5.0 Environmental Assessment Scope and Methodology

Environmental assessment (EA) is used as a planning tool in the initial stages of project conceptualization, planning, and design. Its intention is to identify or predict Project-related effects based on results of scientific assessment and/or traditional knowledge, and to determine standard and design mitigation strategies to avoid, reduce, or eliminate adverse environmental effects. The scope of the assessment and the methods used to prepare this EA Registration document, including the characterization of the factors to be considered, and the details of the assessment of each valued component of the environment are provided below.

The Project, like any other development project, has the potential to interact with the environment in both positive and negative ways. The assessment of those potential interactions constitutes an Environmental Assessment. The assessment is completed in three steps;

1. Identification of the Valued Environmental Components (VECs) that the Project has the potential to interact with;
2. Identification of the Phase of the Project during which the interaction is most likely to occur; and
3. Identification of mitigation to reduce, or eliminate, those potential impacts.

5.1 Selection of 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.

VECs are typically selected for assessment on the basis of: regulatory issues, scientific concern, legislation, guidelines, policies, and requirements; input arising from consultation with regulatory agencies, the public, stakeholder groups, and First Nations; field reconnaissance; and professional judgment.

The Proponent has identified physical, biophysical and socio-economic VECs that were subject to assessment based on knowledge and experience, Technical Review Committee (TRC) comments and a review of the regulatory requirements. The VECs are listed in **Table 7** and addressed throughout this report.

TABLE 7: IDENTIFIED VALUED ENVIRONMENTAL COMPONENTS

Physical VECs	Biophysical VECs	Socioeconomic VECs	Cultural and Heritage VECs
• Atmospheric Environment (Weather Conditions, Climate and Climate Change, Ambient Air Quality, Ambient Sound Levels) • Physical Environment (Geology; hydrology, Groundwater) • Visual Environment (Shadow Flicker, Visual Aesthetics)	• Vegetation and Terrestrial Habitats • Wildlife Terrestrial 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	• Economy • Land Use and Value • Transportation • Recreation and Tourism • Human Health and Safety	• Archaeological and Cultural Resources • Existing and Historic Land Uses

5.2 Spatial and Temporal Boundaries

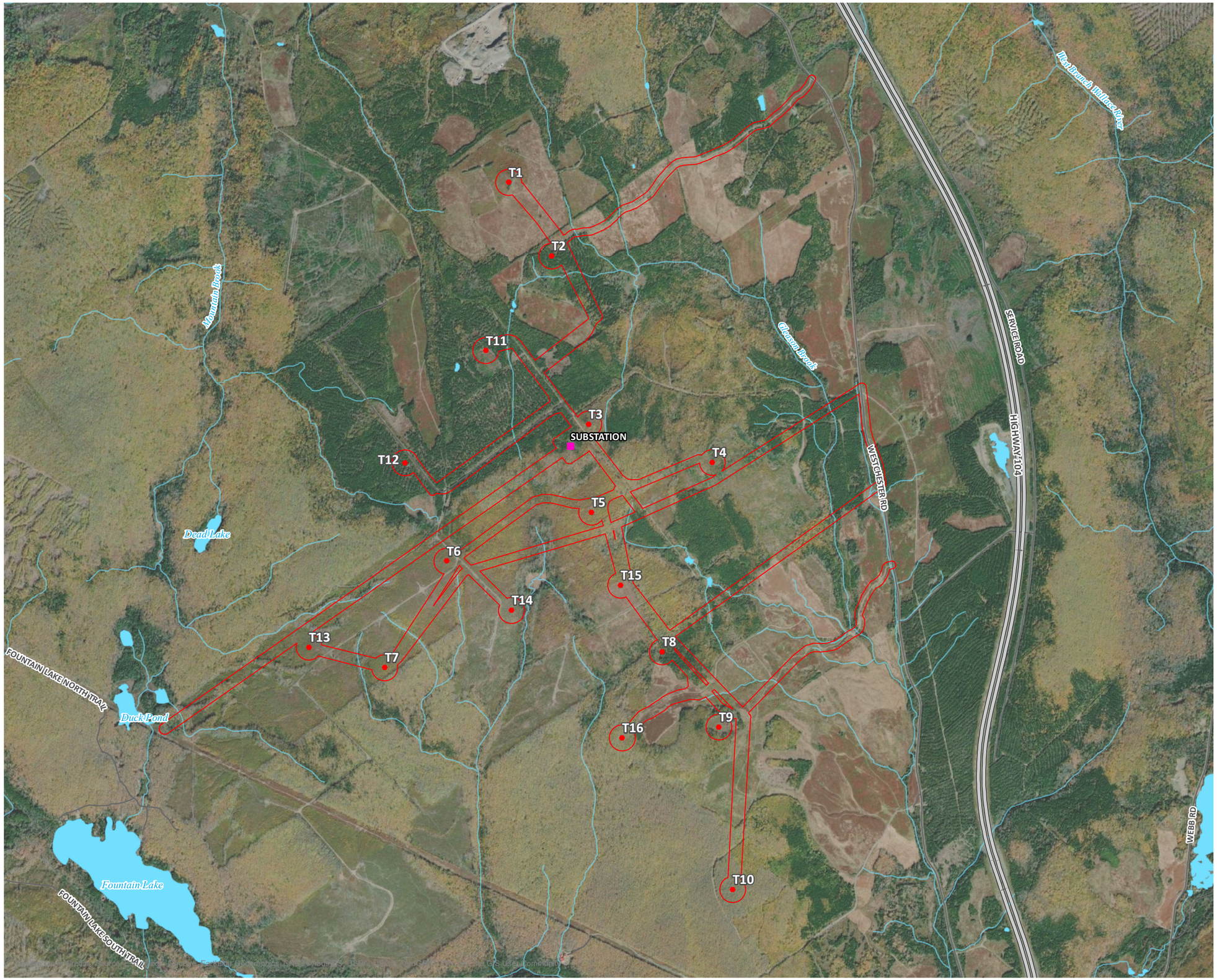
Spatial and temporal boundaries must be determined for each component in the assessment process to properly evaluate the Projects impacts on the VECs. Spatial boundaries are the physical bounds in which the physical Project and related activities are located, as well as zones affected by Project activities. Temporal boundaries are the time frame in which the activities will occur within the spatial boundary.

5.2.1 Spatial Boundaries

The spatial boundaries of the assessment are typically based on the natural system boundaries for physical and biophysical VECs, or administrative/political boundaries for socioeconomic VECs. The assessment of potential environmental interactions with the VECs encompasses two spatial boundaries: the Project Development Area (PDA) and the relevant local assessment area (LAA).

The PDA is defined as the anticipated area of physical disturbance (or physical footprint) associated with the Project. As illustrated on **Figure 3**, the PDA is defined as 15 m on either side of shoulders of the roadways (either existing or new), collector lines and transmission line; 75 m around the base of each turbine location; and 25 m around the substation. The PDA is the same for all VECs discussed within this EA Registration document.

The relevant LAA for each VEC is defined as the maximum area where Project-specific environmental interactions can be predicted and measured with a reasonable degree of accuracy and confidence (i.e., the zone of influence of the Project phases on each VEC). The LAA, which can vary by VEC, is summarized for each VEC in **Table 8**.



Natural Forces

WESTCHESTER WIND PROJECT

PROJECT DEVELOPMENT AREA

FIGURE 3

- Proposed Turbine Location
- Substation
- Project Development Area
- Highway
- Local Road
- Watercourse
- Waterbody
- Wetland

0 0.25 0.5 1 km

N W E S

SCALE 1:20,000

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: 2022-02-03

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

TABLE 8: LOCAL ASSESSMENT AREAS (LAA) FOR VALUED ENVIRONMENTAL COMPONENTS

VEC	Local Assessment Area (LAA)
Atmospheric Environment (Weather conditions, Climate and Climate Change, Ambient Air Quality, Ambient Sound Level)	A 2 km buffer around all Project components, including the PDA.
Physical Environment (Geology; Surface Water, Groundwater)	A 500 m buffer around all Project components, including the PDA.
Visual Environment (Shadow Flicker, Visual Aesthetics)	A 2 km buffer around all Project components, including the PDA.
Terrestrial Habitat and Vegetation Terrestrial Wildlife Wetlands	A buffer of 50 m along roads required to access turbine sites during construction and operation and along powerline corridors. A buffer of 150 m around turbine bases, substations and ancillary equipment.
Birds and Bird Habitat	A 500 m buffer around all Project components, including the PDA.
Bats and Bat Habitat	A 250 m buffer around all Project components, including the PDA.
Aquatic Environment (Fish and Fish Habitat, Turtle Habitat)	A 100 m buffer upstream and downstream of proposed watercourse crossings within the PDA.
Species at Risk and Species of Conservation Concern	A 100 km buffer around all Project components, including the PDA.
Socioeconomic Environment (Demography, Economy, Land Use and Value; Transportation, Recreation and Tourism, Human Health)	The PDA and the surrounding rural communities within the West Hants Regional Municipality.
Cultural and Heritage Environment (Archaeological and Cultural Resources, Existing and Historical Land Uses)	Archaeological and Cultural Resources screening includes the site property boundaries Existing and Historical Land Uses: A 5 km buffer around all Project components, including the PDA.

5.2.2 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 and are outlined below in Table 9.

TABLE 9: TEMPORAL BOUNDARY FOR PROJECT PHASES

Phase	Temporal Boundary
Planning, Site Preparation and Construction, Site Restoration	Q4 2022 – Q1-2024
Operation and Maintenance	Q1 2024 – Operations end (estimated 25+ years after commissioning)
Decommissioning, Infrastructure Removal and Site Reclamation	Estimated 25+ years after commissioning

5.3 Effects Assessment Methods

The assessment of potential environmental interactions with the Project involves identifying the potential for the Project to interact with the VECs outlined in the section above. As each phase of the Project involves different activities, and potentially different interactions with the VECs, the assessment was completed in consideration of each of the Project phases (Site Preparation and Construction; Operation and Maintenance; and Decommissioning) as well as for Accidents, Malfunctions, and Unplanned Events. The potential interactions between the Project and the VECs are presented in **Section 7.0**.

For each of the areas where a Project-VEC interaction has the potential to occur the following assessment methodology was followed:

Scope of VEC – This involves defining the VEC and a rationale for its selection, including a description of temporal and spatial boundaries.

Existing Conditions – This involves the establishment of current existing (baseline) environmental conditions for the VEC in the absence of the Project. Existing conditions were defined based on both desktop information sources as well as confirmatory field work in the Project site and LAA (where available).

Assessment of Project-VEC Interactions –This involves describing how a potential interaction could occur in the absence of mitigation; a discussion of the mitigation and environmental protection measures that are proposed to avoid, reduce, or eliminate adverse interactions between the Project and the VEC, and a characterization of the interactions and prediction of potential environmental effects that could occur as a result of the interactions.

All phases of the Project are assessed, as are accidents, malfunctions, and unplanned events. The evaluation also considers the effects of the environment on the Project. A summary of the assessment for each VEC is provided, leading to an overall conclusion in respect of the interactions and associated effects of the Project on the VEC. The summary also outlines the planned follow-up confirmatory field studies that are recommended for each VEC in order to confirm the predicted environmental effects.

5.4 Project Risk Categories

In order to qualify the potential risk to biophysical VECs (i.e., wild species and/or their habitat), wind power projects are assigned to one of four project risk categories described in the publication Guide to Preparing an EA Registration Document for Wind Power Projects in Nova Scotia (NS Environmental Assessment Branch 2021). The project risk category is determined by a combination of site sensitivity, project size, and turbine height. With this qualification, the Project can be planned and monitored such that impacts resulting from construction or operation can be minimized and/or mitigated.

The above publication categorizes projects within one of four Levels of Concern based on the facility size and site sensitivity. The Project size has been categorized as being medium in size (11-40 turbines); however, the PDA was assessed as very high Environmental Sensitivity due to the presence of species at risk. Therefore, the Project merits a ranking of a Category 4, defined as follows:

> "Projects in this category present the highest level of potential risk to wildlife, and/or their habitat(s) and require the highest level of effort for environmental assessment. Comprehensive baseline surveys are required for category 4 projects. These surveys must be completed over the course of one calendar year. The Proponent must apply standards and protocols for bird monitoring specified for "Category 4" projects as defined by Environment and Climate Change Canada and the Canadian Wildlife Service. Long-term monitoring extended over five years or more, for example, may in some cases be required to document potential negative effects of functional habitat loss."