

Appendix B

Summary of Potential Environmental Effects and the Environmental Effects Monitoring Plan

Appendix B: Potential Environmental Effects and the Environmental Effects Monitoring Plan during Construction

Environmental Feature	Potential Effect	Performance Objective	Mitigation Strategy	Monitoring Plan and Contingency Measures	Net Effects
Heritage and Archaeological Resources					
Protected Properties and Heritage Resources	<ul style="list-style-type: none"> 24 built heritages resources and four cultural heritage landscapes (CHL) have been identified within the Project Study Area. Potential negative effects to 8 of the built heritage resources and three of the CHL. Three protected properties are located within the Project Study Area; potential negative impacts include damage or destruction of protected features and direct or indirect obstruction of significant views. 	<ul style="list-style-type: none"> Minimize potential impacts to protected properties and heritage resources. Avoid the use of protected properties and heritage resources. 	<ul style="list-style-type: none"> Avoid construction within a 50 m bufferzone of identified heritage resources and protected properties. Prior to construction a construction assessment will be completed for individual buildings and buildings and resources within cultural heritage landscapes identified in the Heritage Assessment and Protected Properties Reports. The assessment will be conducted by a qualified vibration analyst who has experience conducting construction assessments to determine vibration impacts for similar buildings and resources. If within 50m bufferzone, document stone walls along Front Road, at the Pentland Cemetery and at the intersection of Emerald 40 Foot Road and Second Concession Road. Prior to construction within 50 m bufferzone of the Trinity United Church and Neilson's Store, recommended that maximum acceptable vibration or PPV levels for each building be determined by a qualified engineer. 	<ul style="list-style-type: none"> Monitor construction activities to ensure PPV levels are not exceed. Cease construction activities if PPV levels are exceeded and reassess solution to ensure compliance with PPV levels. Assess stone walls along Front Road, at the Pentland Cemetery and at the intersection of Emerald 40 Foot Road and Second Concession Road, periodically to ensure no damage is occurring. Evaluate stone wall following construction ensure no damage has occurred. Any damage to the stone wall should be repaired immediately following construction activities. 	<ul style="list-style-type: none"> Following mitigation strategies will minimize net effects.
Archaeological Resources (including both marine and land resources)	<ul style="list-style-type: none"> Encounter non-documented archaeological resources during construction activities such as excavation and component installation. 	<ul style="list-style-type: none"> Minimize potential for disturbance. 	<ul style="list-style-type: none"> All work within the vicinity of a significant archaeological find would be suspended and a Ministry of Tourism and Culture archaeologist and aboriginal communities would be contacted. Recommendations from the marine archaeological assessment included; <ul style="list-style-type: none"> Avoid the Skiff Wreck site and apply a 100 m buffer surrounding the wreck. Avoid the unidentified timber feature with a minimum buffer of 40 m. Avoid the North Amherst Wreck with a buffer of 100 m. 	<ul style="list-style-type: none"> In the event that human remains are encountered or suspected of being encountered before or during construction, all work would stop immediately. Notification would then be made to the Ontario Provincial Police or local police. 	<ul style="list-style-type: none"> No net effects are anticipated to known archaeological resources during construction.
Natural Heritage Resources					
Significant Wetlands	<ul style="list-style-type: none"> Two Provincially Significant Wetlands were identified within 120 m of the Project Location. 18 unevaluated wetlands within 120 of the Project Location are treated as significant for the NHA. No direct loss of significant wetland habitat or function. Degradation of wetland through dust, erosion and/or sedimentation. Changes in surface water flow patterns which impacts vegetation growth. Contamination through accidental spills. Increased run-off during precipitation events. New edge creation by vegetation removal close to wetlands. 	<ul style="list-style-type: none"> Minimize potential impacts to significant wetlands. No direct loss of significant wetland habitat. Minimize dust generation, prevent erosion and sedimentation. Maintain existing surface water flow patterns. Manage the risk of accidental spills. Avoid encroachment into significant wetlands. 	<ul style="list-style-type: none"> No wetland encroachment is permitted. Implementation of a sediment and erosion protection plan. The construction contractor will ensure that no construction disturbance occurs beyond the staked limits and that sensitive areas adjacent to the work areas are not disturbed. The boundaries of all wetlands within 30 m of the proposed construction area will be flagged / staked in the field by a qualified ecologist prior to construction to assist with the demarcation of the construction area, to ensure construction activities avoid these sensitive areas, and to assist with the proper field installation of E&S controls. Workers will be warned not to trespass beyond the boundary of the marked area. Silt barriers (e.g., fencing) will be erected along the edge of wetland boundary. Storage of fuel and activities with the potential to cause contamination will occur in properly protected and sealed areas. In the event of an accidental spill, the MOE Spills Action Centre will be contacted and emergency spill procedures 	<ul style="list-style-type: none"> Check silt fencing along the periphery of significant wetlands daily when construction activities occur within the immediate vicinity of significant woodlands and when inclement weather is anticipated (i.e. rain events). Ongoing monitoring of access roads within 30 m of significant wetlands when construction activities occur within the vicinity. Check that seed grows in areas of disturbance within one growing season. Upon completion of grading or installation of culverts and after rain event ensure that surface water drainage patterns are consistent with drainage patterns that occurred before grading. A detailed Construction Emergency Response and Communications Plan will be prepared by the construction contractor which will contain procedures for spill contingency and response plans, spill response training, notification procedures, and necessary cleanup materials and equipment. 	<ul style="list-style-type: none"> Short-term, temporary in duration and mitigable through the use of standard site control measures.

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			<ul style="list-style-type: none"> implemented immediately. As appropriate, and prior to construction, the limits of vegetation clearing will be staked in the field. Dust suppression methods (i.e. watering) will be implemented as required. Re-vegetate disturbed areas as soon as construction activity within the disturbed areas is complete. All maintenance activities, vehicle refueling or washing and chemical storage will be located more than 30m from wetlands. Where possible, and as appropriate, access roads will be constructed at or near existing grade to maintain surface flow contributions to wetlands. Limit changes in land contours to ensure natural drainage patterns are maintained. Where new access roads cross existing drainage features, design will include culverts or other appropriate structures of sufficient size to accommodate flow. Erosion and sediment control measures will be installed to minimize erosion impacts to significant natural features. 		
Areas of Natural and Scientific Interest	<ul style="list-style-type: none"> The Amherst Bay Life Science ANSI is located within 120 m of the Project Location. Indirect impacts such as dust generation, sedimentation and erosion. Potential for accidental spills. Vegetation clearing. 	<ul style="list-style-type: none"> Minimize disturbance to ANSI. Manage the risk of accidental spills. 	<ul style="list-style-type: none"> Implement sediment and erosion control measures (e.g. perimeter silt fencing, mud mats, check dams and sediment bags). Erect silt barriers (e.g. fencing) along wetland and woodland community edges located within 30 m of construction areas. Where culverts are proposed within 30 m of a significant natural feature, enhanced sediment and erosion control measures (i.e. straw bales, double rows of sediment fencing, check dams) will be installed. In the event of an accidental spill, the MOE Spills Action Centre will be contacted and emergency spill procedures implemented immediately. 	<ul style="list-style-type: none"> Erosion and Sediment controls will be installed prior to construction and will be maintained during construction to ensure their effectiveness at protecting the adjacent significant natural features. A detailed Construction Emergency Response and Communications Plan will be prepared by the construction contractor which will contain procedures for spill contingency and response plans, spill response training, notification procedures, and necessary cleanup materials and equipment. 	<ul style="list-style-type: none"> Short-term, temporary in duration and mitigable through the use of standard site control measures.
Valleylands	<ul style="list-style-type: none"> As no valleylands were identified, there are no anticipated impacts. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> None
Significant Woodlands	<ul style="list-style-type: none"> 15 significant woodlands are located within 120 m of the Project Location. Three significant woodlands are within the Project Location. Minimal amount of proposed tree removal. Indirect impacts such as dust generation, sedimentation, and erosion from construction activities. Removal of vegetation resulting in loss of species diversity, fragmenting available habitat, introduction or spread of invasive species, and temporary disruption to movement of wildlife. Loss of woodland habitat. Accidental damage to root zones. Accidental damage to trees or damage to limbs. Contamination through accidental spills during construction. 	<ul style="list-style-type: none"> Remove minimal amount of woodland. Prevent damage to the root zones. Prevent accidental damage to trees or damage to limbs. Minimize dust generation, prevent sedimentation and erosion. Manage the risk of accidental spills. 	<ul style="list-style-type: none"> Clearly delineate work area using a barrier such as a silt fence or stakes. Workers will be advised not to trespass beyond the boundary of the marked area. Erect silt fencing to prevent sedimentation within critical root zones Implement a sedimentation and erosion control plan. Any issues should be resolved in a timely fashion. Implement dust suppression (i.e. watering) on access roads as required. Re-vegetate disturbed areas as soon as construction activity within the disturbed areas is complete. All maintenance activities, vehicle refueling or washing and chemical storage will be located more than 30m from significant woodlands. Implement infiltration (i.e. minimize paved surfaces and design roads to promote infiltration) techniques to the maximum extent possible to avoid changes in soil moisture and compaction. Erosion and sediment control measures will be installed to 	<ul style="list-style-type: none"> Check silt fencing along the periphery of significant woodlands daily when construction activities occur within the immediate vicinity of significant woodlands and when inclement weather is anticipated (i.e. rain events). Check silt fencing along the limits of construction through Woodland 9 daily when construction activities occur within the immediate vicinity. Monitor access roads within 30 m of significant woodlands on an ongoing basis when construction activities are in the immediate vicinity of woodlands. After seeding an area, check that the seed grows in areas of disturbance within one growing season. Any tree limbs or root zones that are accidentally damaged by construction activities will be pruned using proper arboricultural techniques. 	<ul style="list-style-type: none"> Short-term, temporary in duration and mitigable through the use of standard site control measures.

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			minimize erosion impacts to significant natural features.	<ul style="list-style-type: none"> Any build-up of sediment beyond the silt fence will be cleaned up and removed to avoid risk of further spread of sediment. Increase frequency of dust suppression measures. Replant areas where seed does not grow to ensure vegetation establishes within the growing season. Keep emergency spill kits on site. Implement MOE spill action plan if necessary. Dispose of waste material by authorized and approved offsite vendors. A detailed Construction Emergency Response and Communications Plan will be prepared by the construction contractor which will contain procedures for spill contingency and response plans, spill response training, notification procedures, and necessary cleanup materials and equipment. 	
Provincial Parks and Conservation Reserves	<ul style="list-style-type: none"> As no Provincial Parks and Conservation Reserves were identified, there are no anticipated impacts 	• N/A	• N/A	• N/A	• None
Significant Wildlife and Wildlife Habitat (includes birds, bats, amphibians and other wildlife)	<ul style="list-style-type: none"> Significant wildlife habitat within 120 m of the Project Location includes Raptor Wintering Area, Turtle Overwintering Area, Migratory Landbird Stopover Area, Old Growth Forest, Amphibian Breeding, Marsh Breeding Birds, Woodland Area-Sensitive Breeding Bird Habitat, Open Country Breeding Bird Habitat and Short-eared Owl Habitat and Shrub/Early Successional Bird Breeding Habitat. Loss of habitat. Disturbance due to increased traffic and noise. Disturbance or disruption of breeding birds. Dust generation, sedimentation and erosion during construction. Disturbance or direct removal of vegetation. Contamination through accidental spills during construction or operation. Woodland degradation due to dust or siltation. Wetland degradation due to dust, siltation or accidental spill. 	<ul style="list-style-type: none"> Habitat compensation measures. Prevent habitat avoidance/ disturbance caused by noise and dust generation. Minimize dust generation and siltation, prevent sedimentation and erosion. Manage the risk of accidental spills. Avoid harm to breeding birds or damage to nests. Limit vegetation clearing in grassland habitat. Minimize disturbance to wildlife and wildlife habitat. 	<ul style="list-style-type: none"> Development of a management strategy with agencies, interested landowners and other interested parties to implement some of the recommendations provided in the Owl Woods Management Plan (Ecological Services 2011). The boundaries of the limit of construction within grassland habitat will be delineated and flagged / staked in the field by a qualified ecologist prior to construction to assist with the demarcation of the construction area, to ensure construction activities do not encroach beyond the limited construction area. Avoid construction activities during sensitive periods (i.e. the breeding season). Minimal alteration to surface water drainage patterns and installation of culverts as required to maintain flows. Limit tree clearing in hedgerows to maintain perch and roost sites. Implement dust suppression (i.e. watering) on access roads as required. Best management practices such as silt fencing, will be employed to minimize negative impacts on wildlife habitats and species that use them. Silt fencing will occur where buildable areas are located within 30 m of significant wildlife habitat. Implement wetland mitigation measures in turtle overwintering areas. Where possible, and as appropriate, access roads should be constructed at or near existing grade. No refuelling or maintenance of vehicles in, or adjacent to the feature. In the event of an accidental spill, the MOE Spills Action Centre should be contacted and emergency spill procedures implemented immediately. The boundaries of the amphibian breeding habitat at AB4 should be delineated and flagged / staked in the field by a qualified ecologist accurately demark where erosion and siltation controls should be installed. 	<ul style="list-style-type: none"> Check the limits of construction through significant grassland habitat daily when construction activities are ongoing in grassland habitat. Ongoing monitoring of access roads during construction. Implement wetland monitoring measures in turtle overwintering areas. Should vegetation clearing be required during the breeding bird season, prior to construction, surveys will be undertaken to identify the presence/absence of nesting birds. If a nest is located, a designated buffer will be marked off to ensure no construction activity will be allowed while the nest is active. Monitoring of Short-eared Owl behavior by qualified biologist bi-weekly during construction activities throughout the breeding season in proximity to nesting territories. Check silt fencing along the periphery of significant shrub/early successional feature to make sure it is fully functional daily when construction activities occur within the immediate vicinity and when inclement weather is anticipated (i.e. rain events). Monitor access roads within 30 m of woodlands ongoing during construction activities in the immediate vicinity. Increase frequency of dust suppression measures Any limbs or root zones that are accidentally damaged by construction activities will be pruned using proper arboricultural techniques Restoration of damaged or degraded wetland habitat, which may involve reseeding with a 	<ul style="list-style-type: none"> Limited removal of vegetation. Disturbance impacts will be temporary and short-term in duration. Direct loss of a relatively small amount of habitat.

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			<ul style="list-style-type: none"> Limited encroachment into the marsh breeding bird habitat and area-sensitive breeding bird habitat. Complete vegetation removal outside of the breeding bird and Short-eared Owl breeding season March 1st to July 31st. Restricted construction activities in proximity to potential Short-eared Owl breeding territories. Erect silt fencing to prevent sedimentation. Implement a sedimentation and erosion control plan. Any issues should be resolved in a timely fashion. All maintenance activities, vehicle refueling or washing and chemical storage will be located more than 30m from significant woodlands. Erosion and sediment control measures will be installed to minimize erosion impacts to significant natural features. Rehabilitation of access roads back to grassland after decommissioning, in consultation with the landowners. See mitigation measures under 'Significant Wetland'. See mitigation measures under 'Significant Woodland'. 	<p>native wetland seed mix.</p> <ul style="list-style-type: none"> Where Short-eared Owl territories have been identified in the same year as construction, weekly monitoring will be undertaken to measure potential avoidance behaviours, with weekly reports of findings to MNR. See monitoring measures under 'Significant Wetland' See monitoring measures under 'Significant Woodland'. 	
<p>Vegetation (not considered as part of a significant natural feature)</p>	<ul style="list-style-type: none"> Removal of vascular plants and portions of plant communities in hedgerows and the municipal road allowance. 	<ul style="list-style-type: none"> Minimize disturbance to natural features. Manage the risk of accidental spills. 	<ul style="list-style-type: none"> As appropriate and prior to construction, the limits of the vegetation clearing will be staked in the field. The Construction Contractor will ensure no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed. To the extent practical, tree and/or brush clearing and grassland removal will be completed prior to, or after, the core nesting season for breeding birds (May 1 to July 31). Should clearing be required during the breeding bird season, prior to construction, surveys will be undertaken by a qualified biologist to identify the presence/absence of nesting birds or breeding habitat. Prior to the start of construction activity, the topsoil/seedbank will be stripped and preserved; material will be reapplied in suitable rehabilitation areas post construction. Excavated soil from crane pads will be reused on site, as feasible. Temporary laydown areas will be returned to pre-construction conditions. Following construction, topsoil in areas of temporary disturbance will be replaced/restored. Any accidentally damaged trees should be pruned through the implementation of proper arboricultural techniques. No vehicle traffic on exposed soils, and no heavy machinery traffic on slopes. Re-vegetate temporary access roads or crane paths to pre-construction conditions as soon as possible. Maintain existing vegetation buffers around water bodies. Develop a spill response plan, train staff on appropriate procedures, and keep emergency spill kits on site. Dispose of waste material by authorized and approved offsite vendors. Implement infiltration techniques to the maximum extent possible. 	<ul style="list-style-type: none"> Regular monitoring of the limits of clearing to ensure the objective of minimal disturbance. Post-construction monitoring to ensure re-vegetated areas are functioning properly. Additional replanting/restoration in the event that previous works were unsuccessful. In terms of accidental spills or releases to the environment, standard containment facilities and emergency response materials would be maintained on-site as required. As appropriate, spills would be reported immediately to the MOE Spills Action Centre. Reseeded areas will be monitored for one year to ensure regeneration success. A detailed Construction Emergency Response and Communications Plan will be prepared by the construction contractor which will contain procedures for spill contingency and response plans, spill response training, notification procedures, and necessary cleanup materials and equipment. 	<ul style="list-style-type: none"> Implementation of mitigation measures ensure anticipated adverse effects are minimized or avoided during construction.

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			<ul style="list-style-type: none"> Design roads to promote infiltration. Minimize grading activities to maintain existing drainage patterns, to the fullest extent possible. Control rate and timing of water pumping, and restrict taking of water during periods of extreme low flow. Implementation of storm water discharge best management practices. 		
Water Bodies and Aquatic Resources					
Groundwater	<ul style="list-style-type: none"> Potential for dewatering in proposed construction areas for foundations, transformer pads, underground collector lines, data cabling and transmission lines. Potential contamination from accidental spills. Groundwater interference to local private and/or municipal water well supplies (quantity and quality), function of identified groundwater discharge features (e.g., wetland, watercourses), and the rate, quality of, and location that pumped water is released back into the environment. 	<ul style="list-style-type: none"> Manage the risk of accidental spills. No groundwater interference. 	<ul style="list-style-type: none"> If groundwater is encountered during excavations, good construction practices will be used, such as minimizing the length of time that the excavation is open and monitoring seepage into the excavation. Should pumping be required to dewater excavated areas, water will be directed into the nearest drain or spread across the buildable area and appropriate energy dissipation techniques will be used to reduce the potential for erosion and scouring. Discharge piping will be free of leaks and will be properly anchored to prevent bouncing and snaking during surging. Seepage area to be used for dewatering will be clearly marked with flagging and/or snow-fencing prior to work commencing During site preparation, silt fencing will be included to retain sediments on site so they do not enter any significant natural feature. All sediment control structures will be inspected regularly, and repaired/maintained as necessary. All water pumped during dewatering activities will be directed away from significant natural features and not directly into wetlands. The use of sediments bags (or filter rings) will be used as appropriate to filter out suspended sediment prior to discharge. If water is required for the batch plant in excess of 50,000l/day a PTTW will be obtained from the MOE. 	<ul style="list-style-type: none"> The rate of discharge will be monitored to ensure no erosion or flooding occurs. If energy dissipation measures are found to be inadequate, the rate of dewatering will be reduced or ceased until satisfactory mitigation measures are in place. In terms of accidental spills or releases to the environment, standard containment facilities and emergency response materials would be maintained on-site as required. Refuelling, equipment maintenance, and other potentially contaminating activities would occur in designated areas, and as appropriate spills would be reported immediately to the MOE Spills Action Centre. A detailed Construction Emergency Response and Communications Plan will be prepared by the construction contractor which will contain procedures for spill contingency and response plans, spill response training, notification procedures, and necessary cleanup materials and equipment. If water is required for the the batch plant in excess of 50,000l/day a PTTW will be obtained from the MOE. 	<ul style="list-style-type: none"> It is anticipated any potential effects would be short term in nature and have little to no effect on groundwater quality and adjacent private water wells.
Surface Water, Fish, and Fish Habitat ¹	<ul style="list-style-type: none"> Short-term increase in turbidity from runoff and soil erosion. Water quality and habitat disturbance effects to aquatic habitat. Potential impacts related to the installation and maintenance of culvert crossings, including disturbance to aquatic biota and habitat during installation, permanent enclosure of portions of a watercourse, loss of bed material within the length of the culvert, and changes to riparian vegetation within road allowance. Excavations, grading and other construction activities could affect fish and fish habitat, including gamefish/sportfish and their habitat. Erosion and sedimentation from site disturbance and dewatering. Collapse of the punch or bore hold from under the stream. 	<ul style="list-style-type: none"> Manage the risk of accidental spills. No erosion or sedimentation 	<ul style="list-style-type: none"> No wind turbines have been located within 30 m of the average annual high water mark of a lake or a permanent or intermittent watercourse. All materials and equipment for site preparation and Project construction shall be operated and stored in a manner that prevents any deleterious substance from entering the water. Sediment and erosion control measures should be implemented prior to construction and maintained during the construction phase. Culverts would be designed and installed such that there is no restriction of flows through the culvert Collector line crossing will be completed via horizontal directional drill activities to avoid disturbance of the surface water body. Applicable DFO Operational Statements to be followed to protect fish and fish habitat. All in-water work would be completed with MNR should 	<ul style="list-style-type: none"> As appropriate, an Environmental Monitor Construction Contractor representative would be on-site during installation of Project components that could potentially affect aquatic habitats to ensure compliance with specifications, site plans and permits. The Environmental Monitor should ensure that bank, bed and floodplain conditions are restored to pre-construction conditions, where possible, following completion of the construction activities. Environmental monitoring following spring run-off the year after construction (first year of operations) should occur. If siltation to a watercourse occurs, related construction activities should cease immediately 	<ul style="list-style-type: none"> Net effects are anticipated to be minor and short lived.

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	<ul style="list-style-type: none"> Disturbance of riparian vegetation, stream banks and bottom substrates. Disruption of sensitive fish life stages. Introduction of deleterious substances. Potential for accidental spills. Construction and installation of docks affecting fish habitat. 		<ul style="list-style-type: none"> have regard for in-water construction timing windows. Erect silt fence before grading begins (along water body edges located within 30 m of construction work areas). Direct runoff via swales and erosion control berms (where necessary). Install temporary rock check dams in swales where appropriate to help attenuate flows, reduce erosive velocities, and encourage sediment deposition. Immediately stabilize all disturbed areas not subject to construction activities within 30 days. Possible mitigation measures for dock construction: <ul style="list-style-type: none"> Measures listed in the DFO Operational Statement for Dock Construction Follow MNR in-water construction timing windows Work from barges where possible Shoreline restoration plan Sediment and erosion control Protection of water quality during construction Fish removal plan (for drilling of piles, construction of hydraulic lifts, etc.) Mitigation measures if trenching occurs: <ul style="list-style-type: none"> Clamshell armouring of cable to protect cable in shallow water and minimize trenching. Follow DFO Blasting Guidelines (if applicable) Follow MNR in-water construction timing windows Backfill trench using native materials Work from barges where possible Shoreline restoration plan Restoration of work area (removal of work platforms if required) Sediment control Protection of water quality during construction Fish removal plan Mitigation measures for directional drilling: <ul style="list-style-type: none"> Measures listed in the DFO Operational Statement for High-Pressure Directional Drilling Follow MNR in-water construction timing windows Isolation of the exit location for the protection of water quality and control of drilling fluids (sediment control silt curtain) Restoration of any in-water work areas Restoration of shoreline Sediment control 	<ul style="list-style-type: none"> until the situation is rectified. Inspection of the erosion and sediment controls at least weekly and during and immediately following after each significant rainfall events or weekly, whichever is more frequent. Erosion and sediment control measures to remain securely installed until all areas of the construction site have been permanent vegetation measures are successful and areas are stabilized. Additional monitoring requirements as may be identified in Conservation Authority permits. Conditions for approval in compensation strategies and/or permits from Fisheries and Oceans Canada and/or CRCA, as applicable, will be followed and would likely include conditions of approval such as construction and post-construction monitoring. A detailed Construction Emergency Response and Communications Plan will be prepared by the construction contractor which will contain procedures for spill contingency and response plans, spill response training, notification procedures, and necessary cleanup materials and equipment. 	
Air Quality and Environmental Noise					
Air Emissions	<ul style="list-style-type: none"> Emissions from construction activities, including equipment and vehicles, temporary concrete batching facilities and vehicles.. 	<ul style="list-style-type: none"> Minimize duration and magnitude of emissions. Minimize disturbance to existing land uses. 	<ul style="list-style-type: none"> Using multi-passenger vehicles to the extent practical. Avoid idling vehicles. Complete an Emissions Summary and Dispersion Modeling (ESDM) Report for the temporary concrete batching facility. Equipment and vehicles would be maintained in good working order with functioning mufflers and emission 	<ul style="list-style-type: none"> Adherence to Complaint Response Protocol. All vehicles identified through the monitoring program that fail to meet the minimum emission standards would be repaired immediately or replaced as soon as practical. 	<ul style="list-style-type: none"> Any net effects are expected to be short-term in duration and highly localized.

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			control systems as available. <ul style="list-style-type: none"> Meet the emissions requirements of the MOE and/or MTO. 		
Dust and Odour Emissions	<ul style="list-style-type: none"> Dust emissions from construction activities and high winds. 	<ul style="list-style-type: none"> Minimize disturbance to existing land uses. 	<ul style="list-style-type: none"> Applying dust suppressants (e.g. water, calcium chloride). Maintain adequate control of dust on sites in close proximity to residences. Enforce speed limits for trucks on site as appropriate. Re-vegetate exposed soils as soon as possible. As appropriate, protect stockpiles of friable material with a barrier or windscreen. Consult with local authorities prior to application of dust suppressants (i.e water) on public access roads. Ensure dust generation is monitored and controlled in areas of sensitive land use. Ensure MOE Environmental Compliance Approval (ECA) is in place 	<ul style="list-style-type: none"> Adherence to Complaint Response Protocol. Adherence to conditions of ECA. 	<ul style="list-style-type: none"> Short-term and localized.
Environmental Noise	<ul style="list-style-type: none"> Noise emitted from construction equipment and activities such as excavation, drilling, and operation of construction vehicles and temporary concrete batching facility. 	<ul style="list-style-type: none"> Minimize noise emissions to a reasonable extent Noise levels arising from equipment to be compliant with sound levels established by the MOE and municipal by-laws (if applicable). 	<ul style="list-style-type: none"> All engines associated with maintenance equipment would be equipped with mufflers and/or silencers in accordance with MOE and/or MTO guidelines and regulations. Complete an Emissions Summary and Dispersion Modeling (ESDM) Report for the temporary concrete batching facility. To the greatest extent possible, activities that could create excessive noise would be restricted to construction daytime hours . Equipment and vehicles would be maintained in good working condition to limit engine noise. Avoid idling of vehicles. The Construction Contractor would be required to use noise abatement equipment, in good working order, on all heavy machinery used on the Project. Construction will take place generally during regular construction hours. Extended hours may be needed for safety reasons or to meet other project commitments. Ensure MOE Environmental Compliance Approval (ECA) is in place 	<ul style="list-style-type: none"> Adherence to Complaint Response Protocol. If construction activities that might cause excessive noise must be completed outside of normal time frames discussion and authorization from the Township will be required pertaining to these unplanned circumstances. In addition, adjacent residents will be notified in advance as required. Adherence to conditions of ECA. 	<ul style="list-style-type: none"> Short-term in duration and temporary. Minimized through the implementation of good site practices, transportation planning, and communication with the Township and community.
Land Use and Socio-Economic Resources					
Existing Land Uses	<ul style="list-style-type: none"> Change in use from agricultural to renewable energy development on lands used during construction and operation. Lands not immediately effected by the Project will remain in their current land use. Adverse effects to artificial drainage. Soil erosion or crop loss on adjacent lands due to flooding as a result of temporary or permanent disruption to water flow. Encounter and disruption of contaminated soils. 	<ul style="list-style-type: none"> Minimize disturbance to agricultural lands and operations. Minimize land required for the Project. Avoid impacting artificial tile drains. Minimize disturbance to drainage patterns. Properly manage contaminated soils if encountered. 	<ul style="list-style-type: none"> Where possible, construct site Project infrastructure in such a way to minimize disturbances to existing agricultural lands and operations. Construction activities would be restricted to the delineated construction areas. Waste generated by the project to be deposited in facilities off Amherst Island. A wet soil shutdown practice would be implemented when agriculturally productive lands are impacted by heavy rainfalls. Following the completion of construction, as appropriate, temporary workspaces would be graded and de-compacted (if required), the topsoil replaced, and the area left as close to pre-existing condition as possible. Silt fence and straw bales (or appropriate substitutes) would be installed where appropriate. 	<ul style="list-style-type: none"> Following the completion of construction, as appropriate, temporary workspaces would be graded and de-compacted (if required), the topsoil replaced, and the area left as close to pre-existing condition as possible.. An agricultural tile drainage contractor would carry out any re-alignment works as well as repair tiles and/or drains that may experience construction related damage. 	<ul style="list-style-type: none"> Any net effects are expected to be short-term until mitigation and corrective actions are completed. As appropriate, temporary construction areas would be rehabilitated following construction and restored to agricultural use.

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Environmental Feature	Potential Effect	Performance Objective	Mitigation Strategy	Monitoring Plan and Contingency Measures	Net Effects
			<ul style="list-style-type: none"> • Topsoil salvage and/or replacement should be avoided during heavy precipitation or extremely windy conditions. • Silt control fencing should be installed, where identified, and maintained throughout construction and restoration until lands are fully stabilized. • Locations of crushed or severed tile drains would be recorded and flagged. • If a main drain, header tile, or large diameter tile is severed, a temporary repair should be made to maintain field drainage and prevent flooding of the work area and adjacent lands. • Severed tile drains that are not immediately repaired would be capped. After repair and prior to backfilling, the landowner would be invited to inspect the repair. • If flooding of adjacent agricultural land occurs as a result of a severed tile and subsequent soils are damaged or crops are lost, the impacted area would be rehabilitated as soon as possible. • • Where necessary, a qualified drainage tile contractor would be retained to identify reasonable drainage solutions. • Disruption to drainage ditches, culverts, field entrances, and fences would be repaired appropriately. • Communication with livestock owners regarding the need to erect temporary fencing around workspaces, installation of gates and/or to move the livestock to different fields for short periods of time. 		
Mineral, Aggregate, and Petroleum Resources	<ul style="list-style-type: none"> • No petroleum resources will be used on the Project Location. • As no potential effects are anticipated to existing mineral or aggregate resources, no mitigation measures are necessary. 	<ul style="list-style-type: none"> • No impacts to petroleum resources operations, existing minerals or aggregate resources. 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • No anticipated net effects.
Game and Fishery Resources	<ul style="list-style-type: none"> • Sensory disturbance to game species may occur due to noise from construction and decommissioning activities. 	<ul style="list-style-type: none"> • Minimize sensory disturbance to game and fishery resources. 	<ul style="list-style-type: none"> • Mitigation measures related to noise are outlined in 'Environmental Noise'. 	<ul style="list-style-type: none"> • Adherence to Complaint Response Protocol. 	<ul style="list-style-type: none"> • Construction noise is expected to be temporary and intermittent.
Provincial Plans, Policies, and Recreation Areas	<ul style="list-style-type: none"> • Possible interference with nearby recreational uses from traffic, dust and noise. 	<ul style="list-style-type: none"> • Minimize disturbance to recreational activities. 	<ul style="list-style-type: none"> • Mitigation measures related to noise are outlined in 'Environmental Noise'. • Mitigation measures related to dust are outlined in 'Dust and Odour Emissions'. • Mitigation measures related to traffic are outlined in 'Local Traffic'. 	<ul style="list-style-type: none"> • Adherence to Complaint Response Protocol. 	<ul style="list-style-type: none"> • Any adverse effects are anticipated to be short term and intermittent.
Local Traffic	<ul style="list-style-type: none"> • Short-term, localized disturbance to traffic patterns increases in traffic volume, and/or creation of potential traffic safety hazards. 	<ul style="list-style-type: none"> • Minimize disturbance to local traffic and ferry. 	<ul style="list-style-type: none"> • Implementation of a Traffic Management Plan from the Construction Contractor and discussions with Town ship. 	<ul style="list-style-type: none"> • Adherence to Complaint Response Protocol. • Communication with Township and community. 	<ul style="list-style-type: none"> • Temporary and intermittent.
Local Economy	<ul style="list-style-type: none"> • Potential increase in direct, indirect and induced employment. • Local economic benefits from land lease payments, local expenditures, municipal taxes, etc. • Disruptions to local businesses. 	<ul style="list-style-type: none"> • Create positive effects on local economy. 	<ul style="list-style-type: none"> • To the extent possible, Windlectric would source required goods and services from qualified local suppliers. • Disruptions in the vicinity of local businesses would be largely due to an increase in traffic, and would be short term and are not expected to affect use of these businesses. 	<ul style="list-style-type: none"> • None required. 	<ul style="list-style-type: none"> • A positive net effect is anticipated on the local economy during construction of the Project.
Existing Infrastructure					
Provincial and Municipal	<ul style="list-style-type: none"> • Abnormal wear on roads and/or requirements to upgrade 	<ul style="list-style-type: none"> • Minimize disturbance to 	<ul style="list-style-type: none"> • Consultation with MTO regarding any necessary 	<ul style="list-style-type: none"> • Pre and post construction road surveys will be 	<ul style="list-style-type: none"> • Limited, short-term effect on

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Environmental Feature	Potential Effect	Performance Objective	Mitigation Strategy	Monitoring Plan and Contingency Measures	Net Effects
Infrastructure	<ul style="list-style-type: none"> some intersections. Interference with local utilities. May be instances during maintenance activities where excess loads would require special traffic planning. Authorization from the MTO or Township may be required 	<ul style="list-style-type: none"> provincial, municipal, and other major infrastructure. 	<ul style="list-style-type: none"> agreements related to use of roads for transportation of Project materials in addition to obtaining the required permits for use of provincial highways. Detailed plans or agreements regarding upgrades, maintenance and/or repairs of the local roads and road rights-of-way during construction will be developed with the Township An agreement would be developed for use of the municipal road allowance for routing of the collector lines. Where there are existing distribution lines within the municipal road allowance, Windlectric will work with the Hydro One Networks Inc. to develop shared pole user agreements (if reasonable to do so). Drains superintendents (or equivalent) from the Township will be requested to attend site visits and be part of the discussions with the Conservation Authorities during the Fisheries Act permitting process for the Project. Locate all utilities within municipal road allowances prior to construction. 	<ul style="list-style-type: none"> conducted and Windlectric will be responsible for any required upgrades/repairs directly associated with Project construction as per agreement with the Township. Local roads would be restored to their pre-construction conditions to the satisfaction of local authorities as applicable to the agreement with Township. Some municipal roads requiring structural enhancement/upgrades may be left in their upgraded form if requested. Authorization will be obtained from the Township and/or MTO to implement road work activities once final transportation routes and requirements have been finalized. In the event that utilities within municipal road allowances are damaged as a result of the construction of the Project, Windlectric would rectify damages. Affected roadside ditches and drains would be repaired if required and monitored to ensure that they are functioning properly. 	<ul style="list-style-type: none"> infrastructure.
Navigable Waters	<ul style="list-style-type: none"> Temporary activity due to crossings. 	<ul style="list-style-type: none"> Avoid navigable waterways. Minimize length of disturbance to navigable waterways. 	<ul style="list-style-type: none"> Consultation with Transport Canada and permits (if required) will be obtained prior to construction. 	<ul style="list-style-type: none"> To be identified as part of any permits (if required). 	<ul style="list-style-type: none"> None
Telecommunication and Radar Systems	<ul style="list-style-type: none"> There are no anticipated significant effects to telecommunication/radar systems during the construction of the Project. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> None
Aeronautical Systems	<ul style="list-style-type: none"> Aeronautical obstruction. 	<ul style="list-style-type: none"> Minimize potential hazard to low flying aircraft. 	<ul style="list-style-type: none"> Once the turbines are erected (and prior to operation), turbine lighting will conform to Transport Canada standards. Nav Canada would be responsible for updating all aeronautical charts with the turbine locations. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No anticipated net effects to aeronautical systems.
Public Health and Safety					
Public Health and Safety	<ul style="list-style-type: none"> Increased traffic, limited dust emissions, general construction noise and unauthorized access of the public to the work sites. 	<ul style="list-style-type: none"> Ensure public health and safety. 	<ul style="list-style-type: none"> Implementing transportation planning and safety measures. Traffic Management Plan and a Health and Safety Plan would be prepared and implemented by the Construction Contractor. An Emergency Response and Communications Plan would be developed for the Project. See 'Dust & Odour Emissions' and 'Noise'. Land access would be controlled through signage and restricted to authorized personnel only. 	<ul style="list-style-type: none"> Consultation of the Emergency Response Plan with local emergency services personnel. Adherence to Complaint Response Protocol. 	<ul style="list-style-type: none"> With adherence to safety policies and procedures, there is minimal increased or new risk to public health and safety. Minimal increased or new risk to public health and safety.