



BENJAMINS MILL WIND PROJECT

Addendum to the Environmental Assessment Registration

—

December 20, 2022

—

Natural Forces Developments LP

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Candace Quinn

Environmental Assessment Officer
Environmental Assessment Branch
Nova Scotia Environment and Climate Change
Suite 2085, 1903 Barrington St
Halifax, NS
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Re: Additional Information Request Submission for the Benjamins Mill Wind Project

December 20, 2022

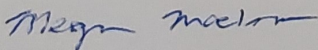
To Ms. Candace Quinn,

Natural Forces Developments Limited Partnership (Natural Forces) is presenting an addendum and associated appendices to the Environmental Assessment Registration Document registered on January 11, 2022 for the proposed Benjamin Mills Wind Project (Project). The Project is being developed in partnership with Wskijnu'k Mtmo'taqtuow Agency Limited (the Agency), a corporate body wholly owned by the 13 Mi'kmaw bands in Nova Scotia. Together, Natural Forces and the Agency are developing the Project and will co-own and operate the Project.

This document addresses the Minister's request for additional information issued on March 9, 2022. To facilitate the review, **Section 1.2** presents a table of concordance as a guidance through the eight points of further information requested by the Minister. This submission also identifies and describes any changes and updates to the proposed Project. All documentation is provided in hard copy and electronically. The electronic version is divided into separate documents to ensure clarity while satisfying the requirement that each document be no larger than 10 MB. A bank draft in the amount of the fee of \$5,573.20 as prescribed under the *Environment Act* has been provided with this submission.

Thank you for your time in reviewing the additional documentation. Please do not hesitate to contact me if further information is required or the reviewers have any questions.

Sincerely,



Megan MacIsaac
Project Developer
Natural Forces Developments Limited Partnership

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Appendix B: Vegetation Assessment

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Appendix E: Watercourse and Fish Habitat Assessment

Appendix F: Birds and Bird Habitat Assessment

Appendix G: Radar and Acoustic Monitoring Report

Appendix H: Bats and Bat Habitat Assessment

Appendix I: 2021 AC CDC Report

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Appendix K: Uranium avoidance and mitigation plan

Appendix L: Geoscience Research, Compilation and Site Visits Summary Report

Appendix M: Sound Level Assessment

Appendix N: Archaeological Resource Impact Assessment

Appendix O: Environmental Management and Protection Plan

Appendix P: Complaint Resolution Plan

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Appendix R: Surface Water Management Plan

Introduction

The Benjamins Mill Wind Project (the Project or the Undertaking) is being developed by Natural Forces Developments Limited Partnership (the Proponent or Natural Forces) on behalf of the Benjamins Mill Wind Limited Partnership, a partnership between the Proponent and Wskijnu’k Mtmo’taquow Agency Limited, a corporate body wholly owned by the 13 Mi’kmaw bands in Nova Scotia. The purpose of the proposed Undertaking is to construct up to 28 wind turbine generators (WTGs) with an installed capacity of up to 150 MW and their associated infrastructure on a mix of privately-owned and provincial Crown lands within the West Hants Regional Municipality in Hants County. The Project will likely be built in multiple phases based on sizing of Power Purchase Agreements (PPAs) that are secured over time.

An Environmental Assessment Registration Document (the EARD) for the Project was submitted on January 11, 2022, to the Minister of Environment and Climate Change in Nova Scotia (the Minister). In conclusion to the thorough review of the EARD, the Minister issued a decision on March 9, 2022 of Additional Information Required (the AIR).

This document is an Addendum to the EARD (the Addendum) and is in response to the AIR requested by the Minister of Environment and Climate Change. As such, this Addendum provides responses to each information request listed in the AIR, including additional studies to evaluate the potential or perceived environmental impacts caused by the Project.

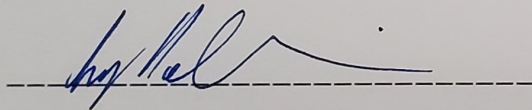
This Addendum outlines the additional information requested by the Minister and is aligned with discussions and feedback from regulatory stakeholders. Relevant information from the EARD pertaining to the AIR has been included in this Addendum to facilitate review.

1.1 Proponent Description

Name of Project	Benjamins Mill Wind Project
Name of Proponent:	Natural Forces Developments Limited Partnership
Joint Registry of Stocks Full Name of Proponent	Natural Forces Developments GP LTD., Natural Forces Technologies Inc., 3261507 Nova Scotia Limited, Natural Forces Wind Inc., and Natural Forces Assets Limited Partnership, carrying on business as Natural Forces Developments Limited Partnership
Joint Registry of Stocks ID Number	3324453
Mailing and Street Address of Proponent	1205-1801 Hollis Street, Halifax, NS, B3J 3N4
Director – Canadian Developments	Amy Pellerin
Proponent’s Contact Person for the purposes of this EA Registration	Megan MacIsaac Project Developer at Natural Forces mmacisaac@naturalforces.ca (902) 422-9663 (Phone) (902-422-9780) (Fax) naturalforces.ca

Signed by Amy Pellerin

On behalf of Natural Forces Developments Limited Partnership in acceptance of the contents of the Addendum to the Environmental Assessment Registration Document.



1.2 Concordance – Minister’s Request for Additional Information

The Minister’s AIR included a list of requests for additional information all of which are answered within this Addendum. To facilitate review of the Addendum, a table of concordance, **Table 1** below, details the sections within this Addendum where each request for information included in the AIR is addressed.

In addition to addressing the AIR, the Proponent has provided responses the comments from the regulator that informed throughout the Addendum. The methods, results and mitigation measures presented in this Addendum were prepared in consultation with the corresponding regulators.

To understand the details of how the specific regulator comments were addressed within the Addendum, a secondary table of concordance is included in **Appendix A**.

TABLE 1: CONCORDANCE

#	Information Requested	Addendum Section
1.	In consultation with Natural Resources and Renewables (NSDNRR) Geological Survey Division Mineral and Management Division, provide a comprehensive review and presentation of all historical geoscience data for the project footprint. This includes but is not limited to:	---
a.	Detailed geological map(s) of the development footprint and project area.	5.1 Geology 5.1.1 Surficial Geology 5.1.2 Bedrock and Mineralization Appendix L: Geoscience Research, Compilation and Site Visits Summary Report
b.	Uranium distribution map layer(s) based on geological, geophysical and geochemical data.	5.1 Geology 5.1.2 Bedrock and Mineralization Appendix L: Geoscience Research, Compilation and Site Visits Summary Report
c.	A technical summary that: i. Identifies and describes known occurrences of uranium; ii. Describes geological controls related to primary occurrences, and potential secondary distribution of uranium; iii. Identifies and describes common benchmark standards for naturally occurring uranium mineralization and human health and safety considerations; and iv. Identifies and describes the local health and safety risk to known and potential occurrences of uranium mineralization	5.1 Geology 5.1.2 Bedrock and Mineralization 5.1.3 Potential Interactions and Mitigation Appendix K: Naturally Occurring Radioactive Material Response Appendix L: Geoscience Research, Compilation and Site Visits Summary Report
d.	Provide an avoidance and mitigation plan which includes: i. A general exposure assessment related to	5.1 Geology 5.1.3 Potential Interactions and Mitigation Appendix K: Naturally Occurring Radioactive

	geoscience site characterization. ii. An exposure assessment for planned activities including infrastructure development and all primary or secondary ground disturbance activities.	Material Response Appendix L: Geoscience Research, Compilation and Site Visits Summary Report
2.	In consultation with NSDNRR Wildlife Branch, and Environment and Climate Change Canada Canadian Wildlife Service provide:	---
a.	Additional details for all flora and fauna surveys including but not limited to methodology, timing, coverage, weather conditions, equipment used, and incidental species observances, particularly for Species at Risk (SAR).	3 Biophysical VECs 3.1 Existing Environment 3.1.1 Terrestrial Habitats and Vegetation 3.1.2 Terrestrial Wildlife 3.1.3 Wetlands 3.1.4 Watercourses and Fish Habitat 3.1.5 Birds and Bird Habitat 3.1.6 Bats and Bat Habitat 3.1.7 Species at Risk Appendix B: Vegetation Assessment Appendix C: Wildlife Assessment Appendix D: Wetlands Assessment Appendix E: Watercourse and Fish Habitat Assessment Appendix F: Birds and Bird Habitat Assessment Appendix G: Radar and Acoustic Monitoring Report Appendix H: Bats and Bat Habitat Assessment Appendix I: 2021 AC CDC Report Appendix J: 2022 AC CDC Report
b.	Details and results of additional flora and fauna surveys, if required.	3 Biophysical VECs 3.1 Existing Environment 3.1.1 Terrestrial Habitats and Vegetation 3.1.2 Terrestrial Wildlife 3.1.3 Wetlands 3.1.4 Watercourses and Fish Habitat 3.1.5 Birds and Bird Habitat 3.1.6 Bats and Bat Habitat 3.1.7 Species at Risk Appendix B: Vegetation Assessment Appendix C: Wildlife Assessment Appendix D: Wetlands Assessment Appendix E: Watercourse and Fish Habitat Assessment Appendix F: Birds and Bird Habitat Assessment Appendix G: Radar and Acoustic Monitoring Report Appendix H: Bats and Bat Habitat Assessment
c.	Explanation of the discrepancies related to rate of nocturnal passage/migration in research conducted for nearby projects.	Appendix G: Radar and Acoustic Monitoring Report
d.	Additional information to support conclusions regarding potential turbine collisions.	3.1.5 Birds and Bird Habitat 3.1.6 Bats and Bat Habitat 3.2 Effects of the Undertaking on the Environment 3.2.6 Birds and Bird Habitat 3.2.7 Bats and Bat Habitat Appendix F: Birds and Bird Habitat Assessment Appendix G: Radar and Acoustic Monitoring Report Appendix H: Bats and Bat Habitat Assessment

e	Proposed mitigation measures for project impacts to birds, bats, SAR and habitat.	3.1.5 Birds and Bird Habitat 3.1.6 Bats and Bat Habitat 3.1.7 Species at Risk 3.2 Effects of the Undertaking on the Environment 3.2.6 Birds and Bird Habitat 3.2.7 Bats and Bat Habitat 3.2.8 Species at Risk Appendix F: Birds and Bird Habitat Assessment Appendix G: Radar and Acoustic Monitoring Report Appendix H: Bats and Bat Habitat Assessment
f	Clarification on how the results of bird monitoring informed the placement of proposed turbines and other infrastructure, particularly in relation to SAR and their habitats.	3.1.5 Birds and Bird Habitat 3.1.7 Species at Risk 3.2 Effects of the Undertaking on the Environment 3.2.6 Birds and Bird Habitat 3.2.8 Species at Risk Appendix F: Birds and Bird Habitat Assessment Appendix G: Radar and Acoustic Monitoring Report
g	Rationale for conducting only one year of avian surveys or provide details and results of an additional year of surveys completed in consultation with the above listed departments.	3.1.5 Birds and Bird Habitat 3.1.7 Species at Risk 3.2 Effects of the Undertaking on the Environment 3.2.6 Birds and Bird Habitat 3.2.8 Species at Risk Appendix F: Birds and Bird Habitat Assessment Appendix G: Radar and Acoustic Monitoring Report
h	An adaptive management plan.	3.2 Effects of the Undertaking on the Environment 3.2.6 Birds and Bird Habitat 3.2.7 Bats and Bat Habitat Appendix Q: Adaptive Management Plan
3.	In consultation with ECC Wetland Specialist provide:	---
a.	Functional assessments for wetlands in the project boundary and information to determine Wetlands of Special Significance.	3 Biophysical VECs 3.1 Existing Environment 3.1.3 Wetlands Appendix D: Wetlands
b.	Details of each wetland in the project boundary in relation to project infrastructure, including any proposed wetland alterations.	3 Biophysical VECs 3.1 Existing Environment 3.1.3 Wetlands Appendix D: Wetlands
c.	Proposed mitigation and monitoring for wetlands.	3.2 Effects of the Undertaking on the Environment 3.2.4 Wetlands Appendix D: Wetlands
d.	Fish and fish habitat assessments in wetlands within the project boundary.	3 Biophysical VECs 3.1 Existing Environment 3.1.4 Watercourse and Fish Habitat Appendix E: Watercourse and Fish Assessment
4.	In consultation with Fisheries and Oceans Canada provide fish and fish habitat surveys for watercourses and wetlands in the project area. Provide details of each watercourse and wetland in the project boundary in relation to project infrastructure, including any proposed watercourse and wetland alterations.	3 Biophysical VECs 3.1 Existing Environment 3.1.3 Wetlands 3.1.4 Watercourse and Fish Habitat 3.2 Effects of the Undertaking on the Environment 3.2.4 Wetlands 3.2.5 Watercourse and Fish Habitat Appendix E: Watercourse and Fish Assessment Appendix D: Wetlands Assessment
5.	In consultation with ECC Water Resources	3.2 Effects of the Undertaking on the Environment

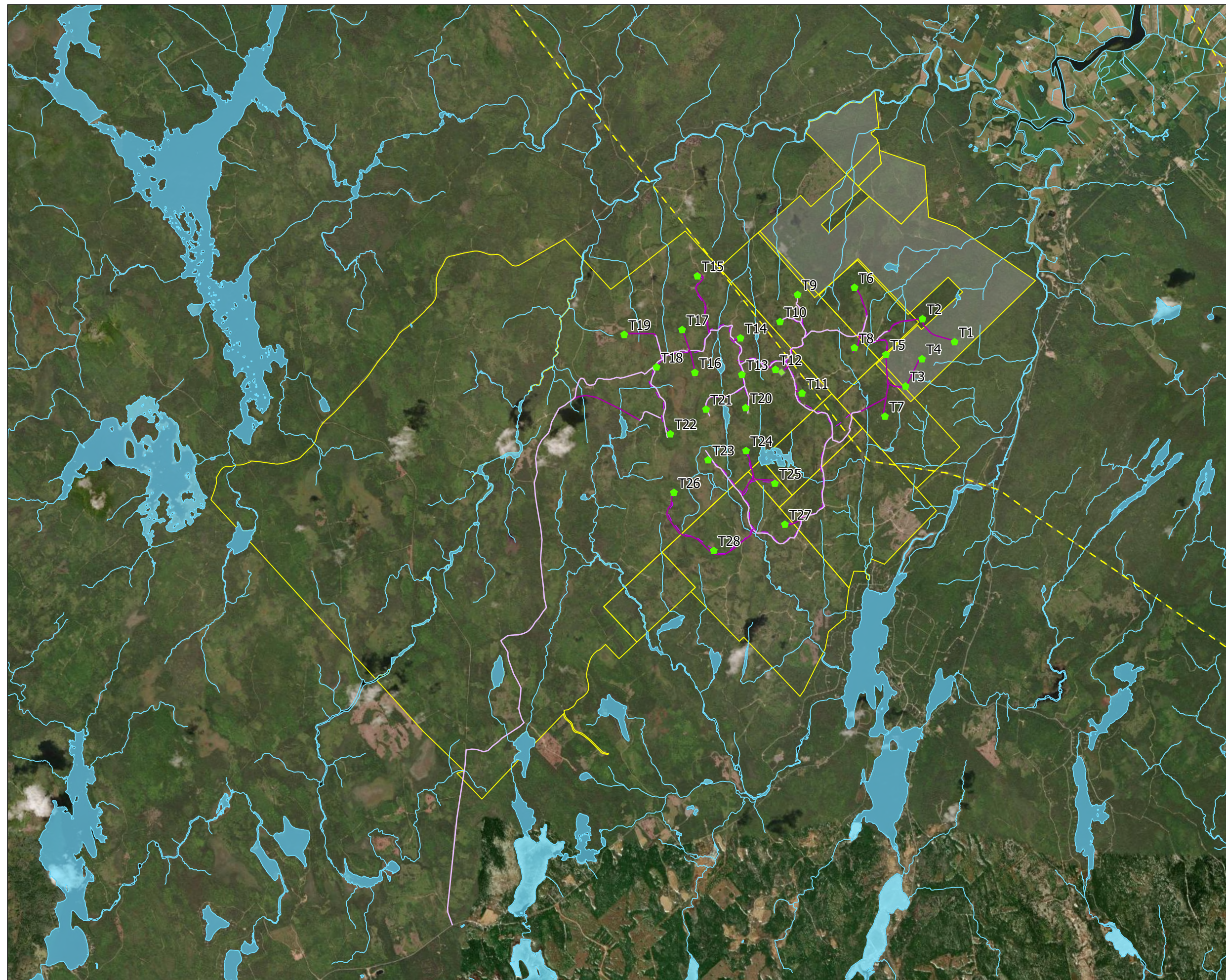
	Management Unit provide a surface water management plan developed by a qualified engineer and an analysis of post-construction water flows.	3.2.5 Watercourses and Fish Habitat Appendix R: Surface Water Management Plan
6.	Provide justification for the noise assessment methodology used and how the modelling software addresses these larger scale commercial wind-turbines (5 MW) and their sound level outputs at the nearest receptor locations. Refer to Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise (Health Canada, 2017) as necessary. The noise assessment should also ensure the modulation of sounds from operations, low frequency noise, proposed mitigation and monitoring, and a complaint resolution plan are provided in detail.	5 Physical Environment 5.2 Ambient Sound Levels 5.2.1 Sound Level Assessments 5.2.2 Potential Interactions and Mitigation Appendix M: Sound Level Assessment
7.	In consultation with ECC Protected Areas and Ecosystems Division provide an analysis of potential impacts to biodiversity values and land-landscape scale ecological connectivity from habitat fragmentation. Identify any associated mitigation measures.	4 Biodiversity and Ecological Connectivity 4.1 Background 4.2 Landscape Status and Connectivity 4.3 Potential Interactions and Mitigation
8.	Provide the final Archaeological Resource Impact Assessment, reviewed and approved by Nova Scotia Communities, Culture, Tourism and Heritage.	6 Archaeological and Cultural Resources 6.1 Archaeological Resource Impact Assessment 6.2 Potential Interactions and Mitigation Appendix N: Archaeological Resource Impact Assessment

1.3 Project Description

1.3.1 Geographical Location

The Project is located in Hants County, approximately 10 km southwest of Windsor (**Figure 1**). The Project is located predominantly on privately owned forested land that has undergone several generations of wood harvesting and has an existing network of forest service roads located throughout the Project site. Four of the turbine locations and associated infrastructure are being proposed on adjacent forested Crown land that consists largely of undisturbed mature forests with a few existing roads. The Project site was selected due to the existing extensive forestry activities and infrastructure, in order to minimize impacts to undeveloped lands as much as feasible. **Figure 1** is a map showing the 28 proposed turbine locations and associated infrastructure.

Figure 1 Project Layout



Legend

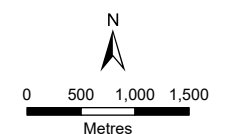
- Proposed Turbine Location
- Proposed Substation Location
- Private Lands
- Crown Lands
- Roads to be Upgraded
- Proposed Access Roads
- Proposed Collector Network
- Proposed Interconnection Line
- Transmission Line
- Watercourse
- Waterbody

Notes

1. Final layout subject to change based on remaining permitting processes in discussion with NSECC and other applicable regulators.
2. Turbine markers are not to scale.

Sources

- Basedata provided by the Province of Nova Scotia
- Basemap: ESRI World Topo Map



Scale: 1:70,000

Spatial Reference: NAD 1983 UTM Zone 20N

Page Size: 11" x 17"

Production Date: Dec 13, 2022

Prepared By: Alex Torrealba



1.3.2 Physical Components of the Project

The footprint of the Project is detailed in **Table 2** and is estimated to cover approximately 182* hectares (ha) during the construction phase. Once the Project is constructed, all temporary works will be removed and the lands used specifically for construction activities will be restored, which will reduce the footprint to approximately 121 ha* for the operational life of the Project. These estimates are based on the full 28 turbine layout and are not inclusive of the area of the currently existing roads. **Table 2** is a summary of the Project footprint estimates by phase.

TABLE 2: FOOTPRINT SIZES OF PROJECT PHYSICAL COMPONENTS

Infrastructure	Construction Footprint (ha)*	Operational Footprint (ha)*	Infrastructure Length (km)
New roads without collector lines (12 m)	5.4	2.0	1.8
Existing roads without collector lines (6 m)	24.3	8.1	13.5
New roads with collector lines (12 m)	56.8	35.5	14.2
Existing roads with collector lines (12 m)	65.1	45.2	18.1
Turbine foundations	28.0	28.0	-
Substation	1.0	1.0	-
Collector Line (not along roads)	0.93	0.93	0.47
Transmission Line and cleared right of way	0.37	0.19	0.12
Total	181.9	120.7	

Notes:

*These calculations are a conservative estimate accounting for maximum possible clearing width required during construction, necessary ditching and clearing for danger trees during operations.

1.3.2.1 Access Roads

The access roads for the Project will range from 6 to 12 m wide with a maximum width of 15 m in areas to facilitate moving large turbine components (i.e., to navigate turning radii on turns). The access roads will be used to move workers and equipment about the site during construction, operation and decommissioning phases.

New Access Roads

The new access roads are anticipated to involve the removal of soil to a depth of between 0.25 and 1.0 m (depending on the ground conditions encountered during the geotechnical investigations) and placing layers of crushed stone. The stone is usually compacted, with a finished construction depth between 0.25 and 0.5 m, again dependent on the strength of the underlying ground formation. The internal site roads will be maintained in good condition during construction and throughout the lifetime of the Project to facilitate maintenance and ongoing environmental studies. The Proponent will work with landowners to determine if the roads will be left in place following the eventual decommissioning of the Project.

The removed topsoil would be stored in accordance with best practice guidelines, and later used for site restoration. Soil needed for backfill would be stored temporarily in low bunds adjacent to the excavations until needed. Any remaining excavated material would be shaped into fill slopes in the roadbed or removed from site to an approved landfill or disposed of appropriately.

Existing Access Roads to be Upgraded

The Project has many existing roads currently used for agricultural, forestry, and recreational purposes. It is anticipated that approximately 32 km of existing roads can be used with minor upgrades. However, portions of existing roads may need to be widened to support large truck and material movements and turning radii of the turbine components. The process for upgrading roads is similar to that of constructing new roads, however, clearing and grading is only required where roads need to be widened, which will minimize the area of new disturbance from the Project.

Transmission Line Access Roads

In addition to the main Project access roads that will be used to transport WTG parts and used by construction crews, there is also a need for access routes into the new proposed transmission line. Roads into the transmission line corridor would be temporary for gaining access and would be approximately 6 m in width. A road approximately 4 m wide along the new transmission line corridor may be maintained during the lifetime of the project to facilitate maintenance.

1.3.2.2 Crane Pads

The installation of the WTGs will require crane pads that will be approximately 70 m by 70 m in size. The crane pad is required to safely accommodate the weight of the large crane necessary for turbine installation and maintenance. Each WTG location will be designed to support the arrangement of the crane pad and the turbine foundation on the topographical constraints of the Project site.

Construction of the main crane pads will involve the removal of soil to a depth of between 0.25 and 0.5 m, depending on the ground condition encountered during the geotechnical investigation. The subsoil will be covered by layers of graded crushed stone. Total construction depth is between 0.25 and 0.5 m, dependent on the characteristics of the underlying geological formations.

The crane pads will be retained throughout the operation and decommissioning phases of the Project to allow for periodic WTG maintenance, and to accommodate any crane necessary should any large components require replacement. The crane pads may also be utilized during the decommissioning phase of the Project.

1.3.2.3 Turbine Foundation

It is anticipated that concrete foundations approximately 20 m in diameter will be required for each WTG. A detailed geotechnical investigation will be undertaken at each WTG location

to evaluate the nature of the soil and substrate characteristics. A registered Professional Engineer will design the foundations in accordance with the specific geological conditions of the turbine locations.

The construction of the reinforced concrete foundations will include excavation to a depth of approximately 3 meters, the placement of concrete forms and steel reinforcement, and the pouring of concrete within the forms. The upper surface of the base will lie approximately 1 m below ground level. Rock chipping and blasting is anticipated to be required to facilitate excavation. The central support pedestal for each foundation would extend 0.20 m above existing ground level to receive the bolted bottom tower section. Suitable excavated material would be compacted in layers on top of the concrete foundation to terminate in line with the existing ground level, leaving room to allow sufficient topsoil reinstatement for vegetation growth. The foundations will be regularly inspected for any signs of deterioration during the operational phase.

The soils removed will be stored in accordance with provincial regulations and best practice guidelines. They will not be stored within 30 m of streams or wetlands and will be replaced during the restoration phase. Soil material needed for backfill will be stored temporarily in a designated area adjacent to the excavation location until needed. Any remaining excavated material will likely be recycled to another site needing clean fill material or graded into the natural slope of the surrounding site.

1.3.2.4 Wind Turbine Generators

As previously described, the Natural Forces is proposing the construction of up to 28 wind turbine generators. Each WTG has an individual generating capacity of 4.2-6.2 MW for a total Project capacity of up to 150 MW. There are a variety of turbine models being considered for the Project. The specification range for features of models under consideration, which are designed and certified according to the latest international standards, are summarized in **Table 3**. Currently the basis for design is the International Electrotechnical Commission (IEC) standards of the IEC - 61400 series. From base to blade tip, the WTGs under consideration have maximum heights of 170-200 m.

TABLE 3: TURBINE SPECIFICATIONS

Feature	Range Under Consideration
Rotor diameter	138 - 170 m
Swept area	15,000 - 23,000 m ²
Rotations per minute	Up to 12
Cut out wind speed	Up to 32 m/s
Hub height	100 - 131 m
Maximum sound pressure level	Up to 107.6 dB(A)
Tower material	Steel or concrete
Colour	White

All turbines will be monitored remotely 24/7 in real-time by a team of operators from the manufacturer. Natural Forces' operations team will also monitor the turbines from Halifax, Nova Scotia. The operators will have the ability to remotely shut off the turbines should they observe conditions that could pose a risk to the turbines' proper functioning or risk to people or wildlife near the turbines. Ice may form on the rotor blades of WTGs in specific weather conditions. The ice build-up poses the risk of ice fragments detaching and creating safety hazards to the surrounding area. All turbines considered will be equipped with a reliable ice detection system. Once ice has been detected, the turbine rotor stops spinning, and will remain stopped until the ice has been melted, which will occur either passively through a natural melting process based on climatic conditions or actively with a de-icing system that heats and melts the ice on the WTG blade. This effectively reduces the risk of ice throw.

1.3.2.5 Lighting

A Lighting Plan for the turbines will be developed and approved by Transport Canada and shared with Canadian Wildlife Services (CWS) to minimize impacts on migrating birds while ensuring aviation safety. The lighting plan will comply with Transport Canada recommendations and Standard 621 – Obstruction Marking and Lighting - Canadian Aviation Regulations (Transport Canada 2021). Chapter 12 of the standard outlines regulations for wind turbines greater than 150 m. The current standard requires two CL-864 (medium intensity, flashing red – 20-40 flashes per minute) lights installed on the nacelle with one operating and one as a back-up. At least three CL-810 (low intensity, flashing red in sequence with nacelle) lights are also required mid-way up the tower (half of the nacelle height) and are to be visible in all directions. These types of lights are likely to be used for the Project but will be adjusted as per Transport Canada recommendations.

The standard that is requiring lighting midway up the tower came into effect in 2016 and follows European practices for tall structures. This standard has been improved from the European practice by implementing flashing, instead of steady burning lights. This change was recommended from the Federal Aviation Administration's technical report on Evaluation of New Obstruction Lighting Techniques to Reduce Avian Fatalities (Patterson 2012).

1.3.2.6 Electrical Works

The electricity produced from the WTGs will be stepped-up from 34.5 kV to 138 kV at the substation via the main step-up transformer(s). Each wind turbine has a small pad mount transformer located inside the tower that initially steps up the voltage to 34.5 kV. A bare copper earthing (grounding) cable will be laid alongside the WTG foundation for lightning protection; grounding will also be installed at other areas as determined by the electrical design. The electrical, communications and grounding cables will leave the WTG foundations below grade. This will be installed according to the design engineer's specification. Typical design will require the cables to be installed by the direct buried method consisting of excavation of a trench with a minimum depth of 1.2 m, placement of a layer of sand, then the collection system cables, earthing and fibre optic cable which are then covered by another layer of sand. Clean aggregate, as specified by the design engineer, will then be placed on top of the sand as the trench is filled back in.

Caution tape, stating “Danger Underground Electrical Cable” will be placed along the full length of the trench at approximately 0.15 m below the finish grade. Any buried electrical cable will likely be marked with permanent safety signs to warn of potential hazards from excavation. The size, type and location of the marker signs will be determined in consultation with the Nova Scotia Natural Resources and Renewables Land Administration Division (NSNRR-LAD) and be in accordance with applicable safety standards.

1.3.2.7 Interconnection to Grid

The Project will be connected to the existing Nova Scotia Power 138 kV transmission line as determined feasible by Nova Scotia Power through the completion of their feasibility study. The planned interconnection will require up to approximately 2 km of new 138 kV line and a single-breaker switching substation. The substation will include one 138 kV circuit breaker and associated switches, a small control building and protection system, and communications and control between the point of interconnection switching substation and the Nova Scotia Power supervisory control and data acquisition (SCADA) system.

1.3.2.8 Turbine Installation

The main WTG components include the tower sections, nacelle, generator, stator, hub and blades. Towers are typically delivered in six large sections, sometimes divided into small panels and assembled on site, if using conventional steel towers or numerous smaller sections if using the pre-cast concrete variety. Once delivered, the tower sections will be erected in sequence on the WTG foundations using a 110 tonne assist crane, 500 tonne base and mid-tower install crane and a large 600 tonne main lift crane. The 500 tonne crane will erect the base and lower midsection of the towers and the main crane will erect the upper-midsection, the tower top section, the nacelle, generator, stator, hub and the blades. Pre-assembly activities will involve the use of a couple small 60 tonne cranes. The blades are attached one at a time on the hub which will already be installed on the nacelle.

1.3.3 Setbacks and Separation Distances

The Project layout allots for the following setbacks from all proposed WTG locations:

- 30 m from wetlands and watercourses;
- 1.6 km from all residential dwellings and cabins;
- 3.9 km to nearest Important Bird Area (IBA) Southern Bright, Minas Basin;
- 4.3 km to the nearest Provincial Park (Falls Lake Provincial Park);
 - 5 km to Provincially Protected Nature Reserves (Panuke Lake Nature Reserve) and Wilderness Area (South Panuke Wilderness Area); and,
- 2.7 km to nearest communication tower.

1.3.4 Schedule

The approximate proposed schedule for the construction activities is presented in **Table 4**. Preconstruction activities and clearing are expected to start in Q2 2023 with operation of the

Project starting in Q4 2024. As noted, the Project will likely be built in several phases. This schedule reflects the earliest start of the first phase.

After the initial tree and land clearing and earth works activities for the construction of the Project are complete, the following main construction activities will occur:

- Construction of access roads, crane pads and lay down areas;
- Construction of the turbine and substation foundations;
- Installation of electrical infrastructure (i.e., power poles, power lines and underground electrical, transmission lines and substation);
- Turbine installation;
- Commissioning of the WTGs; and
- Removal of all temporary works and restoration of the site.

Construction activities will be limited to daytime hours when feasible. The overall erection process for the WTGs will take approximately six to eight days each, depending on the wind conditions, and will not start until suitable wind conditions prevail. Turbines cannot be erected when wind speeds exceed approximately 8 m/s, and the optimal time for assembly often occurs during the early evening. As a result, some construction in the early evening and night is possible during this stage of construction, however, it will be minimized to the extent possible.

TABLE 4: PROJECT SCHEDULE

Phase	Activity Start Date
Phase I - Planning, Site Preparation and Construction, Site Restoration	
- Clearing and Grubbing	Q2 2023
- Civil Works	Q4 2023
- Turbine Foundation	Q4 2023
- Electrical Works	Q4 2023
- Turbine Installation	Q1 2024
- Commissioning	Q2 2024
- Removal of all temporary works and restoration of the site	Q4 2024
Phase II - Operation and Maintenance	
- Turbine Operation	Q4 2024
- Inspection and Maintenance	Q4 2024
Phase III - Decommissioning, Infrastructure Removal and Site Reclamation	
- Infrastructure Removal	25+ years after commissioning
- Site reclamation	

1.3.5 Planning, Site Preparation and Construction

The main site access is from New Russell Road off Highway 104. The majority of the access roads will make use of existing designated roadways and private roads but may require

upgrades to support oversized vehicle movements. Using existing roads allows the Project to significantly minimize its footprint and potential impacts to the environment. Minor temporary road widening may be required along specific portions of provincially maintained roads allowing for wider turn widths. This road widening will be coordinated with Nova Scotia Public Works and the West Hants Regional Municipality Public Works Department and Nova Scotia Natural Resources and Renewables Land Administration Division (NSNRR-LAD), and necessary permits will be acquired before commencing work. New Russell Road will be the entry point for all workers, construction equipment and WTG components for the duration of the construction phase (**Figure 1**).

Clearing, Grubbing and Earth Works

Clearing, grubbing and earth works activities will be planned to occur outside of the breeding bird season where possible. If clearing is required during the breeding bird season, a qualified biologist will be onsite prior to starting the activities to conduct monitoring to identify possible breeding birds in the area and their active nests. These monitoring efforts will follow Environment and Climate Change Canada's (ECCC) specific considerations related to determining the presence of nests. A biologist will observe the bird species in the area and determine if there is presence of suitable nesting habitat within the proposed clearing area. As well, they will observe bird behaviour including, but not limited to, territorial males and individuals carrying food to determine the potential for active nests in the area.

Additionally, the results of the bird surveys completed as part of this assessment will be reviewed to identify species of ground nesters that have been observed at the Project. A large portion of the Project lands has been previously cleared during forestry activity and should ground nesters be found to reside in the Project area during the construction phase, daily nest searches will be conducted prior to construction activities that may impact ground nesters.

Fill Material

Fill material will likely be sourced on site based on desktop geotechnical information and site visits and will be coordinated by the Project's construction manager and civil contractor. Should wetland crossings be required during the construction of access roads, the Proponent will engage in ongoing consultation with the Nova Scotia Department of Environment and Climate Change (NSECC) to determine the proper alteration applications required and applicable wetland compensation. The Proponent is committed to following the proper measures as indicated by NSECC.

Traffic Control

Traffic on site roads will need to be managed if forestry and agricultural activities are still ongoing along the internal site roads throughout the duration of all phases of the Project. Traffic control signs (such as stop and yield) will be installed at the access road intersections. A speed limit of 30 km/h will be posted at site access locations.

Site Restoration

After construction, turbine erection, and commissioning are completed and the Project is in the operation phase, all temporary works will be removed and the land re-graded. The stored topsoil will be replaced, graded and given an aesthetically pleasing appearance.

1.3.6 Operation and Maintenance

Site Access and Traffic

Once the Project is operational, minimal vehicle activity will be required. The internal site roads will be used for periodic maintenance and safety checks. A SCADA system will be installed within the turbines for remote monitoring and control of the wind turbines, which will minimize the need for on-site personnel. The SCADA system ensures safe efficient operation of the turbines and of the overall Project site.

Project Safety Signs

Project signage will be located at the entrance to the site. These signs will provide essential safety information such as emergency contacts and telephone numbers. As well, the signs will provide information about the Project and the companies involved in the Project. Safety signs and information will also be installed throughout the Project Site as required. These signs will be maintained throughout the operational life of the Project.

Inspection and Maintenance

Scheduled maintenance work will be carried out several times each year throughout the operational phase in addition to routine site visits. Unscheduled maintenance is anticipated to be minimal, as the SCADA system allows 24/7 monitoring of the turbines by the manufacturer and the operations team at Natural Forces. Maintenance procedures may require the use of small or large cranes for brief periods of time, for replacement of blades or other turbine components.

Vegetation Management

Minor vegetation management will be required during operation. This management will be minimal beyond vegetation that threatens safe operation of the Project, such as any trees close to the overhead collector lines or within the WTG footing/crane pad area. Herbicides will not be used to manage vegetation on site.

1.3.7 Decommissioning

The Project will be in operation for approximately 25 years, depending on the length of the power purchase agreement (PPA) with Nova Scotia Power. There is the potential to extend the operational period if an extension to the PPA is granted, or a new PPA is negotiated, and extended land agreements are secured. If an extension to the PPA is not obtained, the Project will be decommissioned by removing the infrastructure and reclaiming the site.

Infrastructure Removal and Site Reclamation

Decommissioning will commence within six to nine months after the PPA has been terminated. The decommissioning phase will require considerably lower vehicular support than during the construction phase. The following four steps are anticipated in the decommissioning phase:

1. The WTGs will be dismantled and removed from the site for scrap or resale. Based on landowner agreements, the foundations may be removed to below plough depth and/or covered over with overburden. The stockpiled topsoil will be releveled so that the land may be returned to its former use.
2. The internal site roads and site entrance may be removed if required. After removal, the land will be returned to its former use.
3. The underground cables will be below plough depth and contain no harmful substances. They may be recovered if economically attractive or left in the ground. Terminal connections will be cut back below plough depth.
4. All other equipment, including overhead collector lines and the substation, will be dismantled and removed, and the land will be returned to its former use.

Site Restoration

After the turbines have been decommissioned, all worksite infrastructure will be removed and the land re-graded for site restoration in consultation with the landowners. Site restoration, aiming to have the decommissioned site resemble the natural and/or former state of the site, will be initiated. Local or native plants will be factored into the restoration plan in consultation with the landowner to minimize the potential for habitat loss and invasive species spread.

1.3.8 Future Modifications or Extensions

There are no future phases planned for the Project at this time. The Proponent will sign a PPA with Nova Scotia Power, or some other entity, for approximately 25 years, which is consistent with the WTGs life expectancy. There are no future phases planned for the Project at this time. Prior to the end of the PPA, decommissioning and site reclamation plans will begin, or a new PPA may be signed with necessary maintenance occurring to extend the life of the Project. Should the life of the Project be extended beyond 25 years, the Proponent will re-engage with regulatory authorities at that time.

2 Addendum Scope and Methodology

Details of the scope of the assessment and the methods used to prepare this Addendum are provided in the sections below. The description of the scope and methodology include the characterization of the factors to be considered and the details of the assessment of each valued environmental component. The scope and methods of the studies undertaken in 2022 were developed based on the requests made in the AIR and the comments made by the regulators regarding the EARD.

2.1 Selection of Valued Environmental Components

Valued Environmental Components (VECs) are those components of the physical, biophysical and socioeconomic environments that are of value or interest to regulatory agencies, the public, other stakeholders, and Indigenous peoples. The Project has the potential to interact with these VECs in positive and negative ways at different phases of the Project timeline.

For this Addendum, VECs were selected based on the topics included in the AIR as needing to be further expanded upon and/or needing additional studies. The VECs evaluated in the Addendum are listed in **Table 5**.

Within the following sections, the relevant excerpt from the AIR is included as part of the introduction to the VEC at the beginning of the associated section to facilitate review. Note that these sections are ordered to match the AIR items as presented by the Minister. This order does not follow the order within the original EARD.

TABLE 5: IDENTIFIED VALUED ENVIRONMENTAL COMPONENTS (VECs) FOR THIS ADDENDUM

Biophysical VECs	Physical VECs	Cultural and Heritage VECs
<ul style="list-style-type: none"> • Vegetation and Terrestrial Habitats • Wildlife Excluding birds and bats • Wetlands • Birds and Bird Habitat • Bats and Bat Habitat • Aquatic Habitat Including fish and turtle habitat • Species at Risk Includes potential habitat for SAR and important ecological areas • Ecological Connectivity 	<ul style="list-style-type: none"> • Atmospheric Environment Ambient Sound Levels • Physical Environment Geology; Hydrology 	<ul style="list-style-type: none"> • Archaeological and Cultural Resources

2.2 Spatial and Temporal Boundaries

2.2.1 Spatial Boundaries

The spatial boundaries of the assessment are typically based on the natural system boundaries for biophysical VECs, or administrative/political boundaries for socioeconomic VECs. The assessment of potential environmental interactions with the VECs encompasses two spatial boundaries: the Potential Development Area (PDA) and the relevant local assessment area (LAA). All spatial boundaries presented in the EARD have been updated accordingly based on the AIR and the proposed updates to the Project.

Potential Development Area

The PDA is defined as the extent of all anticipated areas that could undergo physical disturbance associated with the Project. As illustrated on **Figure 2**, the PDA is defined as the area encompassed by:

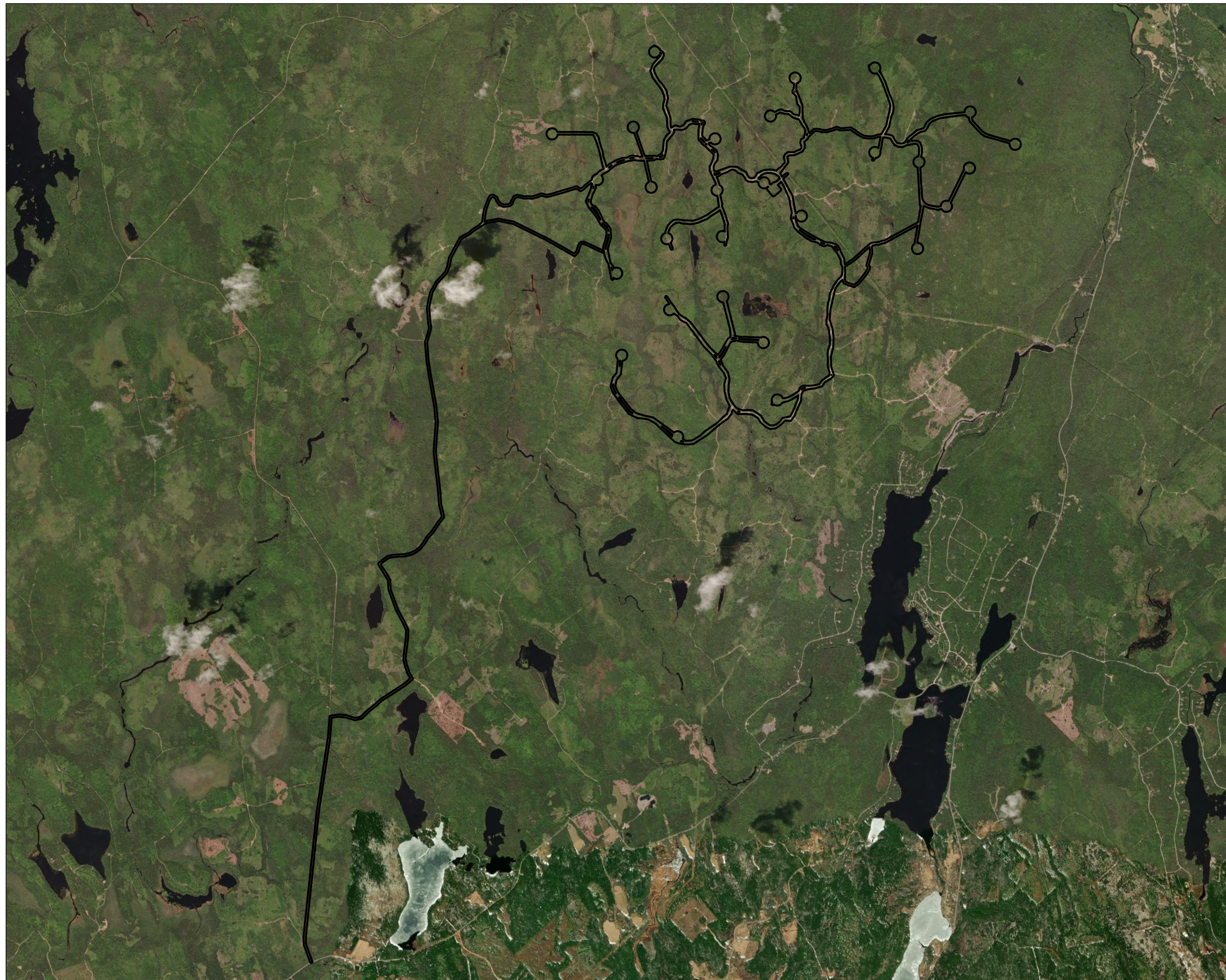
- 15 m on either side of the Project roadways, both existing and new;
- 15 m on either side of the Project collector lines and transmission line;
- 75 m radius around the base of each turbine location; and,
- 25 m radius buffer around the substation.

The PDA is the same for all VECs discussed within this Addendum.

Local Assessment Area

The relevant LAA for each VEC is defined as the zone of influence of the Project phases on each VEC, where environmental interactions can be predicted and measured with a reasonable degree of accuracy and confidence. The LAAs, which vary by VEC, are summarized for each VEC in **Table 6**. The table also specifies if the LAA has been studied through desktop research or fieldwork activities.

Figure 2 Potential Development Area



Legend

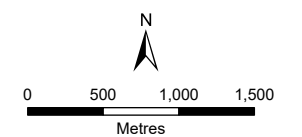
 Potential Development Area

Notes

1. Final layout subject to change based on remaining permitting processes in discussion with NSECC and other applicable regulators.
2. Turbine markers are not to scale.

Sources

- Basedata provided by the Province of Nova Scotia
- Basemap: ESRI World Topo Map



Scale: 1:50,000

Spatial Reference: NAD 1983 UTM Zone 20N

Page Size: 11" x 17"

Production Date: Dec 13, 2022

Prepared By: Alex Torrealba



TABLE 6: LOCAL ASSESSMENT AREAS (LAA) FOR BIOPHYSICAL VALUED ENVIRONMENTAL COMPONENTS

VEC	Local Assessment Area (LAA)	Justification
Terrestrial Habitat and Vegetation	<p><u>2021 and 2022 - Field LAA</u> - 50 m along either side of Project access roads and powerline corridors. - 150 m radius around turbine bases, substations and ancillary equipment.</p>	<p>It encompassed terrestrial habitats located adjacent to the PDA for the assessment of vegetation and lichen species that are most likely to be impacted by the Project.</p> <p>A larger buffer around turbine bases, substations and ancillary equipment was included to assess current disturbances and understand the potential effects of the Project on terrestrial habitats.</p>
Terrestrial Wildlife	<p><u>2021 and 2022 Field LAA</u> - 50 m along either side of Project access roads and powerline corridors. - 150 m radius around turbine bases, substations and ancillary equipment.</p>	<p>It encompassed terrestrial habitats located adjacent to the PDA for the assessment of vegetation and lichen species that are most likely to be impacted by the Project.</p> <p>A larger buffer around turbine bases, substations and ancillary equipment was included to assess current disturbances and understand the potential effects of the Project on terrestrial habitats.</p>
Wetlands	<p><u>2021 and 2022 Field LAA</u> - 500 m radius around the PDA Study area: Wetlands located within 30 m of the PDA.</p>	<p>Predicted wetlands were modelled within the LAA.</p> <p>For the study area, a 30 m wide protective buffer of natural, undisturbed vegetation around a wetland is encouraged to protect wetlands from the impact of outside threats, and serves as important habitat for wildlife (NBDELG 2002).</p>
Watercourses and Fish Habitat	<p><u>2021 - Field LAA</u> - 100 m upstream and downstream of watercourses that intersect with the PDA.</p> <p><u>2022 - Field LAA</u> - Watercourse crossings within 30 m of the PDA and their associated tributaries or distributaries. Study Area: 50 m upstream to 100 m downstream for watercourse crossings within 30 m of the PDA.</p>	<p>The LAA included watercourses that have the potential for direct and indirect impacts and the watercourses downstream of those crossings.</p> <p>For the study area, a buffer of 30 m was selected to include watercourses that are adjacent to the PDA and could be impacted by Project activities within their riparian zone.</p>
Birds and Bird Habitat	<p><u>2021 and 2022 - Field LAA</u> - 500 m radius around the PDA.</p>	<p>The CWS (2007b) recommends selecting survey locations within representative habitats likely to be used by songbirds in the region and spacing the survey locations at least 250 m apart in forest, or 500 m apart</p>

VEC	Local Assessment Area (LAA)	Justification
Bats and Bat Habitat	<p><u>2021 – Field LAA</u> - 250 m buffer around the PDA.</p> <p><u>2022 – Field LAA</u> - 120 m radius around the site access roads and powerline corridors. - 1000 m radius around each proposed WTG location.</p>	<p>in open habitat.</p> <p>The LAA was defined to align with the OMNR advice to identify bat habitat components that may extend to or within 120 m of a project location, and in recognition that confirmed habitat can extend as much as 1000 m beyond an identified point location (OMNR 2011).</p>
Species at Risk and Species of Conservation Concern	<p><u>2021 and 2022 Desktop LAA</u> - 10 km radius around the Project's center</p>	<p>The LAA followed how historical observations of SAR and SoCC were reported in the AC CDC report. A more comprehensive list, covering 100 km radius from the Project's center is also included in Appendix J.</p>

2.2.2 Temporal Boundaries

Temporal boundaries vary according to the different Project phases and potential effects. Typically, the Planning, Site Preparation and Construction phase is short-term (for example, effects related to the use of laydown areas for construction activities) due to the short duration of the activities. The temporal boundaries for the Project generally correspond to the timing duration of the Project phases. The updated boundaries are outlined below in **Table 7**.

Temporal boundaries have been updated in this Addendum based on the Project timeline changes. The temporal boundaries below are approximate based on earliest start of site preparation following permitting approvals.

TABLE 7: TEMPORAL BOUNDARIES FOR PROJECT PHASES

Phase	Temporal Boundary
Planning, Site Preparation and Construction, Site Restoration	Q2 2023 – Q4-2024
Operation and Maintenance	Q4 2024 – Operations end (estimated 25+ years after commissioning)
Decommissioning, Infrastructure Removal and Site Reclamation	Estimated 25+ years after commissioning

3 Biophysical VECs

This section details each of the biophysical VECs studied as part of this Addendum. It serves to fulfill the following request from the Minister's AIR:

2. *In consultation with NRR Wildlife Branch, and Environment and Climate Change Canada Canadian Wildlife Service provide:*
 - a. *Additional details for all flora and fauna surveys including but not limited to methodology, timing, coverage, weather conditions, equipment used, and incidental species observances, particularly for Species at Risk (SAR). |*
 - b. *Details and results of additional flora and fauna surveys, if required.*
 - c. *Explanation of the discrepancies related to rate of nocturnal passage/migration in research conducted for nearby projects.*
 - d. *Additional information to support conclusions regarding potential turbine collisions.*
 - e. *Proposed mitigation measures for project impacts to birds, bats, SAR and habitat.*
 - f. *Clarification on how the results of bird monitoring informed the placement of proposed turbines and other infrastructure, particularly in relation to SAR and their habitats.*
 - g. *Rationale for conducting only one year of avian surveys or provide details and results of an additional year of surveys completed in consultation with the above listed departments.*
 - h. *An adaptive management plan.*
3. *In consultation with ECC Wetland Specialist provide:*
 - a. *Functional assessments for wetlands in the project boundary and information to determine Wetlands of Special Significance.*
 - b. *Details of each wetland in the project boundary in relation to project infrastructure, including any proposed wetland alterations.*
 - c. *Proposed mitigation and monitoring for wetlands.*
 - d. *Fish and fish habitat assessments in wetlands within the project boundary.*
4. *In consultation with Fisheries and Oceans Canada provide fish and fish habitat surveys for watercourses and wetlands in the project area. Provide details of each watercourse and wetland in the project boundary in relation to project infrastructure, including any proposed watercourse and wetland alterations.*
5. *In consultation with ECC Water Resources Management Unit provide a surface water management plan developed by a qualified engineer and an analysis of post-construction water flows.*

3.1 Existing Environment

3.1.1 Terrestrial Habitats and Vegetation

Scope of VEC







Protecting vegetation and plant biodiversity is an important and integral aspect of maintaining a diverse ecosystem. Vegetation shares complex and vital relationships with other VECs identified in the Addendum. In an effort to preserve local flora species and to

ensure flora species of conservation concern remain unharmed, vegetation has been identified as a VEC.

The LAA for terrestrial habitats and vegetation, as shown on **Figure 3**, covers a 50 m buffer established on either side of roads required to access turbine sites and along powerline easements. The LAA encompasses the terrestrial habitats located adjacent to the PDA for the assessment of vegetation and lichen species that are most likely to be impacted by the Project. Around turbine bases, substations and ancillary equipment, the LAA includes a larger buffer (i.e., 150 m) to assess current disturbances and understand the potential effects of the Project on terrestrial habitats.

STUDY AND LOCAL ASSESSMENT AREA FOR VEGETATION AND LICHENS

FIGURE 3

-  Proposed Turbine Location
-  Proposed Substation Location
-  Potential Development Area (PDA)
-  Local Assessment Area
-  Highway
-  Plant Survey Tracks

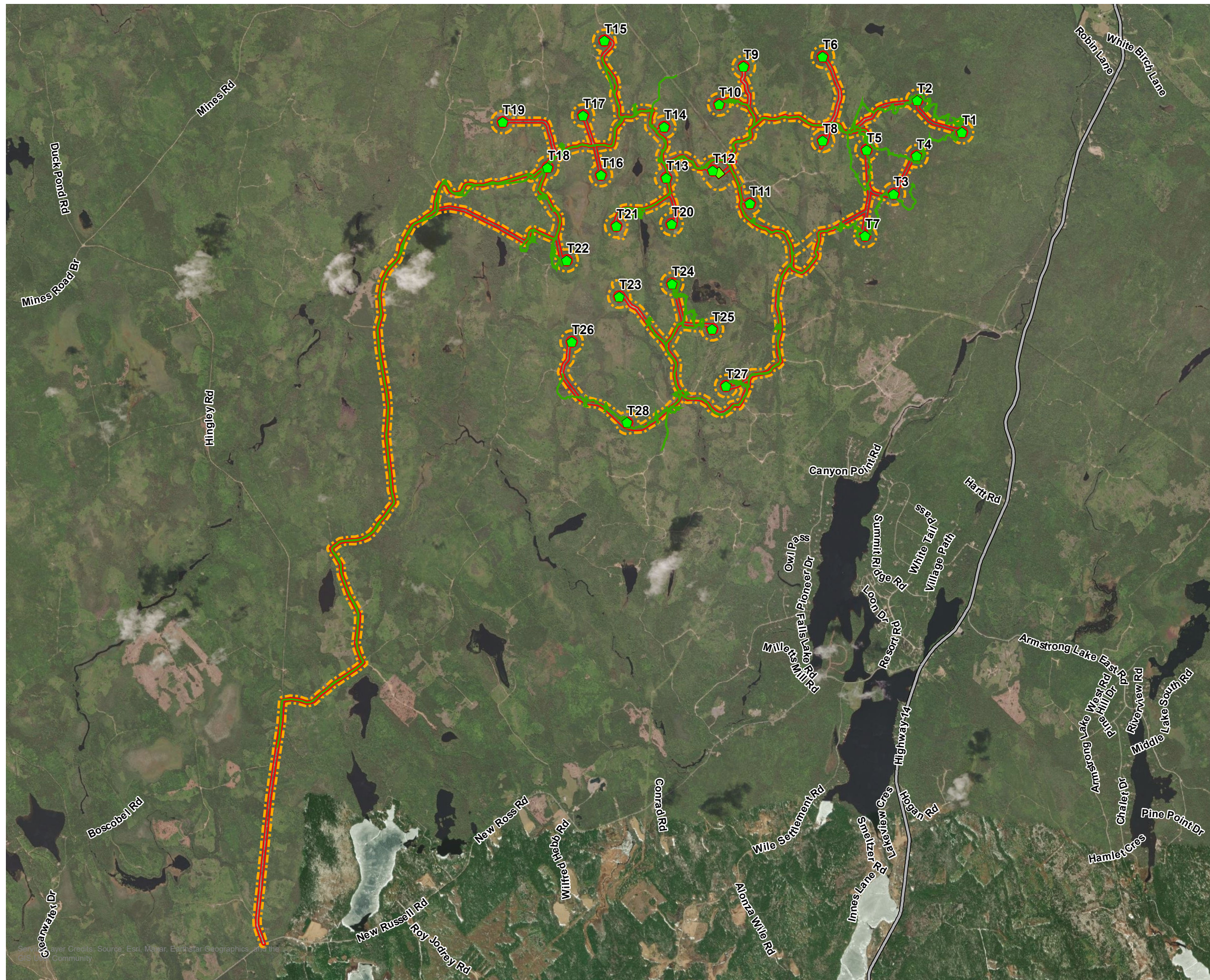


MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: DU
MAP CHECKED BY: KB
MAP PROJECTION: NAD 1983 UTM ZONE 20N



PROJECT: 21-1329
STATUS: DRAFT
DATE: 2022-12-14



The scope of work for the vegetation and lichen surveys is based upon an understanding of the nature of the proposed Project and Project area, as well as the field biologists' experience in assessing similar landscapes. The scope of work also considered feedback from the regulatory consultation process and guidance provided through the "Guide to Preparing an EA Registration Document for Wind Power Projects in Nova Scotia" (NSE 2021). The following scope of work included two years of data collection and was completed as part of the vegetation and lichen surveys for the Project:

- An initial desktop assessment of habitats within the Local Assessment Area (LAA);
- A desktop assessment of vegetation and lichen SAR and SoCC with the potential to occur within the PDA;
- A survey of vegetation species present within the LAA by terrestrial habitat type, along with their AC CDC sub-national rarity ranking, that have the potential to be affected by the Project's activities;
- A survey of lichens present within the LAA by terrestrial habitat type, along with their regional rarity ranking, that have the potential to be affected by the Project activities;
- A survey of vegetation of cultural or traditional importance from a Mi'kmaq knowledge/use perspective that have the potential to occur in the Project site, as identified by a terrestrial biologist from Maqamigew Anqotumeg.
- Incidental observations of vegetation, including SAR, SoCC, and invasive species documented during the 2021 and 2022 biophysical field surveys.

The SAR assessment is comprised of a review of two custom AC CDC reports and the SAR detected during the various field assessments. Details regarding approach, methodology and results of the vegetation SAR assessment are presented in **Section 3.1.7**.

For more detailed methodology and results, refer to the full vegetation assessment (**Appendix B**).

3.1.1.1 Desktop Survey and Habitat Assessment

Approach and Methodology

Prior to completing the field assessments for vegetation and lichens, Dillon conducted a desktop review to evaluate the potential for vegetation and lichen species within the LAA and to assist in scoping the field program. The information was reviewed, along with information on habitats present in the general area of the Project to determine potential for at risk flora species and/or their critical habitat. Dillon completed a review of available resources prior to completing the field surveys, which included the following:

- Data from 2021 and 2022 Atlantic Canada Conservation Data Centre (AC CDC) reports;
- Publicly available GIS map layers (e.g., ecological land classification, forest and non-forest inventory, wetland inventory, Protected Natural Areas, Wildlife Management Zones); and
- Google Earth satellite imagery.

Available mapping through the Nova Scotia Department of Natural Resources and Renewables (NSDNRR) was reviewed to identify forest types, general land use, and habitats within the LAA. Observations gathered during the biophysical assessments carried out for this EA and aided by Google Satellite imagery were used to confirm the existing site conditions within the PDA. A GIS map (**Figure 4**) was generated to show the existing habitat and land use features within the PDA and calculate the area of potential disturbance within each type.

Results

Although the Project layout was designed to minimize the disturbance of naturalized areas as well as prioritizing development in areas with existing anthropogenic disturbance, some areas within the proposed footprint for the Project will extend through less disturbed habitat types, including areas with mature trees, wetlands, and watercourses. The distribution of habitat types within and around the PDA are shown in **Table 8** and **Figure 4**.

Approximately 34% of the PDA is located within areas that have been previously disturbed by forestry, recreational trails and access roads, the remaining 66% of the PDA will be developed within existing forest habitat, as summarized in **Table 8**. It is noted that the PDA was conservatively define and includes areas that are unlikely to be directly impacted by the Project (e.g., areas below collector lines that will be spanned using poles and buffered areas extending from the shoulders of access roads etc.).

TABLE 8: HABITATS WITHIN THE POTENTIAL DEVELOPMENT AREA

Habitat	Area within the PDA (ha)*	Percentage of the PDA*
Hardwood-dominant Forest	43	15%
Mixedwood Forest	67	23%
Softwood-dominant Forest	78	27%
Non-forested Wetlands	1	<1%
Total Non-Disturbed Areas³	188	66%
Recently Cut Area or Regenerating Wood Lot	68	24%
Forestry Access Roads (Existing)	28	10%
Other (includes gravel pit and corridors)	1.5	<1%
Total Area with Anthropogenic Disturbance	98	34%

Notes:

1. Area calculations are estimates and are based on NSDNRR mapping and observations recorded at the site during the 2021 and 2022 biophysical surveys;
2. As previously described, the PDA encompasses all of the proposed 28 turbines locations and their associated infrastructure.
3. Non-disturbed habitats include treated and un-cut forestry stands and plantations.