aercoustics

Aercoustics Engineering Ltd.
50 Ronson Drive, Suite 165
Toronto, ON M9W 1B3

Tel: 416-249-3361
Fax 416-249-3613
aercoustics.com

REPORT ID**: 16100.00.RP4**

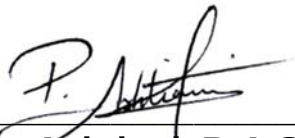
Loyalist Solar Project
Environmental Noise Impact Assessment

Prepared for:

BluEarth Renewables Inc.
34 Harvard Road
Guelph, ON

Prepared by:

Addie Denison, B.A.Sc.



Payam Ashtiani, B.A.Sc., P.Eng.

1 February 2017 – Revision 4

Revision History

Revision Number	Description	Date
1	First Iteration of Noise Assessment Study	October 12, 2016
2	Updates to Appendix C Figures, minor edits to report body, table B.01 and C.02	October 13, 2016
3	R013 OLA added; Polygon shapes altered slightly, table C.01 updated accordingly; Figures updated to include receptor labels and scale; Inverter/transformer spectrums updated to linear; Table C.02 added, listing noise source locations by assessment zone; Inverter/transformer enclosure insertion loss updated; Table C.03 updated to reflect new predicted levels;	January 20, 2017
4	Table 7 updated	February 1, 2017

This report in its entirety, including appendices contains 156 pages.

Table of Contents

Revision History 2
List of Figures 4
List of Tables 4
List of Appendices 5
1 **Introduction** 6
2 **Site Description** 6
2.1 Site Location 6
2.2 Facility Description 6
2.3 Acoustical Environment 7
2.4 Operating Hours 7
3 **Noise Sources** 8
3.1 Substation Transformer 8
3.2 Inverter Clusters 8
3.3 Noise Source Summary 10
4 **Points of Reception** 11
5 **Mitigation Measures** 11
6 **Assessment Criteria** 11
7 **Impact Assessment** 12
8 **References** 13

List of Figures

Figure A.01 – Zoning Map of Lennox and Addington County……Appendix A
Figure A.02 – Area Location Plan – Southern Parcels……Appendix A
Figure A.03 – Area Location Plan – Northern Parcels……Appendix A
Figure A.04 – Site Layout for Parcels A, B, C and D……Appendix A
Figure A.05 – Figure A.05 – Site Layout for Parcels E and F……Appendix A
Figure A.06 – Figure A.06 – Site Layout for Main Transformer……Appendix A
Figure C.01 – Zone 1 Noise Contour……Appendix C
Figure C.02 – Zone 2 Noise Contour……Appendix C
Figure C.03 – Zone 3 Noise Contour……Appendix C
Figure C.04 – Zone 4 Noise Contour……Appendix C
Figure C.05 – Zone 5 Noise Contour……Appendix C
Figure C.06 – Zone 6 Noise Contour……Appendix C
Figure C.07 – Zone 7 Noise Contour……Appendix C
Figure C.08 – Zone 8 Noise Contour……Appendix C
Figure C.09 – Zone 9 Noise Contour……Appendix C

List of Tables

Table 1 – General Project Description 7
Table 2 – Main Transformer Sound Power 8
Table 3 – Inverter and Medium Voltage Transformer Sound Power Levels 9
Table 4 – Noise Source Summary Table 10
Table 5 – Inverter Cluster Acoustic Enclosure Minimum Transmission Loss 11
Table 6 – Worst-case Receptor Impact Table 12
Table 7 – Worst-case Receptor Impact Table 13
Table B.01 – Point of Reception Summary ……Appendix B
Table C.01 – Noise Source Details Including Polygon Definitions……Appendix C
Table C.02 – Noise Source Locations by Assessment Zone……Appendix C
Table C.03 – Noise Impact Assessment Table ……Appendix C

List of Appendices

Appendix A – Site Details
- Figure A.01 – Zoning Map of Lennox and Addington County
- Figure A.02 – Area Location Plan – Southern Parcels
- Figure A.03 – Area Location Plan – Northern Parcels
- Figure A.04 – Site Layout for Parcels A, B, C and D
- Figure A.05 – Site Layout for Parcels E and F
- Figure A.06 – Site Layout for Main Transformer

Appendix B – Receptor Information
- Table B.01 – Point of Reception Summary

Appendix C – Impact Assessment
- Table C.01 – Noise Source Details Including Polygon Definitions
- Table C.02 – Noise Source Locations by Assessment Zone
- Table C.03 – Noise Impact Assessment Table
- Figure C.01 – Zone 1 Noise Contour
- Figure C.02 – Zone 2 Noise Contour
- Figure C.03 – Zone 3 Noise Contour
- Figure C.04 – Zone 4 Noise Contour
- Figure C.05 – Zone 5 Noise Contour
- Figure C.06 – Zone 6 Noise Contour
- Figure C.07 – Zone 7 Noise Contour
- Figure C.08 – Zone 8 Noise Contour
- Figure C.09 – Zone 9 Noise Contour

Appendix D – Supporting Documentation
- Appendix D.01 – Inverter Manufacturer Specifications
- Appendix D.02 – Medium Voltage Transformer Sound Level Estimates
- Appendix D.03 – Noise Receptor Identification
- Appendix D.04 – Proposed Amendments to the Technical Guide for Renewable Energy Approvals

1 Introduction

Loyalist Solar LP, a limited partnership between Mohawks of the Bay of Quinte and BluEarth Renewables Inc., by its General Partner BER Ontario Solar GP Inc. (together the "Proponent"), proposes to develop a non-rooftop solar facility with a maximum nameplate capacity of 54 megawatts alternating current (MWAC), located in the Township of Stone Mills, County of Lennox & Addington, Ontario. The renewable energy facility will be known as the Loyalist Solar Project (the “Project”).The Project is to be located on approximately 200 hectares of land, approximately nine kilometres north of the Town of Greater Napanee, Ontario. Aercoustics Engineering Limited (“Aercoustics”) was retained by the Proponent to prepare an environmental noise impact assessment (“ENIA”) for the proposed Project.

The Proponent submitted a proposal to the Independent Electricity System Operator (IESO) under the Large Renewable Procurement I ("LRP") process and was subsequently awarded an LRP contract by the IESO to generate electricity. The Project will now be subject to a number of approvals including, among others, Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Part V.0.1 of the Ontario Environmental Protection Act.

The following report and the related analysis has been completed to fulfil the noise study requirements for a Renewable Energy Approval (REA), as defined by Ontario Regulation (O. Reg.) 359/09. All analysis has been carried out in accordance with ISO 9613-2 [2].

2 Site Description

2.1 Site Location

The Project will be located in the Township of Stone Mills, County of Lennox & Addington, Ontario. The Project location, situated on multiple privately owned parcels, consists of approximately 200 hectares (494 acres) and is contained within an area generally bounded on the north by Howes Road, Craigen Road to the south, County Road 27 and Murphy Road to the east, and County Road 41 to the west. A zoning map of the Lennox and Addington County with the Project location indicated, is included in Figure A.01. A scaled area location plan is included in Figure A.02 and A.03. There are no other solar farms in the vicinity of the Project that need to be taken into consideration during this assessment.

2.2 Facility Description

The project will consist of a ground mounted solar facility with a maximum nameplate capacity of 54 megawatts alternating current (MWAC). Since the Project will consist of ground-mounted panels with a total nameplate capacity larger than 12 MW, the project is considered to be a Class 3 Solar Facility as defined by O. Reg. 359/09.

Project infrastructure will consist of approximately 190,000 to 290,000 solar panels, each with an individual rating of 320 watts DC (or higher). The AC voltage produced will be "stepped-up" to 34.5 kV through multiple inverter clusters. For the purposes of this report, it has been assumed that each inverter cluster will consist of a 2.2 MW inverter and a 2.2 MVA transformer as well as supervisory control and data acquisition (SCADA) monitoring equipment. Up to 34 inverter clusters will be installed throughout the project area.

The Connection Line system voltage will be stepped up to a 230 kV transmission grid voltage at the substation transformer to be located on the northernmost parcel in the Project location, northeast of the intersection of Miller Road and Frizzell Road. The substation transformer will be located adjacent to the Hydro One Networks Inc. (HONI) corridor, and connect to the existing 230 kV H23B transmission line.

Table 1 – General Project Description

Generator Details	
Project Description	Ground-mounted Solar PV, Class 3
System Nameplate Capacity	54-MW AC
Local Distribution Company	Hydro One Networks Inc.

2.3 Acoustical Environment

The Project is located in a rural area and has been assumed to have an acoustic environment in accordance with Class 3, as defined by the Ministry of the Environment and Climate Change (MOECC) document NPC-300 [3]. The ambient noise level is expected to be dominated by natural sounds, with minimal intrusions from road traffic.

2.4 Operating Hours

Since Solar PV facilities operate by converting solar radiation into electricity, the Project will only produce electricity during the day-time hours. After sunset, when the site no longer receives solar radiation, the inverters will no longer produce noise, and the transformers will be energized but not in operation. Based on sunrise and sunset times, operating hours on the longest day of the year will be approximately 5:15 am to 9 pm.

3 Noise Sources

The main sources of noise for this project will be the substation containing the main step-up transformer, and 34 inverter clusters, each containing one 2.2 MW inverter and one 2.2 MVA transformer. The project layout is provided in Figures A.04-A.06.

For the purposes of this study it has been assumed that all sources will operate at full capacity 24 hours of the day.

3.1 Substation Transformer

A transformer substation will be constructed on the northernmost parcel in project, approximately 280 meters northeast of the intersection of Miller Road and Frizzel Road. The substation will contain one transformer.

The main project transformer will be rated at 62 MVA (35/46/62 MVA ONAN/ONAF/ONAF). The make and model of the main transformer has yet to be selected. As such, Aercoustics has selected an appropriate sound power level and spectrum from a similarly sized transformer in its database. The sound power for this unit has been estimated to be at or below 88 dBA based on IEEE standard C57.12.90-1993 – Part 1 [5].

Noise emitted by transformers is comprised of radiated casing noise from the operational transformer, as well as broadband noise from the cooling fans. Transformer radiated casing noise has a distinct tonal quality and therefore incurs a 5 dB tonal penalty, as per MOE publication NPC-104 [4]. The overall sound power level for the main transformer used in this assessment is 93 dBA including the tonal penalty.

Table 2 – Main Transformer Sound Power

Equipment	Rating	Octave Band Centre Frequency (Hz)									Total (dBA)
		31.5	63	125	250	500	1000	2000	4000	8000	
Substation Transformer*	62 MW	90	96	98	93	93	87	82	77	70	93

*includes 5 dB tonal penalty

3.2 Inverter Clusters

The Project will contain 34 inverter clusters spread across multiple privately owned parcels of land. The final make and model of the Project inverters is still pending, so for the purposes of this report, it has been assumed that each inverter cluster will include one 2.2 MW inverter and one medium voltage 2.2 MVA transformer.

Sunny Central SC 2200-US model inverters have been assumed for the purposes of this report, with approximate dimensions of 2.3m x 2.7m x 1.6m (HxWxD). Sound power data for these inverter units has been obtained from the manufacturer, and is included in Appendix D.01.

A manufacturer has not been selected for the 2.2 MVA medium voltage transformers, so a sound power level has been estimated based on NEMA TRI – 2013 [7]. An assumed surface area of 17 m^2, with dimensions of 1.5 m x 2 m x 2 m (LxWxH). A spectrum was determined based on Table 18.1 of Beranek, 1992 [7]. It was assumed that the medium voltage transformers will be ONAN units.

Each inverter-transformer pair has been modelled as a single point source. Both sources are expected to emit steady noise with a tonal quality. As such, a 5 dB tonal penalty has been included in the overall sound power level used for each inverter-transformer pair.

Table 3 – Inverter and Medium Voltage Transformer Sound Power Levels

Equipment	Rating	Octave Band Centre Frequency (Hz)									Total (dBA)
		31.5	63	125	250	500	1000	2000	4000	8000	
Inverter[1]	2.2 MW	91	92	90	93	91	87	84	89	79	94
Transformer[1]	2.2 MVA	71	77	79	74	74	68	63	58	51	75
Inverter + Transformer Cluster[2]	-	96	97	96	98	96	92	89	94	84	99

[1] Does not include tonal penalty
[2] Includes tonal penalty of 5 dB

Details regarding the estimate for the sound power level of the medium voltage transformers is included in Appendix D.02.

3.3 Noise Source Summary

The following table summarizes the noise sources taken into consideration for this site.

Table 4 – Noise Source Summary Table

Source ID	Source Description	Sound Power Level (dBA)[1]	Source Location[2]	Sound Characteristics[3]	Noise Control Measures[4]
Transformer _62MW	Main Transformer 62 MW	93	O	S,T	U
Inv_A1	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_A2	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_A3	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_A4	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_A5	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_A6	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_B1	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_B2	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_C1	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_C2	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_C3	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_C4	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_C5	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_D1	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_D2	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_D3	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_D4	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_D5	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_D6	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_E1	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_E2	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_E3	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_E4	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_E5	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F1	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F2	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F3	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F4	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F5	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F6	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F7	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F8	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F9	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E
Inv_F10	2.2 MW Inverter + Transformer Cluster	99.5	O	S,T	E

1. A 5 dB penalty has been included for all noise sources
2. Location: Inside Building (I) or Outside Building (O)
3. Sound Characteristics: Steady (S), Tonal (T), Impulsive (I), Quasi-Steady Impulsive (QSI)
4. Noise Control: Silencer (S), Acoustic Lining (A), Barrier (B), Lagging (L), Enclosure (E), Other (O), Uncontrolled (U)

Noise source locations have been defined using a Polygon method. See Section 7 for more details on assessment methodology. Universal Transverse Mercator (UTM) coordinates defining the polygon boundaries for each noise source are included in the Noise Source Details Table in Appendix C.01.

4 Points of Reception

Points of reception within 1.5 km of The Project were identified as critical noise receptors. Receptor locations were determined by CanAcre, communicated in a report issued to BluEarth on August 9, 2016. This report has been included in Appendix D.03.

All points of reception were modelled as two-storey dwellings (a height of 4.5 meters). Existing noise receptors were modelled at a point at the center of the dwelling, while vacant lot receptors were located as indicated by the CanAcre Report.

An assessment of Outdoor Living Area (OLA) receptors, located 30 meters from the façade of any building, at a height of 1.5 meters, was conducted. It was found that in almost all cases the point of reception at the center of the dwelling at a height of 4.5 meters was the worst-case location. The one exception was in the case of receptor R013 – the closest receptor to the main transformer. In this case, a OLA point of reception located 30 meters from the façade of R013 has been included in this assessment.

A Point of Reception Summary Table is included in Table B.01.

5 Mitigation Measures

All of the inverter clusters in The Project will need to be enclosed to meet the permissible sound level limits at all receptors. The required minimum transmission loss of the acoustic enclosure for each is shown in Table 5 below.

Table 5 – Inverter Cluster Acoustic Enclosure Minimum Transmission Loss

	Octave Band Centre Frequency (Hz)								
	31.5	63	125	250	500	1000	2000	4000	8000
Inverter Cluster Acoustic Enclosure	0	0	5	6	7	7	5	2	0

6 Assessment Criteria

The purpose of this assessment was to evaluate whether The Project will operate within the applicable noise level limits defined by the MOECC. These noise level limits are defined by MOECC Publication NPC-300. As per NPC-300 [3], The Project is located in a Class 3; It is located in a rural setting with minimal road traffic where the ambient sound levels are likely dominated by natural sounds.

The following table lists the applicable noise level limits for a Class 3 environment.

Table 6 – Worst-case Receptor Impact Table

Time of Day	One-Hour Leq (dBA)
07:00 – 19:00	45
19:00 – 07:00	40

Although the facility will only operate during daylight hours, sunrise can occur before 7:00 and sunset can occur past 19:00 depending on the time of year. For this reason, the nighttime limit of 40 dBA was used for this assessment.

7 Impact Assessment

All modelling and predictions in this study were done using the software package CadnaA, in accordance with ISO 9613-2 [2].

All noise sources were modelled as point sources with no directivity. Inverter-transformer clusters were modelled as a single point source. Ground absorption was modelled as 0.7. Elevation contours have been included in the model, despite the fact that topography in the region is relatively flat, and is not expected to have a significant impact on noise propagation.

In accordance with the proposed amendments to the Technical Guide for Renewable Energy Approvals that came into effect on May 1, 2016 (EBR Proposal Notice 012-4493), a polygon approach was used for this analysis. The Summary of Proposed Changes to the Technical Guide to Renewable Energy Approvals has been included in Appendix D.04. The location of each piece of project equipment has been defined with a polygon, in which the piece of equipment can be located anywhere, and compliance will still be achieved at all receptors. Where possible, the polygon shape definitions were limited to 3 or 4 vertices. In a few instances, more vertices were included to allow for adherence to property borders, and/or to avoid forested areas.

Compliance was assessed by grouping project receptors into “zones”. Sources within a 1.5 km radius of all receptors in a given zone were taken into consideration, and a worst-case layout was determined. The results of this worst-case layout, and the subsequent worst-case receptor impact have been reported. The noise impact at each of these worst-case receptors in listed in the table below. A full noise impact assessment table, by zone, is included in Table C.02.

Table 7 – Worst-case Receptor Impact Table

Receptor ID	Zone	Leq (dBA)	Closest Polygon/Source
R107	1	32.2	A6
VR062	2	36.8	A1
R088	3	39.2	D4
R093	4	39.1	D6
R079	5	35.3	D3
R085	6	37.2	E5
R106	7	22.8	C5
R064	8	39.4	F6
R013 - OLA	9	38.3	Main Transformer

The results of this assessment indicate that The Project will be in compliance with the MOECC noise limit of 40 dBA at all Noise Receptors.

8 References

[1] Ontario Regulation 359/09

[2] International Standard ISO 9613-2 (Edition 1.0, released 1996) “Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation”.

[3] MOECC Environmental Noise Guideline NPC-300, “Stationary and Transportation Sources – Approval and Planning.”

[4] MOECC Environmental Noise Guideline NPC-104, “Sound Level Adjustments.”

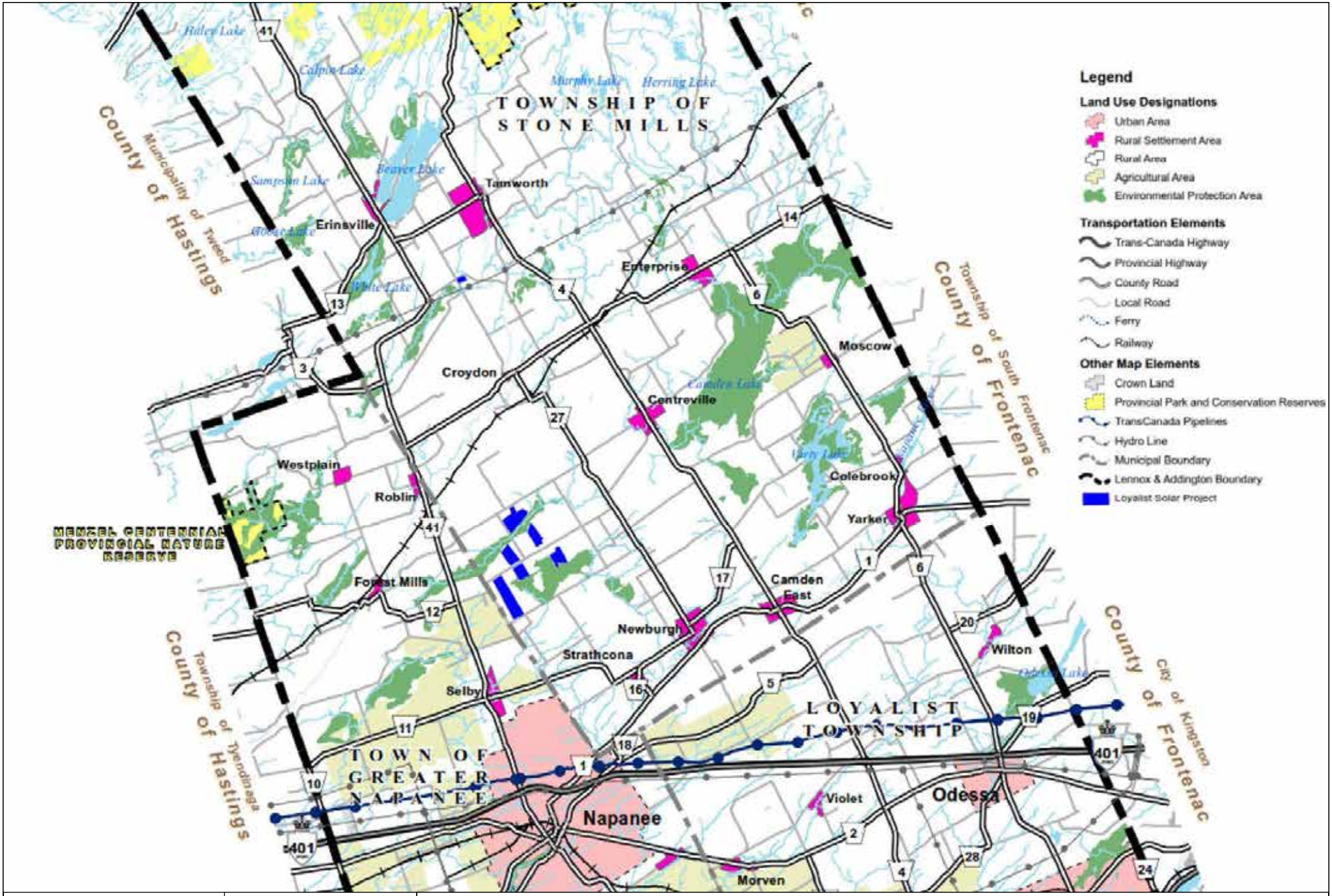
[5] IEEE Power and Energy Society Standard C57.12.90, “IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers.”

[6] NEMA TR1 – 2013, “Transformers, Step Voltage Regulators and Reactors.”

[7] Beranek, “Noise and Vibration Control Engineering – Principles and Applications.” 1992.

[8] MOECC Technical Guide, “Technical Guide to Renewable Energy Approvals.” 2013.

Appendix A
Site Details



aercoustics	Project ID: 16100.00 Scale: NTS Drawn by: AD Reviewed by: PA Date: October 7, 2016 Revision: 1	**Project Name** Loyalist Solar Project **Figure Title** Zoning Map of Lennox Addington County

Figure A.01

Legend

- Noise Source
- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure A.02

Area Location Plan - Southern parcels

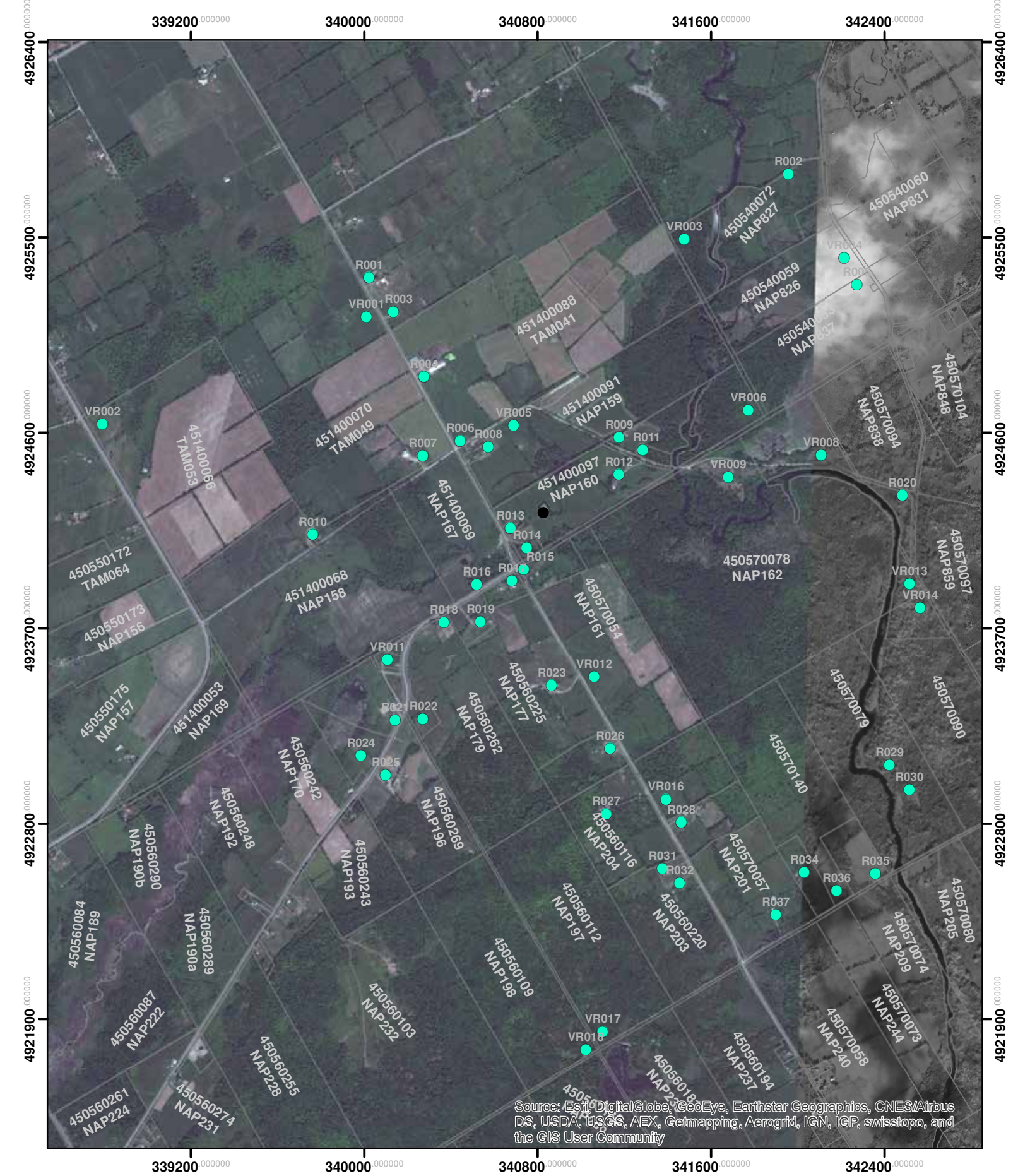
Loyalist Solar Project

BluEarth RENEWABLES INC

0 90180 360 540 720 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Source
- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure A.03

Area Location Plan - Northern Parcel

Loyalist Solar Project

BluEarth RENEWABLES INC

0 65130 260 390 520 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017

Legend

- Noise Source
- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure A.04

Site Layout for Parcels A, B, C and D

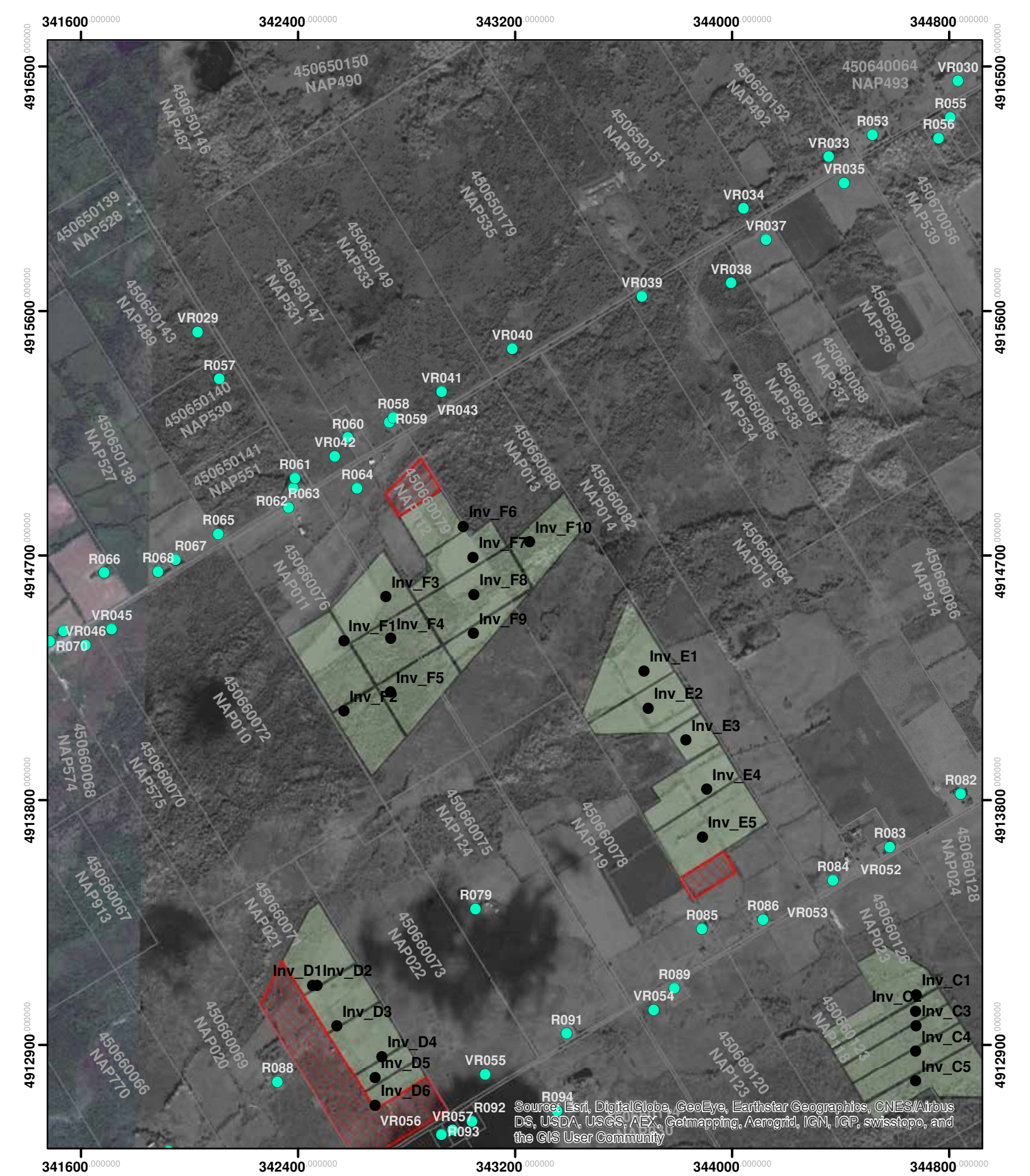
Loyalist Solar Project

BluEarth RENEWABLES INC

0 60120 240 360 480 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Source
- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure A.05

Site Layout for Parcels E, F

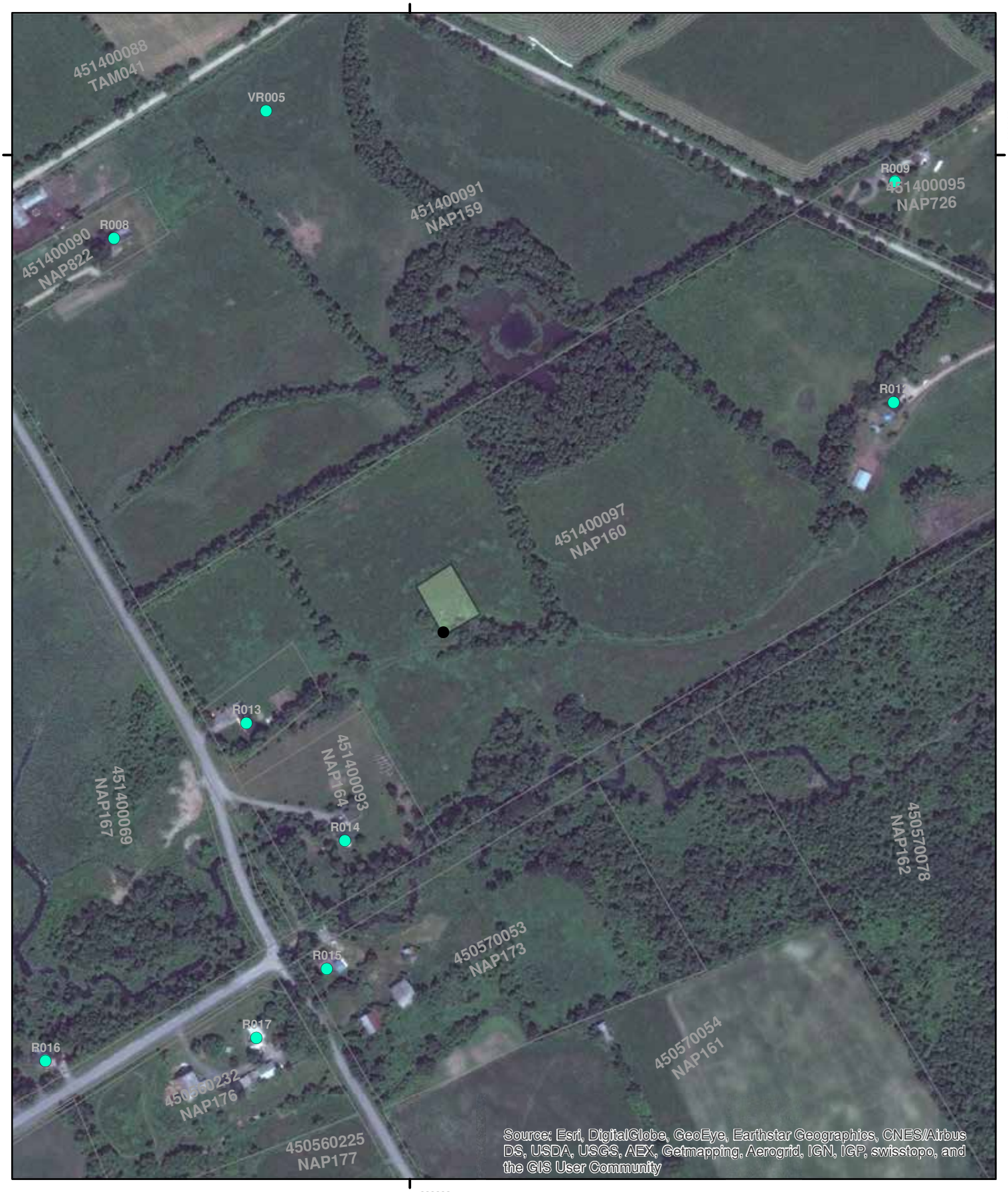
Loyalist Solar Project

BluEarth RENEWABLES INC

0 50100 200 300 400 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Source
- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure A.06

Site Layout for Main Transformer

Loyalist Solar Project

BluEarth RENEWABLES INC

0 10 20 40 60 80 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017

Appendix B
Receptor Information

Table B.01 Point of Reception Summary

*R=Existing Receptor, VR=Vacant Lot

Point of Reception Summary				
Noise Receptor ID*	Description	UTM Coordinates (x,y)		Height (m)
R001	Existing	18340022.34	4925316.86	4.5
R002	Existing	18341955.95	4925791.61	4.5
R003	Existing	18340133.76	4925157.63	4.5
R004	Existing	18340275.4	4924860.72	4.5
R005	Existing	18342272.09	4925283.23	4.5
R006	Existing	18340443.33	4924564.29	4.5
R007	Existing	18340269.94	4924495.74	4.5
R008	Existing	18340571.69	4924536.58	4.5
R009	Existing	18341174.82	4924580.39	4.5
R010	Existing	18339762.23	4924134.67	4.5
R011	Existing	18341285	4924522.13	4.5
R012	Existing	18341173.86	4924410.47	4.5
R013	Existing	18340673.83	4924162.96	4.5
R014	Existing	18340749.87	4924072.41	4.5
R015	Existing	18340735.91	4923973.38	4.5
R016	Existing	18340518.58	4923902.69	4.5
R017	Existing	18340681.66	4923920.14	4.5
R018	Existing	18340366.49	4923729.36	4.5
R019	Existing	18340536.67	4923731.19	4.5
R020	Existing	18342483.11	4924314.06	4.5
R021	Existing	18340142.65	4923277.39	4.5
R022	Existing	18340270.4	4923285.03	4.5
R023	Existing	18340864.56	4923439.63	4.5
R024	Existing	18339984.86	4923115.88	4.5
R025	Existing	18340098.48	4923025.06	4.5
R026	Existing	18341133.52	4923149.31	4.5
R027	Existing	18341115.48	4922847.55	4.5
R028	Existing	18341462.35	4922808.97	4.5
R029	Existing	18342423.07	4923070.6	4.5
R030	Existing	18342514.88	4922958.79	4.5
R031	Existing	18341375.45	4922595.46	4.5
R032	Existing	18341454.78	4922527.96	4.5
R033	Existing	18343002	4922902.45	4.5
R034	Existing	18342029.96	4922577.88	4.5
R035	Existing	18342358.06	4922572.59	4.5
R036	Existing	18342179.19	4922492.67	4.5
R037	Existing	18341898.08	4922383.58	4.5
R038	Existing	18342719.99	4919109.97	4.5
R039	Existing	18344219.08	4918941.58	4.5
R040	Existing	18345182.82	4917903.79	4.5
R041	Existing	18345850.56	4917317.48	4.5
R042	Existing	18345812.48	4917247.14	4.5

Point of Reception Summary				
Noise Receptor ID*	Description	UTM Coordinates (x,y)		Height (m)
R043	Existing	18345638.75	4917173.01	4.5
R044	Existing	18345812.59	4916985.74	4.5
R045	Existing	18345435.89	4916784.39	4.5
R046	Existing	18345402.57	4916763.73	4.5
R047	Existing	18345314.89	4916712.9	4.5
R048	Existing	18345520.06	4916744.27	4.5
R049	Existing	18345474.84	4916729.56	4.5
R050	Existing	18345127.55	4916623.44	4.5
R051	Existing	18345579.58	4916757.53	4.5
R052	Existing	18344983.47	4916520.17	4.5
R053	Existing	18344518.67	4916249.5	4.5
R054	Existing	18345760.09	4916615.56	4.5
R055	Existing	18344806.02	4916314	4.5
R056	Existing	18344762.1	4916236.92	4.5
R057	Existing	18342109.89	4915352.34	4.5
R058	Existing	18342751.59	4915209.25	4.5
R059	Existing	18342737.31	4915192.26	4.5
R060	Existing	18342584	4915135.49	4.5
R061	Existing	18342390.02	4914986.03	4.5
R062	Existing	18342383.38	4914948.84	4.5
R063	Existing	18342365.97	4914878.13	4.5
R064	Existing	18342618.23	4914948.62	4.5
R065	Existing	18342106.68	4914781.26	4.5
R066	Existing	18341685.86	4914638.2	4.5
R067	Existing	18341948.46	4914687.07	4.5
R068	Existing	18341885.13	4914643.26	4.5
R069	Existing	18341536.11	4914423.78	4.5
R070	Existing	18341484.95	4914385.34	4.5
R071	Existing	18341178.29	4914250.2	4.5
R072	Existing	18341298.13	4914269.96	4.5
R073	Existing	18341384.9	4914126.7	4.5
R074	Existing	18346690.84	4915586.69	4.5
R075	Existing	18341056.91	4913220.65	4.5
R076	Existing	18345392.68	4914321.35	4.5
R077	Existing	18345656.46	4914269.65	4.5
R078	Existing	18345455.76	4914147.14	4.5
R079	Existing	18343055.05	4913401.35	4.5
R080	Existing	18345207.57	4914002.66	4.5
R081	Existing	18345148.57	4913965.94	4.5
R082	Existing	18344843.6	4913824.92	4.5
R083	Existing	18344582.2	4913629.2	4.5
R084	Existing	18344372.46	4913507.17	4.5
R085	Existing	18343889.2	4913328	4.5

Point of Reception Summary				
Noise Receptor ID*	Description	UTM Coordinates (x,y)		Height (m)
R086	Existing	18344114.24	4913362.29	4.5
R087	Existing	18345788.56	4913850.75	4.5
R088	Existing	18342324.58	4912765.12	4.5
R089	Existing	18343787.65	4913109.81	4.5
R090	Existing	18341923.27	4912510.75	4.5
R091	Existing	18343390.77	4912943.39	4.5
R092	Existing	18343042.26	4912620.34	4.5
R093	Existing	18342929.58	4912570.82	4.5
R094	Existing	18343355.69	4912657.71	4.5
R095	Existing	18342464.94	4912289.04	4.5
R096	Existing	18342747.28	4912362.81	4.5
R097	Existing	18341607.96	4911932.79	4.5
R098	Existing	18341799.61	4911959.04	4.5
R099	Existing	18342620.08	4912101.36	4.5
R100	Existing	18341671.47	4911789.1	4.5
R101	Existing	18342660.15	4911960.47	4.5
R102	Existing	18341858.42	4911485.49	4.5
R103	Existing	18342017.41	4911242.57	4.5
R104	Existing	18341727.4	4911105	4.5
R105	Existing	18341598.73	4910901.07	4.5
R106	Existing	18345415.79	4911872.64	4.5
R107	Existing	18343203.35	4911198.32	4.5
R108	Existing	18343479.35	4911185.7	4.5
R109	Existing	18345207.85	4911670.07	4.5
R110	Existing	18344942.97	4911521.87	4.5
R111	Existing	18343888.28	4910894.06	4.5
R112	Existing	18343583.67	4910745.2	4.5
R113	Existing	18343322.42	4910585.64	4.5
R114	Existing	18342557.11	4910352.09	4.5
R115	Existing	18342738.29	4910246.25	4.5
R116	Existing	18342831.9	4910174.42	4.5
R117	Existing	18342936.13	4910199.26	4.5
R118	Existing	18342772.73	4910149.29	4.5
R119	Existing	18343336.36	4910048.94	4.5
R120	Existing	18343279.99	4909973.94	4.5
R121	Existing	18342901.02	4909827.34	4.5
R122	Existing	18343341.53	4909891.78	4.5
R123	Existing	18342215.2	4909513.33	4.5
R124	Existing	18343275.59	4909783.67	4.5
R125	Existing	18343063.27	4909670.18	4.5
R126	Existing	18341997.13	4909344.56	4.5
R127	Existing	18342714.03	4909500.08	4.5
R128	Existing	18342621.81	4909464.18	4.5

Point of Reception Summary				
Noise Receptor ID*	Description	UTM Coordinates (x,y)		Height (m)
R129	Existing	18342543.26	4909409.39	4.5
R130	Existing	18343520.07	4909614.99	4.5
R131	Existing	18343580.9	4909543.07	4.5
R132	Existing	18343785.73	4909186.3	4.5
R133	Existing	18343865.72	4907771.48	4.5
R134	Existing	18343421.09	4907636.97	4.5
R135	Existing	18342959.88	4922899.02	4.5
R136	Existing	18342803.18	4919120.85	4.5
R137	Existing	18345352.6	4916804.37	4.5
R138	Existing	18345480.44	4911881.22	4.5
VR001	Vacant Lot	18340009.89	4925134.33	4.5
VR002	Vacant Lot	18338792.29	4924640.79	4.5
VR003	Vacant Lot	18341475.63	4925494.21	4.5
VR004	Vacant Lot	18342214.22	4925407.89	4.5
VR005	Vacant Lot	18340689.22	4924635.06	4.5
VR006	Vacant Lot	18341770.82	4924705.01	4.5
VR008	Vacant Lot	18342108.73	4924498.41	4.5
VR009	Vacant Lot	18341678.84	4924395.83	4.5
VR011	Vacant Lot	18340107.24	4923556.68	4.5
VR012	Vacant Lot	18341060.54	4923479.96	4.5
VR013	Vacant Lot	18342515.59	4923906.38	4.5
VR014	Vacant Lot	18342564.82	4923795.6	4.5
VR016	Vacant Lot	18341391.64	4922913.61	4.5
VR017	Vacant Lot	18341100.22	4921843.96	4.5
VR018	Vacant Lot	18341021.19	4921760.97	4.5
VR019	Vacant Lot	18342605.16	4919079.4	4.5
VR020	Vacant Lot	18344219.66	4918515.79	4.5
VR021	Vacant Lot	18342986.45	4917894.66	4.5
VR022	Vacant Lot	18343985.33	4918232.87	4.5
VR023	Vacant Lot	18342870.02	4917685.85	4.5
VR024	Vacant Lot	18342301.85	4917340.14	4.5
VR025	Vacant Lot	18341799.17	4917160.04	4.5
VR026	Vacant Lot	18341436.85	4914995.01	4.5
VR028	Vacant Lot	18346106.33	4917059.6	4.5
VR029	Vacant Lot	18342030.34	4915523.76	4.5
VR030	Vacant Lot	18344833.6	4916448.27	4.5
VR031	Vacant Lot	18345284.91	4916581.25	4.5
VR032	Vacant Lot	18345091.68	4916468.7	4.5
VR033	Vacant Lot	18344357.5	4916169.1	4.5
VR034	Vacant Lot	18344042.65	4915978.35	4.5
VR035	Vacant Lot	18344414.25	4916072.28	4.5
VR036	Vacant Lot	18345936.33	4916573.05	4.5
VR037	Vacant Lot	18344125.44	4915863.78	4.5

Point of Reception Summary				
Noise Receptor ID*	Description	UTM Coordinates (x,y)		Height (m)
VR038	Vacant Lot	18343997.06	4915704.81	4.5
VR039	Vacant Lot	18343667.61	4915654.8	4.5
VR040	Vacant Lot	18343190.93	4915462.41	4.5
VR041	Vacant Lot	18342930.14	4915304.53	4.5
VR042	Vacant Lot	18342537.05	4915066.28	4.5
VR043	Vacant Lot	18342988.57	4915208.65	4.5
VR045	Vacant Lot	18341713.52	4914431.03	4.5
VR046	Vacant Lot	18341617.04	4914371.68	4.5
VR047	Vacant Lot	18341038.13	4914017.99	4.5
VR049	Vacant Lot	18345758.32	4914548.2	4.5
VR050	Vacant Lot	18345072.89	4913824.14	4.5
VR052	Vacant Lot	18344548.91	4913516.97	4.5
VR053	Vacant Lot	18344278.41	4913358.26	4.5
VR054	Vacant Lot	18343711.91	4913030.27	4.5
VR055	Vacant Lot	18343090.97	4912792.44	4.5
VR057	Vacant Lot	18342970.5	4912587.95	4.5
VR058	Vacant Lot	18342834.32	4912503.31	4.5
VR059	Vacant Lot	18341905.31	4912029.05	4.5
VR060	Vacant Lot	18342226.78	4912130.09	4.5
VR062	Vacant Lot	18341883.7	4911920.55	4.5
VR063	Vacant Lot	18341072.41	4911288.29	4.5
VR064	Vacant Lot	18341271.5	4911356.91	4.5
VR065	Vacant Lot	18341449.11	4911418.06	4.5
VR066	Vacant Lot	18341684.62	4911498.92	4.5
VR067	Vacant Lot	18342130.09	4911105.81	4.5
VR068	Vacant Lot	18346237.89	4912312.12	4.5
VR069	Vacant Lot	18345033.32	4911608.86	4.5
VR070	Vacant Lot	18344761.01	4911450.51	4.5
VR071	Vacant Lot	18344603.97	4911320.21	4.5
VR074	Vacant Lot	18344038.44	4910825.46	4.5
VR075	Vacant Lot	18343789.53	4910743.94	4.5
VR078	Vacant Lot	18343577.43	4910614.31	4.5
VR079	Vacant Lot	18342880.97	4910340.51	4.5
VR080	Vacant Lot	18343410.06	4910517.52	4.5
VR081	Vacant Lot	18343140.36	4910358.73	4.5
VR083	Vacant Lot	18343003.23	4909751.53	4.5
VR084	Vacant Lot	18343159.23	4909732.22	4.5
VR085	Vacant Lot	18343017.78	4909619.59	4.5
VR086	Vacant Lot	18343398.75	4909815.94	4.5
VR087	Vacant Lot	18340885.92	4912935.29	4.5
VR088	Vacant Lot	18342218.7	4924831.06	4.5
VR089	Vacant Lot	18340150.5	4923616.19	4.5
VR090	Vacant Lot	18342312.58	4923666.34	4.5

Table B.01 Point of Reception Summary

Point of Reception Summary				
Noise Receptor ID*	Description	UTM Coordinates (x,y)		Height (m)
VR091	Vacant Lot	18345214.39	4917797.12	4.5
VR092	Vacant Lot	18342341	4914893.96	4.5
VR093	Vacant Lot	18344309.45	4911184.86	4.5
VR094	Vacant Lot	18344008.8	4911007.1	4.5
VR095	Vacant Lot	18342922.92	4909782.36	4.5

Appendix C
Impact Assessment

Table C.01 Noise Source Details Including Polygon Definitions

Noise Source Details Table							
						Vertice Coordinates (UTM)	
Source ID	Description	Height	Sound Power with Tonal Penalty (dBA)	Parcel	Polygon	X	Y
Inv_A1	Inverter Cluster	2.60m	99.5	A	A1	18342815.91	4910999.54
						18342978.11	4910732.81
						18342814.4	4910631.93
						18342653.26	4910903.02
Inv_A2	Inverter Cluster	2.60m	99.5		A2	18342811.11	4911003.72
						18342690.69	4911211.78
						18342527.8	4911112.69
						18342651.6	4910905.51
Inv_A3	Inverter Cluster	2.60m	99.5		A3	18342687.01	4911213.68
						18342569.47	4911411.78
						18342409.97	4911313.43
						18342525.83	4911118.23
Inv_A4	Inverter Cluster	2.60m	99.5		A4	18342566.18	4911418.97
						18342447.83	4911615.99
						18342286.84	4911520.29
						18342405.31	4911321.54
Inv_A5	Inverter Cluster	2.60m	99.5		A5	18342443.73	4911622.89
						18342323.73	4911825.54
						18342165.25	4911722.95
						18342280.83	4911528
Inv_A6	Inverter Cluster	2.60m	99.5		A6	18342158.25	4911729.04
						18342320.73	4911830.04
						18342240.11	4911967.85
						18342074.98	4911867.39
Inv_B1	Inverter Cluster	2.60m	99.5	B	B1	18342798.02	4912180.98
						18342900.4	4912015.08
						18342931.18	4912044.63
						18342911.98	4912077.21
						18342918.02	4912152.58
						18342997.5	4912201.94
						18343037.19	4912197.14
						18343110.1	4912232.15
						18343139.2	4912213.05
						18343205.35	4912241.99
						18343119.54	4912383.09
Inv_B2	Inverter Cluster	2.60m	99.5		B2	18342991.47	4912015.06
						18343017.1	4911969.09
						18343206.75	4912002.82
						18343313.46	4912063.98
						18343221.27	4912206.39
Inv_C1	Inverter Cluster	2.60m	99.5		C1	18344326.69	4912946.46
						18344537.46	4913073.93
						18344454.36	4913203.48
						18344560.58	4913266.59
						18344717.17	4913181.78
						18344755.82	4913117.28
						18344364.01	4912886.95

Inv_C2	Inverter Cluster	2.60m	99.5	C	C2	18344365.37	4912882
						18344399.49	4912827.16
						18344793.16	4913056.67
						18344758.52	4913113.55
Inv_C3	Inverter Cluster	2.60m	99.5		C3	18344400.97	4912823.63
						18344439.92	4912760.52
						18344834.49	4912987.99
						18344794.11	4913053.72
Inv_C4	Inverter Cluster	2.60m	99.5		C4	18344482.89	4912687.68
						18344881.88	4912910.85
						18344836.83	4912985.34
						18344440.07	4912757.32
Inv_C5	Inverter Cluster	2.60m	99.5		C5	18344525.65	4912618.61
						18344733.08	4912745.86
						18344756.82	4912707.54
						18345004.65	4912707.85
						18344883.42	4912909.05
						18344484.18	4912682.56
Inv_D1 & Inv_D2	Inverter Cluster	2.60m	99.5	D	D1, D2	18342420.24	4913086.86
						18342612.15	4913205.74
						18342476.48	4913427.84
						18342438.45	4913401.48
						18342340.71	4913210.21
Inv_D3	Inverter Cluster	2.60m	99.5		D3	18342508.85	4912945.02
						18342420.23	4913084.09
						18342615.22	4913201.27
						18342699.9	4913063.57
Inv_D4	Inverter Cluster	2.60m	99.5		D4	18342508.9	4912942.92
						18342606.41	4912788.89
						18342794.38	4912908.47
						18342701.03	4913061.2
Inv_D5	Inverter Cluster	2.60m	99.5		D5	18342643.94	4912729.02
						18342831.9	4912847.9
						18342797.53	4912904.17
						18342608.73	4912786.83
Inv_D6	Inverter Cluster	2.60m	99.5		D6	18342684.11	4912663.99
						18342645.02	4912726.99
						18342834.04	4912845.4
						18342871.58	4912782.53
Inv_E1	Inverter Cluster	2.60m	99.5	E	E1	18343441.95	4914121.95
						18343616.5	4914549.16
						18343785.43	4914276.09
						18343465.88	4914083.85
Inv_E2	Inverter Cluster	2.60m	99.5		E2	18343490.99	4914044.25
						18343757.36	4914048.06
						18343880.87	4914123.88
						18343787.14	4914275.09
						18343467.26	4914081.85
Inv_E3	Inverter Cluster	2.60m	99.5		E3	18343828.66	4913943.18
						18343951.13	4914011.91
						18343882.38	4914121.61
						18343760.53	4914045.27

Inv_E4	Inverter Cluster	2.60m	99.5	E4	18343707.34	4913685.34
					18343665.47	4913754.91
					18343732.39	4913801.1
					18343698.01	4913852.27
					18343951.7	4914009.73
					18344026.27	4913888.09
Inv_E5	Inverter Cluster	2.60m	99.5	E5	18343807.88	4913516.36
					18344131.55	4913721.73
					18344028.73	4913886.38
					18343708.7	4913682.78
Inv_F1	Inverter Cluster	2.60m	99.5	F1	18342352.96	4914400.39
					18342524.75	4914123.86
					18342683.03	4914222.16
					18342515.21	4914500.28
Inv_F2	Inverter Cluster	2.60m	99.5	F2	18342524.53	4914119.73
					18342671.25	4913889.68
					18342795.2	4914032.8
					18342685.83	4914217.03
Inv_F3	Inverter Cluster	2.60m	99.5	F3	18342590.97	4914381.57
					18342517.74	4914504.02
					18342714.21	4914723.32
					18342835.74	4914530.39
Inv_F4	Inverter Cluster	2.60m	99.5	F4	18342591.68	4914380.35
					18342836.65	4914526.62
					18342928.58	4914374.06
					18342687.9	4914224.99
Inv_F5	Inverter Cluster	2.60m	99.5	F5	18342686.69	4914221.01
					18342931.48	4914371.11
					18342997.63	4914266.38
					18342800.77	4914036.97
Inv_F6	Inverter Cluster	2.60m	99.5	F6	18342862.93	4914699.3
					18342774.56	4914846.1
					18342926.83	4914943.37
					18343017.26	4914799.29
Inv_F7	Inverter Cluster	2.60m	99.5	F7	18342808.05	4914581.17
					18342892.54	4914651.76
					18342864.76	4914697.89
					18343017.77	4914797.49
					18343032.46	4914774.52
					18343107.43	4914836.07
					18343169.11	4914734.94
					18342837.64	4914533.13
Inv_F8	Inverter Cluster	2.60m	99.5	F8	18342933.65	4914377.2
					18343258.37	4914583.53
					18343171.29	4914732.47
					18342839.61	4914529.95
Inv_F9	Inverter Cluster	2.60m	99.5	F9	18342934.47	4914373.67
					18343000.15	4914270.84
					18343262.62	4914578.72
Inv_F9	Inverter Cluster	2.60m	99.5	F10	18343171.99	4914739.42
					18343265.68	4914584.83
					18343458.07	4914810.81
					18343380.89	4914935.38

Transformer_62MW	Main Transformer	4m	93	G	G1	18340804.19	4924267.96
						18340831.35	4924285.37
						18340854	4924246.57
						18340825.49	4924230.15

Table C.02 Noise Source Locations by Assessment Zone

Project: Loyalist Solar Project - Noise Impact Assessment Report
Report ID: 16100.00.RP3

Created on: 1/19/2017

* a blank cell indicates that the source is more than 1.5 kilometers away from the worst-case receptor evaluated for that zone

Source ID	UTM Coordinates (Zone 18)																	
	Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8		Zone 9	
	x	y	x	y	x	y	x	y	x	y	x	y	x	y	x	y	x	y
Inv_A1	18342323	4911829	18342073	4911867	18342241	4911969	18342241	4911969										
Inv_A2	18342445	4911622	18342163	4911723	18342325	4911827	18342325	4911827										
Inv_A3	18342568	4911418	18342285	4911520	18342449	4911618	18342449	4911618										
Inv_A4	18342688	4911214	18342409	4911315	18342570	4911413	18342570	4911413										
Inv_A5	18342812	4911003	18342527	4911113	18342691	4911213	18342691	4911213										
Inv_A6	18342817	4911000	18342653	4910903	18342817	4911001	18342817	4911001										
Inv_B1	18342902	4912013	18342796	4912181	18342796	4912181	18343069	4912351	18343120	4912384	18343120	4912384						
Inv_B2	18343068	4911977	18342990	4912015	18342990	4912015	18343222	4912207	18343222	4912207	18343222	4912207						
Inv_C1	18344363	4912886					18344325	4912946	18344325	4912946	18344325	4912946	18344691	4913078				
Inv_C2	18344399	4912826					18344365	4912882	18344365	4912882	18344365	4912882	18344727	4913018				
Inv_C3	18344439	4912760					18344400	4912823	18344400	4912823	18344400	4912823	18344767	4912949				
Inv_C4	18344482	4912687					18344439	4912757			18344439	4912757	18344820	4912874				
Inv_C5	18344525	4912618					18344484	4912682			18344484	4912682	18345005	4912708				
Inv_D1			18342421	4913086	18342421	4913086	18342564	4913172	18342614	4913204	18342614	4913204			18342477	4913428		
Inv_D2			18342420	4913086	18342420	4913086	18342562	4913172	18342613	4913205	18342613	4913205			18342477	4913428		
Inv_D3			18342509	4912944	18342509	4912944	18342649	4913031	18342637	4913168	18342701	4913063			18342615	4913202		
Inv_D4			18342606	4912789	18342536	4912899	18342744	4912875	18342702	4913062	18342797	4912907						
Inv_D5			18342644	4912729	18342608	4912787	18342780	4912815	18342798	4912905	18342833	4912847						
Inv_D6			18342684	4912664	18342645	4912727	18342820	4912749	18342835	4912846	18342872	4912783						
Inv_E1									18343466	4914083	18343466	4914083			18343617	4914551		
Inv_E2							18343490	4914044	18343490	4914044	18343757	4914047			18343467	4914082		
Inv_E3									18343828	4913942	18343828	4913942			18343760	4914045		
Inv_E4							18343706	4913684	18343665	4913754	18343706	4913684						
Inv_E5							18343807	4913516	18343708	4913682	18343807	4913516						
Inv_F1					18342525	4914123			18342525	4914123	18342684	4914222			18342516	4914501		
Inv_F2					18342671	4913887	18342671	4913887	18342671	4913887	18342797	4914032			18342686	4914219		
Inv_F3									18342591	4914381					18342715	4914724		
Inv_F4					18342688	4914224			18342688	4914224	18342929	4914374			18342837	4914527		
Inv_F5					18342800	4914035	18342800	4914035	18342800	4914035	18342916	4914169			18342932	4914371		
Inv_F6									18342863	4914699					18342773	4914846		
Inv_F7									18342838	4914532					18342864	4914697		
Inv_F8									18342933	4914375	18343143	4914508			18342866	4914547		
Inv_F9									18342999	4914268	18342999	4914268			18342952	4914385		
Inv_F10									18343265	4914583	18343265	4914583			18343171	4914739		
Transformer_62MW																	18340815	4924248

Table C.03 Noise Impact Assessment Table

*R=Existing Receptor, VR=Vacant Lot, OLA=Outdoor Living Area

Zone 1					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R107	Existing	32.2	18343203.35	4911198.32	4.5
R108	Existing	28.3	18343479.35	4911185.7	4.5
R113	Existing	27.1	18343322.42	4910585.64	4.5
VR079	Vacant Lot	26.9	18342880.97	4910340.51	4.5
R114	Existing	26.6	18342557.11	4910352.09	4.5
VR081	Vacant Lot	26	18343140.36	4910358.73	4.5
R115	Existing	25.7	18342738.29	4910246.25	4.5
VR080	Vacant Lot	25.6	18343410.06	4910517.52	4.5
R112	Existing	25.4	18343583.67	4910745.2	4.5
R117	Existing	24.9	18342936.13	4910199.26	4.5
R116	Existing	24.8	18342831.9	4910174.42	4.5
VR078	Vacant Lot	24.7	18343577.43	4910614.31	4.5
R118	Existing	24.5	18342772.73	4910149.29	4.5
R111	Existing	23.8	18343888.28	4910894.06	4.5
VR094	Vacant Lot	23.6	18344008.8	4911007.1	4.5
VR075	Vacant Lot	23.4	18343789.53	4910743.94	4.5
VR093	Vacant Lot	22.8	18344309.45	4911184.86	4.5
VR074	Vacant Lot	22.4	18344038.44	4910825.46	4.5
VR070	Vacant Lot	22.4	18344761.01	4911450.51	4.5
VR071	Vacant Lot	22.3	18344603.97	4911320.21	4.5
R119	Existing	21.7	18343336.36	4910048.94	4.5
R110	Existing	21.7	18344942.97	4911521.87	4.5
R120	Existing	21.1	18343279.99	4909973.94	4.5
R122	Existing	16.2	18343341.53	4909891.78	4.5
R121	Existing	15.6	18342901.02	4909827.34	4.5
VR095	Vacant Lot	15.2	18342922.92	4909782.36	4.5
VR083	Vacant Lot	14.8	18343003.23	4909751.53	4.5
R124	Existing	14.1	18343275.59	4909783.67	4.5
VR084	Vacant Lot	14	18343159.23	4909732.22	4.5
VR086	Vacant Lot	13.9	18343398.75	4909815.94	4.5
R125	Existing	13.7	18343063.27	4909670.18	4.5
R123	Existing	13.5	18342215.2	4909513.33	4.5
VR085	Vacant Lot	13.3	18343017.78	4909619.59	4.5
R127	Existing	12.6	18342714.03	4909500.08	4.5
R128	Existing	12.3	18342621.81	4909464.18	4.5
R126	Existing	11.8	18341997.13	4909344.56	4.5
R130	Existing	11.4	18343520.07	4909614.99	4.5
R129	Existing	11	18342543.26	4909409.39	4.5
R131	Existing	10.7	18343580.9	4909543.07	4.5
R134	Existing	-80.2	18343421.09	4907636.97	4.5
R133	Existing	-80.2	18343865.72	4907771.48	4.5
R132	Existing	-80.2	18343785.73	4909186.3	4.5

Zone 2					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
VR062	Vacant Lot	36.8	18341883.7	4911920.55	4.5
VR059	Vacant Lot	35.2	18341905.31	4912029.05	4.5
VR067	Vacant Lot	34	18342130.09	4911105.81	4.5
R103	Existing	33.5	18342017.41	4911242.57	4.5
R098	Existing	33.4	18341799.61	4911959.04	4.5
R102	Existing	33.3	18341858.42	4911485.49	4.5
R100	Existing	31.1	18341671.47	4911789.1	4.5
VR066	Vacant Lot	30.5	18341684.62	4911498.92	4.5
R097	Existing	29.4	18341607.96	4911932.79	4.5
R104	Existing	28.4	18341727.4	4911105	4.5
VR065	Vacant Lot	27.2	18341449.11	4911418.06	4.5
R105	Existing	25.7	18341598.73	4910901.07	4.5
VR064	Vacant Lot	24.9	18341271.5	4911356.91	4.5
VR063	Vacant Lot	22.5	18341072.41	4911288.29	4.5
R075	Existing	21.4	18341056.91	4913220.65	4.5
VR087	Unknown	20.8	18340885.92	4912935.29	4.5

Zone 3					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R088	Existing	39.2	18342324.58	4912765.12	4.5
VR060	Vacant Lot	39	18342226.78	4912130.09	4.5
R099	Existing	38.1	18342620.08	4912101.36	4.5
R101	Existing	37.1	18342660.15	4911960.47	4.5
R095	Existing	35.3	18342464.94	4912289.04	4.5
R090	Existing	30.3	18341923.27	4912510.75	4.5

Zone 4					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R093	Existing	39.1	18342929.58	4912570.82	4.5
VR057	Vacant Lot	38.9	18342970.5	4912587.95	4.5
R092	Existing	38	18343042.26	4912620.34	4.5
VR058	Vacant Lot	37.9	18342834.32	4912503.31	4.5
VR055	Vacant Lot	37.1	18343090.97	4912792.44	4.5
R096	Existing	35.5	18342747.28	4912362.81	4.5
R094	Existing	33.4	18343355.69	4912657.71	4.5
R091	Existing	32.6	18343390.77	4912943.39	4.5

Table C.03 Noise Impact Assessment Table

Zone 5					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R079	Existing	35.3	18343055.05	4913401.35	4.5

Zone 6					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R085	Existing	37.2	18343889.2	4913328	4.5
R086	Existing	34.7	18344114.24	4913362.29	4.5
VR053	Vacant Lot	33.9	18344278.41	4913358.26	4.5
R089	Existing	33.7	18343787.65	4913109.81	4.5
VR054	Vacant Lot	33	18343711.91	4913030.27	4.5
R084	Existing	32.3	18344372.46	4913507.17	4.5
VR052	Vacant Lot	31	18344548.91	4913516.97	4.5
R083	Existing	30	18344582.2	4913629.2	4.5
VR050	Vacant Lot	24.6	18345072.89	4913824.14	4.5
R082	Existing	23.1	18344843.6	4913824.92	4.5
R081	Existing	21.9	18345148.57	4913965.94	4.5
R080	Existing	21.1	18345207.57	4914002.66	4.5
R078	Existing	17.3	18345455.76	4914147.14	4.5
R076	Existing	15.6	18345392.68	4914321.35	4.5
R077	Existing	14.8	18345656.46	4914269.65	4.5
R087	Existing	13.4	18345788.56	4913850.75	4.5
R074	Existing		18346690.84	4915586.69	4.5
VR049	Vacant Lot		18345758.32	4914548.2	4.5

Zone 7					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R106	Existing	22.8	18345415.79	4911872.64	4.5
R138	Existing	22.5	18345480.44	4911881.22	4.5
R109	Existing	21.7	18345207.85	4911670.07	4.5
VR069	Vacant Lot	21.5	18345033.32	4911608.86	4.5
VR068	Vacant Lot	19.6	18346237.89	4912312.12	4.5

Table C.03 Noise Impact Assessment Table

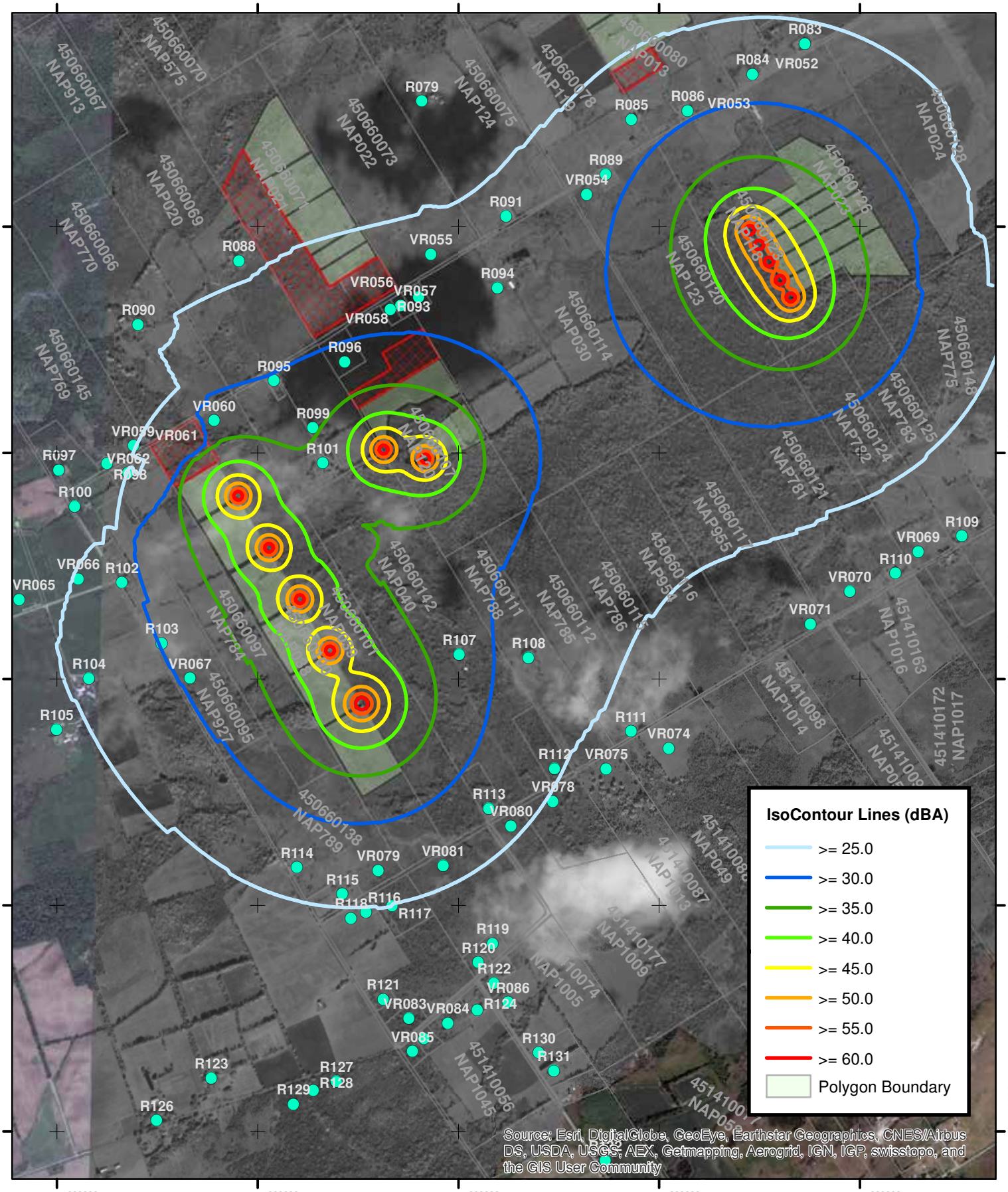
Zone 8					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R064	Existing	39.4	18342618.23	4914948.62	4.5
VR042	Vacant Lot	35	18342537.05	4915066.28	4.5
R063	Existing	34.8	18342365.97	4914878.13	4.5
R062	Existing	34.3	18342383.38	4914948.84	4.5
R060	Existing	34.2	18342584	4915135.49	4.5
VR092	Vacant Lot	34.2	18342341	4914893.96	4.5
R059	Existing	34	18342737.31	4915192.26	4.5
R061	Existing	34	18342390.02	4914986.03	4.5
R058	Existing	33.7	18342751.59	4915209.25	4.5
VR043	Vacant Lot	33.3	18342988.57	4915208.65	4.5
VR041	Vacant Lot	31.9	18342930.14	4915304.53	4.5
R065	Existing	31.5	18342106.68	4914781.26	4.5
R067	Existing	29.4	18341948.46	4914687.07	4.5
VR040	Vacant Lot	29	18343190.93	4915462.41	4.5
R068	Existing	28.8	18341885.13	4914643.26	4.5
R066	Existing	27	18341685.86	4914638.2	4.5
VR045	Vacant Lot	26.9	18341713.52	4914431.03	4.5
VR046	Vacant Lot	25.7	18341617.04	4914371.68	4.5
R069	Existing	25.5	18341536.11	4914423.78	4.5
VR039	Vacant Lot	25.3	18343667.61	4915654.8	4.5
R070	Existing	24.9	18341484.95	4914385.34	4.5
R073	Existing	24	18341384.9	4914126.7	4.5
VR038	Vacant Lot	23.5	18343997.06	4915704.81	4.5
R072	Existing	23.1	18341298.13	4914269.96	4.5
R057	Existing	22	18342109.89	4915352.34	4.5
VR037	Vacant Lot	21.6	18344125.44	4915863.78	4.5
VR034	Vacant Lot	20.8	18344042.65	4915978.35	4.5
VR029	Vacant Lot	20	18342030.34	4915523.76	4.5
R071	Existing	19.5	18341178.29	4914250.2	4.5
VR026	Vacant Lot	18.4	18341436.85	4914995.01	4.5
VR047	Vacant Lot	17.2	18341038.13	4914017.99	4.5
VR035	Vacant Lot	13.9	18344414.25	4916072.28	4.5
VR033	Vacant Lot	13.6	18344357.5	4916169.1	4.5
R053	Existing	9.9	18344518.67	4916249.5	4.5
R038	Existing		18342719.99	4919109.97	4.5
R039	Existing		18344219.08	4918941.58	4.5
R040	Existing		18345182.82	4917903.79	4.5
R041	Existing		18345850.56	4917317.48	4.5
R042	Existing		18345812.48	4917247.14	4.5
R043	Existing		18345638.75	4917173.01	4.5
R044	Existing		18345812.59	4916985.74	4.5
R045	Existing		18345435.89	4916784.39	4.5
R046			18345402.57	4916763.73	4.5

Zone 8					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R047	Existing		18345314.89	4916712.9	4.5
R048	Existing		18345520.06	4916744.27	4.5
R049	Existing		18345474.84	4916729.56	4.5
R050	Existing		18345127.55	4916623.44	4.5
R051	Existing		18345579.58	4916757.53	4.5
R052	Existing		18344983.47	4916520.17	4.5
R054	Existing		18345760.09	4916615.56	4.5
R055	Existing		18344806.02	4916314	4.5
R056	Existing		18344762.1	4916236.92	4.5
R136	Existing		18342803.18	4919120.85	4.5
R137	Existing		18345352.6	4916804.37	4.5
VR091	Vacant Lot		18345214.39	4917797.12	4.5
VR019	Vacant Lot		18342605.16	4919079.4	4.5
VR020	Vacant Lot		18344219.66	4918515.79	4.5
VR021	Vacant Lot		18342986.45	4917894.66	4.5
VR022	Vacant Lot		18343985.33	4918232.87	4.5
VR023	Vacant Lot		18342870.02	4917685.85	4.5
VR024	Vacant Lot		18342301.85	4917340.14	4.5
VR025	Vacant Lot		18341799.17	4917160.04	4.5
VR028	Vacant Lot		18346106.33	4917059.6	4.5
VR030	Vacant Lot		18344833.6	4916448.27	4.5
VR031	Vacant Lot		18345284.91	4916581.25	4.5
VR032	Vacant Lot		18345091.68	4916468.7	4.5
VR036	Vacant Lot		18345936.33	4916573.05	4.5

Zone 9					
Noise Receptor ID*	Description	Impact (dBA)	UTM Coordinates (x,y)		Height (m)
R013 - OLA	Outdoor	38.3	18340708.14	4924182.82	1.5
R013	Existing	37.5	18340673.83	4924162.96	4.5
R014	Existing	36.3	18340749.87	4924072.41	4.5
R015	Existing	32.5	18340735.91	4923973.38	4.5
R017	Existing	30.6	18340681.66	4923920.14	4.5
R008	Existing	30	18340571.69	4924536.58	4.5
R012	Existing	29.6	18341173.86	4924410.47	4.5
VR005	Vacant Lot	29.3	18340689.22	4924635.06	4.5
R016	Existing	28.2	18340518.58	4923902.69	4.5
R006	Existing	27.6	18340443.33	4924564.29	4.5
R009	Existing	27.5	18341174.82	4924580.39	4.5
R011	Existing	26.5	18341285	4924522.13	4.5
R019	Existing	25.8	18340536.67	4923731.19	4.5
R007	Existing	25.6	18340269.94	4924495.74	4.5

Table C.03 Noise Impact Assessment Table

Noise Receptor ID*	Description	Impact (dBA)	Zone 9 UTM Coordinates (x,y)		Height (m)
R018	Existing	24.2	18340366.49	4923729.36	4.5
R004	Existing	22.5	18340275.4	4924860.72	4.5
R023	Existing	22.5	18340864.56	4923439.63	4.5
VR009	Vacant Lot	21.7	18341678.84	4924395.83	4.5
VR089	Vacant Lot	21.3	18340150.5	4923616.19	4.5
VR011	Vacant Lot	20.4	18340107.24	4923556.68	4.5
R010	Existing	19.7	18339762.23	4924134.67	4.5
VR006	Vacant Lot	19.7	18341770.82	4924705.01	4.5
R022	Existing	19.2	18340270.4	4923285.03	4.5
R003	Existing	18.9	18340133.76	4925157.63	4.5
R026	Existing	18.9	18341133.52	4923149.31	4.5
R021	Existing	18.5	18340142.65	4923277.39	4.5
VR001	Vacant Lot	18.4	18340009.89	4925134.33	4.5
VR008	Vacant Lot	17.3	18342108.73	4924498.41	4.5
R001	Existing	17.2	18340022.34	4925316.86	4.5
VR012	Vacant Lot	17	18341060.54	4923479.96	4.5
VR003	Vacant Lot	16.5	18341475.63	4925494.21	4.5
R027	Existing	16.3	18341115.48	4922847.55	4.5
VR088	Vacant Lot	15.7	18342218.7	4924831.06	4.5
R028	Existing	15.2	18341462.35	4922808.97	4.5
R020	Existing	14.6	18342483.11	4924314.06	4.5
VR013	Vacant Lot	14.1	18342515.59	4923906.38	4.5
VR014	Vacant Lot	13.6	18342564.82	4923795.6	4.5
VR004	Vacant Lot	13.5	18342214.22	4925407.89	4.5
R002	Existing	12.9	18341955.95	4925791.61	4.5
R024	Existing	11	18339984.86	4923115.88	4.5
R025	Existing	10.8	18340098.48	4923025.06	4.5
VR016	Vacant Lot	10.6	18341391.64	4922913.61	4.5
VR090	Vacant Lot	8.9	18342312.58	4923666.34	4.5
R031	Existing	8.4	18341375.45	4922595.46	4.5
R005	Existing	8.2	18342272.09	4925283.23	4.5
R032	Existing	7.8	18341454.78	4922527.96	4.5
R029	Existing	6.9	18342423.07	4923070.6	4.5
R030	Existing		18342514.88	4922958.79	4.5
R033	Existing		18343002	4922902.45	4.5
R034	Existing		18342029.96	4922577.88	4.5
R035	Existing		18342358.06	4922572.59	4.5
R036	Existing		18342179.19	4922492.67	4.5
R037	Existing		18341898.08	4922383.58	4.5
R135	Existing		18342959.88	4922899.02	4.5
VR002	Vacant Lot		18338792.29	4924640.79	4.5
VR017	Vacant Lot		18341100.22	4921843.96	4.5



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.01

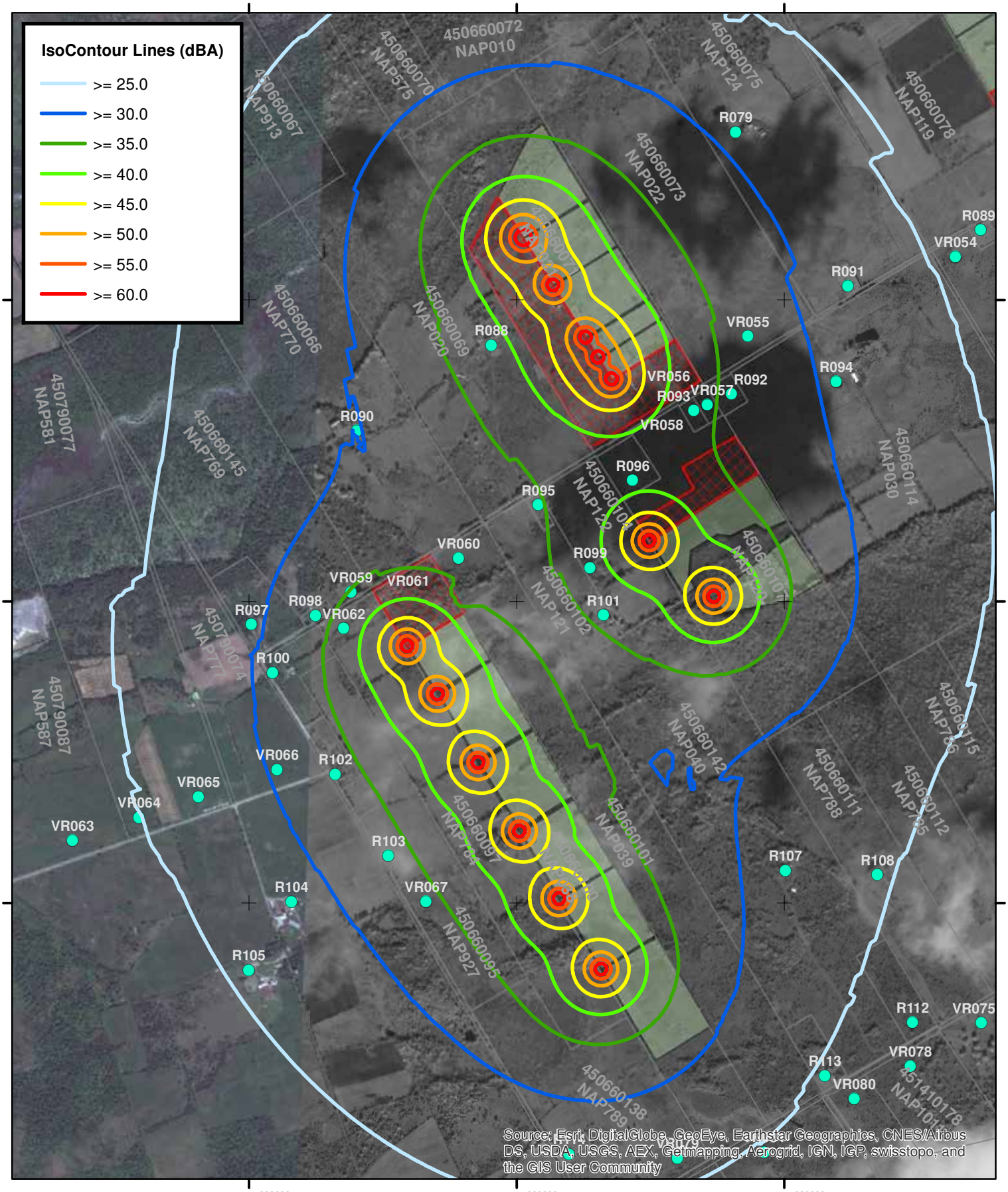
Zone 1 Noise Contour

Loyalist Solar Project

0 60120 240 360 480 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.02

Zone 2 Noise Contour

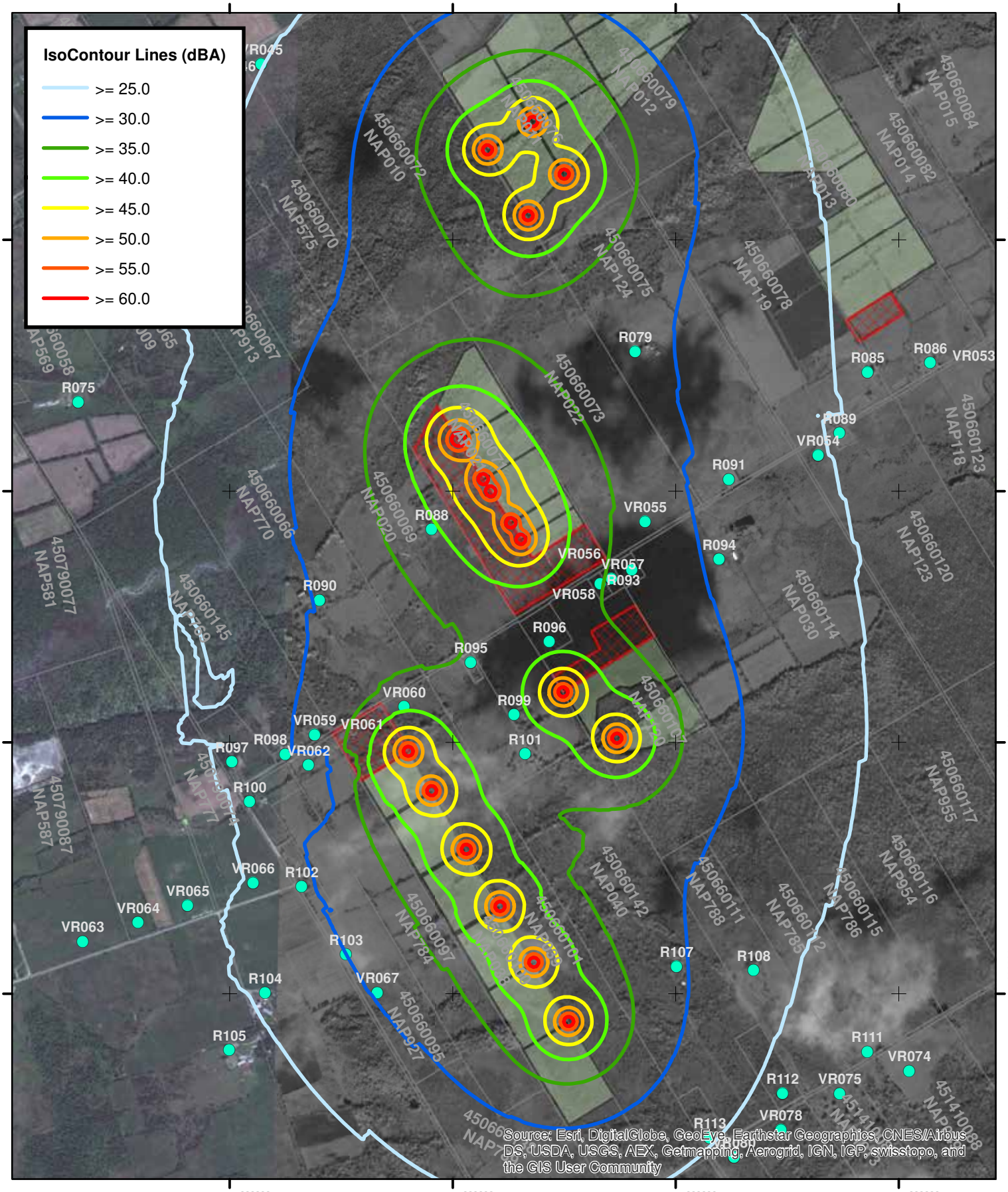
Loyalist Solar Project

BluEarth RENEWABLES INC

0 45 90 180 270 360 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.03

Zone 3 Noise Contour

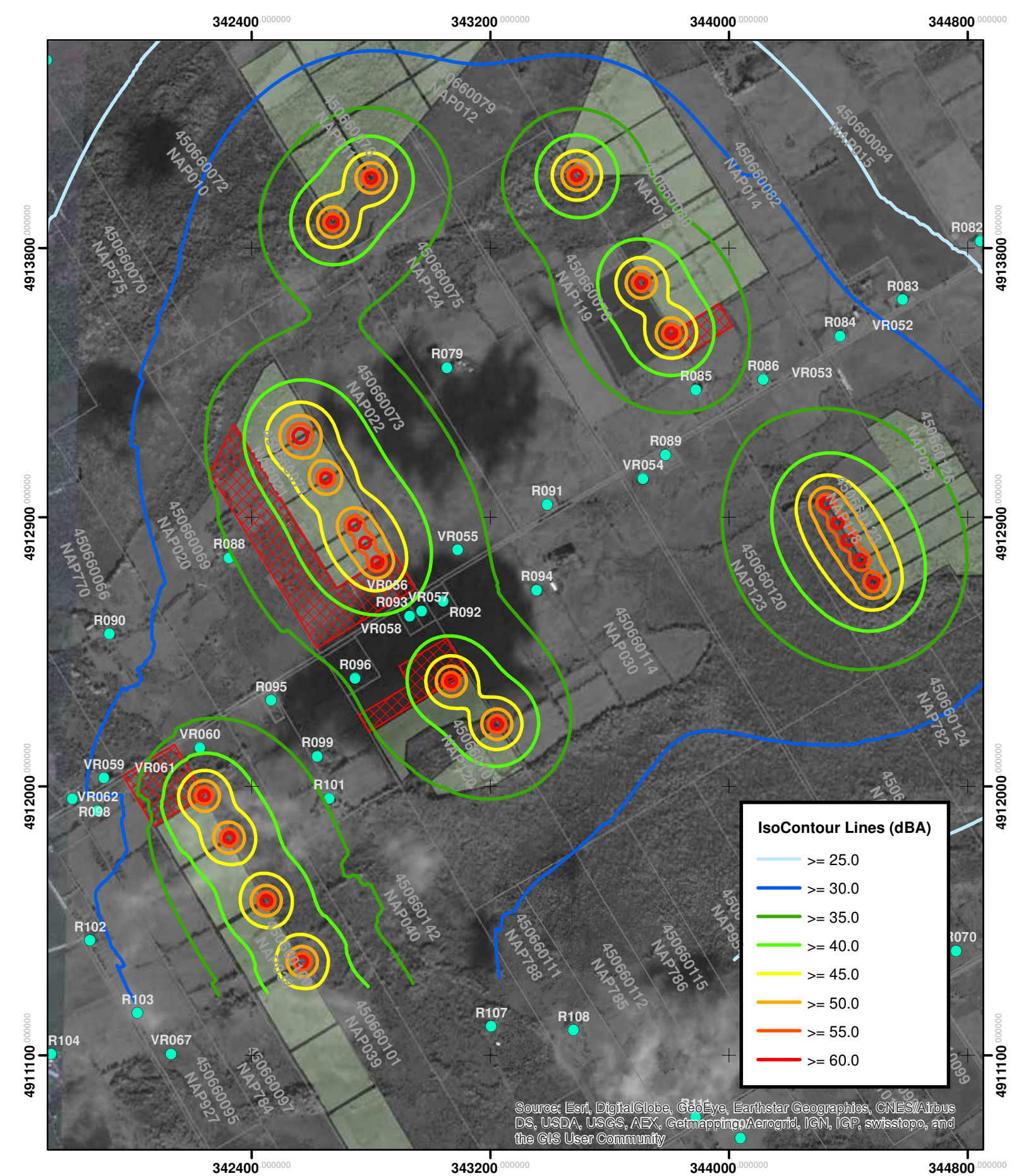
Loyalist Solar Project

BluEarth RENEWABLES INC

0 50100 200 300 400 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- No Noise Source Zone
- Parcel
- Polygon Boundary

Figure C.04

Zone 4 Noise Contour

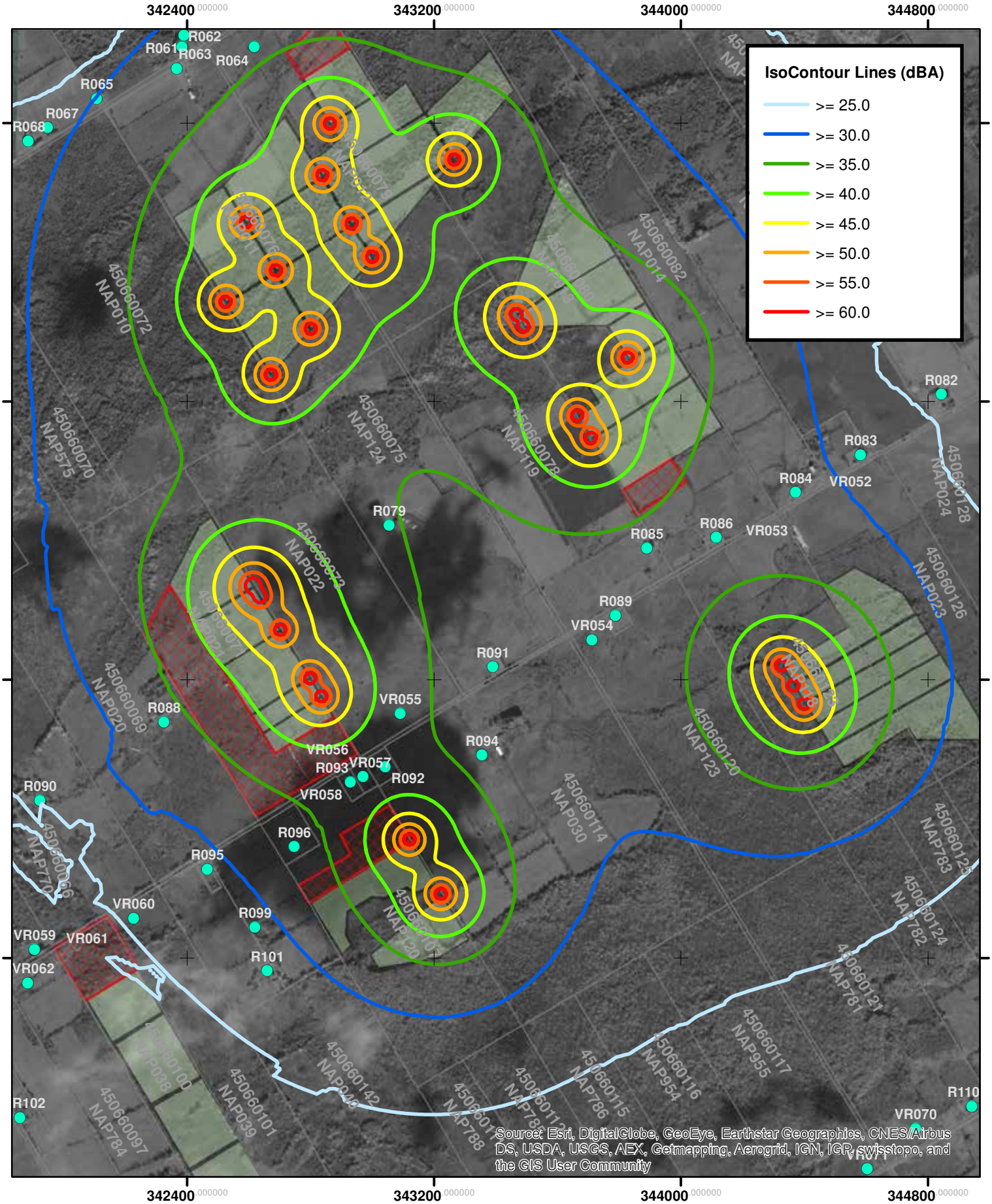
Loyalist Solar Project

BluEarth RENEWABLES INC

0 45 90 180 270 360 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.05

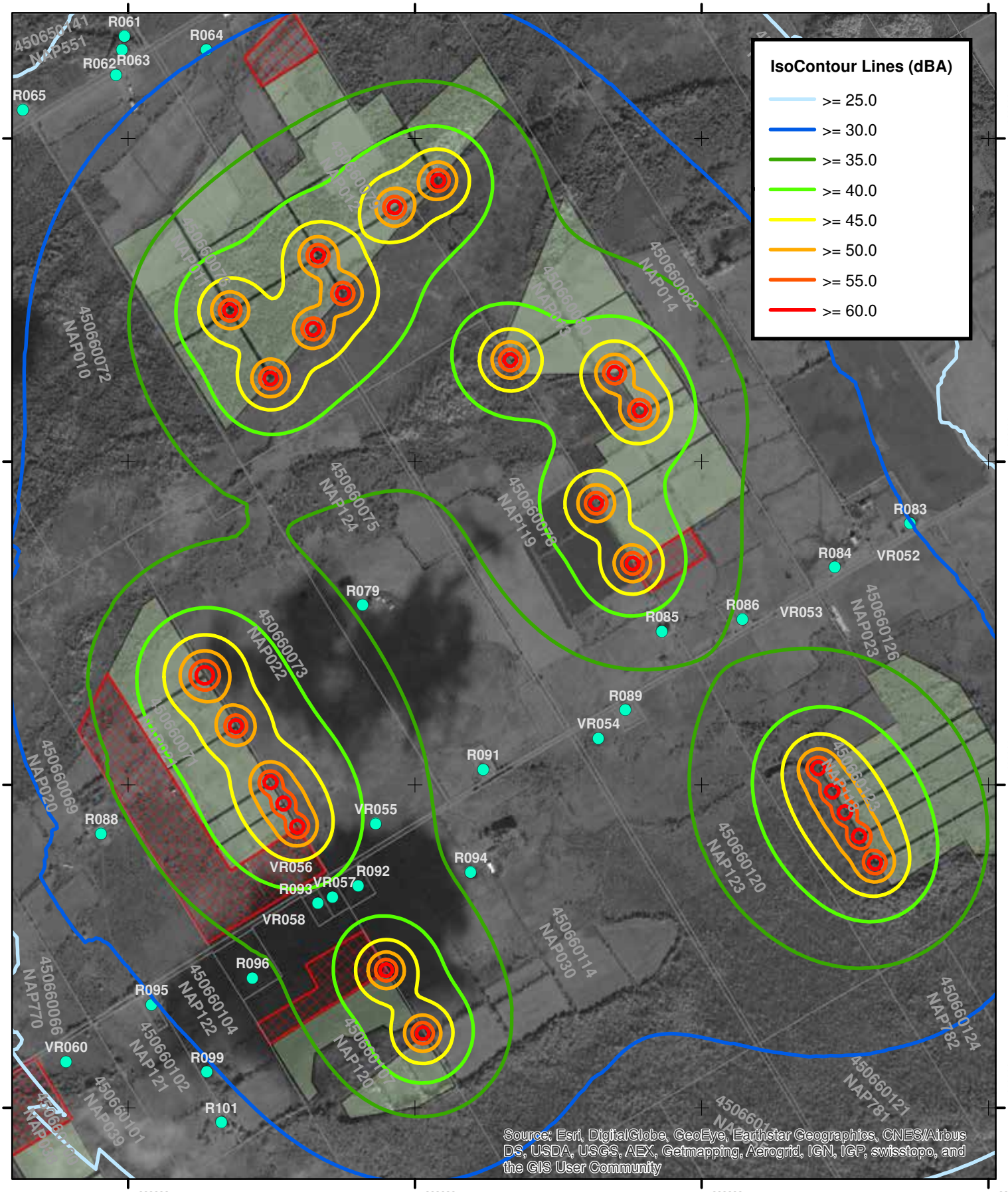
Zone 5 Noise Contour

Loyalist Solar Project

0 45 90 180 270 360 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.06

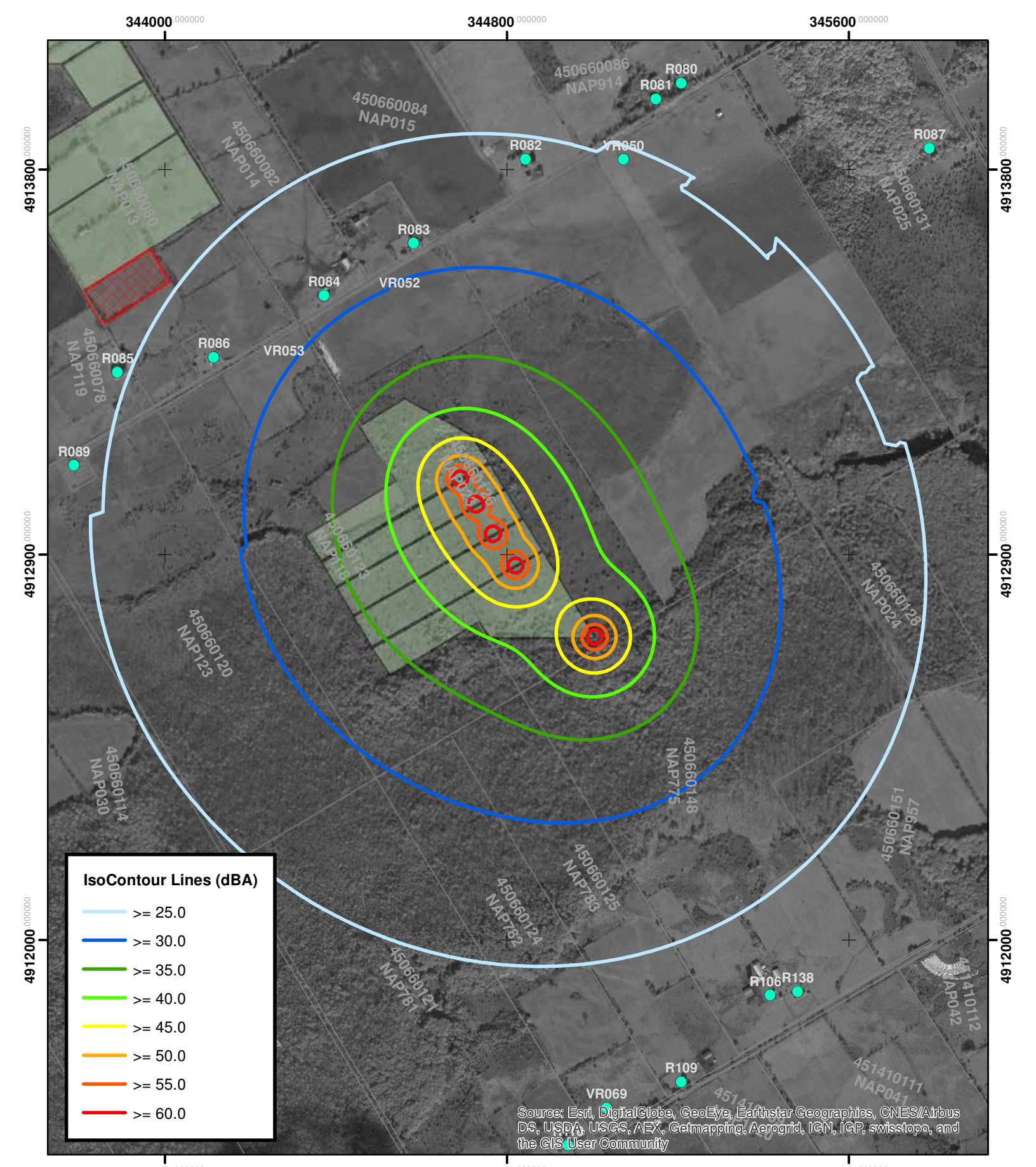
Zone 6 Noise Contour

Loyalist Solar Project

0 40 80 160 240 320 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.07

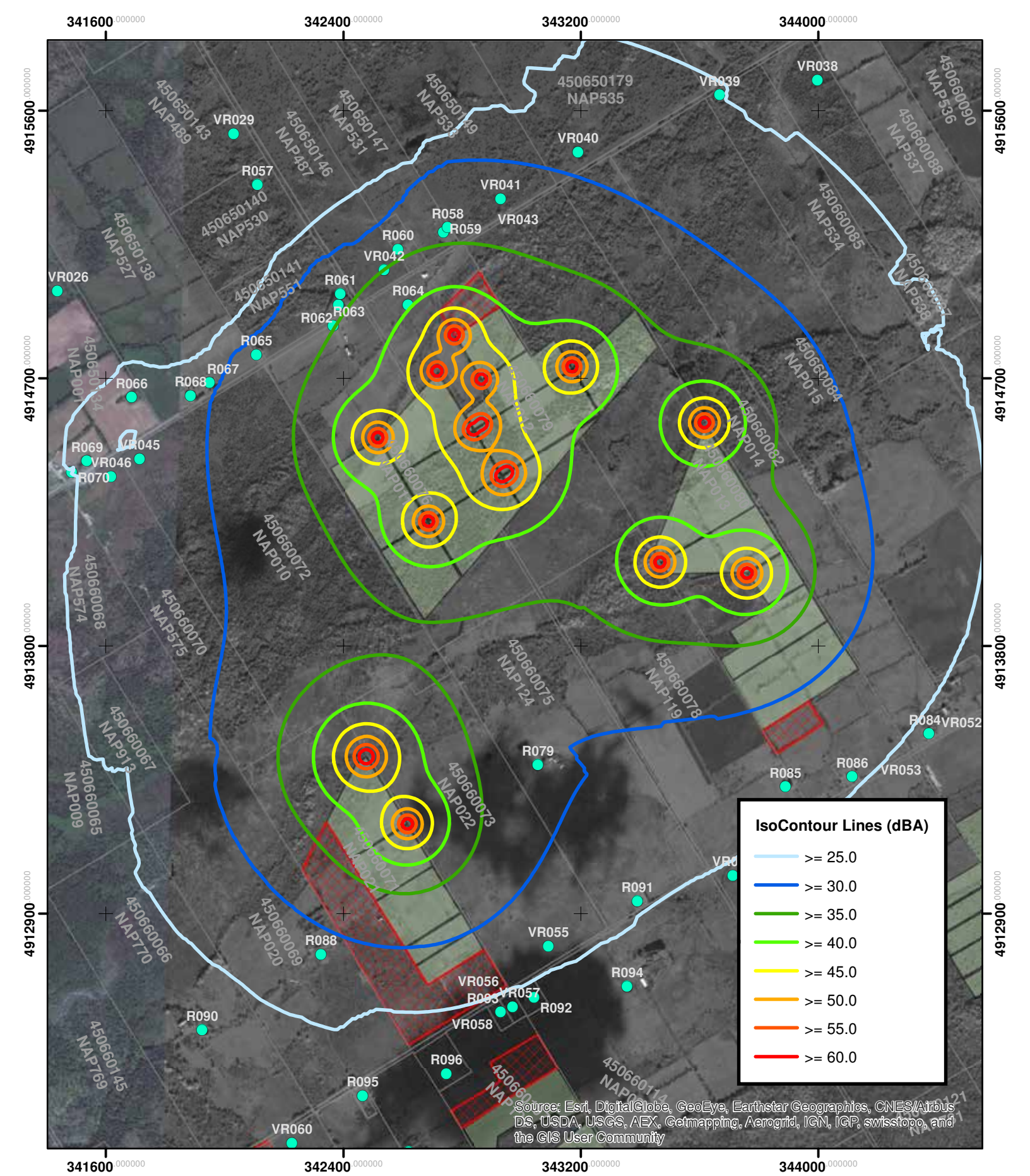
Zone 7 Noise Contour

Loyalist Solar Project

0 25 50 100 150 200 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.08

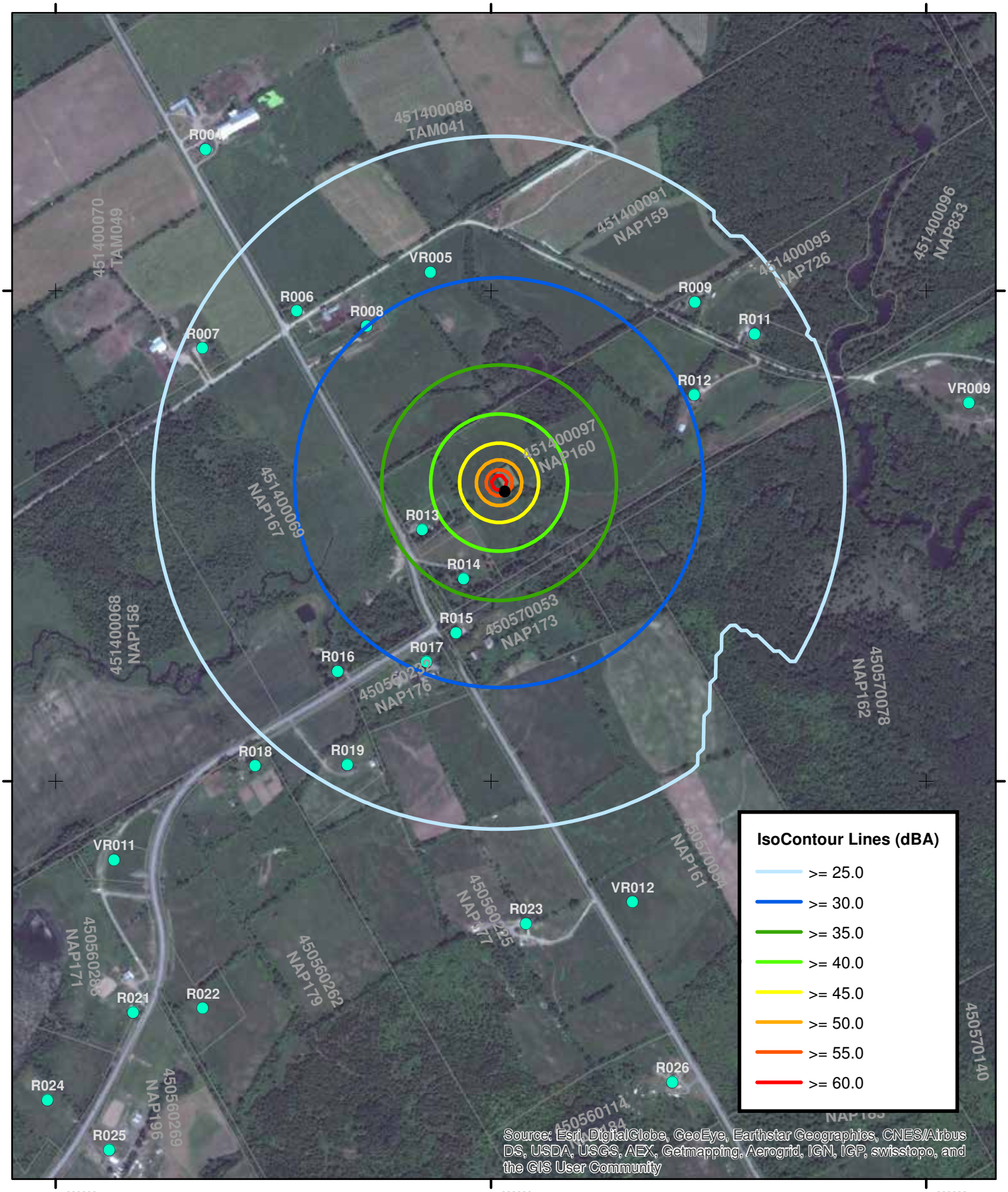
Zone 8 Noise Contour

Loyalist Solar Project

0 45 90 180 270 360 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017



Legend

- Noise Source
- Noise Receptor
- Parcel
- No Noise Source Zone
- Polygon Boundary

Figure C.09

Zone 9 Noise Contour

Loyalist Solar Project

BluEarth RENEWABLES INC

0 25 50 100 150 200 Meters

Coord. System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Created: 20/01/2017

Appendix D
Supporting Documentation

Appendix D.01
Inverter Manufacturer Specifications

White Paper BU-U-019: Sunny Central

Sound Power Measurements on SC 2200 (-US), SC 2500-EV central inverters

Performed by:
SMA Solar Technology AG - Sonnenallee 1 - 34266 Niestetal, Germany - EMC Environment Laboratory (EMV- und Umweltlabor)

Summing up of the Situation

Measurements were taken for one central inverter each of the models SC 2200, SC 2200-US and SC 2500-EV. The sound power measurements were performed in accordance with the DIN EN ISO 9614-2:12/1996 standard, "Determination of sound power levels of noise sources using sound intensity".

The measurements were taken under nominal operating conditions for the inverters, with all inverter fans operating at maximum speed.

Inspection Reference According to EN ISO 3744:2011-02

EN ISO 3744 is used as the basis for determining the noise emissions of the unit under test according to EN ISO 12001:05-2007.
As part of the acoustics, it includes the determination of the sound level of noise sources using the enveloping surface method of accuracy class 2 for essentially free field conditions over a reflective plane. Measurements must be carried out in compliance with IEC 551 and DIN EN 45645-1 according to DIN EN ISO 3744. To position the measurement instruments, the enclosure of the unit under test is considered a main radiation area.

Inspection Reference According to EN ISO 9614-2:2010-11

The sound level is determined according to DIN EN ISO 9614-2 "Determination of sound power levels of noise sources using sound intensity", Part 2: "Measurement by scanning".
This measurement procedure keeps interference on the measurement result caused by noises from the environment to a minimum.

Type of Test / Thresholds and Requirements:

Type of Test / Thresholds and Requirements:	Sound level measurement according to DIN EN ISO 3744:2011-02 and DIN EN ISO 9614-2:2010-11 of sinusoidal, irregularly shaped, transient signals. Classification of ambient conditions in compliance with the German Noise Control Guidelines (TA Lärm). (according to Section 2)
Result:	**The requirements were fulfilled.**

Result of Measurements

The following rating levels can be determined from the sound power measurements performed:

Inverter type	Sound power level mean value L_{WA}
SC 2200	94
SC 2200-US	94
SC 2500-EV	92

The following tables show the selected distances from the inverter and their corresponding sound pressure levels L_{pA} in dB(A) at nominal AC power.

Distance	SC 2200	SC 2200-US	SC 2500-EV
1 m	79	79	77
10 m	66	66	64
20 m	60	60	58
30 m	56	56	55
40 m	54	54	52
50 m	52	52	50
60 m	50	50	49
70 m	49	49	47
80 m	48	48	46
90 m	47	47	45
100 m	46	46	44

Information:

The detailed test report may be requested from SMA Solar Technology AG if necessary.

SC2200 FUMU 3

Sound Power

6.1.2 Calculating the Sound Power

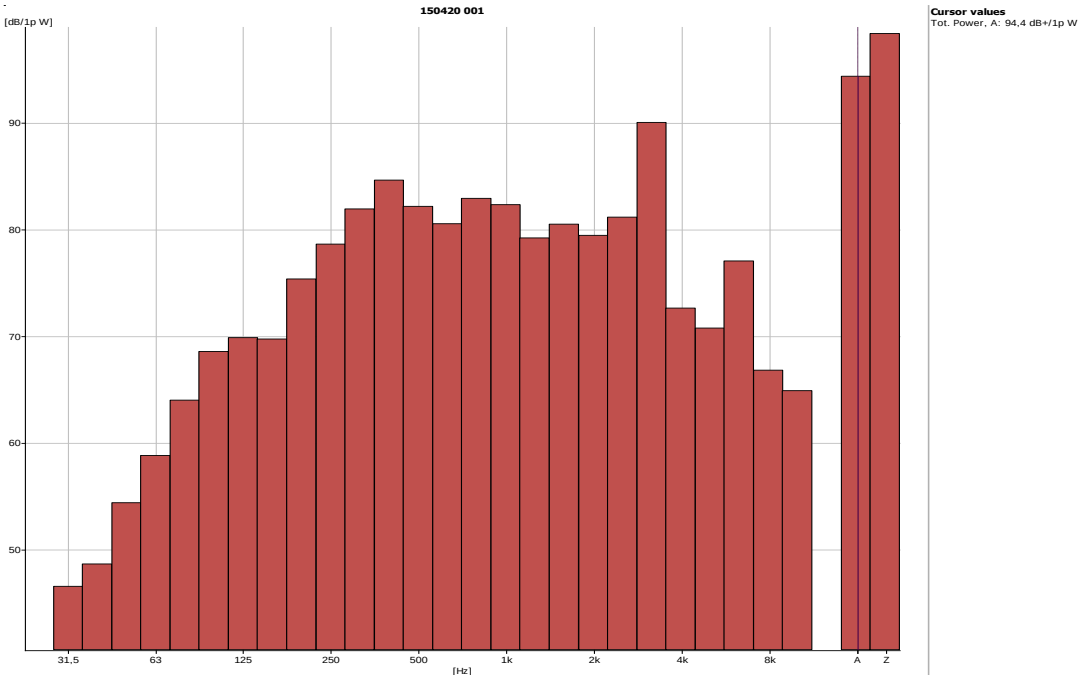
L_{pA} =	average sound pressure level on the measurement surface [dB_A] *	78.86
S =	overall measurement surface [m^2] : 26 partial surfaces x1,1m wide x 1,25m high	35.75
S_0 =	1 [m^2]	

* This specified spatially/temporally averaged sound pressure level was determined using the calculated acoustic power level.

$L_{PA} = L_{WA} - 10\log (S/S_0)$

Acoustic power of L_{WA}= **94,39 $dB_{A/W}$** results for the measurement.

Acoustic Power Levels of the Third Octave Band Frequencies According to EN ISO 9614-2



A-rated sound power = **94.39 $dB_{A/W}$**

Z-rated sound power = 98.39 $dB_{A/W}$

A-rated acoustic power – based on physiologic human hearing

Z-rated acoustic power – technically linear measured value

Overview of the Acoustic Power

Third octave band center frequency [Hz]	Sound power- level L_{wA} [$dB_{A/pW}$] 2200 kW	Sound power- level L_{wz} [$dB_{A/pW}$] 2200 kW
25 Hz	40,56	–
31.5 Hz	46,56	–
40 Hz	48,66	–
50 Hz	54,40	–
63 Hz	58,83	–
80 Hz	64,02	–
100 Hz	68,58	–
125 Hz	69,88	–
160 Hz	69,75	–
200 Hz	75,38	–
250 Hz	78,65	–
315 Hz	81,95	–
400 Hz	84,65	–
500 Hz	82,19	–
630 Hz	80,56	–
800 Hz	82,94	–
1 kHz	82,35	–
1.25 kHz	79,23	–
1.6 kHz	80,52	–
2 kHz	79,47	–
2.5 kHz	81,18	–
3.15 kHz	90,06	–
4 kHz	72,65	–
5 kHz	70,78	–
6.3 kHz	77,07	–
8 kHz	66.83	–
10 kHz	64,91	–
Acoustic power above the surface	A-rated	Z-rated
	94,39	98.39

Appendix D.02
Medium Voltage Transformer Sound Level Estimates

Medium Voltage Transformer Sound Level Estimates

2.2 MVA - Medium Voltage Transformer Sound Power Estimate

Rated Capacity	2.2 MVA
NEMA Sound Pressure Estimate [1]	62 dBA
Assumed Surface Area	17 m^2

	31.5	63	125	250	500	1000	2000	4000	8000	Total (dBA)
Frequency Spectrum Adjustment [2]	-3	3	5	0	0	-6	-11	-16	-23	-
Sound Power Level (dB)	71	77	79	74	74	68	63	58	51	75

[1] Based on NEMA TRI-1993 (R2000), Table 0-2, Immersed Power Transformers
[2] from Beranek, Noise and Vibration Control Engineering, 1992. Table 18.1, Line 28

Appendix D.03
Noise Receptor Identification

Organization:	**BluEarth Renewables Inc.**
Report Name:	**Loyalist Solar Project - Noise Receptor Identification**
Date:	**August 9, 2016**

Legal Company Name:	CanACRE Ltd.
Company Address:	489 Queen Street East, Suite 300
	Toronto, Ontario, M5A 1V1
Contact Name:	Haseeb Amirzada – Manager, Planning and Permitting
Contact Phone Number:	416-548-8602 x 2141
Contact Fax Number:	416-352-0707
Contact Email Address:	hamirzada@canacre.com

TABLE OF CONTENTS

1. INTRODUCTION 3

2. OBJECTIVES OF THE SCOPE OF WORK 3

3. METHODOLOGY 3

3.1. Desktop Analysis 3

3.1.1. Defining the Study Area 3

3.1.2. Identifying lots within the Study Area 3

3.1.3. Noise Receptor Identification 4

3.1.4. Zoning Review 5

3.2. On-site Validation 6

3.2.1. Overview 6

3.2.2. Existing Noise Receptors 6

3.2.3. New Noise Receptor 7

3.2.4. Vacant Lot/Vacant Lot Receptor 7

3.2.5. Deliverables 7

4. RESULTS 8

5. CONCLUSION 8

6. APPENDIX 9

1. INTRODUCTION

CanACRE is pleased to provide BluEarth Renewables Inc. ("BluEarth") with this report explaining our methodology and findings related to the identification of noise receptors within 1km of the signed properties in the Loyalist Solar Project (the "Study Area").

2. OBJECTIVES OF THE SCOPE OF WORK

CanACRE's scope of work required an analysis of the Study Area to determine all existing noise receptors, as defined by *O. Reg. 359/09: Renewable Energy Approvals,* and potential vacant lot receptors through a desktop and on-site validation process. A review of zoning for all properties within the Study Area was completed. The Ministry of Environment and Climate Change's ("MOECC") building permit and site plan approval request form has been submitted to the Township of Stone Mills and the Town of Greater Napanee; however, we have not received any documents to date. As per BluEarth's direction, this report will provide the results and methodology for receptor identification without including the review of building permits and site plan approvals. A revised report will be delivered upon completion of the building permit and site plan approvals process.

3. METHODOLOGY

The following section provides a detailed overview of the methodology employed to complete the noise receptor identification.

3.1. Desktop Analysis

CanACRE's GIS team started the identification process through a desktop analysis of the Study Area. A combination of sources for Ortho-imagery was used to identify existing noise receptors and potential vacant lot receptors ("VLR"). CanACRE's Planning team reviewed zoning designations and corresponding regulations to ensure the VLRs were consistent with the provisions of the municipality's zoning by-law. Overall, a conservative approach was taken when determining the placement of VLR points. This allowed us to be more inclusive rather than to take a stricter approach and leave out a potential receptor point on vacant lands. This section will detail the GIS and Planning teams' methodology.

3.1.1. Defining the Study Area

CanACRE defined the Study Area as being a 1km buffer from the boundaries of all signed properties within the Loyalist Solar Project. The Study Area was confirmed with BluEarth to be sufficient for the purposes of the forthcoming noise study report.

3.1.2. Identifying lots within the Study Area

CanACRE used the resulting ESRI shapefile for the Study Area to identify all of the lots that intersected the Study Area. We purchased additional Teranet parcel data for any portions of the Study Area where this data was not available. The intersect analysis resulted in the full list of properties to be analyzed for identification of noise receptors. The same list was also provided to the Township of Stone Mills and the Town of Greater Napanee for the purposes of MOECC building permit and site plan approval request form.

3.1.3. Noise Receptor Identification

Our analysis began with the review of each lot in the Study Area to determine whether the lands were vacant or non-vacant. The process was completed primarily through the use of Ortho-imagery and Drone imagery provided by BluEarth. If BluEarth's data did not cover a certain lot, Google Earth Imagery and Google Streetview were used as a secondary source for the desktop analysis.

CanACRE's GIS team determined if a lot was vacant or non-vacant based on the presence of existing structures, such as dwellings, on the property. If a structure was found on the property, it was designated as a non-vacant lot and further analysis of the potential existing noise receptors was conducted. If no structures were present on the property, it was designated as a vacant lot and further analysis was completed due to its vacancy.

Upon completion of the identification of all non-vacant lots, the existing noise receptors were identified and digitized by placing a point at the centre of the existing structure. CanACRE ensured, based on the desktop analysis, that the identified receptors followed the definition of a noise receptor as defined in regulation *O. Reg. 359/09: Renewable Energy Approvals, Section 1(4)*. Each digitized receptor point was given the following attribute information in the shapefile:

- Receptor Identification number (assigned)
- Client ID and PIN of the property containing the noise receptor
- Type of building (dwelling vs. institutional building)
- Confidence level in identifying the correct noise receptor
- Coordinates (Latitude/Longitude)
- Source (e.g. BluEarth or Google imagery)

These attributes are included in the shapefile delivered along with this report. The attributes were also included in the data and Receptor Identification spreadsheet ("the Spreadsheet") created to assist the field team during the on-site validation process. The resulting feedback from the Field Team would be used to finalize the receptor shapefiles.

CanACRE reviewed the vacant lots based on the size of the lot to digitize the location of potential noise receptors. As per Section A5 of the MOECC document *Environmental Noise Guideline – Stationary and Transportation Sources - Approval and Planning, (Publication NPC-300)*, the following criteria was used to identify the location of the VLR:

- For vacant lots greater than 1 hectare in area:
    - Identify and digitize a 1-hectare area (100m x 100m square) on the vacant lot for noise assessment purposes. The 1-hectare area should be consistent with:
        - the existing zoning by-law;
        - the typical building pattern in the area; and
        - an appropriate or likely future use on the vacant lot
    - The point for the VLR was digitized based on the centre of the 1-hectare area.
- For vacant lots less than 1 hectare in area:
    - The potential noise receptor point is plotted in the centre of the lot.

A number of vacant lots were found to be inaccessible based on the desktop analysis and on-site validation. No further analysis was conducted on these lots. In the Full Report tab of the Spreadsheet included with this report indicates which PINs were identified as INACCESSIBLE, either through the GIS or On-site Validation processes.

CanACRE followed the definition of an inaccessible vacant lot as per regulation *O. Reg. 359/09:*

> "inaccessible vacant lot" means a vacant lot,
> (a) on private land that cannot be accessed, or in respect of which the owner of the land does not have a legal right to access in the future, through the use of a road by a motor vehicle, as defined in the Highway Traffic Act, or
>
> (b) on private land that cannot be accessed through the use of a navigable waterway by a watercraft;

The GIS team's desktop review resulted in the following shapefiles being produced:

- Study Area Polygon
- VLR Lots Polygon
- VLR Points
- Existing Noise Receptor Points
- Parcel Data Polygon

3.1.4. Zoning Review

CanACRE's Planning team was tasked to review the Township of Stone Mill's and the Town of Greater Napanee's zoning by-laws: 2014-744 and 02-22, respectively. CanACRE geo-referenced the zoning schedules from each zoning by-law and reviewed all VLR point locations to determine the following:

- The zoning designation(s) for the property containing the VLR.
- That the zoning permits:
    - A residential use (i.e. dwelling)
    - An institutional use
    - Either of the above uses and the VLR point is compliant with zone provisions for that use (minimum lot area, frontage, yard setbacks, etc.) or any special setbacks (e.g. from waterbodies or sensitive features)

If it was determined that the VLR point identified by GIS has not or cannot meet the zoning provisions, the location was revised or the vacant lot no longer had a Receptor ID assigned. All of the notes related to the Planning team's zoning review are included in the Full Report tab of the Spreadsheet.

Inaccessible lots and existing noise receptor lots were not reviewed for zoning.

3.2. On-site Validation

Following the Desktop Analysis, CanACRE's Field Team went on-site to the Loyalist Solar Project Study Area to validate our findings. This section provides the methodology used for the On-site Validation process.

3.2.1. Overview

The On-site Validation was a field activity required to verify existing, new, and vacant lot noise receptors within the Study Area, as identified in the initial desktop analysis. To complete the field verification, a Trimble GPS unit ("GPS), Range Finder, and project mapping was used.

The preparation for this exercise required the transfer of the following shapefile products created during the GIS team's desktop analysis into the GPS: Study Area, VLR Lots, VLR Receptors, Existing Noise Receptors, and Parcel Data. Then, the most efficient and accessible routes were determined to perform this exercise using a combination of mapping created by the GIS team and Google Earth.

Using the information on the GPS, the Field Agent travelled and stopped at each Existing Noise Receptor and Vacant Lot Receptor point to verify the point. In certain cases, unplanned encounters with landowners and other locals, some of whom owned or had knowledge about other properties in the area, were used to further confirm receptors on vacant lots or to confirm the inaccessibility of lots. Once an existing or new noise receptor was verified, a photo was taken of each. The detailed methodology for each type of validation is described in the proceeding sections.

3.2.2. Existing Noise Receptors

Using the Parcel Data and Existing Noise Receptor points on the GPS, the Field Agent travelled to and parked near each point. The Existing Noise Receptor was validated and records related to the type of building, number of buildings (considered to be a noise receptor), the number of stories, and any other relevant notes were created. A photo was taken of each Existing Noise Receptor from the public road and named using the convention, "[Client ID] _ [Receptor ID]".

The following should be noted:

- Some of the Existing Noise Receptors that were identified during the Desktop Analysis were found to be farther into the lot and had long, winding private access coming off the public road. As such, only the roof of the noise receptor could be seen, if at all. Cases where the receptor could not be validated have been noted as 'UNABLE TO CONFIRM' under the "VACANT (FIELD VERIFICATION)" column and 'NOT CONFIRMED' under the "TYPE OF BUILDING" column in the Full Report tab of the Spreadsheet.
- Where the lot was inaccessible or the receptor was screened by vegetation, mailboxes and address posts along the public road were indicative of an existing noise receptor and were noted in the Spreadsheet, accordingly.

3.2.3. New Noise Receptor

There were a few instances where a new, but existing, noise receptor was identified during the On-site Validation. The receptor was either on a lot with an Existing Noise Receptor and was not identified during the Desktop Analysis. In such cases, a new record was added in the Spreadsheet and the "SOURCE" column in the Full Report tab would indicate "Field". A photo was taken of each New Noise Receptor from the public road and named as "[Client ID] _ [Receptor ID]".

The following should be noted:

- Additional mailboxes and/or address posts visible at the same entrance off the public road were indicative of additional noise receptors on a lot.
- An encounter with the landowner of NAP752 has been noted in the Spreadsheet. We were advised that NAP418 and NAP456 have a Hunting Camp(s). This could not be confirmed on-site due to the lack of signage and the gated entrances.

3.2.4. Vacant Lot/Vacant Lot Receptor

CanACRE's Field Agent used the Parcel Data and VLR points on the GPS to travel to each point. The vacancy of each property was verified by observing the lot along the length of its frontage onto the public road.

The following should be noted:

- Due to the long depths of many Vacant Lots that were identified during the Desktop Analysis, together with the vegetation cover, the lots were determined to be Vacant based on how far into the lot the Field Agent could observe on-site.
- Some Vacant Lots/VLRs that were identified during the Desktop Analysis were not accessible via a public road or a suitable path. These are noted as 'UNABLE TO CONFIRM' under the "VACANT (FIELD VERIFICATION)" column in the Full Report tab of the Spreadsheet.

3.2.5. Deliverables

The On-site Validation process resulted in the following:

- The Spreadsheet, with the FIELD VERIFICATION attributes recorded in the Full Report tab:
  - Vacant (Field Verification)
  - Image File
  - Type of Building (Dwelling, Educational, Child Care Centre, Heath Care Facility, Community Centre, Place of Worship)
  - Number of Buildings
  - Number of Stories
  - Field Notes

- Photos of all validated Existing Noise Receptors and new Noise Receptors

4. RESULTS

The Receptor Identification process resulted in 212 points being identified within the Study Area. 138 points are Existing Noise Receptors and 74 are potential VLRs. Please refer to the Appendix for the full list of identified receptors. The Full Report tab of the Spreadsheet lists all of the properties within the Study Area along with relevant notes from GIS, Planning, and the Field team in their corresponding sections within the table. Only those records with a Receptor ID in the Spreadsheet should be considered for the noise study report. The Receptor IDs relate to the VR_ID and ER_ID fields in the VLR and Existing Noise Receptor Point shapefiles, respectively. The following items are included as part of the deliverables package for this report:

- GIS Data Package:
    - Study Area Polygon
    - VLR Lots Polygon
    - VLR Point
    - Existing Noise Receptor Point
    - Parcel Data Polygon
- Receptor Identification Spreadsheet – this spreadsheet contains two tabs: (1) Summary – providing a summary of the full report on tab 2 and only lists the records that have a Receptor ID; (2) Full Report – listing all of the properties within the Study Area and includes additional details resulting from the Desktop and On-Site analyses.
- On-site Validation Photos of Existing Noise Receptors

5. CONCLUSION

CanACRE has completed the Receptor Identification exercise for the Loyalist Solar Project based on the parameters agreed upon by BluEarth. The final aspect of our Scope of Work relates to the delivery of any building permits or site plan approvals that have been issued in the recent past by the Township of Stone Mills or Town of Greater Napanee. CanACRE will provide an updated report and set of deliverables upon review of the permits and/or approvals received from the municipalities.

6. APPENDIX

The following table lists all of the receptors that have been identified for the purposes of this report.

Legend:

Existing Receptors
Trailer

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
TAM048	451400067	**VR001**	YES	YES	44.461802	-77.01119	STONE MILLS
TAM053	451400066	**VR002**	YES	YES	44.457091	-77.026333	STONE MILLS
NAP824	450540073	**VR003**	YES	UNABLE TO CONFIRM	44.465363	-76.992886	STONE MILLS
NAP826	450540059	**VR004**	YES	YES	44.464748	-76.98358	STONE MILLS
NAP159	451400091	**VR005**	YES	YES	44.45746	-77.002502	STONE MILLS
NAP833	451400096	**VR006**	YES	UNABLE TO CONFIRM	44.458327	-76.988936	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP834	450570141	**VR008**	YES	YES	44.456542	-76.984628	STONE MILLS
NAP162	450570078	**VR009**	YES	YES	44.455525	-76.989997	STONE MILLS
NAP1085	450560238	**VR011**	YES	YES	44.447629	-77.00948	STONE MILLS
NAP161	450570054	**VR012**	YES	YES	44.447149	-76.997483	STONE MILLS
NAP856	450570135	**VR013**	YES	YES	44.451304	-76.979337	STONE MILLS
NAP855	450570091	**VR014**	YES	YES	44.450318	-76.978685	STONE MILLS
NAP183	450570055	**VR016**	YES	YES	44.442126	-76.993151	STONE MILLS
NAP197	450560112	**VR017**	YES	UNABLE TO CONFIRM	44.432438	-76.996483	STONE MILLS
NAP198	450560109	**VR018**	YES	UNABLE TO CONFIRM	44.431674	-76.997450	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP414	450650119	**VR019**	YES	UNABLE TO CONFIRM	44.407893	-76.976747	STONE MILLS
NAP419	450640091	**VR020**	YES	UNABLE TO CONFIRM	44.403171	-76.956313	STONE MILLS
NAP415	450650115	**VR021**	YES	UNABLE TO CONFIRM	44.397316	-76.971603	STONE MILLS
NAP456	450640065	**VR022**	YES	UNABLE TO CONFIRM	44.400575	-76.959169	STONE MILLS
NAP455	450650153	**VR023**	YES	UNABLE TO CONFIRM	44.395412	-76.973001	STONE MILLS
NAP490	450650150	**VR024**	YES	YES	44.392178	-76.980026	STONE MILLS
NAP452	450650106	**VR025**	YES	YES	44.390448	-76.986279	STONE MILLS
NAP001a	450650197	**VR026**	YES	YES*	44.370889	-76.990165	STONE MILLS
NAP501	450670159	**VR028**	YES	UNABLE TO CONFIRM	44.390472	-76.932202	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP489	450650143	**VR029**	YES	YES	44.375776	-76.982881	STONE MILLS
NAP493	450640064	**VR030**	YES	YES	44.3847	-76.94799	STONE MILLS
NAP499	450670062	**VR031**	YES	YES	44.385993	-76.942367	STONE MILLS
NAP541	450670057	**VR032**	YES	YES	44.384939	-76.944758	STONE MILLS
NAP492	450650152	**VR033**	YES	YES	44.382086	-76.95388	STONE MILLS
NAP491	450650151	**VR034**	YES	YES	44.380302	-76.957773	STONE MILLS
NAP536	450660090	**VR035**	YES	YES	44.381227	-76.953139	STONE MILLS
NAP500	450670224	**VR036**	YES	YES	44.386058	-76.934191	STONE MILLS
NAP537	450660088	**VR037**	YES	YES	44.379289	-76.956700	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP538	450660087	**VR038**	YES	YES	44.377831	-76.958263	STONE MILLS
NAP534	450660085	**VR039**	YES	YES	44.377310	-76.962381	STONE MILLS
NAP535	450650179	**VR040**	YES	YES	44.375476	-76.968303	STONE MILLS
NAP533	450650149	**VR041**	YES	YES	44.373999	-76.971527	STONE MILLS
NAP487	450650146	**VR042**	YES	YES	44.37177	-76.976386	STONE MILLS
NAP013	450660080	**VR043**	YES	YES	44.373149	-76.970765	STONE MILLS
NAP010	450660072	**VR045**	YES	YES	44.365875	-76.986523	STONE MILLS
NAP575	450660070	**VR046**	YES	YES	44.36532	-76.987715	STONE MILLS
NAP009	450660065	**VR047**	YES	YES	44.362011	-76.994868	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP540	450670055	**VR049**	YES	YES	44.367801	-76.935824	STONE MILLS
NAP024	450660128	**VR050**	YES	YES	44.36114	-76.944206	STONE MILLS
NAP023	450660126	**VR052**	YES	YES	44.358264	-76.950686	STONE MILLS
NAP118	450660123	**VR053**	YES	YES	44.356778	-76.954031	STONE MILLS
NAP123	450660120	**VR054**	YES	YES	44.353705	-76.961037	STONE MILLS
NAP022	450660073	**VR055**	YES	YES	44.351431	-76.968752	STONE MILLS
NAP021	450660071	**VR056**	YES	YES	44.350081	-76.971673	STONE MILLS
NAP773	450660109	**VR057**	YES	YES	44.349565	-76.970201	STONE MILLS
NAP120	450660107	**VR058**	YES	YES	44.348774	-76.971883	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP769	450660145	**VR059**	YES	YES	44.344305	-76.983388	STONE MILLS
NAP039	450660101	**VR060**	YES	YES	44.345284	-76.979388	STONE MILLS
NAP038	450660100	**VR061**	YES	YES	44.344423	-76.981251	STONE MILLS
NAP784	450660097	**VR062**	YES	YES	44.343324	-76.983626	STONE MILLS
NAP587	450790087	**VR063**	YES	YES	44.337458	-76.993605	GREATER NAPANEE
NAP1105	450790081	**VR064**	YES	YES	44.338119	-76.99113	GREATER NAPANEE
NAP1104	450790076	**VR065**	YES	YES	44.338708	-76.988922	GREATER NAPANEE
NAP777	450790074	**VR066**	YES	YES	44.339487	-76.985994	GREATER NAPANEE
NAP927	450660095	**VR067**	YES	YES	44.336047	-76.98029	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP957	450660151	**VR068**	YES	YES	44.347783	-76.929148	STONE MILLS
NAP782	450660124	**VR069**	YES	YES	44.341199	-76.944043	STONE MILLS
NAP781	450660121	**VR070**	YES	YES	44.339716	-76.94741	STONE MILLS
NAP955	450660117	**VR071**	YES	YES	44.338510	-76.949340	STONE MILLS
NAP049	451410088	**VR074**	YES	YES	44.333937	-76.956282	STONE MILLS
NAP1013	451410087	**VR075**	YES	YES	44.33315	-76.959378	STONE MILLS
NAP1011	451410178	**VR078**	YES	YES	44.331938	-76.961998	STONE MILLS
NAP789	450660138	**VR079**	YES	YES	44.329324	-76.970646	STONE MILLS
NAP1009	451410177	**VR080**	YES	YES	44.331031	-76.964067	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP790	451410070	**VR081**	YES	YES	44.329544	-76.9674	STONE MILLS
NAP991	451410053	**VR083**	YES	YES	44.324051	-76.968936	STONE MILLS
NAP1045	451410056	**VR084**	YES	YES	44.323911	-76.966975	STONE MILLS
NAP993	451410054	**VR085**	YES	YES	44.322867	-76.968714	STONE MILLS
NAP1005	451410074	**VR086**	YES	YES	44.324716	-76.963998	STONE MILLS
TAM040	451400100	**ER001**	NO	NO	44.463447	-77.01109	STONE MILLS
NAP827	450540072	**ER002**	NO	UNABLE TO CONFIRM	44.468144	-76.986942	STONE MILLS
NAP1107	451400099	**ER003**	NO	NO	44.462039	-77.009641	STONE MILLS
TAM041	451400088	**ER004**	NO	NO	44.459399	-77.00777	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP837	450540053	**ER005**	NO	NO	44.463639	-76.982815	STONE MILLS
NAP821	451400089	**ER006**	NO	NO	44.456769	-77.005569	STONE MILLS
TAM049	451400070	**ER007**	NO	NO	44.456114	-77.007726	STONE MILLS
NAP822	451400090	**ER008**	NO	NO	44.456548	-77.003948	STONE MILLS
NAP726	451400095	**ER009**	NO	NO	44.457075	-76.996385	STONE MILLS
NAP158	451400068	**ER010**	NO	NO	44.452753	-77.013992	STONE MILLS
NAP168	451400094	**ER011**	NO	NO	44.456575	-76.994983	STONE MILLS
NAP160	451400097	**ER012**	NO	NO	44.455546	-76.996345	STONE MILLS
NAP728	451400092	**ER013**	NO	NO	44.453209	-77.00255	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP164	451400093	**ER014**	NO	NO	44.452411	-77.001567	STONE MILLS
NAP173	450570053	**ER015**	NO	NO	44.451517	-77.001712	STONE MILLS
NAP167	451400069	**ER016**	NO	NO	44.450833	-77.00442	STONE MILLS
NAP176	450560232	**ER017**	NO	NO	44.451026	-77.002377	STONE MILLS
NAP179	450560262	**ER018**	NO	NO	44.44924	-77.006277	STONE MILLS
NAP178	450560236	**ER019**	NO	NO	44.449294	-77.00414	STONE MILLS
NAP857	450570096	**ER020**	NO	NO	44.454965	-76.979869	STONE MILLS
NAP171	450560288	**ER021**	NO	NO	44.445124	-77.008949	STONE MILLS
NAP182	450560263	**ER022**	NO	NO	44.445221	-77.007347	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP177	450560225	**ER023**	NO	NO	44.446743	-76.999932	STONE MILLS
NAP172	450560212	**ER024**	NO	NO	44.443636	-77.010881	STONE MILLS
NAP196	450560269	**ER025**	NO	NO	44.442844	-77.009426	STONE MILLS
NAP184	450560114	**ER026**	NO	NO	44.44419	-76.996465	STONE MILLS
NAP204	450560116	**ER027**	NO	UNABLE TO CONFIRM	44.441471	-76.996599	STONE MILLS
NAP200	450570056	**ER028**	NO	NO	44.4412	-76.992231	STONE MILLS
NAP1089	450570079	**ER029**	NO	UNABLE TO CONFIRM	44.443764	-76.980245	STONE MILLS
NAP1089	450570079	**ER030**	NO	UNABLE TO CONFIRM	44.442778	-76.979058	STONE MILLS
NAP202	450560221	**ER031**	NO	NO	44.43926	-76.993257	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP203	450560220	**ER032**	NO	NO	44.43867	-76.99224	STONE MILLS
NAP1090	450570090	**ER033**	NO	NO	44.442377	-76.972923	STONE MILLS
NAP207	450570138	**ER034**	NO	UNABLE TO CONFIRM	44.439245	-76.985032	STONE MILLS
NAP206	450570076	**ER035**	NO	NO	44.439269	-76.98091	STONE MILLS
NAP1091	450570140	**ER036**	NO	NO	44.438511	-76.983132	STONE MILLS
NAP201	450570057	**ER037**	NO	NO	44.437468	-76.986629	STONE MILLS
NAP417	450640060	**ER038**	NO	UNABLE TO CONFIRM	44.408193	-76.975315	STONE MILLS
NAP418	450640229	**ER039**	NO*	UNABLE TO CONFIRM	44.407002	-76.956448	STONE MILLS
NAP457	450640092	**ER040**	NO	NO	44.397871	-76.944042	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP461	450640245	**ER041**	NO	NO	44.392738	-76.935488	STONE MILLS
NAP422	450640246	**ER042**	NO	NO	44.392097	-76.935945	STONE MILLS
NAP457	450640092	**ER043**	NO	NO	44.391393	-76.938103	STONE MILLS
NAP459	450670160	**ER044**	NO	NO	44.389745	-76.935866	STONE MILLS
NAP741	450640089	**ER045**	NO	NO	44.387853	-76.940533	STONE MILLS
NAP458	450640090	**ER046**	NO	NO	44.38766	-76.940945	STONE MILLS
NAP753	450640088	**ER047**	NO	NO	44.387184	-76.94203	STONE MILLS
NAP755	450670065	**ER048**	NO	NO	44.38751	-76.939465	STONE MILLS
NAP754	450670063	**ER049**	NO	NO	44.387368	-76.940028	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP752	450640087	**ER050**	NO	NO	44.386339	-76.944354	STONE MILLS
NAP742	450670066	**ER051**	NO	NO	44.387642	-76.938722	STONE MILLS
NAP751	450640086	**ER052**	NO	NO	44.385379	-76.946131	STONE MILLS
NAP495	450640062	**ER053**	NO	NO	44.382844	-76.951882	STONE MILLS
NAP498	450670064	**ER054**	NO	NO	44.386403	-76.936415	STONE MILLS
NAP494	450670052	**ER055**	NO	NO	44.383486	-76.948296	STONE MILLS
NAP496	450670051	**ER056**	NO	NO	44.382783	-76.948824	STONE MILLS
NAP530	450650140	**ER057**	NO	NO	44.374251	-76.981831	STONE MILLS
NAP531	450650147	**ER058**	NO	NO	44.373103	-76.973738	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP531	450650147	**ER059**	NO	NO	44.372947	-76.973912	STONE MILLS
NAP532	450650148	**ER060**	NO	NO	44.372403	-76.975818	STONE MILLS
NAP551	450650141	**ER061**	NO	NO	44.371016	-76.978206	STONE MILLS
NAP551	450650141	**ER062**	NO	NO	44.37068	-76.978278	STONE MILLS
NAP011	450660076	**ER063**	NO	NO	44.37004	-76.978475	STONE MILLS
NAP012	450660079	**ER064**	NO	NO	44.370729	-76.975332	STONE MILLS
NAP762	450650142	**ER065**	NO	NO	44.369112	-76.981698	STONE MILLS
NAP550	450650137	**ER066**	NO	NO	44.367733	-76.986933	STONE MILLS
NAP527	450650138	**ER067**	NO	NO	44.36823	-76.983654	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP527	450650138	**ER068**	NO	NO	44.367822	-76.984435	STONE MILLS
NAP1094	450650136	**ER069**	NO	NO	44.365771	-76.988746	STONE MILLS
NAP001b	450650198	**ER070**	NO	NO	44.365414	-76.989376	STONE MILLS
NAP526	450650132	**ER071**	NO	NO	44.364131	-76.993181	STONE MILLS
NAP1093	450650135	**ER072**	NO	NO	44.364335	-76.991684	STONE MILLS
NAP574	450660068	**ER073**	NO	NO	44.363065	-76.990552	STONE MILLS
NAP922	450670155	**ER074**	NO	NO	44.377343	-76.924433	STONE MILLS
NAP569	450660058	**ER075**	NO	UNABLE TO CONFIRM	44.354841	-76.994389	STONE MILLS
NAP915	450660091	**ER076**	NO	NO	44.365682	-76.940343	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP539	450670056	**ER077**	NO	NO	44.365273	-76.937019	STONE MILLS
NAP933	450660092	**ER078**	NO	NO	44.364128	-76.9395	STONE MILLS
NAP124	450660075	**ER079**	NO	NO	44.356902	-76.969386	STONE MILLS
NAP932	450660089	**ER080**	NO	NO	44.362775	-76.94257	STONE MILLS
NAP914	450660086	**ER081**	NO	NO	44.362432	-76.943299	STONE MILLS
NAP015	450660084	**ER082**	NO	NO	44.361098	-76.947082	STONE MILLS
NAP766	450660083	**ER083**	NO	NO	44.359281	-76.950302	STONE MILLS
NAP014	450660082	**ER084**	NO	NO	44.358138	-76.952896	STONE MILLS
NAP119	450660078	**ER085**	NO	NO	44.356422	-76.958903	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP765	450660081	**ER086**	NO	NO	44.356779	-76.956091	STONE MILLS
NAP025	450660131	**ER087**	NO	NO	44.361532	-76.935238	STONE MILLS
NAP020	450660069	**ER088**	NO	NO	44.351019	-76.978354	STONE MILLS
NAP931	450660119	**ER089**	NO	NO	44.354437	-76.960111	STONE MILLS
NAP770	450660066	**ER090**	NO	NO	44.348643	-76.983309	STONE MILLS
NAP930	450660074	**ER091**	NO	NO	44.352854	-76.965038	STONE MILLS
NAP774	450660113	**ER092**	NO	NO	44.349872	-76.969311	STONE MILLS
NAP772	450660108	**ER093**	NO	NO	44.349402	-76.970709	STONE MILLS
NAP030	450660114	**ER094**	NO	NO	44.350276	-76.965392	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP929	450660103	**ER095**	NO	NO	44.346766	-76.97645	STONE MILLS
NAP771	450660110	**ER096**	NO	NO	44.347491	-76.972932	STONE MILLS
NAP778	450660144	**ER097**	NO	NO	44.343374	-76.987087	STONE MILLS
NAP928	450660060	**ER098**	NO	NO	44.343652	-76.984692	STONE MILLS
NAP122	450660104	**ER099**	NO	UNABLE TO CONFIRM	44.345111	-76.974448	STONE MILLS
NAP780	450660093	**ER100**	NO	NO	44.342095	-76.986247	STONE MILLS
NAP121	450660102	**ER101**	NO	UNABLE TO CONFIRM	44.343852	-76.973903	STONE MILLS
NAP925	450660094	**ER102**	NO	NO	44.339404	-76.983811	STONE MILLS
NAP926	450660096	**ER103**	NO	NO	44.337253	-76.981744	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP1097	450780101	**ER104**	NO	NO	44.335952	-76.985338	GREATER NAPANEE
NAP037	450780095	**ER105**	NO	NO	44.334089	-76.986889	GREATER NAPANEE
NAP775	450660148	**ER106**	NO	NO	44.343654	-76.939326	STONE MILLS
NAP040	450660142	**ER107**	NO	UNABLE TO CONFIRM	44.337112	-76.966863	STONE MILLS
NAP788	450660111	**ER108**	NO	UNABLE TO CONFIRM	44.337058	-76.963399	STONE MILLS
NAP783	450660125	**ER109**	NO	NO	44.341787	-76.941873	STONE MILLS
NAP1018	450660122	**ER110**	NO	NO	44.340397	-76.94515	STONE MILLS
NAP785	450660112	**ER111**	NO	NO	44.334522	-76.958185	STONE MILLS
NAP1012	450660141	**ER112**	NO	NO	44.333117	-76.961959	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP1008	450660106	**ER113**	NO	NO	44.331625	-76.965186	STONE MILLS
NAP953	450660099	**ER114**	NO	NO	44.329358	-76.974709	STONE MILLS
NAP995	450660098	**ER115**	NO	NO	44.328445	-76.972406	STONE MILLS
NAP996	451410154	**ER116**	NO	NO	44.327819	-76.971211	STONE MILLS
NAP793	451410152	**ER117**	NO	NO	44.328065	-76.969912	STONE MILLS
NAP998	451410182	**ER118**	NO	NO	44.32758	-76.971945	STONE MILLS
NAP1004	451410072	**ER119**	NO	NO	44.326799	-76.96485	STONE MILLS
NAP1001	451410071	**ER120**	NO	NO	44.326112	-76.965534	STONE MILLS
NAP989	451410052	**ER121**	NO	NO	44.324711	-76.97024	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP1003	451410073	**ER122**	NO	NO	44.325386	-76.964738	STONE MILLS
NAP1096	450780100	**ER123**	NO	NO	44.321737	-76.978741	GREATER NAPANEE
NAP1000	451410058	**ER124**	NO	NO	44.324399	-76.965532	STONE MILLS
NAP997	451410055	**ER125**	NO	NO	44.323332	-76.968159	STONE MILLS
NAP1095	450780098	**ER126**	NO	NO	44.320171	-76.981423	GREATER NAPANEE
NAP1103	450780226	**ER127**	NO	NO	44.321726	-76.972485	GREATER NAPANEE
NAP1101	450780222	**ER128**	NO	NO	44.321383	-76.97363	GREATER NAPANEE
NAP1102	450780223	**ER129**	NO	NO	44.320873	-76.974598	GREATER NAPANEE
NAP1051	451410075	**ER130**	NO	NO	44.322934	-76.962417	STONE MILLS

CLIENT ID	PIN	RECEPTOR ID	VACANT (DESKTOP ANALYSIS)	VACANT (FIELD VERIFICATION)	LATITUDE	LONGITUDE	MUNICIPALITY
NAP1052	451410067	**ER131**	NO	NO	44.3223	-76.961633	STONE MILLS
NAP1054	451410066	**ER132**	NO	NO	44.319134	-76.958959	STONE MILLS
NAP1100	450780210	**ER133**	NO	NO	44.306421	-76.957533	GREATER NAPANEE
NAP057	450780225	**ER134**	NO	NO	44.305115	-76.963064	GREATER NAPANEE
NAP1090	450570090	**ER135**	NO	NO	44.442337	-76.973451	STONE MILLS
NAP417	450640060	**ER136**	NO	NO	44.408309	-76.974274	STONE MILLS
NAP458	450640090	**ER137**	NO	NO	44.388015	-76.941584	STONE MILLS
NAP775	450660148	**ER138**	NO	NO	44.343745	-76.938518	STONE MILLS

Appendix D.04
Proposed Amendments to the Technical Guide for Renewable Energy Approvals

Summary of Proposed Changes to the Technical Guide to Renewable Energy Approvals

Purpose

The Ministry of the Environment and Climate Change (MOECC) is proposing a number of revisions and updates to the Ministry's Technical Guide for Renewable Energy Approvals (Technical Guide) to provide additional guidance in support of the proposed amendments which came into effect on May 1, 2016 (EBR Proposal Notice 012-4493). This document outlines the changes proposed for the Guide.

Background

The purpose of the Technical Guide is to provide an explanation of the requirements to complete an application for a Renewable Energy Approval (REA) in accordance with O. Reg. 359/09 under the EPA.

Chapter 1: Overview of the Renewable Energy Approval (REA) application process and the requirements for submitting a complete application

Current Guidance	Proposed Revisions	Rationale
1.1 A Note about Regulatory Amendments and Transition Provisions It should be noted that certain provisions of O. Reg. 359/09 have been amended as of January 1, 2011, July 1, 2012, and November 2, 2012. For clarity, this technical guide reflects the current regulation as amended. However, for applicants that have issued notices with respect to an REA prior to January 1, 2011 or July 1, 2012, transition provisions apply that may allow for applicants to submit applications that comply with certain requirements that existed prior to the amendments coming into force. Applicants should identify which version of the regulation	**1.1 A Note about Regulatory Amendments and Transition Provisions** It should be noted that certain provisions of O. Reg. 359/09 have been amended as of January 1, 2011, July 1, 2012, ~~and~~ November 2, 2012, and May 1, 2016. For clarity, this technical guide reflects the current regulation as amended. However, for applicants that have issued notices with respect to an REA prior to January 1, 2011 ~~or~~ July 1, 2012, or May 1, 2016, transition provisions apply that may allow for applicants to submit applications that comply with certain requirements that existed prior to the amendments coming into force. Where applicants	• To align with regulatory amendments which came into effect on May 1, 2016. • To clarify the transition rules which take into account projects that are already significantly

Current Guidance	Proposed Revisions	Rationale
they are following in their draft reports and REA application submission. Transition provisions in the July 1, 2012 amended regulation allow proponents who have issued a notice of proposal to engage, or where not applicable, a notice of first public meeting, prior to January 1, 2011 to continue under the 2009/2010 pre-submission rules and retain the ability to elect into the 2011 rules. Alternatively they may elect to follow the new (2012) pre-submission rules. Those proponents who have issued a notice of proposal to engage or where not applicable notice of first public meeting between January 1, 2011 and July 1, 2012, they can continue under the 2011 pre-submission rules or elect to follow the new (2012) pre-submission rules. A proponent who has not issued a notice of proposal to engage, or where not applicable notice of first public meeting, before July 1, 2012 is required to follow the new (2012) pre-submission rules. Two exceptions exist with regard to the above transitions provisions: (1) amendments dealing with the participating receptors apply to proponents who have not issued a notice of *final* public meeting, or if a notice is not required, to proponents whose application has not been submitted before July 1, 2012; and (2) amendments related to the project change process are not subject to transition provisions	decide to use a previous version of the regulation, applicants must identify which version of the regulation they are following in their draft reports and REA application submission. ~~Transition provisions in the July 1, 2012 amended regulation allow proponents who have issued a notice of proposal to engage, or where not applicable, a notice of first public meeting, prior to January 1, 2011 to continue under the 2009/2010 pre-submission rules and retain the ability to elect into the 2011 rules. Alternatively they may elect to follow the new (2012) pre-submission rules.~~ ~~Those proponents who have issued a notice of proposal to engage or where not applicable notice of first public meeting between January 1, 2011 and July 1, 2012, they can continue under the 2011 pre-submission rules or elect to follow the new (2012) pre-submission rules.~~ ~~A proponent who has not issued a notice of proposal to engage, or where not applicable notice of first public meeting, before July 1, 2012 is required to follow the new (2012) pre-submission rules.~~ ~~Two exceptions exist with regard to the above transitions provisions:~~ ~~(1) amendments dealing with the participating receptors apply to proponents who have not issued a notice of *final* public meeting, or if a notice is not required, to proponents whose application has not been submitted before July 1, 2012; and~~ ~~(2) amendments related to the project change~~	underway.

Current Guidance	Proposed Revisions	Rationale
and are effective immediately. Applicants are advised to consult Part VIII – Transition of O. Reg. 359/09 to determine how the transition provisions apply to their projects.	~~process are not subject to transition provisions and are effective immediately.~~ ~~Applicants are advised to consult Part VIII – Transition of O. Reg. 359/09 to determine how the transition provisions apply to their projects.~~ O. Reg. 359/09 has been amended to provide transition rules to take into account projects that are already significantly underway. **Sound Power Level** Except in the case of certain changes described below, the pre-May 1, 2016 rules for calculating a wind turbine's sound power level continues to apply to proponents that before May 1, 2016 had: • applied for an approval for the wind turbine(s) and had entered into a power purchase agreement with the Ontario Power Authority (OPA) or Independent Electricity Systems Operator (IESO) in respect of the supply of renewable energy from the turbine(s) before July 1, 2015 or • been issued an approval in respect of the wind turbine(s). The pre-May 1, 2016 sound power level rules continue to apply to any changes to a wind turbine(s) for which an application was made before May 1, 2016 that are proposed before the approval is issued. The pre-May 1, 2016 sound power level rules also continue to apply in respect of future changes to these wind turbines once they are approved unless the change would result in :	

Current Guidance	Proposed Revisions	Rationale
	• a change to the location(s) of a wind turbine(s). • an increase to the wind turbine's overall sound power levels, which results in an increase to noise at a noise receptor within 1.5 kilometres of the turbine. Any of these changes to a wind turbine or adding one or more new wind turbines to the facility are required to be assessed in accordance with the new 2016 sound power level requirements. For proponents of projects who submit a Renewable Energy Approval application or an Environmental Compliance Approval application to MOECC on or after May 1, 2016, in respect of a turbine that had not been previously approved, the new 2016 sound power level requirements apply. A transition rule has been added with respect to LRP I projects. LRP I projects have the option not to include the positive uncertainty value for the purpose of the regulation or when conducting noise assessments. Once a REA is issued, LRP I projects that chose to not include the positive uncertainty value do not have to use a positive uncertainty value when conducting modeling for future changes to wind turbines, unless the change results in : • a change to the location(s) of a wind turbine(s). • an increase to the wind turbine's overall sound power levels, which results in an increase to noise at a noise receptor within 1.5 kilometres of the turbine. Class 3 wind facilities with a hub height of 70 metres or more	

Current Guidance	Proposed Revisions	Rationale
	(excluding blade length) that were granted a REA prior to May 1, 2016, are not subject to the 550 setback requirements unless changes are made to those turbines that increase the wind turbine's overall sound power levels, which results in an increase to noise at a noise receptor within 1.5 kilometres of the turbine. In respect of the amendment to the definition of woodland, the pre-May 1, 2016 definition continues to apply to in respect of projects for which a REA application is made on or before April 30, 2016. The current rules that apply to projects for which a project notice was issued before December 31, 2010 continue to apply. For all other regulatory amendments, no transition provisions apply and all associated rules came into effect as of May 1, 2016.	
4.1 Determining the Class of Project	*See appendix A for revised table.*	• To align with regulatory amendments coming into effect on May 1, 2016.
4.3.4 Meteorological Towers related to Wind Facilities Applicants should also note that meteorological towers may be subject to other government approvals depending on the nature of the tower and where it is located. For instance, in order to install a meteorological tower on Crown Land, the necessary permissions must first be obtained from the MNRF. Applicants should contact key agencies and ministries at an early stage to determine if other approvals may be required for a meteorological tower.	**4.3.4 Meteorological Towers related to Wind Facilities** Applicants should also note that meteorological towers may be subject to other government approvals depending on the nature of the tower and where it is located. For instance, in order to install a meteorological tower on Crown Land, applicants must ensure that land use plans or legislation do not prohibit wind power development at the proposed site and must complete the renewable energy testing requirements of the Approval and Permitting Requirements Document (APRD) in order to obtain the necessary permissions from the MNRF. Applicants should	• To provide clarity and support proponent in the complete submission process of a REA application. • To clarify the requirements of the APRD, and MNRF's review role in the REA

Current Guidance	Proposed Revisions	Rationale
	contact key agencies and ministries at an early stage to determine if other approvals may be required for a meteorological tower.	process.
5. Meeting with Key Agencies/FIT Contract Launch Meeting and Commencing Additional Approvals Applicants that received a FIT 1.0 contract and are seeking an REA are recommended to meet with the Service Integration Unit of MOE's Environmental Approvals Access and Service Integration Branch at an early stage in project planning to discuss how the requirements of O. Reg. 359/09 will apply to their project. The principal point of contact for the REA at the MOE is the MOE's Environmental Approvals Access and Service Integration Branch. Contact information can be found in Appendix 2. Applicants that received a FIT 2.0 contract are required to do a Contract Launch Meeting for Large FIT projects. The contract launch meeting is designed to ensure that applicants are aware of the contractual and regulatory requirements that apply to them. It provides an opportunity for the municipality to comment on municipal infrastructure issues and interests at an early stage (in other words, before the regulatory approval work begins). The Contract Launch Meeting also provides government ministries and agencies the opportunity to discuss regulatory requirements and answer any questions that applicants or municipalities may have.	**5. Meeting with Key Agencies~~/FIT Contract Launch Meeting~~ and Commencing Additional Approvals** It is recommended that applicants who have received a power purchase agreement ~~contract~~ and are seeking an REA meet with the Service Integration Unit of MOECC's Environmental Approvals Access and Service Integration Branch as well as the appropriate government ministries, agencies and project host municipalities, at an early stage in project planning to discuss how the requirements of O. Reg. 359/09 will apply to their project The principal point of contact for the REA at the MOECC is the MOECC's Environmental Approvals Access and Service Integration Branch. Contact information can be found in Appendix 2. Other participants in the Meetings with Key Agencies may include MNRF, MTCS, ENERGY – REFO, IESO, local distribution companies, local municipalities, MOECC District/Regional offices, Ministry of Transportation (MTO), Local Conservation Authority, Federal Agencies such as, Fisheries and Oceans Canada (DFO), Canadian Environmental Assessment Agency (CEAA), Environment and Climate Change Canada (ECCC), NAV Canada, Transport Canada, and others agencies as determined by the applicant. MOECC has created a Location/Siting Considerations Checklist to provide information that proponents should consider when selecting a suitable site for their renewable energy projects: Location and Siting Consideration Checklist.	• To provide clarity and align with the Large Renewable Procurement process developed by the Independent Electricity System Operator (IESO) in 2015.

Current Guidance	Proposed Revisions	Rationale
	Before a project proposal is submitted under the Request for Proposals (RFP) process of the Large Renewable Procurement (LRP), proponents must complete a set of mandatory requirements, including engagement requirements to facilitate early relationship-building between the developer and local community and to collect feedback on local needs and considerations. Proponents must also conduct a preliminary site investigation to ensure developers consider the viability of the proposed site and investigate some of its environmental features before submitting an LRP proposal. The LRP mandatory requirements are supplemental to and were not designed to replace any of the REA requirements. Successful LRP projects must still obtain all required licences, permits and approvals prior to construction. The mandatory requirements of the LRP process may be subject to change in subsequent procurements. For full details on the LRP process, please consult the IESO website here: IESO Website.	
5.1 Determining if Additional Permits are Required *Ontario Ministry of Natural Resources and Forestry (MNRF) section of chart:* **Approvals under the Endangered Species Act, 2007** Authorization or compliance with regulatory rules under sections 23.6 or 23.13 of O.Reg 242/08 (where applicable) is required when a project or project activities may kill, harm, harass, capture, take, possess, transport or collect a species listed as extirpated, endangered or threatened on the Species at Risk in	**5.1 Determining if Additional Permits are Required** *Ontario Ministry of Natural Resources and Forestry (MNRF) section of chart:* **Approvals under the Endangered Species Act, 2007** ~~Authorization or compliance with regulatory rules under sections 23.6 or 23.13 of O.Reg 242/08 (where applicable) is required when a project or project activities may kill, harm, harass, capture, take, possess, transport or collect a species listed as extirpated, endangered or threatened on the Species at Risk in~~	• To provide clarity and support regarding the options to proponents under the ESA.

Current Guidance	Proposed Revisions	Rationale
Ontario List.	~~Ontario List.~~ The *Endangered Species Act*, 2007 (ESA) prohibits the killing, harming, harassing, capturing, taking, possessing, transporting, collecting and damaging or destroying the habitat of a species listed as extirpated, endangered or threatened on the Species at Risk in Ontario List. Various components of a project or project activities may have the potential to contravene the ESA. The ESA enables certain activities to occur that may otherwise be prohibited as long as specific conditions to protect species at risk and their habitat are met. A permit (section 17 of the ESA) or a regulatory exemption (sections 23.6, 23.13 or 23.20) of O.Reg 242/08 (where applicable) may be required if a project or project activities are likely to contravene the ESA. More information on how to obtain a permit or seek a regulatory exemption under the ESA, can be found here: Endangered Species Act Permit or Authorization	
5.1 Determining if Additional Permits are Required *Conservation Authorities section of chart:* Conservation Authorities Act Permit • When a renewable energy project is located in a CA regulated area, the local CA should be contacted early in the process about potential CA permits under the Conservation Authorities Act. • Potential permits related to the control of flooding, erosion, dynamic beaches or pollution. • Contact local CA office for more information. Contact	**5.1 Determining if Additional Permits are Required** *Conservation Authorities section of chart:* Conservation Authorities Act Permit • When a renewable energy project is located within the jurisdiction of a CA and there is a possibility that the project is within regulatory limits set out in regulations under the Conservation Authorities Act, the local CA should be contacted early in the process about a requirement for a ~~potential~~ CA permit.	• To provide clarity and support proponent in the complete submission process of a REA application.

Current Guidance	Proposed Revisions	Rationale
information for local offices is given in Appendix 2.	• Permit decisions consider the impacts of development on the control of flooding, erosion, dynamic beaches and/or pollution. • A permit is also required for altering or interfering with a watercourse or a wetland (Conservation authorities may also request an Environmental Impact Study to address potential hydrological impacts where a permit is required for interfering with a wetland). • Contact the local CA office for more information. Contact information for local offices is given in Appendix 2.	
5.1 Determining if Additional Permits are Required In addition to this list, applicants should note that MNR and Ontario's conservation authorities share a role in managing development on natural hazard lands such as floodplains. Applicants should consult with the local conservation authority (if one exists) or MNR at an early stage in project planning to determine if there are natural hazard lands in the vicinity of the project location and, if so, any changes to the project that may be required.	**5.1 Determining if Additional Permits are Required** In addition to this list, applicants should note that both MNRF and ~~Ontario's~~ conservation authorities have ~~share~~ a role in managing development in areas prone to or associated with natural hazards ~~on natural hazard lands~~ such as floodplains. Applicants should consult with the local conservation authority (if one has been established ~~exists~~) or MNRF at an early stage in project planning to determine if there are areas prone to or associated with natural hazards ~~are natural hazard lands~~ in the vicinity of the project location and, if so, determine any changes to the project that may be required. ~~as floodplains. Applicants should consult with the local conservation authority (if one exists) or MNR at an early stage in project planning to determine if there are natural hazard lands in the vicinity of the project location and, if so, any changes to the project that may be required.~~	• To provide clarity and support proponent in the complete submission process of a REA application.

Current Guidance	Proposed Revisions	Rationale
6.1.2 Identification and Assessment of Archaeological and Heritage Resources If a heritage assessment is undertaken, the person undertaking the assessment must follow and report on the heritage assessment requirements outlined in subsections 23 (1) and 23 (2.1) of O. Reg. 359/09.	**6.1.2 Identification and Assessment of Archaeological and Heritage Resources** If a heritage assessment is undertaken, the person undertaking the assessment must follow and report on the heritage assessment requirements outlined in subsections 23 (1) and 23 (2.1) of O. Reg. 359/09. Heritage assessment includes the following: 1. Investigation, including historical research and visual inspection, to determine whether: • there is potential for the presence of a heritage resource (other than the protected property types table in section 19) at the project location • protected properties that abut the parcel of land on which the project location is situated. 2. If the determination is that there is potential for the presence of a heritage resource, confirm the presence or absence of a heritage resource by applying the criteria set out in Ontario Regulation 9/06 (Criteria for Determining Cultural Heritage Value or Interest) made under the *Ontario Heritage Act*. 3. Evaluation of the impact of the renewable energy project on the heritage attributes of any heritage resources at the project location and on any abutting protected properties and provide recommendations for measures to avoid, eliminate or mitigate the impact.	• To clarify the requirements of a Heritage Assessment. • To provide clarity and support proponent in the complete submission process of a REA application.
6.2 Natural Heritage Assessment An Environmental Impact Study is a report that evaluates the potential impacts of developing within specified features or within a setback distance to a specified feature. The key components of this report (as given in subsection 38 (2) of O. Reg. 359/09) are:	**6.2 Natural Heritage Assessment** An Environmental Impact Study is a report that evaluates the potential impacts of developing within specified features or within a setback distance to a specified feature. The key components of this report (as given in subsection 38 (2) of O. Reg. 359/09) are:	• To clarify the necessary components of a Natural Heritage assessment, the qualifications of

Current Guidance	Proposed Revisions	Rationale
1. Identify and assess the negative environmental effects of the project that will or are likely to occur on a natural feature referred to in subsection 38 (1) of O. Reg. 359/09, provincial park, or conservation reserve, if applicable. 2. Identify mitigation measures to address the negative environmental effects that will or are likely to occur. 3. Describe how potential effects will be monitored during operation in the Environmental Effects Monitoring Plan (EEMP). 4. Describe how potential effects will be mitigated during construction. Applicants proposing a project requiring a NHA should contact MNRF at an early stage in the project planning process to discuss how natural heritage requirements apply to their project.	1. Identify and assess the negative environmental effects of the project that will or are likely to occur on a natural feature referred to in subsection 38 (1) of O. Reg. 359/09, provincial park, or conservation reserve, if applicable. 2. Identify mitigation measures to address the negative environmental effects that will or are likely to occur. 3. Describe how potential effects will be monitored during operation in the Environmental Effects Monitoring Plan (EEMP). 4. Describe how potential effects will be mitigated during construction. In accordance with Section 28(2) and 38(2)(b) of O. Reg. 359/09), MNRF is responsible for reviewing and providing written confirmation that the NHA and EIS was prepared in accordance with MNRF's Natural Heritage Assessment Guide. To assist confirmation of the EIS, it is recommended that applicants include final versions of the sections of the EEMP which reference natural features. The confirmations(s) from MNRF are submitted as part of a complete REA application submission. Applicants proposing a project requiring a NHA should contact MNRF at an early stage in the project planning process to discuss how natural heritage requirements apply to their project. ~~Conservation authorities may also request an Environmental Impact Study to address potential hydrological impacts where a permit is required for development that interferes with a wetland. Applicants are encouraged to consult with the local conservation authority to streamline Environmental Impact Study requirements.~~	heritage consultants, and the role of MNRF.

Current Guidance	Proposed Revisions	Rationale
6.2.1 Bird and Bat Monitoring Plans for Wind Facilities Applicants should note that the EEMP for birds and bats can either be a separate document or included within the general EEMP in the Design and Operations Report. However, the portion of the EEMP that relates to birds and bats must be submitted to MNRF for review prior to submission of a complete REA application. For this reason it is important for applicants to consider bird and bat monitoring at an early stage of project planning.	**6.2.1 Bird and Bat Monitoring Plans for Wind Facilities** Applicants should note that the EEMP for birds and bats can either be a separate document or included within the general EEMP in the Design and Operations Report. However, the portion of the EEMP that relates to birds and bats must be submitted to MNRF for review prior to submission of a complete REA application. MNRF will provide a comment letter to be included in the complete REA application. For this reason it is important for applicants to consider bird and bat monitoring at an early stage of project planning. ~~With regard to the completion of the NHA, the REA regulation amendments of January 1, 2011 included requirements related to the EEMP for birds and bats under section 23.1 of O. Reg. 359/09, as well as an updated definition for woodlands. Applicants with projects eligible to follow the requirements of the pre-2011 REA regulation are advised that electing to follow any provisions of the amended July 1, 2012 regulation will remove pre-2011 flexibility.~~	• To provide clarity to proponents and align with current operational practices.
6.4 Additional Requirements for Land Use Planning Areas Projects located on land protected by key provincial plans (Greenbelt, Lake Simcoe Watershed, Niagara Escarpment, Oak Ridges Moraine) may have additional approval, setback and reporting requirements under O. Reg. 359/09. Following are examples of these requirements:	**6.4 Additional Requirements for Land Use Planning Areas** Applicants proposing a project that is in any part located within the area designated by a key provincial plan (Greenbelt, Lake Simcoe Watershed, Niagara Escarpment, Oak Ridges Moraine) should contact the ministry at an early stage in the project planning process to discuss whether any additional studies and/or documentation (e.g., hydrogeological assessment) apply to their project. Projects located on land protected by key provincial plans ~~(Greenbelt, Lake Simcoe Watershed, Niagara Escarpment, Oak~~	• To provide clarity of the Ministry's requirements and additional assessment in key land protected areas by key provincial plans.

Current Guidance	Proposed Revisions	Rationale
	~~Ridges Moraine)~~ may have additional approval, setback and reporting requirements under O. Reg. 359/09. Following are examples of these requirements:	
7. Completing REA Reports *New Section added (7.3)*	**7.3 MNRF Approval and Permitting Requirements Document** Applicants are advised to consider that much of the information provided to MOECC through the REA reports is also required for review by MNRF as part of decision making on approvals or permits under various legislation, including use or occupation of Crown land under the *Public Lands Act*. In some cases the information requested of applicants through a REA report is sufficient to inform MNRF's decision making process; however, in other cases applicants are required to provide MNRF with additional information to supplement a REA report. The full scope of MNRF's requirements, including information which must be prepared to supplement REA reports, is outlined in the Approval and Permitting Requirements Document for Renewable Energy Projects (APRD). MNRF makes decisions regarding permits, approvals, and the use or occupation of Crown land for renewable energy projects based on the review of all relevant REA reports, information prepared to supplement REA reports, and standalone information requirements found in the APRD. Applicants are advised to refer to the APRD prior to beginning the preparation of REA reports, in order to gain an understanding of MNRF's requirements, including where supplemental information may need to be provided.	• To clarify the requirements of the APRD, MNRF's review role in the REA process and the possible need for proponents to produce additional information to MNRF. • To provide clarity and support proponent in the complete submission process of a REA application.

Current Guidance	Proposed Revisions	Rationale
	With regard to consultation and preparation of the Consultation Report, applicants must ensure that information and draft reports provided for municipal, public and Aboriginal consultation, as well as public meetings, includes all APRD information used to supplement REA reports and any standalone APRD information where required. Where this information is absent, applicants may be required to conduct further consultation on those aspects before MNRF can issue permits or approvals.	
7. Completing REA Reports *New Section added (7.3.1)*	**7.3.1 Petroleum Setbacks** The proponent must ensure that the 75-metre setback from any petroleum wells or facilities is met. If an unplugged petroleum well is located within 75 m of the development, the proponent must apply to MNRF for a licence to plug the well in accordance with the Oil, Gas and Salt Resource Act. If the petroleum well or facility is active, and the proponent wishes to construct within the 75 m setback, the proponent is required to have a Professional Engineer prepare a report demonstrating that the petroleum wells or facilities identified within the setback will not have a negative effect on the renewable energy generation facility and vice versa.	• To clarify the requirements of the APRD and the possible need for proponents to produce additional information or conduct additional work as part of their REA application.
9. Operational Flexibility *New Section added (9.1)*	**9.1 Specific Activities Exempt from REA Amendments** Developers making specific changes to a project may be exempt from having to obtain an amendment to a REA. Eligible changes: 1. A change to the size or location of an area used for temporary storage of equipment or supplies. 2. A reduction in the size of the project location, as long as there are no changes to the infrastructure or equipment	• To provide examples and guidance to proponents of renewable energy facilities of the importance of building operational flexibility into a REA application to avoid potential delays later in the

Current Guidance	Proposed Revisions	Rationale
	that forms part, or is proposed to form part, of the renewable energy generation facility. 3. A change to the location where the renewable energy generation facility connects, or is proposed to connect, to, (i) a transmission system with respect to which, pursuant to agreements, the Independent Electricity System Operator has authority to direct operations, or (ii) the distribution system of the distributor in whose distribution service area the renewable energy generation facility is located. 4. A change in respect of a communications tower. 5. A change in the location of fencing. 6. A change to the make, model, arrangement, tracking system, number or name plate capacity of solar photovoltaic collector panels used, or proposed to be used, at the renewable energy generation facility, as long as there is no increase in the noise emissions from the facility. 7. A change in respect of a fiber optic communications line. In addition, the following conditions apply: • The specified changes cannot be within any of the setbacks in Part V of O. Reg 359/09 or rely on any exemptions that may be contained within those sections. • Changes must take place on the same parcel of land where the project was approved to be engaged in. • For changes made, any required authorizations for	process. • This will avoid proponents coming into the Ministry to obtain REA project amendments for minor changes to a project that do not impact the environment in a significant way.

Current Guidance	Proposed Revisions	Rationale
	properties protected from a heritage perspective must have been obtained. • The proposed change must take place at a location at which a natural heritage assessment was conducted and a confirmation was issued by MNRF. • The person must obtain, where an archeological assessment report was required, the opinion of a consultant archeologist that the proposed change would not alter the conclusion of the report that was prepared and would not result in any additional archaeological concerns. • Where an archeological assessment report was not required based on the determination of low potential for the presence of an archeological resource, the person must be of the opinion that proposed change does not alter that determination. • The person must obtain, where a heritage assessment report was required, the opinion of the persons who prepared the report that he proposed change would not alter the recommendations set out in the report that was prepared and would not result in any new or increased impacts to heritage attributes that are subject to evaluation. • Where a heritage assessment report was not required based on the determination of low potential for the presence of a heritage resource and no abutting protect properties, the person must be of the opinion that proposed change does not alter that determination. Developers are required to provide written notification of the change to the Director and the ministry's District Manager in each	

Current Guidance	Proposed Revisions	Rationale
	district in which the project is situated for record-keeping and monitoring purposes within 30 days after making the change. Developers are also required to post the notification of the change on their website to ensure public awareness. As a best practice, developers should also post the Modification Document on their website for at least 60 days.	
10. Application Submission and Review This submission should be made by sending copies of the application package as follows: • Two (2) to the Director, Environmental Approvals Access and Service Integration Branch • One (1) to the nearest MOECC Regional or District Office.	**10. Application Submission and Review** This submission should be made by sending copies of the application package as follows: • Two (2) paper copies and one (1) electronic (unlocked) copy to the Director, Environmental Approvals Access and Service Integration Branch • One (1) electronic or paper copy to the nearest MOECC Regional or District Office.	• Instead of requiring a paper copy of the application submission, proponent has the option to provide an electronic copy to the District Office.
10.3 Application Review The acceptance of a complete application for review starts the clock on the ministry's six month service standard for reaching a decision on the application. The start of the review phase also places some additional regulated requirements related to consultation. *10.3.1. Environmental Registry Posting and Public Notification* Consultation is a critical component of the REA process, and the review phase includes a final mechanism for public consultation. In most cases, REA applications are subject to a minimum 30 day public comment period on the Environmental Registry. This online registry, found at Environmental Registry will present proposal notices for all accepted REA applications that are undergoing a decision. When an application has been accepted, the ministry will prepare a proposal notice based on information in	**10.3 Application Review** The acceptance of a complete application for review starts the clock on the ministry's six month service standard for reaching a decision on the application. Screenings and reviews of applications with complex, contentious and/or unresolved issues may take longer. The start of the review phase also places some additional regulated requirements related to consultation. Early and meaningful consultation; high quality applications; and going above and beyond minimum requirements may help in speeding up the screening/review process for some applications. *10.3.1. Environmental Registry Posting and Public Notification* Consultation is a critical component of the REA process, and the review phase includes a final mechanism for public consultation. In most cases, REA applications are subject to a minimum 30 day public comment period on the Environmental Registry. However,	• To clarify that the Director has the discretion to extend the timeline for an EBR posting from 30 to 45 days. • To provide greater clarity to proponents of the required public consultation time periods for a proposed REA facility.

Current Guidance	Proposed Revisions	Rationale
the REA application. This notice will then be posted with an active comment period for a minimum of 30 days. In some cases, the comment period may be extended beyond the 30 day minimum. During this time the public can review the proposal notice and provide comments directly to the MOECC about the application. All comments submitted during the comment period must be considered by the MOECC when evaluating an REA application.	in practice for large or complex renewable energy projects, the Director has posted for a comment period of 45 days or longer. This online registry, found at www.ebr.gov.on.ca will present proposal notices for all accepted REA applications that are undergoing a decision. When an application has been accepted, the ministry will prepare a proposal notice based on information in the REA application. This notice will then be posted with an active comment period for a minimum of 30 days. In some cases, the comment period may be greater than the 30 day minimum, particularly for most large or complex renewable energy projects. During this time the public can review the proposal notice and provide comments directly to the MOECC about the application. All comments submitted during the comment period must be considered by the MOECC when evaluating an REA application.	

Chapter 2: Consultation Requirements and Guidance for preparing a Consultation Report

Current	Proposed	Rationale
1.1 Consultation Requirements Overview Figure 6 below depicts the key steps in the REA consultation process including the minimum timelines related to particular requirements. This diagram only applies to projects that require public meetings. Class 2 wind facilities, Class 1 or 2 anaerobic digestion facilities, Class 1 thermal treatment facilities (if the generating unit of the facility is located at a farm operation) and Class 2 thermal treatment facilities do not have mandatory public meeting requirements. However, there are additional notification, document dissemination and other consultation requirements for these	**1.1 Consultation Requirements Overview** Figure 6 below depicts the key steps in the REA consultation process including the minimum timelines related to particular requirements. This diagram only applies to projects that require public meetings. Class 2 wind facilities, Class 1 or 2 anaerobic digestion facilities, Class 1 thermal treatment facilities (if the generating unit of the facility is located at a farm operation) and Class 2 thermal treatment facilities do not have mandatory public meeting requirements. However, there are additional notification, document dissemination and other consultation requirements for	• To establish stronger link between MNRF APRD and REA to support proponent in complete submission process. • To clarify that proponents should include all APRD information in draft reports and technical

Current	Proposed	Rationale
projects and the sections below provide more information on timing. For the purposes of this section, these types of projects will be referred to as “projects that don’t require public meetings”.	these projects and the sections below provide more information on timing. For the purposes of this section, these types of projects will be referred to as “projects that don’t require public meetings”. Applicants are advised to keep in mind that consultations conducted to satisfy sections 15 -18 of the REA regulation are used by MNRF to inform decisions regarding permits, approvals, and the use or occupation of Crown land. To avoid duplication and provide greater clarity to interested and potentially affected parties, applicants should ensure that the project as a whole is presented during consultations. Information and drafts of reports and technical studies provided for consultations should include all APRD information used to supplement REA reports and any standalone APRD information where required. In particular, draft reports and information presented at public meetings must provide sufficient detail for interested parties to achieve a full understanding of activities proposed on Crown land, including detailed depictions of boundaries and proposed access routes. Applicants should follow the direction outlined in this Guide to determine the level of specificity that should be provided when describing Crown land activities for the purposes of consultation (e.g. activity purpose, proposed location, intensity, duration, etc.).	studies used for consultation, including details of proposed activities on crown land.
3.3 Distribution of Notices The above list is a minimum requirement but not exhaustive. Applicants are encouraged to also provide notice to other potentially interested persons that the applicant is aware of (such as landowners in the vicinity of the project location, local interest groups, businesses, and members of the public that may be	**3.3 Distribution of Notices** The above list is a minimum requirement but not exhaustive. Applicants are encouraged to also provide notice to other potentially interested persons that the applicant is aware of (such as landowners in the vicinity of the project location, local interest groups, businesses, and members of the public that may be	• To provide greater clarity to proponents.

Current	Proposed	Rationale
affected by some aspect of the project).	affected by some aspect of the project). For projects proposed on Crown land or abutting lands, this list may also include Crown land tenure holders and users such as mining claim or lease holders, petroleum lease holders, and those with licences or permits. Providing notices to these parties may also contribute to completion of the Crown Land Interests Report required through the APRD.	
3.3 Distribution of Notices For small-scale projects with minimal negative environmental effects and low public concern, providing Notices to the above list will likely be adequate. However, for larger projects with more significant negative environmental effects that will or are likely to occur and high levels of public interest, providing notices beyond the above list could enhance consultation. Applicants may also wish to distribute copies of notices to other relevant agencies (such as the Ministry of Natural Resources and Forestry (MNRF), local conservation authorities, federal government agencies, etc.). In particular, proponents of Class 3, 4 and 5 wind facilities are encouraged to contact the following federal departments regarding their proposed facility (contact information is provided in Appendix 2): • **Canadian Broadcasting Corporation (CBC):** Requires applicants to comply with Radio Advisory Board of Canada (RABC) and Canadian Wind Energy Association (CanWEA) guidelines and to notify CBC of any proposed wind facilities; . • **Royal Canadian Mounted Police (RCMP):** Requires all applicants of proposed wind facilities to contact the RCMP Mobile Communications Services;	**3.3 Distribution of Notices** For small-scale projects with minimal negative environmental effects and low public concern, providing Notices to the above list will likely be adequate. However, for larger projects with more significant negative environmental effects that will or are likely to occur and high levels of public interest, providing notices beyond the above list could enhance consultation. Applicants may also wish to distribute copies of notices to other relevant agencies (such as the Ministry of Natural Resources and Forestry (MNRF), local conservation authorities, federal government agencies, etc.). In particular, proponents of Class 3, 4 and 5 wind facilities are encouraged to contact the following federal departments regarding their proposed facility (contact information is provided in Appendix 2): • **Canadian Broadcasting Corporation (CBC):** Requires applicants to comply with Radio Advisory Board of Canada (RABC) and Canadian Wind Energy Association (CanWEA) guidelines and to notify CBC of any proposed wind facilities; • **Royal Canadian Mounted Police (RCMP):** Requires all applicants of proposed wind facilities to contact the RCMP Mobile Communications Services; **NAV Canada**: Applicants should contact NAV Canada to	• Clarify that proponents should contact NAV Canada to determine potential impact to navigation or radar systems.

Current	Proposed	Rationale
	determine if a proposed wind facility may potentially disturb air navigation and radar systems. NAV Canada may request a wind proponent to move turbines a certain distance from the navigation and radar systems, or require the airport to alter instrument approaches. As a best practice, applicants of solar facilities should also contact NAV Canada due to the potential issue of solar glare;	
5.2 Municipal Consultation Form To provide municipalities and local authorities with an opportunity to provide written comments that can be reviewed by the applicant and the MOE (upon submission of a complete REA application), O. Reg. 359/09 specifies that a municipal consultation form must be provided to all local municipalities and road/service boards by the applicant. The structured municipal consultation form is a two-part form. Part A is completed by the applicant to highlight elements of the project that have implications for municipal infrastructure and servicing. Part B includes fields for the municipality or local authority to comment on how the project may impact specific municipal services and infrastructure. The final completed form is then sent to the applicant so that the concerns raised can be reviewed and addressed as appropriate. This form should be submitted as part of an REA application.	**5.2 Municipal Consultation Form** To provide municipalities and local authorities with an opportunity to provide written comments that can be reviewed by the applicant and the MOECC (upon submission of a complete REA application), O. Reg. 359/09 specifies that a municipal consultation form must be provided to all local municipalities and road/service boards by the applicant. Both the proponent and the municipality should work to clarify expectations at an early stage in project planning. The Municipal Consultation Form is a formal way for municipalities to comment on any issues. Applicants must consider issues raised by municipalities in the municipal consultation form and, where appropriate, revise project plans to address issues in advance of submitting a REA application. The structured municipal consultation form is a two-part form. Part A is completed by the applicant to highlight elements of the project that have implications for municipal infrastructure and servicing. Part B includes fields for the municipality or local authority to comment on how the project may impact specific municipal services and infrastructure. The final completed form is then sent to the applicant so that the concerns raised can be reviewed and addressed as appropriate. This form should be submitted as part of an REA application.	• To explain the importance of filling out the Municipal Consultation Form to municipalities and the value it adds to Ministry decisions.

Current	Proposed	Rationale
5.2 Municipal Consultation Form *New text box added.*	**Location of Transmission of Distribution Lines in Road Allowances** When new or enhanced lines are located on municipal road allowances, municipalities may have concerns or preferences about the placement or location of the lines including associated poles or towers. For example, a proposed new line could have impacts on other existing or planned infrastructure in the road allowance or impact the use or maintenance activities for the road itself. In these situations, the proponent should also engage the municipality at an early stage in project planning.	• Project proponents should discuss and reach agreements with municipalities with respect to the location of transmission and distribution lines in road allowances (if applicable) to prevent potential issues at a late stage in project development.
5.2 Municipal Consultation Form The municipal consultation form is contained in Appendix 4 of this guide, but it is also available on the MOECC website as Publication # 7450e. The specific information related to servicing and infrastructure that the form explores includes: • Proposed road access during construction and after commissioning; • Location and types of municipal service connections that may be required; • Traffic management plans during construction and, if necessary, operation; • Plans for the rehabilitation of areas disturbed and/or municipal infrastructure damaged during construction; • Emergency management procedures/safety protocols; • Proposed site landscaping, if applicable; • Easements or restrictive covenants on the property;	**5.2 Municipal Consultation Form** The municipal consultation form is contained in Appendix 4 of this guide, but it is also available on the MOECC website as Publication # 7450e. The specific information related to servicing and infrastructure that the form explores is outlined below. ~~includes:~~ If additional municipal services and infrastructure may be impacted by the project, applicants and municipalities are encouraged to include this information within the Municipal Consultation Form. • Proposed road access during construction and after commissioning; • Location and types of municipal service connections that may be required; • Traffic management plans during construction and, if necessary, operation; • Plans for the rehabilitation of areas disturbed and/or municipal infrastructure damaged during construction;	• Providing information in the Municipal Consultation Form about municipal services and infrastructure, such as the location of transmission and distribution lines in road allowances, will allow the municipality to provide feedback.

Current	Proposed	Rationale
• Location of fire hydrants and connections to drainage, water works and sanitary sewers and water mains; • Location of buried kiosks and above-grade utility vaults; • Location of existing and proposed gas and electricity lines and connections; • Building Code permits and licences; • Identification of any significant natural features and water bodies; • Identification of any protected properties, archaeological or heritage resources; and • Identification of any municipal aerodromes/airports.	• Emergency management procedures/safety protocols; • Proposed site landscaping, if applicable; • Easements or restrictive covenants on the property; • Location of fire hydrants and connections to drainage, water works and sanitary sewers and water mains; • Location of buried kiosks and above-grade utility vaults; • Location of existing and proposed gas and electricity lines and connections; • Location of transmission or distribution lines in road allowances; • Building Code permits and licences; • Identification of any significant natural features and water bodies; • Identification of any protected properties, archaeological or heritage resources; and • Identification of any municipal aerodromes/airports.	
5. Consultation with Municipalities and other Local Authorities *New Section added (5.3)*	**5.3 REA Site Plan Approval and Building Permit Request Form** To encourage timely sharing of site plan approval or building permit information, municipalities will have 60 days to disclose this approval or permit information upon receipt of a proponent's written request, in order for an approved but not as of yet constructed building or structure to be considered a noise receptor. The proponent must make a written request for site plan approval or building permit information to the Clerk of the municipality through registered mail using a form and format approved by the Director (see appendix X for 'REA Site Plan Approval and Building Permit Request Form'). This form is also available on	• To align with regulatory amendments coming into effect on May 1, 2016. • To encourage timely information sharing so that noise receptors (e.g. homes, schools) that have been approved surrounding a proposed project are promptly brought to a

Current	Proposed	Rationale
	the ministry's website publication # 2159. • So that the 60 day period starts at the same time for projects, the request to the municipality or municipalities must be made in respect of all of the locations in question on the same day. Following the 60 day time period, a proponent must either commence the REA process by publishing a Draft Site Plan or submitting an application for approval within an additional 60 days. This is intended to prevent a time gap between when the site plan approval / building permit information is requested from the municipality, and when the proponent commences the REA process. • Regardless of the 60 day time period, if a building permit is brought to the attention of the proponent by a landowner or a municipality before issuing a Draft Site Plan or submitting an application to the ministry, it must be considered by the proponent.	proponent's attention so they can be properly addressed and accounted for.
7. Consultation through the Environmental Registry Upon receiving a complete application for an REA, the MOECC will publish a proposal notice in respect of the application on the Environmental Registry (Environmental Registry). This proposal notice allows the public to submit comments directly to the ministry during a minimum 30 day comment period. In some cases, the comment period may be extended beyond the 30 day minimum. At this time, applicants are also required, under sections 15.1 and 15.2 of O. Reg. 359/09, to publish all REA documentation to their website (if one exists) and post notices in local newspapers to inform the public of the comment period.	**7. Consultation through the Environmental Registry** Upon receiving a complete application for an REA, the MOECC will publish a proposal notice in respect of the application on the Environmental Registry (Environmental Registry). This proposal notice allows the public to submit comments directly to the ministry during a minimum 30 day comment period. In some cases, the Director may determine that a comment period ~~may be extended~~ that is greater than the 30 day minimum, is appropriate for large or complex renewable projects. At this time, applicants are also required, under sections 15.1 and 15.2 of O. Reg. 359/09, to publish all REA documentation to their website (if one exists) and post notices in local newspapers to inform the public of the comment period.	• Clarify that the Director has the discretion to extend the timeline for an EBR posting from 30 to a longer period – screenings and reviews of applications with complex and/or unresolved issues may take longer.

Current	Proposed	Rationale
Part II: 1. Purpose of the Consultation Report To achieve these two objectives, the Consultation Report will include both written summary information and appended documentation such as copies of notices, written comments received and other communications as described in the sections below. Since consultation may continue right up to a point where the applicant believes they are ready to submit an application, finalizing the Consultation Report will be one of the last steps in the pre-application process. A draft of the Consultation Report is not required to be made available in advance of the public meetings since those meetings will result in modifications to the Consultation Report. As part of their ongoing engagement with Aboriginal communities, applicants should share a paper copy of the final Consultation Report with the communities on the Aboriginal Consultation List prior to, or at the time of, submitting an REA application to the ministry.	**Part II: 1. Purpose of the Consultation Report** To achieve these two objectives, the Consultation Report will include both written summary information and appended documentation such as copies of notices, written comments received and other communications as described in the sections below. The Consultation Report is also reviewed by MNRF to inform decisions on permits and approvals. Since consultation may continue right up to a point where the applicant believes they are ready to submit an application, finalizing the Consultation Report will be one of the last steps in the pre-application process. A draft of the Consultation Report is not required to be made available in advance of the public meetings since those meetings will result in modifications to the Consultation Report. As part of their ongoing engagement with Aboriginal communities, applicants should share a paper copy of the final Consultation Report with the communities on the Aboriginal Consultation List prior to, or at the time of, submitting an REA application to the ministry. ~~Applicants are advised to keep in mind that consultation conducted to satisfy sections 14 - 18 of the REA regulation will be used by the MNRF to inform decisions regarding the disposition of Crown land, and MNRF permits or approvals on Crown and private land. To avoid duplication and provide greater clarity to the community, it is recommended that applicants consult on the entire project. By thinking of the project as a whole, it will allow applicants to consult for the purposes of all necessary permits~~	• To clarify that the Consultation Report is also reviewed by MNRF to inform decisions on permits and approvals.

Current	Proposed	Rationale
	~~and approvals.~~ ~~To ensure that consultation is undertaken in a manner which supports MNRF decision-making under various statutes (e.g. Public Lands Act), draft reports and information presented at public meetings must provide sufficient detail for interested parties to achieve a full understanding of activities proposed on Crown land, and activities which require provision of information under the MNRF's Approval and Permitting Requirements Document (APRD). Applicants should follow the direction outlined in this Guide to determine the level of specificity that should be provided when describing these activities for the purposes of consultation (e.g. activity purpose, proposed location, intensity, duration, etc.).~~	

Part II: 4. Reporting on Aboriginal Consultation
 	
• A summary of comments received by the applicant as a result of the correspondence with each community.
  ○ This could include appending to the report meeting notes from meetings held with communities, copies of notices, written comments received or any other communications or correspondence.
• A summary of discussions of the aspects of the project proposal that were changed in response to comments received from Aboriginal communities, if any.
  ○ This discussion should also reference any changes to draft project documents that were made as a result of a change to the project proposal.
• The section of the Consultation Report that discusses Aboriginal consultation should also contain the following information:
  ○ The rationale behind any proposed mitigation option(s)
	Part II: 4. Reporting on Aboriginal Consultation
	
	• A summary of comments received by the applicant as a result of the correspondence with each community.
	  ○ This could include appending to the report meeting notes from meetings held with communities, copies of notices, written comments received or any other communications or correspondence.
	• A summary of discussions of the aspects of the project proposal that were changed in response to comments received from Aboriginal communities, if any.
	  ○ This discussion should also reference any changes to draft project documents that were made as a result of a change to the project proposal.
	• The section of the Consultation Report that discusses Aboriginal consultation should also contain the following information:
	  ○ The rationale behind any proposed mitigation option(s)
		• To clarify the ministry's expectations with regard to Aboriginal consultation requirements.

Current	Proposed	Rationale
to address potential impacts on Aboriginal or treaty rights or potential environmental effects; ○ The rationale behind any proposed mitigation option(s) to address potential environmental effects; ○ The degree to which the Aboriginal communities were involved in developing any mitigation options; and ○ The rationale why any proposal from an Aboriginal community for mitigation was or was not accepted by the applicant.	to address potential impacts on Aboriginal or treaty rights or potential environmental effects; ○ The rationale behind any proposed mitigation option(s) to address potential environmental effects; ○ The degree to which the Aboriginal communities were involved in developing any mitigation options; and ○ The rationale why any proposal from an Aboriginal community for mitigation was or was not accepted by the applicant. • The ministry strongly recommends appending copies of comments received from all Aboriginal communities, how these comments were considered and addressed, as well as the rationale if comments were not addressed. This information is requested by the Director in practice for most projects and should be included in the report.	

Chapter 3: Required setbacks for wind turbines

Current	Proposed	Rationale
1.1 Measuring Setback Distances All setback distances refer to a length between two defined points, for instance the centre of a building (for a noise receptor) and the centre of the base of a turbine. In some circumstances the two defined points may not be at the same level with respect to elevation from the ground. An example would be a turbine on a hill where the noise receptor is at a lower elevation. For the purpose of complying with the setback requirements of O. Reg. 359/09, in all cases setback distances should be measured as horizontal distances at ground level. The use of Universal Transverse	**1.1 Measuring Setback Distances** All setback distances refer to a length between two defined points, for instance the centre of a building (for a noise receptor) and the centre of the base of a turbine. In some circumstances the two defined points may not be at the same level with respect to elevation from the ground. An example would be a turbine on a hill where the noise receptor is at a lower elevation. For the purpose of complying with the setback requirements of O. Reg. 359/09, in all cases setback distances should be measured as horizontal distances at ground level. ~~The use of Universal~~	• To clarify the required information of the draft site plan, including: municipal address, legal description, or property identification numbers to assist in identifying properties on which receptors are located, rather

Current	Proposed	Rationale
Mercator (UTM) coordinates for demonstrating the locations of noise receptors and turbines when preparing REA reports is recommended to assist evaluation of the horizontal distance.	~~Transverse Mercator (UTM) coordinates for~~ When preparing REA reports, the locations of noise receptors and turbines should be described in a way that is most readily understood such as municipal addresses, ~~the locations of noise receptors and turbines when preparing REA reports is recommended~~ to assist the evaluation of ~~the~~ horizontal distances. Legal descriptions and/or property identification numbers can also be used if municipal addresses are not available.	than UTM coordinates.
2.0 Noise-Based Setbacks Setbacks for noise have been established in regulation for all land-based wind facilities generating ≥50kW and using one or more turbines with a sound power level ≥102 dBA (subsection 54 (1) of O. Reg. 359/09). Facilities that have a lower name plate capacity or use turbines with lower sound power levels are not subject to minimum noise setbacks, though they may still require an REA and may be subject to the property line and road or railway setbacks. Greater detail on the information required for describing the negative environmental effects that will or are likely to occur from noise for small wind projects (Class 2 and 3) is given in section 5.5 of Chapter 4 which provides guidance on preparing the Project Description Report (PDR).	**2.0 Noise-Based Setbacks** Setbacks for noise have been established in regulation for all land-based wind facilities generating ≥50kW and using one or more turbines with a sound power level ≥102 dBA or the greatest height of any wind turbine that forms part of the facility, excluding the length of any blades, is ≥ 70m (subsection 54 (1) of O. Reg. 359/09). Facilities that ~~have a lower name plate capacity or~~ use turbines with ~~lower~~ sound power levels less than 102 dBA, with the height of the turbine(s) less < 70m (excluding the length of any blades), are not subject to minimum noise setbacks, though they may still require an REA and may be subject to the property line and road or railway setbacks. Greater detail on the information required for describing the negative environmental effects that will or are likely to occur from noise for small wind projects (Class 2 and 3) is given in section 5.5 of Chapter 4 which provides guidance on preparing the Project Description Report (PDR).	• To align with regulatory amendments coming into effect on May 1, 2016.
2.3 Multiple/Louder Turbines As indicated in subsection 54 (4) of O. Reg. 359/09, Noise Assessment Reports prepared in accordance with the ministry's *"Noise Guidelines for Wind Farms"* are also required under any of the following circumstances: • If a wind energy facility is comprised of 26 or more specified turbines (unless all turbines have a sound power level < 102	**2.3 Multiple/Louder Turbines** As indicated in subsection 54 (4) of O. Reg. 359/09, Noise Assessment Reports prepared in accordance with the ministry's *"Noise Guidelines for Wind Farms"* are also required under any of the following circumstances: • If a wind energy facility is comprised of 26 or more turbines and any of which have: 1) a sound power level greater or	• To align with regulatory amendments coming into effect on May 1, 2016.

Current	Proposed	Rationale
dBA), • If the project would result in 26 or more specified turbines located within a 3 km radius of a noise receptor; or • If any of the turbines in a wind energy facility have a sound power level greater than 107 dBA.	equal to 102 dBA), or 2) a height, excluding the length of any blades, equal to or greater than 70m); • If the project would result in 26 or more specified turbines located within a 3 km radius of a noise receptor; or • If any of the turbines in a wind energy facility have a sound power level greater than 107 dBA.	
2.5.2 Draft Site Plan Content To clearly convey all of the required content and to ensure other nearby projects are aware of the position of the proposed turbines when assessing combined noise, the following is recommended: • Locations of all turbines should be mapped and provided in a table that indicates the UTM coordinates of turbines. • Turbines from existing or proposed facilities should also be included. • Noise receptors within an appropriate distance (the ministry recommends plotting all within 2 km of the project location) should be mapped and provided in a table that indicates the UTM coordinates of the noise receptors.	**2.5.2 Draft Site Plan Content** To clearly convey all of the required content and to ensure other nearby projects are aware of the position of the proposed turbines when assessing combined noise, the following is recommended: • Locations of all turbines should be mapped and provided in a table that indicates the UTM coordinates of turbines. • Turbines from existing or proposed facilities should also be included. Noise receptors within an appropriate distance (the ministry recommends plotting all within 2 km of the project location) should be mapped and provided in a table that indicates municipal addresses, legal descriptions and/or property identification ~~the UTM coordinates of~~ numbers of ~~the~~ noise receptors.	• To clarify the required information of the draft site plan, including: municipal address, legal description, or property identification numbers to assist in identifying properties on which receptors are located, rather than UTM coordinates.
2.5.5 Limitation on the use of Draft Site Plans If applicants do not submit their REA application within the 18 month period, new noise receptor locations established or moved during the time between the first Draft Site Plan and final submission must be accounted for in the REA application.	**2.5.5 Limitation on the use of Draft Site Plans** If applicants do not submit their REA application within the 18 month period, new noise receptor locations established or moved during the time between the first Draft Site Plan and final submission must be accounted for in the REA application. If an applicant proposes changes to their REA application to modify, add or move the location of (a) wind turbine(s) or other equipment (i.e. transformer or sub-station), new noise receptor	• To clarify existing practice.

Current	Proposed	Rationale
	locations established or moved between the time the REA application was submitted and the time of the proposed change must be accounted for. REA application materials must also be changed accordingly, as outlined in Chapter 10. If after an REA is issued by MOECC, an applicant is amending their REA to modify, add or move the location of (a) wind turbine(s) or a transformer of sub-station, new noise receptor locations established or moved during the time between the REA approval date and REA amendment application submission date must be accounted for in the REA amendment application. In addition, cumulative noise impacts from adjacent wind facilities must also be considered.	
3.0 Setbacks from Property Lines In the absence of an agreement with a neighbouring land owner specifically permitting a closer setback, the proponent must include, as part of the REA application, a Property Line Setback Assessment Report in order to reduce the property line setback. This report must be developed to demonstrate that siting the turbine in such a location will not result in any adverse impacts on neighbouring businesses, infrastructure, or land use activities. Specifically, this assessment should evaluate the land use in the vicinity of the turbine. This should confirm the presence of structures (i.e. barns, storage buildings, stables) and if there will be any expected adverse impacts associated with the turbine being located closer than the turbine hub height setback. If there are potential adverse impacts, a description of preventative measures to address the potential adverse impacts must be included. Such an assessment must be performed separately for each turbine that is sited within the specified property line setback.	**3.0 Setbacks from Property Lines** In the absence of an agreement with a neighbouring land owner specifically permitting a closer setback, the proponent must include, as part of the REA application, a Property Line Setback Assessment Report in order to reduce the property line setback. This report must be developed to demonstrate that siting the turbine in such a location will not result in any adverse impacts on neighbouring businesses, infrastructure, or land use activities. Specifically, this assessment should evaluate the land use in the vicinity of the turbine. This includes providing UTM coordinates of each wind turbine and structure to which the Property Line Setback Assessment Report relates, as well as a table that provides setback distances. This should confirm the presence of structures (i.e. barns, storage buildings, stables). The report must also describe preventative measures that are to be implemented to address the possibility of any adverse impacts. Such an assessment must be performed separately for each	• To clarify that in addition to proponents providing property line setback distances in site plans and tables, proponents are required to include UTM coordinates. • UTM coordinates demonstrate the distance of a turbine from all property lines and is clearer for the public.

Current	Proposed	Rationale
	turbine that is sited within the specified property line setback.	
6.0 Guidance for Demonstrating Adherence to Setbacks On the Site Plan • The location of all turbines (including turbine identification number/code); • The location of all transformers; • The location of all "non-participating" noise receptors (including noise receptor identification number/code); • All property lines, public roads and rail right of ways; • The location of all other project components that comprise the wind energy facility and the project location boundary; • The outer boundaries and classification of all natural features and water bodies; and Linear representation of setback distances.	**6.0 Guidance for Demonstrating Adherence to Setbacks** On the Site Plan • The location of all turbines (including turbine identification number/code); • The location of all transformers; • The location of all "non-participating" noise receptors (including noise receptor identification number/code); • All property lines, public roads and rail right of ways; • Linear representation of setback distances, i.e. UTM coordinates that demonstrate the distance of all wind turbines from all property lines; • The location of all other project components that comprise the wind energy facility and the project location boundary; • The outer boundaries and classification of all natural features and water bodies; and ~~Linear representation of setback distances.~~	• To clarify that in addition to proponents providing property line setback distances in site plans and tables, proponents are required to include UTM coordinates. • UTM coordinates demonstrate the distance of a turbine from all property lines and is clearer for the public.

Chapter 4: Guidance for preparing a Project Description Report

Current	Proposed	Rationale
2.1 Use of the PDR as a Draft Document Note that the draft PDR may also be useful in providing information to other regulatory agencies for the purposes of obtaining additional permits or approvals as required. For instance, if the project is proposed to be located on Crown land, the applicant is encouraged to provide a copy of the draft PDR to those with Crown interests (i.e. mine claim holders, licensed bait fish operators, licensed trappers, etc.) to facilitate discussion.	**2.1 Use of the PDR as a Draft Document** Note that as part of the REA consultation process, it may be useful to provide the draft PDR ~~may also be useful in providing information~~ to other ~~regulatory agencies~~ interested parties for the purposes of ~~obtaining~~ informing decisions on additional permits or approvals as required. For instance, if ~~the~~ a project is proposed to be located on Crown land, the APRD outlines the requirement to ~~applicant~~ address potential impacts on other Crown land tenure	• To clarify that the draft PDR should be shared with interested parties necessary to obtain additional permits and approvals as required. • To provide greater

Current	Proposed	Rationale
	holders and users (e.g. mine claim holders, licensed bait fish operators, licensed trappers, etc.) Applicants are ~~is~~ encouraged to provide such parties with a copy of the draft PDR to ~~those with Crown interests (i.e. mine claim holders, licensed bait fish operators, licensed trappers, etc.) to~~ facilitate discussion and support MNRF decision making.	clarity to proponents.
3.5 Other Approvals Required To ensure that project approvals are evaluated in a timely and coordinated manner, it is recommended that applicants provide information relating to all required or applicable permits, licences and authorizations, other than the REA approval, that applicants believe must be obtained for the project to proceed. For example, this may include permits from the Ministry of Natural Resources (MNR), the Ministry of Transportation (MTO), municipal building permits and conservation authority approvals, etc.	**3.5 Other Approvals Required** To ensure that project approvals are evaluated in a timely and coordinated manner, it is recommended that applicants provide information relating to all required or applicable permits, licences and authorizations, other than the REA approval, that applicants believe must be obtained for the project to proceed. For example, this may include permits from the Ministry of Natural Resources and Forestry (MNRF) as outlined in the APRD, the Ministry of Transportation (MTO), municipal building permits and conservation authority ~~approvals~~ permits, etc.	• To provide clarity to proponents.
4.3 Project Location Map The map should also: • Identify the boundaries of the project location; • Identify and briefly describe on-site land uses on the project location; • Identify and describe the off-site land uses within minimum 300 metres of the project location; • For a project proposed to be built on Crown land, illustrate Crown land users (i.e. Land Use permits, claims, cabins, camps, trap lines); and • To the extent that is feasible in depicting information clearly on the map show: ○ Any cultural heritage resources (note that the precise locations of archaeological sites are sensitive and should not be included in the map), natural features,	**4.3 Project Location Map** The map should also: • Identify the boundaries of the project location; • Identify and briefly describe on-site land uses on the project location; • Identify and describe the off-site land uses within minimum 300 metres of the project location; • For a project proposed to be built on Crown land, illustrate Crown land tenure holders and users ~~(i.e. Land Use permits, claims, cabins, camps, trap lines);~~ and existing/proposed access roads and trails; and • To the extent that is feasible in depicting information clearly on the map show: ○ Any cultural heritage resources (note that the precise locations of archaeological sites are	• To clarify what should be included on project location map.

Current	Proposed	Rationale
and water bodies identified through the records review.	sensitive and should not be included in the map), natural features, and water bodies identified through the records review, municipal drains, and contours of the area. • For projects proposed in southern Ontario, indicate that the 75 metre setback from petroleum wells and facilities has been met or an engineer's report prepared to mitigate any potential negative effects to the renewable energy generation facility.	
4.4 Land Ownership Applicants must clearly identify if the land is privately owned or owned by the Crown. A legal description of the parcels of the land that will be used for the proposed renewable energy generation facility must be provided for private land and Crown land, where available, at the time of application. If the applicant does not own the land over which the project is proposed, the PDR must describe through what legal means (easements, leases, etc.) it will be entitled to access and carry out all phases of the project on the land.	**4.4 Land Ownership** Applicants must clearly identify if the land is privately owned or owned by the Crown. A legal description of the parcels of the land that will be used for the proposed renewable energy generation facility must be provided for private land and Crown land, where available, at the time of application. If the applicant does not own the land over which the project is proposed, the PDR must describe through what legal means (easements, leases, etc.) it will be entitled to access and carry out all phases of the project on the land. For project locations proposed on Crown land or a mix of Crown and private lands, applicants should identify the: • land registration parcel identification number for registered interests; • jurisdiction of Crown lands affected by the proposed project (e.g. acquired, unpatented etc.); and • type of Crown tenure being sought (e.g. patent, lease, etc.)	• To clarify what the applicant should identify in PDR if project is proposed on Crown land.

Current	Proposed	Rationale
5.0 Description of Environmental Effects The reports required by Table 1 of O. Reg. 359/09 and in other sections of the regulation itself (such as for the Design and Operations Report, Surface Water Assessment Report, etc.) contain content sections that should allow for a fulsome discussion related to negative environmental effects that will or are likely to occur by engaging in the renewable energy project. For instance, negative environmental effects that will or are likely to occur from odour at a bio-energy facility can be discussed in relation to facility design measures in the Design and Operations Report and through the evaluation of odour in an odour study report (if required). However, applicants may identify additional negative environmental effects that will or are likely to occur that are not easily discussed in the standard reports required by the regulation. Two examples of additional reports that may be required to address negative environmental effects that will or are likely to occur are: Storm Water Management Plans and Traffic Management Plans. For instance, a solar project proposal could include landscaping changes that alter the quantity or quality of storm water flows generated on the site. An applicant may determine that to adequately describe this negative environmental effect that will or is likely to occur, a Storm Water Management Plan should be prepared even though such a report is not explicitly listed in Table 1 of O. Reg. 359/09. Similarly, a number of renewable energy projects can have negative environmental effects as a result of truck traffic related to construction and/or operation of the facility. If traffic issues are identified as a negative environmental effect that will or is likely to occur, an applicant	**5.0 Description of Environmental Effects** The reports required by Table 1 of O. Reg. 359/09 and in other sections of the regulation itself (such as for the Design and Operations Report, Surface Water Assessment Report, etc.) contain content sections that should allow for a fulsome discussion related to negative environmental effects that will or are likely to occur by engaging in the renewable energy project. For instance, negative environmental effects that will or are likely to occur from odour at a bio-energy facility can be discussed in relation to facility design measures in the Design and Operations Report and through the evaluation of odour in an odour study report (if required). However, some negative environmental effects that will or are likely to occur are not easily discussed in the standard reports required by the regulation. ~~Two examples of additional reports that may be required to address negative environmental effects that will or are likely to occur are: Storm Water Management Plans and Traffic Management Plans. For instance, a solar project proposal could include landscaping changes that alter the quantity or quality of storm water flows generated on the site. An applicant may determine that to adequately describe this negative environmental effect that will or is likely to occur, a Storm Water Management Plan should be prepared even though such a report is not explicitly listed in Table 1 of O. Reg. 359/09~~ **Stormwater Management Plan** The ministry expects applicants to include key elements of Stormwater Management Plans in the Project Description Report,	• To clarify ministry expectations of contents of REA reports.

Current	Proposed	Rationale
should prepare a Traffic Management Plan to evaluate this impact and propose mitigation measures. Further clarity on the content of Storm Water Management Plans and Traffic Management Plans, as well as circumstances where the ministry would expect such plans to be prepared, is given in sections 5.3 and 5.6, respectively	as this plan is already required in the Design and Operation Report and Construction Report of the REA application. Including this plan in the PDR reassures the ministry that the applicant is considering how to address negative environmental effects that will or are likely to occur. For instance, most renewable energy project proposals include land surface changes (both temporary and long term) that may alter the quantity or quality of storm water flows generated on the site. At a minimum, a conceptual Stormwater Management Plan and Erosion and Sediment Plan addressing all project phases should be prepared with the application to address any potential for negative environmental effects. **Traffic Management Plan** Similarly, a number of renewable energy projects can have negative environmental effects as a result of truck traffic related to construction and/or operation of the facility. If traffic issues are identified as a negative environmental effect that will or is likely to occur, an applicant should prepare a Traffic Management Plan to evaluate this impact and propose mitigation measures. Further clarity on the content of Storm Water Management Plans and Traffic Management Plans, as well as circumstances where the ministry would expect such plans to be prepared, is given in sections 5.3 and 5.6, respectively.	
5.2 Natural Heritage As outlined in section 6.2 of Chapter 1, applicants should consider whether the proposed renewable energy project may have an impact on natural heritage features including but not limited to Areas of Natural and Scientific Interest (ANSI), wetlands, woodlands, wildlife habitat, provincial parks, and conservation areas. This description will be largely based on conclusions drawn from reports related to the Natural Heritage Assessment (NHA)	**5.2 Natural Heritage** As outlined in section 6.2 of Chapter 1, applicants should consider whether the proposed renewable energy project may have an impact on natural heritage features including but not limited to Areas of Natural and Scientific Interest (ANSI), wetlands, woodlands, wildlife habitat, provincial parks, and conservation areas. This description will be largely based on conclusions drawn from reports related to the Natural Heritage	• To clarify that additional information may be required from applicants in order for MNRF to assess whether permits and approvals are

Current	Proposed	Rationale
prepared to fulfil REA requirements provided in sections 23.1 – 28 of O. Reg. 359/09. Applicants should consult the MNRF guide "*Natural Heritage Assessment Guide for Renewable Energy Projects*" for more information on this assessment.	Assessment (NHA) prepared to fulfil REA requirements provided in sections 23.1 – 28 of O. Reg. 359/09. Applicants should consult the MNRF guide "*Natural Heritage Assessment Guide for Renewable Energy Projects*" for more information on this assessment. In order to assess whether MNRF permits or approvals are needed, applicants may also be required to provide additional information about natural features and resources as outlined in the Section 6.3.2 of the APRD.	necessary.
5.2 Natural Heritage Applicants are encouraged to consult with conservation authorities regarding potential natural heritage features in the proposed development areas. As watershed managers, conservation authorities play an important role in the collection of natural heritage information.	**5.2 Natural Heritage** Applicants ~~are encouraged to~~ may also consult with conservation authorities regarding potential natural heritage features in the proposed development areas. As watershed managers, Conservation Authorities may have a board approved program or municipally delegated role in the collection of natural heritage information. ~~play an important role in the collection of natural heritage information.~~	• To clarify the role of Conservation Authorities in the collection of natural heritage information.
5.3 Impacts on Surface Water and Ground Water **Surface Water Runoff** If a Stormwater Management Plan is prepared, conclusions are drawn for this plan should be summarized to describe the significance of negative environmental effects that will or are likely to occur in the PDR. **Solar Facilities and Ground Water Monitoring** Depending on site location and characteristics, solar photovoltaic project proponents may be required to implement pre- and post-	**5.3 Impacts on Surface Water and Ground Water** **Surface Water Runoff** At a minimum, as set out in the Design and Operations Report, a conceptual Stormwater Management Plan and Erosion and Sediment Plan during construction and post-construction should be prepared and submitted with the application to address any potential for negative environmental effects. The ministry may require more detailed, site-specific Stormwater Management Plan and Erosion and Sediment Plan on a case by case basis. ~~**Solar Facilities and**~~ **Ground Water Monitoring**	• To clarify Ministry expectations that proponents may be required to implement ground water monitoring not only pre- and post-construction, but also during construction of renewable energy projects.

Current	Proposed	Rationale
construction ground water monitoring to ensure that any potential impacts on ground water are known and addressed prior to construction, particularly where drinking water sources stand potentially to be affected. In order to assess potential ground water issues and whether or not ground water monitoring may be required, applicants should contact the local MOE Regional or District Office early in the planning process to discuss any potential need for assessment and monitoring. The ministry's technical staff in the Regional or District Offices can provide guidance on what information may be required in order to properly assess the geological and hydrogeological conditions at the project site. If anything of environmental concern or significance is found during the ground water monitoring, the ministry will work with the applicants to ensure they take appropriate steps to address and mitigate any potential impacts. Contact information for Regional or District Offices can be found in Appendix 2.	Depending on site location and characteristics, ~~solar photovoltaic project proponents~~ applicants of all types of renewable energy projects may be required to implement ground water monitoring pre-, during and post-construction, ~~and during construction ground water monitoring~~ to ensure that any potential impacts on ground water are known and addressed, particularly where drinking water sources stand potentially to be affected. In order to assess potential ground water issues and whether or not ground water monitoring may be required, applicants should contact the local MOECC Regional or District Office early in the planning process to discuss any potential need for assessment and monitoring. The ministry's technical staff in the Regional or District Offices can provide guidance on what information may be required in order to properly assess the geological and hydrogeological conditions at the project site. If anything of environmental concern or significance is found during the ground water monitoring, the ministry will work with the applicants to ensure they take appropriate steps to address and mitigate any potential impacts. Contact information for Regional or District Offices can be found in Appendix 2.	
5.6 Airports/Aerodromes Proponents are encouraged to consult early in the REA process with municipalities and owners/operators of local airports and/or aerodromes to determine if there are any concerns with respect to the impact the project may have on the airport/aerodrome's operations. Proponents should make every effort to mitigate any concerns raised by the public, owner/operator of the airport/aerodrome, and the local municipality. Proponents should also contact the MOE, Environmental Approvals Access and Service Integration Branch to discuss the issues raised and the potential mitigation. Additionally, proponents may be subject to	**5.6 Airports/Aerodromes** Proponents are encouraged to consult early in the REA process with municipalities and owners/operators of local airports and/or aerodromes to determine if there are any concerns with respect to the impact the project may have on the airport/aerodrome's operations. This may include contacting airports and/or aerodromes surrounding the project that are outside of the local municipality. Proponents should make every effort to mitigate any concerns raised by the public, owner/operator of the airport/aerodrome, and the local municipality. Proponents should also contact the MOECC, Environmental Approvals Access and	• To clarify the ministry's expectations regarding contacting airports surrounding the project location.

Current	Proposed	Rationale
marking and lighting requirements on structures located near airports/aerodromes as determined by Transport Canada. Nav Canada may also notify proponents of any potential of disturbances to the air navigation and/or radar systems and, in some cases, may request the movement of turbines and/or require the airport to alter instrument approaches if there is the potential to affect these systems.	Service Integration Branch to discuss the issues raised and the potential mitigation. Additionally, proponents may be subject to marking and lighting requirements on structures located near airports/aerodromes as determined by Transport Canada. Nav Canada may also notify proponents of any potential of disturbances to the air navigation and/or radar systems and, in some cases, may request the movement of turbines and/or require the airport to alter instrument approaches if there is the potential to affect these systems.	

Chapter 5: Guidance for Preparing the Construction Plan Report

Current	Proposed	Rationale
3.4 Temporary Uses of Land Construction activities may result in temporary changes to land surface or grading as well as the installation of temporary structures such as culverts. This may be due to the construction of temporary access roads or staging areas. Any change to land that occurs during construction and is not reflected in the permanent design of the renewable energy generation facility (i.e. site plan of the Design and Operations Report) should be described. This should include: • The extent of the affected area; • A description of the land use prior to construction; • A description of the temporary land use during construction; • A description of how the temporary land use is reasonable for the soil conditions of the project location;	**3.4 Temporary Uses of Land** Construction activities may result in temporary changes to the land surface or grading as well as from the installation of temporary structures such as culverts, grading and compaction. This may be due to the construction of temporary access roads or staging areas. Any change to land that occurs during construction and is not reflected in the permanent design of the renewable energy generation facility (i.e. site plan of the Design and Operations Report) should be described. This should include: • The extent of the affected area; • A description of the land use prior to construction; • A description of the temporary land use during construction; • A description of how the temporary land use is reasonable for the soil conditions of the project location;	• To clarify expectations related to agricultural land.

Current	Proposed	Rationale
• The timing and duration of the temporary change; and • Activities planned to restore the condition of the land, if any. Applicants are encouraged to contact the local conservation authority to assess the need for any permissions which may be required as a result of temporary changes to land surfaces, grading or the installation of temporary structures.	• The timing and duration of the temporary change; and • Activities planned to restore the condition of the land, if any. If the project site is agricultural, the ministry expects a detailed description of how land capability for agriculture will be maintained or improved following construction activities. For example, soil erosion is mitigated; any topsoil and subsoil removed is stockpiled separately and used to restore any disturbed areas; and drainage and irrigation systems that enhance the productivity of agricultural land are maintained or improved. Applicants are encouraged to contact the local conservation authority to assess the need for any permissions which may be required as a result of temporary changes to land surfaces, grading or the installation of temporary structures.	
4.2 Destruction of Vegetation *New sub-section added (4.2.1)*	**4.2.1 Impact to Prime Agricultural Land** Impacts on the productivity of agricultural land should be mitigated during wind turbine or ground-mounted solar construction. For example, drainage and irrigation systems that enhance the productivity of the agricultural land should be maintained or improved. Applicants should ensure internal roads to facility components (such as wind turbines and ground-mounted solar facilities) are located in a way that minimizes impacts on agricultural land. For example, roads should be placed along property lines or field boundaries to avoid bisecting fields. Width of internal roads should also be considered and not wider than necessary so they	• To clarify expectations related to agricultural land.

Current	Proposed	Rationale
	do not negatively impact surrounding agriculture.	
4.3 Surface Water Runoff Construction activities can change land surface properties that may result in a negative environmental effect related to changes in the quantity and quality of surface water runoff. Any activities that alter the surface properties of land or water drainage should be considered as a negative environmental effect that will or is likely to occur. Some examples include: • Removal of vegetation; • Impervious surface treatments such as concrete or asphalt; • Re-grading land; and • Compacting soils through use of heavy machinery. If significant negative environmental effects will or are likely to occur from surface water runoff during construction, the applicant may determine that a Storm Water Management Plan is the only way to adequately describe surface water runoff and the efficacy of proposed storm water management facilities used to mitigate impacts. More information on Storm Water Management Plans can be found in section 5.3 of Chapter 4. **Impacts Related to Water Takings** If a proponent encounters extraordinary conditions (i.e. an infrequent storm event) following the issuance of the REA that necessitate additional water takings (i.e. construction dewatering) beyond what is permitted under their REA, they are advised to immediately contact the MOE's Environmental Approvals Branch. In this situation, proponents would be expected to provide a description with respect to the additional water taking that	**4.3 Surface Water Runoff** Construction activities can change land surface properties that may result in a negative environmental effect related to changes in the quantity and quality of surface water runoff. Any activities that alter the surface properties of land or water drainage should be considered as a negative environmental effect that will or is likely to occur. Some examples include: • Removal of vegetation; • Impervious surface treatments such as concrete or asphalt; • Re-grading land; and • Compacting soils through use of heavy machinery. As part of the Design and Operations report, a conceptual Stormwater Management Plan and Erosion and Sediment Plan addressing the design and operation of the facility is required to be prepared to address any potential for negative environmental effects, and include: • a description of any works for the collection, transmission, treatment and disposal of sewage, • a description of the expected quantity of sewage produced and the expected quality of that sewage at the project location and • the manner in which it will be disposed of, including details of any sediment control features and storm water management facilities. When preparing the construction plan report the ministry expects	• To clarify the ministry's expectations in the Construction Plan Report regarding surface water runoff and water taking.

Current	Proposed	Rationale
specifically describes the proposed measures to prevent impacts to any local water supplies (e.g., by either interfering with existing supplies or inducing mobilization of contaminated groundwater to impact local wells) and how discharge/return flows would be managed to similarly avoid impacts to any water supplies or the natural environment. Following receipt of this and any other additional information requested by the ministry, the MOE will provide the proponent with direction on how to address the situation, through its existing suite of compliance tools, to allow the project to proceed in a timely manner while maintaining environmental protection. *New Subsection added: Water Taking EASR*	the same level of detail in respect of the construction activities. Alternatively, a Stormwater Management Plan and Erosion and Sediment Plan addressing all project phases can be prepared as a stand-alone document. The ministry may require more detailed, site-specific Stormwater Management Plan and Erosion and Sediment Plan on a case by case basis. More information on Storm Water Management Plans can be found in section 5.3 of Chapter 4. **Impacts Related to Water Takings** If a proponent encounters extraordinary conditions (i.e. an infrequent storm event) following the issuance of the REA that necessitate additional water takings (i.e. construction dewatering) beyond what is permitted under their REA, they are advised to immediately contact the ~~MOE's Environmental Approvals Branch~~ MOECC local District Office. In this situation, proponents would be expected to provide a description with respect to the additional water taking that specifically describes the proposed measures to prevent impacts to any local water supplies (e.g., by either interfering with existing supplies or inducing mobilization of contaminated groundwater to impact local wells) and how discharge/return flows would be managed to similarly avoid impacts to any water supplies or the natural environment. Following receipt of this and any other additional information requested by the ministry, the MOE will provide the proponent with direction on how to address the situation, through its existing	

Current	Proposed	Rationale
	suite of compliance tools, to allow the project to proceed in a timely manner while maintaining environmental protection. **Water Taking EASR** Engaging in some aspects of a renewable energy project may require registration on MOECC's Environmental Activity and Sector Registry (EASR) for Water Taking. The EASR is a risk-based environmental approvals program which requires businesses to register prescribed activities in the EASR (such as water taking). If either of the following two water takings activities will be engaged during the renewable energy projects then registration on the EASR for the water taking may be required. 1. Construction site dewatering involving more than 50,000 L/day and less than 400,000 L/day; and 2. Surface water takings that are more than 50,000 L/day and are for road construction purposes that meet specified criteria about the purpose, rate or location of the water taking. For more detail on the eligibility criteria and operation conditions associated with each EASR, please refer to the EASR Website or the EASR Regulation for Water Taking O.Reg. 63/16. It is anticipated that conditions of a REA will pre-authorize these activities so than an amendment to a REA is not required.	

Chapter 6: Guidance for preparing the Design and Operations Report

Current	Proposed	Rationale
5.1 Water Taking If a proponent encounters extraordinary conditions (i.e. an infrequent storm event) following the issuance of the REA that necessitate additional water takings (i.e. construction dewatering) beyond what is permitted under their REA, they are advised to immediately contact the MOE's Environmental Approvals Branch. In this situation, proponents would be expected to provide a description with respect to the additional water taking that specifically describes the proposed measures to prevent impacts to any local water supplies (e.g., by either interfering with existing supplies or inducing mobilization of contaminated groundwater to impact local wells) and how discharge/return flows would be managed to similarly avoid impacts to any water supplies or the natural environment. Following receipt of this and any other additional information requested by the ministry, the MOE will provide the proponent with direction on how to address the situation, through its existing suite of compliance tools, to allow the project to proceed in a timely manner while maintaining environmental protection.	**5.1 Water Taking** If a proponent encounters extraordinary conditions (i.e. an infrequent storm event) following the issuance of the REA that necessitate additional water takings (i.e. construction dewatering) beyond what is permitted under their REA, they are advised to immediately contact the MOECC local District Office ~~MOE's Environmental Approvals Branch~~. In this situation, proponents would be expected to provide a description with respect to the additional water taking that specifically describes the proposed measures to prevent impacts to any local water supplies (e.g., by either interfering with existing supplies or inducing mobilization of contaminated groundwater to impact local wells) and how discharge/return flows would be managed to similarly avoid impacts to any water supplies or the natural environment. Following receipt of this and any other additional information requested by the ministry, the MOE will provide the proponent with direction on how to address the situation, through its existing suite of compliance tools, to allow the project to proceed in a timely manner while maintaining environmental protection. **Water Taking EASR** Engaging in some aspects of a renewable energy projects may require registration on MOECC's Environmental Activity and Sector Registry (EASR) for Water Taking. The EASR is a risk-based environmental approvals program which requires businesses to register prescribed activities in the EASR (such as water taking). If either of the following two water takings activities will be	• To clarify the ministry's expectations in the Design and Operations Report regarding water taking.

Current	Proposed	Rationale
	engaged during the renewable energy projects then registration on the EASR for the water taking may be required: 1. Construction site dewatering involving more than 50,000 L/day and less than 400,000 L/day; and 2. Surface water takings that are more than 50,000 L/day and are for road construction purposes that meet specified criteria about the purpose, rate or location of the water taking. For more detail on the eligibility criteria and operation conditions associated with each EASR, please refer to the EASR Website or the EASR Regulation for Water Taking O.Reg. 63/16. It is anticipated that conditions of a REA will pre-authorize these activities so that an amendment to a REA is not required.	

Chapter 7: Guidance for preparing the Decommissioning Plan Report

Current	Proposed	Rationale
2. Determining the Probable Future Use for the Facility The first step in preparing a decommissioning plan is to determine the probable future use of the project location after the project is decommissioned. This determination should be made by the applicant and be clearly indicated in the DPR. To guide the applicant in describing the probable future use, the following should be considered: • For many projects the current land use prior to development of	**2. Determining the Probable Future Use for the Facility** The first step in preparing a decommissioning plan is to determine the probable future use of the project location after the project is decommissioned. This determination should be made by the applicant and be clearly indicated in the DPR. To guide the applicant in describing the probable future use, the following should be considered: • For many projects the current land use prior to development	• To clarify expectations related to agricultural land.

Current	Proposed	Rationale
the project may be the most probable future use. For instance a wind or solar project on agricultural land would most probably be returned to a similar agricultural use at the termination of the project. • Current zoning or Official Plans of the local municipality may be helpful in determining a probable future use. • If the project is located within a specified land use planning area such as the Oak Ridges Moraine, Greenbelt, Niagara escarpment, or the Lake Simcoe watershed, among others, the relevant land use plans may assist in determining appropriate conditions of the probable future use.	of the project may be the most probable future use. For instance a wind or solar project on agricultural land would most probably be returned to a similar agricultural use at the termination of the project. • Current zoning or Official Plans of the local municipality may be helpful in determining a probable future use. • If a wind turbine facility is located in a prime agricultural area, the land should be restored back to agriculture, with the same capability for agriculture that existed prior to wind turbine facility development. • If the project is located within a specified land use planning area such as the Oak Ridges Moraine, Greenbelt, Niagara Escarpment, or the Lake Simcoe watershed, among others, the relevant land use plans may assist in determining appropriate conditions of the probable future use.	
3. Content Overview In addition to describing how the project will be decommissioned at the end of the project life, the DPR should also include a separate section with a plan for decommissioning in the event that the project is abandoned during construction. This plan should account for the mitigation of any impacts from storm water runoff or dust resulting from an incomplete construction process. The probable end use for the site if abandoned during construction should be the use of the site prior to construction.	**3. Content Overview** In addition to describing how the project will be decommissioned at the end of the project life, the DPR should also include a separate section with a plan for decommissioning in the event that the project is abandoned during construction. This plan should account for the mitigation of any impacts from storm water runoff or dust resulting from an incomplete construction process. The probable end use for the site if abandoned during construction should be the use of the site prior to construction. Applicants are reminded that the Decommissioning Plan will be	• To provide greater clarity to proponents of what is required in the Decommissioning Plan. • To clarify that MNRF reviews the Decommissioning Plan as part of their decisions on permits and approvals.

Current	Proposed	Rationale
	reviewed by MNRF to inform decisions on permits and approvals. For projects proposed on Crown land, the APRD requires the decommissioning plan to ensure that the project location is restored to a clean and safe condition as determined by the MNRF on a project basis. This includes the retiring, abandoning, dismantling, or removing from active service, working order, or operation all components of the renewable energy project, including access roads.	
4.2 Site Restoration In the DPR, applicants are required to describe how the lands and water will be restored to bring the site into a condition consistent with the probable future use. The site restoration activities that may be considered as part of the DPR include but are not limited to removal of all non-native material placed in the project location area including stone, concrete and asphalt. Restoration can also include seeding and re-vegetation to mitigate potential soil erosion. In describing the site restoration activities, applicants are strongly encouraged to consider the soil type as well as the size and type of infrastructure implemented and develop measures accordingly. For example, if the renewable energy generation facility is to be decommissioned to a probable future agricultural land use, the applicant should propose methods for restoring the soil to provide for that use.	**4.2 Site Restoration** In the DPR, applicants are required to describe how the lands and water will be restored to bring the site into a condition consistent with the probable future use. The site restoration activities that may be considered as part of the DPR include but are not limited to removal of all non-native material placed in the project location area including stone, concrete and asphalt. Restoration can also include seeding and re-vegetation to mitigate potential soil erosion. In describing the site restoration activities, applicants are strongly encouraged to consider the soil type as well as the size and type of infrastructure implemented and develop measures accordingly. For example, if the renewable energy generation facility is to be decommissioned to a probable future agricultural land use, the applicant should propose methods for restoring the soil to provide for that use. This would include returning the soil on site, separated into soil horizons for restoration (i.e. topsoil, subsoil), restoring soil quality and preventing soil erosion.	• To clarify expectations related to agricultural land.

Chapter 8: Guidance for preparing the Water Assessment Report and supplementary reporting on any additional mitigation

Current	Proposed	Rationale
3.1.2 Fisheries Act In Canada, fish habitat is regulated under the federal Fisheries Act and the Policy for the Management of Fish Habitat. DFO administers its Fish Habitat Management Program and plays a pivotal role in the conservation and protection of fish habitat in Canada. The Fish Habitat Protection provisions of the federal Fisheries Act provide for the protection of fish habitat. The principal provision under section 35 (1) states that "no person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat, except those authorized under section 35 (2)." An applicant of a project which may impede fish passage, change water flow in a watercourse, impact fish habitat, or kill fish by means other than fishing, should contact a local conservation authority where one exists, or otherwise, should contact the appropriate local DFO Office to discuss its requirements. Before they get too far in the project planning, applicants must make sure that they are clear as to which process they need to follow to be in compliance with the Fisheries Act. If they are required, applicants should note that authorizations under the Fisheries Act must be obtained from the appropriate federal authority. The Fisheries Act has other provisions related to Fish Habitat Protection and Pollution Prevention, including those related to the prohibition of depositing deleterious substances into fish-bearing waters (section 36) and fish passage (found in several sections). Section 36 (3) of the Fisheries Act is administered by Environment Canada and specifies that, unless authorized by	**3.1.2 Fisheries Act** In Canada, fish habitat is regulated under the federal Fisheries Act and the Fisheries Protection Policy Statement ~~for the Management of Fish Habitat~~. Fisheries and Oceans Canada (DFO) administers its Fisheries Protection ~~Habitat Management~~ Program and plays a pivotal role in the conservation and protection of fish habitat in Canada. The Fisheries ~~Habitat~~ Protection and Pollution Prevention provisions of the federal Fisheries Act provide for the protection of fish habitat. The principal provision under section 35 (1) states that "*no person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery, ~~.the harmful alteration, disruption or destruction of fish habitat~~ except those authorized under section 35 (2)*." Serious harm to fish is defined under the Act as "*the death of fish or any permanent alteration to, or destruction of, fish habitat*". An applicant of a project which may impede fish passage, change water flow in a watercourse, impact fish habitat, or kill fish by means other than fishing, should contact ~~a local conservation authority where one exists, or otherwise, should contact the appropriate~~ the local DFO Fisheries Protection Office to discuss ~~its~~ requirements. Before they get too far in the project planning, applicants must make sure that they are clear as to which process they need to follow to be in compliance with the Fisheries Act. If they are required, applicants should note that authorizations under the Fisheries Act must be obtained from the	• To make terminology consistent with the 2012 amendments to the Fisheries Act.

Current	Proposed	Rationale
federal regulation, no person shall deposit or permit the deposit of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water. Applicants should note that for renewable energy projects, authorizations cannot be obtained for depositing any deleterious substances into the water. Proponents should be aware of the most recent regulation, as changes occur from time to time. Applicants should also note that the DFO and conservation authorities have partnership agreements whereby conservation authorities may review proposals under the Fisheries Act on DFO's behalf.	appropriate federal authority. The Fisheries Act has other provisions related to Fisheries Protection ~~Habitat~~ and Pollution Prevention, including those related to the prohibition of depositing deleterious substances into fish-bearing waters (section 36) and fish passage (found in several sections). Section 36 (3) of the Fisheries Act is administered by Environment Canada and specifies that, unless authorized by federal regulation, no person shall deposit or permit the deposit of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water. Applicants should note that for renewable energy projects, authorizations cannot be obtained for depositing any deleterious substances into the water. Proponents should be aware of the most recent regulation, as changes occur from time to time. ~~Applicants should also note that the DFO and conservation authorities have partnership agreements whereby conservation authorities may review proposals under the Fisheries Act on DFO's behalf.~~	
3.1.3 Endangered Species Act, 2007 Applicants may also need to obtain an approval under the Endangered Species Act, 2007 from the MNR if the project is likely to have an adverse impact on protected species or their habitat. Applicants should contact the appropriate local MNR Regional or District Office, early in the process, to discuss any potential requirements for their projects under the Endangered Species Act, 2007. Applicants should also consult the MNR's "*Approval and Permitting Requirements Document for Renewable*	**3.1.3. Endangered Species Act, 2007 (ESA)** Applicants may also need to obtain ~~an approval under the Endangered Species Act, 2007 from the MNR~~ a permit (section 17 of the ESA) or use a regulatory exemption (sections 23.6, 23.13 or 23.20 of O. Reg 242/08) under the ESA if the project is likely to have an adverse effect on a protected species or its habitat. Applicants should contact the appropriate local MNRF Regional or District Office, early in the process, to discuss any potential requirements for their projects under the ESA.	• To clarify requirements under the Endangered Species Act.

Current	Proposed	Rationale
Energy Projects."	Applicants should also consult the MNRF's "*Approval and Permitting Requirements Document for Renewable Energy Projects*."	
5.1.2 Section 40 O. Reg. 359/09 includes specific requirements for the projects which would be proposed to be built within the Oak Ridges Moraine Conservation Plan Area. Within the Oak Ridges Moraine Conservation Plan Area, only transmission/distribution lines which are part of the renewable energy generation facility can be located in or within 30 metres of the water body. If this is proposed, a supplementary report documenting any additional mitigation measures must be prepared in accordance with subsection 44 (2) of O. Reg. 359/09 and submitted as part of the REA application. This supplementary report should identify and assess negative effects of the construction, installation or operation of the transmission line that will or are likely to occur on the water body and the area within 30 metres of the water body.	**5.1.2 Section 40** O. Reg. 359/09 includes specific requirements for the projects which would be proposed to be built within the Oak Ridges Moraine Conservation Plan Area. Within the Oak Ridges Moraine Conservation Plan Area, only transmission~~/distribution~~ lines which are part of the renewable energy generation facility can be located in or within 30 metres of the water body. If this is proposed, a supplementary report documenting any additional mitigation measures must be prepared in accordance with subsection 44 (2) of O. Reg. 359/09 and submitted as part of the REA application. This supplementary report should identify and assess negative effects of the construction, installation or operation of the transmission line that will or are likely to occur on the water body and the area within 30 metres of the water body.	• To clarify the ministry's intent that distribution lines are not included in this provision.

Chapter 9: Additional reports that may be required as part of an REA application

Current	Proposed	Rationale
9.2 Noise Study Reports for Class 3 Solar Facilities *New section added (9.2.1)*	**9.2.1 Equipment Location in Noise Studies for Class 3 Solar Facilities** Proponents of solar facilities may use a polygon multiple scenario approach for equipment location in noise studies, given the following: • All noise receptors are located outside of the perimeter of where the solar panels or inverters will be located.	• Using a polygon approach in noise studies will prevent proponents from having to obtain a REA amendment for minor changes to their project which are not a

Current	Proposed	Rationale
	• Polygon must be limited to a 3-4 point constraint to create a triangle, square or rectangle (no irregular shapes with more than 4 points) • Proponents are required to plot the noise contours of each scenario in the noise assessment report submitted as part of the REA Application. • Proponents are not able to use this polygon multiple scenario approach if control measures (i.e. noise barriers) are included in the design of the facility or if other solar projects are located nearby as this would affect the proper completion of a combined noise impact assessment. **Solar As-Built Report** Proponents should be aware that the REA will include conditions requiring a "Solar As-Built Report" to be prepared upon completion of construction and submitted to the MOECC Director. The report must include a comparison between the approved coordinates and as-built coordinates in Table format and include the accuracy of measurement. (See sample in Appendix B). Conditions will also require that the report be posted on the project's website (see section 9.2.2).	concern to the ministry.
9.3 Noise Study Report for Wind Facilities *New section added (9.3.1)*	**9.3.1 Equipment Specification in Noise Studies for Wind Facilities** • Wind proponents are required to include wind turbine make/model in REA applications, but "acoustically equivalent" can be included in the description of the equipment. Acoustically equivalent is defined as the same or lower overall and octave band sound power levels, tonal audibility value, height of nacelle, but not electrical output. • If an "acoustically equivalent" wind turbine(s) is used, a new	• To provide clarity to proponents regarding acoustically equivalent equipment specifications.

Current	Proposed	Rationale
	REA condition requires the proponent to submit a Wind Turbine Specifications Checklist confirming the actual equipment make/model constructed at the project site.	
New subsection added to 9.3.1 *Sample Checklist in appendix C of this chart.*	**Wind Turbine Specifications Checklist** In addition to providing the wind turbine specifications, proponents must complete and submit the Wind Turbine Specifications Checklist as part of the REA application form. This will help guide applicants with the Wind Turbine Specifications Report, ensuring that all necessary information is included with the application. The checklist is to be submitted in addition to the Wind Turbine Specifications Report.	• To identify the ministry's expectations of the requirements of the Specifications Report for wind facilities.

Chapter 10: Making Changes to Renewable Energy Approval (REA) Projects

Current	Proposed	Rationale
1.3 Operational Flexibility *New section added (1.3.1)*	**1.3.1 Specific Activities Exempt from REA Amendments (Exemptions, ss. 47.3 (1) and 186 (3) of the Act)** Developers making specific changes to a project may be exempt from having to obtain an amendment to a REA. These specified changes cannot be within any of the setbacks in Part V of O.Reg 359/09 or rely on any exemptions that may be contained within those sections. Eligible activities include: 1. A change to the size or location of an area used for temporary storage of equipment or supplies.	• To align with regulatory amendments which came into effect on May 1, 2016.

Current	Proposed	Rationale
	2. A reduction in the size of the project location, as long as there are no changes to the infrastructure or equipment that forms part, or is proposed to form part, of the renewable energy generation facility. 3. A change to the location where the renewable energy generation facility connects, or is proposed to connect, to, (i) a transmission system with respect to which, pursuant to agreements, the Independent Electricity System Operator has authority to direct operations, or (ii) the distribution system of the distributor in whose distribution service area the renewable energy generation facility is located. 4. A change in respect of a communications tower. 5. A change in the location of fencing. 6. A change to the make, model, arrangement, tracking system, number or name plate capacity of solar photovoltaic collector panels used, or proposed to be used, at the renewable energy generation facility, as long as there is no increase in the noise emissions from the facility. 7. A change in respect of a fiber optic communications line. In addition, the following conditions apply: ○ Changes must take place on the same parcel of land where the project was approved to be engaged in. ○ For changes made, any required authorizations for properties protected from a heritage perspective must have been obtained.	

Current	Proposed	Rationale
	○ The proposed change must take place at a location at which a natural heritage assessment was conducted and a confirmation was issued by MNRF. ○ The person must obtain, where an archeological assessment report was required, the opinion of a consultant archeologist that the proposed change would not alter the conclusion of the report that was prepared and would not result in any additional archaeological concerns. ○ Where an archeological assessment report was not required based on the determination of low potential for the presence of an archeological resource, the person must be of the opinion that proposed change does not alter that determination. ○ The person must obtain, where a heritage assessment report was required, the opinion of the persons who prepared the report that he proposed change would not alter the recommendations set out in the report that was prepared and would not result in any new or increased impacts to heritage attributes that are subject to evaluation. ○ Where a heritage assessment report was not required based on the determination of low potential for the presence of a heritage resource and no abutting protect properties, the person must be of the opinion that proposed change does not alter that determination. Developers are required to provide written notification of the change to the Director and the ministry's District Manager in each district in which the project is situated for record-keeping and monitoring purposes within 30 days after making the change. Developers are also required to post the notification of the	

Current	Proposed	Rationale
	change on their website to ensure public awareness. As a best practice, developers should also post the Modification Document on their website for at least 60 days.	
2. Categories of Project Changes **The categorization and final requirements, if any, which may be imposed for additional documentation, notification and consultation is at the discretion of the Director.** Proponents seeking to make a change are encouraged to speak with the Environmental Approvals Access and Service Integration Branch of the MOE as soon as possible if clarification or further guidance is required in determining the category of proposed change(s). Proponents are also advised to contact the MNR and the Ministry of Tourism, Culture and Sport (MTCS) to determine impacts to the archaeological and/or cultural heritage assessments, respectively, prior to communicating proposed project changes to the MOE.	**2. Categories of Project Changes** **The categorization and final requirements, if any, which may be imposed for additional documentation, notification and consultation is at the discretion of the Director.** Proponents seeking to make a change are encouraged to speak with the Environmental Approvals Access and Service Integration Branch of the MOECC as soon as possible if clarification or further guidance is required in determining the category of proposed change(s). MOECC will receive and review the proposed changes and determine if further involvement from MNRF is required to meet the REA requirements for natural heritage assessments. In addition, p~~P~~roponents are also advised to contact the ~~MNR and the~~ Ministry of Tourism, Culture and Sport (MTCS) to determine impacts to the ~~natural heritage,~~ archaeological and/or cultural heritage assessments, respectively, prior to communicating proposed project changes to the MOECC.	• To clarify that MOECC reviews proposed project changes prior to MNRF.
2.2 Technical Change Technical changes are those that will not result in increased negative environmental effects that will or are likely to occur beyond those that were identified, documented and consulted on during the REA process for the original project. Proposed changes that will result in improvements to the environment are also included in this category. Factors for consideration in determining if a change falls into this category include: • No increase to the Project Location size;	**2.2 Technical Change** Technical changes are those that will not result in increased negative environmental effects that will or are likely to occur beyond those that were identified, documented and consulted on during the REA process for the original project. Proposed changes that will result in improvements to the environment are also included in this category. Factors for consideration in determining if a change falls into this category include: • No increase to the Project Location size;	• To clarify natural heritage considerations in determining if a project change is a technical change.

Current	Proposed	Rationale
• No increase (same or lower) in the overall impact at the receptors (e.g. noise, odour, etc.); • No additional lands require archaeological assessment AND there are no changes to previous recommendations for further assessment; • Reconfirmation of written confirmation and comments for cultural heritage; • Reconfirmation of written confirmation and comments for natural heritage (i.e. no change) or reduction in requirements (i.e. reduced footprint, reduced environmental effects, monitoring plan requirements).	• No increase (same or lower) in the overall impact at the receptors (e.g. noise, odour, etc.); • No additional lands require archaeological assessment AND there are no changes to previous recommendations for further assessment; • Reconfirmation of written confirmation and comments for cultural heritage; • No change to/ or reduction in regard to ~~Reconfirmation of written confirmation and comments for~~ natural heritage requirements ~~(i.e. no change) or reduction in requirements~~ (i.e. unchanged/reduced project location footprint, no previously unidentified natural features/ no new impacts ~~reduced environmental effects, monitoring plan requirements~~).	
3.1.1 Description and Rationale See paragraphs 16.01(3)4, 32.3(1)4 and subsection 32.4 of O. Reg. 359/09. Whether a change is proposed before or after an REA is issued, proponents must provide in writing to the Director a document setting out a written description of and rationale for the proposed change. This is described in more detail later as the “Modification(s) Document”, and may be prepared in an iterative fashion over several versions. It may, depending on the context, summarize, record and propose additional or updated documentation, notification and consultation, and will be utilized in determining if the Director must impose additional requirements with respect to these things. For project changes proposed after the issuance of an REA, this could include one or more reports.	**3.1.1 Description and Rationale** See paragraphs 16.01(3)4, 32.3(1)4 and subsection 32.4 of O. Reg. 359/09. Whether a change is proposed before or after an REA is issued, proponents must provide in writing to the Director a document setting out a written description of and rationale for the proposed change. This is described in more detail later as the “Modification(s) Document”, and may be prepared in an iterative fashion over several versions. ~~It may, d~~Depending on the context, the document may summarize, record and propose additional or updated documentation, notification and consultation, and will be utilized in determining if the Director must impose additional requirements with respect to these things. For project changes proposed after the issuance of an REA, this could include one or	• To clarify the ministry’s review process.

Current	Proposed	Rationale
Proponents are also encouraged to seek guidance from MNRF and MTCS with regard to the potential impact of the proposed change on natural or cultural heritage work and assessments, respectively, prior to communicating the proposed project change(s) to the MOECC.	more reports. MOECC will receive and review the proposed changes and determine if further involvement from MNRF is required to meet the REA requirements for natural heritage assessments. Proponents are also encouraged to seek guidance from ~~MNRF and~~ MTCS with regard to the potential impact of the proposed change on ~~natural or~~ cultural heritage work and assessments, respectively, prior to communicating the proposed project change(s) to the MOECC.	
3.1.1 Description and Rationale The final Modification(s) Document should include: • A summary of the proposed project change(s), including the reason for the change. • An explanation of how the desired change will resolve any issue(s) identified, whether there are any new negative environmental effects that will or are likely to occur as a result of the proposed change, and if required, how those effects are proposed to be mitigated. • A list of each report and study submitted with the REA application and a description of the amendments/updates to each, including: - Where reports or studies do not require a material change to the content, explain how the proposed change does not impact the document. - Where requirements for notification and/or consultation are imposed by the Director and an REA is under MOE technical review or where an REA has been issued, a copy of the notice and evidence that it was published in	**3.1.1 Description and Rationale** The final Modification(s) Document should include: • A summary of the proposed project change(s), including the reason for the change. • An explanation of how the desired change will resolve any issue(s) identified, whether there are any new negative environmental effects that will or are likely to occur as a result of the proposed change, and if required, how those effects are proposed to be mitigated. • A list of each report and study submitted with the REA application and a description of the amendments/updates to each, including: - Where reports or studies do not require a material change to the content, explain how the proposed change does not impact the document. - Where requirements for notification and/or consultation are imposed by the Director and an REA is under MOECC technical review or where an REA has been issued, a copy of the notice and evidence that it was published in	• To clarify the ministry's expectations to proponents.

Current	Proposed	Rationale
accordance with the regulation should be included. - Should include a table that shows the page number, section, original text and revised text, where appropriate. - A summary of the discussion with MNRF and MTCS with respect to the proposed change(s) and, if required, what additional work was imposed by the respective ministries. - Any new letter or addendum to the original letter issued by MNR and/or MTCS	accordance with the regulation should be included. - Should include a table that shows the page number, section, original text and revised text, where appropriate. - If the project changes require involvement from MNRF; a summary of the discussion with MNRF with respect to the proposed change(s) and additional work in order to meet the REA requirements. - A summary of the discussion with ~~MNRF and~~ MTCS with respect to the proposed change(s) and, if required, what additional work was ~~imposed~~ required ~~by the respective ministries.~~ - Any new letter or addendum to the original letter issued by MNRF and/or MTCS	
3.1.2 Additional Documentation: Reports, Studies and Written Confirmation/Comments Determining impacts to the Natural and Cultural Heritage Documentation When considering project changes, proponents must also determine if further work is required in addition to the original natural heritage, archaeological and cultural heritage assessments and whether these assessment reports will need to be revised, or in the case where one was not previously done, whether one is required. For example, moving part of the project to within the setback of a significant natural heritage feature (e.g. significant woodland) would require the preparation of an Environmental Impact Study Report if the original Project	**3.1.2 Additional Documentation: Reports, Studies and Written Confirmation/Comments** Determining impacts to the Natural and Cultural Heritage Documentation When considering project changes, proponents must also determine if further work is required in addition to the original natural heritage, archaeological and cultural heritage assessments and whether these assessment reports will need to be revised, or in the case where one was not previously done, whether one is required. For example, moving part of the project to within the setback of a significant natural heritage feature (e.g. significant woodland) would require the preparation of an Environmental Impact Study Report if the original Project	• To clarify the ministry's review process and clarify the ministry's expectations to proponents.

Current	Proposed	Rationale
Location was not within the setback area. Proponents are strongly encouraged to contact the MNRF or the MTCS to determine impacts to the natural heritage, archaeological and/or cultural heritage assessments, respectively, prior to communicating proposed project changes to the MOE. *Natural Heritage* If the proponent has already obtained written confirmation and comments from MNR, the proponent should contact MNR to discuss whether the Natural Heritage Assessment (NHA) and the Environmental Effects Monitoring Plan (EEMP) will be affected by the proposed project changes.	Location was not within the setback area. MOECC will receive and review the proposed changes and determine if further involvement from MNRF is required to meet the REA requirements for natural heritage assessments. Proponents are strongly encouraged to also contact ~~the MNRF or~~ the MTCS to determine impacts to the ~~natural heritage~~, archaeological and/or cultural heritage assessments, respectively, prior to communicating proposed project changes to the MOECC. *Natural Heritage* If the proponent has already obtained written confirmation and comments from MNRF, the proponent ~~should~~ may be directed to contact MNRF to discuss ~~whether~~ how the Natural Heritage Assessment (NHA) and the Environmental Effects Monitoring Plan (EEMP) ~~will be~~ are affected by the proposed project changes.	
3.2 Notification This section deals exclusively with the typical requirements for notification which would likely be imposed on the proponent under paragraph 16.0.1 (3)1 or 32.3 (1)1 of O.Reg.359/09. The typical notification requirements outlined below are applicable to changes proposed after the final public meeting and/or after the issuance of an REA, unless otherwise clarified. Proposed administrative changes will typically not require notification to the public, municipalities and Aboriginal communities.	**3.2 Notification** This section deals exclusively with the typical requirements for notification which would likely be imposed on the proponent under paragraph 16.0.1 (3)1 or 32.3 (1)1 of O.Reg.359/09. The typical notification requirements outlined below are applicable to changes proposed after the final public meeting and/or after the issuance of an REA, unless otherwise clarified. Proposed administrative changes will typically not require notification to the public, municipalities and Aboriginal communities; however, some administrative changes, ~~-~~such as a change in a company's name, should be posted by the proponent on their website for public awareness.	• To clarify that proponents should notify the public of a company name change on their website.

Chapter 11: A good neighbour approach: tips for applicants

Current	Proposed	Rationale
1. Being a Good Neighbour You can be a good neighbour by: • Engaging the public, municipalities and Aboriginal communities - early and often. While Ontario's regulations have minimum consultation requirements, the more you engage the community, the better neighbour you will be.	**1. Being a Good Neighbour** You can be a good neighbour by: • Engaging the public, municipalities and Aboriginal communities - early and often. While Ontario's regulations have minimum consultation requirements, the more you engage the community, the better neighbour you will be. Early engagement will allow applicants to identify issues and opportunities, and allow time to respond or adapt accordingly.	• To clarify the importance of early engagement.
1. Being a Good Neighbour • Eliminating and/or minimizing impacts of the operation on the community by: ○ Responding promptly to complaints; ○ Having agreements on operation in place, e.g. voluntary slow-downs or shut-downs under specified conditions; ○ Working with the community to identify locally valued resources and take measures to mitigate impacts; ○ Considering provisions for adjusting a project's setbacks/locations or operation practices (e.g. times of operation, turbine speeds) if a sensitive or concerned receptor (human or ecological) is in the area; ○ Ensuring that tourism implications are	**1. Being a Good Neighbour** • Eliminating and/or minimizing impacts of the operation on the community by: ○ Responding promptly to complaints; ○ Having agreements on operation in place, e.g. voluntary slow-downs or shut-downs under specified conditions; ○ Working with the community to identify locally valued resources and take measures to mitigate impacts; ○ Considering provisions for adjusting a project's setbacks/locations or operation practices (e.g. times of operation, turbine speeds) if a sensitive or concerned receptor (human or ecological) is in the area; ○ Ensuring that tourism implications are considered, both in the location of the project and the project as a whole; and ○ Considering visual barriers between receptors and a project (e.g. tree buffer or berm between road and solar farm). ○ Ensuring internal roads to facility components (such as wind	• To clarify expectations related to agricultural land.

Current	Proposed	Rationale
considered, both in the location of the project and the project as a whole; and Considering visual barriers between receptors and a project (e.g. tree buffer or berm between road and solar farm).	turbines and ground-mounted solar facilities) are located in a way that impacts on agriculture are minimized. For example, roads should be placed along property lines or field boundaries to avoid bisecting fields. Width of internal roads should also be considered and not wider than necessary so they do not negatively impact surrounding agriculture.	

Appendices

Appendix A – Wind Classification Table

Wind

Class[1]	Name plate Capacity (kW)	Greatest Sound Power Level (dBA)	Other Specifications	Overview of REA Requirements[2]
Class 1	≤ 3	Any	None	No REA required
Class 2	> 3 and < 50	Any	None	REA required. Fewer study, reporting, setback, and consultation requirements
Class 3	≥ 50	< 102	Greatest sound power level (expressed in dBA) is < 102; greatest height (expressed in metres) of any wind turbine that forms part of the facility, excluding length of any blades, is < 70.	REA required. Fewer setback requirements
Class 4	≥ 50	≥102	One of the following: 1. Greatest sound power level (expressed in dBA) is ≥ 102. 2. Greatest sound power level (expressed in dBA) is < 102; greatest height (expressed in metres) of any wind turbine that forms part of the facility, excluding length of any blades, is ≥ 70.	REA required

Appendix B – Solar As-Built Report

Re: As Constructed Equipment Confirmation REA NO. XXXX-XXXXXX

This letter shall serve as confirmation by (Name of the Company) to the Ministry of the Environment and Climate Change that the as-built UTM coordinates of the noise emitting equipment of the (Name of the Project) comply with the Renewable Energy Approval REA # _____dated _____. The equipment was constructed and installed at locations which do not vary by more than 10 meters from the locations specified in Schedule B of the Approval, and therefore fulfils the requirements of Condition {C1 (2)}of the subject approval.

For verification purposes the table below contains the as-built UTM coordinates, the approved UTM coordinates and the difference in distance (m) between the two sets of coordinates.

UTM Coordinates of Noise Sources as per the REA Dated _____			**As-built UTM Coordinates as per Condition____**		**Difference in Distance (m)**
Source ID	Easting	Northing	Easting	Northing	
Input Required	Input Required	Input Required	Input Required	Input Required	Input Required

Measurement Accuracy: +- ___m

Authorized Signature
Name:
Designation:
Name of the Company:

Appendix C – Wind Turbine Specifications Checklist

The following is a proposed checklist to be added to the Renewable Energy Approvals for proponents to submit with their wind turbine specifications report for a Renewable Energy Approval (REA) application. The purpose of the checklist is to guide proponents with the wind turbine specifications report, ensuring that all necessary information is included with the application. It also helps the ministry to document the turbine specifications.

The following information that **must** be included:

Specifics	Details
Wind Turbine Information	
Manufacturer	
Model	
Hub Height (m)	
Operating Information	
Speed regulation	☐Passive Stall ☐Active Stall ☐ Pitch Control ☐Constant ☐ Variable
Rotational Speeds for each wind speed bin	☐ At 4 m/s: _____ rpm
Rotational Speeds for each wind speed bin	☐ At 5 m/s: _____ rpm
Rotational Speeds for each wind speed bin	☐ At 6 m/s: _____ rpm
Rotational Speeds for each wind speed bin	☐ At 7 m/s: _____ rpm
Rotational Speeds for each wind speed bin	☐ At 8 m/s: _____ rpm
Rotational Speeds for each wind speed bin	☐ At 9 m/s: _____ rpm
Rotational Speeds for each wind speed bin	☐ At 10 m/s: _____ rpm
Version Software for control of wind turbine	
Rotor Information	
Type (Default is a 3 blade, horizontal, upwind turbine)	
Horizontal Distance from rotor centre to tower axis (m)	
Diameter of Rotor (m)	
Rotor Control Devices	

Specifics	Details
Blade Modifications	☐ Vortex Generators ☐ Stall Strips ☐ Trailing Edge Serrations/DinoTails ☐ Other: _____
Blade Length (m)	
Gearbox Information	
Type	☐ Direct Drive ☐ Geared Wind Turbine
Manufacturer	
Model Number	
Generator Information	
Manufacturer	
Model Number	
Nominal Power (MW)	
Sound Data for tested wind turbine	
Overall sound power level IEC61400-11 test at 10 m height	☐ At 4 m/s: _____ dBA
Overall sound power level IEC61400-11 test at 10 m height	☐ At 5 m/s: _____ dBA
Overall sound power level IEC61400-11 test at 10 m height	☐ At 6 m/s: _____ dBA
Overall sound power level IEC61400-11 test at 10 m height	☐ At 7 m/s: _____ dBA
Overall sound power level IEC61400-11 test at 10 m height	☐ At 8 m/s: _____ dBA
Overall sound power level IEC61400-11 test at 10 m height	☐ At 9 m/s: _____ dBA
Overall sound power level IEC61400-11 test at 10 m height	☐ At 10 m/s: _____ dBA
Measurement Uncertainty (dB)	
Grid Terminal Frequency of Tester	☐50 Hz ☐ 60 Hz

The following information that **should** be included:

Specifics	Details
Operating Information	
Swept Area (m^2)	
Rated Power Output (MW)	
Aerodynamic Brakes	☐Yes ☐ No
Cut-in Wind Speed (m/s)	
Cut-out Wind Speed (m/s)	
Nominal Power Wind Speed (m/s)	
Rotor Information	
Aerodynamic Profile of Blade	
Sound Data for tested wind turbine	
Maximum tonal audibility (dB)	

Provide a Power Curve for each wind turbine proposed for the project.