

APPENDIX IX. VISUAL REPRESENTATION



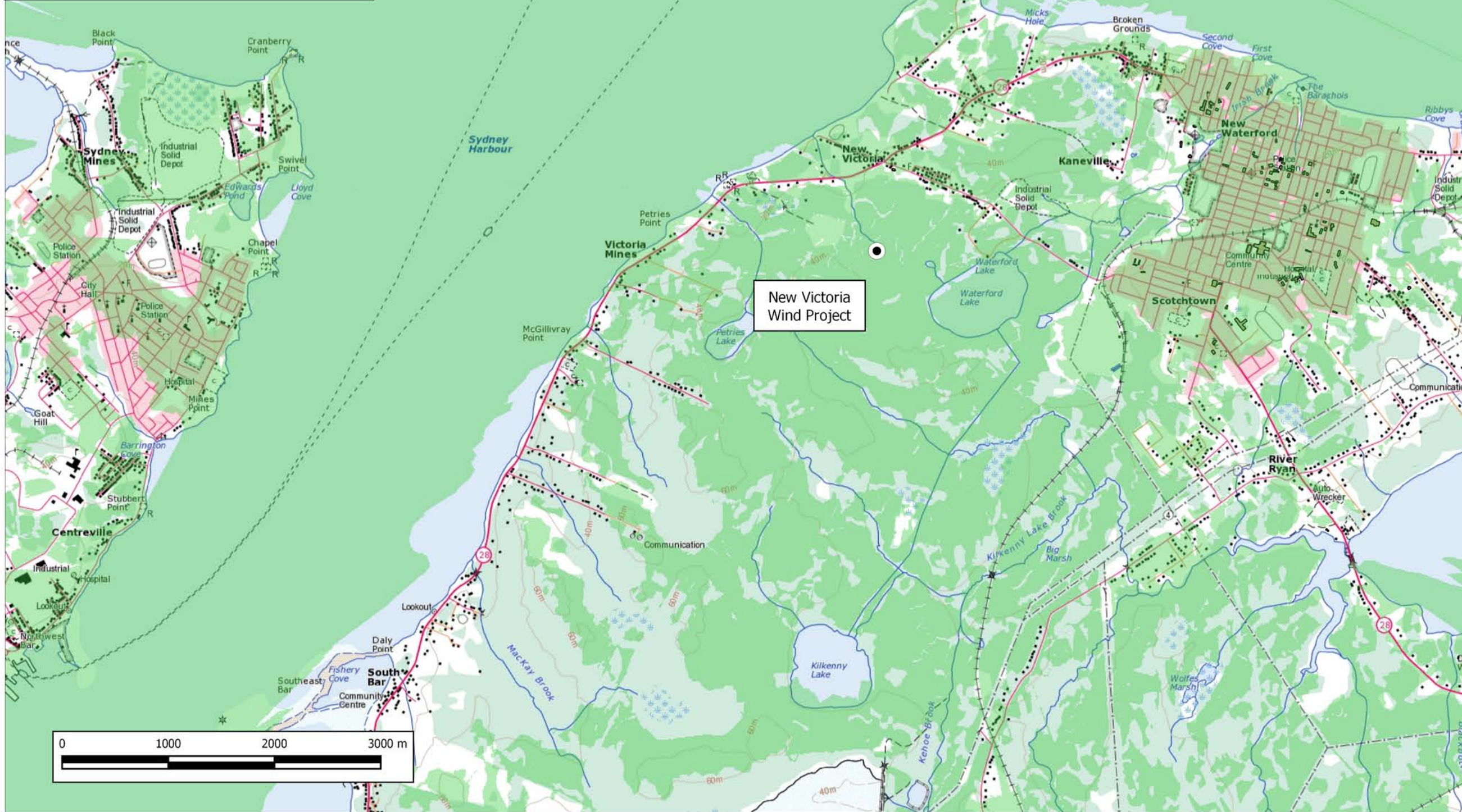
New Victoria Community Wind Project

Option 1: Zone of Visual Influence

Hub Height

Legend

- Proposed Turbine
- Turbine Hub Visible



Map Data: Digital Topographic Mapping by the Nova Scotia Geomatics Center, Nova Scotia Forest Inventory Database

Turbine Model: Enercon E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW

Modeled Using:
 Hub Height: 98 m
 Eye Ht: 1.5 m





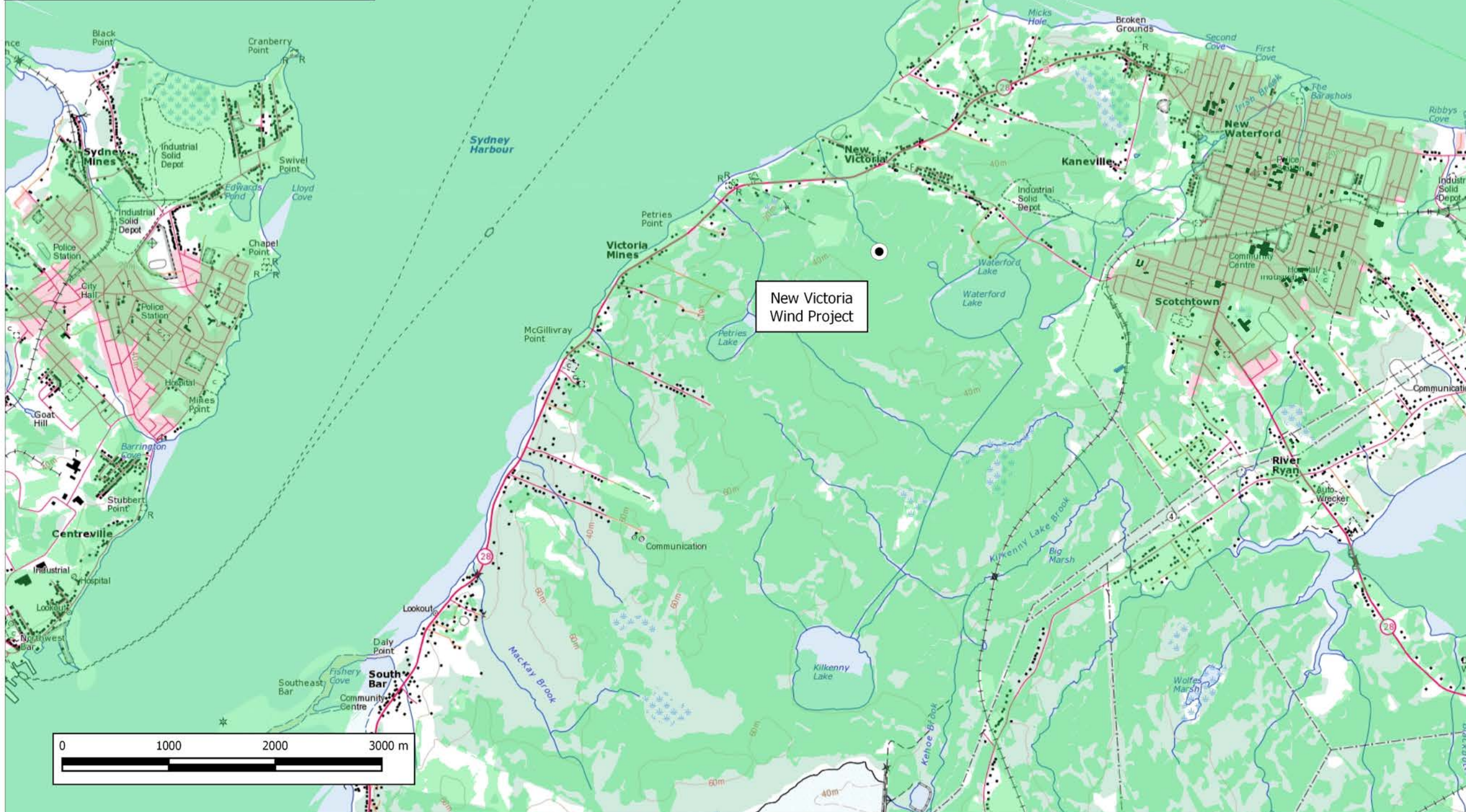
New Victoria Community Wind Project

Option 1: Zone of Visual Influence

Tip Height

Legend

- Proposed Turbine
- Tip Height Visible



Map Data: Digital Topographic Mapping by the Nova Scotia Geomatics Center, Nova Scotia Forest Inventory Database

Turbine Model: Enercon E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW

Modeled Using:
 Tip Height: 144 m
 Eye Ht: 1.5 m





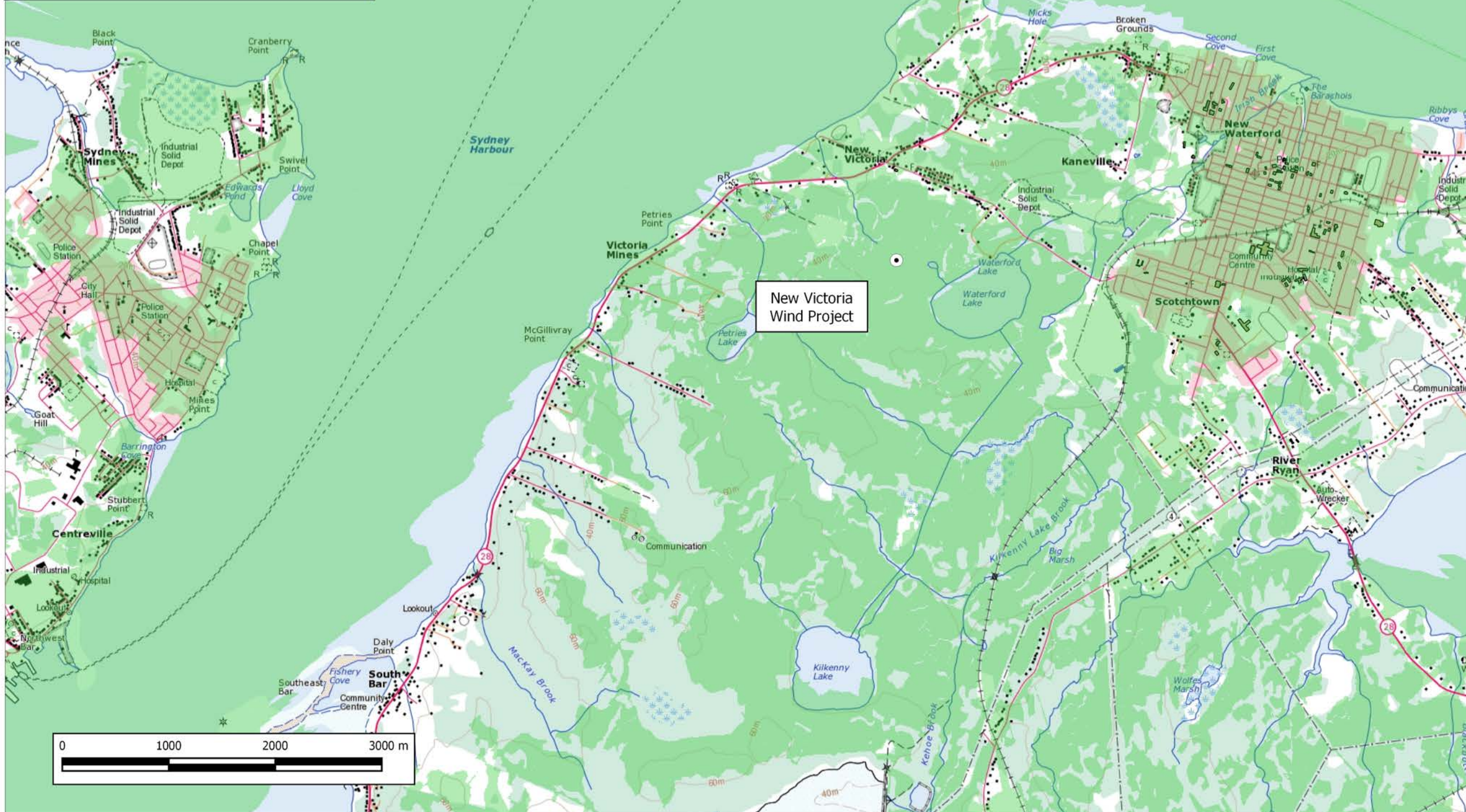
New Victoria Community Wind Project

Option 2: Zone of Visual Influence

Hub Height

Legend

- Proposed Turbine
- Turbine Hub Visible



Map Data: Digital Topographic Mapping by the Nova Scotia Geomatics Center. Nova Scotia Forest Inventory Database

Turbine Model: Enercon E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW

Modeled Using:
 Hub Height: 98 m
 Eye Ht: 1.5 m







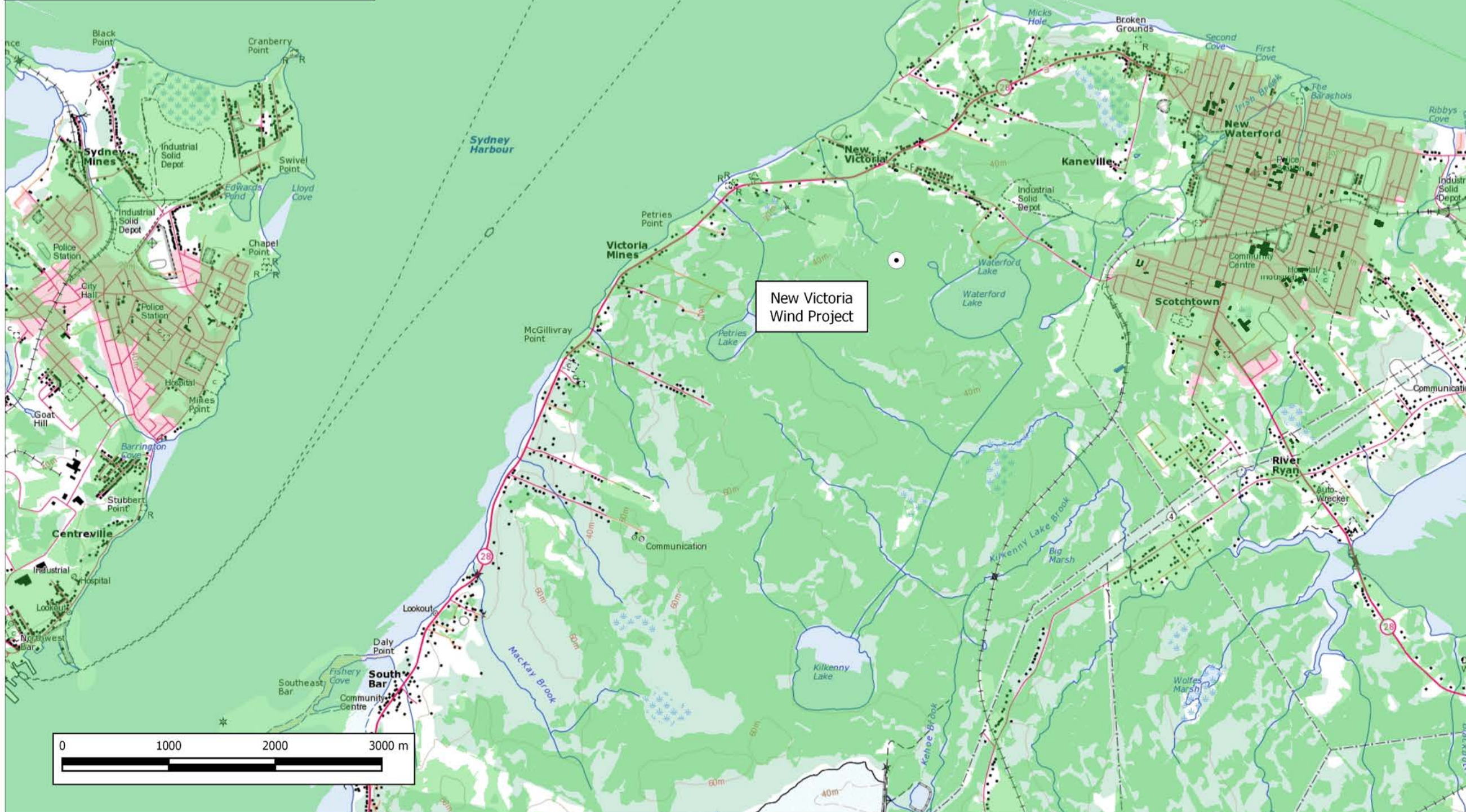
New Victoria Community Wind Project

Option 2: Zone of Visual Influence

Tip Height

Legend

-  Proposed Turbine
-  Tip Height Visible



Map Data: Digital Topographic Mapping by the Nova Scotia Geomatics Center, Nova Scotia Forest Inventory Database

Turbine Model: Enercon E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW

Modeled Using:
 Tip Height: 144 m
 Eye Ht: 1.5 m





Original Photograph



New Victoria Community Wind Project

Visual Simulation 3 Option 1

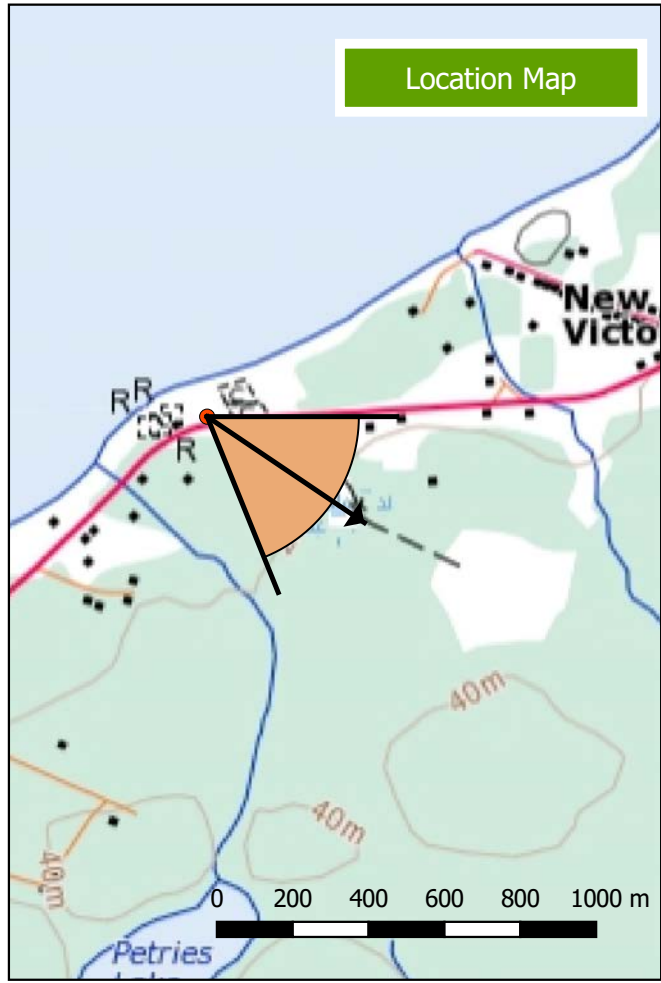
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 Northing: 5,125,738
 Photograph Date: Nov.25, 2015
 View Angle: 124 Degrees

Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	January 14, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 3
Option 2**

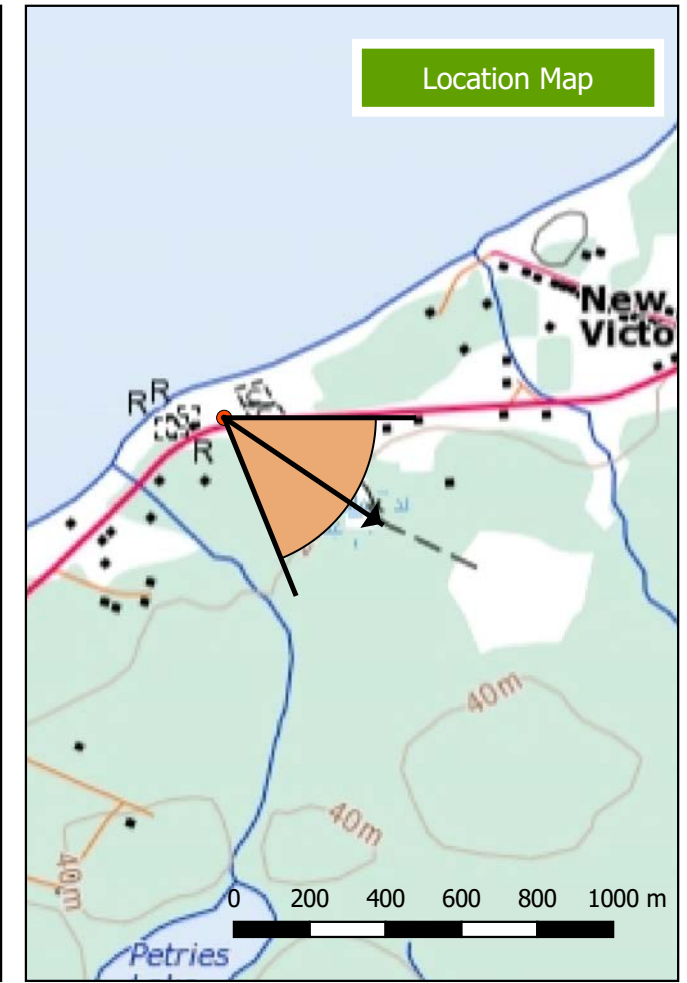
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Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	Jay 14, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 4
Option 1**

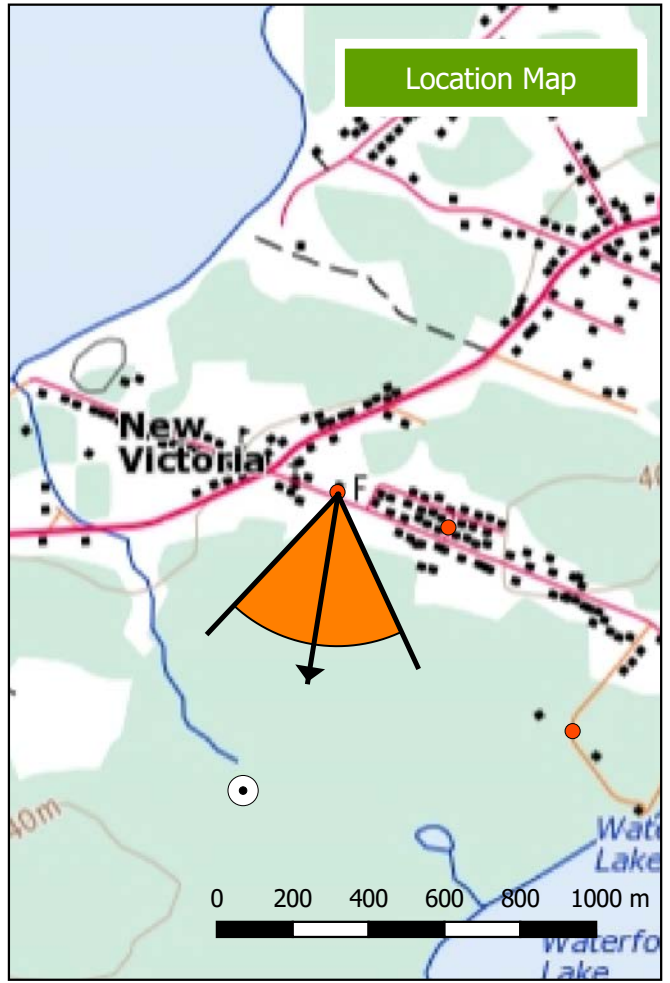
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Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	May 31, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 4
Option 2**

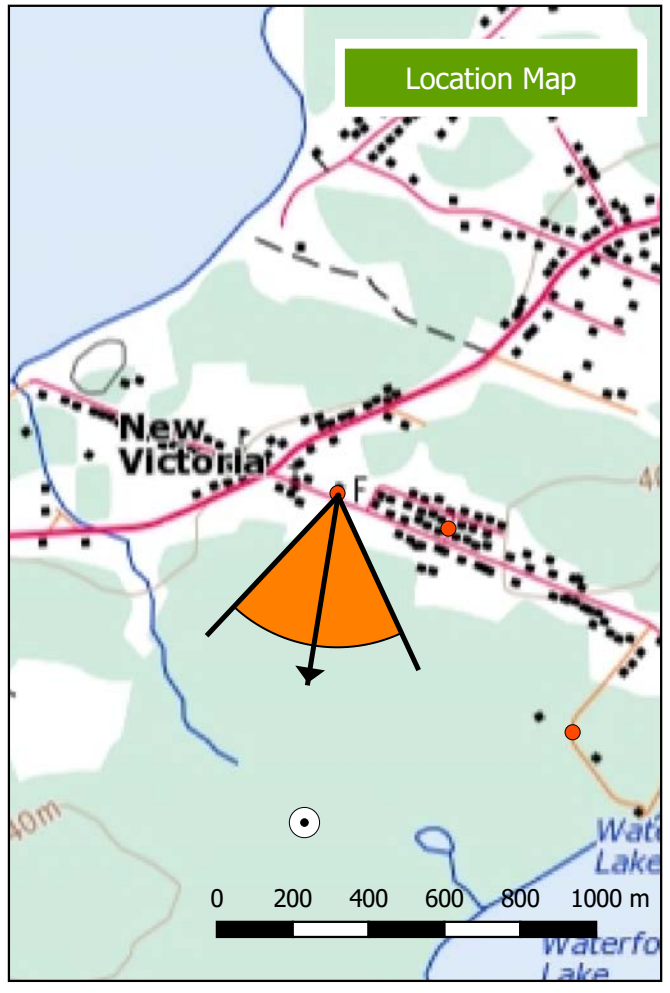
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 Photograph Date: Nov.25, 2015
 View Angle: 170 Degrees

Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	May 31, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 6
Option 1**

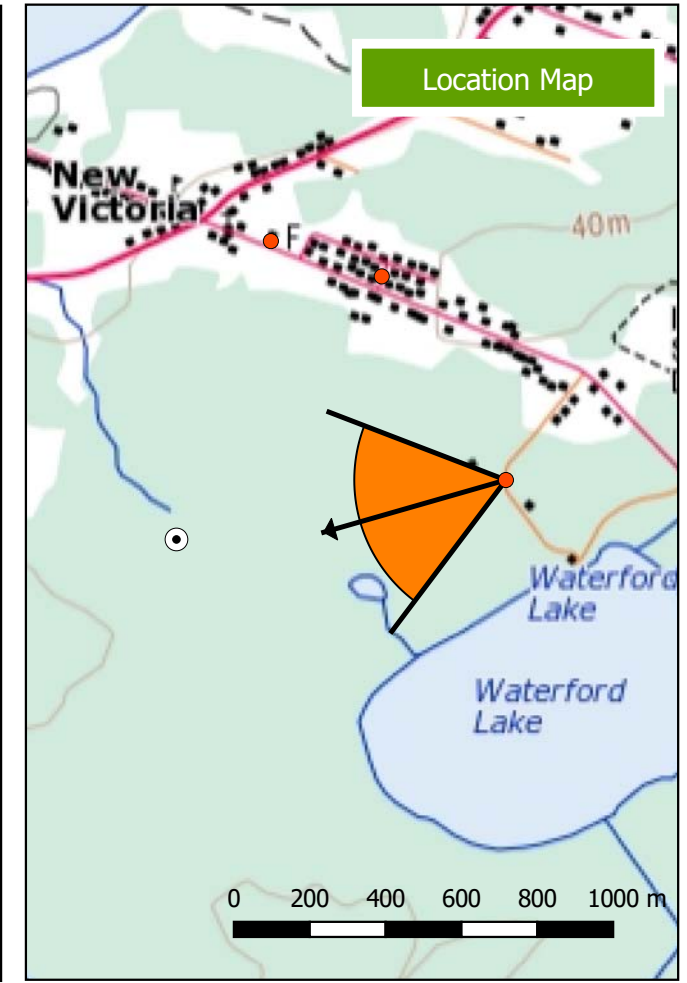
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 Northing: 5,125,231
 Photograph Date: July 7, 2016
 View Angle: 254 Degrees

Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	July 11, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 6
Option 2**

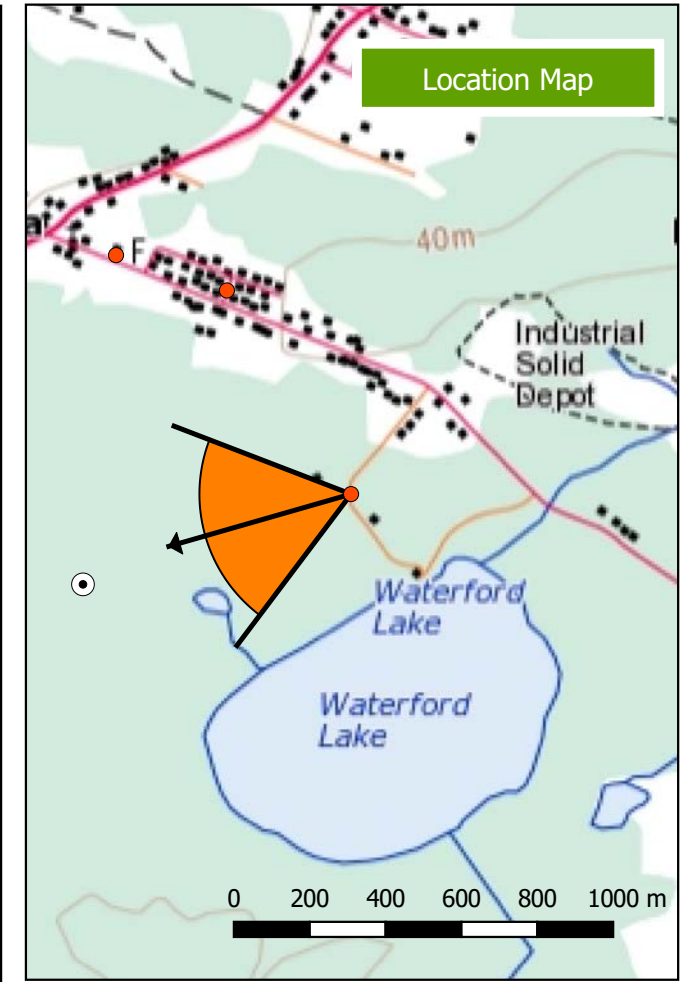
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 Northing: 5,125,231
 Photograph Date: July 7, 2016
 View Angle: 254 Degrees

Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	July 11, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 7
Option 1**

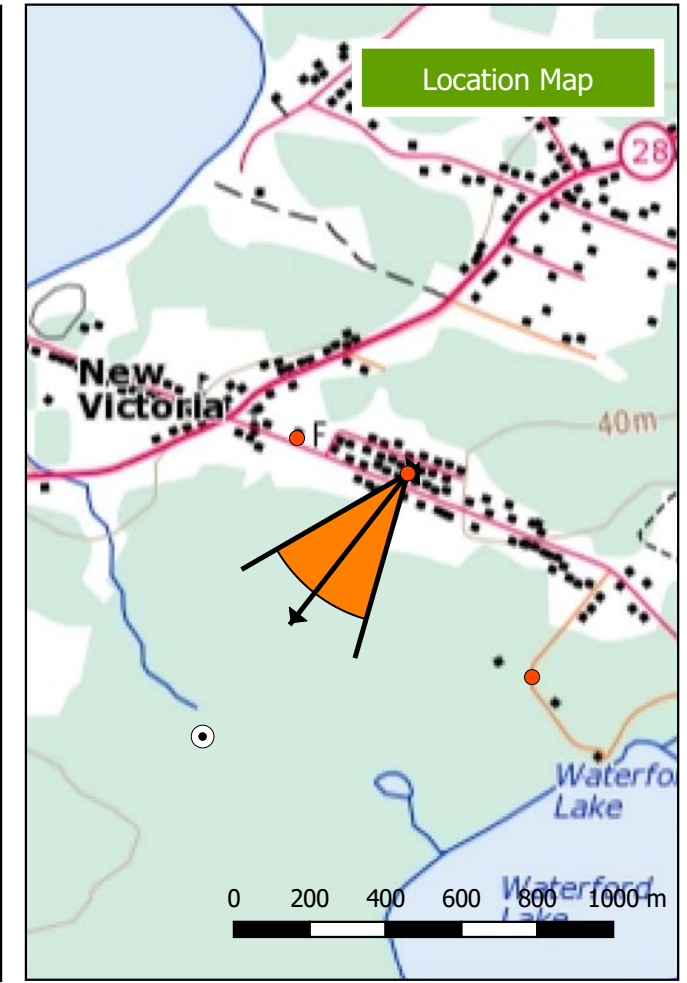
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 View Angle: 218 Degrees

Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	July 11, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map



Original Photograph



**New Victoria Community
Wind Project**

**Visual Simulation 6
Option 2**

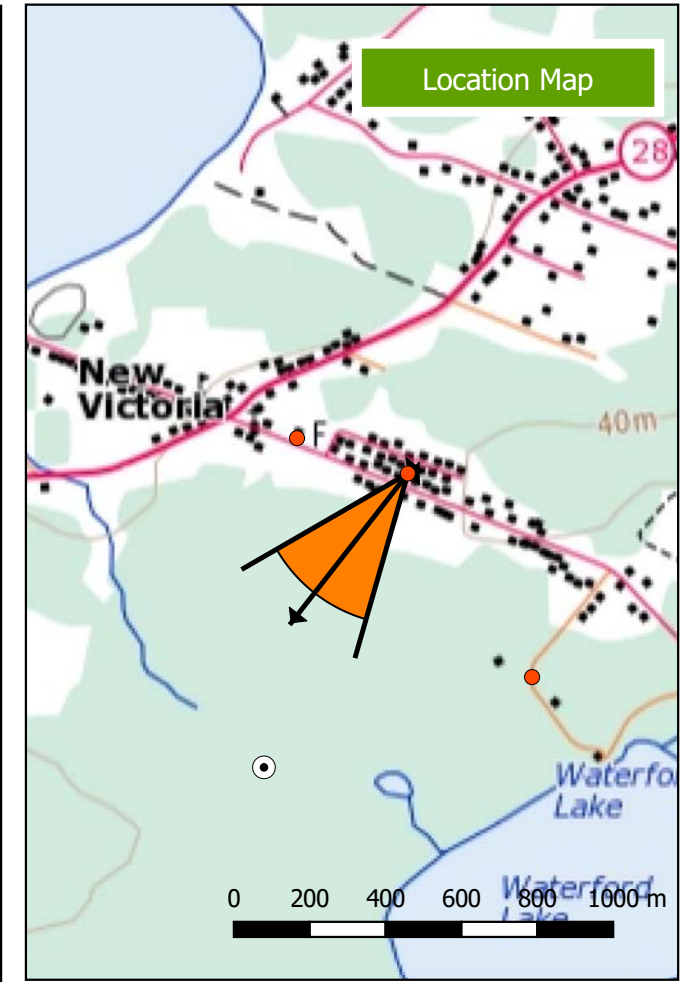
Image: Easting: 721,260
 Northing: 5,125,773
 Photograph Date: July 7, 2016
 View Angle: 218 Degrees

Turbine Manufacturer: Enercon
 Model: E-92
 Hub Height: 98 m
 Rotor Diameter: 92 m
 Rated Power: 2,350 kW
 Power Curve: Level 0

Coordinate System	UTM, NAD83, Zone 20	July 11, 2016
Analysis By: AL-PRO Wind Energy Consulting Canada Inc.		



Visual Simulation



Location Map

APPENDIX X. EMI REPORT AND REGULATORY CORRESPONDENCE



EMI Report

for the

New Victoria Wind Project

Prepared For

Celtic Current Inc.
10442 Route 19
Southwest Mabou
Nova Scotia
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July 6, 2016

Prepared By



Nortek Resource Solutions Inc.
RR # 1
Thorburn, Nova Scotia
B0K 1W0
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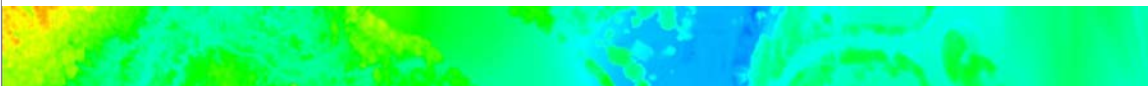


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1.0 Introduction

The proposed New Victoria Wind Project is located approximately 11 km north of Sydney, Nova Scotia in Cape Breton County. The proposed wind project will consist of a single wind turbine with a proposed hub height of 98 m. Two turbine positions identified as Option 1 and Option 2 have been incorporated into the analyses described in this report. The turbine positions for both options are located within 200 m of each other and therefore mapped as a single object in the various maps presented in this report.

This EMI Study is designed to apply the guidelines identified by the joint *Radio Advisory Board of Canada and Canadian Wind Energy Association Technical Information and Coordination Process Between Wind Turbines and Radiocommunication and Radar Systems*¹ (herein after referred to as the RABC). The technical guidelines have been developed to apply a consistent approach to determining if wind energy developments may impact existing radio, telecommunication and radar systems. Radio communication system locations were obtained from Industry Canada Spectrum Direct website².

Additionally, CBC/Radio Canada has specific requirements to ensure that proposed wind farms will not have a negative influence on existing CBC/Radio signals. CBC/Radio Canada requires that specific spatial analysis and mapping be included in this report that are specified in CBC/Radio-Canada Involvement and Requirements Concerning Wind Energy Projects³ (herein after referred to as the CBCIR).

2.0 Point-to-Point Systems above 890 MHz

The existing RABC guidelines describe consultation zones for Point-to-Point Systems above 890 MHz include a 1 km consultation zone around existing transmitters and receivers as well as a variable “cylinder” between links that are based on the distance between links and the licensed frequencies.

A variable consultation zone along the line of sight between the transmitter and receiver recommended by RABC is calculated using the following formula:

$$L_c = R + 52\sqrt{D/F}$$

Where:

D = Path length in kilometers

F = Frequency in gigahertz

L_c = Diameter of the cylinder in meters

R = Wind turbine rotor diameter in meters

Data obtained from the Industry Canada Technical and Administrative Frequency Lists accessed through the Spectrum Direct web site² are summarized in Figure 1.

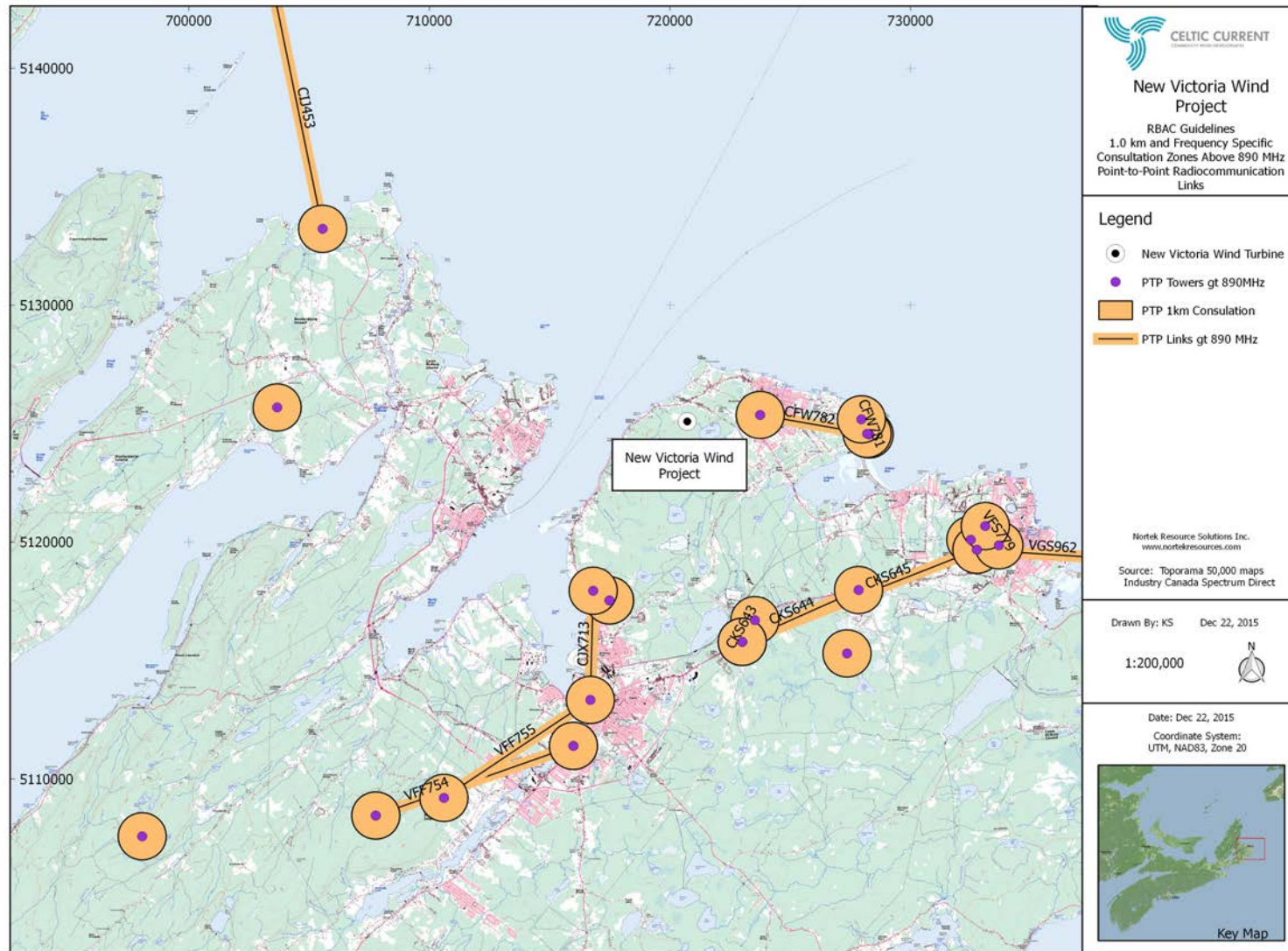


Figure 1: RBAC Guideline Consultation Zones for Point-to-Point Radio Links Above 860 Mhz.

There are no consultation zones and no point-to-point radio links above 890 MHz within the proposed wind project.

3.0 Broadcast Transmitters

3.1 AM Transmitters

A 15 km consultation zone is recommended by RABC and CBCIR for AM radio transmitters utilizing multiple tower antenna systems. For single tower systems, a 5 km consultation zone is required. CJCB-AM Broadcasts at 1,270 kHz from Sydney, Nova Scotia and is the closest AM transmitter located 12.6 km from the proposed wind project (Figure 2). The next closest transmitter, CBI-AM broadcasts at 1,140 kHz and is located 16.6 km south of the proposed wind project. The operator of CJCB will be notified to determine if they are concerned about the project.

The proposed wind project is within the 15 km consultation zone recommended by RABC and CBCIR for one AM Radio transmitter.

Table 1: AM Radio Transmitters Located in Close Proximity to the Proposed New Victoria Wind Project.

Frequency (kHz)	Call Sign	Latitude	Longitude
1140	CBI	46°05' 40" N	60° 08' 52" W
1270	CJCB	46°08' 16" N	60° 11' 42" W

3.2 FM Transmitters

For proximity reasons, the RABC suggests a 2 km consultation zone around existing FM transmitters. Maritime Broadcasting operates 2 FM Transmitters (94.9 and 98.3 MHz) at its tower site located north of Whitney Pier (Figure 3). The transmitter is located 8.2 km from the wind project and is well outside the RABC recommended consultation zone. A summary of FM Transmitters located in close proximity of the proposed wind project are shown in Table 2.

The proposed wind project is not within the 2 km consultation zone recommended by RABC for FM transmitters.

The proposed wind project is not within the 5 km consultation zone recommended by CBCIR.

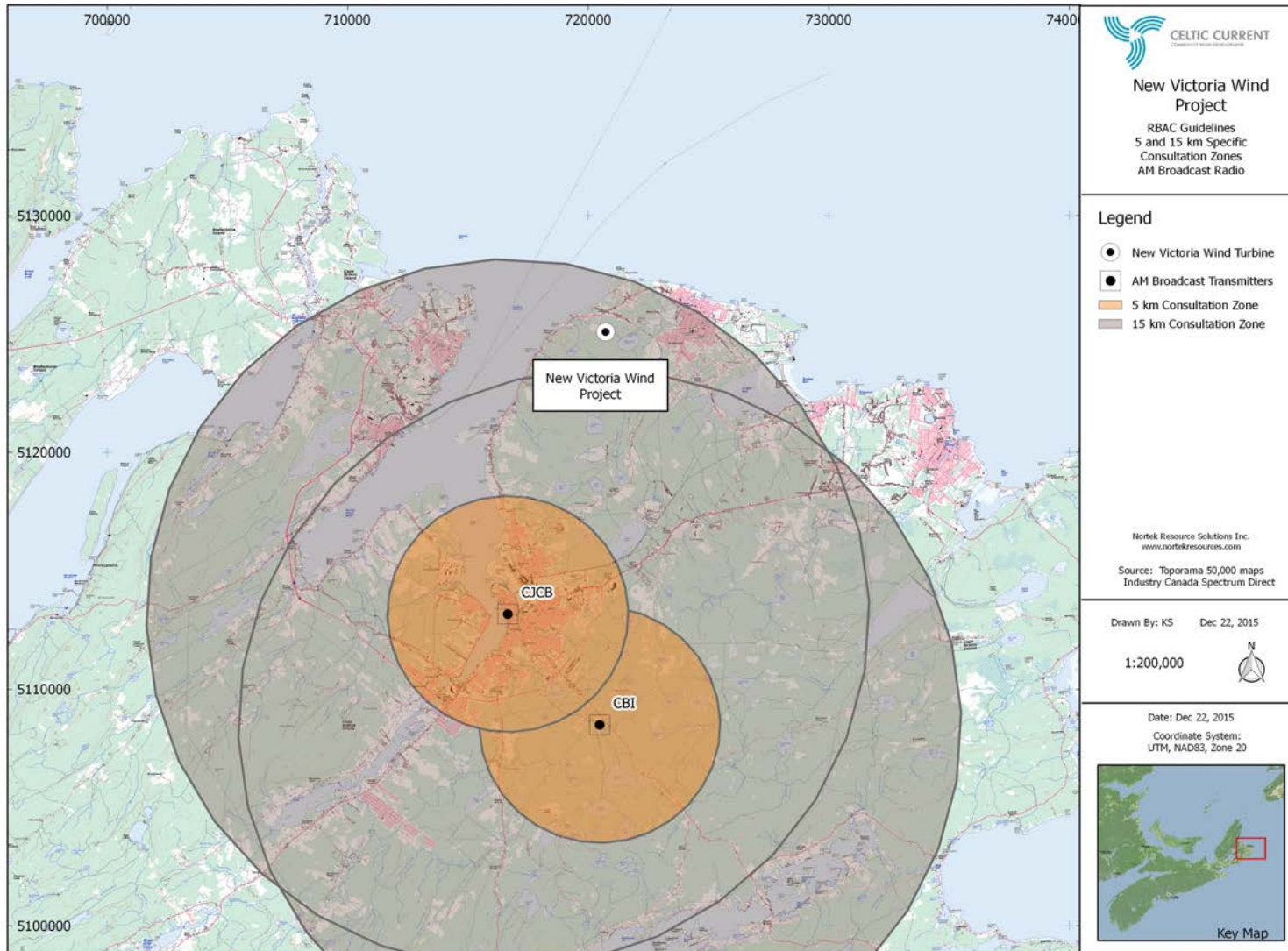


Figure 2: RBAC Guideline 5 and 15 km Consultation Zones for AM Broadcast Transmitters.

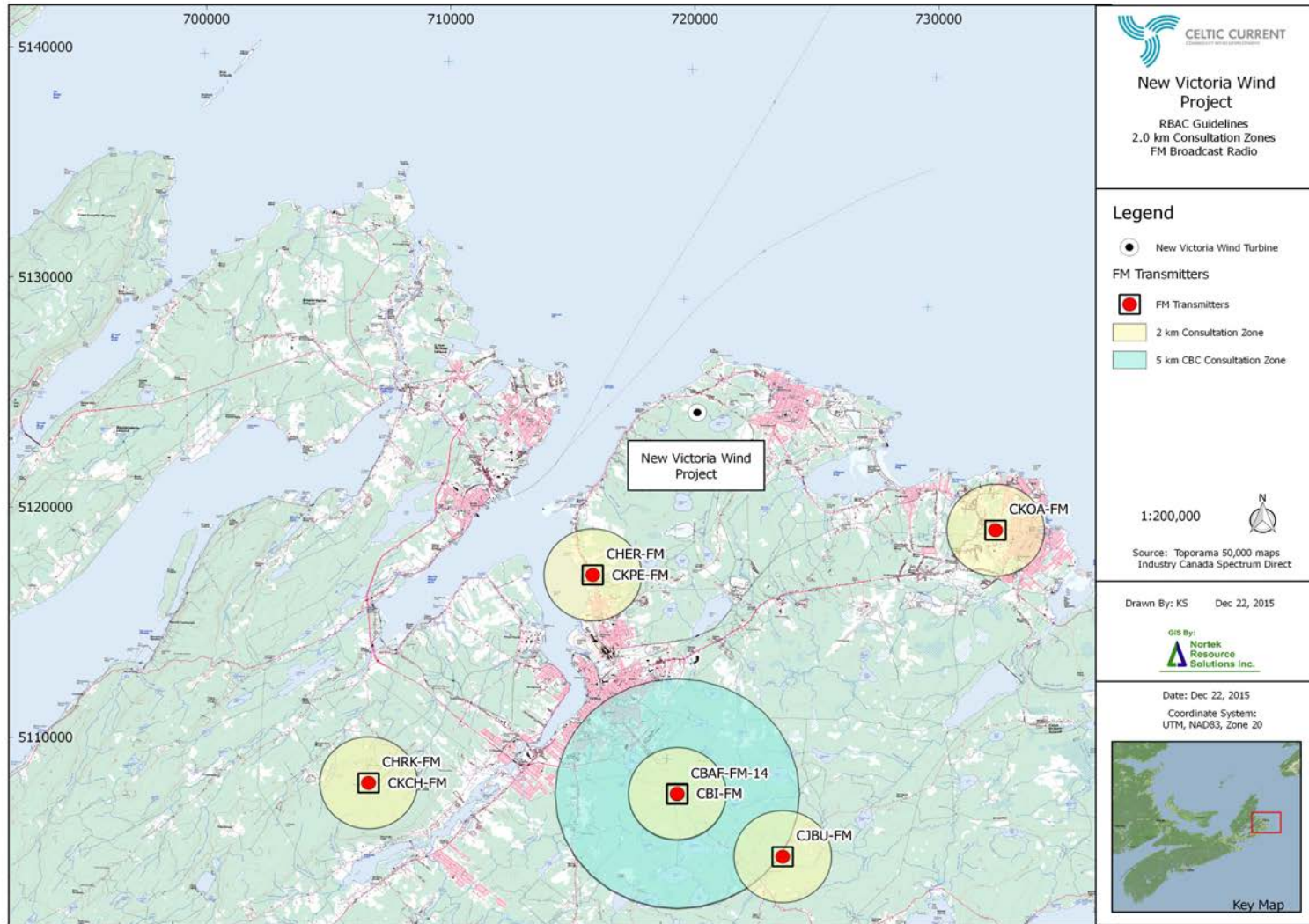


Figure 3: RBAC and CBCIR Guideline FM Broadcast Consultation Zones.

Table 2: FM Radio Transmitters Located in Close Proximity to the Proposed New Victoria Wind Project.

Frequency (MHz)	Call Sign	Latitude	Longitude
89.7	CKOA-FM	46°11' 59" N	59° 58' 43" W
92.1	To be Assigned	Not yet Constructed	
94.9	CKPE-FM	46°10' 48" N	60° 11' 33" W
95.9	CBAF-FM-14	46°05' 39" N	60° 08' 52" W
98.3	CHER-FM	46°10' 48" N	60° 11' 33" W
101.9	CHRK-FM	46°05' 55" N	60° 18' 41" W
103.5	CKCH-FM	46°05' 55" N	60° 18' 41" W
105.1	CBI-FM	46°05' 40" N	60° 08' 52" W
107.3	CJBU-FM	46°10' 11" N	60° 05' 31" W

3.3 TV Transmitters

The closest TV Transmitter is located approximately 13.8 km south of the proposed wind project and is located at Sydney, NS. The next closest television transmitter is located 21.0 km south west of the wind project (Figure 4). Table 3 summarizes the closest TV transmitters to the proposed wind project.

Table 3: TV Transmitters Located in Close Proximity to the Proposed New Victoria Wind Project.

Channel	Call Sign	Latitude	Longitude
4	CJBC-TV	46°07' 20" N	60° 10' 27" W
11	CIHF-TV	46°05' 55" N	60° 18' 41" W

There are no Television Transmitters located within the 2 km consultation zone recommended by RABC.

3.4 CBC Radio Transmitters

The following section describes the components outlined in the CBCIR for a preliminary report.

The closest CBC AM radio transmitter (CBI-AM) site is located 16.6 km south northeast the proposed wind project and the site is situated in Sydney, Nova Scotia (Table 4).

Table 4: Locations and Distances of the Two Closest CBC Radio Transmitter Sites.

Location	Call Sign	Latitude	Longitude	Type	Distance to Wind Project
Sydney	CBI-AM	46°05' 40" N	60° 08' 52" W	AM	16.6
Sydney	CBI-FM	46°05' 40" N	60° 08' 52" W	FM	16.6

There are no CBC AM Radio Transmitters located within the 15 km consultation zone identified by CBCIR . Additionally, there are no FM Radio Transmitters located within the 5 km consultation zone identified by CBCIR.

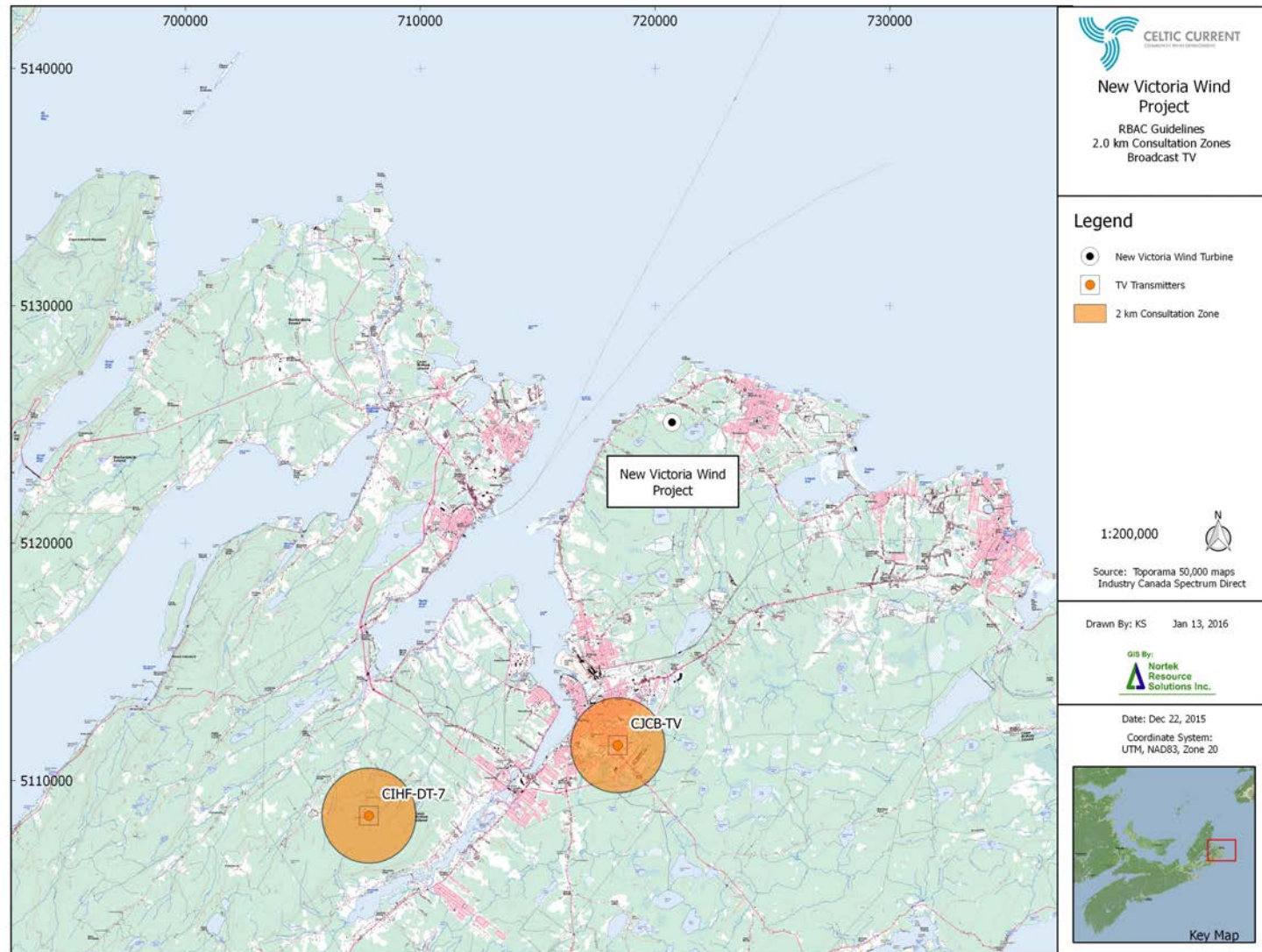


Figure 4: RBAC Guidleine 2 km Consultation Zones for TV Transmitters.

3.5 CBC Television Transmitters

The CBCIR requires that all existing CBC television transmitter sites located within 100 km of the proposed wind project be identified (Figure 5). CBC has recently migrated its television broadcasting from analogue to digital signals in Nova Scotia. This has reduced the number of transmitters to one which is located in Halifax, which is outside of the recommended 100 km consultation zone. Currently, there are no CBC Television Transmitters on PEI and one is Saint John, New Brunswick (Figure 5).

There are no CBC Television Transmitters located within the 100 km consultation zone recommended by CBCIR.

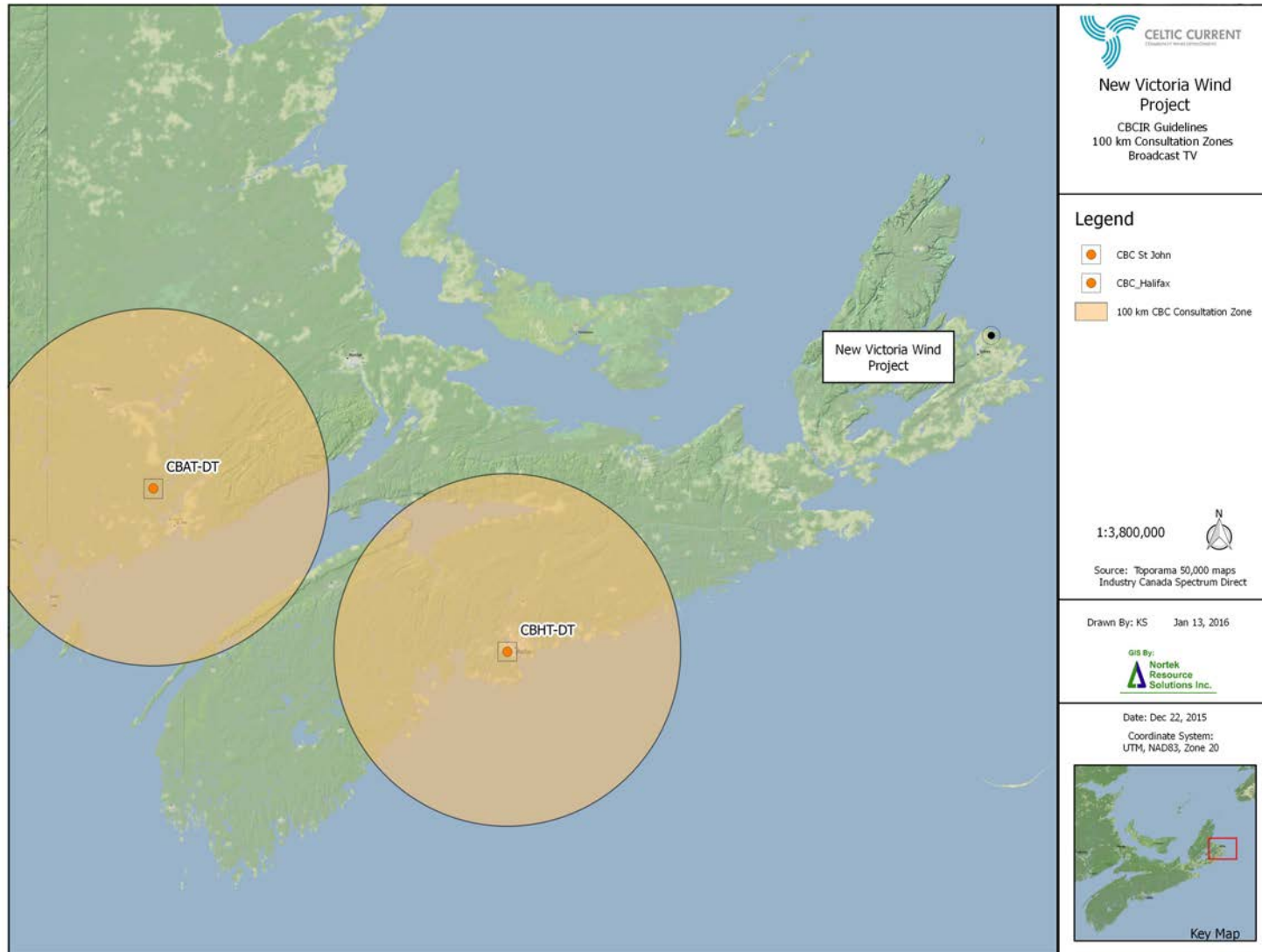


Figure 5: CBC Television Transmitters and CBCIR Guideline 100 km Consultation Zones.

4.0 Over-the-Air Television Reception

As of August 31, 2011, the CRTC had required that all TV transmitters that serve markets with a population greater than 300,000 (Mandatory Markets) be converted to digital technology. In most cases, transmitters in larger urban areas have been upgraded to digital and re-transmitters that serve smaller population bases continued to operate with analog equipment. Television signals received in close proximity to the proposed wind projects are currently broadcast using analogue signals.

The RABC recommends television receiver consultation zones based on the whether the broadcast is delivered using analogue or digital signals with consultation zones of 15 km and 10 km respectively. The 15 km analogue consultation zone covers a relatively large area and extends from Glace Bay in the east into the Boularderie Island in the west and Sydney to the south (Figure 6). The consultation zone includes the urban communities of:

- Sydney Mines
- North Sydney
- Sydney
- New Waterford and
- Glace Bay

Although these are urban areas with high population densities, the trend of consumers moving towards cable or direct-to-home satellite systems, the overall impacts are considered to be moderate. The project proponents are committed to mitigating confirmed negative impacts if they occur as a result of developing the proposed wind project. Celtic Current will develop a mitigation policy and procedure as part of their project planning process.

There are six communities located within the RABC recommended 15 km consultation zone. The project proponents will develop a Over-the-Air Television reception policy and mitigation procedures as part of their ongoing planning process. The policy and associated procedure will be made available to local residents.

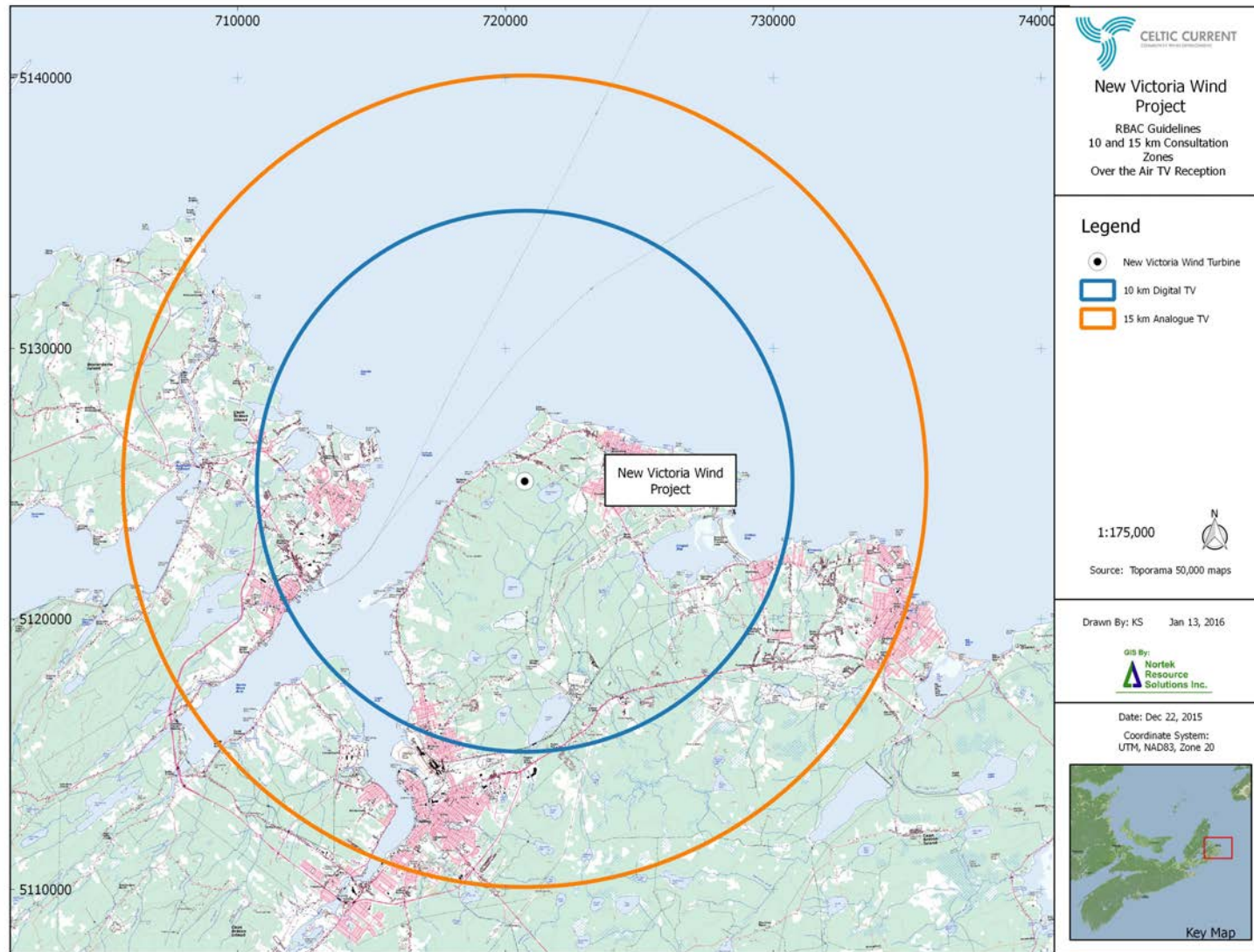


Figure 6: RBAC Guideline 10 km and 15 km Consultation Zones for Over-the-Air-Reception Television.

5.0 Cellular Type Networks

There are no cell phone transmitter sites located within the 1 km consultation zone recommended by the RABC (Figure 7). The closest cell phone tower is located over 3 km from the proposed wind project. Table 5 shows the distance of the 3 closest cell sites to the New Victoria wind project.

Table 5: Closest Cellular Stations to the New Victoria wind project.

License Num.	Licensee	Distance to Wind Project (km)
8042048	Bell Mobility	3.0
3530097	Bell Mobility	7.3
8041843	Bell Mobility	8.5

There are no cellular transmitters located within the 1.0 km consultation zone as outlined in RABC.

6.0 Land Mobile Radio Networks and Point-to-Point Systems below 890MHz

6.1 Land Mobile Radio Networks

Licensed mobile radio links within 30 km of the proposed wind project were mapped and 1 km consultation zones were generated (Figure 8). One radio site is within the consultation zone and the operator has been contacted. The proponent and the license holder are in discussions in regard to potential impacts.

There is one radio network (< 890 MHz) that is located within 1 km of the proposed wind project (Figure 8) as outlined by the RABC.

6.2 Non Disclosed Radio Operators

The RCMP were contacted on Jan 13, 2016 via email as per the RBAC Guidelines (Appendix 3). No issues are expected to be identified.

6.3 Point-to-Point Systems below 890 MHz

There are no radio links that operate below 890 MHz that are located within the 1 km RABC recommended consultation zone (Figure 9).

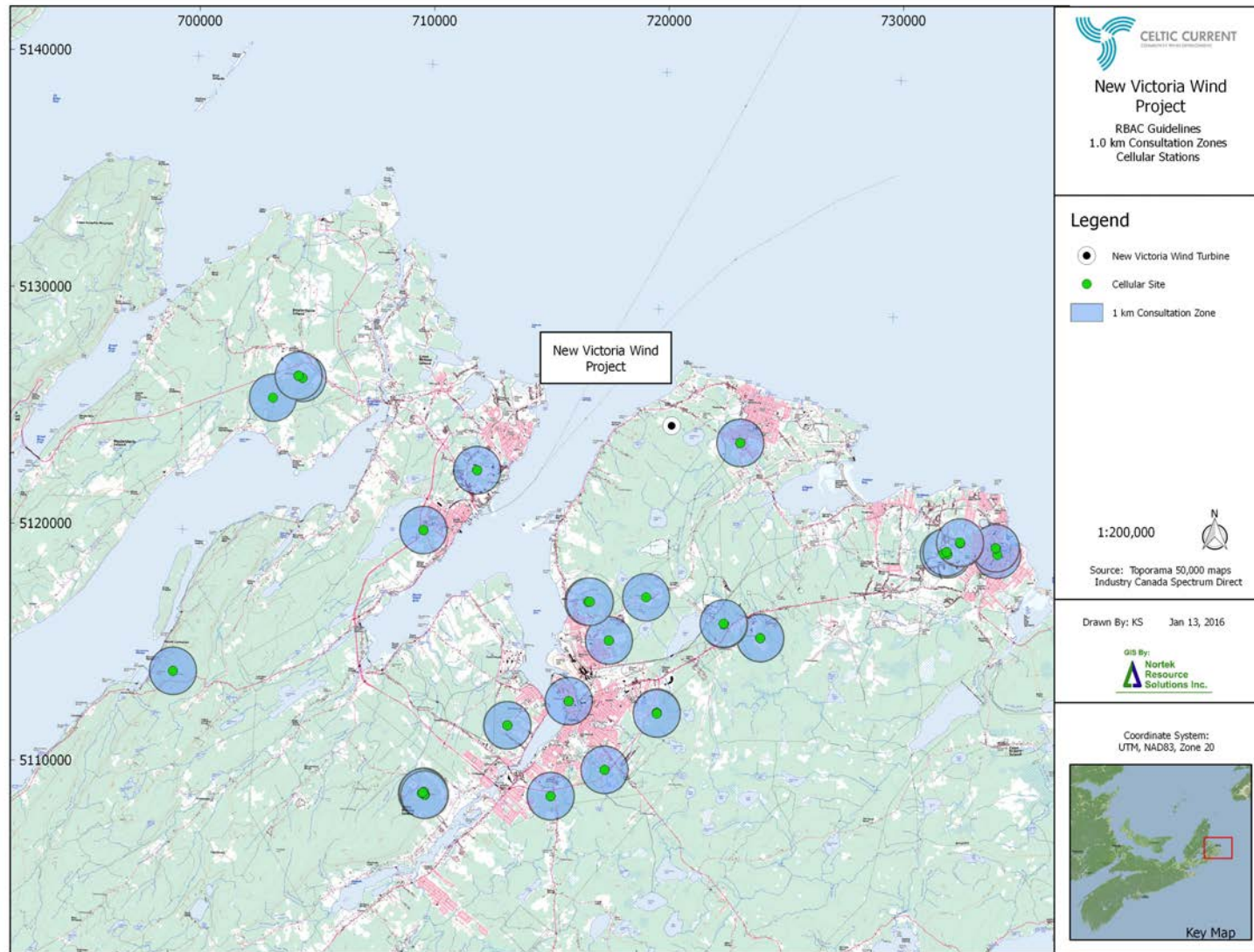


Figure 7: RBAC Guidleine 1 km Consultation Zones for Cellular Networks.

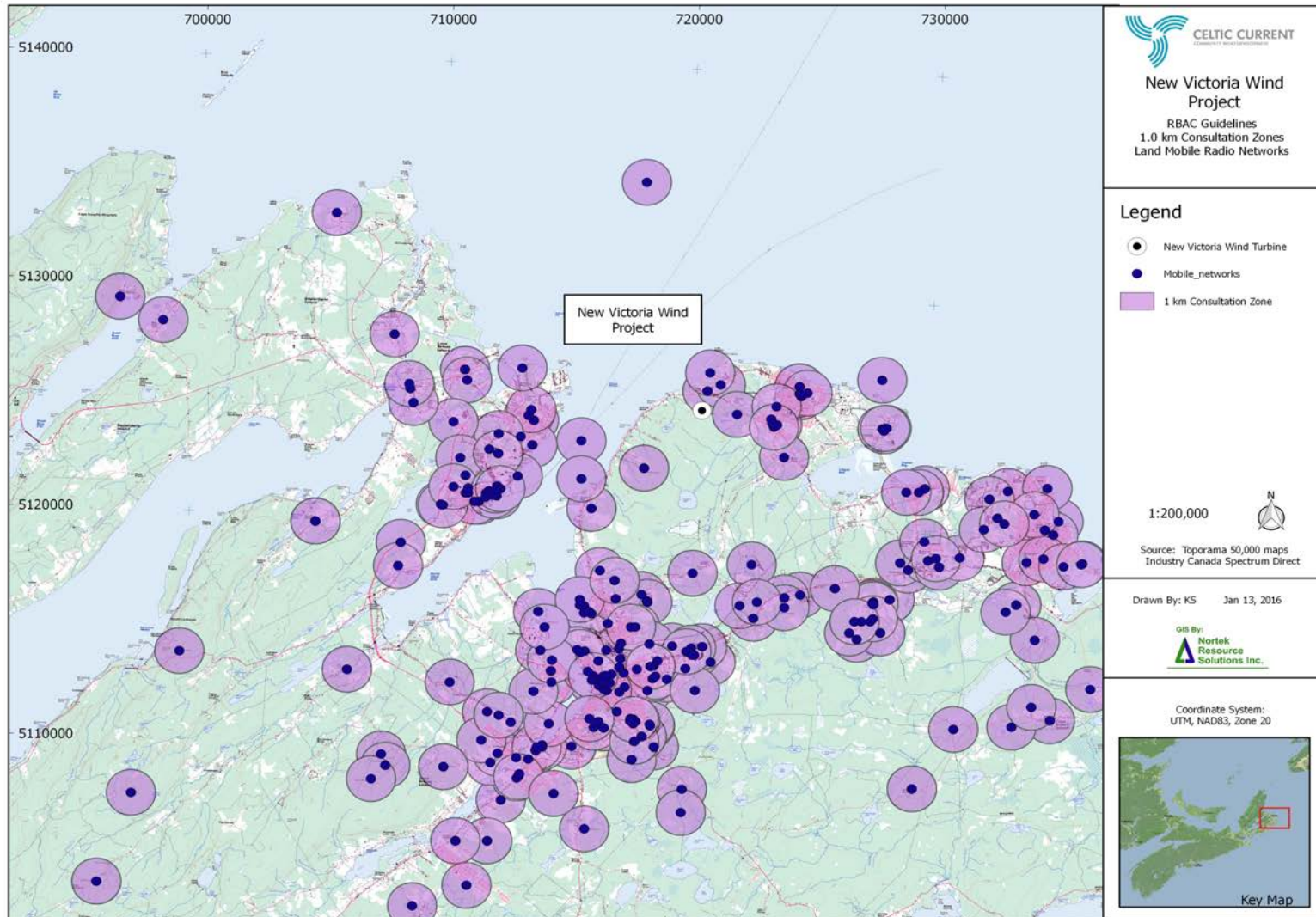


Figure 8: RBAC Guidleins 1 km Consultation Zones for Land Mobile Networks.

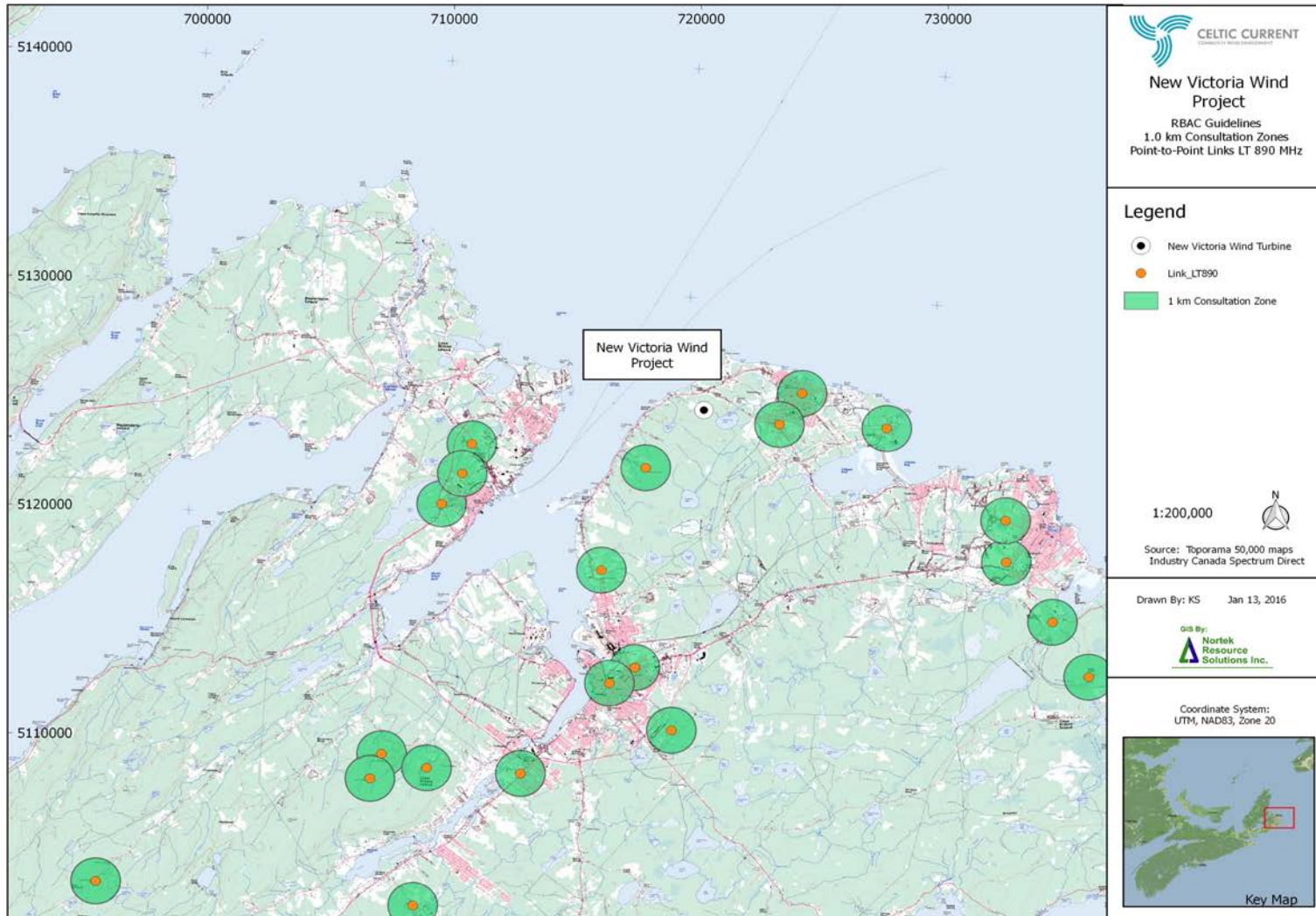


Figure 9: RBAC Guidleine 1 km Consultation Zones for Point-to-Point-Systems Below 890 Mhz.

7.0 Satellite Systems

7.1 Satellite Ground Stations

There are no satellite ground stations located within the RABC recommended 500 m consultation zone.

7.2 DTH Receivers

A preliminary review of Direct to Home Satellite receivers has been completed. The analysis is based on the physical turbine dimensions which are:

Hub Height = 98 m
Rotor Diameter = 92 m

The RABC recommends the following formula for determining the size of the cone:

$$L_{c(m)} = R + 104\sqrt{D/F}$$

where: L_c = Diameter of the cylinder (m)
D = Distance from the ground satellite receiver (km)
F = Frequency in GHz (11.7)
R = Rotor Diameter (92 m)

$$L_{c(1\text{ km})} = 122.4\text{ m}$$

$$L_{c(10\text{ km})} = 188.1\text{ m}$$

A cone based on 11.7 GHz was calculated and the satellite data from Table 6 were used for the analysis. The analysis involved identifying both horizontal and vertical zones where dwellings may be impacted by the wind project. The intersect of these two zones resulted in the final consultation zones highlighted in Figure 10 and Figure 11.

Table 6: Direct-To-Home Geostationary Satellite Parameters.

Service Provider	Satellite ID	Geostationary Satellite Orbit (Lat, Long)	Local Azimuth (True North)	Local Inclination
Bell Direct	Nimiq 4	0° N, 82° W	231.7°	32.6°
	Nimiq 1 Nimiq 2	0° N, 91° W	242.3°	28.8°
	Anik F1 Anik F1R	0° N, 107.3° W	258.9°	19.9°
Shaw Direct	Anik F2	0° N, 111.1° W	262.3°	17.6°

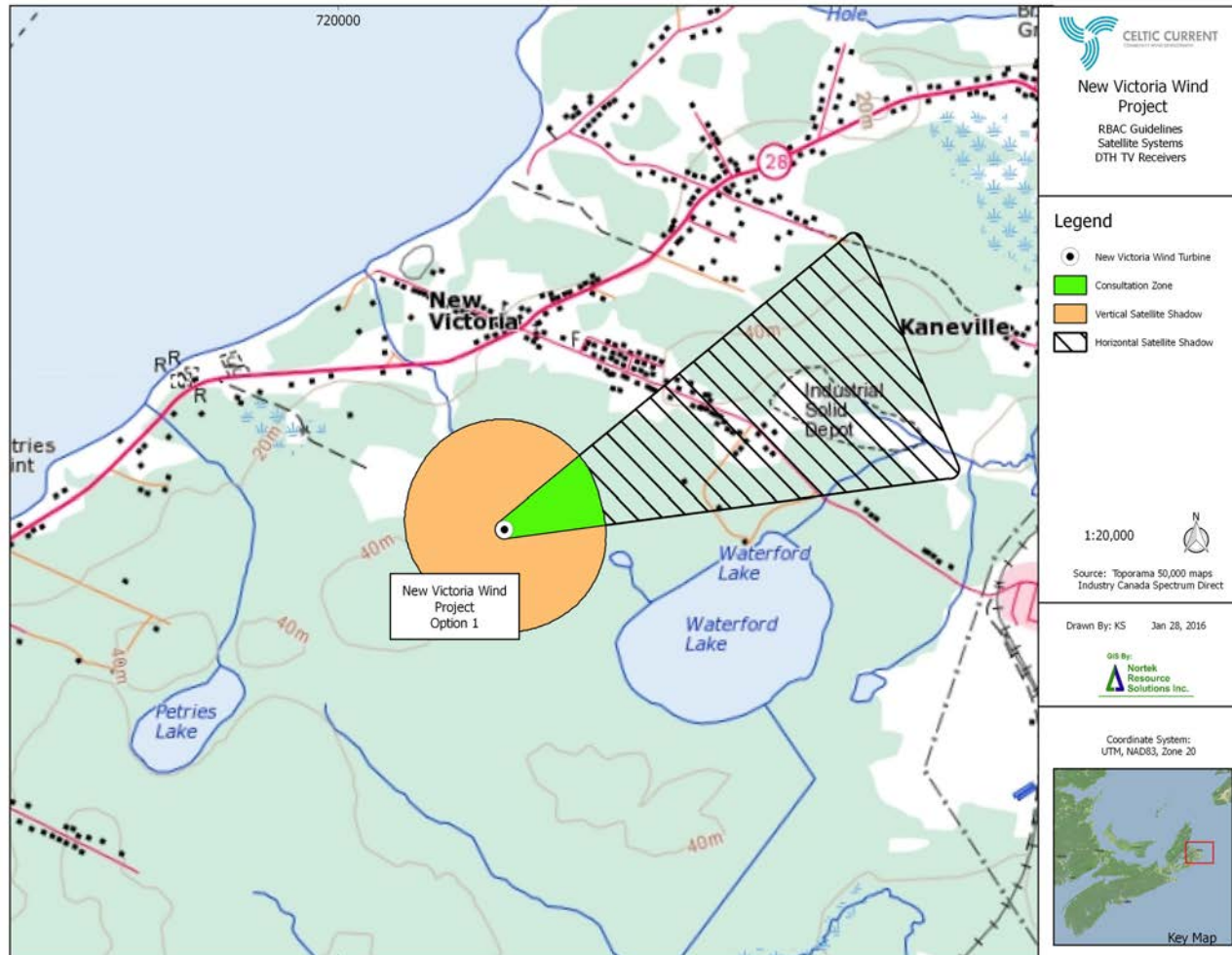


Figure 10: RABC Guideline Consultation Zones for Satellite Receivers Based on Line of Sight Cones for Option 1.

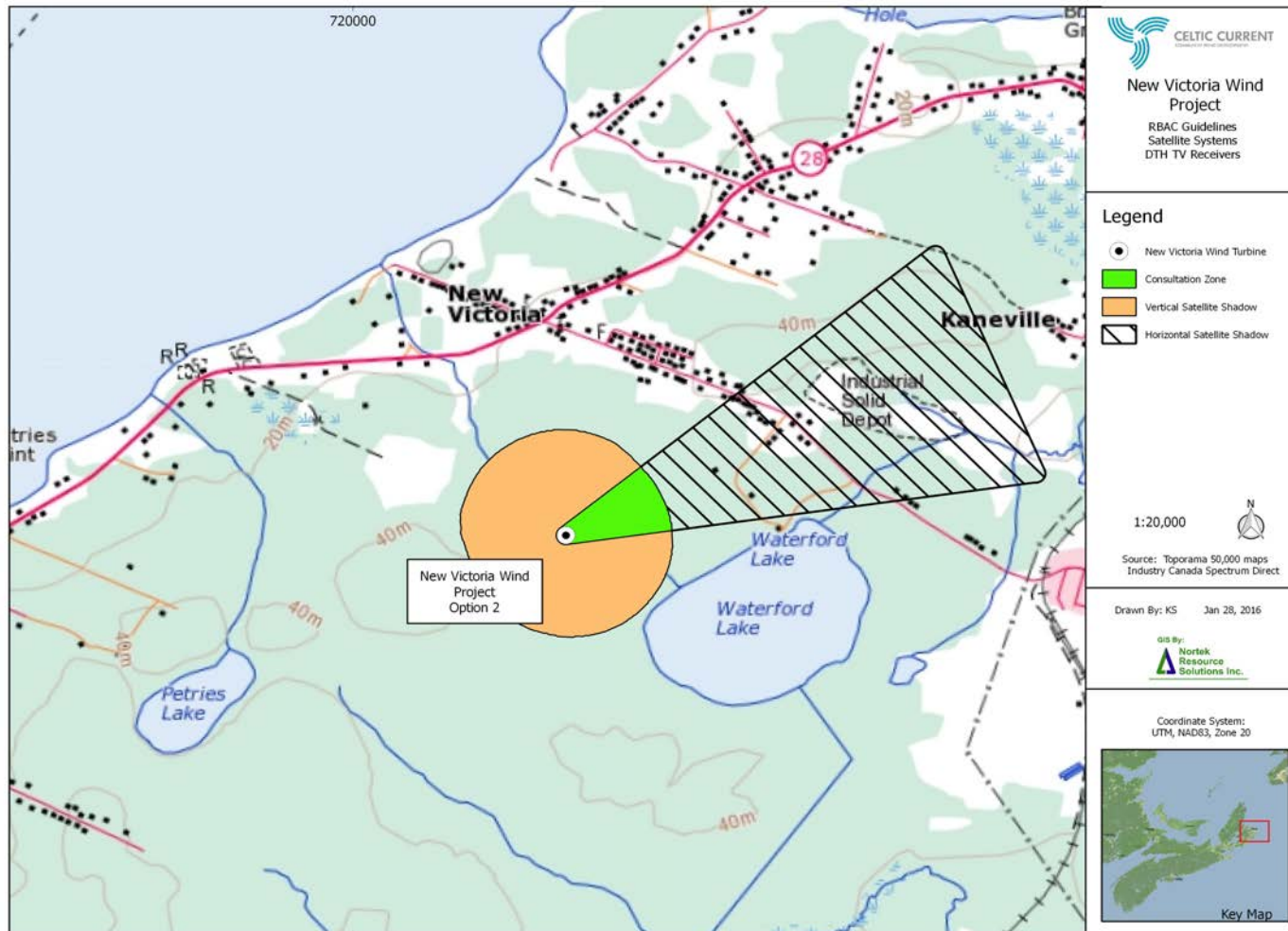


Figure 11: RABC Guideline Consultation Zones for Satellite Receivers Based on Line of Sight Cones for Option 2.

There are no buildings located within the RABC recommended DTH receiver consultation zones identified in this analysis.

8.0 Radar Systems

8.1 Air Defence Radar

DND has been contacted and completed an internal analysis to determine if the proposed wind project may impact an existing radar installation. There is an active Air defence radar located approximately 8.6 km south west of the proposed wind project. DND has not yet responded to the notification of the proposed wind project (Appendix 2).

DND has been contacted and advised of the proposed wind project. The results of their internal review has not yet been shared with the project proponent.

8.2 Vessel Traffic Radar

The Canadian Coast Guard (CCG) monitors vessel traffic through a series of radar installations. The RABC has recommended a 60 km consultation zone around existing stations. The Eddy Point radar installation is designed to monitor vessel traffic that enters Chedabucto Bay bound for Ship Point and Point Tupper. The radar installation is located 128 km from the proposed wind project and therefore falls outside of the 60 km consultation zone. The Canadian Coast Guard has been contacted and they are not concerned with any interference issues (Appendix 2).

No issues in regard to interference with existing vessel traffic radar systems.

8.3 Air Traffic Control Radars

Air Traffic Control Primary Surveillance Radars (PSR) are a critical component for aircraft safety. The two closest civilian PSR sites to the proposed wind project are located at Halifax and Moncton (Table 4). The RABC recommends that an 80 km consultation zone be applied around PSR's and there are no PSR sites located within the 80 km consultation zone.

RABC recommends a 10 km consultation zone be established around the proposed wind project in regard to existing Secondary Surveillance Radar (SSR) sites. The closest SSR site is located at Sydney Airport which is approximately 11 km from the proposed wind project (Table 7). Nav Canada has been contacted to verify that they have no concerns in regard to the proposed wind project.

Additionally, RABC recommends a 10 km consultation zone be applied around major civilian and military airfields. There are no major civilian airfields located within the 10 km consultation zone. The closest civilian airfield is Sydney (CYQY) which is located approximately 11 km south east of the proposed wind project.

Table 7: Nearest Air Traffic Control Radars.

ID	Latitude	Longitude	Distance to wind project (km)
Halifax (PSR)	44.910	-63.429	298
Moncton (PSR)	46.189	-64.570	350
Sydney (SSR)	46.153	-60.056	11
Halifax (SSR)	44.910	-63.429	298
Moncton (SSR)	46.189	-64.570	350
Stephenville (SSR)	48.58	-58.67	283

There are no Primary Surveillance Air Traffic Control radars located within the RABC recommended 80 km consultation zone. Additionally, there are no Secondary Surveillance Air Traffic Control radars located within the 10 km of the proposed wind project.

8.4 Weather Radars

Environment Canada operates a network of Doppler radar sites across the country that collectively is known as the Canadian Weather Radar Network. The radars are used for meteorological forecasting and detecting severe weather events as they occur. Weather radar picks up the Doppler signal from the tips of the rotating blades and the wake turbulence produced as the blades pass through the air.

There are two Doppler weather radar stations that are located in Nova Scotia and one in New Brunswick (Table 8). The closest weather radar site is located 29 km away from the proposed wind project and is located at Marion Bridge, NS. This site is located within the 50 km consultation zone recommended by RABC and Environment Canada has been contacted to discuss any potential issues or concerns in regard to the proposed wind project (Appendix 2).

Table 8: Nearest Weather Radar Sites.

ID and Location	Latitude	Longitude	Distance to Wind Project (km)
XMB Marion Bridge, NS	45.984	-60.212	29
XGO Halifax, NS	45.114	-63.711	303
XNC Chipman, NB	46.220	-65.726	432

There is one Environment Canada Doppler radar site located within the RABC recommended consultation zone. Environment Canada has been contacted and has completed an internal

analysis of potential interference issues. Environment Canada does not expect interference issues to be severe and therefore do not oppose the proposed wind project.

9.0 VHF Omnidirectional Range (VOR)

VHF Omnidirectional systems are ground based, short distance navigation aids which provide pilots with 360 degree directional information to or from a station. The frequency range is 108.1 to 117.956 Mhz.

The Sydney (114.9 MHz) VOR site is located 11.7 km from the proposed wind project and consists of VOR beacon and a tactical air navigation system (Table 9). As the proposed wind project is within 15 km of this navigation aid for aircraft, Nav Canada will be contacted to inform them of the proposed development. The next closest VOR site is at Charlottetown which is located 230 km west of the site. The Halifax VOR site is located 297 km south west of the site. Both these sites are outside of the recommended consultation zones.

Table 9: Closest VOR Sites.

Site	Type	Latitude	Longitude	Distance to Wind Project (km)
Sydney	VORTAC	46.153400 ° N	60.055901 ° W	11.7
Charlottetown	VOR-DME	46.297501 ° N	63.119701 ° W	230
Halifax	VOR-DME	44.923100 ° N	63.401798 ° W	297

The Sydney (114.9 MHz) VOR site is located 11.7 km from the proposed wind project and consists of VOR beacon and a tactical air navigation system. As the proposed wind project is within 15 km of this navigation aid for aircraft, Nav Canada was contacted to inform them of the proposed development. The next closest VOR site is at Charlottetown which is located 230 km west of the site. The Halifax VOR site is located 297 km south west of the site. Both these sites are outside of the recommended consultation zones.

There is one VOR site that is located within the RABC recommended 15 km consultation zone.

10.0 Summary

Table 10: Summary of Results from the EMI Review.

System	RABC Consultation Requirement	Result
Point-to-Point Systems above 890 MHz	1 km of transmitters/receivers A consultation cylinder based on link parameters	There are no radio link transmitters or receivers that are within 1 km of the proposed wind project. Additionally, there are no links that pass within the recommended consultation zone.
Broadcast Transmitters	AM Stations: Omnidirectional: 5 km Directional: 15 km FM: 2 km TV: 2.km	No AM transmitters within the 5 km consultation zone. One transmitter within the 15 km consultation zone. Broadcaster has been contacted, no concerns. No FM Transmitters located within the 2 km consultation zone. No TV Transmitters within the 2 km consultation zone.
Over-the-Air Reception	Digital Transmitters: 10 km Analogue Transmitters: 15 km	A number of potential receivers are located within the 15 km consultation zone recommended by the RABC for analogue Television transmitters. Proponent to develop a reception mitigation policy and procedures.
Cellular Type Networks	1 km of Cell Towers	No cellular networks located within the 1 km consultation zone.
Land Mobile Radio Networks and Point-to-point Systems below 890 MHz	1 km	One Land Mobile Radio Network within the 1 km consultation zone. Licensee has been contacted. No Point-to-Point systems within 1 km.
Satellite Systems	0.5 km around satellite transmit/receive locations Consultation cone based on turbine and satellite locations	No ground satellite stations located within 500 m of the proposed wind turbine. No dwellings or buildings located within the projected consultation cones.
Air Defence Radars, Vessel Traffic Radars, Air Traffic Control Radars and Weather Radars	DND Air Defence radar: 100 km Air Traffic Control Primary Surveillance Radar 80 km Air Traffic Control Secondary Surveillance Radar 10 km DND Precision Approach radar : 40 km Canadian Coast Guard Vessel Traffic radar: 60 km Airfield: 10 km Environment Canada Weather Radar:	DND Contacted – Analysis has been completed but no decisions to date. NAV Canada Contacted – No concerns. Vessel Traffic Systems – Canadian Coast Guard contacted - No Issues. Weather Radar – Environment Canada contacted – No concerns.

	50km	
CBC Preliminary Report	CBCIR: AM Transmitters: 15 km FM Transmitters: 5 km TV Transmitters: 100 km	No CBC AM Transmitters within 15 km of proposed wind project. No CBC FM Transmitters located within 5 km. No CBC-TV Transmitters sites located within 100 km of the proposed wind project. CBC contacted, no issues.
VOR	VOR Beacon: 15 km	There is one VOR sites located within the 15 km consultation zone. NAV Canada contacted – No concerns

11.0 References

- [1] Radio Advisory Board of Canada and Canadian Wind Energy Association (CanWEA), *Technical Information and Coordination Process Between Wind Turbines and Radiocommunication and Radar Systems*, December, 2010.
- [2] Spectrum Direct data base, Industry Canada, <<http://spectrum.ic.gc.ca/eic/site/sc-sd.nsf/eng/home>>, Accessed February 2013.
- [3] CBC/Radio-Canada Involvement and Requirements Concerning Wind Energy Projects, CBC, 1400 Rene-Levesque Blvd. East, Montreal, Quebec. H2L 2M2.

Appendix 1

**Proposed Turbine Coordinate
And Elevation**

Turbine Parameters

ID	Type	Hub Ht (m)	Rotor Dia (m)	Tip Ht (m)	Base Elev (m)	Tip Elev (m)
Option 1	E-92	98	92	144	25	169
Option 2	E-92	98	92	144	30	174

Turbine Coordinates

	UTM, NAD83, Z20		DD WGS84		DMS WGS84	
	Easting	Northing	Lat	Long	Lat	Long
Option 1	720720	5125089	46.243514	-60.136874	46,14,36.65	-60,8,12.75
Option 2	720882	5125008	46.242733	-60.134813	46,14,33.84	-60,8,5.33

Appendix 2

Correspondence with Key Agencies

Canadian Coast Guard

Hello,

The proposed wind farm (New Victoria) is located 3 km away from the closest CCG communication site (Kilkenny Lake).

Therefore no interference issues are anticipated.

Regards,

Martin Grégoire, P. Eng

Canadian Coast Guard

From: Kirk Schmidt [<mailto:kirk.schmidt@al-pro.ca>]
Sent: January 12, 2016 10:51 AM
To: XNCR, Windfarm Coordinator
Subject: New Victoria Wind Project

To Whom it May Concern:

I am forwarding this message on behalf of Celtic Current LP. which is currently developing the New Victoria Wind Project which will consist of a single turbine and is located in Cape Breton County, Nova Scotia. I have attached the proposed turbine coordinates and pertinent data, as well as a general location map for your perusal. Can I ask you to open a file for this project and complete your internal review to determine if you anticipate any interference issues with your existing radar systems.

Please let me know if you have any questions or require any additional data.

Regards

Kirk Schmidt

AL-PRO Wind Energy Consulting Canada Inc.

Suite 21, 390 Marsh Street

New Glasgow, Nova Scotia

Canada, B2H 4S6

Tel: (902) 695-3606

Fax (902) 695-3607

E-Mail: kirk.schmidt@al-pro.ca

www.al-pro.ca

Canadian Broadcasting System

Hi Kirk,

your Wind Turbines are located at a distance sufficient enough to avoid interference with our radio signals.

FM

46°05'40"N, 60°08'55"W

IRCP : CBAF-FM-14, 95.9 MHz

R2 : CBI-FM, 105.1 MHz

DISTANCE DE L'ÉOLIENNE : 16.6 km

AM

46°08'12"N, 60°06'15"W

R1 : CBI, 1140 KHz

DISTANCE DE L'ÉOLIENNE : 15.7km

Thus, no interference is expected.

Regards

Charles

Charles Rousseau, ing.
Premier Ingénieur, Ingénierie du spectre
Senior Engineer, Spectrum engineering
Services Technologiques aux médias

CBC/Radio-Canada
Tel: 514-597-6035 Cell: 514-895-0980
Email: charles.rousseau@radio-canada.ca

2016-01-12 12:08 GMT-05:00 Kirk Schmidt <kirk.schmidt@al-pro.ca>:

Hi Charles:

I am forwarding this message on behalf of Celtic Current LP. which is currently developing the New Victoria Wind Project which will consist of a single turbine and is located in Cape Breton County, Nova Scotia. I have attached the proposed turbine coordinates and pertinent data, as well as a general location map for your perusal. Can I ask you to open a file for this project and complete your internal review to determine if you anticipate any interference issues with your existing communication systems.

Please let me know if you have any questions or require any additional data.

Regards

Kirk Schmidt

AL-PRO Wind Energy Consulting Canada Inc.

Suite 21, 390 Marsh Street

New Glasgow, Nova Scotia

Canada, B2H 4S6

Tel: [\(902\) 695-3606](tel:(902)695-3606)

Fax [\(902\) 695-3607](tel:(902)695-3607)

E-Mail: kirk.schmidt@al-pro.ca

www.al-pro.ca

NAV Canada

From: Trandafilovski, Aleksandar
[Aleksandar.Trandafilovski@navcanada.ca]
Sent: Thursday, May 26, 2016 6:26 AM
To: Kirk Schmidt
Cc: , Atlantic Region, Transport Canada
Subject: 16-0084: 1 Wind Turbine (New Victoria, NS - Celtic Current LP) -
New Victoria, NS
Attachments: 16-0084 Letter to proponent.pdf; 16-0084 Construction Start
Notice.pdf

Hello Kirk,

Please find attached a letter from NAV CANADA regarding your 1 wind turbine (New Victoria, NS - Celtic Current LP) submitted on 2016-01-12.

We ask that you notify us at least 10 business days prior to the start of construction. This notification requirement can be satisfactorily met by returning a completed, signed copy of the attached form. If you have any questions, please don't hesitate to contact me.

Sorry for the delay.

Regards,

Alex Trandafilovski
Land Use Specialist, Aeronautical Information Management (AIM)
NAV CANADA
tel (613) 248-4009 / toll-free (866) 577-0247
fax (613) 248-4094
e-mail: aleksandar.trandafilovski@navcanada.ca

Department of National Defense

From: +WindTurbines@forces.gc.ca
Sent: Monday, June 27, 2016 11:49 AM
To: kirk.schmidt@al-pro.ca
Subject: RE: New Victoria Wind project

Kirk,

Just to keep you in the loop, the detailed analysis has been completed and that report has been sent to the unit that would be affected by the project. It is now up to that unit to review the report and decide from there whether or not they object to the project. Either way, that would come back through this office so I will let you know if there is any news as soon as I hear. Thanks very much for your patience.

Kayla

Captain / Capitaine Kayla Bowser

C2SSO, ATESS

Canadian Armed Forces

kayla.bowser@forces.gc.ca / Tel : 613-392-2811 x4834 / CSN : 827-4834 /

C2SSO, ESTTMA Trenton

Forces armées canadiennes

kayla.bowser@forces.gc.ca / Tél : 613-392-2811 x4834 / RCCC : 827-4834 /

From: Kirk Schmidt [<mailto:kirk.schmidt@al-pro.ca>]
Sent: June-10-16 2:29 PM
To: +WindTurbines@ATESS@TRENTON
Subject: RE: New Victoria Wind project

Hi Kayla:

I am following up on the new Victoria Wind Turbine radar analysis. Did you have a chance to run your modeling ?

Thanks in advance

Introducing GMS-Profiwind - A wind and yield forecast service for Eastern Canada.

gms-profiwind.de/canada.index.php

Kirk Schmidt

AL-PRO Wind Energy Consulting Canada Inc.

Suite 21, 390 Marsh Street

New Glasgow, Nova Scotia

Environment Canada

From: Radars Météo / Weather Radars (EC) [ec.radarsmeteo-
weatherradars.ec@canada.ca]
Sent: Monday, February 22, 2016 11:55 AM
To: Kirk Schmidt
Cc: Radars Météo / Weather Radars (EC); Hogue, Richard (EC/EC)
Subject: RE: New Victoria Wind Farm

Dear Mr. Kirk Schmidt,

Thank you for contacting the Meteorological Service of Canada, a branch of Environment Canada, regarding your wind energy intentions.

Our preliminary assessment of the information provided to us via e-mail on January indicates that any potential interference that may be created by the New Victoria Wind Project near Cape Breton County, Nova Scotia will not be severe. Although we would prefer our radar view to be

interference free, this is not always reasonable. As a consequence, we do not have strong objections to the current proposal.

If your plans are modified in any manner (e.g. number of turbines, height, placement or materials) this analysis would no longer be valid. An updated analysis must be conducted.

Please contact us at: ec.radarsmeteo-weatheradars.ec@canada.ca.

Thank you for your ongoing cooperation and we wish you success.

Best Regards,

Jim M.C. Young

Science Liaison, Meteorological Service of Canada

Environment & Climate Change Canada / Government of Canada

Jim.Young@canada.ca / Tel: +1-416-514-2643 / Mobile : +1-647-298-5396

Liaison de la science, Service météorologique du Canada

Environnement et Changement climatique Canada / Gouvernement du Canada

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