2.0 Description of the Undertaking

2.1 Project Overview and Purpose

The proposed wind energy project, called the Westchester Wind Project (WWP or Project), consists of up to 12 wind turbine generators (WTGs) capable of producing up to 50 MW of renewable energy that will be connected to the existing Nova Scotia Power transmission grid via an overhead transmission line. The Project is being developed by Natural Forces Developments Limited Partnership (referred to herein as the Proponent or Natural Forces) in partnership with Wskijnu'k Mtmo'taqnuow Agency Limited (the Agency), a corporate body wholly owned by the 13 Mi'kmaq bands in Nova Scotia. Together, Natural Forces and the Agency are developing the Project and they will co-own and operate the Project.

The purpose of this Project is to help Nova Scotia achieve their renewable electricity standards through the generation of clean, renewable energy, and reduce Nova Scotia's reliance on imported energy sources through the development of a localized renewable energy generation (Renewable Electricity Regulations 2021).

Canada's and Nova Scotia's recent energy policies encourage renewable energy generation to limit the negative consequences of fossil fuel usage, to reduce greenhouse gasses, and to meet future energy demands. To support the implementation of these policies, Nova Scotia has developed a number of initiatives to encourage the development of renewable energy projects. The Nova Scotia *Electricity Act* (2004) sets out clear requirements regarding the source of electricity to be supplied to the province. The Project will help achieve provincially mandated targets outlined in the *Renewable Electricity Regulations* made under Section 5 of the *Electricity Act*, which requires the province of Nova Scotia to achieve 80% renewable energy by 2030. Reaching this goal will also support the province's objectives of achieving a 53% reduction in greenhouse gas (GHG) emissions by 2030 and becoming net-zero by 2050 (Renewable Electricity Regulations 2021). The increase in renewable energy needed to meet these targets will likely be obtained mainly through wind, marine renewable, hydropower, solar, geothermal, and biomass. The Nova Scotia renewable electricity standard 2030 states that 1100 GWh of electricity must be acquired from independent power producers to meet 2030 targets (Renewable Electricity Regulations 2021).

The Project is located on a mixture of privately owner blueberry fields, previously forested land and undeveloped forested land in Cumberland County near the communities of Westchester Station, Rose, and Londonderry. To minimize the potential impact of the Project on natural landscapes and undisturbed natural habitat, the majority of the proposed locations for the WTGs were selected because they have been previously cut through forestry activities and used for agricultural operations. The proposed Project aims to benefit the site by providing an environmentally friendly and productive source of renewable energy for Nova Scotia while limiting potential impacts to the natural environment while limiting potential disturbance of environmental features.

The development of wind energy projects has been instrumental in reducing harmful greenhouse gases associated with traditional carbon-based energy sources, both locally and abroad. Further, as previously mentioned, the Nova Scotia provincial target is to produce 80% of its electricity from renewable sources by 2030. With less than a decade until this deadline, the development of wind energy is the most

feasible option to help meet renewable energy goals while providing economic development for local communities.

2.2 Geographical Location

The proposed Project site is located on Westchester Mountain in Cumberland County, Nova Scotia **(Figure 1**). The proposed WTG locations and associated infrastructure are situated on privately-owned land located along Westchester Road, near Highway 104. The Proponent is proposing 16 potential turbine locations for the Project. However, only intends to develop up to 12 of these locations for a total of approximately 50 MW. The proposed Project Development Area (PDA) has largely been used for agricultural and forestry activities and therefore has a network of existing privately maintained access roads.

Permission to use the privately-owned land where project infrastructure is located has been obtained by Natural Forces in order to carry out the studies necessary for this EA. Leases will be obtained for the construction and operational phases of the Project. This land to be included in the lease, and referred to as the PDA, includes the footprint required to build the proposed 16 wind turbines and the associated roads, collector lines, the substation and other project infrastructure, though only up to 12 of the wind turbines will be constructed.

2.2.1 Siting Considerations

Natural Forces has a proven record in the development of renewable energy projects in Nova Scotia, Atlantic Canada and across the country. The 13 Mi'kmaw bands in Nova Scotia also have experience in developing wind projects for Nova Scotia's Community Feed-In-Tariff program. Through past experience in developing these projects, the Proponent has developed extensive knowledge on best practices with respect to site finding and development of community-based wind farms. To determine site suitability, the Proponent completed a detailed assessment of the considerations listed below prior to selecting the location of the Project.

This Project was previously proposed in 2011 into a Request for Proposal to gain a power purchase contract with Nova Scotia Power (NSPI). Through that process, environmental and technical studies were undertaken in 2011 and 2012 to evaluate the siting of the Project. Ultimately, the Project was unsuccessful in winning the contract, however, it has remained an appealing site to develop.

Looking ahead with the announcement of the provincial renewable energy targets, the site was again selected to be developed.

The Project site is attractive due to the wind resource, elevation, proximity to and location of the NSPI transmission system, distance from residences, previous forest harvesting activities across the site, and low environmental sensitivity.

63°48'0"W 63°47'0"W 63°46'0"W 63°45'0"W 63°44'0"W 63°43'0"W 63°42'0"W

45°36'0"N 45°35'0"N 45°34'0"N 45°33'0"N 45°32'0"N

FRASER RD
NORTH RD
HIGHWAY 104
JERSEY RD
Mountain Brook
WENTWORTH COLLINGWOOD RD
West Branch Wallace River
WESTCHESTER RD
SERVICE ROAD
Dead Lake
FOUNTAIN LAKE NORTH TRAIL
Sugarloaf Brook
Duck Pond
Newfound Lake
WEBB RD
STILL CA RD
Isaac Lake
SID MCCUMBLY DR
FOUNTAIN LAKE SOUTH TRAIL
Fountain Lake
Fountain Lake Brook
Gleason Brook
Portapique River

FILE LOCATION: K:\2021\211329\Product\Client\EA_WC\WC_ProjectLocation.mxd

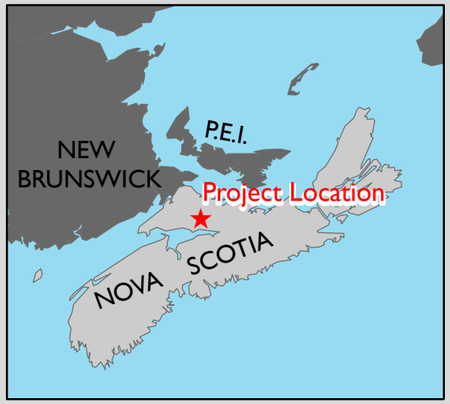
Natural Forces

WESTCHESTER WIND PROJECT

PROJECT LOCATION

FIGURE 1

- Project Location
- Centre of Site (-63.7523, 45.5678)
- Highway
- Public Road
- Watercourse
- Waterbody



0 0.25 0.5 1 km SCALE 1:30,000

N W E S

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

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

DILLON CONSULTING

PROJECT: 21-1329
STATUS: DRAFT
DATE: 2022-02-03

The following is a list of factors that were considered during the site finding and development process:

- Technical Considerations:
  - Suitable wind resource;
  - Regional topography;
  - Proximity to and location of transmission system; and
  - Available turbine technology.
- Environmental Considerations:
  - Location with respect to wetlands and watercourses;
  - Location with respect to residential dwellings or other areas sensitive to sound levels and visual impacts;
  - Sensitivity of flora and fauna;
  - Proximity to provincial or national parks, nature reserves and other sensitive areas; and
  - Location with respect to archaeological or heritage resource distribution.
- Land Use Considerations:
  - Known culturally significant areas;
  - Available access to the land;
  - Communication corridors;
  - Current land use;
  - Future land use; and
  - Proximity to residential properties, communities, and towns.
- Planning Considerations; and
- Municipal zoning by-law regulations.

The Proponent is considering multiple turbine layouts and proposes to develop 12 out of the 16 proposed WTG locations shown on **Figure 2**. As more information is gathered, the Proponent will take into consideration how these parameters and others, including any impacts to the VECs identified and assessed in this EA and any future studies, fit together for the most optimal Project layout.

2.2.1.1 Technical Considerations

The Project is located on a topographical ridge with an elevation ranging from 280-330 m above mean sea level. As a result of the elevated topography and prevailing winds coming from the Bay of Fundy (south and west), the site provides an attractive wind resource for a wind energy project.

Natural Forces has been in discussion with Nova Scotia Power Inc. (NSP) since 2012 and more recently in early 2021 regarding interconnecting the WWP to the existing transmission grid. Together, the Proponent and NSP have identified that there is a suitable 138 kV transmission line that crosses near the Project site. The Feasibility Study for a 50.4 MW wind project identified no technical issues with the proposed Project connecting to the existing line. This line tap will require the construction of up to approximately 2 km of new overhead transmission line and a new substation onsite. The new transmission line required will be constructed, owned, and operated by NSP, however, it has been included in the scope of this Environmental Assessment (EA). The point of interconnection, collector lines, and location of the new proposed substation are demonstrated in **Figure 2**. The Proponent will be

using the services of a third-party consultant to conduct a geotechnical investigation to determine geophysical conditions for turbine design and construction. This assessment is planned to be completed in the fall of 2022.

Lastly, based on site specific measured wind data, turbine availability, site suitability assessments by the manufacturers, and capacity available on the grid, an appropriate turbine technology will be finalized in 2022.

2.2.1.2 Environmental Considerations

Many environmental impacts associated with the construction and operation of a wind energy project can be reduced or eliminated through proper screening during development. The Proponent has consulted with regulatory agencies and conducted desktop and field studies to locate wetlands, watercourses, sensitive habitats, species at risk or conservation concern, and residential dwellings near the Project lands in an effort to design the project to avoid as many of these sensitive features as possible.

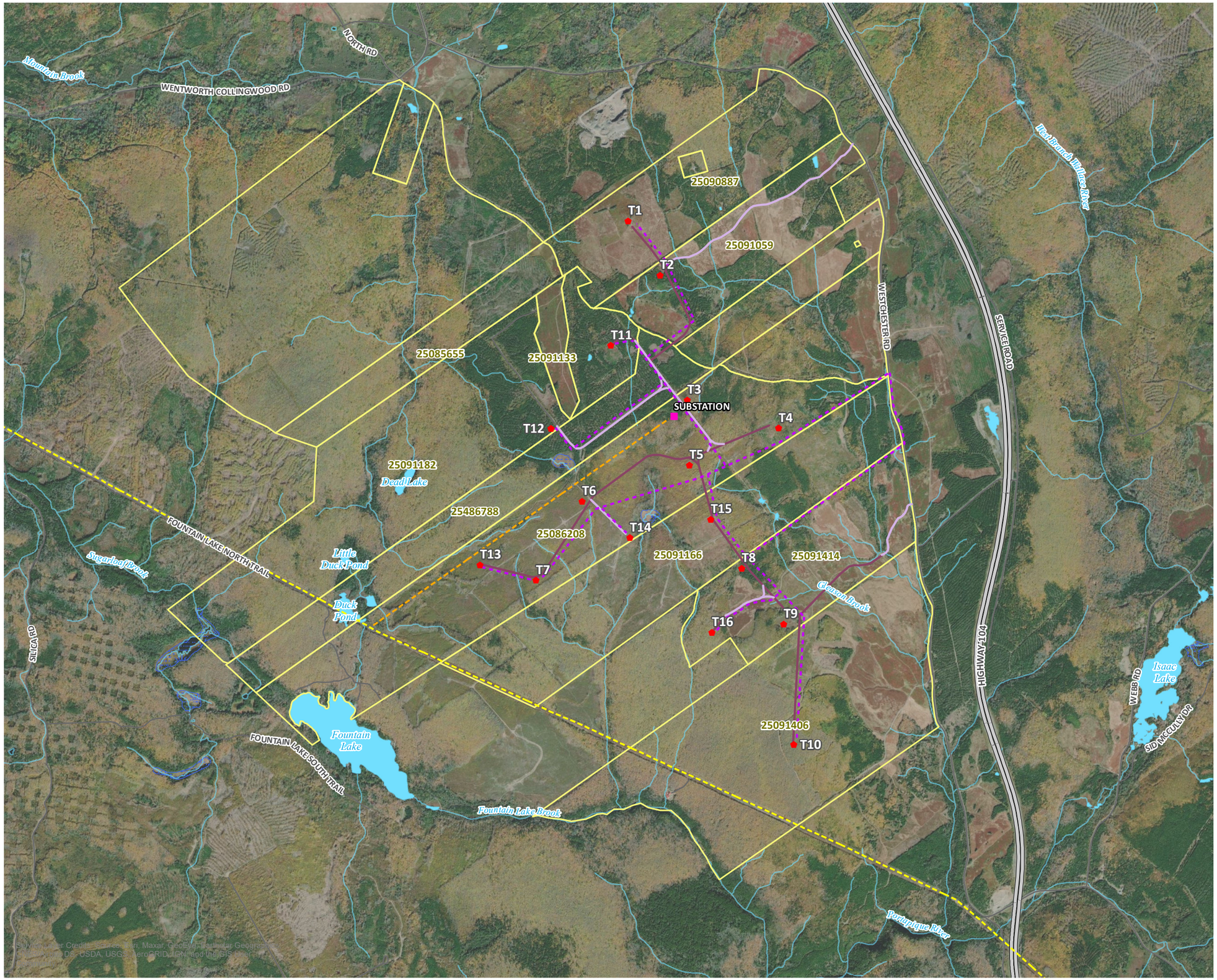
A thorough desktop review of available data for flora and fauna species in the area (i.e., 100 km from the centre of the site) has been conducted in order to identify species at risk and species of high importance that may be impacted by the proposed development. The desktop review included the environmental field studies conducted on the site in 2011 and 2012. And finally, the desktop review was then supplemented by field assessments and surveys completed in 2021. Assessments were focused on potential environmental constraints or areas of interest determined through engagement activities. Flora and fauna species at risk or of high importance identified during the desktop assessment or field surveys are discussed in **Section 6.2**.

Archaeological resource desktop and walkover studies have also been conducted by Cultural Resource Management Group Ltd (CRM). Further details of this study are discussed in **Section 6.4**.

2.2.1.3 Land Use Considerations

The Project requires consideration of current land uses within the proposed Project site. The proposed Project will be situated on privately-owned lands along Westchester Road, near Highway 104, as shown on **Figure 2**. The privately-owned site lands have an existing network of access roads used largely to access wild blueberry fields and maple woods, as well as for forestry and recreational use. There are also two telecommunication towers on the same land parcels, but setback from the proposed Project infrastructure. The land parcles are actively used for recreational purposes with existing snowmobile trails in the area. The Project requires consideration of these current land uses and consultation with these land users will be ongoing to ensure safe use and continued enjoyment of these lands.

The areas adjacent to the Project site are made up of a mix of forested areas and those used for agriculture, much of which is represented by blueberry production. There is also a quarry that has proposed an expansion and exploration and small low-density residential communities in the area.



Natural Forces

WESTCHESTER WIND PROJECT

PROJECT LAYOUT

FIGURE 2

- Proposed Turbine Location
- Substation
- Existing Site Road
- New Site Road
- Proposed Collector Network
- Interconnection Line
- Highway
- Public Road
- Transmission Line
- Watercourse
- Waterbody
- Wetland
- Site Parcel

0 0.25 0.5 1 km

N W E S

SCALE 1:27,000

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

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

DILLON CONSULTING

PROJECT: 21-1329
STATUS: DRAFT
DATE: 2022-02-11

FILE LOCATION: K:\2021\211329\Product\Client\EA_WC\WC_ProjectLayout.mxd

2.2.1.4 Planning Considerations

The Proponent has consulted the Municipality of Cumberland and the Land Use By-Law (2020) zoning regulations for the Project area, and has engaged with both staff and Council to determine the steps necessary to obtain the required municipal permits. The proposed Project is located in the Rural Resource zoning, making it appropriate for this type of development under current bylaws. The Project layout fits within the setbacks required by bylaw and positive discussions have been ongoing with staff and Council.

Consultation with the Municipality of Cumberland staff and Council will continue and the Development Permit will be obtained prior to commencing construction.

Following a detailed assessment of the above considerations, the proponent determined that the Project location has strong potential to provide efficient renewable energy while minimizing impacts to the community and the environment. The Project location and proposed layout from a regional and local context are shown in **Figure 2**.

2.3 Physical Components of the Project

The footprint of the Project is detailed in **Figure 2** and is estimated to cover approximately 88 hectares (ha) during the construction phase. Once the Project is constructed, all temporary works will be removed and the lands specifically for construction activities will be restored, which will reduce the project footprint to approximately 46.5 ha for the operational life of the Project. **Table 1** is a summary of the project footprint, the estimates are based on the full 16 turbine layout, which is an overestimation since only up to 12 turbines will be constructed.

TABLE 1 FOOTPRINT SIZES OF PROJECT PHYSICAL COMPONENTS

Infrastructure	Construction Footprint (ha)	Operational Footprint (ha)	Infrastructure Length (km)
Existing roads (to be upgraded)	12.3	7.9	5.7
New roads	41.5	22.5	12.8
Turbine foundations	16	16	-
Substation	1.17	1.17	-
Collector Line (not along roads)	13.1	9.8	-
All Collector Line	-	-	6.6
Transmission Line and cleared right of way	3.9	3.9	2.6
TOTAL	88.1	46.4	-

2.3.1 Access Roads

The access roads for the Project will range from 6 - 11 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 – 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 – 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 on-going environmental studies. The roads will be left in place following the eventual decommissioning of the Project if the landowners are in agreement.

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 road bed, or removed from site to an approved landfill or disposed of appropriately.

Existing Access Roads to be Upgraded

The Project site has many existing roads currently used for agricultural, forestry, and recreational purposes. It is anticipated that approximately 6 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 proposed 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 lines. 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 transmission line corridor may be maintained during the lifetime of the project to facilitate maintenance.

2.3.2 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 surrounding topography constraints of the Project site.

Construction of the main crane pads will involve the removal of soil to a depth of between 0.25 – 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 – 0.5 m, also 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.

2.3.3 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 to match the geological conditions.

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 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 checked for any signs of failing 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.

2.3.4 Wind Turbine Generators

The Proponent is proposing 16 potential turbine locations for the Project, with the intent to develop up to 12 of these locations. Considering these multiple turbine locations is important as to accommodate new technical data that is still being gathered. The turbine locations will be finalized by assessing all considerations, including the optimal wind resource and land availability, that allow for the civil design requirements of the Project. As more information is gathered, the Proponent will take into consideration how these parameters and others, including any impacts to the VECs identified and assessed in this EA and any future studies, fit together for the most optimal Project layout.

Each WTG has an individual generating capacity of 4.2-6.2 MW for a total Project capacity of up to 50 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 2**. 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 200 m.

TABLE 2: 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 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 will effectively reduce the risk of ice throw.

2.3.5 Lighting

A Lighting Plan for the turbines will be developed and approved by Transport Canada and 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 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).

2.3.6 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 Land Services Branch and be in accordance with applicable safety standards.

2.3.7 Interconnection to Grid

The Project will likely be connected to the existing Nova Scotia Power 138 kV transmission line. A feasibility study has been completed for this point of interconnection for a 50.4 MW project size. The planned interconnection will require up to approximately 2 km of new 138 kV line and a single-breaker switching substation including one 138 kV circuit breaker and associated switches, a control building and protection system, and communications and control between the point of interconnection switching substation and the Nova Scotia Power SCADA system.

2.3.8 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.

2.4 Setbacks and Separation Distances

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

- >30 m from wetlands and watercourses;
- >1 km from all residential dwellings and cabins;
- 16 km to nearest Important Bird Area (IBA) Cobequid Bay;
- 15.8 km to the nearest Provincial Park (Wentworth Provincial Park);
- >12 km to Provincially Protected Nature Reserves (Montrose Nature Reserve and Steepbank Brook Nature Reserve);

- >1 km to the nearest Wilderness Area (Portapique River Wilderness Area);
- >1 km to nearest Special Management Practice Zone (1.8 km from the nearest deer wintering area);
- >1 km nearest mapped significant habitat (i.e., 1.8 km from the nearest deer wintering area and 1.7 km to critical habitat for a species at risk); and
- >5 km to known bat hibernacula.

Environmentally sensitive and managed areas are discussed further in **Section 6.2.7.1**. The PDA is located within a Mainland Moose Concentration Area, intersects with potential critical habitat for Atlantic salmon (inner Bay of Fundy population) and is approximately 1.7 km from critical habitat for wood turtle.

2.5 Schedule

The approximate proposed schedule for the construction activities is presented in **Table 3**. Preconstruction activities and clearing are expected to start in Q4 of 2022 with operation of the WWP in Q1 2024.

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

- Construction of access roads, crane pads and lay down areas;
- Construction of the turbine 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 3: PROJECT SCHEDULE

Phase	Beginning of Phase
Phase I - Planning, Site Preparation and Construction	
- Clearing and Grubbing	Q4 2022
- Civil Works	Q4 2022
- Turbine Foundation	Q2 2023
- Electrical Works	Q2 2023
- Turbine Installation	Q3 2023
- Commissioning	Q4 2023
- Removal of all temporary works and restoration of the site	Q1 2024
Phase II – Operation and Maintenance	Q1 2024
- Turbine Operation	Q1 2024
- Inspection and Maintenance	
Phase III - Decommissioning	25+ years after commissioning
Infrastructure Removal	
Site Reclamation	

2.6 Planning, Site Preparation and Construction

The main site access is from Westchester 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 as described in **Section 6.3.3**. 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 Municipality of Cumberland Public Works Department and necessary permits will be acquired before commencing work. Westchester Road will mainly be the entry point for all workers, construction equipment and WTG components for the duration of the construction phase (**Figure 2**).

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 WWP site. 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. Details on the Projects interactions with wetlands and watercourses is further discussed in **Section 7.2**.

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.

2.7 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 comprehensive supervisory control and data acquisition (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.

2.8 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 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 WTG components will be dismantled and removed from the site. Similar traffic movements to those experienced during the delivery of the turbine components are anticipated. 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. The base will be removed to below plough depth, and 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. Site restoration, aiming to have the decommissioned site resemble the natural and/or former state of the site, will be initiated. Native plants and soil will be factored into the restoration plan to minimize the potential for habitat loss and invasive species spread.

2.9 Future Modifications or Extensions

The Proponent will sign a PPA with Nova Scotia Power for approximately 25 years, which is consistent with the WTGs life expectancy. There are no future phases planned for the WWP 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.