AMHERST ISLAND WIND ENERGY PROJECT CONSULTATION REPORT

Appendix G

Aboriginal Community Correspondence and Consideration by Project Team

AMHERST ISLAND WIND ENERGY PROJECT CONSULTATION REPORT

Appendix G1

Correspondence with Mohawks of the Bay of Quinte

AMHERST ISLAND WIND ENERGY PROJECT CONSULTATION REPORT Appendix G1 - Mohawks of the Bay of Quinte - Tyendinaga Mohawk Territory April 2013

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
September 13, 2011	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.	No response required.
November 1, 2011	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
May 30, 2012	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
June 26, 2012	June 27, 2012	Kristin Maracle , Environmental Technical Services Officer, Mohawks of the Bay of Quinte	Stantec	In regards to a meeting with the Mohawks of the Bay of Quinte, Windlectric and Stantec. Indicated that Tyendinaga Mohawk Council has scheduled July 9, 2012 at 2pm to discuss the proposed Project. Noted that she also left a voicemail message for a Stantec employee working on the Project.	Stated that due to prior commitments Stantec and Algonquin Power are unable to meet on July 9, 2012. Requested that the meeting be rescheduled for July 16, 2012.

AMHERST ISLAND WIND ENERGY PROJECT CONSULTATION REPORT Appendix G1 - Mohawks of the Bay of Quinte - Tyendinaga Mohawk Territory April 2013

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
July 9, 2012	N/A	Stantec	Kristin Maracle, Environmental Technical Services Officer, Mohawks of the Bay of Quinte	Asked about the council meeting that took place on July 9, 2012. Asked if there was discussion pertaining to the Amherst Island Wind Project. Asked if council would rather have Project representatives come on July 16 or July 20, 2012.	No response required.
July 9, 2012	July 9, 2012	Kristin Maracle, Environmental Technical Services Officer, Mohawks of the Bay of Quinte	Stantec	Stated that the Council Meeting will be held on July 16, 2012 at 10:00 am. Would like to know if Stantec would be available to disucss the Project on this day.	Thanked Kristin for her email. Indicated that they would be happy to present the Project at the day and time mentioned.
July 16, 2012	N/A		Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	Meeting held on July 16, 2012 with Mohawks of the Bay of Quinte to introduce the Project Team and present the Project proposal. The Project Team presented a brief overview of Algonquin Power and Windlectric including Stantec, the Project, the REA process, and current Project schedule, outlined natural environment work completed to date and provided Project contact information. Following the presentation, Council members were given the opportunity to ask questions or provide comments about the Project.	No response required.
August 22, 2012	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required.
December 20, 2012	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
January 16, 2013	N/A	Stantec	Kristin Maracle, Environmental Technical Services Officer, Mohawks of the Bay of Quinte	Called to discuss replacement of key documents in the Amherst Island REA application package. Left a voicemail message with contact information.	No response required.
January 18, 2013	N/A	Kristin Maracle, Environmental Technical Services Officer, Mohawks of the Bay of Quinte	Stantec	Kristin Maracle from the Mohawks of the Bay of Quinte responded to voicemails. Indicated that their office is open on January 21, 2013 and she would be available to exchange key documentation related to the Amherst Island REA application. She also indicated that the MBQ would review and provide comments if required.	No response required.
January 21, 2013	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	Updated copy of Underwater Archaeological Assessment Report replaced in person on January 21, 2013	No response required.
February 7, 2013	N/A	Stantec	Mohawks of the Bay of Quinte – Tyendinaga Mohawk Territory	The Draft Property Line Setback Assessment was provided via courier on February 7, 2013.	No response required.

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Appendix G2

Correspondence with Alderville First Nation

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
September 13, 2011	N/A	Stantec	Alderville First Nation	A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.	No response required.
November 1, 2011	N/A	Stantec	Alderville First Nation	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Alderville First Nation	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
May 30, 2012	N/A	Stantec	Alderville First Nation	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
August 22, 2012	N/A	Stantec	Alderville First Nation	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
December 20, 2012	N/A	Stantec	Alderville First Nation	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required.
January 16, 2013	N/A	Stantec	Alderville First Nation	Left a voicemail message with their main office regarding Amherst Island REA application and the need to replace key documentation.	No response required.
January 18, 2013	N/A	Dave Simpson, Lands and Resources Communications Officer, Alderville First Nation	Stantec	Indicated that he is available on January 21, 2013 for a drop off of Amherst Island REA application uodated information. Noted that Alderville will review information and provide comments if required.	No response required.
January 21, 2013	N/A	Stantec	Alderville First Nation	Updated copy of Underwater Archaeological Assessment Report replaced in person on January 21, 2013	No response required.
February 7, 2013	N/A	Stantec	Alderville First Nation	The Draft Property Line Setback Assessment was provided via courier on February 7, 2013.	No response required.

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Correspondence with Mississaugas of Scugog Island First Nation

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
September 13, 2011	N/A	Stantec	Mississaugas of Scugog Island First Nation	A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.	No response required.
November 1, 2011	N/A	Stantec	Mississaugas of Scugog Island First Nation	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Mississaugas of Scugog Island First Nation	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
May 30, 2012	N/A	Stantec	Mississaugas of Scugog Island First Nation	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
August 22, 2012	N/A	Stantec	Mississaugas of Scugog Island First Nation	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
December 20, 2012	N/A	Stantec	Mississaugas of Scugog Island First Nation	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required.
January 17, 2013	N/A	Stantec	Dave Mowat, Mississaugas of Scugog Island First Nation	Contacted Mississaguags of Scugog Island First Nation to discuss Amherst Island REA application and the need to replace key documentation. Arranged for January 21, 2013 as an appropriate time for a junior staff member to come by and replace documentation. MSIFN will review REA application and provide comments if there are concerns.	No response required.
January 18, 2013	N/A	Stantec	Dave Mowat of Mississaugas of Scugog Island First Nation	Contacted Mississaugas of Scugog Island First Nation to postpone the plan delivery of Amherst Island REA application updates because of bad weather. Re-scheduled for January 28, 2013. The First Nation community were agreeable with this re-schedule.	No response required.
January 28, 2013	N/A	Stantec	Mississaugas of Scugog Island First Nation	Updated copy of Underwater Archaeological Assessment Report replaced in person on January 28, 2013	No response required.
February 7, 2013	N/A	Stantec	Mississaugas of Scugog Island First Nation	The Draft Property Line Setback Assessment was provided via courier on February 7, 2013.	No response required.

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Appendix G4

Correspondence with Curve Lake First Nation

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
August 30, 2011	N/A	Chief Keith Knott Curve Lake First Nation	Narren Santos, Ministry of Environment Sean Fairfield, Algonquin Power Co.	Acknowledged receipt of the Notification of Proposed Wind Energy Project on July 22, 2011. Noted that the Project is situated within the Traditional Territory of Curve Lake First Nation and is the subject of a claim under Canada's Specific Claims Policy. Suggested that Karry Sandy-Mackenzie, Williams Treaty First Nation Coordinator (8 Creswick Court, Barrie, ON L4M 2S7) be provided with a copy of the proposal as is required under the First Nations of the Williams Treaty. Indicated that they are not aware of any issues that would cause concern with respect to the Project. Stated that if a native burial site or Archaeological finding is uncovered during the Project the First Nation must be contacted immediately. If unforeseen issues arise with potential negative impacts on the First Nation, they requested to be notified immediately.	No response required.
September 13, 2011	N/A	Stantec	Curve Lake First Nation	 A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. 	No response required.
November 1, 2011	N/A	Stantec	Curve Lake First Nation	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Curve Lake First Nation	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
May 30, 2012	N/A	Stantec	Curve Lake First Nation	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
August 22, 2012	N/A	Stantec	Curve Lake First Nation	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required.
December 20, 2012	N/A	Stantec	Curve Lake First Nation	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required.
January 17, 2013	N/A	Stantec	Dave Beaucage-Johnson, Lands Officer, Curve Lake First Nation	Contacted Curve Lake First Nation to discuss Amherst Island REA application and the need to replace key documentation. Discussed issue with Dave Beaucage-Johnson. Dave noted that he would contact Stantec regarding an appropriate time for a junior staff member to come by the office.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
January 21, 2013	N/A	Stantec	Dave Beaucage-Johnson, Lands Officer, Curve Lake First Nation	Called Dave Beaucage Johnson to confim whether he would be in the office on January 21, 2013 and his physical address. Dave stated that he is available and provided his physical address and directions off Mississauga St.	No response required.
January 21, 2013	N/A	Stantec	Curve Lake First Nation	Updated copy of Underwater Archaeological Assessment Report replaced in person on January 21, 2013	No response required.
February 7, 2013	N/A	Stantec	Curve Lake First Nation	The Draft Property Line Setback Assessment was provided via courier on February 7, 2013.	No response required.

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Appendix G5

Correspondence with Hiawatha First Nation, Mississaugas of Alderville

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Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
September 13, 2011	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	 A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. 	No response required.
November 1, 2011	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
May 30, 2012	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
August 22, 2012	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
December 20, 2012	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required.
January 16, 2013	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	Contacted Hiawatha First Nation to discuss Amherst Island REA application and the need to replace key documentation. Left a voicemail message with the Band Office.	No response required.
January 18, 2013	January 18, 2013	Secretary, Hiawatha First Nation	Stantec	Voicemail response by secretary of Hiawatha First Nation regarding the Amherst Island REA application. Directed to contact Lori and Dianne in Hiawatha's Consultation Unit.	Called and left a voicemail message indicating the need to provide updated information.
February 6, 2013	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	Updated copy of Underwater Archaeological Assessment Report replaced in person on February 6, 2013	No response required.
February 7, 2013	N/A	Stantec	Hiawatha First Nation, Mississaugas of Alderville	The Draft Property Line Setback Assessment was provided via courier on February 7, 2013.	No response required.

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Correspondence with Kawartha Nishnawbe First Nation

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
September 13, 2011	N/A	Stantec	Kawartha Nishnawbe First Nation	A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.	No response required. Courier package to Kawartha Nishnawbe First Nation was returned unopened.
November 1, 2011	N/A	Stantec	Kawartha Nishnawbe First Nation	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Kawartha Nishnawbe First Nation	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required. Courier package to Kawartha Nishnawbe First Nation was returned unopened.
May 30, 2012	N/A	Stantec	Kawartha Nishnawbe First Nation	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
August 22, 2012	N/A	Stantec	Kawartha Nishnawbe First Nation	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required. Courier package to Kawartha Nishnawbe First Nation was returned unopened.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
December 20, 2012	N/A	Stantec	Kawartha Nishnawbe First Nation	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required. Courier package to Kawartha Nishnawbe First Nation was returned unopened.
January 16, 2013	N/A	Stantec	Kawartha Nishnawbe First Nation	Contacted Kawartha Nishnawbe First Nation regarding the Amherst Island REA application. Left a voicemail message indicating a return of the sent package and requested contact information to send information.	No response required.
January 24, 2013	February 7, 2013	Chief Kris Nahrgang	Stantec Letter Response by: Algonquin Power Co.	Chief Kris Nahgrang responded to voicemail regarding Amherst Island REA application. Provided his home home address, contact information and email for future correspondences on this Project. Mentioned that, due to lack of capacity, he would require a fee to review the REA application. Noted that Proponents would receive, in writing and in e-mail, written comments within 2 weeks once provided with capacity funding.	Thanked Chief Nahrgang for responding to Stantec on January 24, 2013 regarding the REA Application for the Project. Indicated that they are pleased to provide capacity funding to Kawartha Nishwabe First Nation for their timely review of the Amherst island material. Reminded the First Nation about the Public Information Centres scheduled for March 5 and 6, 2013 for the Project and provided letter dated December 21, 2012 as reference. Noted that they value the First Nation input, particularly, any information the community may have about any adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and any measures for mitgating those adverse impacts.
February 7, 2013	N/A	Stantec	Kawartha Nishnawbe First Nation	Updated copy of Underwater Archaeological Assessment Report couriered on February 7, 2013	No response required.
February 7, 2013	N/A	Stantec	Kawartha Nishnawbe First Nation	The returned copy of the Notice of Final Public Meeting, Draft REA Reports and Draft Project Summary Report (originally sent December 20, 2012) was sent via courier on February 7, 2013 to an alternate address provided by Chief Nahrgang. The package also included an updated copy of the Underwater Archaeological Assessment Report and Property Line Setback Assessment Report.	No response required.

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Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
February 19, 2013	April 5, 2013	Chief Kris Nahrgang	Stantec	Noted that there are no major areas of concern for their Community regarding the Project. Stated that the area of archaeological resources within the study area have been adequately addressed, and requested copies of the Stage 3 work when it becomes available. Noted that the Project would not have negatve impacts on their Communities Lands, Rights or Resources. Stated that no additional contact is necessary unless further pertinent information related to the Project arises in the future.	Thanked Chief Nahrgang for providing comments with respect to the proposed Amherst Island Wind Energy Project Draft REA technical documents.

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Appendix G7

Correspondence with Williams Treaty First Nations Claims Coordinator

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
September 13, 2011	N/A	Stantec	Williams Treaty First Nations Claims Coordinator	A letter, Notice of Proposal to Engage in a Renewable Energy Project and the Draft Project Description Report were sent via courier on September 13, 2011. The letter provided Project contact information and requested from the community: 1) any information available that should be considered during the preparation of the REA Application and, 2) any information about any adverse impacts that the Project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.	No response required.
November 1, 2011	N/A	Stantec	Williams Treaty First Nations Claims Coordinator	A letter, Notice of Public Meeting and a revised Draft Project Description Report were sent via courier on November 1, 2011. The letter provided information about the public meeting and dates in which the Notice will be published in the local newspapers. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
February 1, 2012	N/A	Stantec	Williams Treaty First Nations Claims Coordinator	On February 1, 2012, a letter, Notice of Draft Site Plan, and a Draft Site Plan Report (dated February 2012) were provided by courier. An invitation was extended to have a copy of the Notice published in a newspaper within the community.	No response required.
May 30, 2012	N/A	Stantec	Karry Sandy-Mackenzie, Williams Treaty First Nation Claims Coordinator	Called and left a voice message inquiring about input with respect to the Project and the potential to set up a conference call with Windlectric.	No response required.
August 22, 2012	N/A	Stantec	Williams Treaty First Nations Claims Coordinator	On August 22, 2012, a letter, the Notice of Revised Draft Site Plan and Revised Study Area, a revised Draft Site Plan Report (dated August 2012) and a revised Draft Project Description Report (dated August 2012) were provided by courier. An invitation to have a copy of the Notice published in the community newspaper was also offered.	No response required.

Date of Correspondence	Date of Response	From	То	Contents of Correspondence	Project Response
December 20, 2012	N/A	Stantec	Williams Treaty First Nations Claims Coordinator	On December 20, 2012, a letter, the Notice of Final Public Meeting and all Draft REA reports, including the Draft Project Summary Report, were provided by courier. The letter requested any information about adverse impacts that the Project may have on constitutionally protected aboriginal or treaty rights and measures to mitigate those adverse impacts.	No response required.
January 17, 2013	N/A	Stantec	Karry Sandy-Mackenzie, Williams Treaty First Nation Claims Coordinator	Contacted Williams Treaty First Nation LandCclaims Coordinator regarding the need to replace key documentation in the Amherst Island REA application. Voicemail message left for review.	No response required.
January 22, 2013	March 11, 2013	Karry Sandy- Mackenzie, Williams Treaty First Nation Claims Coordinator	Stantec	Karry Sandy McKenzie, Williams Treaty First Nation Land Claim coordinator responded to voicemail. Indicated that she works out of her home and a meeting in Toronto or another GTA location is perferred. Mentioned that she will be in Toronto on January 28 or February 1, 2013. Indicated that she will get back to Stantec with a confirmed date and time.	Karry Sandy McKenzie, Williams Treaty First Nation Land Claim coordinator was left a voicemail indicating Stantec would appreciate the opportunity to make necessary administrative changes to the current report. Stantec offered to meet to exchange the material at her convienience.
February 7, 2013	N/A	Stantec	Williams Treaty First Nations Claims Coordinator	The Draft Property Line Setback Assessment was provided via courier on February 7, 2013.	No response required.
March 1, 2013	N/A	Stantec	Karry Sandy McKenzie, Williams Treaty First Nation Land Claim Coordinator	Exchanged voicemails. Left messages. Stopped attempts to exchange updated copies of Underwater Archaeological Assessment Report in March 2013.	No response required

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Appendix G8

Project Summary Report



AMHERST ISLAND WIND ENERGY PROJECT PROJECT SUMMARY REPORT

File No. 160960595 December 2012

Prepared for:

Windlectric Inc. 2845 Bristol Circle, Oakville, ON L6H 7H7

Prepared by:

Stantec Consulting Ltd. Suite 1 - 70 Southgate Drive Guelph ON N1G 4P5

Executive Summary

Windlectric Inc. (the Proponent or Windlectric) is proposing to develop, construct, and operate the 56 - 75 megawatt (MW) Amherst Island Wind Energy Project (the Project) within Loyalist Township (the Township) in the County of Lennox and Addington (the County) in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The basic components of the proposed Project include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under REA. The layout includes 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The number of wind turbines will be dependent upon final selection of the model of the wind turbine most appropriate to the proposed Project. The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Windlectric has retained Stantec Consulting Ltd. (Stantec) to prepare a Renewable Energy Approval (REA) application, as required under Ontario Regulation 359/09 - Renewable Energy Approvals under Part V.0.1 of the Act of the Environmental Protection Act (O. Reg. 359/09). According to subsection 6(3) of O. Reg. 359/09, the Project is classified as a Class 4 Wind Facility. This Project Summary Report is one component of the REA application for the Project, and has been prepared in accordance with O. Reg. 359/09 and the Ministry of the Environments' (MOE) "Technical Guide to Renewable Energy Approvals" (July 2011). This Project Summary Report provides a summary of each document that will be made available to the public at least 60 days before the Project's final Public Meeting. <u>The purpose of this Project Summary Report is to solicit comments and gather relevant information from potentially affected Aboriginal Communities and incorporate this information in the relevant reports prior to the final Public Meeting. This report includes a summary of the following reports, as presented in Section 3.0:</u>

- Project Description Report;
- Construction Plan Report;
- Design and Operations Report
- Decommissioning Plan Report;
- Wind Turbine Specifications Report;
- Natural Heritage Assessment and Environmental Impact Study;
- Water Body and Water Assessment Report; and
- Archaeological (Stage 1 and Stage 2) and Heritage Reports
- Marine Archaeological report.

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1.0 Introduction

1.1 **PROJECT OVERVIEW**

Windlectric Inc. (the Proponent or Windlectric) is proposing to develop, construct, and operate the 56 - 75 megawatt (MW) Amherst Island Wind Energy Project (the Project) within Loyalist Township (the Township) in the County of Lennox and Addington (the County) in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The basic components of the proposed Project include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under REA. The layout includes 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The number of wind turbines will be dependent upon final selection of the model of the wind turbine most appropriate to the proposed Project. The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Temporary components during construction may include staging areas for the turbines, access roads, met tower(s), collector lines and transmission line as well as crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. (HONI) 115 kV transmission line.

The Proponent has elected to assess and seek approval for some alternative Project configurations. The Renewable Energy Approval (REA) application process will consider:

- two alternative mainland transmission line routes;
- two alternative switching station locations and corresponding point of common coupling with the HONI line;
- three alternative mainland temporary dock locations along the mainland;
- a submarine cable with three alternative submarine cable routes near the mainland;

- three alternative mainland submarine cable landing locations and corresponding cable vault locations;
- up to three alternative met tower locations; and,
- up to four potential locations for an operations and maintenance building.

Final selection of the sites to be used would be based on the results of consultation activities, detailed design / engineering work, and the conditions experienced during construction.

Windlectric has retained Stantec Consulting Ltd. (Stantec) to prepare a Renewable Energy Approval (REA) application, as required under Ontario Regulation 359/09 - Renewable Energy Approvals under Part V.0.1 of the Act of the Environmental Protection Act (O. Reg. 359/09). According to subsection 6(3) of O. Reg. 359/09, this Project is classified as a Class 4 Wind Facility.

2.0 **Project Information**

2.1 **PROJECT INFORMATION**

The following provides a list of project information:

Name of the Project:	Amherst Island Wind Energy Project
Proponent:	Windlectric Inc.
Energy Source:	Wind energy. No supplementary fuel sources will be used to generate
	electricity.
Nameplate Capacity:	Up to 75MW
Class of Facility:	Class 4 Wind Facility
Land Ownership:	Privately owned lands, within Municipal and County road right of ways, within
	municipal unopened road allowances, Crown Land (bed of Lake Ontario).

2.2 CONTACT INFORMATION

The proponent for the proposed Project is Windlectric Inc. (a subsidiary of Algonquin Power Co.). The proponent is responsible for the design, construction, operation, and decommissioning of the proposed Project.

Windlectric's office and contact for the proposed Project is:

Name:	Sean Fairfield
Title:	Senior Manager – Project Planning
Company:	Algonquin Power Co.
Address:	2845 Bristol Circle,
	Oakville, ON L6H 7H7
	Tel: 905-465-4518

or,

Name:	Alex Tsopelas
Title:	Project Manager, Renewables
Company:	Algonquin Power Co.
Address:	2845 Bristol Circle,
	Oakville, ON L6H 7H7
	Tel: 905-829-6388

The proponent's contact information for project questions, comments and consultation is as follows:

Project Name:	Amherst Island Wind Energy Project
Address:	c/o Windlectric Inc.
	2845 Bristol Circle,
	Oakville, ON L6H 7H7
Project Telephone:	1-855-466-8068
Project Fax:	905-465-4514
Project Email: Project Website:	windlectric@amherstislandwindproject.com www.amherstislandwindproject.com

The lead consultant for preparation of the Renewable Energy Approval (REA) application is Stantec Consulting Ltd. ("Stantec"). Stantec provides professional consulting services in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics for infrastructure and facilities projects. The consultant's office and contact information is:

Name:	Rob Rowland
Title:	Senior Project Manager
Company:	Stantec Consulting Ltd.
Address:	Suite 1 - 70 Southgate Drive
	Guelph, ON N1G 4P5
	Tel: 519-836-6966 ext. 550
or	

or,

Name:	Kerrie Skillen
Title:	Project Manager
Company:	Stantec Consulting Ltd.
Address:	3430 South Service Road, Unit 203
	Burlington, ON L7N 3T9
	Tel: 905-931-3923

2.3 PROJECT LOCATION

The proposed Project will be entirely located within Loyalist Township in the County of Lennox and Addington in eastern Ontario.

The Project Location includes lands on Amherst Island, and a corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Location stretches from the mainland shoreline, north of the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East.

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In accordance with O. Reg. 359/09, the Project Location includes all land and buildings/structures associated with the Project and any air space in which the Project will occupy. This includes structures such as turbines, access roads and collector lines as well as any temporary work areas (the 'constructible area' for the Project) which are required to be utilized during the construction of the Project. The entire constructible area may not be used at each Project Location. The constructible areas have been reduced in size in areas where constraints exist (e.g. natural features) and construction will be limited to the smaller area.

The boundary of the Project Location is used for defining setback and site investigation distances according to O.Reg. 359/09.

Settlements in the general vicinity of the Project include Stella, Emerald, Millhaven, Ernestown, Amherstview, and Bath.

The proposed Project is not located in any areas protected under provincial plans and policies described in O.Reg. 359/09, including the Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan, and the Lake Simcoe Protected Plan. There are no Provincial Parks located within the general vicinity of the Project Location.

The Project Location is shown in Appendix A.

3.0 Project Components

This section provides a description of the major equipment and infrastructure associated with operation of the Project.

3.1 WIND TURBINE GENERATORS

The proposed Project will include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under the Renewable Energy Approval (REA). The layout includes 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The turbines under consideration have the same physical footprint. Windlectric has completed the REA such that any wind turbine model under consideration could be placed in the layout provided in **Appendix A**.

A summary of the basic specifications of the turbine models being considered is provided in Table 3.1 below.

Each of the wind turbine installations would consist of the following key components:

- Concrete foundation;
- Steel support tower (comprised of 5 sections);
- Nacelle containing the electrical generator;
- Hub (rotating structure that holds the turbine blades);
- 3 rotor blades;
- A pad mount transformer to convert power from 690 V to 34.5 kV; and,
- Electrical controls and connections.

Detailed information about the specific turbine models are provided in the *Draft Wind Turbine Specifications Report*.

Operating Data	Specification	
General		
Rated capacity (kW)	2300 kW	
Cut-in wind speed (m/s)	3 m/s	
Cut-out wind speed (m/s)	25 m/s	
Rotor		
Number of rotor blades	3	
Rotor diameter (m)	113 m	
Blade length (m)	55 m	

Table 3.1: Basic Turbine Specifications
Operating Data	Specification	
Swept area (m ²)	10,000 m ²	
Tower		
Hub height (m)	99.5 m	
Tip height (m)	154.5 m	

Table 3.1: Basic Turbine Specifications

3.2 ACCESS ROADS

Approximately 35 km of new access roads are required for installation and operation of the Project components including wind turbines, met tower(s), operations and maintenance building, substation, temporary dock, permanent dock and switching station. Where possible, access roads have been planned in a manner that reduces the amount of land required to access the Project components or utilizes existing agricultural laneways, thus reducing potential impacts on the existing environment. New access roads will be constructed as required to provide access to Project components.

Access roads will be approximately 4 - 6 metres wide and will not require resizing for the operation phase, with the exception of the entrances off the Township or County roads that require wider turning radii, of approximately 50 m, during construction.

Some access roads require turnaround areas for delivery trucks. These turnaround areas will be the same width as access roads, with turning radii.

3.3 WATER CROSSINGS

Permanent culvert installations would be required along access roads and associated underground collector and data lines that cross watercourses. All crossings would require a permit approval from the Cataraqui Region Conservation Authority (CRCA) and/or the Department of Fisheries and Oceans (DFO).

Culverts required for any water crossings are described in the *Draft Water Assessment and Water Body Report.*

3.4 ELECTRICAL INFRASTRUCTURE

3.4.1 Turbine Transformers and Collector system

A pad mount transformer, located on the ground adjacent to the tower of each wind turbine, is required to transform the electricity created in the nacelle to a standard operating power line voltage (i.e. 690 V to 34.5 kV). The transformers will be approximately 2 m x 2 m.

A 690 V cable runs down the turbine tower to the pad mount transformer. From the pad mount transformer, underground 34.5 kV collector lines will carry the electricity to the municipal road

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allowances following the turbine access roads or, along the most direct path possible between two turbines (i.e. across a field), on private land, to the substation.

All proposed collector lines have been routed on private lands where landowners have agreements with the Proponent. Where possible, the underground and/or overhead collector lines have been incorporated into the design of the access roads to reduce the area required for construction and minimize the potential construction impacts. Junction boxes are required at the junction of an underground collector line going from private land to the public road allowance.

Some sections of the collector system may have to be installed above ground if required to pass sensitive natural features or other obstacles.

Data cabling, if installed, would run with the collector lines, whether underground or overhead.

3.4.2 Substation

Associated with the Project will be a substation. At the substation, the accumulated power from the collector lines will be transformed from a 34.5 kV collection voltage to a 115 kV transmission voltage. The substation will be located on private land on the north side of 2nd Concession Road between Stella 40 Foot Road and Dump Road. The substation will consist of a prepared area of approximately 80 m by 100 m in size. A chain link safety fence will enclose the substation. A locked vehicle gate will allow for maintenance access.

The substation will house the switching, control, protection, communication and metering systems required to support the operation of the substation. The substation will include one (1) 34.5/115 kV transformer.

A sound attenuation wall will be built at the substation transformer. The barrier will be continuous and its surface density will be 184 kg/m2, exceeding the 20-kg/m2 requirement established by MOE.

An access road for the substation will be constructed from 2nd Concession Road.

The substation will be operated, monitored and controlled 24-hours a day via a telecommunication system.

A conceptual drawing of the substation is shown in Figure 6.

3.4.3 Transmission Line

The 115 kV (nominal) transmission line connecting the substation to the Hydro One Networks Inc. (HONI) electrical grid can be broken into three distinct geographic sections:

- 1. Amherst Island: approximately1.5 km of overhead or underground line to connect the substation with the submarine cable.
- 2. Lake Ontario: approximately 4.5 km of submarine cable to connect Amherst Island to the mainland.
- 3. Mainland: there are currently two options for the transmission line route on the mainland.

Mainland Transmission Line Option 1: the transmission line would be comprised of approximately 0.7 km of underground or overhead line, across Highway 33 (in consultation with the Ministry of Transportation) to a switching station located near the Invista Transformer Station, where it will be connected to the to an existing HONI 115 kV transmission line (Q6S) which currently connects to the Invista Transformer Station. In order to connect to the HONI QS6 three (3) new wooden poles will be installed by HONI within their approved right of way.

Mainland Transmission Line Option 2: the transmission line would be comprised of an approximately 1.7 km underground or overhead cable from the cable vault, across Highway 33, along the east side of Jim Snow Drive, to a switching station located north east of the intersection of Jim Snow Drive and Taylor Kidd Blvd, then along the north side of Taylor Kidd Blvd. where it will connect to the HONI Q6S. Consultation with the Ministry of Transportation and the County of Lennox and Addington will be required for the placement of the line. In order to connect to the HONI QS6 three (3) new wooden poles will be installed by HONI within their approved right of way.

A conceptual drawing of the cable termination on the mainland is shown in Figure 7 and 8.

The land-based transmission line on Amherst Island will be constructed as an overhead or underground line. If required, a 115 kV riser will be installed to transition from the overhead line to the submarine cable. A conceptual drawing of the submarine cable termination on Amherst Island is shown in Figure 9.

The Township will be kept informed about the final design of the 115 kV cable risers will be done in consultation with the Township.

3.4.4 Submarine Cable

A submarine cable is required to convey electricity from Amherst Island to the mainland.

Specifications

- Voltage: 115kV (nominal)
- Material: galvanized steel armour cable (crosslinkable polyethylene (XLPE) insulation)
- Diameter: 170mm ± 20mm

• Conduit: High-density polyethylene (HDPE) schedule 40 and diameter is 14" ± 2"

The submarine cable will be protected by electrical protection relays and high voltage circuit breakers, as well as remote teleprotection to HONI's system. A cross section of a submarine cable is shown in Figure 10 as an example.

The submarine cable will also contain a fibre optic data cable to facilitate supervisory control and data acquisition (SCADA) and protection requirements.

The submarine cable will extend from the landfall location on Amherst Island, approximately 750 m west of Stella, to a landfall near the intersection of Jim Snow Drive and Bath Road on the mainland. Three landfall locations on the mainland are being considered as part of this REA application. Only one option will be constructed and used as part of the Project.

The three submarine cable landfall locations being considered on the mainland are:

- 1. South of Jim Snow Drive
- 2. South of the Invista Transformer Station
- 3. Approximately 300 m west of Option 2.

The submarine cable will connect directly to the overhead or underground line on Amherst Island and the underground or overhead line on the mainland with splices located in concrete cable vaults approximately 50 m inland from both shorelines. A conceptual drawing of the cable vaults is shown in Figure 11.

To facilitate the installation of the submarine cable and to provide an additional level of protection, Windlectric is proposing to utilize a protective cable technology (such as steel armouring or a protective conduit) at the two landings. The use of armouring or conduits could require trenching near the shoreline. The submarine cable will be laid to avoid any water intakes. The two submarine cable ends (island side and mainland side) would be pulled through or trenched into the buried concrete cable vaults.

Nearshore survey work at the landfall locations has been completed to confirm the location of existing utilities and the geophysical characteristics of the lake bottom that will be encountered when installing the conduits.

Windlectric has, and will continue, to consult with DFO, as required, to ensure compliance with DFO's *Operational Statement for Underwater Cables*.

The proposed route of the submarine cable crosses the existing MTO air bubbler system, which is used for ice control on the water surface, to allow for the Amherst Island Ferry to travel between the mainland and the island during the winter months. Windlectric has, and will

continue, to consult with MTO, as required, to determine an approach for crossing the Amherst Island Ferry bubbler system.

3.4.5 Switching Station

Associated with the proposed Project will be a switching station where the electrical infrastructure will be connected to the existing HONI QS6. The switching station will consist of a prepared area of approximately 2500 m² in size and will be located on private land.

As discussed in Section 3.4.3 there are currently two options for the mainland transmission line route. Each option requires a switching station.

For *Mainland Transmission Line Option 1* the switching station would be located near the Invista Transformer Station. A conceptual drawing of the switching station on the Invista property is shown in Figure 12.

For *Mainland Transmission Line Option 2* the switching station would be located north east of the intersection of Jim Snow Drive and Taylor Kidd Blvd. A conceptual drawing of the switching station is shown in Figure 13

3.4.6 Island Dock

As part of the proposed Project, a permanent docking facility is required on Amherst Island to meet shipping and construction requirements. The dock structure has to accommodate large barges and be capable of handling heavy items associated with the construction of the proposed Project. The dock will be located approximately 750 m west of Stella.

The dock types under consideration are as follows (note: the labeled designations below correspond to conceptual design nomenclature information that was submitted to the Department of Fisheries and Oceans):

- 1. Dock Type Option 2 Steel frame on rock lake bottom (posts) with concrete slab decking. Requires a concrete abutment.
- Option 2A Drive piles into lake bottom and level at pile caps. Platform (decking) constructed of a light steel frame or concrete slabs on the piles. Requires a concrete abutment.
- 3. Option 3 Drive piles into lake bottom and level at pile caps. Platform is concrete slabs with sides and bottom that is back-filled with gravel. Requires a concrete abutment.

All of the above options include a length of fixed dock of approximately 30 m by 7 m in size [+/-50%], with a single jack-up barge, of approximately 20 m by 12 m in size [+/- 50%], on the off-

shore end that is adjustable due to water levels changes. Total area (above the water) for the dock including the jack-up barge is 450 m2 [+/- 50%].

The dock design, and construction will be completed in consultation with the DFO, as required, to ensure compliance with their *Operational Statement (OS) for Dock and Boathouse Construction*.

3.4.7 Operations and Maintenance Building

An operations and maintenance building will be required on the island to facilitate the day-to-day operations of the Project. The building will be located on private land and will be approximately 30 m by 60 m along with parking space and on-site storage. The building will include office space, warehouse and workshop space, kitchen, restrooms and associated parking. It would also include areas for storage of equipment and spare parts, and would have a secure area for hazardous materials and lubricant storage.

The operations and maintenance building would be enclosed in a yard of approximately $1,100 \text{ m}^2$ with a possible chain link fence. The proposed layout for the operations and maintenance building is shown in Figure 13.

Several locations are being considered for the location of the operations and maintenance building. Only one location will be used as part of the Project.

The wind farm will be operated, monitored and controlled 24-hours a day. To facilitate this monitoring, fibre optic data cable and/or wireless technology would be used. If data cabling is used it will be installed in conjunction with the collector line system, from each wind turbine to the substation and then to the operation and maintenance building.

An underground septic tank (capacity of 10,000L) and aboveground non-potable water tank (capacity of 10,000L) would service the operation and maintenance building. The final design of the septic system would conform to local building code and health unit requirements.

No groundwater or surface water supplies are anticipated to be used for the facility. A water well may be installed/permitted to service the operations and maintenance building for sanitary purposes if it is determined that use of the water tank is not sufficient. The well would be used for drinking water if water quality meets regulatory requirements for potable water. It is expected that water will be used to hose down the floor or the workshop. A sump/drainage pit will collect the residues and drain to the septic system.

Electrical power for the operations and maintenance building will be delivered by an overhead HONI line, which will terminate on a transformer pole adjacent to the facility. The transformer will step down the power supply to a voltage that can be utilized within the operations and maintenance building. The final connection of the power will be made through underground cable from the transformer pole to the building electrical service located within the building.

3.4.8 Storage Shed

An unserviced storage shed will be situated across Art McGinns Road from S17 and S10. The building will measure approximately 6 m x 8 m, situated on a gravel base area of approximately 7m x 9 m base, and is anticipated to be a prefabricated engineered structure with a concrete foundation that will extend below the frost line. The building will house equipment and spare parts to be used during construction and operations of the Project.

3.4.9 Met Tower

1-3 permanent met towers would be installed for use during the operation phase of the Project. The met tower(s) would be a steel lattice structure with a height of 60 m or 100 m.

The met tower(s) foundation design is dependent on ground conditions and is typically a steel reinforced concrete-filled pedestal foundation. The met tower(s) will either be freestanding supported entirely by the foundation or would have guy wires for lateral support anchored with reinforced buried concrete. The 100 m met tower foundation will be approximately 5 m x 5 m, and its associated anchor blocks (if required) will be approximately 2 m x 2 m. The 60 m met tower foundation will be approximately 1 m x 1 m, and its associated anchor blocks (if required) will be approximately 1 m x 1 m.

The met tower(s) will carry instrumentation for collecting wind data to support operation of the Project. Power and data cabling for the met tower(s) would be trenched in from the nearest collector line system.

Windlectric has a 60 m re-instrumented tubular guyed met tower which was installed in 2005. This met tower has been used to identify the quality of wind resource for the proposed Project. The wind data collected will be used to determine the best orientation of the wind turbines. This tower is a prospecting tower and may be removed upon reaching commercial operation.

Access for installation of new met tower(s) is required. See Section 3.2 for more information on access roads.

3.5 TEMPORARY COMPONENTS

Lands to be temporarily used during the construction of the proposed Project are for turbine, access road, met tower, collector line and transmission line staging areas, crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings.

Any temporary office buildings, including the proposed site office(s), used during construction will not be serviced, and would be placed within the delineated construction work areas.

Following construction activities, all of the temporary locations will be restored to pre-existing conditions. Restoration work would start following installation of each wind turbine and removal of all construction materials and equipment from each turbine site. This includes removal of the granular and geotextile material from applicable areas.

3.5.1 Turbine Staging Area

The constructible area at each turbine location is approximately 100 m x 100 m and will be used as a construction staging area. Within the constructible area will be a turbine staging area for construction of the turbine foundation and assembly of the turbine, and a crane pad where the crane(s) will rest during turbine installation. The crane pad area will be approximately 25m x 60 m. The constructible areas would also be used for temporary storage of the turbine components, parking and foundation spoil pile.

Staging areas for the turbine components would not be graveled. Instead, top soil would be removed and stock piled, the subsoil's would be compacted and temporary laminated crane mats would be used under each of the crane stabilizer arms. If required, portions of the constructible area have been reduced on a site-by-site basis to avoid natural features and water bodies.

Turbine constructible areas would be actively used throughout the construction phase, to varying degrees during all construction activities at turbine siting areas. These same staging areas would be used in the future should maintenance during the operation of the wind turbine require large components to be removed/replaced from the turbine.

Once the turbine erection is complete, the prepared area around each turbine and the crane pads (25 m x 60 m) will be kept, while the remaining constructible area will be rehabilitated to pre-existing conditions.

3.5.2 Crane Paths

A heavy-lift crawler and mobile crane(s) would be used to assemble the turbines. The movement of the crane(s) between turbine sites, termed 'crane paths', would follow access roads and municipal roads where possible. The crane(s) would be, in some places, broken down and transported to other turbine locations for re-assembly. However, there may be instances where it is more effective, to minimize potential impact to municipal roads and avoid demobilization of the crane(s), to move the crane(s) along the most direct path possible between two turbines. All proposed crane paths will follow collector line corridors, with a constructible area of approximately 10 m wide. All proposed crane paths will be on private lands where landowners have agreements with the Proponent.

Crane paths will be approximately 10 m wide, be relatively level and rolled as required. Crane mats would be used where required to facilitate the crane moving through soft or wet areas.

Crane paths not located on roads would be initiated in conjunction with turbine assembly and would be used to move the crane(s) at the next turbine assembly area. These paths would be rehabilitated to pre-construction condition at the end of the construction phase.

3.5.3 Access Road Staging Area

A staging area would occur within the approximately 10 m staked constructible area along access roads for construction of the 4 m to 6 m wide access road.

Some access roads require turnaround areas for delivery trucks. These turnaround areas will be the same width as access roads, and include the same requirements for staging areas.

A staging area would occur within the approximately 50 m wide staked constructible area along access road entrances off municipal roads for construction of the 10 m to15 m wide access road entrances.

Portions of the constructible area will be reduced on a site-by-site basis to avoid natural features and water bodies, as appropriate.

Access road staging areas may be used for temporary laydown of turbine components during construction. No site preparation is required within these staging areas (provided they are in safe working condition), however in locations where turbine components are temporarily stored; these areas will be restored following turbine erection to pre-existing conditions.

3.5.4 Met Tower Staging Area

The constructible area to install a 100 m met tower would be approximately 150 m x 150 m. The constructible area to install a 60 m met tower would be approximately 100 m x 100 m. Within the constructible area will be a met tower staging area for construction of the met tower foundation, required anchor blocks and assembly of the met tower.

3.5.5 Roadside Collector and Transmission Line Staging Area

Roadside collector and transmission lines will be sited within the municipal road allowance. Final details of the line requirements will be developed at the detailed design stage in consultation with the Township and County. The entire span of the municipal road allowance has been included within the assessment of temporary land use, though this entire area will not be used for installation of the collector and/or transmission lines.

3.5.6 Central Staging Areas

Temporary central staging areas will be set up on Amherst Island and the mainland to facilitate construction of the proposed Project. Central staging areas are proposed on Amherst Island near the substation property, and the submarine cable landing area. On the mainland, central

staging areas are proposed at the submarine and dock landing areas, near the Invista Transformer Station, and north east of the intersection of Jim Snow Drive and Taylor Kidd Blvd. The central staging areas vary in size from as small as approximately 30 m x 50 m to as large as approximately 25 acres.

The central staging areas will support the following construction operations, as required:

- Laydown of Project components including, but not limited to, wind turbine components, electrical cabling, pad-mount transformers, general construction materials such as gravel and steel.
- Parking areas for Contractors, Subcontractors and Other Contractors;
- Site Office(s);
- Rail unloading crane pad;
- Cable vault construction and installation;
- Docking facility construction and installation (for both permanent and temporary docks);
- Switching station construction;
- Batch Plant;
- Portable generators;
- Maintenance and tool storage;
- Water and rinsing facilities (water to be brought in by tanker);
- Approved temporary fuel tanks, in properly contained spill containment structures;
- Equipment storage and maintenance area;
- Disposal facilities for various solid wastes;
- Temporary toilet facilities self-contained with no on-site disposal; and,
- Waste disposal containers.

3.5.6.1 Batch Plant

A temporary concrete batch plant will be utilized on Amherst Island to facilitate construction of the proposed Project. The batch plant will be located approximately 600 m west of Stella 40 Foot Road, north of 2^{nd} Concession Road. The prepared area for the batch plant will be approximately 120 m x 150 m.

Within the prepared area of the batch plant there will be a variety of functioning services and utilities. Facilities located within this area include a small laboratory office to test concrete quality, a potential office located within a trailer, a volumetric or by weight mobile batching plant, a shelter for concrete ad mixture, a washing station, water tank, a vertical cement tanker with a screw discharge area or an area for 1 m³ of cement and bags, and a truck fueling station. This location will also provide parking for 6-10 concrete truck mixers, and serve as a stockpile area for concrete aggregate including sand, stone and fine aggregate.

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The following discussion provides a general description of typical operation procedures for a concrete batch plant.

Aggregate materials (i.e., limestone, gravel, and sand) will be delivered to the batch plant by truck and will be deposited into storage piles. A front-end loader will transfer aggregate material from the storage piles into an above ground hopper. The hopper will gravity feed an inclined conveyor that will transfer the aggregates to aggregate compartments in the plant. Aggregate materials will then be gravity fed to the aggregate weigh scales located underneath each compartment. The aggregate weigh scale will feed a second conveyor, which will transfer the appropriate mass of material into a truck mixer.

Cementitious materials (i.e., Portland cements and slag) will be delivered by tanker and will be stored in one of two silos. The two silos may be filled simultaneously using blowers on the transport trucks and have a capacity of approximately 65 tonnes each. Cementitious materials from Silo #1 will be transferred to the cement scale by two enclosed cement augers. Cementitious materials from Silo #2 will be transferred to the cement scale by gravity. The appropriate mass of cementitious material from the cement scale will then be gravity fed through a pipe into the truck mixer.

At the truck mixer, water will be introduced via a spray over the raw material drop point. If necessary, the water will be heated by a heater or boiler. Small quantities of admixes (i.e., chemical additives to achieve certain properties in concrete) may also be added. Each raw material batch will be mixed inside the truck mixer drum for approximately 15 minutes. The resulting wet concrete product will then be transported to the pour site with the mixer drum set at a constant rate of revolution.

If an electrical feed is not available at the batch plant site, power for the plant will have to be provided by a diesel generator set. As appropriate, the generator set will be housed in an outdoor enclosure adjacent to the batch plant.

There will be no discharge of wastewater to the environment which would require an approval for an industrial sewage works under Section 53 of the *Ontario Water Resource Act*. If water taking exceeds 50,000 litres/day, an application for a Permit To Take Water will be required under the *Ontario Water Resources Act*.

3.5.6.2 Site Office(s)

Temporary site office(s) will be set up on Amherst Island and the mainland to facilitate construction of the proposed Project. The temporary site offices will not be serviced, and would be placed within the delineated construction work areas.

The site office(s) on Amherst Island will be located approximately 600 m west of Stella 40 Foot Road, north of 2nd Concession Road, near the location for the proposed batch plant. The

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prepared area for the site office(s) on Amherst Island will be approximately 50 m x 50 m. The area surrounding the site office(s) will serve as an area for parking.

The site office(s) on the mainland will be located within any of the proposed central staging areas. The prepared area for the site office(s) on the mainland will be approximately 50 m x 50 m. The area surrounding the site office(s) will serve as an area for parking.

The temporary site office(s) will be constructed using modular trailers. Main communication among the site(s) will likely be by radio and cell phones. Some land lines will be required and an internet rotor will be installed. A power source will most likely be obtained from nearby hydro poles. Temporary office(s) may be equipped with washrooms; however some modular trailer washroom facilities may be required to be brought on site.

3.5.7 Mainland Dock

As part of the proposed Project, a temporary docking facility is required on the mainland to meet shipping and construction requirements. The dock structure has to accommodate large barges and be capable of handling heavy items associated with the construction of the proposed Project. Post construction, all in water works will be removed. On shore abutment may remain depending on agreement with landowner.

The location of the dock on the mainland has not been finalized. There are three alternative locations for the mainland dock, which include:

- 1. East Dock Option: approximately 300 m east of the intersection of Jim Snow Drive and Bath Road.
- 2. Centre Dock Option: south of Jim Snow Drive.
- 3. West Dock Option: approximately 600 m west of the intersection of Jim Snow Drive and Bath Road.

The dock types under consideration are as follows (note: the labeled designations below correspond to conceptual design nomenclature information that was submitted to the DFO):

- 1. Dock Type Option 2 Steel frame on rock lake bottom (posts) with concrete slab decking. Requires a concrete abutment.
- Option 2A Drive piles into lake bottom and level at pile caps. Platform (decking) constructed of a light steel frame or concrete slabs on the piles. Requires a concrete abutment.
- 3. Option 3 Drive piles into lake bottom and level at pile caps. Platform is concrete slabs with sides and bottom that is back-filled with gravel. Requires a concrete abutment.

All of the above options include a length of fixed dock, with a single jack-up barge on the offshore end that is adjustable due to water levels changes.

Dock length varies by location. Table 3.2 lists the approximate dock and jack-up barge lengths for each option.

Mainland Dock Option	Dock Size [+/- 50%]	Jack-up barge Size [+/- 50%]	Dock Area above the water (including jack-up barge) [+/- 50%]
West Dock Option	85 m by 7 m	20 m by 12 m	835 m2
Centre Dock Option	165 m by 7 m	20 m by 12 m	1395 m2
East Dock Option	30 m by 7 m	20 m by 12 m	450 m2

Table 3.2: Doc and Jack-Up Barge Size Options

In addition to the details provided in Table 3.2, the following information applies to the dock designs:

- The number of posts/piles will be very similar among options and the final number will not be known until all options are detailed. The current design is based on allowable bearing pressure on the rock, based on rock quality identified during test pitting on the Island. This is subject to confirmation when boreholes are drilled.
- Design with posts on lake bottom (Option 2) will be more complex than those with piles anchored in the bedrock (Options 2A and 3).
- Hydraulic cylinder ramps will be required for all the construction options to allow for water level adjustment. Total of 0.4 m² footprint required (base of two cylinders) for each dock.
- Each dock will require four dolphins to which the transportation barges will be tied. Each dolphin has an area of 0.75 m², a total of 3 m² per dock for dolphins.
- The dock width is approximately 7 m for most of its length. The jack-up barges on the end of each dock are 20 m long and 12 m wide. The dock width of approximately 7 m assumes that transportation trucks will cross Highway 33 in a perpendicular manner and there is no need for turning from the highway. If turning is required, additional dock width would be necessary.

3.5.8 Temporary Watercourse crossings

No temporary water crossings are expected as part of the proposed Project.

3.6 PROJECT SCHEDULE

The projected start dates for construction, operation and decommissioning activities are provided in the table below.

Construction is anticipated to commence in Fall of 2013 and finish by early 2015. Operation and maintenance activities would occur as required throughout the life of the Project. The specific schedule for decommissioning would be determined at the time it is undertaken.

The wind turbines used for the Project can be expected to be in service for the term of the 20 year Ontario Power Authority Power Purchase Agreement. Following the term of the contract, a decision would be made regarding whether to extend the life of the facility or to decommission. Barring routine scheduled maintenance, the turbines are expected to be operational 24 hours a day, 7 days a week, assuming appropriate wind conditions.

Table 3.3: Major Project Phases and Anticipated Scheduling Milestones			
Construction	Operation	Decommissioning/Repowering	
Fall 2013 to early 2015	Q1 2015	2035	

4.0 **Project Activities**

4.1 OVERVIEW OF ACTIVIES

A general overview of the activities during construction, operation, and decommissioning phases of the proposed Project are provided below.

Table 4.1: Key Pro	ject Activities		
Project Phase	Activities		
Construction	Turbine and Met Tower Sites		
	Delineation of temporary work areas		
	Completion of necessary vegetation clearing and site grading		
	Access road construction and culvert installation		
	Installation of turbine staging areas, access road staging areas and crane paths		
	Installation of turbine and met tower foundations		
	Installation of pad-mount transformers		
	Turbine and met tower erection		
	Installation of collector lines, and data cabling (if required) usually parallel to access roads		
	Restoration of temporary work areas		
	Substation Site		
	Delineation of temporary work areas		
	Completion of necessary vegetation clearing and site grading		
	Installation of substation		
	Restoration of temporary work areas		
	Operations and Maintenance Building Site		
	Delineation of temporary work areas		
	Completion of necessary vegetation clearing and site grading		
	Construction of operations and maintenance building		
	Restoration of temporary work areas		
	Switching Station Site		
	Delineation of temporary work areas		
	Completion of necessary vegetation clearing and site grading		
	Installation of switching station and connection with grid		
	Reclamation of temporary work areas		
	Additional Activities		
	Preparation of central staging areas		
	Completion of permanent access roads		
	Installation of batch plant and site office(s)		
	Installation of collector lines, transmission lines and submarine cable		
	Installation of cable vaults		
	Installation (and removal, if required) of temporary dock		
	Installation of permanent dock		
	Reclamation of all other temporary work areas		

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Table 4.1: Key Pro	oject Activities
Project Phase	Activities
Operation	Turbine and Met Tower Sites
	Preventative and routine maintenance
	Unplanned maintenance
	Meter calibrations
	Grounds keeping
	Substation Site
	Preventative and routine maintenance
	Unplanned maintenance
	Operations and Maintenance Building Site
	Preventative and routine maintenance
	Unplanned maintenance
	Remote wind farm condition monitoring
	Switching Station Site
	Preventative maintenance
	Unplanned maintenance
	Additional Activities
	Collector line, transmission line and submarine cable maintenance
	Cable vault maintenance
	Permanent dock maintenance
Decommissioning	Turbine and Met Tower Sites
	Removal of turbine and met tower infrastructure
	Site grading (dependent upon new proposed use)
	Possible removal of access roads dependent upon agreement with property owner
	Possible excavation and removal of collector lines depending upon agreement with
	Pomoval of substation
	Operations and Maintenance Building Site
	Perceival of operations and maintenance building, dependent on agreement with property
	owner
	Switching Station Site
	Removal of switching station
	Additional Activities
	Disconnection from provincial grid
	Removal of collector system in municipal right of way (remove wires and poles as required.
	dependent upon agreement with municipality)
	Removal of permanent dock (if required)

5.0 Summary of REA Documents

In accordance with Section 17.(1)3. of O. Reg. 359/09, the following provides an outline of each document that will be provided as part of Windlectric's REA application (with the exception of the Consultation Report). Each document outlined below is being prepared in accordance with O. Reg. 359/09. The reports are also being prepared in accordance with the MOE's "Technical Guide to Renewable Energy Approvals " and the MNR's APRD requirements when available for the specific report. The intent of providing this Summary Report early on in the process is to gather comments on feedback to include in the relevant REA reports prior to the Final Public Meeting.

5.1 PROJECT DESCRIPTION REPORT

Project Description: Report Summary

The summary of the draft <u>Project Description Report</u> for the Amherst Island Wind Project (the Project) is provided in sections 1 through 4 of this document. The <u>Project Description Report</u> has been written in accordance with Ontario Regulation 359/09. The purpose of the report is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an understanding of the Project, including any environmental effects that may result from engaging in the Project.

Permits and Approvals

A number of federal, provincial, and municipal permits and approvals are required prior to construction and operation of the Project. These permits and approvals are applied for outside of the REA process, and Windlectric will continue to work with government regulators to obtain these approvals prior to start of construction.

5.2 CONSTRUCTION PLAN REPORT

Construction Plan: Report Summary

The following is a summary of the draft <u>Construction Plan Report</u> for the Project. The <u>Construction Plan</u> <u>Report</u> was prepared in accordance with O. Reg. 359/09, and is one component of the Renewable Energy Approval (REA) application for the Project. The purpose of the report is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an understanding of construction activities relating to the Project, including any environmental effects that may result from engaging in the Project.

Pre-Construction Activities

Prior to construction, a registered Ontario Land Surveyor (or equivalent) will survey and stake all access roads, collector lines and turbine locations as appropriate. The Project Location includes the footprint of the facility components, plus any temporary work and storage locations.

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Wherever possible, the construction area has been reduced or moved on a site-specific basis to avoid natural features and water bodies.

Construction Activities

Construction includes site preparation, component installation and site restoration.

The basic components of the Project include:

- 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 75 MW. (currently looking at two models Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines);
- A 34.5 kV underground and overhead power line collector system;
- A 115kV submarine cable connecting the island with the mainland;
- Fibre optic data lines from each turbine and/or wireless technology for the communication of data;
- A transmission line;
- Truck turnaround areas;
- An operations and maintenance building;
- Permanent dock;
- A substation;
- A switching station;
- An unserviced storage shed;
- One connection point to the existing electrical system;
- Cable vault areas, meteorological tower(s) (met tower(s)); and,
- Access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Temporary components during construction include

- Staging areas for the turbines, access roads, met tower(s), collector line and transmission line as well as staging areas;
- Crane paths;
- A temporary dock;
- Site office(s);
- Batch plant;
- Central staging areas; and,
- Associated watercourse crossings.

All turbines will be assembled with heavy-lift crawler and mobile cranes.

Materials that will be brought on site include raw materials, construction vehicles and equipment (e.g. cranes, excavators, dump trucks, water trucks, bulldozers, etc.), and other Project components. Wherever possible, local materials will be used, if sufficient quantity and quality is available at competitive prices.

All temporary work locations will be restored to pre-impact conditions at the end of the construction phase

POTENTIAL CONSTRUCTION EFFECTS AND MITIGATION

Heritage & Archaeological Resources

Archaeological resources could be disturbed during construction. Potential impacts to significant built heritage resources and significant cultural heritage landscapes are related to destruction, alteration, and direct or indirect obstruction of significant views, or interference to archaeological artifacts.

If archaeological or historical materials or features are found, all work will be suspended and a Ministry of Tourism, Culture and Sport archaeologist and appropriate Aboriginal Communities will be contacted. If human remains are encountered or suspected, all work will stop immediately, and the proper authorities will be notified. Potential mitigation measures for the built heritage resources and cultural heritage landscape include avoiding damaging or removing trees and roots near identified properties, and stopping activities if monitored vibration levels exceed limits. Baseline testing of peak particle velocity (PPV) / level of vibration will be conducted at the protected property, and if no impact is detected the Construction Contractor will determine the need for additional testing, in consultation with a qualified engineer.

Natural Heritage Resources

Construction activities can cause dust, sedimentation, erosion, and accidental spills. Increased traffic, on-site human activities, and environmental noise could result in avoidance, displacement, or mortality of species located near construction activities.

During construction, Windlectric will obtain all applicable permits and approvals, ensure no construction disturbance goes beyond defined construction areas, and minimize vehicle movement within construction areas and access roads. Where possible, disturbed areas will be rehabilitated, and regular monitoring will occur throughout construction.

Water Bodies & Aquatic Resources

Construction, including removal and reinstallation of existing culverts and installation of new culverts, could result in groundwater seepage, vegetation removal, accidental spills, downstream sediment transport, soil erosion, and a short-term increase in surface water turbidity (cloudiness), which may affect fish and fish habitat. Some dewatering may also be required.

Windlectric will work with the Ministry of Natural Resources and the Cataraqui Region Conservation Authority to determine the best timing windows for in-water work. Silt fencing will be used where required, and vegetation removal along the watercourse will be minimized. Where applicable, DFO Operational Statements would be followed to protect fish and fish habitat. The stream bank will be restored following construction, and reseeded. An Emergency Response and Communications Plan will be developed, with procedures in case of accidental spills.

Air Quality & Environmental Noise

Operation of heavy equipment and construction, transportation, and delivery vehicles will result in localized air emissions, noise, and dust during construction. High winds may result in erosion and dispersal of loose soil.

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To reduce emissions, all equipment and vehicles will be maintained in good working order, with mufflers and/or silencers, and construction crews will use multi-passenger vehicles and reduce idling, where possible. Crews will adhere to noise by-laws and restrict construction hours. Water will be used for dust control, and soil piles will be covered. A Construction Traffic Management Plan will be developed to outline management of traffic and delivery of materials.

Land Use & Socio-Economic Resources

Land use in the island portion of the Study Area is primarily agricultural with some areas of undeveloped forest or wetland, while land use on the mainland portion is industrial, and those lands with Project components will be changed from present use for the life of the Project. Adjacent land uses could be impacted by the temporary increase in noise and dust levels during construction. Increases in local traffic could cause abnormal wear on local roads and traffic safety hazards. Construction may also affect soil structure and fertility, reducing soil productivity, and affect artificial drainage. Sensory disturbance to game species may also occur.

Participating landowners will be compensated for land taken out of production, and the Project has been sited to minimize disturbance to existing land uses. Mitigation measures include de-compacting soil, consultation with landowners and qualified specialists, and implementing the Traffic Management Plan.

The Project is also expected to have a positive impact on the local economy by the creation of indirect and induced employment.

Waste Management & Contaminated Lands

Waste will be generated during the construction phase. Improper disposal of waste may result in contamination to soil, groundwater and/or surface water. Litter may also become a nuisance to nearby residences and there is the potential for accidental spills of materials such as fuel and lubricating oils.

Mitigation measures include proper labeling and storage of materials, refueling and equipment maintenance only in designated areas and proper disposal of wastes. A Construction Waste Management Plan will be developed, including protocols for reuse, recycling and/or disposal of solid, hazardous and sanitary waste.

Public Health & Safety

Potential effects are largely in the form of increased construction related traffic, dust emissions, construction noise, and unauthorized access to the work sites.

Implementation of transportation planning and safety measures will help to mitigate potential adverse effects. A Health and Safety Plan and an Emergency Response and Communications Plan will be developed to provide guidance on policies and procedures during the construction phase.

Monitoring

The Construction Contractor will be responsible for implementing construction environmental effects monitoring measures in compliance with applicable municipal, provincial and federal standards and guidelines.

5.3 DESIGN AND OPERATIONS REPORT

The following is a summary of the draft <u>Design and Operations Report</u> for the Project. The <u>Design and</u> <u>Operations Report</u> is one component of the Renewable Energy Approval (REA) application for the Project, and has been prepared in accordance with O. Reg. 359/09. The purpose of the report is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an understanding of the details of the design and operational stage of the Project.

Facility Components

The basic components of the Project include up to 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW, a 34.5 kV collector system, fibre optic cabling laid with the underground collector lines, turbine access roads, crane pads, a submarine cable to the mainland, interconnection to the existing electrical system, a substation, a switching station and an operations and maintenance building.

Facility Operations Plan

Operation activities include daily monitoring of wind turbines and maintenance activities.

Scheduled maintenance during operation will include the following:

- Visual inspection;
- Inspection of mechanical components;
- Inspection of electrical components; and,
- Greasing and general maintenance.

The maintenance of turbines and inspection of the electrical collector system would be the responsibility of Windlectric. Through use of a Supervisory Control and Data Acquisition (SCADA) system that is connected to fibre optic cables installed with the collector lines, the maintenance staff would be able to monitor the performance of all turbines on-line in real time. The SCADA system would identify any potential problems so that pro-active inspection and maintenance can occur. Potentially damaged turbines would be shut down until maintenance staff can perform a site inspection.

Initial visits for planned maintenance are more frequent, with less regularity as the Project matures. Each turbine would have sensors to measure wind speed and direction, to determine when the turbines are operating and to control the pitch of the blades and the orientation of the nacelle.

The project will be monitored on a 24x7 basis and necessary local operations and maintenance personnel will be put in place. All staff will be trained in proper techniques to ensure protection of the environment and safe operation and maintenance of Project equipment.

POTENTIAL OPERATION & MAINTENANCE EFFECTS

Natural Heritage Features

Potential effects to natural features during operation include disturbance due to increased traffic, noise, and dust, the potential for accidental spills, and direct mortality of birds and bats from collisions with turbines. Sensory disturbance to wildlife may occur during operations as a result of increased on-site human activities.

Protocols to minimize the impact of accidental spills and dust will be developed and implemented. All applicable permits and approvals will be obtained prior to operations, and all conditions contained within permits and approvals will be implemented. Post-construction monitoring for bird, raptor and bat mortality will occur. These programs are detailed in the Environmental Effects Monitoring Plan.

Water Bodies & Aquatic Resources

Potential impacts from operations and maintenance activities include accidental spills, soil erosion, downstream sediment transport and a short-term increase in surface water turbidity, including associated impacts to fish and fish habitat.

Protocols to minimize any impact of accidental spills will be provided in the Emergency Response Plan. Vegetation removal will be minimized, materials will be contained in a safe manner, and erosion and sediment control measures such as seeding stream banks, will occur to stabilize the area surrounding waterbodies.

Air Quality & Environmental Noise

Air emissions and nuisance dust effects from equipment and vehicle use will occur during operations and maintenance activities. Mechanical and aerodynamic sound will be emitted from the wind turbines during operation.

To reduce emissions from equipment and vehicles, personnel may use multi-passenger vehicles, avoid idling, make sure equipment and vehicles are in good working order, and repair or replace vehicles that do not meet minimum emission standards. A regular maintenance program will largely mitigate potential effects related to noise from damaged turbines. Noise levels from turbines will be compliant with provincial requirements. A Communication and Emergency Response Plan will be in place to hear any concerns from the community and address them appropriately.

Land Use & Socio-Economic Resources

During operation, there is potential for increases in traffic on roadways, minimal impacts to livestock, sensory disturbance to game species, and interference with telecommunication and radar systems. The presence of wind turbines will also alter the visual landscape. Mitigation measures will reduce the majority of project effects during operations and maintenance.

Local economic benefits will include land lease payments to participating landowners, municipal taxes, and local hiring. Potential mitigation measures for effects to telecommunication and radar systems may

include the replacement of receiving antenna, relocating either the transmitter or receiver, or switching to an alternate means of receiving the information.

Waste Management & Contaminated Lands

Improper disposal of waste material generated during operations may result in contamination to soil, groundwater, and/or surface water resources on and off the Project sites. Litter generated during operations may also become a nuisance to nearby residences.

A site-specific waste collection and disposal management plan will be implemented, which will include good site practices. Refueling, equipment maintenance, and other potentially contaminating activities will occur in designated areas.

Public Health & Safety

The highly unlikely potential exists for damage or detachment of turbine parts during operation, which may result in damage to the landing area from impact. Other potential effects may result from the accumulation of ice on the turbine blades, extreme weather events and third party damage.

Modern wind turbines must meet strict international engineering standards. During high wind events or imbalances of the turbine blades due to ice accumulation, the turbines are designed to cease operation. Turbines are equipped with lightning protection systems and located at least the minimum regulated setback distance from receptors. Access to the towers will be restricted to avoid potential accidents to unqualified persons.

Environmental Effects Monitoring Plan

Environmental monitoring will continue with appropriate follow-up activities during the operation of the Project. Monitoring will provide data on key functions of the natural environment and socio-economic features that may be affected during construction or operation of the Project, and on the effectiveness of mitigation measures implemented as part of the Project.

Emergency Response & Communications Plan

The Emergency Response Plan will include a plan for the proper handling of material spills and associated procedures to be undertaken during a spill event. The plan will also specify containment and clean-up of materials and their storage locations and include general procedures for personnel training.

Ongoing stakeholder communication will occur to receive and respond to community issues on an ongoing basis.

5.4 DECOMMISSIONING PLAN REPORT

The following is a summary of the draft <u>Decommissioning Plan Report</u> for the Project. The <u>Decommissioning Plan Report</u> is one component of the Renewable Energy Approval (REA) Application for the Project. The purpose of the report is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an understanding of the closure plan for the Project at the end of its useful life, and to describe restoration of the Project Location to an acceptable condition for its intended use following Project closure.

DECOMMISSIONING PROCEDURES

Project components are expected to be in service for the term of the 20 year Ontario Power Authority Feed-In Tariff contract. Following the term of the contract, a decision would be made to extend the life of the facility (repower the Project) or to decommission. Decommissioning would entail removal of facility components and restoring the land to an acceptable condition for its intended use. The costs for removal of Project infrastructure will be the responsibility of the owner of the Project.

During decommissioning and restoration, general environmental protection and mitigation measures, according to regulatory requirements at the time of decommissioning would be implemented.

A temporary staging area at each turbine location would be used for storage of the turbine components, parking, and the foundation spoil pile. All decommissioning activities will occur within the designated areas and temporary erosion and sedimentation control measures will be implemented based on industry best management practices.

The turbines would be dismantled, in the reverse sequence of steps as during construction, using a crane. All materials would be removed for recycling, reuse, reconditioning, or disposal.

Underground collector lines on private property would not be removed, but the ends buried to a depth of approximately 1 m and left in pace, in consultation with the landowner and in accordance with the land agreements. Any junction boxes will be removed. Underground collector lines, the transmission line, splice vaults and junction boxes in the road allowances would be removed, if required by an agreement with the Township and/ or the county.

All access roads would be returned to their original pre-construction state, unless the landowner wishes to keep them intact.

The unserviced electrical control buildings and transformer station will be removed for reuse, recycling or disposal. The area would be restored to pre-existing conditions at the end of the decommissioning phase and the operator of the Project will develop a Site Restoration Plan, designed to restore habitat in areas affected by Project-related equipment.

Any proposed decommissioning works within or near watercourses and/or aquatic habitats will be discussed with Cataraqui Region Conservation Authority to determine any site specific mitigation and/or remediation plans.

Site Rehabilitation/Restoration

The operator of the Project will develop Site Restoration Plan, in consultation with appropriate agencies, which is expected to cover agricultural and cultural areas, as well as crane pads, access roads and areas for turbine staging.

Areas that may have compacted due to facility operation or decommissioning would be decompacted. Any agricultural tile drains capped during construction, or damaged during decommissioning, would be repaired. Topsoil taken from the surrounding land would be added to a similar depth as surrounding areas. All areas would be graded to pre-construction conditions and restored appropriately, in consultation with the landowner.

The Project should not result in any long term decommissioning effects. The costs will be the responsibility of the Project owner or the purchaser of the reusable materials.

Managing Excess Materials & Waste

Prior to dismantling and demolition, Windlectric or the project operator would complete a waste audit. All wastes would be managed according to relevant regulations and specifications in effect at that time.

Major pieces of equipment may be recyclable or reusable, resulting in minimal residual waste for disposal.

Health and Safety

The Project's Emergency Response and Communications Plan would be in effect for all phases of the Project, including decommissioning.

As appropriate, the decommissioning firm will develop a staff training program for decommissioning activities, including environmental, health, and safety procedures, and the emergency response plan.

Notification

Prior to decommissioning, Windlectric will consult with stakeholders (e.g. local government) regarding the details of decommissioning and would prepare an updated and comprehensive decommissioning plan as required to meet regulatory requirements in effect at that time. A description of non-emergency communications with Project stakeholders is included in the Emergency Response and Communications Plan.

5.5 WIND TURBINE SPECIFICATIONS REPORT

The Project will include up to 36 Siemens wind turbines. The layout includes 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. A summary of the basic specifications of the SWT-2.3-113 2300 kW and SWT-2.3-113 2221 kW model wind turbines is provided in Tables 5.1 and 5.2 below.

Table 5.1 Turbine Description – Siemens SWT-2.3-113 2.3 MW		
Operating Data	Specification	
General		
Rated capacity (kW)	2,300 kW	
Cut-in wind speed (m/s)	3 m/s	
Cut-out wind speed (m/s)	25 m/s	
Rotor		
Number of rotor blades	3	
Rotor diameter (m)	113 m	
Blade length (m)	55 m	
Swept area (m ²)	10,000 m ²	
Rotor speed (rpm)	6 - 13 rpm	
Tower		
Hub height (m)	99.5 m or site-specific	
Tip height (m)	154.5 m or site-specific	
Acoustic Emissions Data		
Overall sound power level	105 dBA	
Measurement uncertainty value	+/- 1.5 dBA	
Octave band sound power level (linear weighted)	113.3 dBA @ 8m/s	
Tonality and tonal audibility	< 2 dB	

Table 5.2 Turbine Description – Siemens SWT-2.3-113 2.221 MW		
Operating Data	Specification	
General		
Rated capacity (kW)	2,221 kW	
Cut-in wind speed (m/s)	3 m/s	
Cut-out wind speed (m/s)	25 m/s	
Rotor		
Number of rotor blades	3	
Rotor diameter (m)	113 m	
Blade length (m)	55 m	
Swept area (m ²)	10,000 m ²	
Rotor speed (rpm)	6 - 13 rpm	
Tower		
Hub height (m)	99.5 m or site-specific	
Tip height (m)	154.5 m or site-specific	

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Table 5.2 Turbine Description – Siemens SWT-2.3-113 2.221 MW		
Operating Data	Specification	
Acoustic Emissions Data		
Overall sound power level	104 dBA	
Measurement uncertainty value	+/- 1.5 dBA	
Octave band sound power level (linear weighted)	112.7 dBA @ 8m/s	
Tonality and tonal audibility	< 2 dB	

5.6 NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY

The following is a summary of the draft <u>Natural Heritage Assessment and Environmental Impact Study</u> (<u>NHA/EIS</u>) for the Project (the Project. The Natural Heritage Assessment and Environmental Impact Study was prepared in accordance with O. Reg. 359/09, and is one component of the Renewable Energy Approval (REA) application for the Project. The purpose of the report is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an assessment of potential Project-related negative impacts on natural environment features in the Project Study Area.

A Natural Heritage Assessment is required to determine whether any of the following features exist in and/or within 120 m of the Project Location (any land, structure or air space in, on or over which part of a renewable energy project is proposed, including the footprint of the facility components, plus any temporary work and storage locations):

- Wetlands;
- Coastal wetlands;
- Life Science Areas of Natural and Scientific Interest (ANSIs);
- Earth Science ANSIs (within 50 m);
- Valleylands;
- Woodlands;
- Natural features in specified provincial plan areas;
- Wildlife habitat; and,
- Provincial parks and conservation reserves.

If there is Project infrastructure within 120 m of any of these features, an Environmental Impact Study (EIS) is required that identifies and assesses any negative environmental effects and identifies mitigation measures.

Records Review

Documents reviewed and agencies contacted included Environment Canada, MNR, the Cataraqui Region Conservation Authority (CRCA), the Municipality of Loyalist Township.

SITE INVESTIGATION

The Project is primarily sited within consisted of a mix of naturalized habitat and active cropland (mainly hay and pasture). Woodland and wetland communities occurred throughout the Zone of Investigation.

A site investigation was required to confirm the status and boundaries of natural features identified through the records review, and to identify any additional natural features in or within 120 m of the Project Location.

Methods & Results

The Study Area was crossed on foot and physically inventoried. Wetlands, Life Science ANSI, woodlands, candidate significant wildlife habitat – winter deer yards, generalized candidate significant wildlife habitat and candidate significant wildlife habitat (amphibian breeding habitat) were identified or confirmed as occurring within 120 m of the Project Location and required further assessment. These features were evaluated to determine if they are provincially significant, significant, not provincially significant or not significant.

Environmental Impact Study (EIS)

An EIS is required to identify and assess any negative environmental effects and develop mitigation measures to significant features in or within 120 m of the Project Location.

Significant Wetlands

Twenty wetlands, not previously identified by MNR, were identified in or within 120 m of the Project Location and are treated as provincially significant. Both the Nut Island Duck Club Marsh and Long Point Marsh, previously identified as provincially significant by the MNR, remain as provincially significant in this report.

The primary mitigation strategy was avoidance of wetlands. Prior to final siting of the Project, significant wetlands were identified applying a conservative approach. Substantial effort was allocated to the design of the final layout to ensure that Project components were sited outside of conservatively identified significant wetland boundaries. Separation distances from Project components to significant wetlands were maximized to the extent possible as an impact avoidance strategy.

There will be no direct loss of significant wetland habitat or function due to the Project. Indirect impacts resulting from construction activities, such as dust generation, sedimentation, and erosion are expected to be short term, temporary in duration and mitigable through the use of standard site control measures.

Significant Woodlands

Fifteen of the woodlands met the criteria for significance based on criteria standards within the NHA Guide for Renewable Energy Projects. The primary mitigation strategy was avoidance of the significant woodlands however the Project Location is proposed to occur within three significant woodlands requiring the permanent removal of a small area of woodland. Overall, potential impacts to Woodland Feature 4 are anticipated to be very minor.

Indirect impacts to significant woodlands resulting from construction activities, such as dust generation, sedimentation and erosion are expected to be short term, temporary in duration and mitigable through the use of standard site control measures.

Significant Wildlife Habitat

The following significant wildlife habitats were identified in or within 120 m of the Project Location:

- Raptor Wintering Areas;
- Turtle Overwintering Area;
- Migratory Landbird Stopover Area;
- Old Growth Forest;
- Amphibian Breeding (Woodland and Wetland);
- Marsh Breeding Birds;
- Woodland Area-Sensitive Breeding Bird Habitat;
- Open Country Breeding Bird Habitat and Short-eared Owl Habitat; and,
- Shrub/Early Successional Bird Breeding Habitat.

Proposed Mitigation

Table 5.3 summarizes the general mitigation measures which will be implemented during construction, including the mitigation objective and specific location where each mitigation measure should be applied.

Table 5.3: Summary of Construction Phase Mitigation Measures Recommended			
Mitigation Measure	Objective(s)	Location(s)	
Any vegetation removal required along roadside collector lines should be minimized, and occur entirely within the road right-of-way.	Minimize vegetation removal and impacts on wildlife habitats	Underground Collector Lines/ or overhead collector lines	
Any accidentally damaged trees should be pruned through the implementation of proper arboricultural techniques.	Protect tree species from permanent damage	Entire Project	
Suspend work if high runoff volume is noted or excessive sediment discharge occurs.	Minimize erosion impacts on features when construction activities are proposed within 30 m of significant natural features	Within 30 m of any significant feature, including significant woodlands and wetlands and significant wildlife habitat	
No vehicle traffic on exposed soils, and no heavy machinery traffic on slopes	Limit unnecessary risk of increased erosion, turbidity or sedimentation	Entire Project	
Re-vegetate temporary access roads or crane paths to pre-construction conditions as soon as possible.	Limit the potential for erosion or sedimentation due to exposed soil conditions	Entire Project	
Maintain existing vegetation buffers around water bodies	Minimize the potential for erosion, and protect wildlife habitat, within riparian areas	Entire Project	
Any stockpiled material will be stored more than 30 m from a significant wetland, woodland, or water body	Limit the potential for increased erosion within 30 m of significant natural features	Entire Project	
All maintenance activities, vehicle refueling or washing, and chemical storage will be located more than 30 m from any significant feature.	Minimize the risk of contamination of chemical spill around significant natural features	Entire Project	
Develop a spill response plan, train staff	Minimize potential long-term effects	Entire Project	

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on appropriate procedures, and keep	or significant contaminations in the	
emergency spill kits on site.	event an accidental spill occurs	
Dispose of waste material by authorized	Limit the potential for contamination	Entire Project
and approved offsite vendors	of significant natural features	
Implement infiltration techniques to the	Minimize potential impacts to soil	Entire Project
maximum extent possible.	moisture regime and groundwater	
	stores	
Design roads to promote infiltration.	Minimize potential impacts to soil	Entire Project
	moisture regime and groundwater	
	stores	
No herbicides will be used within	Avoid impacts to natural vegetation	Significant woodlands and
significant features or wildlife habitats.	species, significant features, and	wetlands, and significant wildlife
	wildlife habitats	habitat
Minimize grading activities to maintain	Maintain existing surface water	Entire Project
existing drainage patterns, to the fullest	drainage patterns	
extent possible.		
Control rate and timing of water	Limit potential impacts on water	Entire Project
pumping, and restrict taking of water	temperature, surface water storage,	
during periods of extreme low flow.	and wildlife habitat	
Implementation of storm water	Avoid potential contamination of	Entire Project
discharge best management practices.	water sources	
Collect drill cuttings as they are	Limit the potential for soil or water	Horizontal Directional Drilling
generated and placed in a soil bin or	contamination	
bag for off-site disposal		
Restore and re-vegetate entry/exit pits	Minimize the presence of exposed	Horizontal Directional Drilling
to pre-construction conditions as soon	soil to reduce the potential for	
as possible after construction	erosion	

Monitoring

A post-construction monitoring study for birds and bats has been developed in consultation with the MNR, including mortality monitoring and regular reporting at turbines for a period of three years after start of operations. The monitoring program should be reassessed by MNR and Windlectric at the end of each monitoring year.

5.7 WATER ASSESSMENT AND WATER BODY REPORT

The following is a summary of the draft <u>Water Assessment and Water Body Report</u> for the Project. The <u>Water Assessment and Water Body Report</u> was prepared in accordance with O. Reg. 359/09, and is one component of the Renewable Energy Approval (REA) application for the Project. The purpose of the report is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an assessment of potential Project-related negative impacts on water features in the Project Study Area.

Methods

The Water Assessment included a background information review and site investigation to determine the presence and boundaries of water bodies, as defined in O. Reg. 359/09, within 120 m of the Project Location. The "Project Location" refers to any land, structure or air space in, on or over which part of a renewable energy project is proposed. For the purposes of this Project, the Project Location includes the footprint of the facility components, plus any temporary work and storage locations.

Once the Project layout and locations of water bodies were confirmed, fish communities were sampled at selected locations within the 120 m of the Project Location, and a general aquatic habitat assessment was conducted. A combination of background data and results of Stantec's 2011 and 2012 surveys were used to determine the presence or absence of fish habitat.

EXISTING CONDITIONS & PREDICTED IMPACTS

Site Investigation

While on site, the field crews confirmed the presence or absence of potential water bodies within 120 m of the Project Location. Fish collections were made at water bodies for which recent background date was unavailable to determine whether the watercourse provided fish habitat.

Water Features

A total of 22 water bodies were identified within the 120 m Zone of Investigation. Some of the surface water features identified on MNR mapping (e.g. watercourses) did not exist in the field or consisted of surficial drainage; therefore, these features were not classified as water bodies. During the field investigations, there were no additional water bodies, lakes or seepage areas identified within 120 m of the Project Location. Additional field surveys included fish sampling at selected locations and an assessment of fish habitat.

Based on a review of the document entitled "Inland Ontario Lakes Designated for Lake Trout Management" (MNR, 2003), there are no Lake Trout (Salvelinus namaycush) lakes that are at or above development capacity identified within 300 m of the Project Location.

SUMMARY OF IN-WATER WORK IN OR NEAR FISH HABITAT

Based on the current Project layout, in-water work has the potential to affect fish or fish habitat, or areas that contribute indirectly to fish habitat, at three watercourse locations on Amherst Island, and two locations in the nearshore area of Lake Ontario.

Based on previously submitted REA applications, it is likely that most Project-related impacts to water bodies and aquatic habitat can be mitigated. Locations where further DFO consultation will occur during the permitting process include sites where new roads and culverts are proposed, and for project components in Lake Ontario. At these locations, DFO can issue a Letter of Advice if they conclude that the works can be conducted in a manner that will not require a *Fisheries Act* authorization. Windlectric Inc. will comply with any conditions and recommendations resulting from the DFO consultation process.

Negative effects associated with turbine construction, underground (or overhead if required) collector line installation can be mitigated. If conditions of applicable Operational Statements can be met and the mitigation measures implemented no further DFO review or approvals would be required. Although

specific Operational Statements are referenced, consultation with the DFO may result in site-specific construction methods and mitigation measures for some locations.

Permits and Approvals

The federal *Fisheries Act* governs the protection of fish and aquatic habitat, including the harmful alteration, disruption or destruction (HADD) of fish habitat, and the deposition of damaging substances into fisheries waters.

All required permits and approvals will be obtained in consultation with the Cataraqui Region Conservation Authority and the Department of Fisheries and Oceans (DFO).

Potential Impacts

The potential impacts of the Project to watercourses could include short-term increases in turbidity (cloudiness) from runoff, soil erosion, and water quality and aquatic habitat disturbance during construction. Installation and maintenance of culverts and access roads may cause disturbance to aquatic biota and habitat, disruption of water flow and fish passages, loss of bed material and changes to shoreline vegetation. Potential impacts related to the installation of underground collector and interconnection lines include erosion and sedimentation, collapse of punch or bore hole under the stream, disturbance to riparian vegetation, and disturbance to bottom and bank substrates.

During construction of the submarine cable between the island and the mainland, potential impacts to fish and fish habitat include disruption of sensitive fish spawning areas (e.g., gravel, cobble, and rock rubble), erosion and sedimentation caused by disturbance to the shoreline and bed of water bodies, removal of riparian (bank) vegetation and underwater rocks and logs that provide cover, shade and food, and disruption of sensitive fish life stages.

During the operational phase, submarine cables produce magnetic fields. The only effect of cables on the ambient electrical environment may be on the local geomagnetic field as a weak magnetic field source. While a number of species are reported to be capable of detecting changes in the Earth's magnetic field, the narrow linear feature of the field around the cable makes it unlikely that long distance navigation, migration, or major behavioural patterns of those species would be affected.

General Mitigation Measures

General mitigation measures for construction activities near a watercourse include:

- All in-water work would be completed within MNR seasonal timing windows to avoid impacts to spawning species;
- Proper operation and storage of materials and equipment will prevent harmful substances from entering the water; and,
- Sediment and erosion control by silt fencing prior to construction will prevent sedimentation of the water.

With respect to dock construction since specific construction details are not known at the time of report preparation, the list is extensive such that all measures are included and the appropriate measures will be

applied as needed. Although the scale of the proposed docks is larger than that covered by DFO's Operational Statement for Dock and Boathouse Construction, the conditions and mitigation measures listed in the Operational Statement should be implemented to minimize impacts on the aquatic environment.

As the final construction method is not fully defined at this time, the following list of measures is provided and may or may not apply, dependent on the final dock location and design.

- Measures listed in the DFO Operational Statement for Dock Construction
- Follow MNR in-water construction timing windows
- Work from barges where possible
- Shoreline restoration plan
- Sediment and erosion control
- Protection of water quality during construction
- Fish removal plan (for drilling of piles, construction of hydraulic lifts, etc.)

Although the scale of the submarine cable component of the project is larger than that covered by DFO's Operational Statement for Underwater Cables, the conditions and mitigation measures listed in the Operational Statement should be implemented to minimize impacts on the aquatic environment. For offshore installation the cable will be laid on the lake bottom from barges on the lake surface. Mitigation measures listed in DFO's Operational Statement regarding refueling and maintenance of machinery, spill kits, etc. will be implemented. The cable material is a galvanized steel type armour with cross-linkable polyethylene insulation which minimizes the electromagnetic field around the cable.

Monitoring

A Construction Contractor would be on-site during construction to ensure compliance with specifications, site plans and permits and prevent impacts to fish and fish habitat. Following construction, the bank, bed, and bed will be restored to pre-construction conditions, where possible.

During operations, the site will be restored as necessary, and appropriate actions will be taken if an accidental spill and/or leak occurs.

5.8 ARCHAEOLOGICAL AND HERITAGE REPORTS

The following is a summary of the <u>Heritage Assessment</u>, <u>Protected Properties</u>, <u>Stage 1 Archaeological</u> <u>Assessment</u> and <u>Stage 2 Archaeological Assessment</u> reports for the Project. Archaeological assessments are provided to the Ministry of Tourism and Culture (MTC) for review in advance of submission as part of the Renewable Energy Approval application. The purpose of the Archaeological Assessment Reports is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an understanding of the archaeological potential within the Project Study Area, and identify any archaeological features that would require removal prior to construction activities relating to the Project.

Heritage Assessment

Specific sections of the Ontario Regulation 359/09, Renewable Energy Approvals Under Part V.0.1 Of The Environmental Protection Act pertain to Heritage Resources, specifically heritage resources and cultural heritage landscapes. In order to meet the conditions of the regulation, Stantec Consulting Ltd was retained by Windlectric Inc. to conduct a Heritage Assessment of the location of Project.

The assessment included a review of historic period maps, aerial imagery and Census data as well as records and inventories held by Loyalist Township, the Lennox and Addington Archives, and the Amherst Island Museum and Gallery.

A visual survey was completed on July 7th and 8th, 2011 to determine the presence of potential built heritage resources within the Study Area. During the site visit, the Study Area was also assessed for any groupings of resources that might constitute a cultural heritage landscape.

A total of 24 significant built heritage resources were identified within the Study Area based on criteria set out under O.Reg 9/06 of the Ontario Heritage Act. Four significant cultural heritage landscapes were identified within the study area.

Potential Project-related impacts on the significant built heritage resources and cultural heritage landscape were assessed as per the Ontario Ministry of Tourism and Culture 2006 guidance for Heritage Impact Assessments.

Potential negative impacts were identified for nine significant built heritage resources and three significant cultural heritage landscapes:

- 4125 South Shore Road, BHR 5;
- 2750 Front Road, BHR 6;
- 3190 Front Road, BHR 7;
- The Dry Stone Fence at Emerald 40 Foot Road and Second Concession Road, BHR 18;
- 3475 Second Concession Road, BHR 19;
- 4725 Second Concession Road, BHR 20;
- 5950 Second Concession Road, BHR 21;
- 3775 Third Concession Road, BHR 22;
- Village of Stella Cultural Heritage Landscape, CHL 1;
- St. Paul's Presbyterian Church, CHL 3; and
- The Ferry Landscape, CHL 4.

Protected Properties

Specific sections of the Ontario Regulation 359/09, Renewable Energy Approvals Under Part V.0.1 Of *The Environmental Protection Act* pertain to Heritage Resources, specifically protected properties as listed in the Table in Section 19. In order to satisfy the conditions of the regulations, Stantec Consulting Ltd. was retained by Windlectric Inc. to conduct a Protected Properties Assessment of the location of the Project.

The assessment included a review of records and inventories held by Loyalist Township, the Ontario Ministry of Culture and the Ontario Heritage Trust. A visual survey of the Study Area was completed in July, 2011 to confirm the existing conditions.

The findings of the report conclude that:

- Three (3) properties designated by a municipal by-law made under section 29 of the OHA have been identified within the Study Area.
- No properties in respect of which a notice of intention to designate as being of cultural heritage value or interest has been given in accordance with section 29 of the *OHA* have been identified within or adjacent to the Study Area.
- No properties designated by order of the Minister of Culture under section 34.5 of the *OHA* have been identified within or adjacent to the Study Area.
- No properties in respect of which a notice of intention to designate as being of cultural heritage value or interest of provincial significance has been given in accordance with section 34.6 of the *OHA* have been identified within or adjacent to the Study Area.
- No properties that are part of an area designated by a municipal by-law made under section 41 of the *OHA* as a heritage conservation district have been identified within or adjacent to the Study Area.
- No properties designated as a historic site under Regulation 880 of the Revised Regulations of Ontario, 1990 (Historic Sites) made under the *OHA* have been identified within or adjacent to the Study Area.

Potential negative impacts were identified for each of the protected properties and the following recommendations have been made to minimize or avoid impacts:

This study recommends the following:

- Prior to construction within a 50 m bufferzone of the Trinity United Church and Neilson's Store, it
 is recommended that maximum acceptable vibration, or peak particle velocity (PPV), levels for
 each building be determined by a qualified engineer
- Construction activities should be monitored to ensure that maximum PPV levels are not exceeded.

• All construction activities should cease if PPV levels are exceeded to determine a solution to ensure compliance with PPV levels.

In order to address potential negative impacts on the Pentland Cemetery, the following recommendations have been made:

- In order to minimize the visual impact of an Operations and Maintenance Building on the pastoral character of views from the cemetery, it is recommended that trees be planted between the road and the building.
- Prior to construction activities related to the buried cable or Operations and Maintenance Building, it is recommended that the stone wall be fully documented.
- The stone wall should be assessed periodically by a qualified individual during construction activities to ensure that no damage is occurring.
- Construction activities should cease immediately if vibrations are found to be resulting in damage until the wall can be adequately reinforced or supported.
- The stone wall should be evaluated following construction activities to ensure that no damage has occurred and any damage to the wall should be repaired immediately following construction activities.

Stage 1 and 2 Archaeological Assessment

The Stage 1 Archaeological Assessment was composed of a program of background research and visual assessment to determine the archaeological potential of the Study Area.

A visit was made to the Project Study Area on July 7th and 8th, 2011 to assess general conditions. Private property was not accessed during the site visit and all observations were recorded from public property (*i.e.*, public roads). All roads within the Project Study Area were visited and locations of Project infrastructure were surveyed from all possible directions.

In general, the Project Study Area was found to be undisturbed, although a quarry was noted on the north side of Front Road in Lot 10, North Shore Concession. In the locations of Project components land was either undeveloped or agricultural in nature. The site visit confirmed the presence of features of archaeological interest throughout the Project Study Area (e.g., knolls, watercourses).

Based on principles of archaeological potential modelling, existing archival records and characteristics identified on the Ministry of Tourism and Culture's Archaeological Potential Determination Checklist, it was Stantec's professional opinion that the Project Study Area demonstrated potential for the presence of archaeological deposits of integrity. Stage 2 Archaeological Assessment was recommended to occur within areas of any project related infrastructure construction, including all turbine pads, access roads, underground cable links, construction offices, laydowns and temporary storage areas and any other areas where soil disturbances into and below the topsoil may occur.

The Stage 2 fieldwork was conducted in accordance with the Ontario Heritage Act (OHA) and the Ministry of Tourism and Culture (MTC)'s Standards and Guidelines for Consultant Archaeologists (2011). Stage 2
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archaeological survey generally takes two forms: pedestrian survey and test pit excavation survey Pedestrian survey, the preferred methodology, requires that the area to be surveyed be ploughed as if the ground were to be cultivated and allowed to weather through one hard or several light rainfalls. After weathering the ground is walked at a slow pace and the locations of artifacts recorded using a Geographic Positioning System (GPS). During a pedestrian survey only diagnostic artifacts are collected; all others are left *in situ*.

If ploughing is not technically feasible in some locations due to the nature and extent of existing ground cover or other conditions, Stage 2 assessment will need to be completed using a test pit excavation strategy. In this instance standard archaeological test pits of 30 x 30 cm or greater are excavated and all excavated soils passed through screens of 6 mm mesh. During test pit survey all artifacts encountered are retained. In either case the survey interval will be at no more than 5 m. During Stage 2 assessment all field activities will be recorded using a GPS.

As part of the proposed Project a Stage 2 Archaeological Assessment (AA) was required in support of environmental permitting. Given the elevated archaeological potential for both prehistoric and historic period archaeological resources within the Study Area it was recommended that any lands which are planned to be disturbed for development activity (including construction laydowns, temporary storage areas, etc.) undergo Stage 2 Archaeological Assessment prior to any ground disturbances.

Seven (7) archaeological sites have been identified which meet criteria for further assessment and have been recommended to proceed to Stage 3 AA. There are an additional four (4) isolated findspots identified and recorded for which the cultural heritage and value of the site has been sufficiently addressed at the Stage 2 AA and have not been recommended for further work.

Marine Archaeological Assessment

A desktop investigation of the Project Study Area was conducted to determine the potential for submerged archaeological resources within the existing Project Study Area. This assessment included a review of the archaeological context of the area, historical sources, shipping losses within and around the study area, previous academic archaeological study within the area, as well as review and discussion with scuba diving groups who have dove within the Project Study Area.

Based on the results of the desktop assessment the Project Study Area was considered to exhibit potential for previously undiscovered submerged archaeological resources. In order to confirm that no submerged archaeological resources were within the disturbance area of the Project, a sub-surface remote sensing survey was conducted.

The remote sensing survey included a multi-beam sonar investigation as well as spot investigations of identified targets with a Remotely Operated Vehicle. A sub-bottom profile survey was also conducted to determine the nature of the lake bottom within the Project Study Area. This survey resulted in the discovery of one shipwreck within the Project Study Area and one unidentified feature. This wreck has been determined to be a skiff of indeterminate age. It has been registered as the Skiff Wreck Site (BbGe-28) with the Ontario Ministry of Tourism, Culture and Sport (MTCS). No archaeological resources were encountered directly within the proposed submarine cable route or within 80 metres on either side. The unidentified feature consisted of various cut log timbers and associated metal covering. This likely represents a former crib and was not registered with the MTCS.

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A secondary survey was conducted outside of the proposed cable route at the request of the Project proponent. The purpose of this secondary survey was to locate an existing Ministry of Transportation (MTO) bubbler line which runs along the existing Loyalist Township public ferry route. The survey of this area resulted in the discovery of a 19th to 20th century shipwreck (located approximately 350 metres west of the Project's submarine cable route). This wreck has been registered as the North Amherst Wreck (BbGe-27).

As there are currently no standards or guidelines in regards to underwater archaeological survey within the province of Ontario all underwater archaeological fieldwork was conducted according to the practices and principles of the Nautical Archaeological Society. The Nautical Archaeological Society is an internationally recognized organization with ties to several academic institutions. The underwater archaeological principles and practices utilised have been adopted by numerous governments worldwide.

6.0 Summary of Potential Environmental Effects

The effects of constructing, operating, and decommissioning a wind farm is well understood and can be mitigated through established and accepted techniques and practices. For example, siting infrastructure outside of wetlands and away from residential (sound) receptors reduces the potential for negative environmental effects.

Based upon agency guidance, Stantec's understanding of the potential effects of constructing, operating, and decommissioning wind power projects, and the requirements of the REA process, the following Project-specific features have been identified and are expected to be further analysed as part of the REA application process:

- Heritage and Archaeological Resources;
- Natural Heritage Resources;
- Water Bodies;
- Air, Odour, Dust;
- Environmental Noise;
- Land Use and Resources;
- Provincial and Local Infrastructure; and,
- Public Health and Safety.

Detailed descriptions of the potential effects, mitigation measures, and net effects to these features during the construction, operation, and decommissioning phases of the Project will be provided in the REA application via the REA reports referenced above.

7.0 Conclusion and Signatures

This report has been prepared by Stantec for the sole benefit of Windlectric Inc., and may not be used by any third party without the express written consent of Windlectric Inc.. The data presented in this report are in accordance with Stantec's understanding of the Project as it was presented at the time of reporting.

STANTEC CONSULTING LTD.

Kerrie Skillen Project Manager

Rob Rowland Senior Project Manager

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Appendix A

Site Plan



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Project Study Area

300m Zone of Investigation

120m Zone of Investigation

Project Components			
	Turbine		

- Met Tower (Potential Location)
- Substation (Potential Location)
- Access Road
- Collector Lines
- - Submarine Cable Path
- Laydown Area and Crane Path
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed

Transmission Lines

- Mainland Option1
- Mainland Option 2
- Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)
- Noise Receptors
- Existing Vacant

Existing Features

- Road
- --- Unopened Road Allowance
- → Railway
- Elevation Contour (metres ASL)
- Hydro Line
- Watercourse
- Waterbody
- Wooded Area ANSI Boundary
- Property Boundary

Notes

- 1. Coordinate System: UTM NAD 83 Zone 18 (N).
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.



Client/Project



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Figure No. 1

Γitle **Project Location & Study Area**

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Project Study Area 300m Zone of Investigation 120m Zone of Investigation Project Components Met Tower (Potential Location) Substation (Potential Location) Access Road Collector Lines - - Submarine Cable Path ------ Laydown Area and Crane Path Operation and Maintenance Building (Potential Location) Potential Culvert Location Point of Common Coupling Mainland Cable Vault (Potential Location) Island Cable Vault Constructible Area Mainland Dock (Potential Location) Island Dock Batch Plant (Potential Location) Site Office (Potential Location) Storage Shed Transmission Lines Mainland Option1 Mainland Option 2 Island Transmission Line Central Staging Area Switching Station (Potential Location) Noise Receptors **Existing Features** --- Unopened Road Allowance Elevation Contour (metres ASL) Hydro Line Watercourse Waterbody Wooded Area ANSI Boundary

Property Boundary

- Coordinate System: UTM NAD 83 Zone 18 (N).
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WINDLECTRIC INC. AMHERST ISLAND WIND ENERGY PROJECT

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Project Location & Study Area







Legend Project Study Area 300m Zone of Investigation 120m Zone of Investigation Project Components 👃 Turbine

 Met Tower (Potential Location) Substation (Potential Location)

- Access Road
- Collector Lines
- - Submarine Cable Path
- ----- Laydown Area and Crane Path
- Operation and Maintenance Building (Potential Location)
- Potential Culvert Location • Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed
- Transmission Lines
- Mainland Option1
- Mainland Option 2 Island Transmission Line

Land Use

- Central Staging Area
- Switching Station (Potential Location)
- Noise Receptors
- Existing Vacant

Existing Features

- Road
- --- Unopened Road Allowance
- ----- Railway
- Elevation Contour (metres ASL)
- Hydro Line
- Watercourse Waterbody
- Wooded Area
- ANSI Boundary
 - Property Boundary

Notes

- Coordinate System: UTM NAD 83 Zone 18 (N).
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Client/Project

WINDLECTRIC INC. AMHERST ISLAND WIND ENERGY PROJECT

Figure No. 1.4

Title

Project Location & Study Area

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	300m Zone of Investigation			
	20m Zone of Investigation			
Project	Components			
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