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Construction Plan Report

Woodstock Wastewater Treatment Plant Biogas Utilization Project

Oxford County
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ONTARIO CLEAN WATER AGENCY
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1.0 Introduction

This Construction Plan Report has been prepared in accordance with the guidelines provided by the Ministry of the Environment, Conservation and Parks (MECP) entitled “Chapter 5: Guidance for Preparing the Construction Plan Report.” This report fulfills part of the requirements for a Renewable Energy Approval (REA) under Ontario Regulation 359/09, which is part of the Environmental Protection Act.

This report describes the project activities undertaken during the construction phase of the Biogas Utilization Project so that all negative environmental effects that will or are likely to occur may be identified. The report will also describe mitigation measures in respect of the negative environmental effects that will or are likely to occur from construction or installation activities. This report is required as this application pertains to a Class 3 anerobic digestion facility that will be located at the existing Woodstock WWTP.

1.1 Project Overview

Oxford County (the County) is undertaking a biogas utilization upgrade at the Woodstock WWTP as part of the County’s 100% Renewable Energy Plan by implementing a CHP system to generate heat and electricity from biogas produced at the WWTP, thereby decreasing the WWTP’s dependence on the energy grid.

The Woodstock WWTP is located at 195 Admiral Street, Woodstock, Ontario. The proposed CHP system will be within the existing footprint of the WWTP.

The basic components of the Woodstock WWTP Biogas Utilization Project will include the following:

- The CHP and biogas conditioning equipment and associated exterior concrete equipment pad
- High voltage grounding transformer and associated exterior concrete equipment pad
- Field control panel and associated exterior concrete equipment pad
- Yard piping, including electrical and communication wires, hydronic heating pipes, digester gas pipes, and condensate drain pipes

2.0 Description of Construction and Installation Activities

2.1 Site Preparation

This project will be constructed within the existing site boundaries of the Woodstock WWTP. Minimal site preparation activities are anticipated for this project, and will include:

- Removal of existing asphalt and concrete at the proposed CHP location

- Excavation to a minimum depth of 1.3 m at the location of each equipment pad (for CHP and biogas conditioning equipment, high voltage grounding transformer, and field control panel)
- Backfill of excavations with suitable compacted engineered fill
- Excavation for buried yard piping (electrical routing, hydronic pipes, digester gas pipes, condensate pipe)

No external or internal access roads are proposed to be constructed as part of this project. The existing site access on Admiral Street, from Tecumseh Street will be used during construction along with existing roadways. The internal access roadways within the WWTP site will be used during construction.

2.1.1 Materials Brought on Site

The excavations for the concrete equipment pads will be backfilled with a suitable compacted engineered fill. The excavations will be approximately 1.3 m deep.

Engineered fill will be delivered by truck. Materials will be placed within the boundary of the Woodstock WWTP site during site preparation activities. It is not anticipated that additional site clearing will be required for material laydown areas during the site preparation stage.

2.1.2 Construction Equipment Used

Key equipment required during site preparation activities include:

- Contractor utility vehicles (approximately 6 tonnes)
- Small excavator (approximately 15 tonnes)
- Medium dump truck (for transporting materials to and from site) (approximately 30 tonnes)

Equipment will access the site through the existing site access on Admiral Street and use the existing internal access roadways during construction.

On-site fueling of equipment may occur during site preparation.

2.1.3 Timing and Operational Plans

The proposed timing of the site preparation activities is provided in Table 1.

Table 1. Site Preparation Timing Plan

Project Phase	Activities	Approximate Date
Site Preparation	Start of construction	September 2025
	Excavation and backfill of future equipment pad locations	October 2025
	Excavation for new electrical routing and piping	November 2025

2.1.4 Temporary Uses of Land

Site preparation activities will temporarily alter the existing land surface and grading at the WWTP site, which is primarily grass covered in open areas. The site preparation for the CHP system will also result in demolition of a portion of an existing concrete and asphalt driveway. Additionally, there will be a small laydown area for the backfill material. These locations will be altered for the duration of the site preparation activities.

The footprint of the CHP system, associated electrical equipment, and yard piping is relatively small (0.07 hectares) in comparison to the fenced portion of the WWTP site (4.79 hectares). It is also anticipated that only a small laydown area will be required. Therefore, the impacts of the temporary changes to the site are anticipated to be minimal.

2.1.5 Temporary Water Takings

It is not anticipated that water will be required during site preparation activities. Excavation activities will be to 1.3 deep, while the groundwater table is at approximately 4 m, therefore there will be no need for any de-watering activities during site preparation.

2.1.6 Materials and Waste Management

Solid waste generation will occur during the site preparation phase of the project (i.e., excavated concrete, asphalt, and earthwork). Disposal bins will be deployed onsite to dispose of any solid material safely and in accordance with the Environmental Protection Act O.Reg 406/19 and R.R.O. Reg 347 for on-site and excess soil management and general waste management. Earthworks excavated during construction can be set aside and used for re-grading following installation of equipment.

Excess excavated materials will eventually be trucked off-site and disposed of in accordance with the regulations above. Excavated concrete and asphalt may be sent to an appropriate re-use or recycling facility for aggregate materials, if possible.

2.2 Equipment Installation

2.2.1 Materials Brought on Site

Equipment installation associated with this project will include:

- The CHP and biogas conditioning equipment and associated exterior concrete equipment pad (approximately 12 x 18 m)
- High voltage grounding transformer and associated exterior concrete equipment pad (approximately 5.7 x 2.5 m)
- Field control panel and associated exterior concrete equipment pad (approximately 4.4 x 2.6 m)
- Yard piping, including electrical routing, hydronic pipes, digester gas pipes, and condensate drain pipe

The three concrete equipment pads will be reinforced with rebar and cast in place. The concrete equipment pads will be poured before installation of the equipment.

The key equipment (package CHP plant, biogas conditioning equipment, electrical equipment, and yard piping) will be transported to the site via transport truck. If equipment is delivered to site before the equipment pads are prepared, they will be temporarily stored on site until the foundations are ready for installation. It is not anticipated that additional site clearing will be required for material laydown areas during the equipment installation stage.

2.2.2 Construction Equipment Used

Key equipment required during equipment installation activities include:

- Contractor utility vehicles (approximately 6 tonnes)
- Concrete mixer (approximately 35 tonnes)
- Transport truck (approximately 25 tonnes)
- Crane and rigging equipment
- Telehandler for unloading CHP from delivery trailers (approximately 8 tonnes)
- Skid steer (approximately 1 tonne)

Equipment will access the site through the existing site access on Admiral Street and use the existing internal access roadways during construction. It is not anticipated that additional site clearing will be required for material laydown areas during the site preparation stage.

On-site fueling of equipment may be occur during installation activities.

2.2.3 Timing and Operational Plan

The proposed timing of the equipment installation activities is provided in Table 2.

Table 2. Equipment Installation Timing Plan

Project Phase	Activities	Approximate Date
Equipment Installation	Installation of concrete equipment pads, new electrical routing, piping and field control panel	March 2026
	Installation of CHP system, grounding transformer, new electrical routing, piping and field control panel	June 2026

2.2.4 Temporary Uses of Land

Areas of the WWTP site may be temporarily used for equipment laydown and temporary storage of equipment that is delivered before it can be installed. These locations will be altered temporarily until the equipment is installed in its final location.

2.2.5 Temporary Water Takings

It is not anticipated that water taking will be required during equipment installation activities.

2.2.6 Materials and Waste Management

Solid waste generation will occur during the equipment installation of the project, including packaging material to transport equipment to site. Disposal bins will be deployed onsite to dispose of any solid material safely and in accordance with the Environmental Protection Act O.Reg 406/19 and R.R.O. Reg 347 for on-site and excess soil management and general waste management.

2.3 Post-Installation Activities

Post-installation activities will include commissioning and restoration of the site, re-grading and sod or seeding of impacted areas. No vegetation other than mowed grass is anticipated to be impacted by this project.

2.3.1 Materials Brought on Site

The site will be re-graded to meet the design. Where needed, earthworks set aside during site preparation activities can be used during re-grading. If additional soils are needed during grading activities, they will be delivered by truck.

Sod or grass seed will be placed on site surfaces that were impacted by the project. Sod or grass seed will be delivered by truck.

Earthworks, sod, and grass seed will be placed within the boundary of the Woodstock WWTP site during site restoration activities. It is not anticipated that additional site clearing will be required for material laydown areas during the site restoration stage.

2.3.2 Construction Equipment Used

Key equipment required during equipment installation activities include:

- Contractor utility vehicles (approximately 6 tonnes)
- Transport truck (approximately 25 tonnes) or other transportation vehicle
- Medium dump truck (for transporting materials to and from site) (approximately 30 tonnes)
- Skid Steer (approximately 1 tonnes)

Equipment will access the site through the existing site access on Admiral Street and use the existing internal access roadways during construction. It is not anticipated that additional site clearing will be required for material laydown areas during the site preparation stage.

On-site fueling of equipment may be occur during installation activities.

2.3.3 Timing and Operational Plans

The proposed timing of the site restoration activities is provided in Table 2.

Table 3. Equipment Installation Timing Plan

Project Phase	Activities	Approximate Date
Equipment Installation	Remediation of temporary work areas	August 2026
	Remediation of site landscaping	September 2026

2.3.4 Temporary Uses of Land

Areas of the WWTP site may be temporarily used for material laydown. These locations will be altered temporarily until the materials have been placed following re-grading and sod placement or grass seeding.

2.3.5 Temporary Water Takings

It is not anticipated that water will be required during site restoration activities.

2.3.6 Materials and Waste Management

It is not anticipated there will be significant excess materials or waste generated during post-installation activities.

If there is excess excavated materials following re-grading of the site, materials will eventually be trucked off-site and disposed of and in accordance with the Environmental Protection Act O.Reg 406/19 and R.R.O. Reg 347 for on-site and excess soil management and general waste management.

3.0 Description of Negative Environmental Effects and Mitigation Measures

The following section identified potential negative environmental effects of the construction and installation activities described above, and proposed mitigation measures to reduce the impacts of these effects.

3.1 Air and Noise Emissions

During the construction and installation phase of the Project, air and noise emissions generation are anticipated. Under the *Occupational Health and Safey Act (OHSA O.Reg.381/15)*, the noise emission during the construction and installation phase will not exceed the 85 dBA limit. Oxford County's construction hours will be followed to ensure that noise emission is limited to the allotted hours of construction operation only; no special noise exemption is anticipated.

Air emissions including dust, odour, and carbon emissions from construction are anticipated and will follow the *Environmental Protection Act (EPA)* O.Reg 419/05, to ensure that the local air

quality limit is adhered to during construction and contained with the Project location. Best management practices, including the use of water for dust suppression, conducting excavations on days with low wind, and using tarps to cover stockpiled materials to prevent wind erosion, will be implemented during construction and installation activities to reduce the amount of dust generated.

3.2 Destruction of Vegetation

As this Project is taking place on an existing disturbed WWTP site, no vegetation other than mowed grass is anticipated to be impacted by this project.

Following construction, work areas will be restored match pre-construction conditions as closely as possible. Sod or grass seed will be applied to impacted areas to minimize impacts of stormwater runoff and erosion.

3.2.1 Impact to Prime Agricultural Land

There will be no impacts on the productivity of agricultural land associated with this project.

3.3 Impacts to Water Resources

3.3.1 Surface Water Runoff

There may be some negative impact on the surface water as it is related to this Project. During the construction and installation phases of the Project, excavation activities will modify the land surface.

To prevent the transfer of exposed sediment to nearby surface water bodies (i.e., the Thames River), silt fencing will be installed before site preparation activities and maintained throughout the construction and installation phase of the Project. Catch basins in the vicinity of the construction zone will also be lined with filter cloth to prevent excess sediment from entering the local stormwater sewer system. Silt fencing and catch basin liners will be inspected regularly (i.e., weekly) throughout the project and cleaned, repaired or replaced as needed with 24 hours of the noted deficiency. If stockpiled soil materials are anticipated to be on site for long periods of time, or on days with high winds, tarps can be used to covered stockpiled materials to prevent wind erosion of these materials. Additional erosion and sediment control measures may be installed throughout the Project if needed (e.g, hay bales).

During the post-installation activities, sod or grass seed will be applied to impacted areas to stabilize exposed soils. Inspections should take place following application of sod or seeding to ensure impacted areas of the site have been stabilized.

More details on stormwater management are provided in the Stormwater Management Plan.

3.3.2 Impacts on Water Bodies

It is anticipated that there will be no discharge into the local water body (i.e., Thames River) related to the Project. Throughout the construction and installation phase of the Project, the existing WWTP's treatment capacity, influent and effluent parameters and treatment process will

not be affected and as such, the treated wastewater effluent that discharges in the Thames River will not be impacted.

Stormwater on-site that typically runs into the Thames River may be impacted by erosion and sediment on site from exposed soils. Information on erosion and sediment control measures are described in Section 3.3.1.

3.3.3 Impacts Related to Water Takings

It is anticipated that there will be no impact on water-taking related to the Project. The completed hydrogeological report for this Project noted a groundwater table of approximately 4 metres below grade and all excavation activities during the construction and installation phases of the Project will be no deeper than 1.3 metres; this confirms that there will be no impacts to the ground water.

3.4 Spills

There are some negative impacts on spill as it is related to this Project.

Spills may occur during the construction and installation phases of the Project. Fuel, lubricant and coolant will be utilized during the installation and commissioning of the CHP system and from various construction equipment and this may pose as a spill risk. Spill kits and emergency response materials will be made readily available to rectify the accidental discharge, and proper fueling procedures will be followed on site. In the event of a spill, all work in the affected area will stop immediately and the spill will be rectified accordingly. Liquid spills will be addressed per applicable regulations (in accordance with the Environmental Protect Act, O.Reg. 675/98 and R.R.O Reg.347 for classification and exemption of spills and reporting of discharges and general waste management). The regulated and appropriate absorbents will be used to clean up liquid spills then managed as solid wastes. For toxic/hazardous material spills, management and clean up will be adhered to as indicated in the Environmental Protection Act O.Reg.347. The Design and Operation Report outlines protocols for proper handling and management of spills.

3.5 Impacts on Cultural Heritage (Protected Properties, Archaeological and Heritage Resources)

Currently, there are no anticipated cultural heritage or archaeological impacts related to the construction or installation phases of this Project.

Under O.Reg. 359/09, a cultural heritage assessment and archaeological assessment has been completed. In the cultural heritage research, two cultural heritage resources (CHR) were identified within 300 m of the Project Location, however, neither of the CHRs are currently a protected property as outlined in section 19 of the O.Reg 359/09 and therefore did not require further evaluation of potential impacts. The Cultural Heritage report concluded that there are no anticipated impacts with respect to built heritage resources and cultural heritage landscapes related to the Project. Please refer to the completed cultural heritage report for more details.

In the archaeological assessment, it was determined that no previously registered archaeological sites are located within one kilometre of the Project study area. The property

inspection performed at the Project study area determined that parts of the Project study area exhibit archaeological potential however these areas of archaeological potential will not be disturbed in any phases of this Project. The Project will be situated in a pre-disturbed area of the WWTP and as such, no further inspection is required.

3.6 Impacts on Local Roads and Traffic

During the construction and installation phases of the Project, there will be some negative impacts to the local road and traffic within the vicinity of the existing WWTP due to increased truck traffic into and out of the WWTP site to transport Project equipment and materials. Appropriate permits will be obtained from MTO or other authorities having jurisdiction, if needed, however it is not anticipated there will be any oversized loads required as part of this Project.

Travel to the site will primarily be during construction hours, during daylight, which will reduce the potential from vehicle accidents.

It is not anticipated that any existing roads outside or inside of the existing WWTP facility will be permanently modified or altered as part of the construction or installation phases of this project.

More details on transportation management and monitoring are provided in the Project Description Report.

3.7 Impacts on Natural Heritage

There are no anticipated impacts on the natural heritage related to the construction or installation phases of this Project.

Under O.Reg.359/09, a natural heritage assessment has been completed. In the natural heritage research, suitable wildlife habitat (SWH) was identified for five species that are considered special concern and rare. Although SWH were identified, based on the SWH being at the edge of the 120 m study area, and outside of the fenced perimeter, the natural heritage report concluded that there are no anticipated impacts with respect to natural heritage resources related to the Project. Please refer to the completed natural heritage report for more details.

Closure

This report has been prepared by J.L. Richards & Associates Limited for Oxford County's exclusive use. Its discussions and conclusions are summary in nature and cannot properly be used, interpreted or extended to other purposes without a detailed understanding and discussions with the client as to its mandated purpose, scope and limitations. This report is based on information, drawings, data, or reports provided by the named client, its agents, and certain other suppliers or third parties, as applicable, and relies upon the accuracy and completeness of such information. Any inaccuracy or omissions in information provided, or changes to applications, designs, or materials may have a significant impact on the accuracy, reliability, findings, or conclusions of this report.

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