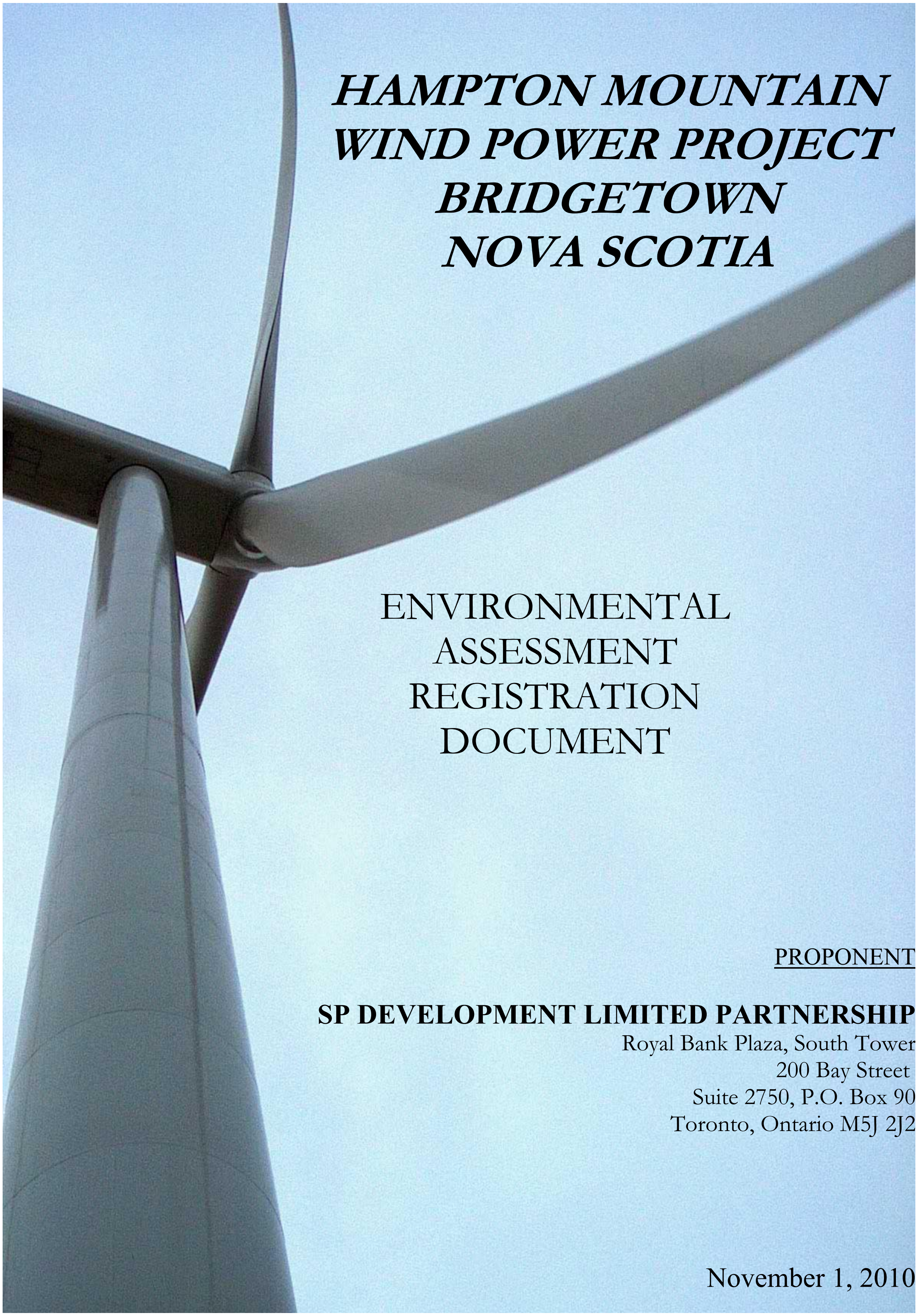

HAMPTON MOUNTAIN WIND POWER PROJECT BRIDGETOWN NOVA SCOTIA

ENVIRONMENTAL ASSESSMENT REGISTRATION DOCUMENT

PROPONENT

SP DEVELOPMENT LIMITED PARTNERSHIP
Royal Bank Plaza, South Tower
200 Bay Street
Suite 2750, P.O. Box 90
Toronto, Ontario M5J 2J2

November 1, 2010

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EXECUTIVE SUMMARY

Sprott Power Corp. has a 1,000 megawatt (MW) wind energy development portfolio consisting of 12 sites in Quebec, New Brunswick and Nova Scotia. The sites have been developed over a four-year period and included 23 meteorological towers collecting wind resource data. The portfolio brings together more than 300 landowners and over 100,000 acres of development area within 12 communities.

SP Development Limited Partnership, a wholly owned subsidiary of Sprott Power Corp. (Sprott) intends to construct, own and operate a 25.2 MW wind power electrical generation project and a substation on lands located north of Bridgetown, Nova Scotia. The project is referred to as the Hampton Mountain Wind Power Project (the Project).

The Project is considered a Category II undertaking. A Category II undertaking is defined as an "electrical generating facility which has a production rating of 2 megawatts or more derived from wind, tides, or waves". As such, the Project is required to register for environmental assessment as identified under Schedule A of the *Environmental Assessment Regulations* (Nova Scotia).

This environmental assessment registration document has been created according to the methodologies and requirements outlined in the document *Proponents Guide to Wind Power Projects: Guide for Preparing an Environmental Assessment Registration Document (Nova Scotia Environment, May 2007; Updated September 2009)* and accepted practices in environmental assessment.

The Project environmental development efforts to date have included consultation with, landowners, residents, the municipality, First Nations and regulatory agencies as well as the completion of the environmental assessment components during the spring, summer and fall of 2010. Sprott anticipates project construction will commence in 2011 following the completion of the environmental assessment and the finalization of all regulatory approvals.

Twelve (12) turbines are proposed to be installed on the Project lands. As a fundamental component of the Project, various access roads, above and below ground electrical collection lines, a substation, crane pads, staging and storage yards, and temporary work space will be required. The Project layout has been developed based on known environmental, regulatory, and social constraints and is subject to regulatory approval.

Once setbacks were identified, the Project lands GIS map was created to show available lands for the Project development after the setbacks were imposed. As a result of the constraints, only 20 per cent of the original Project Area is actually available for wind power development.

Standard construction mitigation methods will be implemented during all phases of the building of the Project to ensure there are no significant impacts of the Project on Valued Ecosystem Components (VEC). These methods were included in the development of the Environmental Protection Plan (EPP) which is included as part of this assessment.

There are no areas of cultural significance identified during assessments of historical resources. As well there are no adverse effects anticipated in regards to environmental changes on health and socio-economic conditions, physical and cultural heritage areas, traditional land use, and traditional structures or sites.

The magnitude of disturbance and risk associated with the Project are all considered minor given the abundance of similar VEC within the Project area and the mitigation techniques and technologies currently available.

The data presented within this assessment indicates there are no significant environmental concerns and no significant impacts expected that cannot be effectively mitigated through well established and acceptable industry practices.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. General Information

General Project Information	Sprott Power Corp. intends to construct and operate a 25 MW wind power project on lands referred to as Hampton Mountain, located 4.30 km north of Bridgetown Nova Scotia.
Project Name	Hampton Mountain Wind Power Project (the "Project")
Proponent Name	SP Development Limited Partnership
Proponent Contact Information	Royal Bank Plaza, South Tower 200 Bay Street Suite 2750, P.O. Box 90 Toronto, Ontario M5J 2J2 Business: 416 943 8099 Facsimile: 416 943 4695 email: info@Sprottpower.com
Proponent Project Director	Donald J. Bartlett Chief Operating Officer
Project Location	• The Project lands are located approximately 4.30 kilometres north of the town of Bridgetown, Nova Scotia; • The Project lands are located approximately 4.00 kilometres southeast of the community of Hampton, Nova Scotia; • Project lands located entirely within Annapolis County, Nova Scotia; and • The approximate centre of the Project lands are located at 44^{0}53'03.14"N and 65^{0}17'49.95"W.
Landowner(s)	The project lands are located entirely on freehold (private) land. No federal or provincial crown lands are impacted.
Expected rated capacity of proposed project in MW	25.2 MW (12 turbines x 2.1 MW/turbine)
Federal Involvement	At this time, no federal departments are providing funding. No other Canadian Environmental Assessment Act triggers (*Section 5, CEAA*) will be enacted.
Required Federal Permits &	• Department of National Defense Authorization; • Transport Canada; • Nav Canada;

Authorizations	• No other federal authorizations are anticipated at this time;
Provincial Authorities issuing Approvals	a. Nova Scotia Department of Environment; b. Nova Scotia Department of Natural Resources; c. Nova Scotia Transportation and Infrastructure Renewal
Required Provincial Permits & Authorizations	The following permits, authorizations and/or approvals will be required for this Project which will allow for the construction and operation of the Project 1. *Environmental Assessment Approval.* Approved pursuant to Section 40 of the *Environment Act* and Section 13 (1)(b) of the *Environmental Assessment Regulations* in Nova Scotia, Canada; 2. *Approval to Construct – Culvert(s),* Pursuant to *Part V of the Environment Act, S.N.S 1994-95, c.1;;* 3. Nova Scotia Transporation and Infrastructure Renewal: *Permit for Breaking Soil of Highways;* 4. *Wetland Alterations* Pursuant to Activities Designation Regulations, Division I, Section 5(1)(na)
Provincial Regulatory Authorities Consulted during EA and Project Development Process	Nova Scotia Environment (NSE), Policy & Corporate Services: • Helen MacPhail, Environmental Assessment Officer; • Steve Sanford, Environmental Assessment Officer. Nova Scotia Department of Natural Resources: • Mark Elderkin, Species at Risk Biologist Office of Aboriginal Affairs: • Jay Hartling, Senior Strategist, Provincial Consultation. Health Canada: • Allison Denning, Regional Environmental Assessment Coordinator, Atlantic Region Nova Scotia Department of Energy: • Ross McLaren, Communications Director Provincial Parks: • Harold Carrol, Director Mi’kmaq Environmental Assessment Technical Committee

Municipal Authorities	County of Annapolis	
Required Municipal Permits & Authorizations	*Development Permit* – Municipality of the County of Annapolis	
Environmental Assessment Document Completed By:	Robert McCallum, P.Biol Meghan Milloy, MES, McCallum Environmental Ltd Solutions for Environmental Approvals and Compliance **McCallum Environmental Ltd.** 208 Kingswood Dr. Hammonds Plains, N.S. B4B 1L2	Michael Parker East Coast Aquatics **East Coast Aquatics Inc.** P.O. Box 129 Bridgetown, Nova Scotia B0S 1C0

2. Project Information

A. PROPONENT PROFILE

Sprott has a 1,000 Megawatt (MW) wind energy development portfolio consisting of twelve sites in Quebec, New Brunswick and Nova Scotia. The sites were developed over a four-year period, and included 23 meteorological towers collecting wind resource data for up to 48 months. The portfolio brings together over 300 landowners and 100,000 acres of development area within twelve communities.

Sprott has been created by the former co-founder of Ventus Energy Inc., Jeff Jenner. Ventus developed almost 50% of the wind energy project capacity currently operating or under construction in the Maritimes prior to its sale in 2007.

SP Development Limited Partnership, a wholly owned subsidiary of Sprott, is the proponent for the Project. Sprott is committed to the development of renewable energy projects utilizing the best available wind, water and solar technologies. Sprott constructs, develops and operates renewable energy generation facilities on behalf of its investors and in cooperation with the landowners and communities where the projects are located.

Sprott's Executive Management Team consists of:

- Jeff Jenner, CA, CBV – President and Chief Executive Officer
- Donald J. Bartlett, P.Eng. – Chief Operating Officer (Bedford, NS)
- Martin Lim, CA – Chief Financial Officer
- Hugh Campbell, P.Eng. – Vice President Technology and Procurement

The Environmental Assessment Project Team is:

- Robert McCallum, P.Biol., McCallum Environmental Ltd., Halifax
- Michael Parker, Biologist, East Coast Aquatics, Bridgetown
- Meghan Milloy, MSc., McCallum Environmental Ltd., Halifax
- Andrew Sharpe, Biologist, Bridgetown
- Sharon Hawboldt, Biologist, Granville Ferry
- Steve Davis, Professional Archeologist, Davis McIntyre & Associates, Halifax

B. NEED FOR PROJECT

The Government of Nova Scotia has committed to a target of 25 percent renewable electricity supply by 2015 as part of Nova Scotia's Renewable Energy Plan that was announced in 2010. Nova Scotia's total renewable electricity content is expected to more than double from 2009 levels to satisfy this target. Furthermore, the Government of Nova Scotia has committed to a target of 40% renewable electricity supply by 2020. The renewable energy production is expected to include hydro, wind, biomass, and tidal sources.

This Project is being developed in response to this government initiative.

C. BACKGROUND OF PROJECT

The Project was initiated in 2005 by Gale Force Energy Inc. which signed option agreements with more than 20 landowners covering approximately 1,635 hectares. In July 2006, a sixty (60) metre meteorological tower (MET) was installed. The MET has collected over four years of wind resource data at the Project site with a high degree of confidence. There were a series of corporate changes from 2006 to 2009 that culminated in Sprott becoming the owner and proponent of the Project.

D. PROJECT LOCATION

The Project lands are located entirely within Annapolis County, Nova Scotia. The Project lands are located approximately 4.30 kilometres north of the town of Bridgetown, Nova Scotia, and approximately 4.00 kilometres southeast of the community of Hampton, Nova Scotia. The approximate centre of the Project lands is located at 44^{0}53'03.14"N and 65^{0}17'49.95"W.

The map on the following page provides an overview of the Project location.

The western boundary of the Project is marked by the Hampton Mountain Road, which leads north from Bridgetown, towards the community of Hampton. The northern boundary of the Project is marked by Arlington Road, which runs east from the Hampton Mountain Road. The eastern boundary of the Project is located at Leonard Road, and the southern boundary of the Project follows the abrupt drop from what is known locally as North Mountain.

The Project footprint is situated on private land. The following table provides a list of PIDs included in the Project.

Table 1. Project PIDs. *

PID	PID
05169594	05127774
05169602	05031644
05209333	05126925
05127386	05127758
05170683	05127725
05141957	05126990
05141940	05005400
05266077	05126958

***Please refer to *Figure 25 – Watercourse Crossing Locations* for a map with PIDs.**

The map on the following pages provides an overview of the Project location.

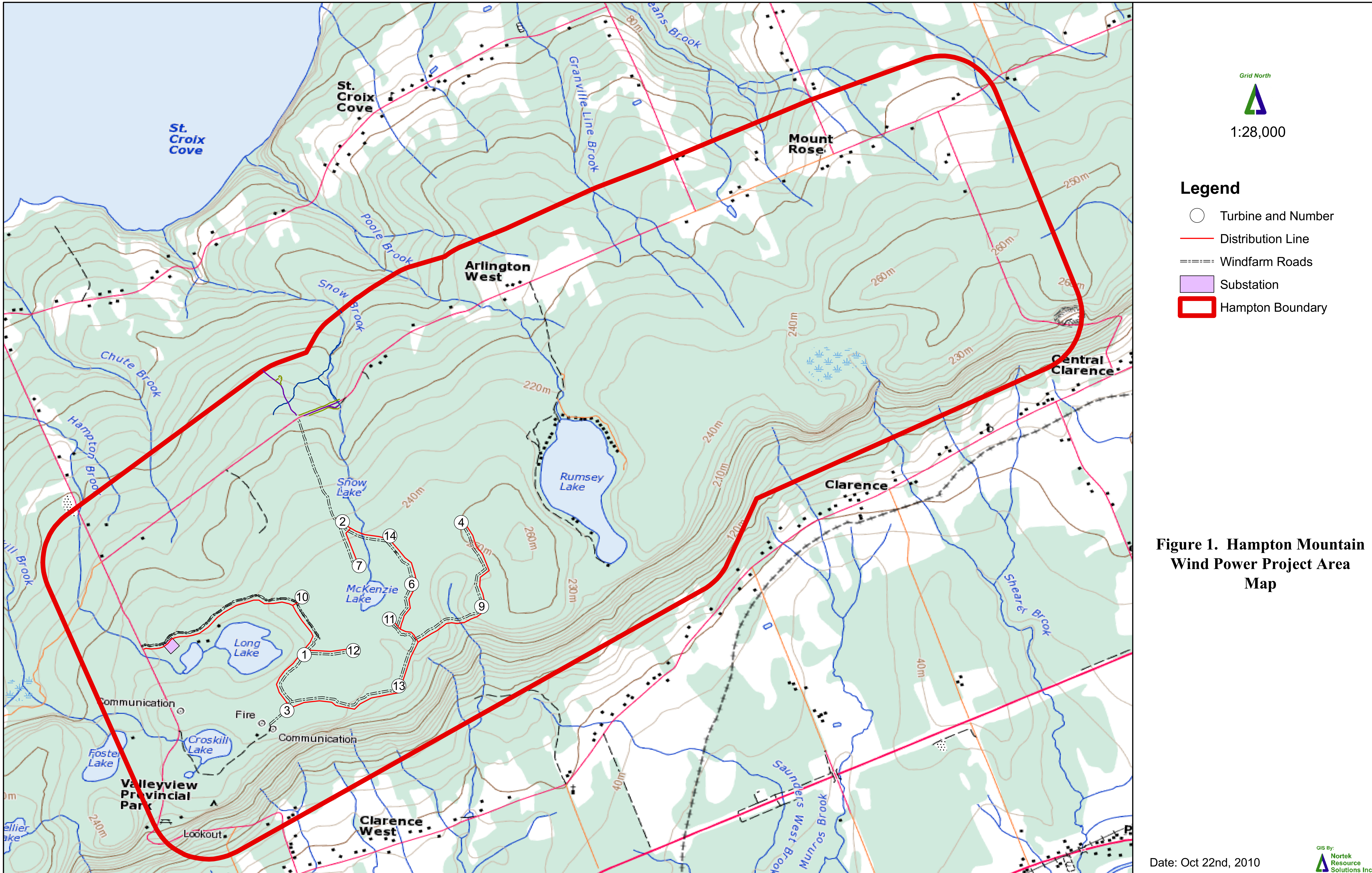

Figure 1. Hampton Mountain Wind Power Project Area Map

Date: Oct 22nd, 2010

Figure 2. Project Lands Map.

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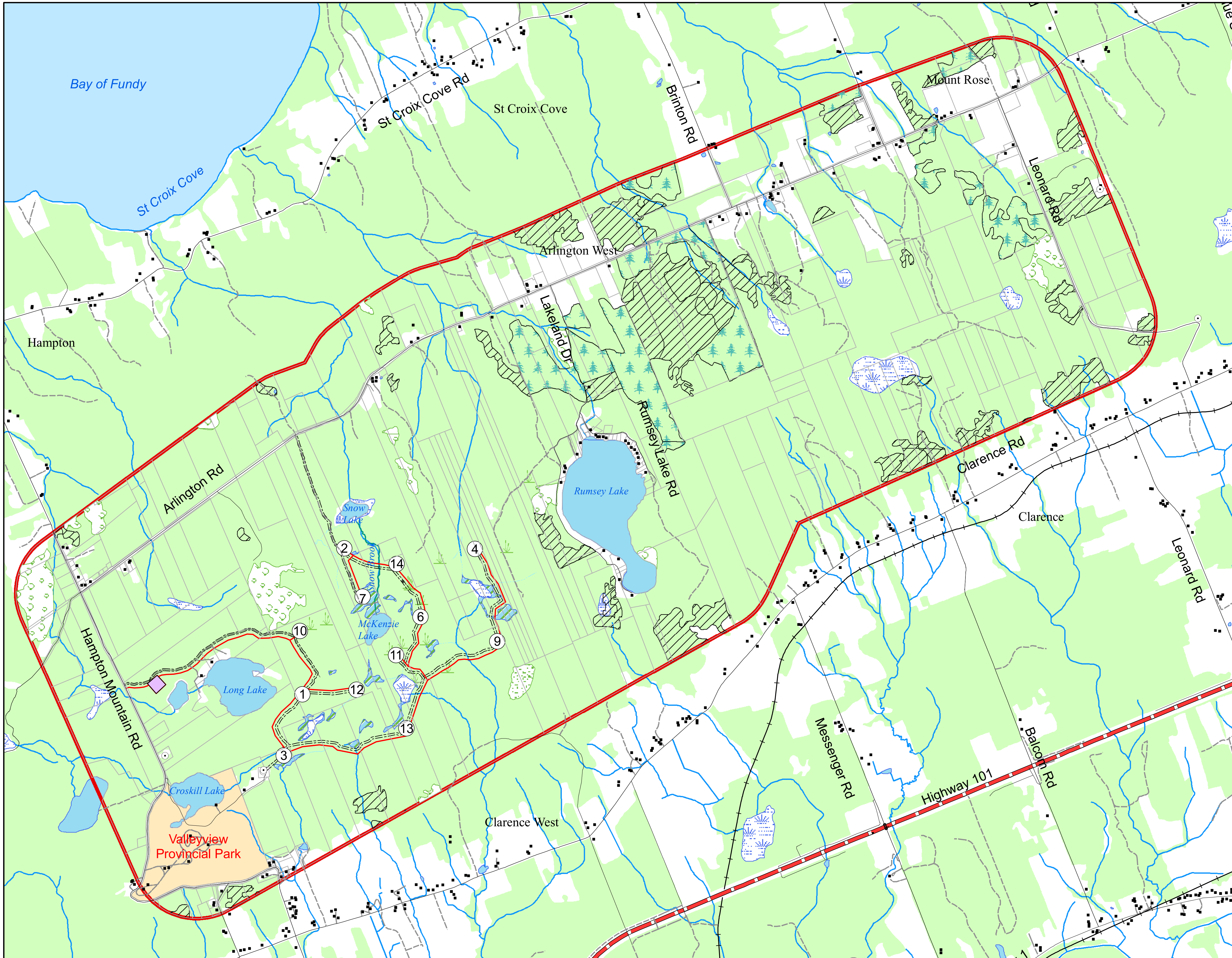


Project Features

- Substation
- Turbine and Number
- Distribution Line
- Windfarm Roads
- Hampton Boundary

Existing Features

- Towers
- Buildings
- Highway 101
- Main Rd
- Rail Road
- Woods Roads
- Trails
- Provincial Park

Water

- Field Verified Wetland
- Field Verified Streams
- Rivers
- Lake
- DNR Wetlands
- Field Verified Wetlands

Date: Oct 25th, 2010

GIS By: Nortek Resource Solutions Inc.

E. PROJECT COMPONENTS/STRUCTURES

The key components of the Project include 12 wind turbine generators (the "turbines") with a total installed capacity of 25.2 MW, pad-mounted or nacelle situated transformers at each turbine, a 34.5 kilovolt ("kV") electrical collector system with both overhead and buried lines, and a 69 kV/138kV wind farm substation that will include a step-up transformer, control building, switchgear, support structures, and a system of access roads to the turbines. Nova Scotia Power Inc. ("NSPI") is expected to construct a 5 km 69 kV/138kV overhead transmission line to the Project's substation from their facility in Bridgetown.

Sprott intends to lease and/or purchase an existing building which will operate as an operation and maintenance building with a storage yard.

a. Turbines

The representative values for the characteristics of one potential turbine manufacturer are shown below for example purposes.

Table 2. Turbine Characteristics

OPERATING DATA	
Rated power	2.1 MW
Cut-in wind speed	3.5 metres per second (m/s)
Rated wind speed	11.5 m/s
Cut-out wind speed	25 m/s
50 years gust wind speed	59.5 m/s
Hub height	79 metres (m)
Rotational Speed	12 to 15.8 revolutions per minute
ROTOR	
Pitch system	Pitch regulated, electrical
Diameter	95 m
Swept area	7085 square meters
Blade material type	Glass-fibre reinforced plastic (GRP)/Epoxy
GENERATOR	
Type	Asynchronous double fed induction generator (DGIG)
Rated power	2100 kW
Rated voltage	600 Volts
Frequency	60 Hertz
Protection	IP 54
Cooling system	Forced Air cooled
Insulation	Class H
Slip control	20%
BRAKING SYSTEM	

Aerodynamic brake	3 independent systems with blade pitching mechanism
Mechanical brake	Hydraulic fail-safe disc brake system
GEARBOX	
Type	3 stages (One planetary & Two helical)
Ratio	1 : 118.6
Nominal load	2294 kW
YAW SYSTEM	
Type	Driven by 4 electrical driven planetary drives
Bearings	Friction bearing with gear
CERTIFICATIONS	
Design standards	GL-Guideline of 2003/2004, IEC-61400-1, 3rd Edition, IEC 61400-22, 1st Edition
Quality	ISO 9001:2000, ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007
TOWER	
Type	4 section welded steel tubular tower
Corrosion protection	Triple anti-corrosion exterior/double anti-corrosion interior

Wind turbines and supporting structures typically consist of eight key components:

1. tower foundations;
2. three or four tower sections of steel or concrete with service access provided by stairs and/or service person lifts;
3. fibre glass nacelle housing the mainshaft gearbox and generator,
4. three fibre glass or carbon fibre rotor blades;
5. cast iron hub;
6. pad-mounted or internal nacelle mounted transformer;
7. electrical and grounding wires; and
8. buried grounding grid at perimeter of foundation

The average cleared area s required for each turbine including assembly areas for the turbine components but excluding the access road, power line and temporary laydown area, will be 0.8 hectares.

Each turbine will be up to approximately 80 to 100 m in height from ground level to the hub. The swept diameter of each three bladed rotor will measure 95 to 100 m. The rotors are variable speed, rotating slowly at 12 to 18 revolutions per minute depending upon wind conditions. The land requirement for each turbine will be dependent upon the final site specific location of the turbines, consultation with the landowner, the associated infrastructure, existing on-site environmental features and permitting conditions.

The nacelle includes bedplate/frame, fibre glass enclosure, rotor hub, mainshaft, gearbox, generator, turbine control equipment, instrumentation, and cooling/heating equipment. These components are located at the top of the tower sections and are connected to the three bladed rotor via a main shaft and hub assembly. Tower foundations may range from three to eight metres in depth depending upon site-specific soil conditions.

A pad-mounted or nacelle situated transformer will be required for each turbine (this will be determined once a turbine manufacturer has been selected) to transform the low voltage electricity created in the nacelle to medium voltage collection system level (i.e., 600 V to 34.5 kV). The pad mounted transformers will be approximately three metres long and wide and about two metres high. The electrical collection system will be comprised of a series of above ground power lines with the exception to where the collection system will go underground from the last riser pole to the turbine pad mounted transformer or directly into the turbine tower.

i. Lighting

Turbine lighting will meet the design requirements and quality assurance for lights required under *Canadian Aviation Regulations 2010-1* Part VI - General Operating and Flight Rules Standard 621.19 - Standards Obstruction Marking, Section. Transport Canada generally recommends the use of medium intensity red beacon and/or white strobe lights.

b. Electrical Collection System

The 34.5 kV medium voltage collection system will be used to take the power from the wind turbines to the wind farm substation. The collection system will consist of one (1) to two (2) x 34.5 kV circuits. Each circuit will be designed to handle approximately 15 MW to 25 MW of wind generation. The 34.5 kV circuits will consist of both overhead and buried sections. The overhead circuits will consist of a single wooden pole construction from the substation to an area of approximately 50 to 100 metres from the turbine where the overhead section will then connect to an underground cable which will connect to the unit step-up transformer at the wind turbine. The total distance of the collection system, both overhead and underground is estimated to be 7.4 kilometres in length. The routing of the collection system will mainly follow the access roads with the exception where there is a requirement to run the collection system across country to the next set of turbines.

NSPI 69kV transmission system is located approximately 5km from the Project site at the Bridgetown substation. A new 69kV line will be required from NSPI existing substation to the new Project substation. Alternatively, NSPI may elect to connect the Project to their 138kV transmission line when and if NSPI extends the 138kV system as far as the Project site. The 69kV/138kV line is expected to follow sections of existing county roads and/or utilize existing municipal road allowances or utility line right-of-ways were possible in order to avoid or minimize environmental impact to the surrounding area. NSPI will design, construct and own the

69kV/138kV line using their standard engineering design. Any regulatory approvals required for the transmission line is the responsibility of the utility.

c. Substation

The Project substation will step-up the voltage from 34.5kV to 69kV/138kV and will interconnect the wind farm to NSPI's 69kV/138kV transmission system. The substation will be located on private land according to the Site Plan and will consist of a small control building, a main 34.5kV to 69kV/138kV step-up transformer, breakers, air disconnect switches, structural steel, protection and control equipment, metering, equipment concrete foundations, and ground grid. The substation will be secured by a chain link fence to restrict access to only authorized personnel.

d. Access Roads

The access roads will be upgraded and built to accommodate the size requirements of the crane and the load specifications to support the delivery of approximately 100 flatbed truck loads of turbine and crane components. The final access road surface will be typically 8m wide along straight sections, but will be widened through turns and as required to allow adequate access for turbine components. Ditches and culverts will be added where required to allow for proper drainage. The surface soil and grubbing will be re-located in borrow areas along the road side and graded to prevent erosion and sediment runoff. The ditches will be constructed along the road edge following provincial guidelines and procedures to control for surface water runoff. Crossover culverts or water-bars will be installed under the roads where necessary.

e. Meteorological (MET) Tower

The Meteorological Tower, which is currently located between Turbine locations 10 and 1, is a tower which carries meteorological instrumentation. The MET has a number of anemometers (devices to measure wind speed) installed at different heights on the mast, and one or two wind vanes (devices to measure wind direction). These are connected to a data logger, at the base of a mast, via screened cables. This system is battery operated using a solar panel for recharge.

Signals that area recorded for each sensor with a ten-minute averaging period, are as follows:

- Mean wind speed;
- Maximum gust wind speed;
- True standard deviation of wind speed;
- Mean wind direction;
- Mean temperature;
- Air Pressure;

- Logger battery voltage.

In recent years, it has become standard practice to download data remotely, via either modem or a satellite link. This approach has made managing large quantities of data from masts, on a range of prospective sites, significantly more efficient than manual downloading.

f. Temporary Components

During the construction phases of the project, the following lists temporary Project components that will be required:

1. Storage yard (or multiple storage areas) will be required to store construction equipment, turbines, cranes, shacks, offices, parking and other necessary components. An operations building or trailers will be brought in prior to leasing or purchasing of an building for the operation and maintenance facility;
2. Temporary work space may be required along access roads and at crane pad sites will be used as required following approval from appropriate landowners;
3. Two (2) borrow pits may be required to provide necessary fill for access road or crane pad site creation. All borrow pits will be permitted as required;
4. Due to turbine foundation requirements, a temporary cement batch plant may be established within or adjacent to the project lands to supply cement for foundation construction. To date this requirement has not been finalized;
5. An area next to the substation will be used to allow for construction trailers and construction personnel.

g. Other Components

An operation and maintenance space will be leased or an existing facility may be purchased in a near-by town. The building will facilitate the day-to-day operations for the project.

F. PROJECT ACTIVITIES

a. Anticipated Schedule of Activities

The following milestone schedule outline the typical project schedule which takes into account the final Project development stages such as receiving regulatory approval and execution of a Power Purchase Agreement. It also allows for adequate time to procure the long lead Plant equipment such as the wind turbines and the main step-up transformer. Should a number of the key items be obtained early, there may be an opportunity to shorten the schedule by 12 months.

Table 3. Schedule Table

Task	Anticipated Completion Date
Geotechnical Study	**December 2010**
Engineering Design	**February 2011**
Road Construction	**June 2011**
Environmental Assessment Approval	**February 2011**
Power Purchase Agreement	**March 2011**
Turbine Purchase Agreement	**March 2011**
Generator Interconnection Agreement	**June 2011**
Commence Construction	**February 2011**
-Clearing for roads & turbine foundations	February 2011
-Preliminary roads	March 2011
-Pour concrete mud slabs for turbine foundations	March 2011
-Long-lead equipment procurement	May 2011
-Final Roads	May/June 2011
-Substation & Collection System	May/June 2012
-Turbine foundations, turbine delivery & erection	June/Sept 2012
Commercial Operation Date	**Oct/Nov 2012**

b. Anticipated Phases of Activities

Phase	Details	
Pre-Construction		
	Notification of residents/landowners of construction commencement Survey turbine site locations in field Survey access roads on project lands Trucking & set up of temporary facilities – construction offices, workers trailers, temporary washroom facilities, etc. Construction equipment delivery	• **Use of provincial, municipal or private roads for access;** • **Use of local landfill for disposal of refuse;** • **Use of local accommodations and facilities** • **Use of staging and storage yard.**
Construction		
General	Clearing and Grubbing of overstory vegetation Construction of storage yards Construction of temporary work space	• **Re-use or disposal of excess soils;** • **Lands required for cement plant may be outside Project boundaries**
Civil	Construction of access roads, approaches, water crossings Removal of excess soils Construction of temporary work space(s)	

	Construction of quarries Site grading Excavation of foundations Pouring of foundations Reclamation of surplus soils	• **Use provincial, municipal or private roads for access to water;** • **Construction of power lines within government road allowances or along existing transmission right-of-ways.**
Turbines	Turbine component delivery Tower/turbine erection Install Turbine Electrical & Padmount Transformers	
Collection System	Install & Connect overhead (O/H) Collector System including fiber optic communication cable. Installation of poles and guide wires	
Sub-Station	Installation of equipment foundations and station ground grid Installation of equipment support structures Installation of transformer, switch gear, protection and control systems, control building, conduits, wiring, and terminations	
Operations & Maintenance		
	Weed control	• **Limited use of landfills or recycling facilities;** • **May require temporary work space for equipment storage in event that cranes or other large equipment and crew required for maintenance activity**
	Re-seeding of disturbed soils	
	Grading and road maintenance	
	Turbine maintenance	
	Facility maintenance	
	Testing of equipment	
Decommissioning		
	Removal of infrastructure	• **Use provincial, municipal or private roads for access to water or soils;** • **May require temporary work space for equipment storage prior to removal from Project;** • **Use of water from local source for reclamation;** • **Use of landfills/recycling for equipment waste/disposal.**
	Removal of crane pads and gravel from access roads	
	Recontouring of pad and access roads	
	Reclamation of surface soils	
	Re-seeding	
	Removal of above ground poles and lines	

c. Access Road Construction

Proposed access routes have utilized existing roads, trails, and clearings as much as possible.

Construction of access roads will consist of the following:

- Surveying of the access road boundaries to 20 metres;
- Road boundaries will be flagged by surveyors;
- Cutting, de-limbing and decking all salvageable timber using feller buncher, skidders, chainsaws and logging trucks;
- Following removal of overstory vegetation, lands will be brushed with a bulldozer and backhoe to remove non-salvageable wood and brush. Scrub brush/grubbings will be piled along disturbance boundaries and will have breaks installed to allow for water flow where necessary. Limbs and non-merchantable material will be chipped, left in brush piles or buried underground for natural decay; depending on the site conditions.
- Roads may require soil stripping and leveling using a two lift soil stripping method in areas where bedrock is not found at or immediately below the surface.
- Following salvage of surface soils (where possible), crushed rock may be placed on the road and packed with a roller;
- A second and final layer of crushed rock may be placed over top and packed with a roller if required;
- Gravel may be used on the accesses on an as-needed basis during the construction and operational life;
- Culverts will be installed as required to maintain natural drainage according to Nova Scotia Environment and/or Department of Fisheries & Oceans standards;
- Once roads are constructed and suitable for travel, any soils piled in or along the edge of the cleared area will be returned to ditchlines and re-vegetated as per the Environmental Protection Plan (EPP), provided in Appendix II;

d. Turbine Site Construction

The erection of a turbine requires a large level work area for safe operation and the following site dimensions will be typical for the project (refer to Drawing on following page):

Table 4. Infrastructure and associated dimensions of workspace

Infrastructure	Dimensions of Workspace Required
Total Cleared Work Space Per Turbine (required for storage of turbine blades, nacelle, and tower sections during the erection process)	90 m x 90 m
Permanent Lease: Turbine base with Power	25 m x 25 m

Cables and Pad Mounted Transformer for use during operational life	
Crane Pad	16 m x 25 m

Construction of the turbine locations will consist of the following:

- Surveying of the turbine site boundaries to 90 metre x 90 metre dimensions;
- Boundaries will be flagged by surveyors;
- Cutting, de-limbing and decking all salvageable timber using feller buncher;
- Following removal of overstory vegetation, lands will be brushed with a bulldozer and backhoe to remove non-salvageable wood and brush. Scrub brush will be piled along disturbance boundaries and will have breaks installed to allow for water flow where necessary (Photo 1);

Photo 1. Typical clearing operations of a turbine site following timber removal

- Turbine sites may require soil stripping and leveling using a two lift soil stripping method in areas where bedrock is not found at or immediately below the surface.
- Drainage patterns will be maintained by installing adequate crossing structures;
- Blasting of uneven surface bedrock and foundation areas will be completed as required. All blasting will be conducted in accordance with the *General Blasting Regulations, N.S. Reg. 77/90*, or any updated versions thereof;
- Following blasting of bedrock, blasted bedrock will be excavated and used for the development of a crane pad on the turbine location. Turbine bases will be excavated to appropriate dimensions (determined by engineering requirements);
- Each turbine base is anticipated to require installation of a support structure using approximately 300 m^3 of cement and re-bar (Photos 2, 3);
- Installation of rebar and other required infrastructure;
- Pouring of concrete;

Photo 2. Typical turbine re-bar installation for the spread foot foundation.

Photo 3. Typical turbine spread footing foundation following concrete pour. Note blasted rock from foundation used on site.

Concrete for turbine foundations is expected to be supplied by either an existing concrete facility or a temporary concrete batch plant may be installed.

If a concrete batch plant is required it will be permitted by the supplier in accordance with Nova Scotia Environment regulations.

e. Turbine Erection

The erection of turbines is based upon specific site conditions found at each turbine Site. Engineering lift procedures will be required for each turbine and generated by the construction contractor.

- Lifting and construction equipment will be placed on the ground and leveling techniques will be used as required, for the safe operation of equipment;
- Two cranes will be used for each turbine component installation (one main lifting crane and one tailing crane). The main lifting crane will be situated on the leveled crane pad area immediately adjacent to the foundation pedestal. The tailing crane will be located nearby.
- Hydraulic torque wrenches will be used to tighten bolted connections between turbine tower sections.

f. Equipment Delivery

The following outlines the expected transportation route for delivery of turbine components (Figure 3). The route will be subject to Nova Scotia Transportation and Infrastructure Renewal (NSTIR) approval and transportation company (TBD) approval and may therefore change.

1. Initial delivery via Port of Halifax;
2. Transport from Port of Halifax along Highway 101 to Middleton exit #18;
3. West on Brooklyn Road from exit #18;
4. North on Mt. Hanley Road;
5. West on Brown Road;
6. South on Elliott Road; and,
7. West on Arlington Road to Project. The total distance from Exit #18 is 20.2 km.

This route has been chosen due to equipment and truck sizes, turning radii available on the route, exit characteristics at exit #18, avoidance of major traffic corridors through Bridgetown or other towns, bridge weight restrictions, and road characteristics.

- All turbine components will be delivered on trailers up to 50m in length. Site roads will be constructed to accommodate long load, low bed trailers.
- Two support cranes will be required to offload each of the turbine components at their respective turbine site laydown area(s).
- Tower components will be either erected directly from delivery trailers or stored at each turbine laydown site
- Balance of Plant electrical components may be delivered to a local existing offsite storage yard prior to being delivered to site for installation.

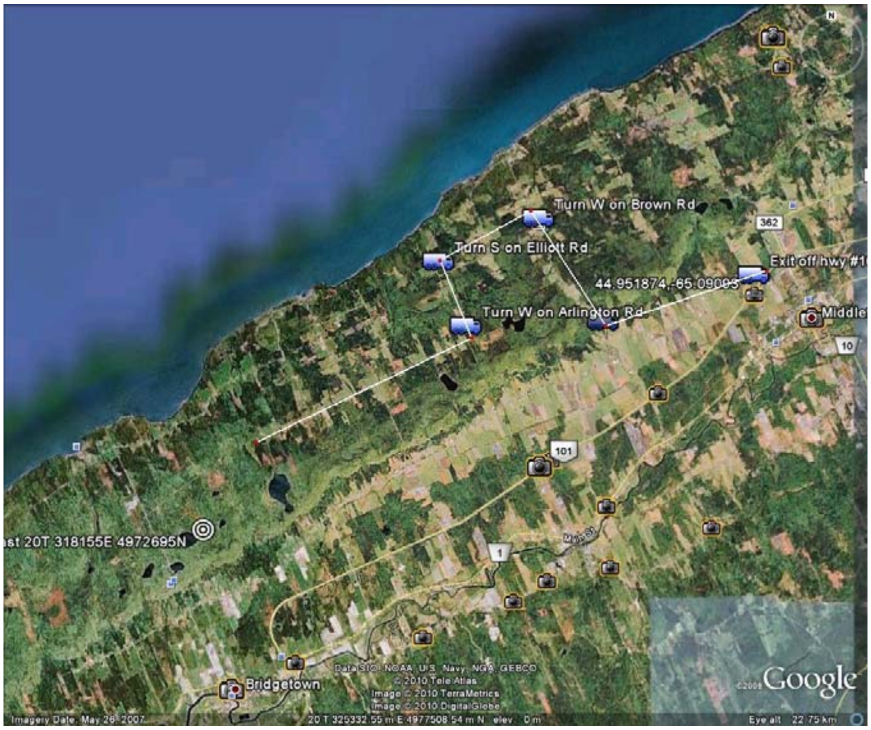


Figure 3. Proposed Transportation Route for Equipment Delivery

g. Collection System

The Collection System will be installed within the Project boundaries, and will mainly consist of above ground utility wooden power poles, spaced approximately 50 metres apart. All power poles will be purchased from a supplier which has treated the poles in accordance with appropriate regulations.

Construction of the collection system will consist of the following:

- Surveying of the pole locations;

  If necessary, drilling of borehole into bedrock to approximately 5 – 8 metres depending upon subsoil/bedrock conditions;
- Installation of power poles;
- Installation of cross arm supports and pole infrastructure;
- Unspooling and stringing of power lines and fiber optic cable;
- Installation of pole mounted disconnect switches as may be required by the electrical design.

h. Quarry Construction (if required)

Two (2) blast and crush quarries may be chosen within the Project site in consultation with appropriate landowners, to provide material to support construction requirements.

Although geotechnical results have not been obtained to determine the exact characteristics of the bedrock, at this time it is anticipated that the primary means of excavation will require the use of explosives, for the purpose of removing consolidated rock from the quarry. It is anticipated that these two potential quarries would meet the definition of "quarry" in accordance with the *Pit and Quarry Guidelines, May 4, 1999.*

Both quarries would be located in separate areas. The quarries will be less than 2 hectares each and will be constructed in accordance with the *Pit and Quarry Guidelines, May 4, 1999* as required. However at this time, no approval from the Department of Environment is anticipated.

- The quarries will not be placed within 30 metres of a watercourse, wetland, or ordinary high water mark;
- The quarries will not be placed within 90 metres of an off-site structure;
- The quarries will not be placed within 15 metres of the property boundary when a structure on the abutting property is not involved;
- All quarry locations will be assessed for biophysical impacts prior to construction;

Construction of the quarries will be as follows:

- Surveying of the boundaries;
- Boundaries will be flagged by surveyors;
- Cutting, de-limbing and decking all salvageable timber using feller buncher;
- Following removal of overstory vegetation, lands will be brushed with a bulldozer and backhoe to remove non-salvageable wood and brush. Scrub brush will be piled along disturbance boundaries and will have breaks installed to allow for water flow where necessary;
- Pits may require soil stripping and leveling using a two lift soil stripping method in areas where bedrock is not found at or immediately below the surface.
- Following salvage of surface soils (where possible), excavation of bedrock material would commence;

- Blasting will be in accordance with the *General Blasting Regulations, N.S. Reg. 77/90*, or any updated versions thereof;

i. Sub-Station Construction

Due to work area requirements for safety, and electrical infrastructure spacing requirements, the sub-station location requires a large level work area for safe operation and the following site dimensions will be used for the Project:

Table 5. Infrastructure and associated dimensions of workspace

Infrastructure	Dimensions of Workspace Required
Total Cleared Work Space	90 metres x 100 metres

- All boundaries are located >30 metres from the high water mark of any water body or wetland;
- Drainage patterns will be maintained by installing adequate crossing structures;

Construction of the sub-station location will consist of the following:

- Surveying of the site boundaries to above noted dimensions;
- Boundaries will be flagged by surveyors;
- Cutting, de-limbing and decking all salvageable timber using feller buncher;
- Following removal of overstory vegetation, lands will be brushed with a bulldozer and backhoe to remove non-salvageable wood and brush. Scrub brush will be piled along disturbance boundaries and will have breaks installed to allow for water flow where necessary;
- Sub-station location may require soil stripping and leveling using a two lift soil stripping method in areas where bedrock is not found at or immediately below the surface.
- If necessary, blasting of uneven surface bedrock will be completed as required. All blasting will be conducted in accordance with the *General Blasting Regulations, N.S. Reg. 77/90*, or any updated versions thereof;
- Following blasting of bedrock, blasted bedrock will be excavated and used as part of the substation sub base;
- Installation of equipment foundations and station ground grid;
- Installation of equipment support structures;
- Installation of substation equipment such as the transformer, switch gear, protection and control systems, control building, conduits, wiring, and terminations

Photo 4. Typical substation under construction with 4 collection system circuits.

j. Waste Disposal

All hazardous materials on work sites are controlled under federal and provincial legislation. The legislation requires that employers provide specific information to workers for the safe use, handling, production and storage of hazardous materials on work sites.

There are limited waste by-products created from the wind energy generation process. Some waste will be produced from ongoing maintenance for the turbine facilities (e.g., lube and hydraulic oils). Hazardous waste materials will not be generated in large quantities and will be disposed of through conventional waste-oil and hazardous waste disposal streams as regulated in the province of Nova Scotia.

Non-hazardous waste will be disposed of through conventional, local waste handling facilities operated by the local municipalities. As appropriate, materials suitable for recycling will be reused and/or recycled.

Controlled products are products, materials, and substances that are regulated by Workplace Hazardous Materials Identification System (WHMIS) legislation. All controlled products fall into one or more of the six WHMIS classes and each has specific handling, transport, storage, and safety requirements. All WHMIS requirements will be managed under the Sprott Health & Safety program to be developed at a later date.

3. Environmental Assessment Methodologies

In an effort to reduce environmental effects resulting from the Project, and to also determine limitations on available lands due to environmental, social, topographic, or infrastructure related setback requirements, a series of methodologies were employed during project development:

1. Regulatory requests for data relating to known flora and fauna, species at risk, historical, and other resources within the identified project lands;
2. Constraints Analysis;
3. Field Verification of constraints; and
4. Classification and identification of soils, vegetation, wildlife, and general environmental characteristics (i.e. vegetation concentrations, timber volumes, and wildlife usage) based upon commonly accepted practices in environmental assessment.

A. SITE SENSITIVITY

Using the matrix provided in the *Proponents Guide to Wind Power Projects: Guide for preparing an Environmental Assessment Registration Document (*Nova Scotia Environment, 2007, p. 8), the overall level of concern category associated with the Project was determined. The matrix matches the sensitivity of the site and the size of the proposed facility to rank projects into one of four possible categories. Generic guidance is then provided on the nature and extent of baseline information and follow-up requirements for each category. The "level of concern" is therefore relative to other wind energy projects and does not reflect the threat to birds/bats posed by wind energy in comparison to other types of projects.

Facility Size

Size	Definition
Very Large	Contain more than 100 turbines
Large	Contain 41-100 turbines
Medium	**Contain 11-40 turbines**
Small	Contain 1-10 turbines

Site Sensitivity

The determination of site sensitivity was undertaken in consultation with CWS and DNR. The characteristics of the region/area resulted in a potential sensitivity of "High". (Environment Canada, March 2006) Under this classification, the Project area was anticipated to affect one or more of the following characteristics:

- Site contains one or more landform factors that concentrate birds (*e.g.,* islands, shoreline, ridge, peninsula or other landform that may funnel bird movement) or significantly increase the relative height of the turbines;
- Project will disrupt large contiguous wetland or forest habitat that may be of importance to birds;
- Site is located between habitats where large local bird movements occur, or is close to significant migration staging or wintering area for waterfowl or shorebirds;
- Site contains, or is adjacent to, a small colony of colonial birds, such as herons, gulls, terns, or seabirds.
- Site is subject to increased bird activity from the presence of a large heron, gull, tern or seabird colony located in the vicinity of the site.
- Site is subject to increased bird activity from the presence of an area recognised as nationally important for birds (*e.g.,* a National Wildlife Area, Migratory Bird Sanctuary, Important Bird Area, National Park, or similar area protected provincially or territorially because of its importance to birds); and/or, Site contains species of high conservation concern (*e.g.,* birds known to have aerial flight displays, PIF/CWS priority species, etc.);

Project Category

	Site Sensitivity			
Facility Size	**Very High**	**High**	**Medium**	**Low**
Very Large	Category 4	Category 4	Category 3	Category 2
Large	Category 4	Category 3	Category 2	Category 2
Medium	Category 4	Category 3	Category 2	Category 1
Small	Category 4	Category 2	Category 1	Category 1

Category 3. *Projects in this category present an elevated level of potential risk to wild species and/or their habitat(s), and require comprehensive surveys to gather baseline information. These will normally need to be done over the course of one calendar year unless additional concerns are identified in the process (e.g., an unexpected species at risk is found to be present), which could extend the time period. The proponent must apply standards and protocols for bird monitoring specified for "Category 3" projects as defined by Environment Canada and the Canadian Wildlife Service. Preconstruction surveys need to quantify what species are using the area and obtain measures of their relative abundance.*

B. CONSTRAINTS ANALYSIS

A constraint can be specified as something to *maintain* or something to *avoid*. Many constraints can be expressed either way, such as to maintain a certain separation between known classes of objects (Agent Consortium, 2001). The desired effect of constraints analysis is to reduce the number of possible non-compliant results of Project development, while at the same time increasing the proportion of acceptable ones. A constraint can be *independent* or *contextual*. Independent constraints consider only one object, e.g., the setback distance around a known species at risk. Contextual constraints consider relations between objects, e.g. Use of a habitat area by a species at risk, resulting in expansion of the constraint (Agent Consortium, 2001).

The two basic categories of constraints are:

1. *Geographic/EnvironmentalConstraints* - arising from characteristics of geographic limitations or environmental characteristics and map specifications;
2. *Process Constraints* - arising from resource limitations, regulatory limitations, and workflows.

Geographical/Environmental Constraints

1. Topological: ensure that basic topological relationships (connectivity, adjacency, containment) between features were maintained;
2. Landcover: refers to the predominant material or vegetation;
3. Landuse: categories the primary land-related activities;
4. Watercourse(s): Watercourses are mainly made up of lines which are represented as chains. Depending on scale, they may also be delineated as areas. Natural watercourses usually exhibit a current, but the presence of a current or even of water is not required for their portrayal in the constraints mapping. Natural watercourses are constrained by topography and follow the shape of the terrain surface. Natural watercourses exhibit particular shape patterns as a result of meandering/braiding and as a result of existing geology and geomorphological processes. Natural watercourses may be perennial (exist during the entire year) or intermittent (exist only when sufficient water is available); and,
5. Species at Risk (SAR): species at risk locations were taken from known datasets, government sources, or other relevant studies specific to the Project area. Once identification of SAR was complete, spatial setbacks were employed. Distances were based upon Federal or provincially defined setbacks for development from a particular species or habitat type;

Process Constraints

A complete analysis of procedural constraints identified a great many decision points. It also identified what types of data and criteria were needed to make these decisions (Agent Consortium, 2001). They are as follows:

1. Wind Regime: Turbine sites are selected on basis of wind regime specific to the Project lands from validated wind measurements. Collection of site specific data for wind speed and direction being crucial to determining site potential. Once specific turbine site determinations are modeled, considerations of the loss of output due to mutual interference between turbines is factored;
2. Existing Land Use: the nature of uses of the land within the Project boundaries. Land uses definitions are based upon field studies of land use. Once land use is determined,

GIS analysis using aerial photos and polygon creation over land use is used to calculate areas. For example, the entire Project has a GIS polygon created over top. That polygon can then be analyzed to determine area based upon mapping scales;

3. Existing Infrastructure: existing roads, transmission lines, or other infrastructure have defined regulatory setback requirements. These setbacks are dependent upon the dominant regulations for development and are mapped as linear or point source constraints;
4. Proposed Infrastructure: processes necessary to the successful production of the power resource are known. They include turbine pad sizes, access road requirements for handling transport of equipment, transmission infrastructure requirements, work space requirements, and sub-station characteristics;
5. Regulatory Setbacks: Municipal and provincial regulatory setback requirements are defined in the applicable legislation, regulations, or guidelines; and,
6. Social Considerations: refers to the existing housing or populated areas within the Project boundaries. Housing locations are defined in a single dataset and subsequently used constrain the available spatial land base due to restrictions on development resulting from noise, visual impacts or other impacts.

C. ENVIRONMENTAL ASSESSMENTS

The specific focus of this environmental assessment is to identify those potentially affected Valued Ecosystem Components (VECs), determine what effects the Project may have on VECs, and develop mitigation techniques that may eliminate, reduce, or control any adverse environmental effects. Residual effects have been considered for determination of whether adverse environmental effects may be acceptable or whether effects are significant enough to require ongoing mitigation. Effects will depend upon duration, intensity, timing and frequency of impacts.

The different components of the environmental assessment were conducted throughout the spring, summer, and fall of 2010 to comply with the *Category 3* requirements listed in Section 3(A), above. Field studies to characterize the natural environment of the Project Area were conducted on more than 40 separate days between May and September 2010. These studies were aimed at highlighting the ecological linkages within the Project area, as well as with the habitats surrounding the Project area. This work included:

1. Spring, summer, and fall avian monitoring (2010);
2. Vegetation surveys (June and August 2010);
3. Aquatic surveys (June, August, September 2010);
4. Bat monitoring using ANABAT detectors (August and September 2010);
5. Opportunistic herptofuana and mammal survey (May to September 2010)
6. Additional plant surveys along the roads and at each $100m^2$ area around each proposed turbine;
7. Wetland surveys and functional analyses (for wetland area that cannot be avoided); and

8. Numerous site assessments of the turbine locations and access roads to site locations within identified constraints;

Species-At-Risk

Several resources were used to determine an appropriate list of potential species of conservation concern for the Project. Desktop examinations focused on identifying similar habitats to those found at the Project, and developing a list of species observed or potentially present at such habitats. These resources helped provide the focused list of species, which were then assessed in the field during vegetation, avian, mammal, and aquatic surveys conducted between during 2010. The species resources referenced included such sources as the Atlantic Canada Conservation Data Centre, the Nova Scotia Endangered Species Act, the Federal Species at Risk Act (SARA), the NS General Status of Species listing as maintained by NSDNR, Nova Scotia Ecological Land Classification mapping, the Significant Species and Habitats Database, the Maritime Breeding Bird Atlas, the Nova Scotia Museum, the Nova Scotia Herptofaunal Atlas.

The Atlantic Canada Conservation Data Centre maintains the documented records of the presence of existing rare, sensitive and at risk species in Nova Scotia. This information is available to the public through a formal search process.

There are a number of ranking systems for species of conservation concern are important to consider when evaluating both lists of potential species for a project site and those confirmed on the site. Four are of particular importance for Provincial Species assessment. They are the species listed under the Nova Scotia Endangered Species Act, the Federal Species at Risk Act, and those ranked by the Nova Scotia Department of Natural Resources on the General Status Ranks of Wild Species in Nova Scotia, or by the Atlantic Canada Conservation Data Center for the Province of Nova Scotia. All four are referenced at various points within this Environmental Assessment report and together are used to define the rare, sensitive and At Risk species discussed.

The following descriptions are provided to allow interpretation of the legislative protection and Provincial ranks assigned to the flora and fauna of Nova Scotia. The NS Endangered Species Act protects species with legislation. Such species are considered "At Risk", and a species of conservation concern within this document. The Provincial act assigns the following categories:

- **Endangered** - a species facing imminent extirpation or extinction.
- **Threatened** - a species likely to become endangered if limiting factors are not reversed.
- **Vulnerable** - a species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.

The Nova Scotia Department of Natural Resources has developed the General Status Ranks of Wild Species in Nova Scotia as a "first alert" system that provides us with an overall indication of how well species are doing in Nova Scotia, and to maintain biodiversity and ensure no species becomes at risk as a consequence of human activities.

The primary NS General Status ranks are as follows:

- **Red** - any species known to be, or believed to be, at risk. Species for which a formal detailed risk assessment has been completed (COSEWIC assessment or a provincial equivalent) and that have been determined to be at risk of extirpation or extinction. Species that maybe at risk of immediate extirpation or extinction and are therefore candidates for interim conservation action and detailed risk assessment by COSEWIC or the Province.
- **Yellow** - any species known to be, or believed to be, particularly sensitive to human activities or natural events. Species that are not believed to be at risk of immediate extirpation or extinction, but which may require special attention or protection to prevent them from becoming at risk.
- **Green** - any species known to be, or believed to be, not at risk.

Provincially Red and Yellow ranked species are considered "Sensitive", and a species of "conservation concern" within this document.

NatureServe and the Atlantic Canada Conservation Data Center (ACCDC) use a standardized ranking system to assign individual species within Nova Scotia a provincial level ranking for biodiversity. The three ranks that indicated particular conservation concern are:

S1: Extremely rare throughout its range in the province (typically 5 or fewer occurrences or very few remaining individuals). May be especially vulnerable to extirpation.

S2: **R**are throughout its range in the province (6 to 20 occurrences or few remaining individuals). May be vulnerable to extirpation due to rarity or other factors.

S3: Uncommon throughout its range in the province, or found only in a restricted range, even if abundant in at some locations (21 to 100 occurrences).

Species ranked as S1 or S2 by the Atlantic Canada Conservation Data Center are considered "rare", and a species of "conservation concern" within this document.

Finally, a National level ranking exists. Species listed as at risk by COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and that are approved by the appropriate Federal Minister to be included on Schedule 1 of the Species at Risk Act (SARA) are protected under that act. Such species are considered "At Risk" within this document, and are a species of conservation concern. The relevant SARA status categories are as follows:

- **Endangered** - a species facing imminent extirpation or extinction.
- **Threatened** - a species likely to become endangered if limiting factors are not reversed.
- **Special Concern -** (formerly "vulnerable") a species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.

In assessing species of conservation concern for the proposed Project, all four ranking systems were considered for both species likely to be found within the habitats of the Project area and those species confirmed during field inventories on the Project area. Species of conservation concern on these four lists are further discussed in the relevant sections of this report (vegetation, avian, mammals, herptofuana, aquatics, wetlands), and include any species listed At Risk either Federally or Provincially, and/or any ACCDC S1 or S2 ranked species, and/or any NSDNR Red or Yellow General Status Ranked species.

Avian Monitoring

The bird monitoring plan for the Project was developed from recommended protocols and guidance documents developed by the Canadian Wildlife Service (CWS 2007, 2006). Basic Project avian monitoring requirements were discussed with the Nova Scotia Department of Natural Resources (NSDNR). Through this consultation with NSDNR Wildlife staff, it was indicated that fall migration and presence of raptors in the fall were the primary concerns. NSDNR also highlighted the potential of a Peregrine Falcon flyway between Belle Isle Marsh forage grounds and St. Croix Cove, and the unknown routing of such relative to the Project area.

The following outlines the initiated methodology for avian monitoring for the site, based on the identified site features and CWS *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds* (2007). A series of techniques were employed taking into consideration the habitat diversity and spatial scale of the Project area. In reporting on avifauna, the term observation means both visual and/or audial confirmation of a species. This monitoring plan was forwarded to Monique Breau at the Canadian Wildlife Service for comment.

Habitats were considered at several scales during the development of a monitoring program. First, Atlantic Canada Conservation Data Center (ACCDC) records for 100km radius around the Project site were obtained, as were a relevant subset of north mountain records from Cape Blomidon to the Digby Gut. The mountain ridge ACCDC species records have been reviewed and are considered within the avian monitoring plan for this site. On a Project area Scale, forest cover types, wetlands, and open water habitats were identified and incorporated into the development of the avian monitoring program.

The baseline avian monitoring involved weekly to bi-weekly surveys from April 15 to October 15, 2010. Spring surveys began the week of May 03, 2010. Overwinter surveys have not been completed at the time of submission. These surveys will be ongoing and updates provided.

Assessment was completed regularly during 2010 spring and Fall Migration periods, as well as during the Breeding season. Details of the methods used and the results are provided in the following sections.

On September 9, 2010 initial field findings were discussed with Mark Elderkin, NSDNR Species at Risk Biologist, to determine if additional field activities may be warranted by the initial findings. The assessment of flora and fauna has been completed to comply with Mr. Elderkin's requirements.

Spring and Fall Migration

Field assessments were completed twice a week during the period from May 1 to May 31, 2010 to observed Spring Migration patterns. This assessment was repeated from September 1 to September 30, 2010 to observe Fall Migration.

Once each week studies were completed by conducting stopovers every 500m along transects to conduct Migration Counts within mixed forest ecotype and hardwood forest ecotype. Also, general area counts were completed during each field visit across the Project landscape, including specific assessments at each large wetland, and Mackenzie Lake and Crosskill Lake.

Breeding Season

Field assessments were completed once every 10-12 days during the period from June 1 to August 31, 2010. A total of eight field assessments were completed.

Ten minute point count assessments were completed at each turbine location a minimum of two times during each field visit. A total of 22 point counts were conducted.

General area searches of Mackenzie Lake, significant or large wetlands, mixed forest ecotypes, hardwood forest ecotypes were completed during each field assessment. During general area searches, species numbers were enumerated, total time of search was recorded, and any behavioral indicators were documented. Surveys were all conducted within the first four hours of sunrise.

Vegetation

Three vegetation surveys were completed during the months of May, August and September 2010. Early, mid and late growing season surveys were used in order to facilitate proper plant identification, given that different species bloom at different times of the year, and blooms are sometimes a defining feature of a plant. Vegetation survey design also identified the need to complete surveys in a variety of habitats within the Project Area and around the Project Site. Wetlands, hardwood stands, mixed wood stands, and softwood stand habitats were surveyed. Additionally, small unique habitats encountered during field work, such as rock outcrops, talus slopes, and cave/chasm habitats that lie on the southern perimeter of the Project area at the crest of the North Mountain, were also examined for plant species that may be limited to those habitat types. Additionally, a late season inventory was completed along all proposed road routes and at 100 m^2 plots centered on each of the proposed turbine locations. In total, one hundred and thirty-three (133) species of vascular plants, bryophytes, and lichens were inventoried during the vegetation surveys.

Bat Monitoring

A total of two (2) ANABAT™ detectors were deployed for varying lengths of time. ANABAT™ is a system designed to help users identify and survey bats by detecting and analysing their echolocation calls. It carries a strong emphasis on passive detection, in which the detector is used as a logging device to monitor bat activity in the absence of human intervention. For passive monitoring, there are three main components to the system, a Bat Detector, a ZCAIM and software. In the newer SD1 model, the detector and ZCAIM are combined into a single housing. The detector and ZCAIM were placed in the field and protected from the weather while saving their data to a Compact Flash memory cards.

The seasonal timing of the sampled period corresponded to the end of the summer residency period and the fall migration period. A detector was deployed at ground level along a forest edge located in the clearing for the meteorological tower within the Project area. This unit was placed in a weather proof casing with the microphone protected inside an angled 12 PVC conduit such that the angle of reception to the microphone was at 45 degrees to the ground and oriented parallel to the forest edge (Weller and Zabel, 2002). A second detector was placed approximately 25 m above ground level on the platform of a fire tower to record bat echolocation sequences at height more representative of airspace where the turbine blades will be operating and to maximize the chances of recording any high-flying migratory bats. Both bat detectors were programmed to record calls from 1900 until 0700 daily.

Identification of many bat species is possible because of the distinctive nature of their echolocation calls (Fenton and Bell, 1981; O'Farrell et al., 1999). Species were qualitatively identified from echolocation sequences by comparison with known echolocation sequences recorded in this and other geographic regions. In the case of species in the genus Myotis (northern long-eared bat and little brown bat), we did not identify sequences to the species level, as their calls are too similar to be reliably separated. Identifications were accomplished using frequency-time graphs in ANALOOK software (C. Corben, www.hoarybat.com). An anabat echolocation file that approximates a call sequence, defined as a continuous series of greater than two calls (Johnson et al., 2004), was used as the unit of activity.

Wetlands & Aquatic Surveys

A desktop review of available topographic maps, appropriate databases and aerial photography was completed to aid in determination of wetland habitat on the Project Site. Predicted wetland areas were identified from the NSDNR Sensitive and Significant Habitats Database, and predicted wet areas within the Project area were identified from the NOVAWAM depth to water table mapping. Stereo pairs of air photos were also consulted as a predictor of where wetlands may exist within the landscape. During field surveys conducted between June 1 and August 31st, 2010 the predicted wetland areas were field verified.

Although few NSDNR mapped wetlands and few shallow water table areas appeared to exist within the Project area based on the desktop review, numerous wetlands were identified during field surveys. The perimeters of seventeen (17) wetlands were preliminarily delineated based on micro-topography, and observed surface hydrology and vegetation. These perimeters were documented using a handheld Garmin 60CSx GPS unit. Any inlet and outlet streams or features to each wetland were marked during the preliminary delineation processes. Subsequently inlet and outlet channels that did not exist on 1:10,000 topographic maps of the Project area were walked and mapped using handheld GPS. These were predominantly intermittent stream features. Additionally, any wet areas encountered within the Project area were marked with handheld GPS to further identify wet habitats within the landscape. Once wetland areas were identified, vegetation surveys, Herptofaunal searches, and avian surveys were conducted to document species use in these areas. Quantitative vegetation plots, soils surveys, and complete functional analysis were conducted at two of the largest wetlands to further characterize these areas. A preliminary wetland classification was assigned to each wetland based on all collected field data. All wetland data was then used in constraints modeling to identify key functions and values for each identified wetland that might be directly affected by Project construction.

As Snow Brook was identified as the primary stream feature of the Project area the full length of this channel between Mackenzie Lake and Snow Lake was walked and mapped using a handheld GPS unit on May 19th, 2010. Stream habitat was assessed, basic temperature and pH measures collected, morphological channel measurements were taken, and pool habitats were visually observed for presence of fish. Similarly, smaller intermittent channels identified during wetland assessments, or during field activities, were walked and mapped using a hand held GPS as appropriate. Stream dimension measures and pH data were collected for any of the larger intermittent stream features.

Several Lakes exist within the Project area. Desk top review of these lakes included search of Provincial records for stocking and bathymetric maps. Local anecdotal observations of fish species present in each lake were collected over the survey period. The Nova Scotia Department of Inland Fisheries in Pictou was contacted for any information available on the Mackenzie Lake. However, the Department had no records for that body of water. Mackenzie Lake was further assessed through angling surveys on May 19th and August 13th. Basic pH and temperature measures were collected on May 19th, while a more comprehensive limnological assessment at three survey points on the lake was completed on August 13th. This survey included depth profiles of temperature, dissolved oxygen, pH, conductivity, and turbidity using a Quantas Hydrolab. The intent of this survey was to determine appropriateness of habitat quality for salomonids and other fish species.

The locations of species of conservation concern that were identified during field surveys, sensitive wetland habitats and water course features were mapped as shown in various Figures throughout the document. Species and habitats data were then considered as biological constraints to the layout and development of the proposed Project.

Herptofauna and Mammal Surveys

Desktop review included collection and assessment of species of conservation concern documented by the Atlantic Canada Conservation Data Center along the North Mountain Ecodistrict from Cape Split to Digby Gut. Herptofaunal searches of rock outcrops, deadfall, wetland, and stream habitats were conducted and incidental observations were recorded during completion of other field surveys. No targeted mammal surveys were undertaken. Incidental observations of mammals and various mammal sign across the Project area were documented and photographed during completed on field surveys. Sign included such features as dens and nests, scat, tracks, and forage evidence. Herptofaunal and mammal observations were collected between April and October 2010.

Watercourse Crossings

All crossing locations were field verified by Michael Parker (East Coast Aquatics Inc.) and Robert McCallum, P.Biol, in summer of 2010 and characteristics described herein are based upon field verification. All drainage area calculations are based upon 3 dimensional modeling and drawing of polygons at right angles to contours surrounding the crossing locations. This was done due to the limited accuracy of 1:50000 and 1:10000 contour maps, and the numerous and varied small variations in topography resulting in small intermittent drainages clearly not visible at either of the two aforementioned scales.

Conclusions regarding possible impacts to VECs are based upon estimation of habitat availability. Expected habitat losses were estimated through aerial photographic interpretation. Known disturbances were scaled from existing aerial photographs, and habitat estimations were based upon calculations derived from scaled measurements.

Photographs of the proposed turbine locations, access roads, or other infrastructure were taken to provide documentation of conditions prior to Project commencement.

D. LIMITATIONS

Constraints Analysis

- On some maps, land use or land cover is defined everywhere to form a complete mosaic of polygons. On topographic maps landuse/landcover is depicted only in certain areas. The source data in some cases may need to be conditioned to allow the second type of depiction if it is a mosaic, and certain constraints will operate differently in each case (Agent Consortium, 2001); and
- Conflicts that might exist between objects in a database are typically of a logical nature, such as topological inconsistencies or duplicate identifiers. We attempted to ensure that our database has addressed any potential inconsistencies, however inconsistencies may still occur. In map generalization, the vast majority of conflicts are physical, spatial consequences of reducing map scale. The greater the degree of scale change, the more

cluttered an ungeneralized map will be, and this signals the extents of potential conflicts in presentation of the data.

Limitations incurred at the time of the assessment include:

- McCallum Environmental Ltd. has relied in good faith upon the evaluation and conclusions in third party assessments. McCallum Environmental Ltd. relies upon these representations and information provided but can make no warranty as to accuracy of information provided;
- There are a potentially infinite number of methods in which human activity can influence wildlife behaviors and populations and merely demonstrating that one factor is not operative does not negate the influence of the remainder of possible factors;
- The environmental assessment provides an inventory based on acceptable industry methodologies. A single assessment may not define the absolute status of site conditions;
- Effects of impacts separated in time and space that may affect the areas in question, have not been not been included in this assessment.

General Limitations incurred include:

- Classification and identification of soils, vegetation, wildlife, and general environmental characteristics (i.e. vegetation concentrations, timber volumes, and wildlife usage) have been based upon commonly accepted practices in environmental consulting. Classification and identification of these factors are judgmental and even comprehensive sampling and testing programs, implemented with the appropriate equipment by experienced personnel, may not identify all factors;
- All reasonable assessment programs will involve an inherent risk that some conditions will not be detected and all reports summarizing such investigations will be based on assumptions of what characteristics may exist between the sample points.

4. Turbine, Access Road, and Sub-Station Site Selection & Consideration of Alternate Locations

At the outset, the spatial dimensions of the Project area were selected. (Figure 1*)*

The methods for turbine site selection, access road routings, substation location, laydown yard area, and quarries were determined using constraints mapping methods outlined below. These methods work in synergy, and none of the below mentioned processes is independent of any of the others.

- Wind regime mapping was used to identify optimal wind resource areas within the land base. This allows for effective placement of the turbines to maximize power generation from the wind resource for the Project based upon expected energy outputs within the modeled wind regimes. The mapping was completed using meteorological tower data which has been collected continuously for approximately 4 years;
- Once wind resource mapping and optimization of the wind resource models were completed, different wind turbine manufacturers were selected for modeling. As each manufacturer has different engineering inputs, designs, and outputs, each manufacturer had to be modeled independently. Each turbine type was then placed within the wind regime and mapped within the available lands according to engineering criteria;
- GIS mapping of the Project lands was completed using datasets for landform, landuse, topography, watercourses, historical resources, and wildlife. In addition, aerial photography was used to complement the GIS datasets, with the final goal of building a robust, dynamic, and temporally valid constraints map that can be modified as turbine selection is finalized;
- Within the GIS datasets the following parameters were mapped:

    1. Project area;
    2. Topography;
    3. Land Use;
    4. Existing infrastructure;
    5. Broadcasting (T.V. & Radio);
    6. Meteorological Towers (aka Met Towers);
    7. Residences;
    8. Existing roads (classified & unclassified) and including ATV trails;
    9. Existing transmission lines;
    10. Known wildlife sites;
    11. Known species at risk locations;

12. Known heritage sites;
13. Lakes, ponds or other visible open water bodies;
14. Watercourses;
15. Wetlands; and
16. Property boundaries (PIDs);

- Once mapping of the above parameters was complete, setbacks were placed on the datasets:

    - Species at risk that were identified or expected within the Project lands, had radial setbacks imposed as required under Provincial or Federal regulations or guidelines;
    - Thirty (30) metre setbacks from lakes, ponds, open water, watercourses, and wetlands were imposed;
    - Seven hundred (700) metre setbacks were placed around residences to ensure that noise levels at those receptors would be below Health Canada recommendations of 45 dB(A). This was done prior to noise modeling being completed. This 700 metre setback is in fact 200 metres larger than is typically used for constraints analysis;
    - Setbacks for existing infrastructure (i.e. blind corners on roads/highways) due to safety issues;
    - Municipal setbacks for development (if any);
    - Setbacks that may have been requested by specific landowners;
    - Setbacks from Property boundaries;
    - Setbacks from Crosskill Lake as it is a known secondary water supply for Bridgetown;
    - Setback from Valleyview Provincial Park, located on the southwest edge of the Project;
    - Setbacks between turbines. Due to wake loss and turbulence from blades while they are in operation, a minimum five (5) times rotor diameter (100 metres) (= 5 x 100 metres = 500 metre) setback distance is required in the prevailing wind direction between turbines, and minimum three (3) times rotor diameter (300m) setback distance is required perpendicular to the prevailing wind direction between turbines.

- Once known setbacks were identified, the Project lands GIS map was created to show available lands for Project development after setbacks were imposed (Figure 4). The reader should note that as a result of the above noted constraints, **only 20% of the original Project Area is actually available for wind power development;**

- The turbine locations were subsequently imposed onto this setback map. As a result, numerous turbine locations were moved to comply with known setback requirements while still attempting to optimize wind resources;

- GPS coordinates were then used to field verify the turbine locations. Further constraints analysis was completed during field assessments. For example, Turbine #7 was moved north and east 70 metres to maintain a setback from a wetland that was not identified during the mapping phases;
- Using the above noted information, Balance of Plant (BOP) was developed using the same datasets and field data to ensure regulatory setbacks are maintained for all phases of the Project;
- As reflected on the layout map, the turbine numbers are no longer sequential. This is a result of constraints analysis. For example due to the inability to meet all the required setbacks and to adequately mitigate environmental effects, Turbines 5 and 8 were dropped from the Project;
- Constraints analysis using GIS based systems, and subsequent field verification methodologies allowed development of the layout and balance of plant in an environmentally sustainable and regulatory compliant manner.

Road layout was conducted in the field using a handheld GPS unit with mapped wetland locations, and a route was selected based on local microtopography and the location of existing wetlands and watercourses. In this way potential impacts were immediately mitigated to the greatest extent possible. As hydrology is a key component to establishment of wetlands and the type of wetland that will form, care was taken to mark all locations where a culvert installation might be needed to maintain natural surface water pathways. Roads were placed on heights of land whenever possible such that surface sheet flows would not be intercepted by a road prism and redirected or concentrated to alternate locations.

The following summarizes how turbine locations were moved from their original locations to ensure they met all the above noted requirements, and to ensure that environmental effects were minimized:

Turbine 1: Turbine was located on a dry hardwood area that required no movement from the original selected location as no area with reduced impacts is available.

Turbine 2: Turbine location was originally placed within 30m of an intermittent stream and atop a bedrock outcrop. It was moved eastward approximately 60 m. Operationally the proposed location ensures a minimum setback to an adjacent residence, and a minimum 5 rotor diameters from Turbine 7. Further northward and eastward movement is constrained by the adjacent residence. Southward movement is constrained by Turbine 7, which is also constrained as described below. Westward movement from the original location is constrained by the intermittent stream and property boundary. Due to constraints, no other areas with reduced impacts are available.

Turbine 3: Turbine is located on a dry mixed wood site that required no movement from the original selected location as no area with reduced impacts are available. While

Figure 4 (below) shows the turbine within constrained areas, this is due to the result of the noise guideline of 45 dB(A) being slightly exceeded at a seasonal camp. The owner of that seasonal camp indicated they have no concerns with this noise level, and has provided a letter to this affect. This letter is provided in Appendix V, following the Sound Assessment.

Turbine 4: Turbine is located on a dry mixed wood site that required no movement from the original selected location as no area with reduced impacts are available.

Turbine 6: Turbine was moved approximately 100m southwest from its original location as the original location was sited 20m below grade in a small topographic depression. This movement mitigated site safety and road construction issues associated with the side slope grade to the original position ensured the turbine was a minimum 5 rotor diameters from Turbine 14, and 3 rotor diameters from Turbine 11. Further movement west is constrained by building permit requirements. Movement north is constrained by rotor wash from Turbine 14 which is constrained as described below. Movement east and south is constrained by steep topographic relief. No other areas within the defined constraints are available.

Turbine 7: Turbine site was originally located in a treed bog area. This site was moved approximately 90m north to a high mixed wood ridge. This site avoids the existing wetlands, and increases the distance from Mackenzie Lake to approximately 165m. The location maintains a minimum 5 rotor diameters from Turbines 2 and 11, and a minimum 3 rotor diameters from Turbines 14 and 10. Movement west is constrained by property boundaries. Movement south is constrained by a wetland. Movement north is constrained by a wetland and rotor wash from Turbine 2 that is constrained northward as described above, as well as by the building permit. No areas with reduced impacts within the constrained lands are available.

Turbine 9: Turbine 9 was originally permitted within 20m of an intermittent stream and an estimated 10m down the crest of the mountain. The new proposed location is northward and slightly westward approximately 90m from the original location. This maintains a minimum watercourse setback of 90m. This movement mitigated site safety and road construction issues associated with the side slope grade to the original position, and also ensures it was a minimum 3 rotor diameters from Turbine 6. Movement north or west is confined by property boundaries and the original building permit. Movement south or east of the original location is confined by steep topography and an intermittent stream. No areas with reduced impacts within the constrained lands are available.

Turbine 10: Turbine site was moved southeast approximately 30 metres to place it closer to the existing forestry road that is adjacent to it. This turbine is located on a dry mixed wood site that required no other areas with reduced impacts within the constrained lands are available.

Turbine 11: Turbine site was located on a dry mixed wood site that required no movement from the original permitted location as no area with reduced impacts are available.

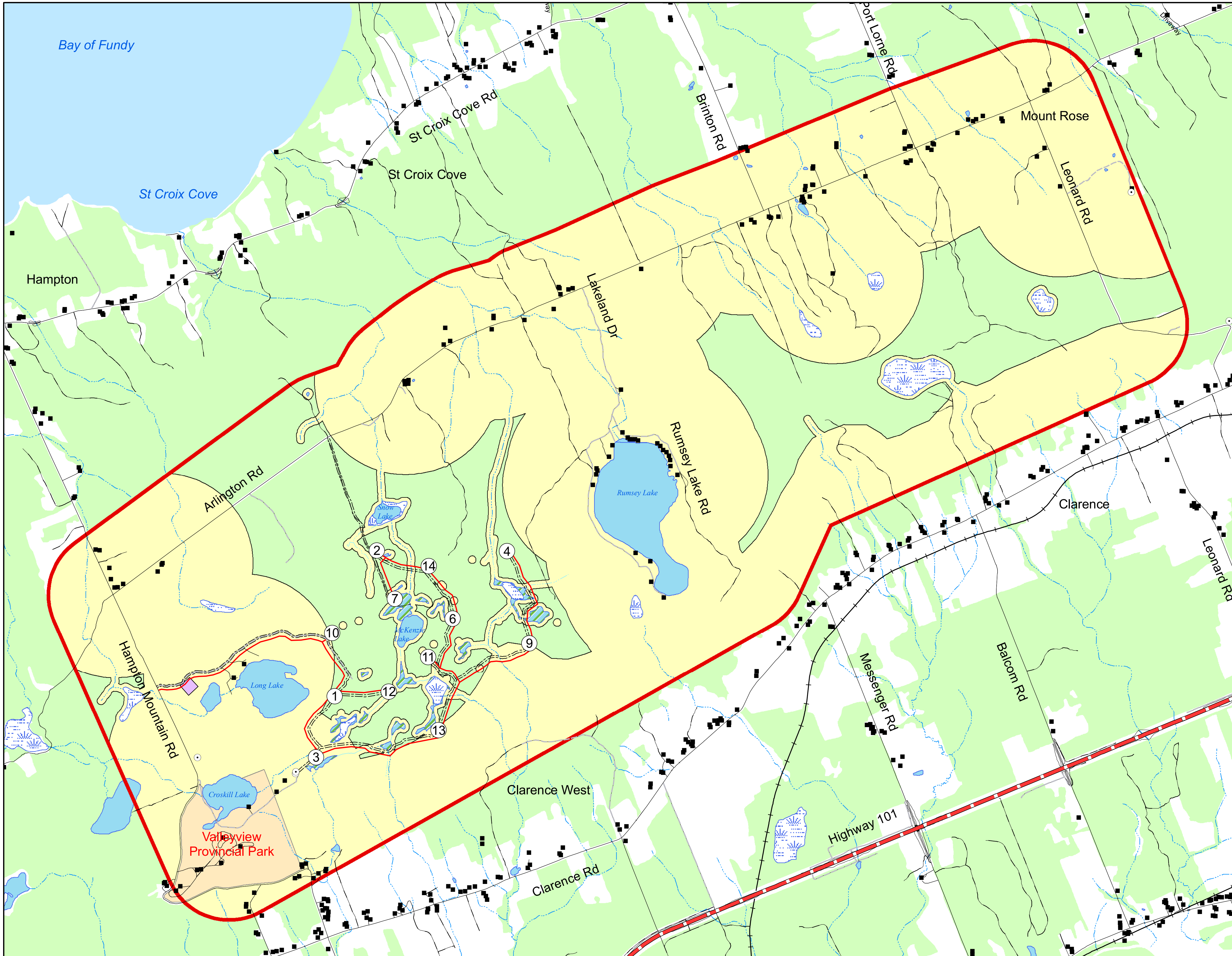
Turbine 12: Turbine site was located on a dry hardwood site that was within 20m of an intermittent stream. It was moved northwest from its original permitted location a distance of approximately 50m. This provides a minimum setback of 65 m from the intermittent stream.

Turbine 13: Turbine site was located on a dry mixed wood site that required no movement from the original permitted location as no area with reduced impacts are available. Due to mapping scales associated with Figure 4, the Turbine appears within the constrained areas but it is not.

Turbine 14: This turbine was located on a dry mixed wood site that required no movement from the original permitted location as no area with reduced impacts are available.

The high level of detail used within the constraints analysis and field verification adequately mitigates, and reduces or eliminates, impacts to Valued Ecosystem Components (VEC), existing infrastructure, and residents, and ensures regulatory setbacks are maintained.

Figure 4. Project Area Constraints Map



Grid North

1:28,000

Project Features

- Turbine and Number
- Windfarm Roads
- Distribution Line
- Substation
- Hampton Boundary
- Constraints

Existing Features

- Towers
- Buildings
- Highway 101
- Main Roads
- Trail
- Rail Road
- Woods Roads
- Provincial Park

Water

- Field Verified Streams
- Stream
- Field Verified Wetlands
- DNR Wetlands
- Lake

Turbine 3: Originally constrained due to sound over 45 dB(A) at nearby seasonal camp. Owner of camp has since released constraint.
Turbine 13. Due to scale of map, turbine appears within constrained area, but it is not.

Date: Oct 25th, 2010

GIS By: Nortek Resource Solutions Inc.

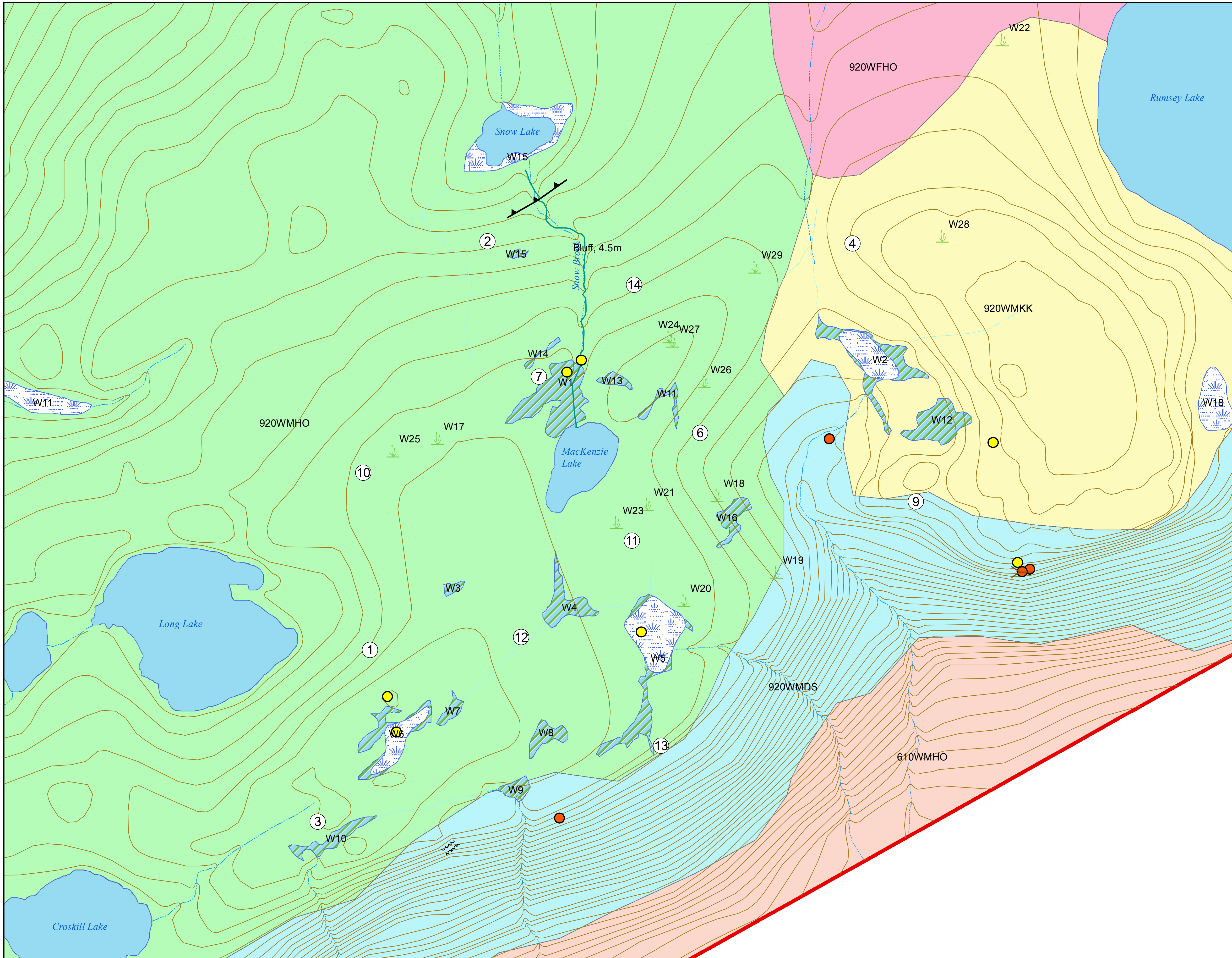


Figure 5. Biological Constraints Map

Grid North

1:10,000

Legend

Turbine and Number

Land_Features

Cave

Chasm

Bluff

NS General Status Ranked Species

Red - Field Checked

Yellow - Field Checked

Field Verified Wetland

GPS Streams

Contour

DNR Swamp

GPS Wetlands

Hampton Boundary

Water

Lake

Stream

Ecological Land Classification

610WFHO

610WMHO

920WFDS

920WFHO

920WMDS

920WMHO

920WMKK

Ecological Land Classification
Region
610 - Annapolis Valley Region
920 - North Mountain Region
Ecosections
WFDS - Well drained, fine textured soil on steep slopes or canyons.
WFHO - Well drained, fine textured soil on hummocky terrain.
WMDS - Well drained, medium textured soil on steep slopes or canyons.
WMHO - Well drained, medium textured soil on hummocky terrain.
WMKK - Well drained, medium textured soil on hilly terrain.
XXWA - Inland water.

Date: Oct 25th, 2010

GIS By: Nortek Resource Solutions Inc.

5. Project Area Environmental Information

A. GENERAL SPATIAL SETTING FOR PROJECT

The proposed Hampton Wind Farm Project is located in the Fundy Shore Ecoregion and the North Mountain Ecodistrict, as defined by the Nova Scotia Department of Natural Resources (NSDNR 2010b).

One of the smaller ecoregions, The Fundy Shore is a narrow strip of land that wraps around the Bay of Fundy starting at Cape d'Or to Five Islands before crossing over to Cape Split and continuing west past the Hampton Wind Farm Project area to Brier Island. A significant feature of the geological history of this ecoregion is the basalt lava which flowed from rifts created by the movement of the continental plates as they drifted apart over 200 million years ago. This basalt underlies the North Mountain. The highest elevations along the North Mountain within the Project area lie to the east nearer Rumsey Lake, where a knoll of more than 260m exists. Much of the Hampton Wind Farm site exists slightly above the 240m contour. Other portions of the Fundy Shore Ecoregion, such as the Parrsboro shore, seldom exceed 125 m above sea level (NSDNR 2010b).

Much of the soils in this ecoregion are moderately coarse, commonly stony to gravelly, and shallow to bedrock and well drained. However, there are large areas of finer textured, imperfectly drained soils occurring, which were observed on the Project area. The total area of the Fundy Shore Ecoregion is 1219 km^2 or 2.2 % of the province (NSDNR 2010b).

A short distance up the mountain slope south of the Bay of Fundy, the forest becomes mixedwood consisting of balsam fir, red spruce, red maple, white birch and yellow birch. Beech and sugar maple are found on the upper slopes and higher elevations (NSDNR 2010b) as evidences by species identified across the Project area.

B. NATURAL SUBREGION

The Fundy Shore Ecoregion is further subdivided into Ecodistricts. The Hampton Wind Farm exists in the North Mountain Ecodistrict, which is a narrow ridge parallel to the shoreline of the Bay of Fundy. It stretches for about 200 km, from Cape Blomidon to Brier Island (NSDNR 2010b). The south facing slope of the North Mountain can be quite steep in places, with escarpment-like features at several locations. Small steep-sided valleys, locally known as vaults, dissect the slope. On the Bay of Fundy side, the slopes are longer and more gradual. The total area of the ecodistrict is 989 km2 or 81% of the Fundy Shore ecoregion.

The climate of the North Mountain Ecodistrict is influenced by the Bay of Fundy. The ecodistrict has a mean annual temperature of 6.6°C and mean summer and winter temperatures of 16.3and -3.4°C, respectively. The ecodistrict experiences frequent fog and gets about 1234 mm of precipitation annually. It receives about 460 mm of precipitation between May and September and accumulates about 1584 annual growing degree-days (5°C basis). The ecodistrict has a relatively long growing season of 207 days and a summer moisture deficit of about 38 mm. The North Mountain bears the brunt of the weather coming off the cold waters of the Bay of Fundy, protecting the Annapolis valley from the cooler climate and the fogs of the Fundy shore. Summer temperatures are cooler and winters are somewhat milder than the interior of the province. The distinguishing Ecoregion feature is described as a coastal climate dominated by its proximity to the Bay of Fundy (NSDNR 2010b).

Although no fog day's data exists for the Project area or the adjacent Bay of Fundy Coastline, it appears that data from Saint John New Brunswick may be a reasonable surrogate. Data sourced from Environment Canada (Figure 6) for the City of Saint John indicates approximately 98 fog days a year in Saint John, which lies almost north directly across the Bay of Fundy from the Project area, and which has the same fog contour as Hampton (Environment Canada 2010). Environment Canada indicates that Saint John receives between 150-300 hours a year with visibility less than 1km (Environment Canada 2003).

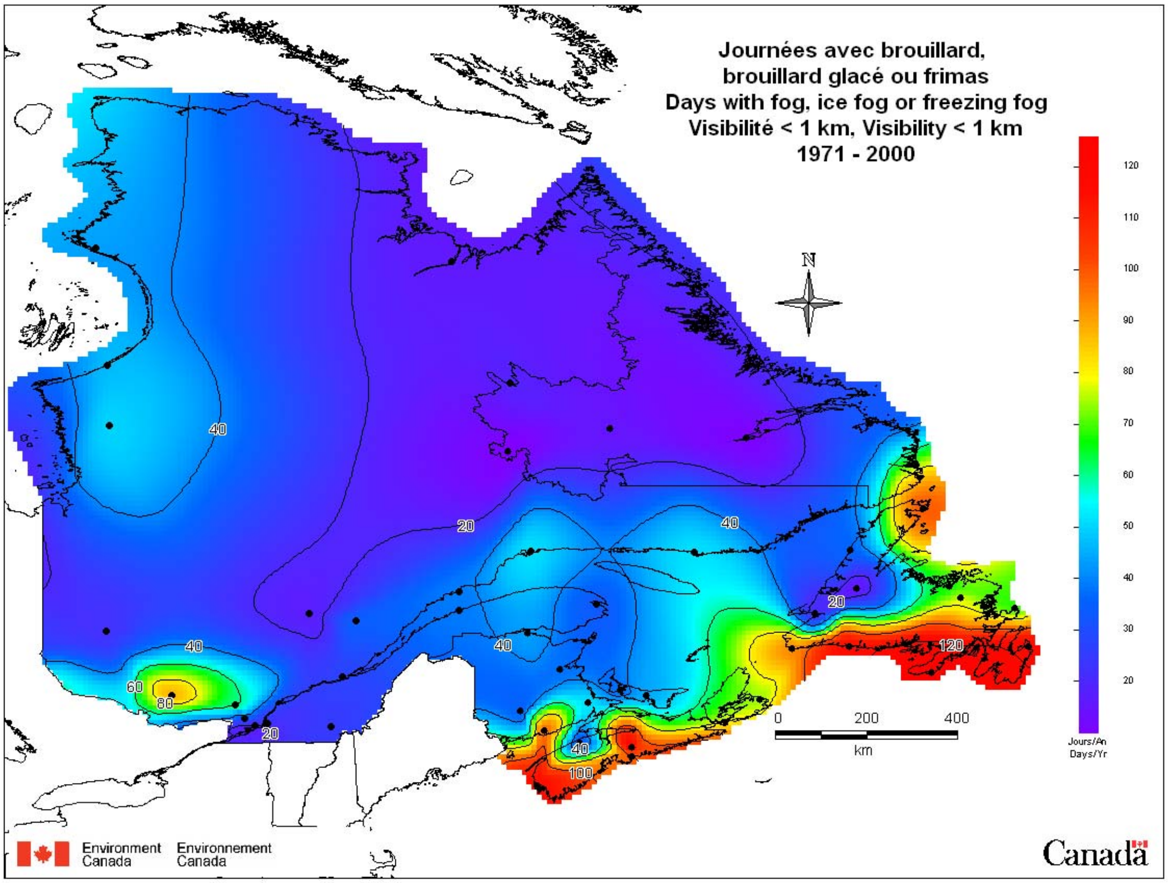


Figure 6. Days with Fog, ice fog or freezing fog (Environment Canada)

Potential impact of fog on bird interactions with turbines is unknown. Given the anticipated period of time each year for which fog limits visibility to less than 1 km along the Hampton shoreline is 0.07 – 0.14% of each year, (Environment Canada, 2003), the amount of time that visibility would be limited at the height of the proposed turbines is likely to be very small. It is anticipated therefore that the potential negative consequences of fog cover and bird turbine interactions, should they exist, would be minimal at the Project area.

C. LAND USE

The following Table (6) displays the land use components and area (in hectares) of each component within the Project area:

Table 6. Calculations of Land Use*

Land Use/Land Type	Area (hectares)	% of Project Area**
Lakes	91.0	5%
Agricultural/Pasture/Clearings	184	10%
Clearcuts	12	0.8%
Homesteads w/ Additional Clearing	12	0.7%
Roads	8.7	0.5%
Forested	1530	80%
Total Project Area	1837	100%

*Although active logging has occurred since these calculations were complete, operations did not appear (from a field level) to be on a large enough scale to significantly alter the area calculations.
**Values in column have been rounded, as such they add to 99.9%

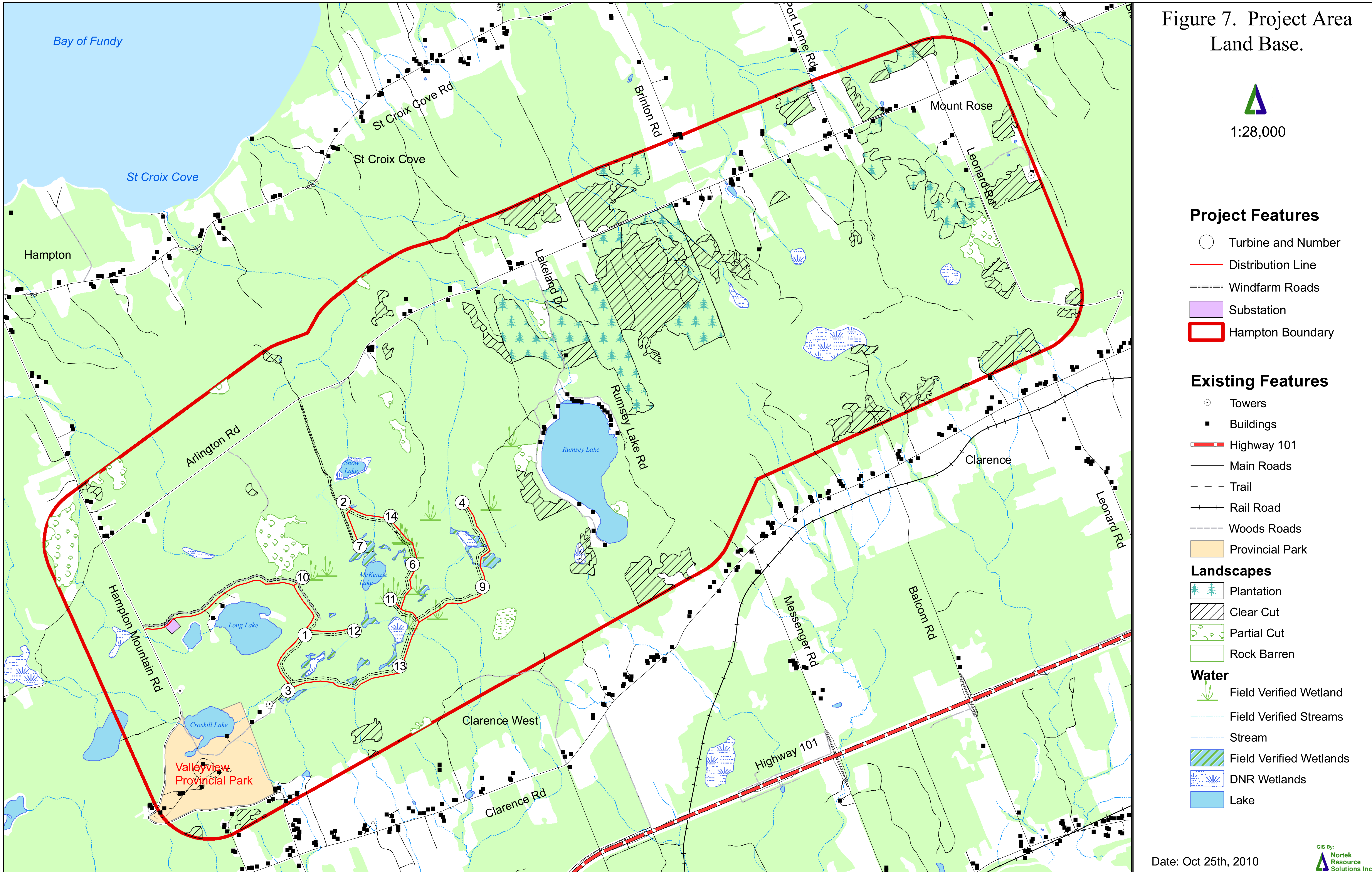
Land use within the Project area is dominated by relatively undisturbed forested woodlands, the total area of which accounts for 80% of the Project land base. Although the dominant commercial use on forested lands is timber harvesting, at the time of assessment, only 1% of the lands had been clearcut. However, on 10% of the lands, complete clearing of forested vegetation has occurred and land use has changed to agricultural, or occupancy by homes.

Existing roads within the Project area account for 1% of existing disturbance and are associated with all land use types, including recreation.

In areas without active timber harvesting, land use is dominated by recreation, camping, use of seasonal cabins/accommodations, fishing, and water recreation. Consultation with one of the landowners within the Project area indicated that there is limited to no hunting on the Project lands. According to the landowner, there is a lack of suitable prey (i.e. partridge; pheasant) and limited visibility for hunting of deer). All Terrain Vehicles (ATV) use is extensive within the Project area and there is a myriad of interconnected trails, stopping locations, and tracks suggesting continuous and extensive use.

In summary, approximately 80% of the land base is forested, 5% is lakes (which includes surrounding cabins and associated recreation use), and the remaining 15% has either changed land use or been altered by logging.

Figure 7. Project Area Land Base.



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