriate in order to make a determination of significance as to any potentially significant adverse environmental impacts that may arise from the Project; and

WHEREAS, the City Council, in its Resolution #53 dated May 22, 2008, classified the project as an "Unlisted Action," as this term is defined in the Regulations, but it subsequently determined that the action is a "Type I" action pursuant to Auburn City Code §305-53(c);

NOW, THEREFORE, BE IT RESOLVED BY THE MEMBERS OF THE CITY COUNCIL OF THE CITY OF AUBURN AS FOLLOWS:

1. The City hereby declares itself to be lead agency for the Project;

2. Based upon an examination of the EAF, the City Council's knowledge of the area surrounding the Project, the comments of DEC and the Planning Board, and such further investigation of the Project and its respective environmental effects as the City Council has deemed appropriate, the City Council makes the following findings and determinations with respect to the Project:

(a) The Project is described in Part 1 of the EAF;

(b) The Project is a joint venture among CH Energy Group, Inc., CH-Auburn Energy, LLC and the City, and City Council has the authority to enter into agreements with and to issue approvals to CH Energy Group, Inc. and CH-Energy Auburn, LLC in connection with the Project;

(b) The Project constitutes a Type I action pursuant to Auburn City Code §305-53(c) and the City Council has coordinated its environmental impact review of the Project with the DEC and the Planning Board;

(c) The City Council has examined Part 1 of the EAF and has completed Parts 2 and 3 of the EAF, and no potentially significant adverse environmental impacts are noted in the EAF for the Project and none are known to the City Council.

Therefore, the City Council hereby determines that the Project will not have any specific significant adverse environmental impacts; and

(d) As a consequence of the foregoing, the City has prepared a negative declaration with respect to the Project.

3. The City Manager is hereby directed to file, distribute and publish notice of a negative declaration with respect to the Project (the negative declaration to be substantially in the form and to the effect of the negative declaration attached hereto) in compliance with the Regulations; and a copy of the negative declaration shall be maintained in City Hall in a file that will be readily accessible to the public.

4. This Resolution shall take effect immediately.

Seconded by Councilor Smith

	AYES	NOES
Councilor Graney	✓	
Councilor McNabb	ABSENT	
Councilor Smith	✓	
Councilor Brower	✓	
Mayor Quill	✓	

Carried and Adopted

Appendix B
Agency Correspondence Letters

Therefore, the City Council hereby determines that the Project will not have any specific significant adverse environmental impacts; and

(d) As a consequence of the foregoing, the City has prepared a negative declaration with respect to the Project.

3. The City Manager is hereby directed to file, distribute and publish notice of a negative declaration with respect to the Project (the negative declaration to be substantially in the form and to the effect of the negative declaration attached hereto) in compliance with the Regulations; and a copy of the negative declaration shall be maintained in City Hall in a file that will be readily accessible to the public.

4. This Resolution shall take effect immediately.

Seconded by Councilor Smith

	AYES	NOES
Councilor Graney	✓	
Councilor McNabb	ABSENT	
Councilor Smith	✓	
Councilor Brower	✓	
Mayor Quill	✓	

Carried and Adopted

Response from New York State Office of Parks, Recreation and Historic Preservation

Eliot Spitzer
Governor

Carol Ash
Commissioner

New York State Office of Parks,
Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

February 13, 2008

RECEIVED
FEB 22 2008

Michael H. Long
City of Auburn, City Hall
24 South Street
Auburn, New York 13021-3832

Re: SEQRA
Auburn Landfill Gas Electric Generators and
Anaerobic Digester Facilities
Bradley Street, adjacent to current wastewater
treatment plant
AUBURN, Cayuga County
08PR00646

Dear Mr. Long:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Register of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

Response from New York Natural Heritage Program-Division of Fish, Wildlife & Marine Resources

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925

Alexander B. Grannis
Commissioner

February 29, 2008

Michael H. Long
City of Auburn
Memorial City Hall, 24 South Street
Auburn, NY 13021-3885

Dear Mr. Long:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed New Wastewater Sludge Processing Facility, site as indicated on the map you provided, located near Bradley Street, City of Auburn, Cayuga County.

We have no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of your site.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain any information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. For these reasons, we cannot provide a definitive statement on the presence or absence of rare or state-listed species, or of significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

Sincerely,
Tara Seoane jp
Tara Seoane, Information Services
NY Natural Heritage Program

Enc.
cc: Reg. 7, Wildlife Mgr.
Reg. 7, Fisheries Mgr.

DIVISION OF ENVIRONMENTAL PERMITS REGIONAL OFFICES January 2006

REGION	COUNTIES	REGIONAL PERMIT ADMINISTRATORS
1	Nassau & Suffolk	John Pavacic NYS-DEC BLDG. 40 SUNY at Stony Brook Stony Brook, NY 11790-2356 Telephone: (631) 444-0365
2	New York City (Boroughs of Manhattan, Brooklyn, Bronx, Queens, & Staten Island	John Cryan NYS-DEC One Hunters Point Plaza 47-40 21st Street Long Island City, NY 11101-5407 Telephone: (718) 482-4997
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster & Westchester	Margaret Duke NYS-DEC 21 South Putt Corners Road New Paltz, NY 12561-1696 Telephone: (845) 256-3054
4	Albany, Columbia, Greene, Montgomery, Rensselaer & Schenectady	William Clarke NYS-DEC 1150 North Wescott Road Schenectady, NY 12306-2014 Telephone: (518) 357-2069
4 (sub-office)	Delaware, Otsego & Schoharie	Kent Sanders NYS-DEC Route 10 HCR#1, Box 3A Stamford, NY 12167-9503 Telephone: (607) 652-7741
5	Clinton, Essex, Franklin & Hamilton	Thomas Hall NYS-DEC Route 86, PO Box 296 Ray Brook, NY 12977-0296 Telephone: (518) 897-1234
5 (sub-office)	Fulton, Saratoga, Warren & Washington	Thomas Hall NYS-DEC County Route 40 PO Box 220 Warrensburg, NY 12885-0220 Telephone: (518) 623-1281
6	Jefferson, Lewis & St. Lawrence	Brian Fenlon NYS-DEC State Office Building 317 Washington Street Watertown, NY 13601-3787 Telephone: (315) 785-2245
6 (sub-office)	Herkimer & Oneida	J. Joseph Homburger* NYS-DEC State Office Building 207 Genesee Street Utica, NY 13501-2885 Telephone: (315) 793-2555

7	Cayuga, Madison, Onondaga & Oswego	John Feltman NYS-DEC 615 Erie Blvd. West (Env.Permits Room 206) Syracuse, NY 13204-2400 Telephone: (315) 426-7438
7 (sub-office)	Broome, Chenango, Cortland, Tioga & Thompkins	Michael Barylski* NYS-DEC 1285 Fisher Avenue Cortland, NY 13045-1090 Telephone: (607) 753-3095
8	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne & Yates	Peter Lent NYS-DEC 6274 East Avon Lima Road Avon, NY 14414-9519 Telephone: (585) 226-2466
9	Erie, Niagara & Wyoming	Steve Doleski NYS-DEC 270 Michigan Avenue Buffalo, NY 14203-2999 Telephone: (716) 851-7165
9 (sub-office)	Allegany, Cattaraugus, Chautauqua	Ken Taft* NYS-DEC 182 East Union, Suite 3 Allegany, NY 14706-1328 Telephone: (716) 372-0645

* Deputy Regional Permit Administrator

Response from U.S. Department of the Interior – Fish & Wildlife Service

Rx Date/Time FEB-05-2008(TUE) 11:49
FEB-05-2008 11:48 US FISH & WILDLIFE P.001
P.01/01

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Field Office
3817 Luker Road
Cortland, NY 13045
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo

Project Number: 80245

To: Michael Long Date: Feb 5, 2008

Regarding: Gas electric generators and anaerobic digester energy facilities

Town/County: City of Auburn / Cayuga County

We have received your request for information regarding occurrences of Federally-listed threatened and endangered species within the vicinity of the above-referenced project/property. Due to increasing workload and reduction of staff, we are no longer able to reply to endangered species list requests in a timely manner. In an effort to streamline project reviews, we are shifting the majority of species list requests to our website at http://www.fws.gov/northeast/nyfo/es/section7.htm. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response. Step-by-step instructions are found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (Service), to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above document control number in any future correspondence.

Endangered Species Biologist: Sandra Doran *Sandra Doran*

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to *take* (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

TOTAL P.01

Cayuga County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

Common Name	Scientific Name	Status
Bald eagle[1]	*Haliaeetus leucocephalus*	D
Bog turtle	*Clemmys muhlenbergii*	T
Indiana bat (S)	*Myotis sodalis*	E

Status Codes: E=Endangered T=Threatened P=Proposed C=Candidate D=Delisted
W=Winter S=Summer

[1]The bald eagle was delisted on August 8, 2007. While there are no ESA requirements for bald eagles after this date, the eagles continue to receive protection under the Bald and Golden Eagle Protection Act (BGEPA). Please follow the Service's May 2007 Bald Eagle Management Guidelines to determine whether you can avoid impacts under the BGEPA for your projects. If you have any questions, please contact the endangered species branch in our office.

Information current as of: 2/5/2008

Print Species List

Appendix C
FEMA Flood Maps

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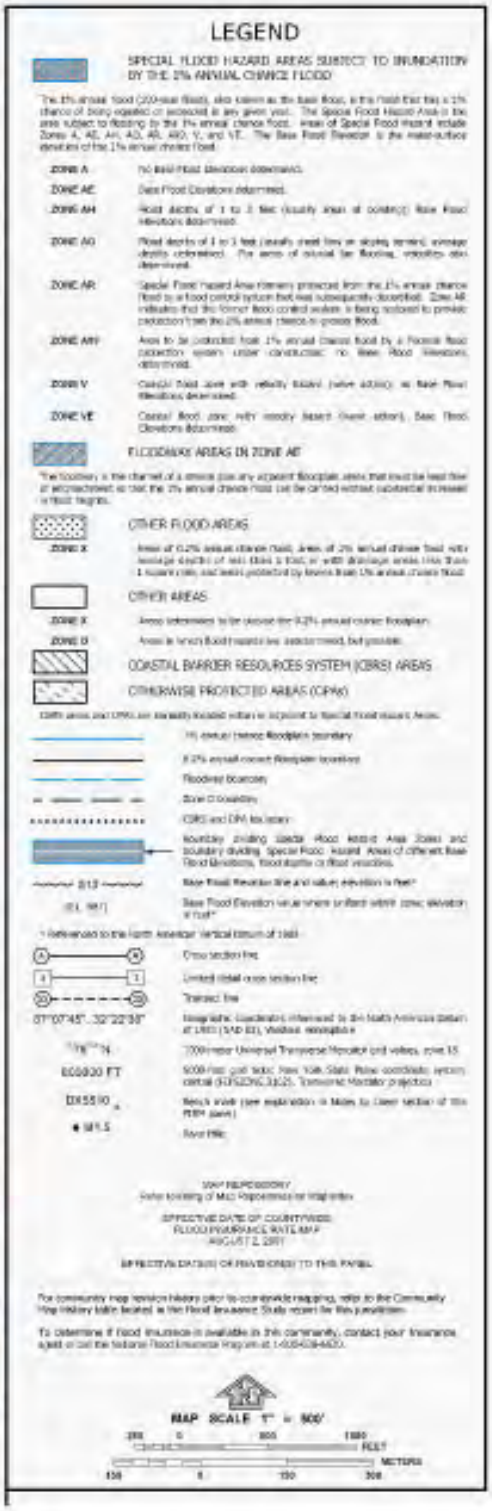
Flood Insurance Rate Map for Cayuga County, City of Auburn from FEMA web site – http://map1.msc.fema.gov/idms/IntraList.cgi?displ=wsp/item_10297706.txt

FEMA FLOOD MAP AND LEGEND



Appendix D
Wetlands Determination

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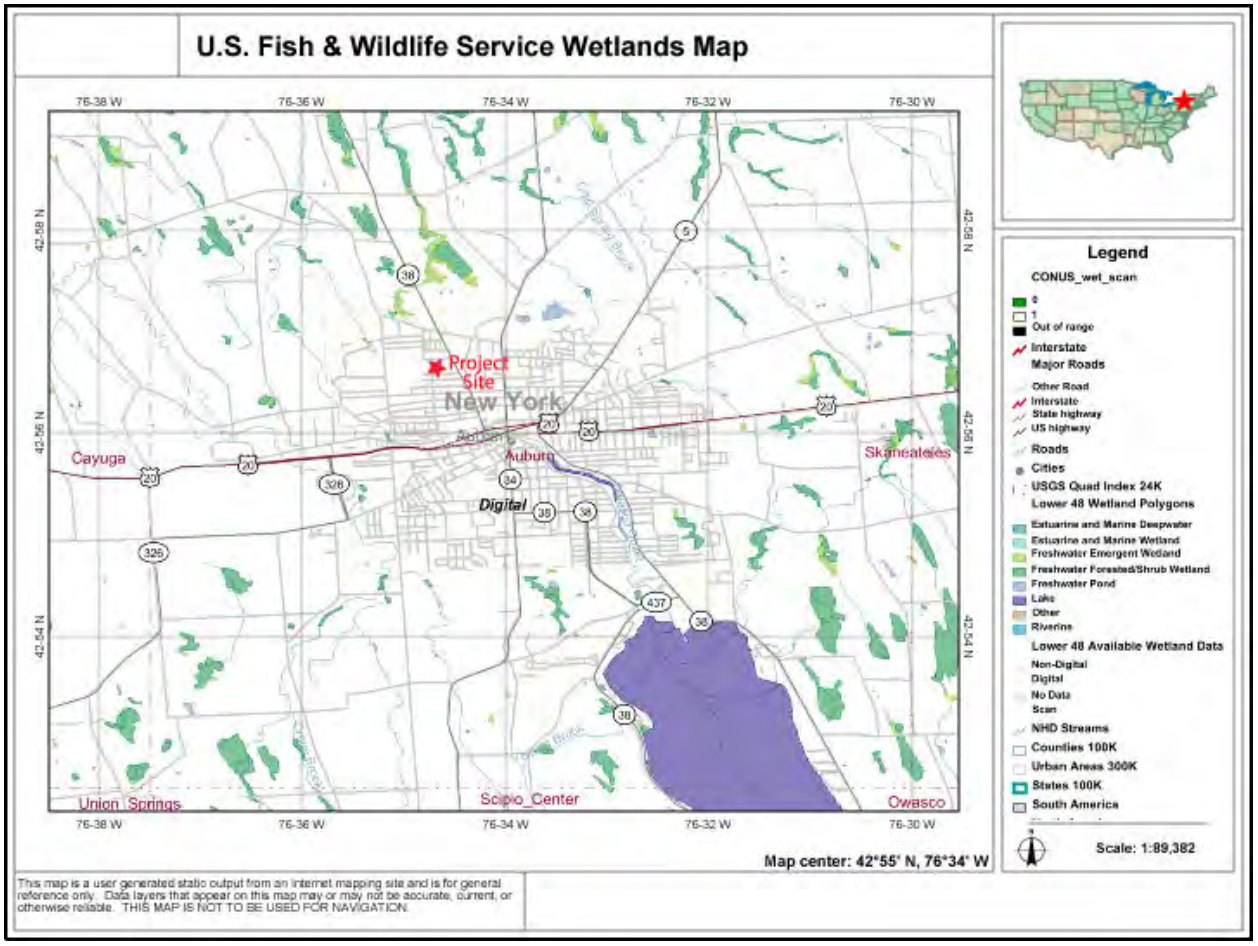
The US Fish and Wildlife Service website http://wetlandsfws.er.usgs.gov/imf/imf.jsp?site=NWI_CONUS identifies potential wetlands that may be on or adjacent to the Plant site. The Wetlands Online Mapper information indicates that there are no existing wetlands on or near the project location, as shown on the maps below.

Stearns and Wheler, LLC, an environmental engineering company, has completed a field verification of the site and no wetlands were identified during the inspection as confirmed in the Stearns and Wheler letter below.



A close up of the project area more clearly shows that no wetlands were identified near the project in the US Fish and Wildlife Wetland survey map.

STEARNS & WHELER
Environmental Engineers & Scientists

May 1, 2008

Mr. William Cetti
ECO Technology Solutions
504 Fortress Circle SE
Leesburg, VA 20175

Re: Wetlands Determination for the ECOTS Proposed Bio-Energy Facility Site
East of and Adjacent to the Existing Auburn Wastewater Treatment Plant Site
West of North Division Street, North of Allen Street and Commerce Way
Auburn, Cayuga County, New York
S&W No. 71073.0

Dear Mr. Cetti:

Per your request, we reviewed jurisdictional maps and visited the above-referenced site (hereafter: subject site) on April 2, 2008 to determine whether it contained any federal or state-regulated freshwater wetlands or fell within the jurisdictional adjacent area of any state-regulated wetlands. This letter outlines the findings of our map review and field investigation.

Article 24 of the New York State Environmental Conservation Law (NYSECL) requires that wetlands must appear on the state's freshwater wetland maps in order to be subject to regulation by the State of New York. The New York State Freshwater Wetland Maps for Cayuga County do not indicate any state-regulated wetlands on or within 500 feet of the subject site. Therefore, no state-regulated wetlands occur on the site, and the site does not fall within the 100-foot regulated adjacent area to state-regulated wetlands.

The National Wetland Inventory (NWI) Map for the area encompassing the subject site (copy attached for your reference) also did not indicate any wetland cover types on the site, though two small isolated wetland pockets were indicated to the east of the site. However, wetlands need not appear on the NWI maps to fall under federal jurisdiction. Thus, we visited the site on April 2, 2008 to determine whether the site exhibited the three criteria outlined in the Federal Manual for Freshwater Wetland Delineation (Army Corps Experimental Station, 1987) (1987 Manual) that define a potentially jurisdictional wetland: h ydrophytic vegetation, hydric soils, and signs of prolonged soil saturation within the root zone.

We found that soils on the subject site were largely filled land, similar to the adjacent wastewater treatment plant site. Vegetation on the site was mostly mixed grasses and goldenrod (*Solidago* sp.), with a hedgerow of Eastern cottonwood (*Populus deltoides*) and box elder (*Acer negundo*) along the northern edge of the property. The vegetation was not dominated by plants with a wetland indicator status of facultative wet (FAC) or wetter, so hydrophytic vegetation was not dominant.

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Mr. William Cetti
ECO Technology Solutions

May 1, 2008
Page 2

The fill material varied in texture from fine sandy loam to silty loam, which was saturated within a few inches of the surface at the time of our visit. This may have been due to recent precipitation, however. Soils sampled in several locations exhibited a Munsell moist soil color of 10YR ¾ and had no mottling, redoximorphic features, or other signs of long-term saturation. Thus, we found no hydric soils.

One small patch of hydrophytic vegetation was observed in an isolated depression about 6 feet across on the southern portion of the site, which was inundated with about 15 cm of water at the time of our visit. Vegetation in this depression included cattail (*Typha latifolia*), soft rush (*Juncus effusus*), and tussock sedge (*Carex stricta*), but soils were still fine sandy loam with a Munsell moist color of 10YR ¾. Therefore, we concluded that while hydrophytic vegetation and wetland hydrology were present in this small depression, hydric soils were not found, so it could not be considered a wetland under the standards of the 1987 Manual.

We did identify a wetland to the east of the subject site that may fall under federal jurisdiction and may be one of the small isolated wetland pockets indicated on the NWI Map. This wetland was not on the subject site, and federal wetlands regulations do not regulate beyond the wetland boundary, so the subject site is not subject to federal wetland jurisdiction from this offsite wetland.

In summary, we reviewed jurisdictional maps and conducted a field visit to sample vegetation, soils and hydrology on the subject site, per the 1987 Manual. We found that the subject site contained no state or federal jurisdictional wetlands, and did not fall within the 100-foot regulated area adjacent to state-regulated wetlands. Therefore, development activities on the site will not require permits under Sections 401 and 404 of the Clean Water Act or under NYSECL Article 24.

We hope this information is helpful. If you have any questions regarding this information or our study of the subject site, please contact me directly at (315) 655-8161, ext. 384.

Sincerely,

STEARNS & WHELER, LLC

Michael S. Fishman
Certified Wildlife Biologist
Certified Professional Wetland Scientist

MSF/jas

Enclosure

cc: Tim Carpenter, P.E., Stearns & Wheler, LLC (w/enc.)

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STEARNS & WHELER

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Appendix E
Listed Species Determination

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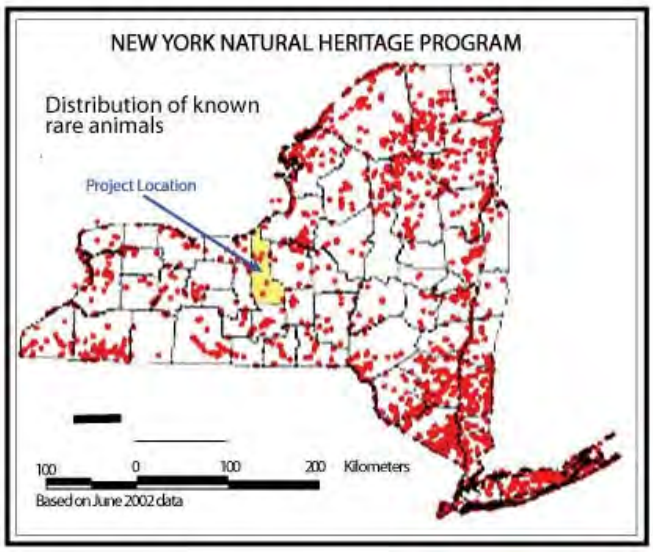
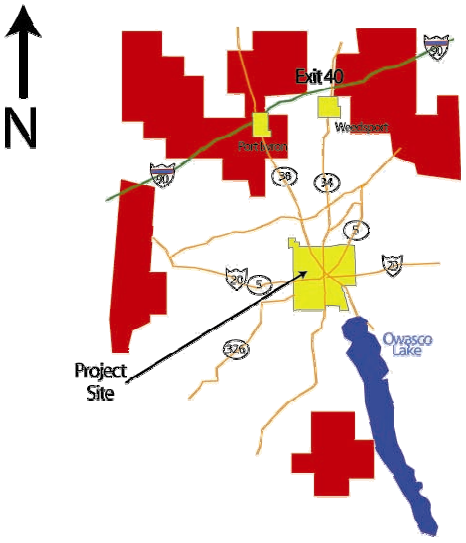
The New York State Department of Environmental Conservation website HTTP://WWW.DEC.STATE.NY.US/WEBSITE/DFWMR/HERITAGE/ANIMALS.HTM contains a 2002 map of rare animals in the state.



A close up of the Distribution of Known Rare Animals Map for the area surrounding the project location confirms the known animal population is not living on or near the project location.



Stearns and Wheler, LLC, an environmental engineering company, has completed a field verification of the site and has confirmed no habit exists for the Indiana bat or bog turtle discussed in the attached US Fish and Wildlife letter at the Plant Site. See the Stearns and Wheler letter below.

STEARNS & WHELER LLC
Environmental Engineers & Scientists

May 1, 2008

Mr. William Cetti
ECO Technology Solutions
504 Fortress Circle SE
Leesburg, VA 20175

Re: Listed Species Determination for the ECOTS Proposed Bio-Energy Facility Site
East of and Adjacent to the Existing Auburn Wastewater Treatment Plant Site
West of North Division Street, North of Allen Street and Commerce Way
Auburn, Cayuga County, New York
S&W No. 71073.0

Dear Mr. Cetti:

Per your request, we reviewed state and federal online mapping resources and visited the above-referenced site (hereafter: subject property) on April 2, 2008 to determine whether it contained any federal or state-listed special concern, threatened, or endangered species, or habitat for said species. This letter outlines the findings of our resource review and field investigation.

The New York State Department of Environmental Conservation's Online Resource Mapper (copy attached for your reference) did not indicate any state-listed species on or in the vicinity of the subject property. Our field visit did not reveal any significant habitats for listed species, or any evidence that the site would support state-listed species of special concern, or threatened or endangered species.

The U.S. Department of Interior Fish & Wildlife Service's online list of Endangered Species Act (ESA) listed species for Cayuga County (attached for your reference) identified bog turtle (*Clemmys muhlenbergii*), Indiana bat (*Myotis sodalis*), and bald eagle (*Haliaeetus leucocephalus*) (no longer listed under the ESA, as of August 2007) as having known or likely occurrences in Cayuga County. However, the existing habitat on the site of mowed grass field with one narrow hedgerow of eastern cottonwood (*Populus deltoides*) and box elder (*Acer negundo*), and habitats on adjacent parcels of developed land and a small, isolated, wooded wetland with very young growth trees and no snags do not provide suitable habitat to support any of the listed species identified above. Our list of plant species identified on the site, while not exhaustive, does not include any listed species, and we do not believe it is likely that the site supports listed species at any other time of year, apart from possible transient individuals. Therefore, no formal consultation with the New York State

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Mr. William Cetti
ECO Technology Solutions

May 1, 2008
Page 2

Department of Environmental Conservation or the U.S. Fish & Wildlife Service regarding listed species should be necessary.

We hope this information is helpful. If you have any questions regarding this information or our study of the subject site, please contact me directly at (315) 655-8161, ext. 384.

Sincerely,

STEARNS & WHELER, LLC

Michael S. Fishman
Certified Wildlife Biologist
Certified Professional Wetland Scientist

MSF/jas

Enclosures

cc: Tim Carpenter, P.E., Stearns & Wheler, LLC (w/enc.)

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STEARNS & WHELER LLC

Cayuga County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

Common Name	Scientific Name	Status
Bald eagle[1]	*Haliaeetus leucocephalus*	D
Bog turtle	*Clemmys muhlenbergii*	T
Indiana bat (S)	*Myotis sodalis*	E

Status Codes: E=Endangered T=Threatened P=Proposed C=Candidate D=Delisted

W=Winter S=Summer

[1] The bald eagle was delisted on August 8, 2007. While there are no ESA requirements for bald eagles after this date, the eagles continue to receive protection under the Bald and Golden Eagle Protection Act (BGEPA). Please follow the Service's May 2007 Bald Eagle Management Guidelines to determine whether you can avoid impacts under the BGEPA for your projects. If you have any questions, please contact the endangered species branch in our office.

Information current as of: 4/30/2008