



- All surplus materials, rubbish, waste materials, and construction debris will be removed from the site upon completion of construction of the project
- All waste will be handled in accordance with relevant provincial and federal requirements
- Waste material will not be dumped on-site. In the event that waste materials are inadvertently dumped, the Construction Manager (or designate) will immediately act to have the dumped material cleaned up and removed
- No waste or debris will be permitted to enter any watercourse
- Only material approved by the Independent Construction Compliance Monitor and the Site Supervisor will be disposed of or reused onsite (e.g., clean fill materials)
- Run-off from a disposal/storage area will not be allowed to enter a watercourse.

6.6.5 Contaminants to Air

There will be infrequent, short-duration emissions of greenhouse gases from motorized vehicles during the operations phase. This will result from accessing the O&M building or from transporting maintenance personnel to the turbine sites. Compared to background conditions, these emissions are negligible. No other significant discharges of contaminants to air are expected during the operation phase of the project.

7. DESCRIPTION OF NEGATIVE ENVIRONMENTAL EFFECTS AND MITIGATION

The following sections provide a summary of potential environmental effects and mitigation measures associated with the project operations period.

7.1 Archaeological Resources

Section 5.8 of the Construction Report provides a summary of potential project effects on archaeological resources. The operations phase of the project will not result in additional effects on archaeological resources. All Archaeological Assessment Reports can be found in Appendix A of the Construction Plan Report. Please note all Archaeological Assessments were undertaken prior to a change in the turbine numbering system. The turbines referenced below are based on the revised turbine numbering system.



7.2 Cultural Heritage

Section 5.8 of the Construction Report provides a summary of potential project effects on cultural heritage resources. The operations phase of the project will not result in additional effects on cultural heritage resources. Appendix B of the Construction Plan Report includes Cultural Heritage Self-Assessment Reports and the Cultural Heritage Assessment Report.

7.3 Natural Heritage Resources

7.3.1 Potential Negative Effects and Performance Objectives

The Natural Heritage Assessment Reports identified and assessed the significance of impacts to natural features within 120 metres of project components. Specifically, natural heritage investigations included a Records Review, Evaluation of Significance and Site Investigations. Please refer to that report for further details regarding natural heritage features in the project location. The natural heritage assessment report package should be referred to for detailed description of natural features located within 120 metres of project components.

Impacts to natural heritage features during the operations phase are generally related to noise emissions from the operation of the turbines and bird or bat mortality from contact with turbine blades or other project components. Potential impacts to birds and bats and the related monitoring programs are addressed in the *Post Construction Monitoring Plan* that is included as part of the Natural Heritage EIS Report. Dust emissions from access road use for routine maintenance or accidental spills may also impact natural heritage features.

The performance objectives in respect to mitigating environmental effects include:

- No spills
- Limit operations related to vehicle use to minimize greenhouse gas and dust emissions
- Limit noise to minimize disturbance to adjacent natural heritage features
- No wildlife road kills from use of vehicles for project maintenance
- Meet the mortality threshold outlined in the Post-Construction Monitoring Plan.

7.3.2 Mitigation Strategy

Maintenance activities during the operations phase will follow relevant procedures and best practices outlined in the Construction Plan Report and in the Facility Operations Plan and Emergency Response and Communications Plans in this Design and Operations Report.



7.4 Surface and Groundwater

7.4.1 Potential Negative Effects and Performance Objectives

Project components have been sited to minimize adverse effects to water bodies. Refer to the Water Assessment Report and the Water Body Report. During project operations, there is minimal potential for erosion, sedimentation and accidental spills to negatively affect groundwater, water bodies and aquatic resources.

The performance objective will be to have no spills, erosion or sediment transport during the operations phase of the project.

7.4.2 Mitigation Strategy

Operations staff will monitor during the operations period for sedimentation, drainage issues and accidental spills. In the case of unforeseen maintenance, DWP will cease activities in the immediate vicinity. Maintenance activities will follow procedures outlined in the Construction Plan Report and in the Water Bodies Assessment Report and Water Report, and DWP will obtain necessary permits and approvals for work within or near water bodies.

7.5 Air Quality, Odour and Dust

7.5.1 Potential Negative Effects and Performance Objectives

Air emissions of greenhouse gases and fugitive dust emissions will occur from intermittent use of equipment and vehicles to access the site and conduct turbine maintenance. Operation of the project components will not cause significant odour or dust emissions.

The performance objective will be to minimize magnitude and duration of emissions, reduce dust emissions to the greatest extent possible and receive no complaints.

7.5.2 Mitigation Strategy

Emissions from the operations phase of the project are expected to be negligible compared to background conditions. DWP personnel will employ best practices to minimize emissions, including avoiding unnecessary idling, maintaining vehicles in good overall working condition, and suppressing dust as required and minimizing vehicle travel on exposed soils.



7.6 Noise

7.6.1 Potential Negative Effects and Performance Objectives

Sound will be emitted during the operations phase of the project from the wind turbines, transformers, vehicles and maintenance equipment. Noise can cause sensory disturbance to wildlife and people nearby.

The performance objective will be to maintain noise levels at receptor locations no greater than 40 dBA and to receive no noise complaints.

Please refer to **Figure 4** for a map showing all receptors. Sound emission levels can be found in the Noise Study Report, included as **Appendix C** of this report.

7.6.2 Mitigation Strategy

Adherence to setbacks from noise receptors in the project site plan is the primary means to mitigate noise impacts. A *Noise Study Report*, completed in accordance with *Ontario Regulation 359/09* determined that the predicted noise at non-participating receptors will not exceed 40 dBA. Routine maintenance of turbines and transformer substations will ensure that turbines are operating properly and according to the manufacturer's acoustic specifications. Maintenance vehicles will be kept in good working condition to minimize noise emissions, and maintenance operations with the potential to create excessive noise will be restricted to regular business hours. Project operations will adhere to local noise by-laws and all activities that generate noise (including road construction) will occur within the hours of 6:00 a.m. and 11:00 p.m., as per the Township of Melancthon Excessive Noise By-law 31-2002.

7.7 Land Use and Resources

7.7.1 Potential Negative Effects and Performance Objectives

Project lands and surrounding lands are primarily agricultural, and there are no public recreation spaces in the project area. See **Appendix C** regarding potential noise effects of the project. Surrounding land uses would remain unchanged during project operation; however, the local viewscape will be disrupted by the presence of the turbines.



Performance objectives will be to minimize disturbance and disruption to existing adjacent land uses. The project will have positive effects on the local economy.

7.7.2 Mitigation Strategy

Project components were sited in consultation with the public to minimize the impact on neighboring land uses. Mitigation measures with respect to noise and dust are discussed in earlier sections.

7.8 Provincial and Local Infrastructure

7.8.1 Potential Negative Effects and Performance Objectives

There will be a negligible increase in truck traffic during the operations and maintenance phase for regular operations and maintenance. In the case where replacement of large project components is required, permits for unconventional loads may be required from Ministry of Transportation, Ontario (MTO). Refer to the Construction Plan Report for potential effects on municipal or provincial infrastructure resulting from delivery of project components. Wind turbines may also interfere with telecommunications systems, including radio and television broadcast signals, cellular networks and airport communication systems.

The performance objectives will be to minimize disturbance to the above infrastructure.

7.8.2 Mitigation Strategy

DWP will consult with MTO, Dufferin County and/or Melancthon Township regarding any required permits for unconventional loads, and notify local residents in advance. DWP has consulted with all agencies and licensed providers to identify likely effects to telecommunications networks and airport communication systems.



7.9 Waste Management

7.9.1 Potential Negative Effects and Performance Objectives

Accidental spills and improper disposal of waste have the potential to contaminate on-site soil and water resources.

The performance objectives will be to ensure proper storage and disposal of waste material and to have no accidental spills.

7.9.2 Mitigation Strategy

Please refer to the Spills Response Plan in **Section 9.3.1** for details on chemical and hazardous material storage, handling and spills response.

7.10 Public Health and Safety

7.10.1 Potential Negative Effects and Performance Objectives

Structural failure, falling ice and extreme weather events present a potential public health risk if not adequately mitigated and monitored. The performance objective is to have no structural failures and no impacts to human health from ice throw.

7.10.2 Mitigation Strategy

Public health risks have been minimized through adherence to required setbacks. Structural failure will be prevented through proper maintenance, monitoring of operation and use of lightning protection systems. Turbines will automatically shut down in the event of weight imbalances, and signage will indicate areas where icing could occur. Project components have been designed to withstand extreme weather events, and can be shut down remotely as required.