APPENDIX B

Project Notifications and Letters

Ministry of Natural Resources

Sudbury District Office
Northeast Region
Regional Operations Division

3767 Highway 69 South, Suite 5
Sudbury, ON P3G 1E7
Tel.: 705-564-7823
Fax: 705-564-7879

Ministère des Richesses naturelles

Bureau de district Sudbury
Région Nord-Est
Division des opérations régionales

3767 Route 69 Sud, bureau 5
Sudbury ON P3G 1E7
Tél. : 705-564-7823
Téléc. : 705-564-7879

Ontario

September 9, 2011

Mr. Rick Martin, Senior Manager
Business Development, Wind Energy
Northland Power
Box 73, 13 Worthington Street
Little Current, ON
P0P 1K0

Dear Mr. Martin:

RE: NHA Confirmation for the McLean's Mountain Wind Farm

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for the McLean's Mountain Wind Farm on Manitoulin Island, submitted by Northland Power on September 1, 2011.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

In accordance with Section 28(3)(c) and 38(2)(c), MNR also offers the following comments in respect of the project:

Turbines 31, 34, 39, 40, 43 are being permitted as alternate sites (listed as Five Extra Permitted Sites in the legend of report mapping). It is recognized that no access road is provided for alternate turbine sites in the southwest corner of the project location (Turbine #s 31, 39, 40 and 43). If turbine construction at one or more of these alternate sites in the southwest portion of the project location is determined necessary, confirmation of a Natural Heritage Assessment will be required from MNR, in accordance with Renewable Energy Approvals Regulation, prior to construction.

. . . /2

In addition to the NHA, Environmental Effects Monitoring Plans that address post-construction monitoring and mitigation for birds and bats must be prepared and implemented. It is recommended that post-construction monitoring plans be prepared in accordance with MNR Guidelines and be reviewed by MNR in advance of submitting a REA application to MOE in order to minimize potential delays in determining if the application is complete.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document.* These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Bob Robinson, Renewable Energy Planner at (705) 564-7868 or bob.l.robinson@ontario.ca .

Sincerely,

Ed Tear
District Manager
Sudbury

cc. Jim Beal, Renewable Energy Provincial Field Program Coordinator, MNR
Narren Santos, Environmental Assessment and Approvals Branch, MOE

Ministry of Tourism and Culture

Culture Programs Unit
Programs and Services Branch
Culture Division
435 S. James St., Suite 334
Thunder Bay, ON P7E 6S7
Tel.: 807 475-1632
Fax: 807 475-1297

Ministère du Tourisme et de la Culture

Unité des programmes culturels
Direction des programmes et des services
Division de culture
Bureau 334, 435 rue James sud
Thunder Bay, ON P7E 6S7
Tél.: 807 475-1632
Téléc.: 807 475-1297

Ontario

August 18, 2010

Don McKinnon
Dillon Consulting Ltd.
235 Yorkland Blvd., Suite 800
Toronto, ON M2J 4Y8

Dear Mr. McKinnon,

Re: Review and acceptance into the provincial register of reports the archaeological assessment report entitled "Stage 2 Archaeological Resource Assessment McLean's Mountain Wind Farm Part of Lots 21 and 22, Concession 12; Part of Lot 3, Concession 8; Part of Lot 20, Concession 11; Part of Lot 9,oncession 6; Part of Lots 7-8, Concession 5; Part of Lot 7, Concession 4; Part of Lots 11-13, Concession 2; Part of Lot 14, Concession 3; Part of Lot 19-20, Concession 4; Part of Lot 31, Concession 1; Part of Lots 22-23, 25-26, Concession 12, Geographic Township of Howland, Northeastern Manitoulin and the Islands (NEMI), District of Manitoulin" written on August 6, 2010, received on August 9, 2010.

PIF: P027-093-2010
MTC: HD00507

FIT File#: F-000522-WIN-130-601 and F-000520-WIN-130-601

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s.22(3)(a) of O.Reg. 359/09 under the *Environmental Protection* Act regarding archaeological assessments undertaken for the above noted project.

Based on the information contained in the report you have submitted for this project, the Ministry believes that archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the license terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines. Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the report.

The report recommends the following:

- It is recommended that the property be cleared of archaeological concerns; however,
- Should previously undocumented archaeological resources be discovered, they may be an archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with sec. 48(1) of the Ontario Heritage Act.;

- The Cemetereis Act requires that any person discovering human remains must notify the police or coroner and the Registrar of cemeteries, Ministry of Small Business and Consumer Services.

The Ministry of Tourism and Culture is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the *Ontario Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licenses.

Please feel free to contact me if you have any questions or require additional information.

Yours,

A Hinshelwood.

Andrew Hinshelwood
Archaeology Review Officer

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* In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result:

(a) if the report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or,

(b) from the issuance of this letter.

Further measures may need to be taken in the event that additional artifacts of archaeological sites are identified or the Report(s) are otherwise found to be inaccurate, incomplete, misleading or fraudulent.

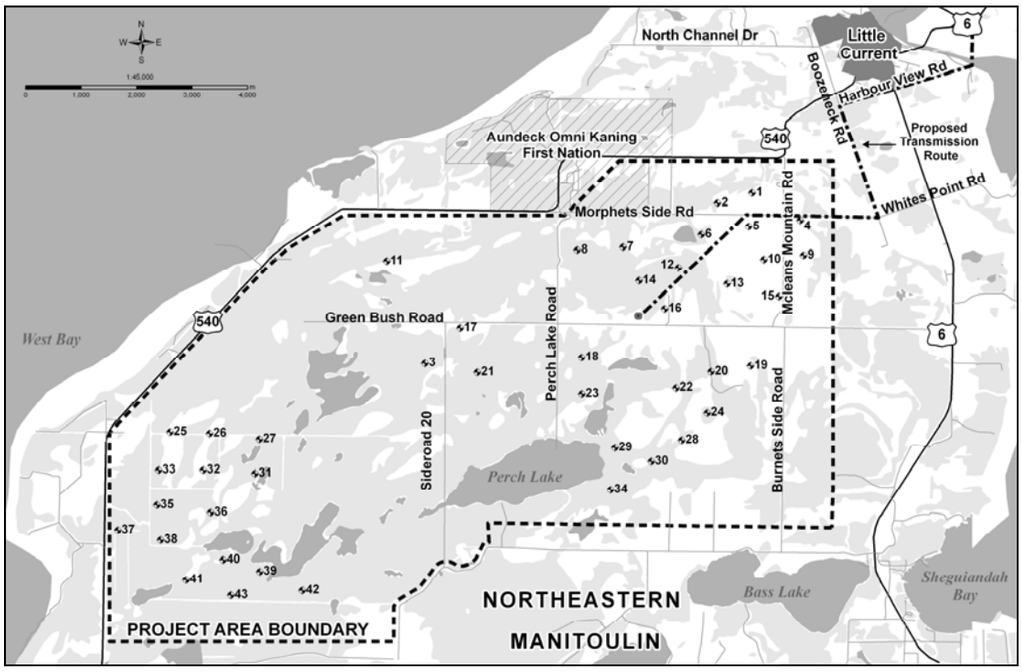
Project Notification (Notices and Letters)

MCLEAN'S MOUNTAIN WIND FARM PROJECT
First Notice of Public Review
Regarding a Draft Renewable Energy Approval (REA) Submission Package

Project Name: Maclean's Mountain Wind Farm
Project Location: Municipality of Northeastern Manitoulin and the Islands (Manitoulin Island), Ontario
Dated at the Municipality of Northeastern Manitoulin and the Islands this 13th day of January 2010.

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. The proposed MMWF is expected to consist of up to 43 wind turbines that will generate 77 MW of electricity. The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA replaces approvals formerly required under the *Environmental Assessment Act*, *Planning Act* and *Environmental Protection Act*. NPI intends to develop the project under the new Green Energy Act (GEA) Feed-In-Tariff (FIT) program. This notice is distributed in accordance with REA requirements.

Map of Proposed Project Location



Project Description

The proposed MMWF project will include 43 wind turbines with an initial installed capacity of 77 MW. All turbines will be located within the project boundary area as shown in the map above. The turbine locations shown on the above map may be subject to change based on input received through the REA process. The proposed project will connect with the Hydro One Transmission system (the provincial grid) that is located on Goat Island. There will be the need to cross the North Channel with a submarine cable to facilitate the transmission connection.

Documents for Public Inspection

A written copy of the Environmental Screening Report/Environmental Impact Statement (ESR) was made available for public inspection on July 2009 at NEMI's Clerk Office. Under REA, NPI is obligated to provide several reports to support the REA application. NPI has prepared draft supporting documents in order to comply with the requirements of REA and intends to rely on the previously submitted ESR (July 2009) to partially fulfill the required documentation. A Draft REA Package including supplementary documentation in fulfillment of REA requirements will be made available for a 60-day review period as of January 18th, 2010. NPI will also be holding a Public Information Centre (PIC) on March 22, 2010. Ads will be provided in the local newspaper to notify you of the upcoming PIC. The draft REA Reports will be available as of January 18th, 2010 at the project website *www.northlandpower.ca click tab for Development Projects* and for review at these locations:

Township of the Northeastern Manitoulin and the Islands
Clerk's Office
15 Manitowaning Road
Little Current ON, P0P 1K0

Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0

Project Contacts and Information: To learn more about the proposed project, upcoming public meetings or to provide your comments on the draft REA Reports, please contact:

Rick Martin, Project Manager
Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0
Tel: (705)271-5358 cell, (705)368-0303 Manitoulin Island Office
E-mail: rickmartin@northlandpower.ca

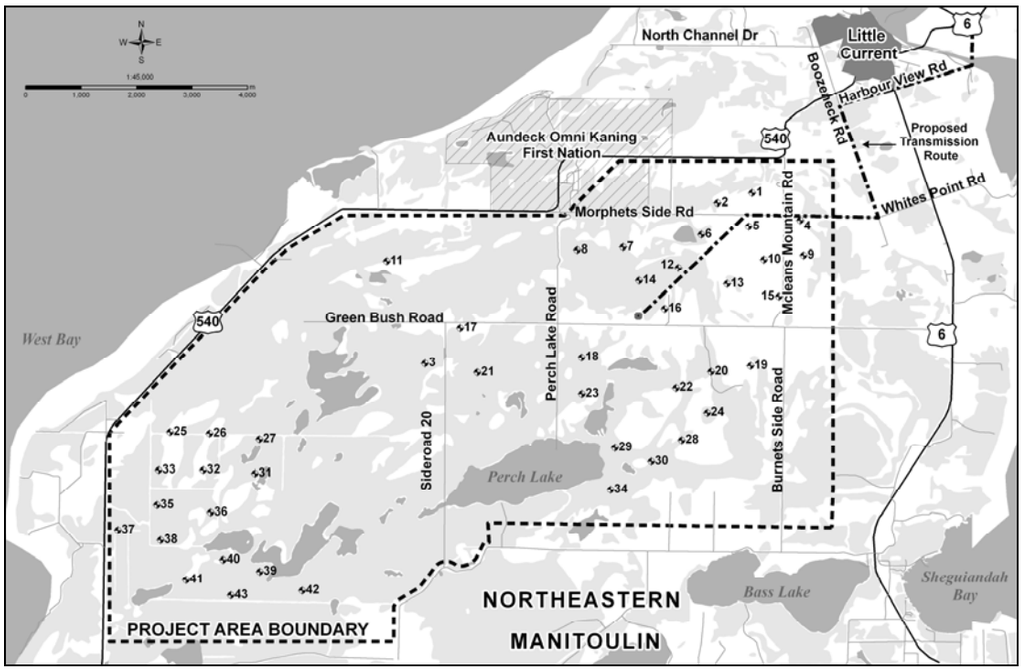
Don McKinnon, REA Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8
Tel: 416.229.4647 ext. 2355
E-mail: dpmckinnon@dillon.ca

MCLEAN'S MOUNTAIN WIND FARM PROJECT
Second Notice of Public Review
Regarding a Draft Renewable Energy Approval (REA) Submission Package

Project Name: Maclean's Mountain Wind Farm
Project Location: Municipality of Northeastern Manitoulin and the Islands (Manitoulin Island), Ontario
Dated at the Municipality of Northeastern Manitoulin and the Islands this 20th day of January 2010.

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. The proposed MMWF is expected to consist of up to 43 wind turbines that will generate 77 MW of electricity. The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA replaces approvals formerly required under the *Environmental Assessment Act*, *Planning Act* and *Environmental Protection Act*. NPI intends to develop the project under the new Green Energy Act (GEA) Feed-In-Tariff (FIT) program. This notice is distributed in accordance with REA requirements.

Map of Proposed Project Location



Project Description

The proposed MMWF project will include 43 wind turbines with an initial installed capacity of 77 MW. All turbines will be located within the project boundary area as shown in the map above. The turbine locations shown on the above map may be subject to change based on input received through the REA process. The proposed project will connect with the Hydro One Transmission system (the provincial grid) that is located on Goat Island. There will be the need to cross the North Channel with a submarine cable to facilitate the transmission connection.

Documents for Public Inspection

A written copy of the Environmental Screening Report/Environmental Impact Statement (ESR) was made available for public inspection on July 2009 at NEMI's Clerk Office. Under REA, NPI is obligated to provide several reports to support the REA application. NPI has prepared draft supporting documents in order to comply with the requirements of REA and intends to rely on the previously submitted ESR (July 2009) to partially fulfill the required documentation. As indicated in the first Notice (released on January 13th, 2010) a Draft REA Package including supplementary documentation in fulfillment of REA requirements was made available for a 60-day review period on January 18th, 2010. NPI will also be holding a Public Information Centre (PIC) on March 22, 2010. Ads will be provided in the local newspaper to notify you of the upcoming PIC. The draft REA Reports have also been available as of January 18th, 2010 at the project website *www.northlandpower.ca click tab for Development Projects* and for review at these locations:

Township of the Northeastern Manitoulin and the Islands
Clerk's Office
15 Manitowaning Road
Little Current ON, P0P 1K0

Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0

Project Contacts and Information: To learn more about the proposed project, upcoming public meetings or to provide your comments on the draft REA Reports, please contact:

Rick Martin, Project Manager
Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0
Tel: (705)271-5358 cell, (705)368-0303 Manitoulin Island Office
E-mail: rickmartin@northlandpower.ca

Don McKinnon, REA Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8
Tel: 416.229.4647 ext. 2355
E-mail: dpmckinnon@dillon.ca

January 11th, 2010

INSETRT MAIL MERGE ADDESSES

Dear Landowner,

Re: Northland Power Inc., McLean's Mountain Wind Farm Project
Renewable Energy Approval (REA) Draft Submission Package

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. This wind farm is expected to consist of approximately 43 wind turbines that will generate about 77 MW of electricity.

It is NPI's intention to obtain a contract for the sale of electricity with the Ontario Power Authority (OPA) through the Province's Feed-in-Tarriff (FIT) program. The project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA process replaces the previous process that required several separate approvals including for example, the *Environmental Assessment Act, Planning Act and Environmental Protection Act*. As specified in the REA regulations (Section 16), a project proponent is required to:

- Notify the local community of the proponent's intent to develop the project (accomplished through this letter);
- Provide paper copies of the drafts of all documents as required by the REA Regulations (as described in this letter); and,
- Provide electronic copies of the drafts of all documents as required by the REA Regulations on the Project website (available via www.northlandpower.ca *click tab for Development Projects on January 18th, 2010*)

NPI would like to take this opportunity to inform you that a Renewable Energy Approval (REA) Draft submission package will be available for your review and comment on January 18th, 2010 for sixty (60) days at the following locations:

Township of the Northeastern Manitoulin and the Islands	**Northland Power Inc. Little Current Office**
Clerk's Office	McLean's Mountain Wind Farm Office
15 Manitowaning Road	23A Vankoughnet St. East
Little Current ON, P0P 1K0	Little Current ON, P0P 1K0

The draft reports are also available at the project website: www.northlandpower.ca
(Click tab for Development Projects)

The REA Draft submission package provides supplementary information to the existing McLean's Mountain Wind Farm Environmental Screening Report/Environmental Impact Statement (ESR) (July 2009) and includes the following sections:

Section 1: Concordance Table

NPI is relying on the previously completed McLean's Mountain Wind Farm Environmental Screening Report/Environmental Impact Statement (ESR) released in July 2009 to fulfill much of the REA reporting requirements. The Ministry of Environment advised that this is an acceptable approach for this project. The Concordance Table document outlines NPI's fulfillment of the REA requirements for a Class 4 Wind Facility. This document summarizes the REA requirements and illustrates how these requirements were fulfilled through the ESR (July 2009). The McLean's Mountain Wind Farm ESR document was released in July 2009 for a 30–day public review as part of the former Environmental Assessment process. The ESR document is consistent with the former Environmental Screening provisions of Ontario Regulation 116/01 for a Category B project and with the requirements of the *Canadian Environmental Assessment Act*. The ESR document was developed to assist in the determination of potential environmental effects, including both the social and natural environment, which could result from the proposed project. NPI intends to rely on the ESR (July 2009) to fulfill, at least partially, the necessary REA documentation. The concordance table also references any supplementary information that was provided as part of the REA Draft submission package.

Please note that the wind farm layout presented in the ESR is to be considered as draft subject to revisions based on the input received from government agencies, aboriginal communities, the public and landowners through the REA consultation process.

Section 2: The McLean's Mountain Wind Farm ESR/EIS (ESR), July 2009 Comment/Response Table

A comment-response table that documents the NPI's responses provided to the comments received during the 30-day review period of the ESR document was developed.

Section 3: Supplementary REA Reports

NPI is obligated to provide the required documentation to support its REA application. NPI intends to rely on the ESR that was released in July 2009 to fulfill, at least partially, the necessary documentation.

The following supplementary documents, which were not required for the ESR process, are included in the REA Draft submission package:

- ✓ Project Description Report
- ✓ McLean's Mountain Wind Farm Environmental Management and Protection Plan - Supplementary Information for the Design and Operations Report
- ✓ Community Response Plan - Supplementary Information for the Design and Operations Report
- ✓ Construction Schedule - Supplementary Information for Construction Plan Report
- ✓ Decommissioning Plan Report

A comprehensive Consultation Report will be prepared once the REA consultation process has concluded. The Consultation Report will be prepared to reflect REA requirements and will

document the consultation program that will be conducted under the REA process. The Consultation Report will include a summary of communication and consultation activities conducted with the public, government agencies and Aboriginal communities and will include responses to comments received. NPI has met the REA requirements for the first Public Information Centre under the former Environmental Screening process.

Section 4: Supplementary Mapping

A map depicting the REA wind farm setback requirements is enclosed. This map depicts all applicable REA setbacks which have been met for the draft wind farm project layout. The setbacks include the distances from the proposed wind turbines to the important features within the project area boundary such as residences and natural features.

Comments on the draft REA reports are to be submitted in writing (see below for contact information) by **March 18th, 2010**.

NPI is pleased to continue its communications with members of your community with respect to this project. The proposed project and findings of the REA process will be presented at a future Public Information Centre (PIC) that is planned for March 22, 2010. Notice of this future PIC will be released in your community close to the date of the planned PIC.

If you have questions about the project please do not hesitate to contact me at:

- McLean's Mountain Wind Farm Project, P.O. Box 73, Little Current ON, P0P 1K0
- Phone (mobile): (705)-271-5358, Phone (project office): (705)-368-0303; or
- E-mail: *rickmartin@northlandpower.ca.*

Yours truly,

Rick Martin
Project Manager
Northland Power Inc.

January 18th, 2010

Dear Sir/Madam;

Re: Northland Power Inc., McLean's Mountain Wind Project
Renewable Energy Approval (REA) Draft Submission Package

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. This wind farm is expected to consist of approximately 43 wind turbines that will generate about 77 MW of electricity.

It is NPI's intention to obtain a contract for the sale of electricity with the Ontario Power Authority (OPA) through the Province's Feed-in-Tarriff (FIT) program. The project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA process replaces the previous process that required several separate approvals including for example, the *Environmental Assessment Act, Planning Act and Environmental Protection Act*. As specified in the REA regulations (Section 16), a project proponent is required to:

- Notify the local community of the proponent's intent to develop the project (accomplished through this letter);
- Provide paper copies of the drafts of all documents as required by the REA Regulations (accomplished through this submission); and,
- Provide electronic copies of the drafts of all documents as required by the REA Regulations on the Project website (available via www.northlandpower.ca *click tab for Development Projects*)

This Renewable Energy Approval (REA) Draft submission package has been released as of January 18th, 2010 for a 60-day review period and includes the following sections:

Section 1: Concordance Table

NPI is relying on the previously completed Environmental Study Report to fulfill much of the REA reporting requirements. The MOE advised that this is an acceptable approach for this project. The Concordance Table document outlines the NPI's fulfillment of the REA requirements for a Class 4 Wind Facility. The Concordance Table summarizes the REA requirements and illustrates how these requirements were fulfilled through the McLean's Mountain Wind Farm Environmental Screening Report/Environmental Impact Statement (ESR) released in July 2009. The McLean's Mountain Wind Farm ESR document was released in July 2009 for a 30–day public review as part of the former Environmental Assessment process. The ESR document is consistent with the former Environmental Screening provisions of Ontario Regulation 116/01 for a Category B project. The ESR document was developed to assist in the determination of potential environmental effects, including both the social and natural environment, which could result from the proposed project.

The concordance table also references any supplementary information that was provided as part of the REA Draft submission package.

Please note that the wind farm layout presented in the ESR is to be considered as draft subject to revisions based on the input received from government agencies, aboriginal communities, the public and landowners through the REA consultation process.

Section 2: The McLean's Mountain Wind Farm ESR/EIS (ESR), July 2009 Comment/Response Table

A comment-response table that documents NPI's responses to the comments received during the 30-day review period the ESR document was developed.

Section 3: Supplementary REA Reports

NPI is obligated to provide the required documentation to support its REA application. NPI intends to rely on the ESR that was released in July 2009 to fulfill, at least partially, the necessary documentation. The following supplementary documents, which were not required for the ESR process, are included in this REA Draft submission package:

- ✓ Project Description Report
- ✓ McLean's Mountain Wind Farm Environmental Management and Protection Plan - Supplementary Information for the Design and Operations Report
- ✓ Community Response Plan - Supplementary Information for the Design and Operations Report
- ✓ Construction Schedule - Supplementary Information for Construction Plan Report
- ✓ Decommissioning Plan Report

A Comprehensive Consultation Report will be prepared once the REA consultation process is completed. The Consultation Report will be prepared to reflect REA requirements and will document the consultation program that will be conducted under the REA process. The Consultation Report will include a summary of communication and consultation activities conducted with the public, government agencies and Aboriginal communities and will include responses to comments received. NPI has met the REA requirements for the first Public Information Centre under the former Environmental Screening process.

Section 4: Supplementary Mapping

A map depicting the REA wind farm setback requirements is enclosed. This map depicts all applicable REA setbacks that have been met for the draft wind farm project layout. The setbacks include the distances from the proposed wind turbines to the important features within the project area boundary such as residences and natural features

Comments on the draft REA reports are to be submitted in writing (see below for contact information) by **March 18th, 2010**.

NPI is pleased to continue its communications with members of your community with respect to this project. The proposed project and findings of the REA process will be presented at a future Public Information Centre (PIC) that is planned for March 22, 2010. Notice of this future PIC will be released in your community close to the date of the planned PIC.

If you have questions about the project please do not hesitate to contact me at:

- McLean's Mountain Wind Farm Project, P.O. Box 73, Little Current ON, P0P 1K0
- Phone (mobile: (705)-271-5358, project office: (705)-368-0303); or
- E-mail: *rickmartin@northlandpower.ca.*

Yours truly,

Rick Martin
Project Manager
Northland Power Inc.

Renewable Energy Approval
Notice of Public Review
Ontario Regulation 359/09

MCLEAN'S MOUNTAIN WIND FARM PROJECT
First Notice of Public Information Centre
Regarding a Draft Renewable Energy Approval (REA) Submission Package

Project Name: Maclean's Mountain Wind Farm
Project Location: Municipality of Northeastern Manitoulin and the Islands (Manitoulin Island), Ontario
Dated at the Municipality of Northeastern Manitoulin and the Islands this 17th day of February 2010.

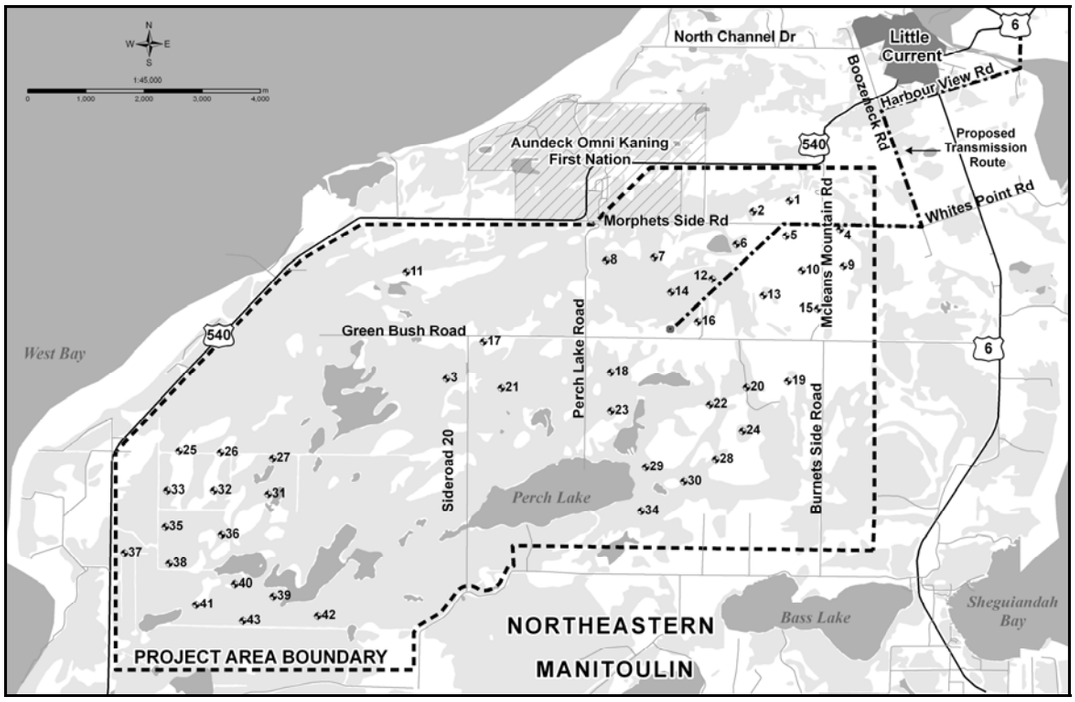
Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. The proposed MMWF is expected to consist of up to 43 wind turbines that will generate 77 MW of electricity. The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the Green Energy Act. The REA replaces approvals formerly required under the Environmental Assessment Act, Planning Act and Environmental Protection Act. NPI intends to develop the project under the new Green Energy Act (GEA) Feed-In-Tariff (FIT) program. This notice is distributed in accordance with REA requirements.

Public Information Centre
DATE: Monday, March 22, 2010
TIME: 7:00 p.m. – 10:00 p.m.
PLACE: Royal Canadian Legion No 177, Vankoughnet E., Little Current, Ontario

Project Description

The proposed MMWF project will include 43 wind turbines with an initial installed capacity of 77 MW. All turbines will be located within the project boundary area as shown in the map below. The turbine locations shown on the above map may be subject to change based on input received through the REA process. The proposed project will require the construction of a transmission line to connect with the Hydro One Transmission system (the provincial grid) that is located on Goat Island. There will be the need to cross the North Channel with a submarine cable to facilitate the transmission connection.

Map of Proposed Project Location



Purpose of the Public Information Centre

NPI has prepared a Draft REA Package including supplementary documentation in fulfillment of REA requirements that was made available for a 60-day review period on January 18th, 2010. The package of materials has been available at: the municipal office of the Township of the Northeastern Manitoulin and the Islands, at the Northland Power Inc. Little Current Office and on the project website *www.northlandpower.ca* click tab for Development Projects. Comments on the draft REA reports were requested by March 18th, 2010. The purpose of this Public Information Centre is to present the proposed project, the REA process and to respond to public questions, issues and concerns. This PIC is the final pubic meeting required under the REA process.

Project Contacts and Information: To learn more about the proposed project, upcoming public meeting or to provide your Comments on the draft REA Reports please contact:

Rick Martin, Project Manager
Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0
Tel: (705)271-5358 cell, (705)368-0303 Manitoulin Island Office
E-mail: rickmartin@northlandpower.ca

Don McKinnon, REA Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8
Tel: 416.229.4647 ext. 2355
E-mail: dpmckinnon@dillon.ca

Renewable Energy Approval
Notice of Public Review
Ontario Regulation 359/09

MCLEAN'S MOUNTAIN WIND FARM PROJECT
Second Notice of Public Information Centre
Regarding a Draft Renewable Energy Approval (REA) Submission Package

Project Name: Maclean's Mountain Wind Farm
Project Location: Municipality of Northeastern Manitoulin and the Islands (Manitoulin Island), Ontario
Dated at the Municipality of Northeastern Manitoulin and the Islands this 24th day of February 2010.

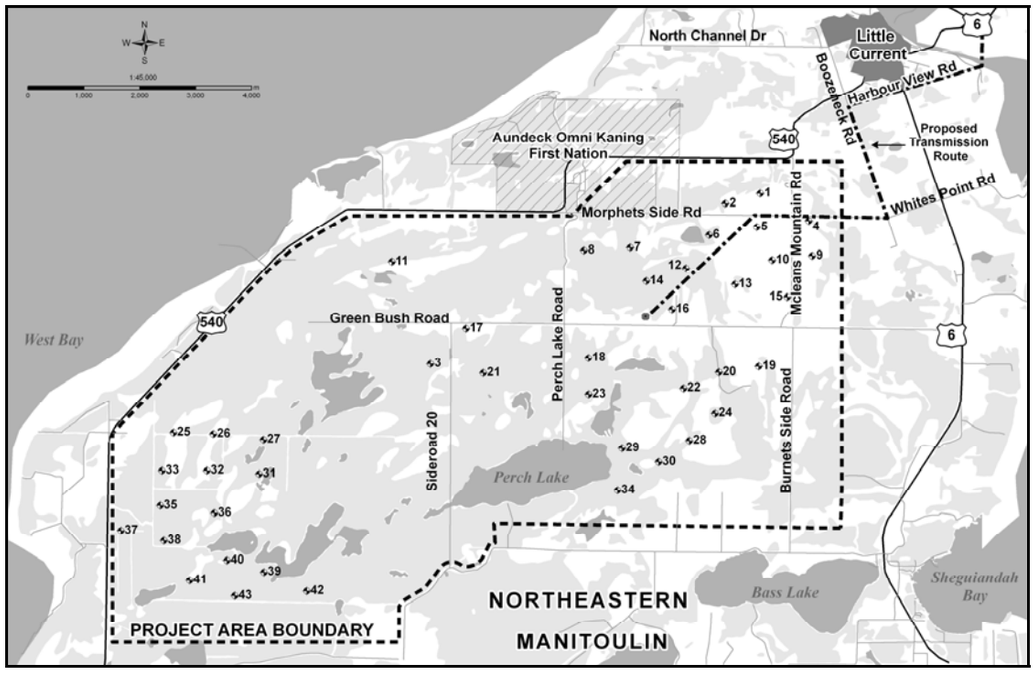
Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. The proposed MMWF is expected to consist of up to 43 wind turbines that will generate 77 MW of electricity. The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the Green Energy Act. The REA replaces approvals formerly required under the Environmental Assessment Act, Planning Act and Environmental Protection Act. NPI intends to develop the project under the new Green Energy Act (GEA) Feed-In-Tariff (FIT) program. This notice is distributed in accordance with REA requirements.

Public Information Centre
DATE: Monday, March 22, 2010
TIME: 7:00 p.m. – 10:00 p.m.
PLACE: Royal Canadian Legion No 177, Vankoughnet E., Little Current, Ontario

Project Description

The proposed MMWF project will include 43 wind turbines with an initial installed capacity of 77 MW. All turbines will be located within the project boundary area as shown in the map below. The turbine locations shown on the above map may be subject to change based on input received through the REA process. The proposed project will require the construction of a transmission line to connect with the Hydro One Transmission system (the provincial grid) that is located on Goat Island. There will be the need to cross the North Channel with a submarine cable to facilitate the transmission connection.

Map of Proposed Project Location



Purpose of the Public Information Centre

NPI has prepared a Draft REA Package including supplementary documentation in fulfillment of REA requirements that was made available for a 60-day review period on January 18th, 2010. The package of materials has been available at: the municipal office of the Township of the Northeastern Manitoulin and the Islands, at the Northland Power Inc. Little Current Office and on the project website *www.northlandpower.ca* click tab for Development Projects. Comments on the draft REA reports were requested by March 18th, 2010. The purpose of this Public Information Centre is to present the proposed project, the REA process and to respond to public questions, issues and concerns. This PIC is the final pubic meeting required under the REA process.

Project Contacts and Information: To learn more about the proposed project, upcoming public meeting or to provide your Comments on the draft REA Reports please contact:

Rick Martin, Project Manager
Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0
Tel: (705)271-5358 cell, (705)368-0303 Manitoulin Island Office
E-mail: rickmartin@northlandpower.ca

Don McKinnon, REA Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8
Tel: 416.229.4647 ext. 2355
E-mail: dpmckinnon@dillon.ca

Renewable Energy Approval
Notice of Public Review
Ontario Regulation 359/09

MACLEAN'S MOUNTAIN WIND FARM PROJECT
Third Notice of Public Information Centre
Regarding a Draft Renewable Energy Approval (REA) Submission Package

Project Name: Maclean's Mountain Wind Farm
Project Location: Municipality of Northeastern Manitoulin and the Islands (Manitoulin Island), Ontario
Dated at the Municipality of Northeastern Manitoulin and the Islands this 10th day of March 2010.

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. The proposed MMWF is expected to consist of approximately 43 wind turbines that will generate about 77 MW of electricity. The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the Green Energy Act. The REA replaces approvals formerly required under the Environmental Assessment Act, Planning Act and Environmental Protection Act. NPI intends to develop the project under the new Green Energy Act (GEA) Feed-In-Tariff (FIT) program. This notice is distributed in accordance with REA requirements.

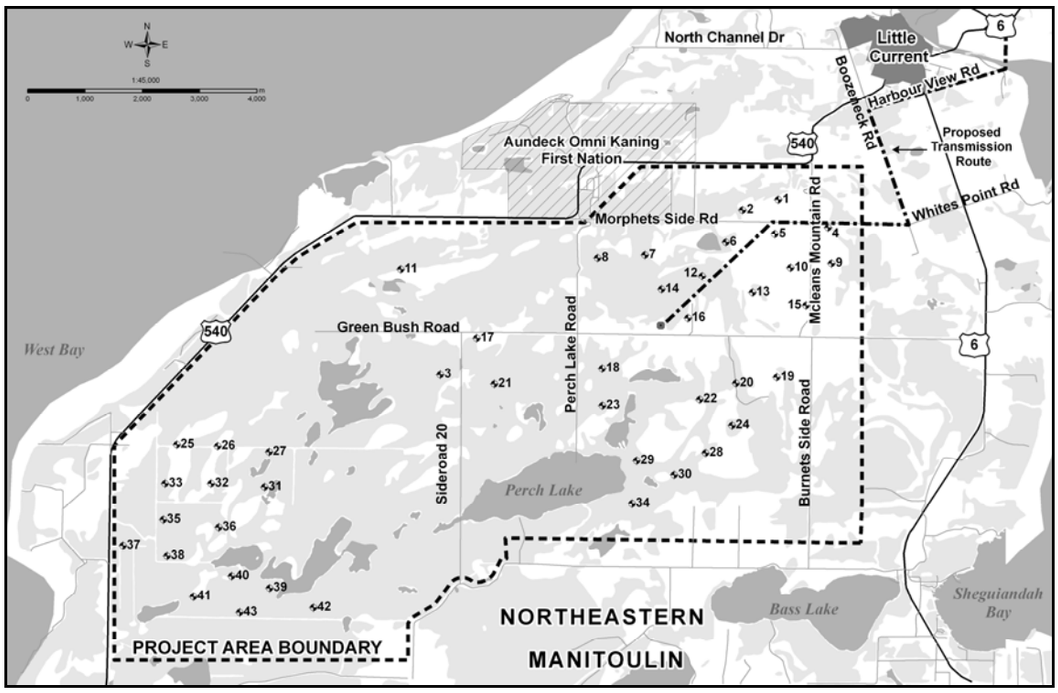
Public Information Centre

DATE: Monday, March 22, 2010
TIME: 7:00 p.m. – 10:00 p.m.
PLACE: Royal Canadian Legion No 177, Vankoughnet E., Little Current, Ontario

Project Description

The proposed MMWF project will include approximately 43 wind turbines with an initial installed capacity of about 77 MW. All turbines will be located within the project boundary area as shown in the map below. The turbine locations shown on the above map may be subject to change based on input received through the REA process. The proposed project will require the construction of a transmission line to connect with the Hydro One Transmission system (the provincial grid) that is located on Goat Island. There will be the need to cross the North Channel with a submarine cable to attach the transmission connection.

Map of Proposed Project Location



Purpose of the Public Information Centre

NPI has prepared a Draft REA Package including supplementary documentation in fulfillment of REA requirements that was made available for a 60-day review period on January 18th, 2010. The package of materials has been available at: the municipal office of the Township of the Northeastern Manitoulin and the Islands, at the Northland Power Inc. Little Current Office and on the project website *www.northlandpower.ca* click tab for Development Projects. Comments on the draft REA reports were requested by March 18th, 2010. The purpose of this Public Information Centre is to present the proposed project, the REA process and to respond to public questions, issues and concerns. This PIC is the final pubic meeting required under the REA process. Notification of this scheduled PIC was provided on February 17th and 24th, 2010.

Project Contacts and Information: To learn more about the proposed project, upcoming public meeting or to provide your Comments on the draft REA Reports please contact:

Rick Martin, Project Manager
Northland Power Inc. Little Current Office
MacLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0
Tel: (705)271-5358 cell, (705)368-0303 Manitoulin Island Office
E-mail: rickmartin@northlandpower.ca

Don McKinnon, REA Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8
Tel: 416.229.4647 ext. 2355
E-mail: dpmckinnon@dillon.ca

Agency Correspondence under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the Green Energy Act

Response to Comments Received from
The Municipality of Northeastern Manitoulin and the Islands (Town of NEMI)
regarding the Municipal Consultation Form for the proposed McLean's Mountain Wind Farm (MMWF)

May 5, 2010

The following addresses issues and concerns expressed by The Municipality of Northeastern Manitoulin and the Islands (NEMI) to NPI regarding the submission of the Renewable Energy Approval (REA) Municipal Consultation form.

Re: 5.1 Project Location

Northland Power Inc (NPI) acknowledges the sewer and water infrastructure along Gammie Road and will stay in communication with the NEMI Roads Superintendent during the entire construction phase of the proposed project along the Town roadways as agreed in the Road Use Agreement that is now completed between the Town of NEMI and NPI. NPI will also contact Bell Canada to establish a shared line use agreement in place along this route.

The cottage at the end of Harbor Vue road is known to NPI and its contractor. NPI and its contractor and will conduct all work within the 45' between the cottage and the southern limit of the road allowance.

During the winter months roads will be maintained for snow removal by the Owner of the proposed McLean's Mountain Wind Farm (MMWF).

NPI/MMWF will ensure that the emergency communications infrastructure will be continuous and will conduct studies to investigate possible issues and mitigation strategies will be addressed.

NPI/MMWF has continually attempted to engage the surrounding First Nation Communities to realize the issues associated with the project layout. No comments have come forward to assist NPI/MMWF in this regard. To date NPI/MMWF received only references to the 1990 agreement and the issues with the Crown. If it comes to the attention of NPI/MMWF that the ownership of the roadways, that are to be utilized for the project, are that of First Nations, an agreement will be sought out with the respective community.

The channel crossing will proceed in such a way that it will be as unobtrusive as possible and all permits will be obtained as are required from the Ministry of Natural Resources (MNR), the Department of Fisheries and Oceans (DFO) the Coast Guard. NavCanada will also be informed so that the crossing and "no anchor zone" will be noted on navigational charts.

RE: 5.2 Project Roads

A Roads Users Agreement is now in place with the local Municipality and will be adhered to throughout the construction of the electrical transmission facility. This agreement addresses the concerns regarding the use of municipal roads.

RE: 5.3 Municipal Service Connections

All infrastructure in the proposed project area is noted and disturbances are not expected. Should any disturbances occur appropriate action measures will be taken to return the disturbed areas to their original state or better.

RE: 5.4 Facility Other

Landscaping, emergency management, and safety protocols are all addressed in the REA document that was released as a draft document on January 18, 2010, and made available for public review. This document has been finalized and submitted to the Ministry of Environment (MOE) Environmental Assessment and Approvals Branch (EAAB) on May 11, 2010.

Re: 5.5 Project Construction

Any disturbed areas as a result of construction by the NPI/MMWF to municipal lands will be restored to its original condition or better.

The existing drainage will be maintained.

Buried Kiosks may be utilized in areas where a 90degree turn is made to cross a roadbed.

As indicated earlier the Road use agreement is in place currently to address the issues of line placement.

A pay scale will be established to reflect the scale of the project and the costs required to care for it.

NPI/MMWF has completed a Stage 1 Archaeological Assessment and has begun a Stage 2 Archaeological Assessment study.

April 22, 2010

DILLON CONSULTING

255 Yorkland Blvd.
Suite 800
Toronto, Ontario
Canada
M2J 4Y8
Telephone
(416) 229-4646
Fax
(416) 229-4692

David Bishop
Ontario Ministry of Natural Resources – Sudbury District
Espanola Area Office
148 Fleming Street
Espanola, Ontario P5E 1R8

Re: McLean's Mountain Wind Farm – Marine Cable Crossing of Little Current Channel of Lake Huron – Work Permit Application

Dear Mr. Bishop:

On behalf of Northland Power Inc. (NPI), please find attached a Work Permit application forms for the Marine Cable Crossing of Little Current Channel of Lake Huron in association with the McLean's Mountain Wind Farm Project. The application includes the following forms and supporting documentation:

- Part 1 – Application for Work Permit
- Part 3 – Application to Do Work on Shorelands
- Part 5 – Works Within a Waterbody

Please also refer to the following attached documents for additional information and specific details with respect to construction methods, existing site conditions, and preliminary design:

- Preliminary Design and Construction Methodology Report prepared by C.B. Fairn & Associates Ltd (including drawings);
- Photo Summary showing the existing conditions from each shoreline.

If you have any questions or require further information please do not hesitate to contact me at 519-650-9833 ext 280 or by email at dknee@dillon.ca.

Yours sincerely,
Dillon Consulting Limited

Daniel J. Knee, B.Sc.
Aquatic/Fisheries Specialist

c.c. Connie Smith, DFO
Stephen Monks, H.B. White
Don McKinnon, Dillon

DJK:
Our File: 09-1983

Ministry of Natural Resources / Ministère des Richesses naturelles

Application for Work Permit / Demande de permis d'exploitaion

Part 1 / Partie 1

Applicant (eg. landowner, licencee, permittee, etc.) (Cannot be a subcontractor)
Demandeur (ex. : propriétaires fonciers, détenteurs de permis, etc.) (Ne doit pas être un sous-traitant)

Name/Nom	Business Phone/Tél. (Bureau)	Residence Phone/Tél. (Résidence)
Northland Power Inc.	(416) 962-6262	--
Mailing Address/Adresse postale: 30 St. Clair Avenue West, 17th Floor, Toronto, ON		Postal Code/Code postal: M4V 3A1

Site Contractor or Person in Charge/Entrepreneur ou responsable sur place

Name/Nom	Business Phone/Tél. (Bureau)	Residence Phone/Tél. (Résidence)	Radio Contact Available/Radio
H.B. White Canada Corp.	(905) 433-9333	--	☒ Yes/Oui ☐ No/Non
Mailing Address/Adresse postale: 655 Bloor Street West, Oshawa, ON			Postal Code/Code postal: L1J 5Y6

Type of Work Proposed - Please indicate and complete the appropriate additional part(s)

Type de travaux prévus - Préciser et remplir la partie appropriée

- ☐ Building Construction / Construction de bâtiments
- ☒ Work on Shorelands / Travaux sur des terres
- ☒ Work Within a Waterbody / ravaux submergés submergées
- ☐ Roads or Trails or Water Crossing / Routes ou piste ou traverse de cours d'eau

Location of Work Permit Area/Emplacement

Township, Municipality, Basemap No. or Lot and Concession, Location, Subdivision or Mining Claim or U.T.M. No.
Canton, municipalité, carte de base n° ou parcelle, concession, emplacement, subdivision ou N° du MTU ou concession minère
Municipality of Northeastern Manitoulin and the Islands east of Little Current, ON

Other i.e. Waterbody (describe) / Autre p. ex. cours d'eau (décrire): Little Current Channel (North Cannel) to Goat Island

Camp Location / Emplacement du camp: N.A.

No. or Workers on Site / Nbre de travailleurs sur le site: 15

Private Land/Terres privées

Private Lands of - Applicant/Appartenant au demandeur
☐ Yes Oui ☒ No Non ☐ Other (specify) À d'autres (préciser qui)

Effective Date(s)/Dates

Start Date/Date de début des travaux	Finish Date/Date de fin des travaux
June 16, 2010	August 31, 2010

Equipment to be Used/matériel qui sera utilisé

Please specify/Préciser
Pick-up Truck/ excavators/ dump trucks/ rock crushers/ drill rig/ clamshell dredge floating barge/ boats

Note:
The issuance of this permit does not relieve the applicant from the responsibility of acquiring any other agency, board, government, or other approvals as may be required.

If an applicant requires a copy of this application, he/she should retain copy prior to submitting.

Personal Information on this form is collected under the authority of Section 13 of the Public Lands Act, R.S.O. 1990 and Ontario Regulation 453/96 as amended and Ontario Regulation 975 as amended, and the information will be used for the purposes of the Act and Regulations. Questions about this information should be directed to the local MNR office. MNR office addresses and phone numbers are listed on the reverse of this form.

I/We hereby agree to rely solely upon the terms and conditions of the written work permit issued pursuant to this application. Any changes, amendments to the written work permit must be approved in writing by MNR.

I certify the information given in this application is true.

Remarque:
La délivrance de ce permis n'exonère pas le détenteur d'obtenir les autorisa- tions qui pourraient être exigées par d'autres gouvernements, organismes, commissions, etc.

Si le demandeur en a besoin, il doit conserver un exemplaire de cette demande avant de la soumettre.

Les renseignements personnels exigés dans les présentes sont recueillis en vertu de l'article 13 de la *Loi sur les terres publiques*, S.R.O. 1990 et du règlement de l'Ontario 453/96 tel que modifié et du règlement 975 de l'Ontario tel que modifié. Ils seront utilisés selon les termes de la Loi et des règlements. Veuillez adresser toute question à ce sujet au bureau local du MRN. Une liste des bureaux du MRN avec adresses et numéros de téléphone se trouve au verso.

J'accepte de me conformer strictement aux conditions écrites du permis d'exploitation émis pour la présente demande. Tout changement ou toute modification audit permis d'exploitation doit être approuvé par écrit par le MNR.

Je certifie que les renseignements donnés ici sont véridiques.

Signature of Applicant/Signé par	Position/Poste	Date
	President + CEO	April 20/10
Signature of contractor (if applicable) Signature de l'entrepreneur (s'il y a lieu)	Position/Poste	Date
	VICE PRESIDENT OPERATIONS.	APR 20 2010.
Date Application Received in Office / Date de r'éception de la demande		

863 (01/01)

Ministry of Natural Resources
Ontario

Ministère des Richesses naturelles

Application to Do Work on Shorelands
Demande de permis de travaux sur des rives

Part 3
Partie 3

I Complete applicable sections.
II Include proof of ownership (e.g. copy of deed and, if available, a copy of survey plan) or indicate property lines.
III Include sketches/drawings/survey plans as indicated on the reverse of this form

Note: Application will not be processed unless the sketches have been completed and attached to the application.

IV Applications may be required to include evidence that notice of the proposed work has been provided to at least the two immediately adjacent neighbours and that they have been provided reasonable opportunity to comment on the proposed work.
V Include municipality's comments of the project, where applicable, (i.e. for dredging or constructing improvements).

I Remplir les parties appropriées.
II Joindre une preuve de propriété (le cas échéant, copie d'acte de vente, de plan cadastral) ou indiquer les limites de propriété.
III Joindre, des croquis, dessins, plans comme l'indique le verso de cette formule.

Remarque: Les demandes reçues sans ces documents ne seront pas acceptées.

IV On peut exiger une preuve qu'au moins les deux voisins immédiats ont été avisés des travaux et qu'ils ont eu une possibilité raisonnable de faire des commentaires sur ces travaux.
V Joindre les commentaires de la municipalité, le cas échéant (p. ex. pour le dragage ou la construction d'améliorations).

1) Filling/Remblais

a) Purpose/But: N.A.

b) Dimensions of Area to be Filled: Dimensions de la surface à remblayer: N.A.

Length/Longueur	Width/Largeur	Depth of Water/Profondeur de l'eau
N.A.	N.A.	N.A.

c) Type of Material to be Used (Please check)
Types de matériaux qui seront utilisés (encercler)

☐ Sand / Sable ☐ Earth / Terre ☐ Gravel / Gravier ☐ Armour Stone / Pierre ☐ Rock Rubble / Morceaux de roche ☐ Other (indicate) / Autres (préciser): N.A.

d) Manner of Preventing Erosion or Silting/Méthode pour prévenir l'érosion ou l'envasement: N.A.

2) Dredging/Dragage

a) Pupose/But: To install marine cables in the channel to achieve 2 m below datum

b) Area to be Dredged / Surface à draguer: see attached

Length/Longueur	Width/Largeur	Average Water Depth/Profondeur moyenne de l'eau
see attached	see attached	see attached

c) Type of Material (Check box and indicate approx. %)/Types de matériaux (encercler et donner le % approx.)

Sand	Marsh	Silt	Gravel	Clay	Rock
☐ Sable ____ %	☐ Marais ____ %	☐ Vase ____ %	☒ Gravier 50 %	☐ Argile ____ %	☒ Roche 50 %

d) Indicate Disposal Location of Dredged Material/Préciser où le matériau enlevé sera déposé: Sidecast until ready for replacement trench

e) Proposed Method of Siltation/Erosion Protection (i.e. straw bales, silt curtain, etc.)Méthode prévue pour prévenir l'envasement ou l'érosion (p. ex. balles de paille, rideau de vase, etc.): Floating tubidity curtain will completely enclose area of in-water work (see attached drawings)

3) Boat Launch/Ramp/Rampe/Lancement de bateaux

a) Dimensions: N.A.

b) Material to be Used/Matériaux qui seront utilisés: N.A.

4) Construction of Dock, Boathouse, Breakwall/Construction d'appontements, abris à bateau, brise-lames

a) Purpose/But: N.A.

b) Dimensions: N.A.

Length/Longueur	Width/Largeur	Height/Hauteur
N.A.	N.A.	N.A.

c) Materials Used in Construction (if material has a preservative, also indicate what type)Matériaux qui seront utilisés (si ces matériaux sont traités avec un préservatif, préciser lequel): N.A.

d) Construction Details (i.e. type of support - concrete, wooden crib)/Détails de la construction (p. ex. type de support - charpente en bois, en béton): N.A.

5) Other Works/Autres travaux (Please Specify)/préciser)

Shoreline Trench Excavation (see attached drawings and construction methodology document)

(out of water on banks)

Ministry of Natural Resources / Ministère des Richesses naturelles — Ontario

Works Within a Waterbody
Travaux dans une surface d'eau

Part 5
Partie 5

Stream Width (summer) Largeur du cours d'eau (été)	Stream Depth (summer) Profondeur du cours d'eau (été)	Streambed Material Matériau du fond	Stream flows continuously Le cours d'eau coule continuellement
432 m m/ft m/pi	0-10.5 m m/ft m/pi	Muck Boue ☐ · Clay Argile ☐ · Silt Vase ☐ · Sand Sable ☐ · Gravel Gravier ☒ · Rock Roche ☐	75% of year or more / 75% de l'année ou plus: Yes Oui ☒ · No Non ☐

Ownership of Work Site
Propriétaire du terrain

Applicant's status with respect to land on which Work is to be located
Statut du demandeur en ce qui concerne les terrains où sont prévus les travaux

Part Owner Co-propriétaire	Owner Propriétaire	Agent for Owner(s) Agent	Lessee Locataire
☐	☐	☐	☒

Ownership of Work
Statut du demandeur des travaux

Applicant's status with respect to Work
Statut du demandeur en ce qui concerne les travaux

Part Owner Co-propriétaire	Owner Propriétaire	Agent for Owner(s) Agent	Lessee Locataire
☐	☐	☒	☐

Purpose of Work
But des travaux

Water Supply — Approvisionement en eau
Domestic Domestique ☐ · Agricultural Agricole ☐ · Municipal Municipal ☐ · Industrial Industrial ☐

Recreation (Check either "Private" or "Commercial" and type.)
Loisirs (cocher «Privé» ou «Commercial» et indiquer le type)
Private Privé ☐ · Com. Com. ☐ · Fishing Pêche ☐ · Hunting Chasse ☐ · Swimming/Boating Natation/canotage ☐

General/Généralités
Fire Protection / Protection contre les incendies ☐ · Water Power / Énergie hydraulique ☐ · Navigation / Navigation ☐ · Wildlife / Faune ☐ · Landscaping / Paysagement ☐ · Fish Hatchery / Frayère ☐
Flood Control / Contrôle des inondations ☐ · Erosion Control / Contrôle de l'érosion ☐ · Pollution Control / Contrôle de pollution ☐ · Urban Drainage / Drainage urbain ☐ · Rural Drainage / Drainage rural ☐ · Water Crossing / Traverse d'eau ☐
Development (Specify) / Aménagement (préciser) ☐
Other (Specify) / Autres (préciser) ☒ Marine Power Cable Crossing

Description of Proposed Work
Description des travaux prévus

Instructions: Complete any of the following items that apply to the work at the location covered by this application.
All measurements should be exact, where possible to determine, otherwise state estimated measurements. Metric measure is preferred. Please indicate which system of measurement you have used.
Instructions: Remplir les cases s'apliquant aux travaux prévus sur le terrain qui fait l'objet de cette demande. Les dimensions doivent être exactes si elles peuvent être mesurées; préciser qu'elles sont approximatives dans le cas contraire. Utiliser de préférence le système métrique, mais préciser le système utilisé.

Proposed Construction Start Date
Date prévue du début des travaux: June 16, 2010

Measurement System Used
Système de measures utilisé
Metric Métrique ☒ · Imperial Impérial ☐

General Description / Description générale
New Nouveau ☒ · Repair/Alteration Réparation/modifications ☐ · Removal Enlèvement ☐

Construction to be Construction
Permanent Permanente ☒ · Temporary Temporaire ☐

Intended Operation of Work
Utilisation
Continuous Continuelle ☒ · Intermittent Intermittente ☐ · Seasonal Saisonnière ☐

Material(s) to be used
Matériaux qui seront utilisés
Earth Terre ☐ · Rock-fill Roche ☐ · Concrete Béton ☐ · Timber Bois ☐ · Steel Acier ☐ · Masonry Maçonnerie ☐ · Other (Specify) Autre (préciser) ☒ Native materials excavated and returned to original condition

Dam
Barrage

Type: N.A.
Overflow (flow over crest) Trop-plein (coule par dessus le barrage) ☐ — Détournement — and/or et (ou) — Flow through (gate, spillway, etc.) Relié (déversoir, vanne) ☐
Height (above streambed) Hauteur (au dessus du lit): m/ft. m/pi.
Length Longueur: m/ft. m/pi.

Pond
Bassin

Type: N.A.
Instream (dam or dugout) Dans le courrant (barrage ou tranchée) ☐ · By-pass (diversion) Détournement ☐ · Connected (diversion – no outflow) Relié (déversoir, vanne) ☐ · Other (specify) Autre (préciser) ☐

Average Length Longueur moyenne	Average Width Largeur moyenne	Area Surface	Depth (at deepest point) Profondeur (maximale)
m/ft. m/pi.	m/ft. m/pi.	sq. m/ft. m^2 pi^2	m/ft. m/pi.

Diversion
Détournement

Type of Diversion / Type de détournement (Partial Partiel ☐ · Total Total ☐)	Stream diverted to / Cours d'eau dévié vers (Same stream Le même cours ☐ · Other Autre ☐) (specify) (préciser): N.A.	Pipe Diameter / Diamètre des tuyaux m/ft. m/pi.	Width / Largeur m/ft. m/pi.	Depth / Profondeur m/ft. m/pi.	Length / Longueur m/ft. m/pi.

Avg. Flow (Large Diversion) / Débit moyen (détournement important): cu. m/ft. per sec. / m/pi^3 par sec.
(Small Diversion) (détournement faible): l/gal. per sec. / l/gal par sec.
Percentage of streamflow to be diverted / Pourcentage du débit de l'eau dévié: %

Period(s) of Operation / Période d'exploitation	Hrs. per day / Heures par jour	Days per year / Jours par an	from (mo.) / de (mois)	to / à	(mo.) / (mois)

Channelization
Chenal

Type of Channelization / Type de travaux (Widening Élargissement ☐ · Deepening Creusement ☐ · Straightening Rectification ☐)	Width (bottom) Largeur (au fond) m/ft m/pi	Depth Profondeur m/ft. m/pi.	Length Longueur m/ft. m/pi.
N.A.			

Water Crossing and/or Fill
Traverse d'eau et (ou) remblai

Type of Crossing / Type de traverse (Bridge Pont ☐ · Culvert Ponceau ☐ · Causeway Chaussée ☐)	Type of Fill / Type de remblai (Dike Digue ☐ · Embankment Berge ☐ · Retaining Wall Mur de soutènement ☐ · Dock Appontement ☐)

Other Type of Crossing or Fill (Please specify) Autre type de traverse d'eau et (ou) remblai (préciser)	Height Hauteur	Width Largeur	Length Longueur
Submarine Cable Crossing	On bottom m/ft. m/pi.	1 m m/ft. m/pi.	490 m m/ft. m/pi.

Attachment(s) to this Application (See reverse, items 1 & 2)
Pièces jointes (Voir verso, rubriques 1 et 2)

Please check applicable attachments / Cocher les pièces jointes appropriées: See attached design drawings and construction methodology

Location or Survey Plan Plan de levé et de situation	Repair description Description des réparations	Alteration description Description des modifications	Removal description Description des enlèvements	Remarks/Other Remarques/Autre
☒	☐	☐	☐	☐

April 20th, 2011

Ms. Doris Dumais
Director, Approvals Branch
Ministry of the Environment
2 St. Clair Ave West, Floor 12A
Toronto, ON
M4V 1L5

Dear Ms. Dumais,

Re: McLean's Mountain Wind Farm Project
Changes to Project Components - Public Information Centre

Northland Power Inc. (NPI) and Mnidoo Mnising Power (MMP) propose to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario in the Traditional Lands of the Anishnabe of Mnidoo Mnising.

A contract has been obtained for the sale of electricity from wind with the Ontario Power Authority (OPA) through the Province's Feed-in-Tariff (FIT) program. The project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA process replaces the previous process that required several separate approvals including for example, the *Environmental Assessment Act, Planning Act and Environmental Protection Act*.

As required by *O. Reg. 359/09*, NPI has prepared a Draft REA Package including supplementary documentation in fulfillment of REA requirements which was made available for a 60-day review period on January 18th, 2010. The package of materials has been available at: the municipal office of the Township of the Northeastern Manitoulin and the Islands, at the McLean's Mountain Wind Farm, Little Current Office and on the project website *www.northlandpower.ca* (click tab for Development Projects). Comments on the draft REA reports were requested by March 18th, 2010.

Since publicly releasing the Draft REA Reports in January 2010, the hub heights of the wind turbines have changed from 80 metres to 100 metres in height. Also, there has been

a reduction in the number of wind turbines. The proposed MMWF project will now include 24 wind turbines with an installed capacity of 60 MW.

NPI and MMP would like to take this opportunity to inform you that a Public Information Centre has been scheduled to present the proposed changes to the project and to respond to public questions, issues and concerns. Details are as follows:

DATE: Wednesday May 18th, 2011
TIME: 7:00 p.m. – 9:00 p.m.
PLACE: Royal Canadian Legion No 177,
Vankoughnet E., Little Current, Ontario

The Notice of PIC is enclosed for your information. Should you have questions regarding the proposed project please do not hesitate to contact me directly at:

- McLean's Mountain Wind Farm Project, P.O. Box 73, Little Current ON, P0P 1K0
- Phone (mobile): (705) 271.5358, Phone (project office): (705) 368.0303
- E-mail: *rickmartin@northlandpower.ca.*

Yours truly,

Rick Martin
Project Manager
Northland Power Inc.

Encl. Notice of PIC

Cc. Narren Santos, Senior Program Support Coordinator, MOE

April 20th, 2011

Mr. Brian Cameron
District Manager
Ministry of the Environment
199 Larch Street, Suite 1201
Sudbury ON
P3E 5P9

Dear Mr. Cameron,

Re: McLean's Mountain Wind Farm Project
Changes to Project Components - Public Information Centre

Northland Power Inc. (NPI) and Mnidoo Mnising Power (MMP) propose to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario in the Traditional Lands of the Anishnabe of Mnidoo Mnising.

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- McLean's Mountain Wind Farm Project, P.O. Box 73, Little Current ON, P0P 1K0
- Phone (mobile): (705) 271.5358, Phone (project office): (705) 368.0303
- E-mail: *rickmartin@northlandpower.ca.*

Yours truly,

Rick Martin
Project Manager
Northland Power Inc.

Encl. Notice of PIC

Ashby, Beatrice

From: Enright, Michael
Sent: Thursday, April 15, 2010 2:50 PM
To: Sheryl.Lusk@ec.gc.ca
Cc: Ashby, Beatrice; McKinnon, Don
Subject: Northland Power Inc's McLean's Mountain Wind Farm - Final REA Application Submission
Attachments: EC_Final REA_April15_Sheryl Lusk.pdf

Dear Ms. Lusk,

As per your recent communications with Beatrice Ashby attached please find information regarding EC's comments and the Final REA Application Submission for the proposed McLean's Mountain Wind Farm. Should you have any questions or concerns please feel free to contact me directly.

Kind Regards,

Michael Enright
Dillon Consulting Limited
1155 North Service Road West, Unit 14
Oakville, Ontario, L6M 3E3
T - 905.901.2912 ext. 3401
M - 416.453.0975
F - 905.901.2918
MEnright@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

April 15th, 2010

Ms. Sheryl Lusk
Environmental Protection Operations Division, Ontario
Environment Canada
4905 Dufferin Street
Toronto, ON M3H 5T4

RE: McLean's Mountain Wind Farm, Northland Power Inc.
Final Renewable Energy Approval Application Submission –
Environment Canada Comments on Avian Monitoring

Dear Madam,

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. This wind farm is expected to consist of approximately 43 wind turbines that will generate about 77 MW of electricity.

It is NPI's intention to obtain a contract for the sale of electricity with the Ontario Power Authority (OPA) through the Province's Feed-in-Tarriff (FIT) program. The project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA process replaces the previous process that required several separate approvals including for example, the *Environmental Assessment Act, Planning Act and Environmental Protection Act*.

The intent of this letter is to follow up on previous communications with Environment Canada (EC) staff, specifically regarding EC's comments from September 25th, 2009 made under the previous EA process. We acknowledge receipt of the above comments and note that the Ontario Ministry of Natural Resources (MNR) was provided a copy of your letter. Dillon in consultation with the MNR and Northland Power Inc. will consider your comments for inclusion into the final submission of the Renewable Energy Approval Application. Most comments provided by (EC) staff are anticipated to be addressed within *Environmental Effects Monitoring Plan* (included in the *Design and Operations Report*) as 'pre' and 'post' construction activities. The MNR, Sudbury District Office is currently reviewing the documentation prepared by NPI under REA and are providing comments. The Final Renewable Energy Approval Application is scheduled for submission to the Ministry of the Environment in early May 2010.

Yours truly,

Dillon Consulting Limited

Michael Enright, B.Sc
Biologist

DILLON CONSULTING

235 Yorkland Blvd.
Suite 800
Toronto, Ontario
Canada
M2J 4Y8
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(416) 229-4646
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(416) 229-4692

Dillon Consulting
Limited

Ministry of the Environment

Environmental Assessment and Approvals Branch

2 St. Clair Avenue West
Floor 12A
Toronto ON M4V 1L5
Tel.: 416 314-8001
Fax: 416 314-8452

Ministère de l'Environnement

Direction des évaluations et des autorisations environnementales

2, avenue St. Clair Ouest
Étage 12A
Toronto ON M4V 1L5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

April 15, 2010

MOE File #: NE-09-WF-0017

Mr. Rick Martin, Project Manager
Northland Power Inc.
30 St. Clair Avenue West, 17th Floor
Toronto, ON M4V 3A1

Dear Mr. Martin:

RE: Director's Aboriginal Communities List – McLean's Mountain Wind Project

The Ontario Ministry of Environment has reveiwed the information provided in the draft of the Project Description Report (PDR) received for the McLean's Mountain Wind Project. We have reviewed the anticipated negative environmental effects of the project (as described in the PDR) relative to our current understanding of the interests of aboriginal communities in the area.

In accordance with section 14 of the *Renewable Energy Approval Regulation* (O.Reg. 359), please find below the list of Aboriginal Communities that:

i) have or may have constitutionally protected aboriginal or treaty rights that may be adversely impacted by the project; or

ii) otherwise may be interested in any negative environmental effects of the project. (O. Reg 359/09 s14(b)(i) and (ii))

Aboriginal Community **Common Name:** **Reserve Name:** **Contact Information:**
Aundeck Omni-kaning First Nation Sucker Creek Sucker Creek 23 PO BOX 21, RR 1 LITTLE CURRENT, ON P0P 1K0 Phone (705) 368-2228 Fax (705) 368-3563
Sheguiandah Sheguiandah 24 PO BOX 101 SHEGUIANDAH, ON P0P 1W0 Phone (705) 368-2781 Fax (705) 368-3697
M'Chigeeng First Nation West Bay M'Chigeeng 22

PO BOX 2, M'CHIGEENG, ON P0P 1G0 Phone (705) 377-5362 Fax (705) 377-4980
Sheshegwaning First Nation Sheshegwaning 20 GENERAL DELIVERY SHESHEGWANING, ON P0P 1X0 Phone (705) 283-3292 Fax (705) 283-3481
Zhiibaahaasing First Nation Cockburn Island Cockburn Island 19 GENERAL DELIVERY SIVLER WATER, ON P0P 1Y0 Phone (705) 283-3963 Fax (705) 283-3964
Wikwemikong First Nation Wikwemikong Unceded 26 PO BOX 112, WIKWEMIKONG, ON P0P 2J0 Phone (705) 859-3122 Fax (705) 859-3851
Whitefish River First Nation Wauwaskinagaa Whitefish River (part) 4 GENERAL DELIVERY BIRCH ISLAND, ON P0P 1A0 Phone (705) 285-4335 Fax (705) 285-4532
Sagamok Anishnawbek First Nation Spanish River Sagamok PO BOX 610 MASSEY, ON P0P 1P0 Phone (705) 865-2421 Fax (705) 865-3307
Serpent River First Nation Serpent River 7 48 VILLAGE ROAD CUTLER, ON P0P 1B0 Phone (705) 844-2418 Fax (705) 844-2757
North Channel Métis Council Larry Folz , President P.O. Box 1408 Blindriver, ON P0R 1B0 Phone: 705- 356-7000 Fax: 705- 849-3146 rwayautoparts@hotmail.com
Whitefish Lake First Nation Whitefish Lake 6

PO BOX 39 NAUGHTON, ON P0M 2M0 Phone (705) 692-3651 Fax (705) 692-5010
Sudbury Métis Council Richard Sarrazin, President 260 Alder Street, Upstairs Sudbury, ON P3C 5P4 Phone: 705-671-9855 Fax: 705-671-9415 richards@metisnation.org
Métis Nation of Ontario Consultation Unit 500 Old St. Patrick St, Unit 3 Ottawa, ON K1N 9G4
Chiefs of Ontario, Métis Nation of Ontario, Ontario Native Women's Association, Union of Ontario Indians, United Chiefs and Councils of Manitoulin

NOTE: None of the foregoing should be taken to imply approval of this project or the contents of the draft of the PDR. This response only addresses the requirement of the Director to provide a list of aboriginal commuities to you as required in s. 14 of O. Reg. 359/09. You should also be aware that information upon which the above comments are based is subject to change. Aborginal communities can make assertions at any time, and other developments can occur that might require additional communities to be notified. Should this happen, the ministry will contact you. Similarly, if you recieve any feedback from any aboriginal communities not included in this list as part of your public consultation, we would appreciate being notified.

Please contact Sandra Guido at (416) 314-6802 should you have any questions or require additional information.

Sincerely,

Doris Dumais
Director
Environmental Assessment and Approvals Branch
Ministry of Environment

cc: Mansoor Mahmood, Renewable Energy Team, Ministry of the Environment
Joe de Laronde, Aboriginal Affairs Branch, Ministry of the Environment

Ashby, Beatrice

From: Guido, Sandra (ENE) [Sandra.Guido@ontario.ca]
Sent: Tuesday, March 30, 2010 5:11 PM
To: Ashby, Beatrice
Subject: RE: Northland Power's McLean's Mountain Wind Farm Project Draft REA Package

Thank you Beatrice.

Best regards,
Sandra

Sandra Guido
Senior Program Support Coordinator
Renewable Energy Team
Environmental Assessment and Approvals Branch
Ministry of the Environment
2 St. Clair Ave West, Floor 12A, Toronto ON M4V 1L5
Tel: 416.314.6802 Fax: 416.314.8452
sandra.guido@ontario.ca

From: Ashby, Beatrice [mailto:BAshby@dillon.ca]
Sent: March 30, 2010 1:16 PM
To: Guido, Sandra (ENE)
Cc: McKinnon, Don; rickmartin@northlandpower.ca
Subject: FW: Northland Power's McLean's Mountain Wind Farm Project Draft REA Package
Importance: High

Good afternoon Sandra,

As per my voice mail to you attached please find the *Northland Power Inc's McLean's Mountain Wind Farm Renewable Energy Approval (REA) Draft Submission Package* that was issued for public review on January 18, 2010.

I am also sending a hard copy to your attention via courier immediately. Please feel free to contact me should you have any questions or comments.

Kindest Regards,

Beatrice.

DILLON CONSULTING

Beatrice Ashby, MES, RPP, MCIP
Dillon Consulting Limited
1155 North Service Road West, Unit 14
Oakville, Ontario, L6M 3E3
T - 905.901.2912 ext. 3417
M - 416.888.2190

F - 905.901.2918
BAshby@dillon.ca
www.dillon.ca

From: Allen, Paula (ENE) [mailto:Paula.Allen@ontario.ca]
Sent: Tuesday, March 30, 2010 10:47 AM
To: rickmartine@northlandpower.ca; McKinnon, Don
Cc: Guido, Sandra (ENE); Brennan, Drew (ENE)

Subject: Northland Power's McLean's Mountain Wind Farm Project Draft REA Package

Hi Rick and Don,

I have received your Draft REA Package for the McLean's Mountain Wind Farm Project. However, in consulted with the Ministry's Renewable Energy Team at the Environmental Assessment and Approvals Branch in Toronto I have learned that you did not provide a copy of your package to that office. The Draft REA Package should have been directed to that office. Please forward a copy of the package to:

Sandra Guido

Senior Program Support Coordinator

Renewable Energy Team

Environmental Assessment and Approvals Branch

Ministry of the Environment

2 St. Clair Ave West, Floor 12A, Toronto ON M4V 1L5

Tel: 416.314.6802 Fax: 416.314.8452

sandra.guido@ontario.ca

I will forward the package directed to my attention on February 23, 2010 to the Ministry's Sudbury District Office for any input that might be required to support the application.

If you have any questions, you should direct them to Sandra Guido.

Paula Allen

Paula Allen

Environmental Planner/EA Coordinator

Technical Support Section

Northern Region

Ministry of the Environment

Tel: 705 564-3273 Toll Free: 1 800 890-8516

Fax: 705 564-4180

E-mail: paula.allen@ontario.ca

Website: http//www.ene.gov.on.ca

Ministry of the Environment

Environmental Assessment and Approvals Branch

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Floor 12A
Toronto ON M4V 1L5
Tel.: 416 314-8001
Fax: 416 314-8452

Ministère de l'Environnement

Direction des évaluations et des autorisations environnementales

2, avenue St. Clair Ouest
Étage 12A
Toronto ON M4V 1L5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

March 19, 2010

Mr. Rick Martin
Project Manager
Northland Power Inc.
30 St. Clair Avenue West, 17th Floor
Toronto, ON M4V 3A1

Dear Mr. Martin:

RE: Noise Receptors and Vacant Lots

The Ministry of the Environment (MOE) has reviewed the matters raised regarding noise receptors in relation to hunt camps and the centre of vacant lots. The MOE offers the following position on both matters below.

Hunt Camps as Noise Receptors

In respect of Northland Power's McLean's Mountain Wind Project, we understand that shortly after the turbine layout was made available to the public in July 2009, a number of applications were made for building permits to allow the construction of small buildings without servicing. We understand that individuals are claiming these to be hunt camps. It does not seem likely that these buildings will be used for overnight accommodation and thus will not be considered noise receptors as defined under section 1(4) of the Renewable Energy Approval Regulation (O.Reg 359/09). When preparing the documentation that forms part of your application, we would expect you to identify and explain whether or not a particular hunt camp meets the definition of a "noise receptor" and as part of the renewable energy approval process, we expect you to consult with the public about this determination.

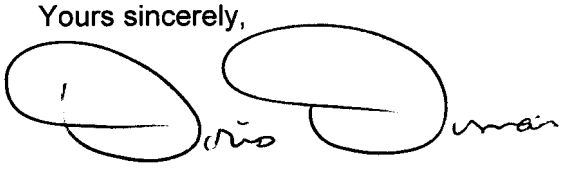
Centre of Vacant Lot

For the purposes of the setback prohibitions in sections 54 and 55 of O.Reg 359/09, the noise receptor is considered to be the centre of the vacant lot if no site plan approval or building permit has been issued to permit a building or structure used for overnight accommodation, educational facility, a day nursery or a place of worship. However, the definition of a noise receptor as it pertains to vacant lots as described in the ministry's *Noise Guidelines for Wind Farms,* dated October 2008 (Guideline) governs the preparation of a noise report prepared in accordance with the Guideline.

Proponents will need to demonstrate that receptor locations on vacant lots as defined in 6.3.3 of the *Noise Guidelines for Wind Farms* can comply with O.Reg 359/09 noise setbacks including the minimum 550 metre setback.

If you have any questions or concerns, please contact myself at (416) 314-8171 or Mansoor Mahmood at (416) 314-8573.

Yours sincerely,



Doris Dumais
Director – Environmental Approvals
Environmental Assessment and Approvals Branch

c: David A. Williamson, Chief Administrative Officer, Town of Northeastern Manitoulin and the Islands
Don McKinnon, Dillon Consulting

C.B. FAIRN & ASSOCIATES LTD.

MARINE CONSTRUCTION ENGINEERING
PIPELINE & DREDGING CONSULTANTS

NORTHLAND POWER

McLEAN'S MOUNTAIN WIND FARM
MANITOULIN ISLAND, ONTARIO

PRELIMINARY DESIGN
AND
CONSTRUCTION METHODOLOGY

MARINE CABLES CROSSING OF
LITTLE CURRENT CHANNEL OF LAKE HURON
LITTLE CURRENT, ONTARIO

Prepared for:

WHITE

H.B. WHITE CANADA CORP.

March 15, 2010

18 GREENGATE ROAD, DON MILLS, ONTARIO, CANADA M3B 1E8 TEL. (416) 449-3325 FAX (416) 391-2075

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PRELIMINARY DESIGN AND CONSTRUCTION METHODOLOGY

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1.0 INTRODUCTION

1.1 General

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, Ontario in the Municipality of Northeastern Manitoulin and the Islands. The proposed wind farm is expected to consist of approximately 43 wind turbines that will generate about 77 megawatts of electricity and connect to the existing local transmission system. Completion of the project and commissioning of the new MMWF system is scheduled for spring of 2011.

As part of the MMWF project to connect the wind turbines with the Hydro One transmission system located on Goat Island, there will be the need to cross the Little Current Channel of Lake Huron (North Channel) to Goat Island with several marine cables to facilitate transmission connection.

This report presents the proposed preliminary design for installation of the marine cables crossing of the Little Current Channel, in addition to the anticipated construction methods and procedures to be undertaken to carry out and execute the construction work for installation of the cables in accordance with the design specifications.

The proposed location of the marine cables crossing site near the town of Little Current, Ontario is shown in Figure 1.

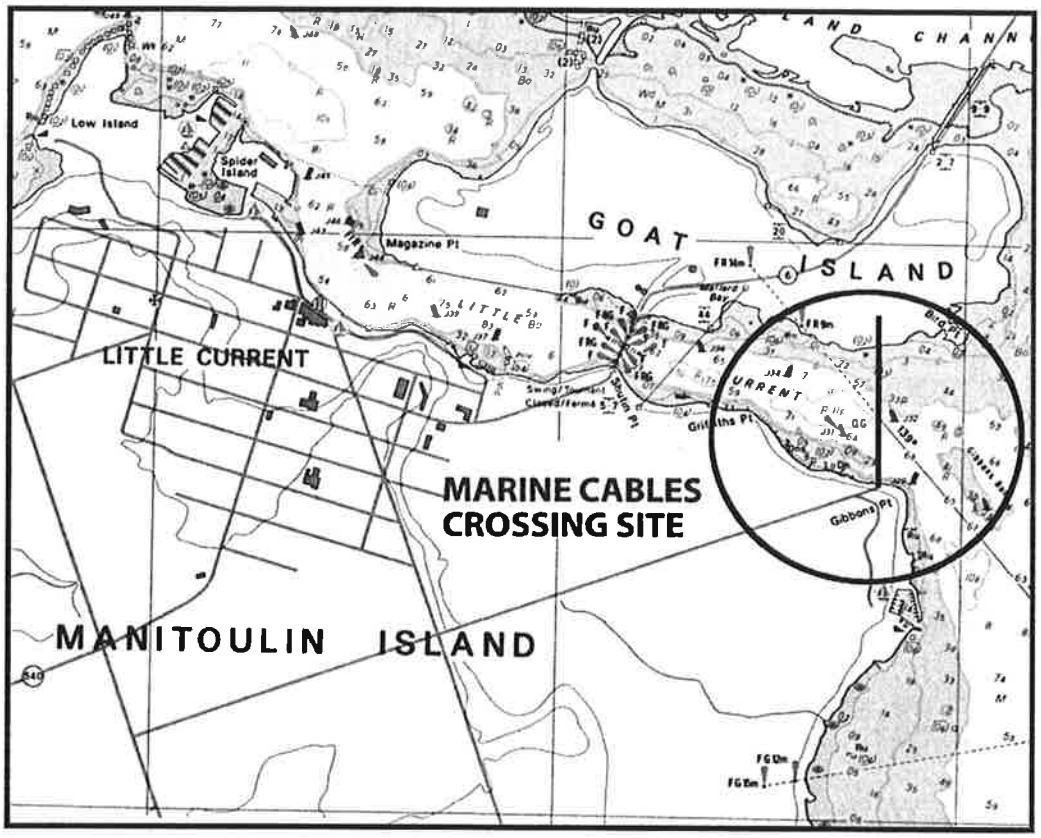


Figure 1: Location of MMWF marine cables crossing site.

1.2 Terms of Reference

C.B. Fairn & Associates Ltd. has been retained by H.B. White Canada Corp., on behalf of Northland Power Inc., to review the requirements for the proposed marine cables crossing of the Little Current Channel (North Channel), prepare a preliminary design with associated drawings, and provide the construction methodology for installation of the cables across the channel.

This report was prepared by C.B. Fairn & Associates Ltd. for H.B. White Canada Corp., Northland Power Inc. and its consultants. The material in the report reflects the best judgment and opinions of C.B. Fairn & Associates Ltd., with respect to the terms of reference and in light of the information available, at the time of preparation.

2.0 PROJECT DESCRIPTION

The proposed McLean's Mountain Wind Farm project involves laying transmission lines from the wind turbine sites on Manitoulin Island to Goat Island where the new lines will connect with the existing transmission system operated by Hydro One.

Specifically, the electrical transmission cables (115 kV) will cross the Little Current Channel at the eastern end of Manitoulin Island in a north-south orientation. There are a total of three (3) electrical cables to be installed across the channel, in addition to one fibre optic cable.

The marine cables crossing portion of the project extends between the north and south shores of the channel. At each shore, the marine cables will terminate at a concrete manhole installed on the respective banks back from the shoreline. On the south shore, the manhole is set back approximately 18 metres from water's edge at sta. 0+000. On the north shore where the ground slopes more gradually, the manhole is positioned approximately 40 metres beyond water's edge at sta. 0+490.

Accordingly, the total length of the channel crossing of the marine cables between manholes on the north and south shores measures 490 metres.

3.0 EXISTING SITE CONDITIONS

3.1 Channel Characteristics

The Little Current Channel at the proposed site of the marine cables crossing measures 432 metres between shorelines along the proposed alignment. Based on the recent bathymetric survey conducted in June 2009, the bank on the south side of the channel appears to rise at a fairly steep slope (average 3.5:1 h:v) while the bank and near-shore area on the north side exhibits a much shallower and gradual slope (average 15:1 h:v).

Maximum water depth along the proposed cables alignment measures approximately 10.5 metres and occurs in the southern section of the channel, although similar deeper waters are also located close to the south shore some 40 metres from water's edge.

The designated navigation channel traverses the proposed cables crossing site in the southern half of the channel where deeper water occurs. The width of the navigation

channel at the crossing site measures approximately 140 metres (sta. 0+105 to sta. 0+245).

Average water level in the Little Current vicinity is recorded at 176.63 metres relative to I.G.L.D. 1985 chart datum, as referenced on the Navigation Chart No. 2207 (Canadian Hydrographic Services). Highest recorded water level between 1918 and 2000 referenced on the chart is 177.40 metres, with lowest recorded water level of 175.60 metres (IGLD 1985).

The site of the proposed marine cables crossing at Little Current may be subject to strong currents in the channel although specific information regarding currents is presently not available at this time. Based on local observations, the Little Current Channel currents will vary but have been described as being fairly swift and strong in velocity at certain times. Further study of the current conditions at the crossing site may be required to determine any potential effects on the installed submarine cables and marine construction operations in the open waters.

3.2 Geotechnical Information

At the time of this report, there was no site specific geotechnical information available pertaining to the proposed marine cables crossing of the Little Current Channel.

However, based on local knowledge and site observations provided by others, combined with reference to past projects undertaken in the Little Current vicinity, it is assumed that the underlying conditions of the channel bottom and shoreline banks consist primarily of bedrock and/or hard till, with minimal to zero upper layer of overburden, both on land and in the water.

Therefore, all trench excavation required for the installation of buried cables presented in the preliminary design is assumed to occur primarily in bedrock, requiring drilling and blasting along the cable right-of-way alignment in order to achieve required trench excavation to grade.

In addition, some sizable boulders were observed identified by the surveyors and identified on the bathymetric survey which may indicate the presence of boulders along the proposed cables alignment which will have to be investigated.

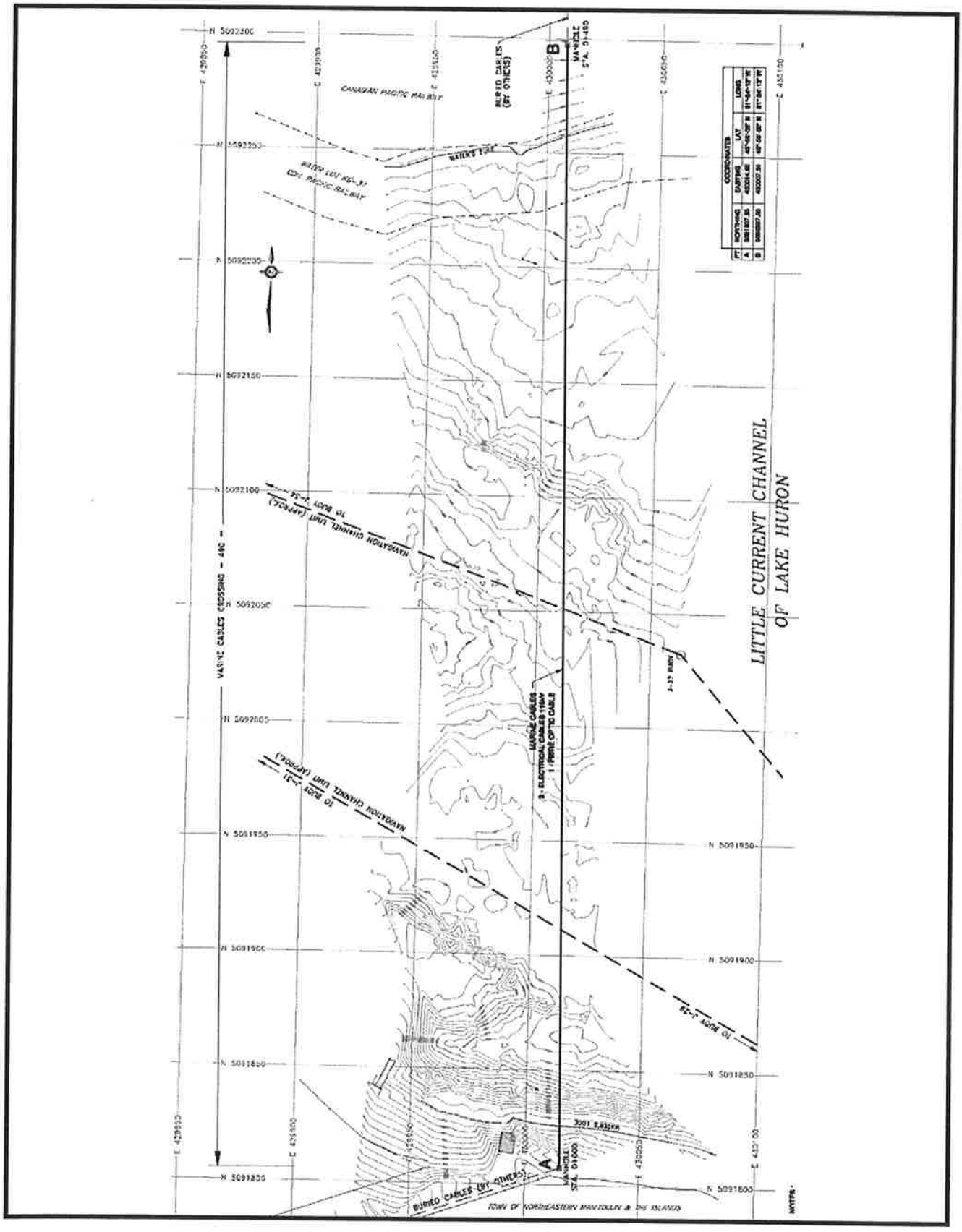


Figure 2 : General Plan – MMWF Marine Cables Crossing

4.0 PRELIMINARY DESIGN – MARINE CABLES CROSSING

The proposed marine cables crossing of the Little Current Channel will extend from the south shore on Manitoulin Island to the north shore on Goat Island between the concrete manholes located at sta. 0+000 and sta. 0+490, respectively (as shown on Figure 2).

The three armoured electrical transmission cables and single fibre optic cable with communication duct will be buried in an excavated trench on the channel banks and in shallow waters near shore on both sides of the channel. For the preliminary design, the cables will be installed in an excavated trench in the channel to 2.0 metres below datum. Where the channel bottom elevation is greater than 2.0 metres below datum, the cables will be laid directly on the channel bottom.

Accordingly, the marine portion of the cables crossing will consist of three (3) design sections. The first section of cables will extend from the manhole on the south shore (sta. 0+000) out to the offshore 2.0 metre depth location in the channel, approximately 10 metres from the shoreline at sta. 0+028. This section of cables will be installed in an excavated trench and subsequently backfilled following installation to original preconstruction conditions.

The second section of cables is laid directly on the channel bottom in deeper water elevations exceeding 2.0 metres below datum. The cables laid on the channel bottom do not require any trenching to be performed and will extend from sta. 0+028 to sta. 0+366, a total length of 338 metres.

The final section of cables is similar to the first section and represents the cables buried in an excavated trench on the north side of the channel, extending from the 2.0 metres depth in the channel (sta. 0+366) to the cables terminus at the concrete manhole (sta. 0+490) on the north shoreline. Due to the flatter slope in the near-shore region of the north shoreline and the gradually rising upland bank, the length of the buried cables on the north side of the channel is much longer than on the south side and measures approximately 124 metres in total length.

Using conventional open cut trenching for the near-shore and bank sections of the proposed channel crossing, the marine transmission cables will be buried in an excavated marine trench to provide the necessary protection and security with a minimum cover of 865 mm (34") over the top of the cables after backfilling, in accordance with design specifications and cable manufacturer's recommendations. The remaining section of the

armoured marine cables across the channel in deeper water will be laid directly on the channel bottom.

Reference is made to Figure 3 for the typical section of buried cables installed in an open cut trench. Figure 4 illustrates the transmission cables laying directly on the channel bottom in the deeper water depths.

The trenched section of installed transmission cables on this crossing project is designed with a bottom width of approximately 1.0 metres to accommodate the three armoured electrical cables and single fibre optic cable, and 0.5:1 (horizontal:vertical) side slopes, as shown in Figure 3. A minimum spacing of 200 mm centre-to-centre between the individual electrical cables (115 kV) is recommended by the cable manufacturer (see Figure 3).

While the transmission cables could be bundled together for installation, this configuration is not preferred since the combined weight of the banded cables would make handling more difficult, banding the cables together is a time-consuming process and will slow the rate of installation across the channel, and raises issues for future maintenance on individual lines. For these reasons, this crossing project is designed with each cable laid independently of the other cables with the specified minimum spacing.

Since the transmission cables will be installed in excavated rock trenches on both sides of the channel, it is recommended that the cables be bedded with a layer of granular material (e.g. Granular A) prior to backfilling the trench with the excavated blasted rock. The trench bedding will be placed above and beneath the installed armoured cables to protect and secure the cables, and avoid any potential damage from directly contacting the rock trench and blasted rock backfill.

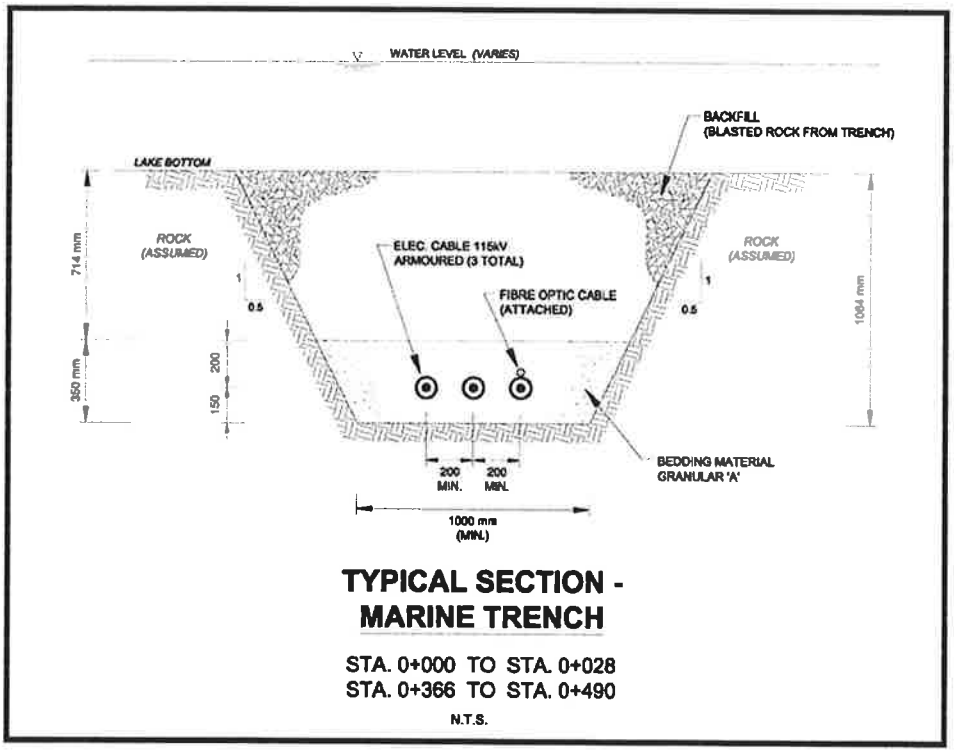


Figure 3: Typical Section – Cables in Marine Trench

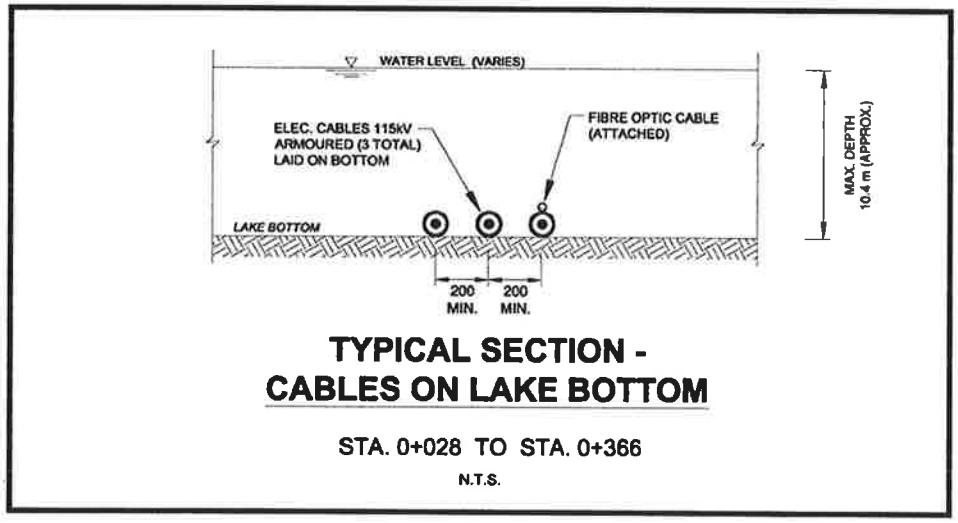


Figure 4: Typical Section – Cables Laid on Channel Bottom

5.0 CONSTRUCTION METHODOLOGY

The installation of the MMWF transmission cables across the Little Current Channel will involve a well-planned sequence of construction work to provide a practical and efficient method of installing the marine cables at the proposed channel crossing site, while minimizing environmental impacts in the channel and surrounding areas.

The work involved in the construction of the marine cables crossing includes preparing the site, excavating the cable trenches both on shore and in water, installation of the transmission cables across the channel, backfilling the excavated trenches, and site cleanup and demobilization.

Specifically, it is anticipated that the execution of the construction works for the marine cables crossing will involve the following work items and sequence. However, it is noted the contractor's actual methods may vary from the procedures presented herein and as such these anticipated methods act as a general guideline.

5.1 Clearing and Grubbing Right-of-Way

Upon arriving at the site and commencing the work, the contractor's first step will entail clearing and grubbing of the cable right-of-way on the shore sections of the south bank (sta. 0+000 to water's edge) and the north bank (sta. 0+490 to water's edge).

5.2 Excavation of Trenches

Construction of the cable crossings will require an open-cut trench to be excavated on the shore and in the near-shore channel where the channel bottom elevation does not exceed 2.0 metres below datum. Due to the assumed presence of bedrock on shore and below the channel bottom, drilling and blasting of the rock along the proposed cable right-of-way alignment will have to be performed in advance of excavating the trench to grade depth.

The contractor will commence the excavation of the trenches with the drilling and blasting of the on-land trenches on both banks, extending from the contract limits (manholes) down to water's edge. Following the blasting operations, the contractor will proceed to excavate the cable trenches on shore down to required grade (approximately 1.1 metres depth below existing ground) using a land-based excavator (backhoe). The blasted rock excavated from the shore trenches will be placed adjacent to the trench and temporarily stockpiled for future backfill following installation of the cables.

Following the excavation of the rock trenches on shore, the contractor will prepare for commencement of the drilling, blasting and excavation of the marine trenches in the near-shore waters. Before any trench activities begin in the water, the contractor will install temporary floating turbidity curtains to encompass the full length of the marine trench working area. These floating turbidity curtains will be continuous and extend out from the shore on both sides of the trench and beyond the end of the marine excavation. The curtains will be employed over the duration of the in-water work including the drilling and blasting, trench excavation, cable installation and backfilling operations. However, if channel currents are too strong on certain days, maintaining the vertical position and effectiveness of the floating turbidity curtains may be challenging. The curtains may benefit from being deployed in the near-shore areas of the channel where currents may not be as great.

The in-water construction work will require the use of floating dredging equipment to carry out the required drilling, blasting and dredging of the marine rock trench. The drilling and blasting operations will be performed from a barge, and the marine trench will be excavated using a barge-mounted excavator (clamshell dredge or backhoe). The barge will be equipped with steel spuds and/or anchors to hold the barge in position while digging. Additional marine equipment may include an attendant tug or workboat. The floating barge will also be used by the contractor for the cable laying operations.

With the turbidity curtains in place, the contractor will commence the drilling and blasting of the underlying rock in the channel bottom. The blasted rock will be subsequently excavated by the contractor to achieve the required grade depth in the open cut trench. The blasted rock excavated from the cable trench will be temporarily stockpiled for re-use as trench backfill following installation of the transmission cables. The barge-mounted excavator will sidecast the blasted rock from the cable trench for temporarily stockpiling on the channel bottom on both sides of the trench.

The turbidity curtains will be positioned to provide sufficient width on both sides of the marine trench to allow the excavated blasted rock to be stockpiled on the inside of these curtains.

5.3 Installation of Transmission Cables

Once the on-shore and marine trenches are prepared, the contractor will proceed with the installation of the 3 electrical transmission cables and single fibre optic cable across the

channel. It is anticipated that the cables will be installed using a floating barge to lay the cables in the trenches and directly on the channel floor.

Using the barge for cable laying operations, the three electrical cable reels and one fibre optic cable reel will be placed at one end of the barge and spaced apart. The large individual cable reels will each be placed in a steel holding frame and each reel will be equipped with a braking system. Before proceeding with the laying procedures, it is recommended that all cables be tested while still on their reels to ensure their integrity and confirm all circuits are satisfactory.

At the other end of the barge, the contractor will install 4 fair leads spaced apart. The cables will be rolled off the large reels and fed through their respective fair leads in preparation to commence cable laying operations. With the barge fully equipped and set up with the required cable reels and fair leads, it will proceed to the north side of the channel where the slope is shallower with spuds deployed to anchor the barge in approximately 2 metres water depth (or as close as the floating barge can get to shore). The four cables will be simultaneously unwound from their respective reels and the ends taken back to the concrete manhole (sta. 0+490). With the cable ends temporarily anchored at the manhole, the contractor will commence laying the cables in the excavated trench.

The tug or workboat will be used to move the barge slowly in a southerly direction along the proposed alignment towards the south shore of the channel. As the barge slowly advances across the channel, the cables will be fed from the barge through the fair leads and into the trench or directly on the channel bottom once deeper water is encountered. It is important that the barge be kept on line as cable laying advances across the channel through the use of a G.P.S. unit.

It is estimated that the barge will move approximately 15 metres at a time and drop its spuds to anchor the barge and allow the fibre optic cable to be attached to one of the larger electrical cables using stainless steel connection bands spaced every 3 metres. This sequence would be repeated across the entire channel width until the barge reaches the south shore. Once the barge has advanced to the south side of the channel, the remaining lengths of cables will be unreeled and taken ashore back to the terminus at the manhole (sta. 0+000) with the cables carefully placed in the excavated trench.

At this point with the cables laid out continuously across the full width of the channel between respective manholes on the north and south shores, the cables will be tested

again to verify they are fully functional and that no damage has occurred during the cable laying operations. Before backfilling of the excavated trench commences, divers will inspect all cables laying in the trenches and on the channel bottom. It is recommended that the diving inspection be recorded on DVD for future reference as part of the as-built records.

Once the cables have passed inspection and the minimum spacing between installed cables verified, backfilling of the excavated trenches will proceed using granular bedding material under and over the cables and the stockpiled blasted rock to return the ground and channel bottom to their original pre-construction contours, as shown in Figure 3.

Following completion of the construction work at the Little Current crossing project including removal of the temporary turbidity curtains, site cleanup and restoration, the contractor's land and marine equipment will be demobilized from the site.

6.0 PROJECT SCHEDULE

On-site construction work for the McLean's Mountain Wind Farm is anticipated to begin in the summer of 2010 following contract award.

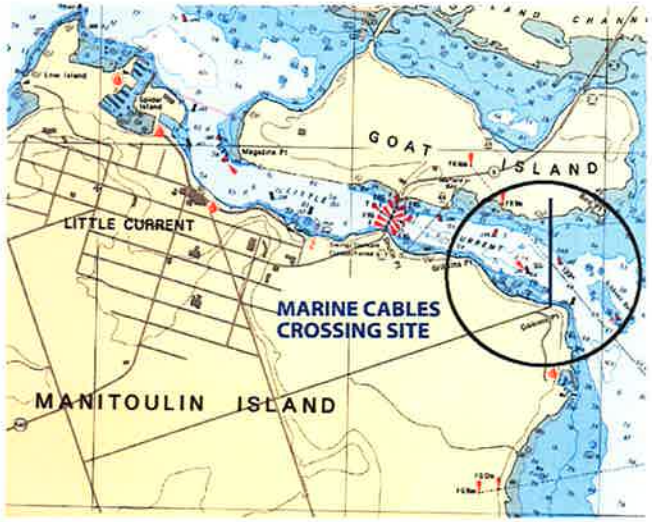
Work on the marine cables crossing of the Little Current Channel (North Channel) is anticipated to commence in July 2010, following mobilization of the floating equipment to the site and in accordance with the designated environmental window for in-water work. Due to restrictions concerning fish spawning, it is anticipated that in-water work at the Little Current site will not be permitted during the period from March 15th to July 1st.

Accordingly, the work of this marine cables crossing is anticipated to be performed in the summer and fall months of 2010 (July to September). It is estimated that the construction work including installation of the marine cables across the channel and site restoration as described herein will entail a project duration of approximately 2 months.

NORTHLAND POWER INC.

MARINE CABLE CROSSING

McLEAN'S MOUNTAIN WIND FARM
MANITOULIN ISLAND, ONTARIO

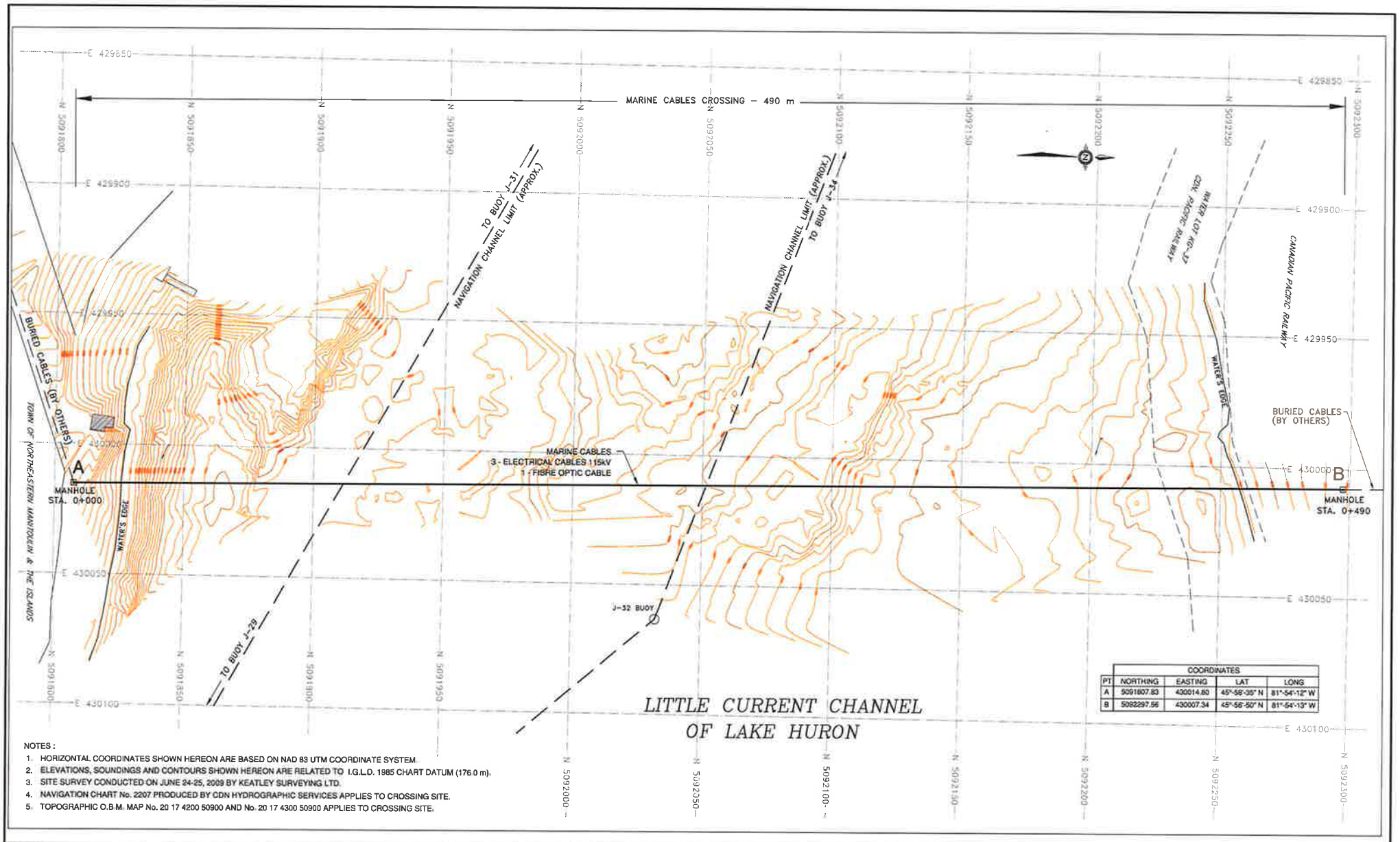


DRAWING INDEX

DWG. No.	NAME
MM-01	GENERAL PLAN
MM-02	PLAN & PROFILE - STA. 0+000 TO 0+250
MM-03	PLAN & PROFILE - STA. 0+250 TO 0+500
MM-04	TYPICAL SECTIONS & DETAILS
MM-05	TURBIDITY CURTAINS

H.B. WHITE CANADA CORP.

C.B. FAIRN & ASSOCIATES LTD.



	COORDINATES			
PT	NORTHING	EASTING	LAT	LONG
A	5091807.83	430014.80	45°-58'-35" N	81°-54'-12" W
B	5092297.56	430007.34	45°-58'-50" N	81°-54'-13" W

NOTES :

1. HORIZONTAL COORDINATES SHOWN HEREON ARE BASED ON NAD 83 UTM COORDINATE SYSTEM.
2. ELEVATIONS, SOUNDINGS AND CONTOURS SHOWN HEREON ARE RELATED TO I.G.L.D. 1985 CHART DATUM (176.0 m).
3. SITE SURVEY CONDUCTED ON JUNE 24-25, 2009 BY KEATLEY SURVEYING LTD.
4. NAVIGATION CHART No. 2207 PRODUCED BY CDN HYDROGRAPHIC SERVICES APPLIES TO CROSSING SITE.
5. TOPOGRAPHIC O.B.M. MAP No. 20 17 4200 50900 AND No. 20 17 4300 50900 APPLIES TO CROSSING SITE.

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NOT FOR CONSTRUCTION

CONSULTANT: H.B. WHITE CANADA CORP.

MARINE CONSULTANT: C.R. FAIRN & ASSOCIATES LTD.

NO	REVISIONS	DATE	APPROVED
	ISSUED FOR PERMIT	MAR 2010	

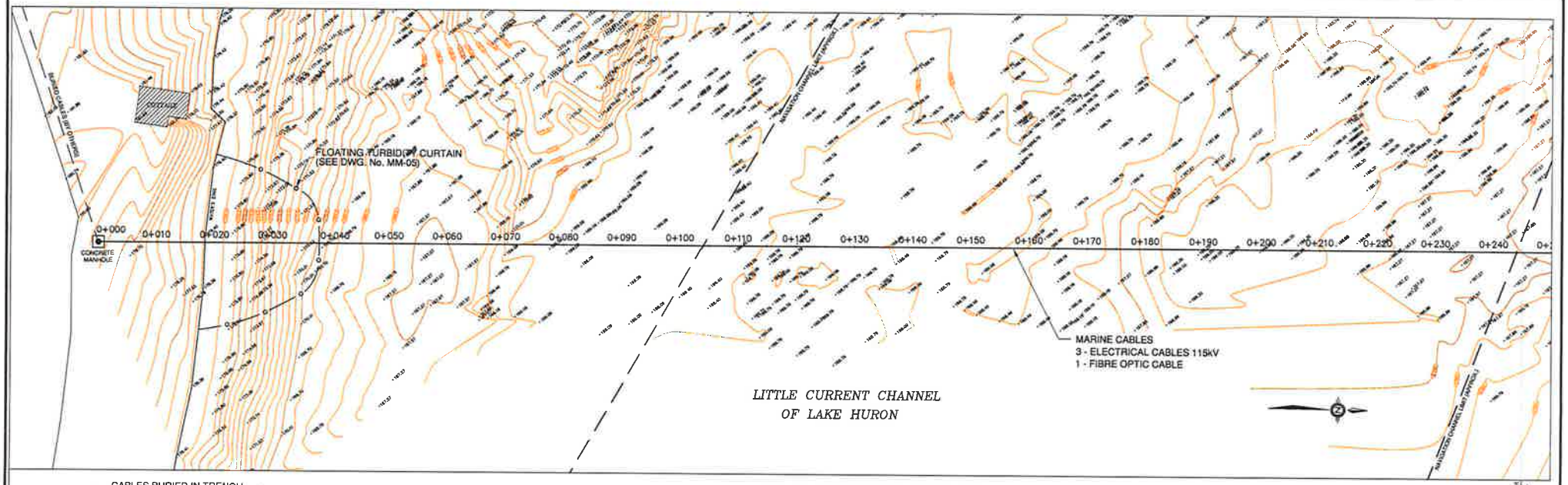
McLEAN'S MOUNTAIN WIND FARM
MARINE CABLE CROSSING

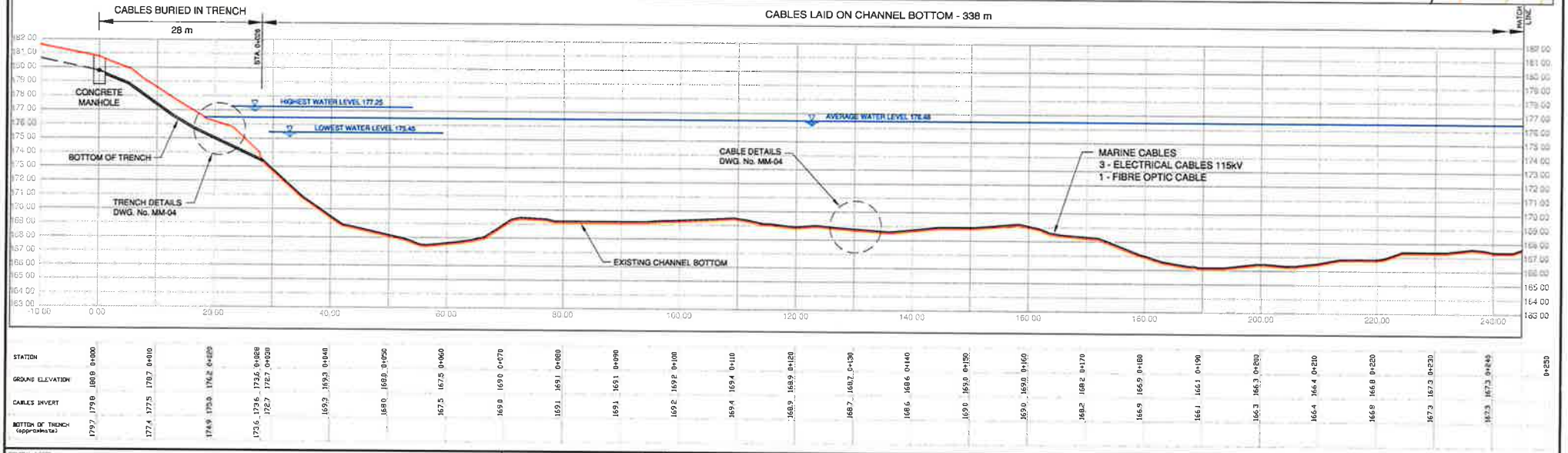
GENERAL PLAN

NORTHLAND POWER INC.

SCALE HOR.	1:600	VERT.	---
DESIGN	C.B.F.	DRAWN	P.J.P.
REVIEWED	C.B.F.	DATE	MARCH 2010

DRAWING No. MM-01
REV No.





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GROUND ELEVATION	180.0	178.7	176.2	173.6	172.7	169.3	168.0	167.5	169.0	169.1	169.1	169.2	169.4	169.4	168.9	168.7	168.6	169.0	168.2	166.9	166.1	166.3	166.4	166.8	167.3	167.3
CABLES INVERT	179.7	179.8	177.5	178.7	175.0	173.6	172.7	169.2	168.0	167.5	169.0	169.1	169.1	169.2	169.4	169.4	168.9	168.7	168.6	169.0	169.0	168.2	166.9	166.1	166.3	166.4	166.8	167.3	167.3	
BOTTOM OF TRENCH (approximate)																										

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CONSULTANT: M.B. WHITE CANADA CORP.

MARINE CONSULTANT: C.B. FAHN & ASSOCIATES LTD.

NO.	REVISIONS	DATE	APPROVED
	ISSUED FOR PERMIT	MAR 2010	

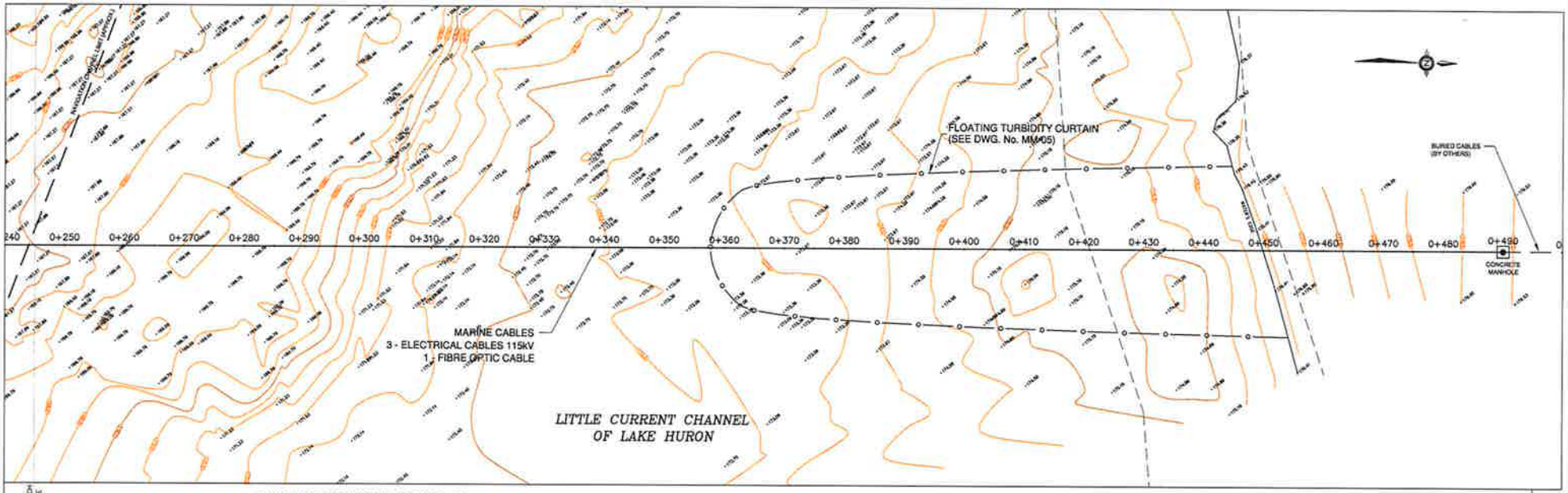
McLEAN'S MOUNTAIN WIND FARM
MARINE CABLE CROSSING

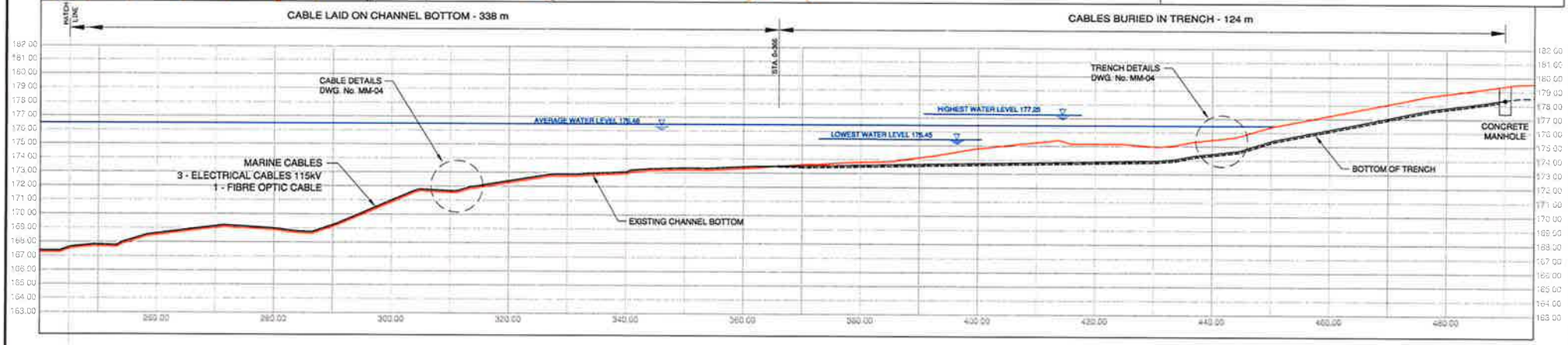
PLAN AND PROFILE
STA. 0+000 TO STA. 0+250

NORTHLAND POWER INC.

SCALE HOR.	1:500	VERT.	1:125
DESIGN	C.B.F.	DRAWN	P.J.P.
REVIEWED	C.B.F.	DATE	MARCH 2010

DRAWING No. MM-02
REV. No.





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GROUND ELEVATION		167.7	168.5	169.0	168.9	169.1	170.8	171.5	172.3	172.7	173.0	173.2	173.3	173.5	173.6	173.8	174.2	174.8	175.3	175.2	175.0	175.5	175.4	176.3	178.1	177.8	178.4	
CABLES INVERT														173.5	173.6	173.6	173.7	173.8	173.9	173.9	174.0	174.5	175.4	176.3	177.1	177.8	178.4	
BOTTOM OF TRENCH (approximate)														173.5	173.6	173.6	173.7	173.8	173.9	173.9	174.0	174.5	175.4	176.3	177.1	177.8	178.4	

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CONSULTANT: H.B. WHITE CANADA CORP.

MARINE CONSULTANT: C.B. FAIRN & ASSOCIATES LTD.

NO.	REVISIONS	DATE	APPROVED
	ISSUED FOR PERMIT	MAR. 2010	

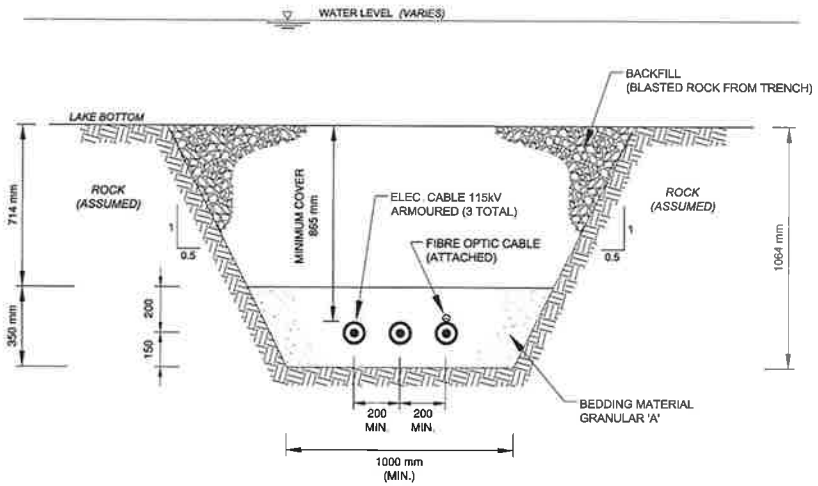
McLEAN'S MOUNTAIN WIND FARM
MARINE CABLE CROSSING

PLAN AND PROFILE
STA. 0+250 TO STA. 0+500

NORTHLAND POWER INC.

SCALE HOR.	1:300	VERT.	1:125
DESIGN	C.B.F.	DRAWN	P.J.P.
REVIEWED	C.B.F.	DATE	MARCH 2010

DRAWING No. MM-03
REV. No.



TYPICAL SECTION - MARINE TRENCH

STA. 0+000 TO STA. 0+028
STA. 0+366 TO STA. 0+490

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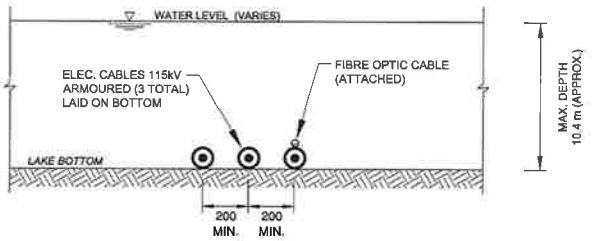

TYPICAL SECTION - CABLES ON LAKE BOTTOM

STA. 0+028 TO STA. 0+366

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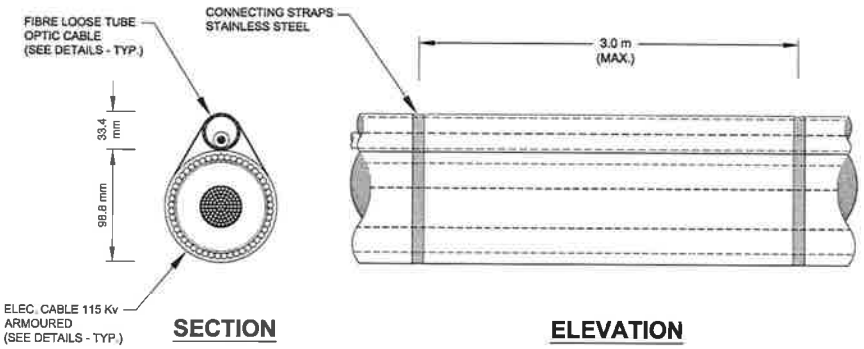
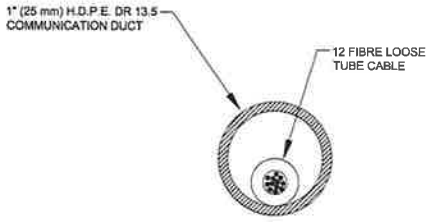


ELECTRICAL CABLE WITH FIBRE OPTIC CABLE

N.T.S.



FIBRE OPTIC CABLE - DETAILS (TYP.)

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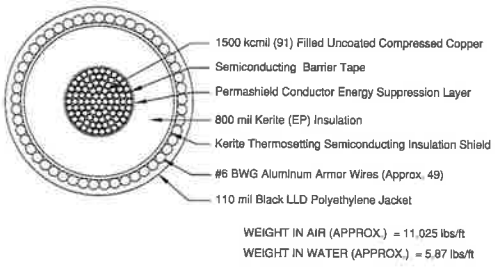

WEIGHT IN AIR (APPROX.) = 11.025 lbs/ft
WEIGHT IN WATER (APPROX.) = 5.87 lbs/ft

ELEC. CABLE 115 kV - DETAILS (TYP.)

KERITE CATALOG No. 195G95-J8100 OR EQUIVALENT

Component	Description	Diameter	
Conductor	1500 kcmil (91) Copper	1.38"	35.1 mm
Barrier Tape	Semiconducting Fabric Tape	1.39"	35.3 mm
Permashield	Energy Suppression Layer	1.45"	36.8 mm
Insulation	Kerite EP (800 mil)	3.10"	78.7 mm
Semicon	Kerite Thermoset Shield	3.24"	82.3 mm
Wire Shield	#6 BWG AL Wires. (49)	3.65"	92.7 mm
Jacket	Black Polyethylene (110 mil)	3.89"	98.8 mm

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PRELIMINARY
NOT FOR CONSTRUCTION

Consultant: H.B. WHITE CANADA CORP.
Marine Consultant: C. B. FAIRN & ASSOCIATES LTD.

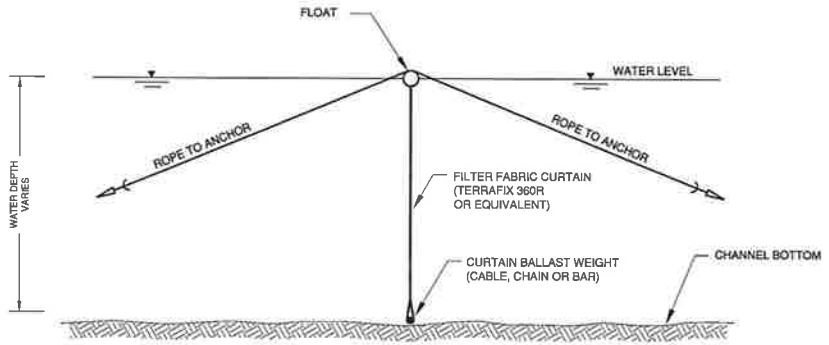
NO.	REVISIONS	DATE	APPROVED
	ISSUED FOR PERMIT	MAR 2010	

McLEAN'S MOUNTAIN WIND FARM
MARINE CABLE CROSSING

TYPICAL SECTIONS & CABLE DETAILS

NORTHLAND POWER INC.

SCALE: HOR.	VERT.	DRAWING No.	MM-04
DESIGN: C.B.F.	DRAWN: P.J.P.	REV. No.	
REVIEWED: C.B.F.	DATE: MARCH 2010		



NOTE: TURBIDITY CURTAIN TO BE ADJUSTABLE TO SUIT WATER DEPTHS.

SECTION - TURBIDITY CURTAIN (TYP.)

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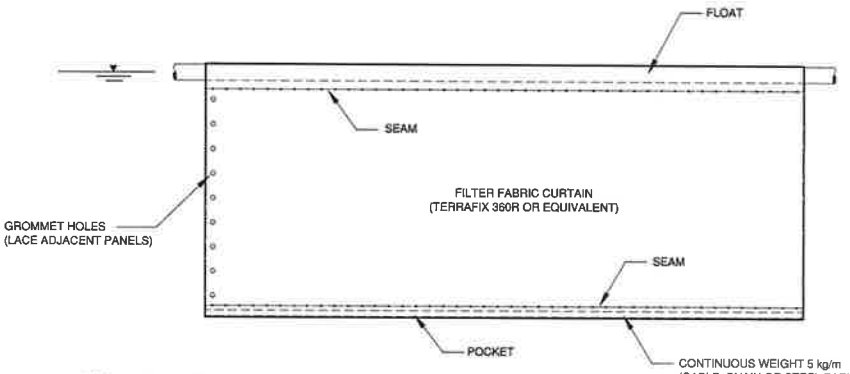

NOTE: MINIMUM OVERLAP 100 mm FOR CONNECTING CURTAIN SECTIONS.

ELEVATION - TURBIDITY CURTAIN (TYP.)

N.T.S.

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MARINE CONSULTANT: C.B. FAHN & ASSOCIATES LTD.

NO.	REVISIONS	DATE	APPROVED
	ISSUED FOR PERMIT	MAR 2010	

McLEAN'S MOUNTAIN WIND FARM
MARINE CABLE CROSSING

TURBIDITY CURTAINS

NORTHLAND POWER INC.

SCALE HOR.	VERT.	DRAWING No.	MM-05
DESIGN C.B.F.	DRAWN P.J.P.		
REVIEWED C.B.F.	DATE MARCH 2010	REV. No.	

Photo 1 **March 2010** Notes: Channel crossing looking south at Manitoulin from Goat Island shoreline.	
Photo 2 **March 2010** Notes: Shoreline of Goat Island looking east from the north crossing site.	

Photo 3 **March 2010** Notes: Shoreline of Goat Island looking west from the north crossing site.	
Photo 4 **March 2010** Notes: Channel crossing looking north at Goat Island from Manitoulin shoreline.	

Photo 5 **March 2010** Notes: Shoreline of Manitoulin Island looking west from the south crossing site.	
Photo 6 **March 2010** Notes: Shoreline of Manitoulin Island looking east from the south crossing site.	

Ontario

Ministry of the Environment

Renewable Energy Approval
Consultation Form: municipalities, local authorities
ss. 18(2) Ontario Regulation 359/09

Ce formulaire est disponible en français

PART A: TO BE COMPLETED BY THE APPLICANT BEFORE SUBMITTING TO MUNICIPALITY OR LOCAL AUTHORITY

Section 1 - Project Description

1.1 - Renewable Energy Project

Project Name *(Project identifier to be used as a reference in correspondence)*

McLEANS MOUNTAIN WIND FARM L.P.

Project Location

Same as Applicant Physical Address? ☐ Yes ☒ No (If no, please provide site address information below)

Civic Address- Street Information *(includes street number, name, type and direction)*	Unit Identifier *(i.e. apartment number)*
PLEASE REFER TO SECTION 6.10.1.2 of ATTACHED INFORMATION	

Survey Address *(Not required if Street Information is provided)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number.

Lot	Conc.
PLEASE REFER TO SECTION	6.10.1.2 of ATTACHED

Part and Reference: used to indicate location within unorganized territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.

Part	Reference Plan
	SUPPLEMENTARY INFORMATION

Location Information *(Includes any additional information to clarify physical location)(e.g. municipality, ward/ township)*

MUNICIPALITY of NORTHEASTERN MANITOULIN AND THE ISLANDS (NEMI)

Geo Reference *(e.g. southwest corner of property)*

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing
NAD 83	17	+/- 1m	GPS	414445	5081398

Project Phasing *(outline construction, operation and decommissioning activities)*

PLEASE REFER TO THE ATTACHED SUPPLEMENTARY INFORMATION
- SECTION 2.2 - DESCRIPTION of PROJECT ACTIVITIES
- PROJECT DESCRIPTION REPORT (SECTION 3.0)

1.2 - Environmental Context

Describe any negative environmental effects that may result from engaging in the project *(consider construction, operation and decommissioning activities.)*

PLEASE REFER TO THE ATTACHED SUPPLEMENTARY INFORMATION
- PROJECT DESCRIPTION REPORT (SECTION 4.0)

Propose early avoidance/prevention/mitigation concepts and measures.

PLEASE REFER TO THE ATTACHED SUPPLEMENTARY INFORMATION
- SECTION 6.6.3 - MITIGATION MEASURES

1.3 - Renewable Energy Generation Facility

Type of Facility / Operation *(select all that apply & complete all appropriate sections)*

☒	Wind Facility (Land Based)	☐	Biofuel Facility
☐	Wind Facility (Off-Shore)	☐	Solar Photo Voltaic Facility
☐	Biogas Facility (Anaerobic Digesters)	☐	Other Describe :
☐	Biomass Facility (Thermal Treatment)	☐	Class (if applicable) :

Name Plate Capacity	Expected Generation	Service Area	Total Area of Site *(hectares)*
77.4 MW	77.4	CONNECTED TO S2B AT GOAT ISLAND	8000 H

Provide a description of the facilities equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.

PLEASE REFER TO THE ATTACHED SUPPLEMENTARY INFORMATION

- PROJECT DESCRIPTION REPORT

1.4 – Renewable Energy Generation Activities

Describe the activities that will be engaged in as part of the renewable energy project

PLEASE REFER TO THE ATTACHED SUPPLEMENTARY INFORMATION

- SECTION 2.2 - DESCRIPTION OF PROJECT ACTIVITIES
- PROJECT DESCRIPTION REPORT (SECTION 3.0)

Section 2 – Supporting Documents

2.1 – Requirement	Name of Draft documents distributed for consultation	Date available to Municipal or Local Authority Contact
DRAFT Project Description Report	NORTHLAND POWER INC. - McLEAN'S MOUNTAIN WIND FARM	DEC 16, 2009
DRAFT Design and Operations Report		LATE 2009
DRAFT Construction Plan Report		EARLY 2010
DRAFT Decommissioning Plan Report		
List of other Documents		
(REFER TO THE ATTACHED SUPPLEMENTARY INFORMATION))		

Location where written draft reports can be obtained for public inspection *(physical location for viewing and the applicants project website if one is available)*:
McLEAN'S MOUNTAIN WIND FARM SITE OFFICE (
TOWNSHIP of NORTHEASTERN MANITOULIN AND THE ISLANDS

Section 3 – Applicant Address and Contact Information

3.1 - Applicant Information *(Owner of project/facility)*

Applicant Name *(legal name of individual or organization as evidenced by legal documents)*	Business Identification Number
McLEAN'S MOUNTAIN WIND FARM L.P.	851176743-RT0001

Business Name *(the name under which the entity is operating or trading - also referred to as trade name)* ☑ same as Applicant Name

McLEAN'S MOUNTAIN WIND FARM L.P.

Civic Address- Street Information *(includes street number, name, type and direction)*	Unit Identifier *(i.e. apartment number)*
23A VANKOUGHNET ST. E. LITTLE CURRENT, ON P0P1K0	UNIT "A"

Survey Address *(Not required if Street Information is provided)*

Lot and Conc.:
used to indicate location within a subdivided township and consists of a lot number and a concession number.

Lot	Conc.
PLEASE REFER TO SUPPLEMENTARY INFORMATION PART "A" SECTION 6.10.1.2	

Part and Reference:
used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.

Part	Reference Plan

Municipality	County/District	Province/State	Country	Postal Code
NORTHEAST MANITOULIN AND THE ISLANDS	MANITOULIN	ONTARIO	CANADA	P0P 1K0

PART B: TO BE COMPLETED BY THE MUNICIPALITY OR LOCAL AUTHORITY

Section 4 - Municipal or Local Authority Contact Information (check the one that applies)

Local Municipality *(include each local municipality in which project location is situated)*				☒ Yes ☐ No	
Name of Municipality	Address	Phone	Clerk's Name	Clerk's Phone/Fax	E-Mail Address
Northeastern Manitoulin and	Postal Bag 2000 Little Current, ON P0P 1K0	705-368-3500	Janet Moore	705-368-3500 x228 705-368-2245	jmoore@townofnemi.on.ca
Upper Tier Municipality *(include each upper tier municipality in which project location is situated)*				☐ Yes ☐ No	
Name of Municipality	Address	Phone	Clerk's name	Clerk's Phone/Fax	E-Mail Address
Local roads area *(include each local roads area in which project location is situated)*				☐ Yes ☐ No	
Name of local roads board	Address	Phone	Secretary-treasurer's Name	Secretary-treasurer's Phone/Fax	E-Mail Address
Board Area *(include each board area in which project location is situated)*				☐ Yes ☐ No	
Name of Local Service Board	Address	Phone	Secretary's name	Secretary's Phone/Fax	E-Mail Address

Section 5: Consultation Requirement

5.1 - Project Location

Provide comment on the project location with respect to infrastructure and servicing.

as per attached

5.2 – Project Roads

Provide comment on the proposed project's plans respecting proposed road access.

as per attached

Identify any issues and provide recommendations with respect to road access

as per attached

Provide comment on any proposed Traffic Management Plans

as per attached

Identify any issues and provide recommendations with respect to the proposed Traffic Management Plans

as per attached

5.3 – Municipal or Local authority Service Connections

Provide comment on the proposed project plans related to the location of and type of municipal service connections, other than roads.

as per attached

Identify any issues and provide recommendations with respect to the type of municipal service connections, other than roads.

as per attached

5.4 – Facility Other

Identify any issues and recommendations with respect to the proposed landscaping design for the facility

as per attached

Provide comment on the proposed project plans for emergency management procedures / safety protocols.

as per attached

Identify any issues and recommendations with respect to the proposed emergency management procedures / safety protocols.

as per attached

Identify any issues and recommendations with respect to any Easements or Restrictive Covenants associated with the Project Location

as per attached

5.5 Project Construction

Identify any issues and recommendations with respect to the proposed rehabilitation of any temporary disturbance areas and any municipal or local authority infrastructure that could be damaged during construction.

as per attached

Identify any issues and recommendations with respect to the proposed location of fire hydrants and connections to existing drainage, water works and sanitary sewers

as per attached

Identify any issues and recommendations with respect to the proposed location of buried kiosks and above-grade utility vaults

Identify any issues and recommendations with respect to the proposed location of existing and proposed gas and electricity lines and connections
as per attached
Provide comment on the proposed project plans with respect to Building Code permits and licenses.
as per attached
Identify any issues and recommendations related to the identification of any significant natural features and water bodies within the municipality or territory.
as per attached
Identify any issues and recommendations related to the identification any archaeological resource or heritage resource.
as per attached

The Town of
NORTHEASTERN MANITOULIN
and the ISLANDS

Municipal Office
15 Manitowaning Rd

Postal Bag 2000
Little Current, ON
P0P 1K0

March 8, 2010

Rick Martin
Project Manager
Northland Power Inc.
30 St. Clair Avenue West, 17th Floor
Toronto, Ontario
M4V 3A1

Dear Mr. Martin:

Further to your letter of December 16, 2009, I am returning the municipal consultation form from the Town of Northeastern Manitoulin and the Islands on your McLean's Mountain Wind Farm Project.

Our responses are designed to ensure that you are aware of the potential impact of your project on municipal infrastructure. In identifying potential issues, we have also ensured that we provided potential solutions for your consideration.

You will note a number of areas in which the municipality was not provided with sufficient detail to enable a meaningful response. Please be advised that the municipality is prepared to comment on this material when it becomes available.

Under section 5.2 our response indicates that there is no agreement in place with the proponent permitting the use of municipal roads. As you are aware, that agreement has now been negotiated and we expect to have it signed within the next two weeks. Any of the issues identified in section 5.2 not covered by the road use agreement will still need to be addressed by your company.

If you have any questions or require further clarification on any of the issues identified in our response, please give me a call at (705) 368-3500, extension 224.

Yours truly,

D. A. Williamson

David A. Williamson
Chief Administrative Officer

cc: Ministry of the Environment – Approvals Branch

RESPONSE TO MUNICIPAL CONSULTATION

MARCH 8, 2010

On December 16, 2009, Northland Power Inc. provided the Town of Northeastern Manitoulin and the Islands with the draft project description report. The balance of the required reports were provided on January 18, 2010 and included the supplementary information for the design and operations report, the supplementary information for the construction plan report, and the decommissioning plan report.

Section 5

5.1 Project Location

There are a limited number of open roadways in the project area. The proposed transmission line goes through an area that does have municipal water and sewer infrastructure in place.

The proponent identifies that they will be placing a high voltage line down the side of Gammie Street and Harbour Vue Road. There is sewer and water infrastructure on Gammie Street that needs to be considered when placing poles. There is also existing poles and lines on Harbour Vue Road that will need to be taken into consideration when determining where to place the high voltage line. Bell Canada and Hydro One currently have easements for those lines which will have to be considered by Northland Power when placing poles and lines along that roadway. Permission may be required from either company if their easements are to be encroached upon.

The road allowance at the end of Harbour Vue Road currently has a cottage constructed on it. The proponent will have to ensure that their line can be placed a safe distance from this dwelling.

There is very little infrastructure other than roadways in the bulk of the project area. Many of the roads in the project area are seasonal and not maintained during the winter months.

The municipality's radio and emergency communications infrastructure is located within the project area and the municipality will need confirmation that the proponents activities during the construction and operation phase of the project will not interfere with that service.

Several of the First Nation Communities on the Manitoulin Island have unresolved land claims that extend to the unopened road allowances in the project area. Negotiations are currently ongoing between the Federal and Provincial Governments and the First Nations to resolve those claims however in the interim the Municipality cannot guarantee free and unencumbered access to those road allowances.

The municipality has not received any detailed information on the process or infrastructure required to cross the North Channel from Harbour Vue Road to Goat Island. The installation of submarine lines or Towers will require two crossings of the municipal shoreline road allowance which is still subject to land claims by First Nations. The Channel is also used heavily by boat traffic, including cruise ships, which are critical to the municipality's tourism sector so it is essential that the "crossing" be designed to be as unobtrusive as possible and not interfere with boat traffic.

5.2 Project Roads

At the present time there is no agreement in place with the proponent permitting the use of municipal roads. The negotiations on the road use agreement need to be completed.

The proponent's documentation indicates that they require 10 meters for access. The majority of the municipality's roads are 4.5 to 7 meters and will not meet the minimum required width. The proponent will have to construct the road to the required width.

The established roads may not actually be fully situated on municipal property (given roads). This means that the municipality may not own the property on either side of the road so widening of those roads will require permission from the actual owners of the property. This also means that the proponent will have to survey all of the roadways (opened and unopened) to ensure that any work that is undertaken is in fact on municipal roads.

The established roads are subject to load restrictions during specific times of the year so construction will have to be carried out during those periods when the load restrictions do not apply.

The existing roads have not been constructed with a view to supporting heavy loads and traffic that this project may create. These roads may need to be upgraded by the proponent to ensure the integrity of the roads and protect the safety of the traveling public.

The existing roads do not have a sufficient turn radius to meet the requirements of the proponent. The proponent will have to build adequate accesses from the provincial highway and from the municipal roads to their specific project sites.

The proponent did not provide sufficient detail on the actual areas of unopened road allowance that they will be requesting the use of. Further detail will be required.

Any work on unopened road allowances will need to be completed to municipal standards to ensure the safety of the traveling public and in a manner that will ensure the there is no negative impact on drainage.

The proponent will be required to provide proof of adequate insurance to protect the municipality from liability for its actions while working on municipal roadways (opened or unopened).

Access roads from existing and upgraded municipal roads must be properly engineered to address potential drainage issues along municipal roadways. Entrance permits will be required for each of these access roads.

The Town does not have a traffic management plan and we have not received a traffic management plan from the proponent the reflects the impact of this project on traffic flow or volumes.

5.3 Municipal Service Connections

There are water and sewer services on Gammie Street that is in the project area. However, there is no indication that the proponent plans on accessing those services.

Hydro One is the provider of electrical services in the municipality and should be contacted by the proponent to determine the impact on their infrastructure. Bell Canada also has infrastructure in the project area that may be impacted by the project. CFRM Radio Inc., Bell Canada and CBC also have infrastructure in the project area that may be impacted by the proponent. The proponent is responsible for identifying any other infrastructure in the project area that may be impacted by their activities.

5.4 Facility Other

The municipality has not been provided with any information by the proponent on the areas of landscaping, emergency management, easements, restrictive covenants or safety protocols. We are unable to comment on this area until we receive that information.

5.5 Project Construction

At the present time we are not in receipt of any information that indicates what the proposed rehabilitation of any temporary disturbance areas. The municipality will expect that any disturbance to areas or municipal infrastructure damaged during construction will be restored to its original condition at a minimum.

The proponent will have to ensure that their efforts in the project area do not interfere with drainage either on or along municipal property and roadways.

We have not been provided with any plans that suggest that there are buried kiosks or above grade vaults in the project area.

We have not been provided with any information to suggest that there are any gas lines in the project area. The location of electrical lines and poles on municipal roadways has not been agreed to yet as this is an outstanding item in the road use agreement currently being negotiated between Northland Power and the Municipality.

All construction will have to be in compliance with the applicable building codes and is subject to the municipality's established fees.

The municipality has not received any detailed information on the process or infrastructure required to cross the North Channel from Harbour Vue Road to Goat Island. The installation of submarine lines or Towers will require two crossings of the municipal shoreline road allowance which is still subject to land claims by First Nations. The proponent will have to ensure that they have met the requirements for meaningful consultation with First Nation Communities.

The Channel is also used heavily by boat traffic, including cruise ships, which are critical to the municipality's tourism sector so it is essential that the "crossing" be designed to be as unobtrusive as possible and not interfere with boat traffic.

The proponent has not confirmed whether this is potentially a significant site from an archaeological or heritage resource perspective. The proponent will have to undertake the appropriate studies required to satisfy this requirement for the Province and Federal government.

Ashby, Beatrice

From: McKinnon, Don
Sent: Tuesday, February 02, 2010 11:33 AM
To: RickMartin
Cc: Ashby, Beatrice; 091983
Subject: FW: McLean's Mountain Wind Farm, Northland Power Inc - Enviromental Assessment
Follow Up Flag: Follow up
Flag Status: Completed

fyi

From: Yu-Chao.HWANG@HydroOne.com [mailto:Yu-Chao.HWANG@HydroOne.com]
Sent: Tuesday, February 02, 2010 10:20 AM
To: McKinnon, Don
Cc: ierullo@HydroOne.com; Yu-Chao.HWANG@HydroOne.com
Subject: McLean's Mountain Wind Farm, Northland Power Inc - Enviromental Assessment

Dear Mr. McKinnon,

In our initial review, we have confirmed that Hydro One Transmission facilities are located within immediate vicinity of the proposed site in your study area. Please allow appropriate lead-time in your project schedule in the event that proposed development impacts Hydro One infrastructure which requires relocation or modifications, or needs an outage, that may not be readily available.

In planning, please note that developments should not reduce line clearances and limit access to our facilities at any time in the study area of your Proposal. Any construction activities must maintain the electrical clearance from the transmission line conductors as specified in the Ontario Health and Safety Act for the respective line voltage.

The integrity of the structure foundations must be maintained at all times, with no disturbance of the earth around the poles, guy wires and tower footings. There must not be any grading, excavating, filling or other civil work close to the structures.

Note that existing rights of ways may have provisions for future lines or already contain secondary land uses (i.e. pipelines, water mains, parking, etc). Please take this into consideration in your planning.

Once details are known and it is established that your development will affect Hydro One facilities including the rights of way, please submit plans that detail your development and the affected Hydro One facilities to:

Kent Taylor, Hydro One Real Estate Management
185 Clegg Road, Markham L6G 1B7
Phone: (905) 946-6230, Fax: (905) 946-6287
kent.taylor@hydroone.com

Please note that the proponent will be responsible for costs associated with modification or relocation of Hydro One facilities, as well as any added costs that may be incurred due to increase efforts to maintain our facilities.

Regards,

Yu-Chao (Tom) Hwang

Hydro One Networks Inc.
Asset Management, TX Sustainment Investment Planning
483 Bay Street, Toronto, Ontario M5G 2P5
Tel: 416-345-5990

January 27, 2010

Ontario Ministry of Natural Resources
Sudbury District Office
Northeast Region
Field Services Division
3767 Highway 69 South, Suite 5
Sudbury ON
P3G 1E7

Attention: Mr. Eric Cobb
Species at Risk Biologist

DILLON CONSULTING

1155 North Service Rd. West
Unit 14
Oakville, Ontario
Canada
L6M 3E3
Telephone
(905) 901-2912
Fax
(905) 901-2918

Response to MNR Comments Regarding Potential Impacts of the McLean's Mountain Wind Farm on Endangered or Threatened Species and Their Habitats.

Dear Mr. Cobb,

The following is in response to your August 21st, 2009, letter commenting on the potential impacts posed to Species at Risk by the proposed Northland Power Inc. McLean's Mountain Wind Farm. You will recall that we had a conference call on September 3, 2009 to discuss an approach to address the MNR concerns. This letter summarizes some of those discussions. The MNR comments are provided below in italics with our response below.

Section 6.9.1.2 of the ESR report identifies the rare threatened and endangered wildlife that may be present in the proposed area of undertaking. This section should be modified to accurately reflect the species information in order to address the following items:

- *Although Houghton's goldenrod is identified as a species present in the general area, it does not identify the plant's status as Threatened under the Endangered Species Act (2007).*
- *Recently, three bird species have been added to the Species at Risk list, with Chimney Swift and Whip-poor-will being designated as Threatened and Common nighthawk as Special Concern. The Atlas of Breeding Birds of Ontario indicates that all three have been observed in the area of interest, which is further supported by the results of your breeding bird surveys.*

…cont'd

- *Least bittern is a Threatened bird species under the Endangered Species Act. This SAR was observed during the breeding bird surveys, but was not identified and described in this section.*

The status of species above is recognized. Additional monitoring for select species identified as possibly occurring in the study area has been incorporated into the REA technical reports (e.g. Environmental Management Plan). It should be noted that Whip-poor-will was not observed in the study area during fieldwork and no breeding evidence was found for this species in the study area during the most recent Ontario Breeding Bird Atlas project. Similarly, least bittern was not observed in the study area during fieldwork and there was no breeding evidence during the most recent Ontario Breeding Bird Atlas project in the study area.

The report also states that several of the SAR identified in the section (e.g. Blandings turtle, Eastern massasauga and Houghton's goldenrod) *were not observed during fieldwork, but there is little information provided on the methods and effort to conclude the absence of these species from the study area.*

Field surveys carried out for the McLeans Mountain wind farm focused on the avian community, vegetation community and botanical species in the study area. A table detailing fieldwork conducted to date has been attached. Our report does not suggest that these species are necessarily absent from the study area. Simply, they were not observed during extensive field studies and therefore the likelihood of occurrence and impact is low.

Pre-construction avian surveys used protocols outlined in Environment Canada's *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds* (2007), and covered all four seasons. Avian surveys were conducted throughout the study area from 2004 to 2008.

Botanical surveys occurred during the fall of 2008, using a combination of wandering transects to document plant species in the general study area, with a focus on potential access roadways, and 10 X 10 meter sample plots at a subset of proposed turbine locations. During all phases of fieldwork incidental observations of other wildlife species were recorded.

Based on known occurrences, there is a reasonable expectation that protected species are present on the site. To determine whether your project is in compliance with the Endangered Species Act, 2007 or may require authorization under the Act, the following information will be required in order to assess whether or not this project has the potential to adversely affect species protected under the Endangered Species Act, 2007: A survey for Blanding's turtle… and Eastern massasauga.

…cont'd

As discussed during our phone conversation of September 3, 2009 our extensive field work in the study area has not found the occurrence of Blanding's turtle or Eastern massasauga. Therefore, additional fieldwork prior to the approval of the project is unnecessary and unlikely to help achieve the management goal. The evaluation of impacts and mitigation will assume the potential presence of Blanding's turtle, Eastern massasauga and Houghton's goldenrod and plan accordingly.

Turbine locations and access roads will maintain a setback of 120m from wetlands. This will protect the main habitat for Blanding's turtle and Eastern massasauga hibernation habitat. The construction of access roads and turbines outside of wetlands and their buffers will not impede corridor connection with other seasonal habitats. The access roads will be used intermittently at low speeds by maintenance and environmental monitoring personnel. Provided individuals using access roads are made aware of the potential for these species to occur and proper protocols are used should an individual be observed, the potential for impact during the operational phase of the project is low.

The environmental management plan implemented during the operational phase of the project can help mitigate mortality as well as track possible interactions with the above species at risk. Interactions and possible mortality can be reported to the MNR on an annual basis so that follow up can be completed by the MNR, where necessary. The need for possible alternative mitigation measures during the operational phase of the project, as indicated by the results of annual reporting, can be discussed between Northland Power Inc. and the MNR.

Prior to construction of access roads and turbines, a search for Houghton's goldenrod will be conducted in areas where appropriate habitat exists. In the event that Houghton's Goldenrod individuals are found on a road allowance or turbine site, options for mitigation will be considered, which may include slightly modifying proposed road or turbine location; or in instance where moving an access road and/or turbines is unfeasible, Northland Power Inc. will apply for the appropriate permit under section 17, subsection 2, of Ontario's Endangered Species Act, 2007.

Sections 6.9.2 and 6.9.3 should be revised respectively, to identify potential effects and mitigation measures for the following species:

- *Because of the recent designations for Whip-poor-will and Chimney swift, the observation of least bittern and the potential for Houghton's goldenrod to be found in the study area; these sections should be updated accordingly to include the required information for these species.*

…cont'd

- *Mitigation measures for Blanding's turtle and Eastern massasauga appropriately identify education and awareness training for contractors and workers, but there are no details on the protocol to handle these SAR should they be encountered. It should be noted that handling of these SAR may constitute a contravention under Section 9 of the Endnagered Species Act, 2007, and a Section 17(2)c permit may be required in order to authorize this activity.*
- *Further mitigation measures need to be considered for the operational phase of the wind farm, to address any mortality that may occur due to vehicular traffic.*
- *Although there are no records of loggerhead shrike in the area since 2000, there is potential for these birds to return to the area, and mitigation strategy should be developed to address this possibility.*
- *In general, the document describes mitigation measures that will be employed during the construction phase. Specific monitoring is not proposed for the SAR identified in the area during post-construction/operational phase of the project. In the event as SAR is adversely impacted by operations, will there be any further mitigation measures considered (i.e. seasonal constraints on production, etc.).*

We have reviewed this information and have incorporated your suggestions in the REA technical reports (e.g. Environmental Management Plan). See the previous response regarding further mitigation measures during the operational phase of the project

It is important to be aware that changes may occur in both species and habitat protection. The Committee on the Status of Species in Ontario meets regularly to evaluate species for listing and to re-evaluate species already listed. As a result, species designations may change and / or habitat protection provisions may also change, for example, if a habitat regulation comes into affect. Mitigation measures may need to be revised at anytime in the near future to account for any new changes.

Northland Power Inc. is committed to finding an appropriate wind farm design that minimizes environmental impacts, which protects species as well as their habitat to the extent possible. No one can foresee what changes may take place in the future to species or habitat protection. As part of the operational phase of the wind farm, Northland Power Inc. will continue to assess their environmental management plan. Where necessary, possible changes to the environmental management plan will be made that reflect good environmental practices, including protection of species and their habitat.

…cont'd

In summary, we appreciate your input regarding the protection of Species at Risk. It is our understanding that updating some baseline information to be consistent with the information contained in your letter, evaluation of potential impacts and refined mitigation approach for each Species at Risk mentioned above should provide the MNR with the information that they require for this project. Rather than conduct additional surveys, Northland Power Inc. will adopt a proactive planning approach, which assumes the potential presence of Blandings turtle, Eastern massasauga and Houghton's goldenrod. Appropriate impacts and mitigation during construction and operational phase of the project will be reported to reduce possible negative effects. Based on our conference call, we anticipate that additional surveys will only be required for Houghton's goldenrod as a post-project approval activity.

If you any other questions or comments relating to the above, please contact me at the address below.

Sincerely,

DILLON CONSULTING LIMITED

Michael Enright B.Sc.
Biologist

January 18th, 2010

Mr. Eric Cobb
Sudbury District
Ministry of Natural Resources
3767 Hwy. 69 South,
Suite 5, ON
P3G 1E7

Dear Mr. Cobb;

Re: Northland Power Inc., McLean's Mountain Wind Project
Renewable Energy Approval (REA) Draft Submission Package – Ministry of Natural Resources Confirmation

Northland Power Inc. (NPI) proposes to develop the McLean's Mountain Wind Farm (MMWF), located south of the community of Little Current, in the Municipality of Northeastern Manitoulin and the Islands (NEMI); geographic Township of Howland, and the geographic Township of Bidwell in the District of Manitoulin, Ontario. This wind farm is expected to consist of approximately 43 wind turbines that will generate about 77 MW of electricity.

It is NPI's intention to obtain a contract for the sale of electricity with the Ontario Power Authority (OPA) through the Province's Feed-in-Tarriff (FIT) program. The project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. The REA process replaces the previous process that required several separate approvals including for example, the *Environmental Assessment Act, Planning Act and Environmental Protection Act*.

As part of this submission we enclose the following for your review and comment:

1) A letter dated January 27, 2010 prepared by Dillon Consulting, responding to your comments dated August 21st, 2009; and,
2) A Renewable Energy Approval (REA) Draft Submission Package.

As part of an application for the issue of a renewable energy approval, as specified in the REA regulations (Section 28), a project proponent (NPI) is required to obtain written confirmation from the Ministry of Natural Resources. It is through this submission that NPI asks that the Ministry provide a written confirmation as well as any additional comments in respect of the natural heritage assessment.

The enclosed Renewable Energy Approval (REA) Draft submission package has been released as of January 18th, 2010 for a 60-day public review period and includes the following sections:

Section 1: Concordance Table

NPI is relying on the previously completed Environmental Study Report to fulfill much of the REA reporting requirements. The MOE advised that this is an acceptable approach for this project. The Concordance Table document outlines the NPI's fulfillment of the REA requirements for a Class 4 Wind Facility. The Concordance Table summarizes the REA requirements and illustrates how these requirements were fulfilled through the McLean's Mountain Wind Farm Environmental Screening Report/Environmental Impact Statement (ESR) released in July 2009. The McLean's Mountain Wind Farm ESR document was released in July 2009 for a 30–day public review as part of the former Environmental Assessment process. The ESR document is consistent with the former Environmental Screening provisions of Ontario Regulation 116/01 for a Category B project. The ESR document was developed to assist in the determination of potential environmental effects, including both the social and natural environment, which could result from the proposed project. The concordance table also references any supplementary information that was provided as part of the REA Draft submission package.

Please note that the wind farm layout presented in the ESR is to be considered as draft subject to revisions based on the input received from government agencies, aboriginal communities, the public and landowners through the REA consultation process.

Section 2: The McLean's Mountain Wind Farm ESR/EIS (ESR), July 2009 Comment/Response Table

A comment-response table that documents NPI's responses to the comments received during the 30-day review period the ESR document was developed.

Section 3: Supplementary REA Reports

NPI is obligated to provide the required documentation to support its REA application. NPI intends to rely on the ESR that was released in July 2009 to fulfill, at least partially, the necessary documentation. The following supplementary documents, which were not required for the ESR process, are included in this REA Draft submission package:

- ✓ Project Description Report
- ✓ Response to MNR Comments dated August 21, 2009
- ✓ McLean's Mountain Wind Farm Environmental Management and Protection Plan - Supplementary Information for the Design and Operations Report
- ✓ Community Response Plan - Supplementary Information for the Design and Operations Report
- ✓ Construction Schedule - Supplementary Information for Construction Plan Report
- ✓ Decommissioning Plan Report

A Comprehensive Consultation Report will be prepared once the REA consultation process is completed. The Consultation Report will be prepared to reflect REA requirements and will document the consultation program that will be conducted under the REA process. The Consultation Report will include a summary of communication and consultation activities conducted with the public, government agencies and Aboriginal communities and will include responses to comments received. NPI has met the REA requirements for the first Public Information Centre under the former Environmental Screening process.

Section 4: Supplementary Mapping

A map depicting the REA wind farm setback requirements is enclosed. This map depicts all applicable REA setbacks that have been met for the draft wind farm project layout. The setbacks include the distances from the proposed wind turbines to the important features within the project area boundary such as residences and natural features

Comments on the draft REA reports are to be submitted in writing (see below for contact information) by **March 18th, 2010**.

NPI is pleased to continue its communications you with respect to this project. The proposed project and findings of the REA process will be presented at a future Public Information Centre (PIC) that is planned for March 22, 2010. Notice of this future PIC will be released in your community close to the date of the planned PIC.

If you have questions about the project please do not hesitate to contact the following:

Rick Martin, Project Manager
Northland Power Inc. Little Current Office
McLean's Mountain Wind Farm Office
P.O. Box 73
Little Current ON, P0P 1K0
Tel: (705)271-5358 cell, (705)368-0303
Manitoulin Island Office
E-mail: rickmartin@northlandpower.ca

Don McKinnon, REA Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8
Tel: 416.229.4647 ext. 2355
E-mail: dpmckinnon@dillon.ca

Yours truly,

Rick Martin
Project Manager
Northland Power Inc.

Ministry of Culture

Culture Programs Unit
Programs and Services Branch
435 S. James St., Suite 334
Thunder Bay, ON P7E 6S7
Tel: (807) 475-1632
Fax: (807) 475-1297
Email: paige.campbell@ontario.ca

Ministère de la Culture

Unité des programmes culturels
Direction des programmes et des services
Bureau 334, 435 rue James sud
Thunder Bay, ON P7E 6S7
Tél: (807) 475-1632
Téléc: (807) 475-1297
Email: paige.campbell@ontario.ca

Ontario

January 15, 2010

Dr P. Julig
Archaeology Survey of Laurentian University
Sudbury, ON

Dear Pat,

Re: Review and acceptance into the provincial register of reports the archaeological assessment report entitled "Report on Stage 1 Archaeological Assessment fo the Manitoulin Island Wind Farm, by Northland Power, in Northeast Manitoulin and the Islands" written June 2009, received on December 30, 2009
PIF: P100-016-2009
RIMS: HD00045

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

This Stage 1 background study has identified various areas of archaeological potential within the development area. It is recommended that a Stage 2 field assessment is required for those areas identified in the report. The Ministry of Culture concurs with the report recommendations and accepts this report into the provincial register of archaeological reports.

Please contact me with any concerns regarding this matter.

Yours

Paige Campbell
Acting Archaeology Review Officer
cc Dillon Consulting

Dr. Patrick Julig
Archaeological Survey of Laurentian University
Department of Anthropology
Ramsey Lake Road,
Laurentian University, Sudbury, ON. P3E 2C6

Archaeological Licence Office
Ministry Of Culture
400 University Ave.
Toronto, ON. M7A 2R9

December 23, 2009

RE: Project Information Number P-100 -016-2009, Stage 1 Assessment of Manitoulin Island Wind Farm

Dear Licence Administrator,

Enclosed please find four copies of the licence report for Project Number P-100 -016-2009, Stage 1 Assessment of Manitoulin Island Wind Farm. We trust that you will find this satisfactory.

The client, Dillon Consulting (address in report) is requesting that you review and comment on this report as soon as possible.

Thank you very much,

Patrick Julig Lic.# P-100

CC. Dillon Consulting
235 Yorkland Blvd.
Suite 800
Toronto, ON. M2J 4Y8

Public Correspondence under Ontario Regulation 359/09 Renewable Energy Apprival (REA) under Green Energy Act

April, 2010

To All Government and Company Officials:

Re: McLean's Mountain Wind Project and Community Concerns

The purpose of this letter is to advise you of the many concerns that people living on and off of Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

Economic Impacts

- Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? Once the infra-structure is approved for this first project, the road is already paved for many more companies to follow. Firms such as Greenhead Energy and others will also be offered government subsidies and will easily be able to plug into the main grid (which has to first be upgraded for Northland's expansion). Vacationers and long time island residents who used to enjoy the peace and quiet of the natural world will leave and take their economic resources elsewhere.

Environmental Concerns

- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock foundation support turbines the height of a 40 storey high building over the lifespan of the turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?
- Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone: How can Northland assure other land owners that their ground water supplies will not be changed, disappear or become contaminated with all this drilling going on over such a large area? Drilling and construction activity would definitely adversely affect underground water flow which would contaminate many spring-fed lakes, ponds and drinking water sources.
- Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?

First Nations Concerns

- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate

consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored and continues to be ignored," said Chief Shining Turtle of Whitefish River First Nation and UCCM tribal chair.

- The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK. The UCCM and the Wikwemikong Unceded First Nation all stated their opposition to the Northland power project.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

Infrasound and Human Health Impacts

- See below for details, including references. For full information, please visit www.WindVigilance.com

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McLean's Mountain Wind Farm.**

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated:

"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "… there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability….it's ruining their lives – and it's genuine…".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines.[7],[8],[9],[10] Families including children have abandoned their homes to protect their health. This cannot be denied.

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines. [11], [12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13],[14],[15] and that wind turbine induced "Annoyance was further

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[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010 http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009, http://windvigilance.com/primer_ahe.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009
[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in different living environments
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents

associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "…chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]
The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects.[19]

"Health Canada advises…that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the **McLean's Mountain Wind Farm** is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.

Specific concerns about the REA include but are not limited to:

The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.

The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.

The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.

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[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009, http://windvigilance.com/primer_ahe.aspx

There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.

In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.

For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment "There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits." [22]

In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]

The request for proposal further states:

"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]

The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]

The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and "The claim that their "lives have been ruined" by the noise is not an exaggeration…" [26]

The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27],[28]
This deficiency is further illustrated by the Ministry of Environment's January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]

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[21] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305
[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695 www.merx.ca
[24] ibid
[25] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec 31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663
[27] Ontario Regulation 359/09 Made Under The Environmental Protection Act Renewable Energy Approvals Under Part V.0.1 of the Act, September 24, 2009
[28] "October 2008 Noise Guidelines for Wind Farms" Ontario Ministry of Environment
[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696 www.merx.ca

It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA.

Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [32]

The research gaps include among others, investigation of 'health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development."

The World Health Organization states "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof."[33]

In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" and authoritative bodies including those in Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise.

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[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC
[31] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[32] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010
[33] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

Please visit www.WindVigilance.com for full details. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours truly,

[redacted]

Please be advised that this letter has also been sent to:

James C. Temerty, Chairman of the Board, Northland Power Inc. (**please distribute copies to all board members),**

Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, Arlene King, Chief Medical Officer of Health, Ministry of Health and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project, that are described above. The project layout will be presented at the PIC. The Notice of (PIC) is attached.

I would like to thank you for submitting [redacted] Grade 6 Student LCPS speech as well as media articles regarding the proposed project. To address your son's question regarding the decommissioning of the wind turbines the wind turbines will be decommissioned at the end of their life span. A decommissioning plan has been prepared by NPI. The decommissioning plan identifies the specific Project components that will be removed, the costs associated with the removal of the components and the associated scrap value. The cost of decommissioning will be paid by the company that owns the contract with the government at the end of its useful life. We expect this to be Northland Power Inc. Acknowledging that the decommissioning responsibility is a requirement of any company who holds a contract under the FIT process. The decommissioning plan is an integral part of the REA requirement.

To address your question (your e-mail message of April 22nd, 2010) regarding solar energy as an alternative to the proposed wind farm please be advised that a mix of renewable energies will be needed to support the energy needs of Manitoulin and Ontario. Solar power can be used to produce some of this energy. However, currently the efficiency of solar modules is less than wind and with the quality of the wind resource on Manitoulin Island, in order to produce the same amount of power as wind turbines, a large percentage of the land on Manitoulin Island would have to be covered with solar panels, leading to a much greater environmental impact.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns and Responses Regarding Economic Impacts

Comment: *"Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, for example, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current.

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Concerns and Responses Regarding Natural Environment

Comment: *"Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage (…)"*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial geotechnical tests show that the rock near the surface is fractured and permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

Additional geotechnical investigations have been initiated and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines can be erected in a variety of soil/rock conditions. The risk of turbine collapse is extremely low. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

Comment: *"Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone (…)"*

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. Further, the project will not reduce the rate of rainwater infiltration in the larger area. Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?"*

NPI Response:

Extensive studies on the natural environment have been conducted for the proposed project. These studies include the input of the Ministry of Natural Environment (MNR) and Environment Canada (EC) to ensure that the natural environment on Manitoulin Island is protected. A Natural Environment Assessment, in consultation with the MNR and EC was also conducted for this project. The assessment concluded that the risk to rare, threatened and endangered species in the area is low and minimal significant adverse effects are anticipated. Additional field work was conducted in 2010 as per the MNR direction. Some turbines have been removed and some changes were made to the turbine and road locations to avoid wetland areas that now have to be avoided under the REA process. The results of this work will contribute to the final Environmental Management and Protection Plan (EMPP). NPI will implement mitigation measure where required. A new natural heritage assessment document has been prepared and submitted to the Ministry of Natural Resources for review and comment. NPI will implement mitigation measures where required. NPI will implement mitigation measures where required.

Concerns and Responses Regarding First Nations

Comment: *"At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made (…)"*

Comment: *The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation (….)"*

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

Concerns and Responses Regarding Decreased Property Values

Comment: *"There is increasing evidence that Industrial Wind Turbines (IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project (…)"*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's' Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that "To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value."

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Infrasound and Human Health Impacts

Comment: *"(…) For full information, please visit www.WindVigilance.com"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The recent (May 2010) report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).*
>
> *Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).*
>
> *Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance*
> *(Jakobsen 2005, Leventhall 2006) (…)."*

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

All of the proposed wind turbines are greater than 698 meters away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

Concerns and Responses Regarding Set-back Distances between Industrial Wind Turbines and Nearby Homes and Dwellings

Comment: *"The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp."*

NPI Response:

In the current wind farm layout there is a minimum separation distance of 630 metres between a wind turbine and a receptor. The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine siting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

The Ontario's Chief Medical Officer of Health, Dr. Arlene King, recently sent a memorandum to all Medical Officers of Health and Environmental Health Directors stating the following about wind energy and human health: "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health. To see the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf

To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding "Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Comment: ***"****(…) The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms (…)"*

NPI Response:

The Chief Medical Officer of Health (CMOH) Report "The Potential Health Impact of Wind Turbines" dated May 2010 concludes that "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects" and that "The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct adverse health effects. However, some people might find it annoying. It has been suggested that annoyance may be a reaction to the characteristic "swishing" or fluctuating nature of wind turbine sound rather than to the intensity of sound".

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. Further, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

April, 2010

To All Government and Company Officials:

Re: McClean's Mountain Wind Project and Community Concerns

The purpose of this letter is to advise you of the many concerns that people living on and off of Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

Economic Impacts

- Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McClean's Mountain project, with another 40 MW awaiting approval and another 100+ MW planned after that, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? Once the infra-structure is approved for this first project, the road is already paved for many more companies to follow. Firms such as Greenhead Energy and others will also be offered government subsidies and will easily be able to plug into the main grid (which has to first be upgraded for Northland's project). Vacationers and long time island residents who used to enjoy the peace and quiet of the natural world will leave and take their economic resources elsewhere.

Environmental Concerns

- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for a water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock foundation support turbines the height of a 40 storey high building over the lifespan of the turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?
- Surface ground water contamination: How can Northland assure other land owners that their ground water supplies will not be changed, disappear or become contaminated with all this drilling going on over such a large area?
- Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?

First Nations Concerns

- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored

and continues to be ignored," said
Shining Turtle, Whitefish River First Nation chief and UCCM tribal chair.

- The AOK First Nation has also expressed opposition to this project, siting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

Infrasound and Human Health Impacts

- See below for details, including references

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McClean's Mountain Wind Farm.**

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated:

[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association

"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "… there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability.…it's ruining their lives – and it's genuine…".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines.[7],[8],[9],[10] Families including children have abandoned their homes to protect their health. This cannot be denied.

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines. [11], [12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13],[14],[15] and that wind turbine induced "Annoyance was further

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[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010 http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009, http://windvigilance.com/primer_ahe.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009
[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in different living environments
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents

associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "…chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]
The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects.[19]

"Health Canada advises…that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the McClean's Mountain Wind Farm is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.

Specific concerns about the REA include but are not limited to:

The REA was prepared by **Dillon Consulting and paid for by the proponent Northland Power Inc**. This financial dependency raises concerns about the objectivity of the contents of this REA.
The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.

The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.

The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations

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[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009, http://windvigilance.com/primer_ahe.aspx

does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.

There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.

In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.

For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment "There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits." [22]

In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]

The request for proposal further states:

"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]

The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]

The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and "The claim that their "lives have been ruined" by the noise is not an exaggeration…" [26]

The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27],[28]

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[21] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1

[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305

[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695 www.merx.ca

[24] ibid

[25] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association

[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec 31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663

[27] Ontario Regulation 359/09 Made Under The Environmental Protection Act Renewable Energy Approvals Under Part V.0.1 of the Act, September 24, 2009

[28] "October 2008 Noise Guidelines for Wind Farms" Ontario Ministry of Environment

This deficiency is further illustrated by the Ministry of Environment's January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]

It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The Ministry of Environment has proposed draft technical bulletins on various renewable energy issues for public comment including specifically the REA.[32] The Public Consultation process states:

"This proposal has been posted for a 90 day public review and comment period starting March 01, 2010. If you have any questions, or would like to submit your comments, please do so by May 30, 2010 to the individual listed under "Contact". Additionally, you may submit your comments on-line."

"All comments received prior to May 30, 2010 will be considered as part of the decision-making process by the Ministry of the Environment if they are submitted in writing or electronically using the form provided in this notice and reference EBR Registry number 010-9235."

"Please Note: All comments and submissions received will become part of the public record. You will not receive a formal response to your comment, however, relevant comments received as part of the public participation process for this proposal will be considered by the decision maker for this proposal."

The REA's public consultation phase ends May 30, 2010. Therefore, the **Northland Power Inc.'s** REA is invalid and must be withdrawn until such time as the public consultation has been fulfilled and the technical guidelines finalized.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA.

Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [33]

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[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696 www.merx.ca

[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC

[31] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1

[32] Ministry of Environment, Renewable Energy Approval http://www.ene.gov.on.ca/en/business/green-energy

The research gaps include among others, investigation of 'health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development."

The World Health Organization states "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof."[34]

In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" and authoritative bodies including those in Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours truly,

Please be advised that this letter has also been sent to:

James C. Temerty, Chairman of the Board, Northland Power Inc. (please distribute copies to all board members), Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, Arlene King, Chief Medical Officer of Health, Ministry of Health and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

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[33] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010

[34] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May 2011

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Comment: *"Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, for example, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Concerns and Responses Regarding Natural Environment

Comment: *"Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage (…)"*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial geotechnical tests show that the rock near the surface is fractured and

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

Additional geotechnical investigations have been initiated and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines can be erected in a variety of soil/rock conditions. The risk of turbine collapse is extremely low. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

Comment: *"Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone (…)"*

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. We are aware, previous to any construction; many people in the community are hauling water to their wells at various times of the year. Further, the project will not reduce the rate of rainwater ground infiltration in the larger area. Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?"*

NPI Response:

Extensive studies on the natural environment have been conducted for the proposed project. These studies include the input of the Ministry of Natural Environment (MNR) and Environment Canada (EC) to ensure that the natural environment on Manitoulin Island is protected. A Natural Environment Assessment, in consultation with the MNR and EC was also conducted for this project. The assessment concluded that the risk to rare, threatened and endangered species in the area is low and minimal significant adverse effects are anticipated. Additional field work was conducted in 2010 as per the MNR direction. Some turbines have been removed and some changes were made to the turbine and road locations to avoid wetland areas that now have to be avoided under the REA process. The results of this work will contribute to the final Environmental Management and Protection Plan (EMPP). NPI will implement mitigation measure where required. A new natural heritage assessment document has been prepared and submitted to the Ministry of Natural Resources for review and comment.

<u>Concerns and Responses Regarding First Nations</u>

Comment: *"At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made (…)"*

Comment: *The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation (….)"*

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

<u>Concerns and Responses Regarding Decreased Property Values</u>

Comment: *"There is increasing evidence that Industrial Wind Turbines (IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project (…)"*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's' Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that *"*To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value.*"*

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Infrasound and Human Health Impacts

Comment: *"(…) For full information, please visit www.WindVigilance.com"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The

evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The May 2010 report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).*
>
> *Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).*
>
> *Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance*
> *(Jakobsen 2005, Leventhall 2006) (…)."*

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

All of the proposed wind turbines are at least 698 metres away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

Concerns and Responses Regarding Set-back Distances between Industrial Wind Turbines and Nearby Homes and Dwellings

Comment: *"The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp."*

NPI Response:

The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine sighting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established

and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

The Ontario's Chief Medical Officer of Health, Dr. Arlene King, recently sent a memorandum to all Medical Officers of Health and Environmental Health Directors stating the following about wind energy and human health: "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health.

To see the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf

To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding Adverse Health Effects and Industrial Wind Turbines

Comment: ***"****(…) The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms (…)"*

NPI Response:

The Chief Medical Officer of Health (CMOH) Report "The Potential Health Impact of Wind Turbines" dated May 2010 concludes that "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects"' and that "The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct adverse health effects. However, some people might find it annoying. It has been suggested that annoyance may be a reaction to the characteristic "swishing" or fluctuating nature of wind turbine sound rather than to the intensity of sound.

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. Further, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

April 29, 2010

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Re: McLean's Mountain Wind Project and Community Concerns

On Tuesday, April 6, 2010, in an article printed in the Toronto Star, ex-Ontario Power Authority head Jan Carr exposed the McGuinty government's actions on wind farm development as an expensive, arrogant and ill-conceived failure of planning that should be stopped. Yesterday, there was a rally at Queen's Park where hundreds of people from across Ontario shared their stories about the destructive effects of industrial wind turbine installations on the economy, human health, and the environment.

The purpose of this letter is to advise you of the many concerns that people living on and off of Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

Economic Impacts

- Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? Once the infra-structure is approved for this first project, the road is already paved for many more companies to follow. Firms such as Greenhead Energy and others will also be offered government subsidies and will easily be able to plug into the main grid (which has to first be upgraded for Northland's expansion). Vacationers and long time island residents who used to enjoy the peace and quiet of the natural world will leave and take their economic resources elsewhere.

Environmental Concerns

- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock foundation support turbines the height of a 40 storey high building over the lifespan of the turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?

- Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone: How can Northland assure other land owners that their ground water supplies will not be changed, disappear or become contaminated with all this drilling going on over such a large area? Drilling and construction activity would definitely adversely affect underground water flow which would contaminate many spring-fed lakes, ponds and drinking water sources.
- Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?

First Nations Concerns

- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored and continues to be ignored," said Chief Shining Turtle of Whitefish River First Nation and UCCM tribal chair.
- The AOK First Nation has also expressed opposition to this project, citing concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK. The UCCM and the Wikwemikong Unceded First Nation all stated their opposition to the Northland power project.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

Infrasound and Human Health Impacts

- See below for details, including references. For full information, please visit www.WindVigilance.com

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McLean's Mountain Wind Farm.**

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated:

"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "… there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability….it's ruining their lives – and it's genuine…".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines.[7],[8],[9],[10] Families including children have abandoned their homes to protect their health. This cannot be denied.

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[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010 http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009, http://windvigilance.com/primer_ahe.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines. [11], [12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13],[14],[15] and that wind turbine induced "Annoyance was further associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "…chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]
The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects.[19]

"Health Canada advises…that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the **McLean's Mountain Wind Farm** is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.

Specific concerns about the REA include but are not limited to:

The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.

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[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in different living environments
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents
[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009, http://windvigilance.com/primer_ahe.aspx

The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.

The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.

There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.

In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.

For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment "There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits." [22]

In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]

The request for proposal further states:

"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]

The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]

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[21] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1

[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305

[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695 www.merx.ca

[24] ibid

[25] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association

The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and "The claim that their "lives have been ruined" by the noise is not an exaggeration…" [26]

The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27],[28]
This deficiency is further illustrated by the Ministry of Environment's January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]

It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA.

Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [32]

The research gaps include among others, investigation of 'health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development."

The World Health Organization states "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be

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[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec 31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663
[27] Ontario Regulation 359/09 Made Under The Environmental Protection Act Renewable Energy Approvals Under Part V.0.1 of the Act, September 24, 2009
[28] "October 2008 Noise Guidelines for Wind Farms" Ontario Ministry of Environment
[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696 www.merx.ca
[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC
[31] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[32] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010

endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof."[33]

In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" and authoritative bodies including those in Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise. Please visit www.WindVigilance.com for full details. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours truly,

Please be advised that this letter has also been sent to:

James C. Temerty, Chairman of the Board, Northland Power Inc. (**please distribute copies to all board members),**

Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, Arlene King, Chief Medical Officer of Health, Ministry of Health and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

[33] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May 2011

[redacted]

RE: McLean's Mountain Wind Project – Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns and Responses Regarding Economic Impacts

Comment: *"Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Concerns and Responses Regarding Natural Environment

Comment: *"Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage (…)"*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial tests show that the rock near the surface is fractured and permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

Additional geotechnical investigations have been initiated and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines can be erected in a variety of soil/rock conditions. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

Comment: *"Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone (…)"*

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. We are aware, previous to any construction; many people in the community are hauling water to their wells at various times of the year. Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?"*

NPI Response:

Extensive studies on the natural environment have been conducted for the proposed project. These studies include the input of the Ministry of Natural Environment (MNR) and Environment Canada (EC) to ensure that the natural environment on Manitoulin Island is protected. A Natural Environment Assessment, in consultation with the MNR and EC was also conducted for this project. The assessment concluded that the risk to rare, threatened and endangered species in the area is low and minimal significant adverse effects are anticipated. Additional field work was conducted in 2010 as per the MNR direction. Some turbines have been removed and some changes were made to the turbine and road locations to avoid wetland areas that now have to be avoided under the REA process. The results of this work will contribute to the final Environmental Management and Protection Plan (EMPP). NPI will implement mitigation measure where required. A new natural heritage assessment document has been prepared and submitted to the Ministry of Natural Resources for review and comment. NPI will implement mitigation measures where required.

Comment: *"At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made (…)"*

The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation (….)"

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

Concerns and Responses Regarding Decreased Property Values

Comment: *"There is increasing evidence that Industrial Wind Turbines (IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project (…)"*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that *"To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value."*

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Infrasound and Human Health Impacts

Comment: *"(…) For full information, please visit www.WindVigilance.com"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The May 2010 report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial*

sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).

Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).

Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance
(Jakobsen 2005, Leventhall 2006) (…)."

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. All of the proposed wind turbines are greater than 698 meters away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences. NPI is obligated to meet provincially identified setbacks. NPI has confirmed that the final wind turbine layout meets all REA setbacks.

Concerns and Responses Regarding Set-back Distances between Industrial Wind Turbines and Nearby Homes and Dwellings

"The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp."

NPI Response:

In the current wind farm layout there is a minimum separation distance of 698 metres between a wind turbine and a receptor. The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine siting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

The Ontario's Chief Medical Officer of Health, Dr. Arlene King, recently sent a memorandum to all Medical Officers of Health and Environmental Health Directors stating the following about wind energy

and human health: "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health.

To see the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf

To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding Adverse Health Effects and Industrial Wind Turbines

"(…) The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms (…)"

NPI Response:

The Chief Medical Officer of Health (CMOH) Report "The Potential Health Impact of Wind Turbines" dated May 2010 concludes that "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects"' and that "The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct adverse health effects. However, some people might find it annoying. It has been suggested that annoyance may be a reaction to the characteristic "swishing" or fluctuating nature of wind turbine sound rather than to the intensity of sound".

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. Further, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

April 29, 2010

Rick Martin
McLean's Mountain Windfarm Project
Box 73
Little Current, ON, P0P 1K0

Dear Mr. Martin,

In July, 2009 we wrote to Northland Power (NPI) with our concerns and questions about the proposed McLean's Mountain Wind Farm Project on Manitoulin Island. In 9 months we have received no acknowledgement of our letter, let alone responses to our questions.

We are particularly concerned about the effects of blasting the foundations for these turbines. The impact of the blasting 43 holes, which would have to be at least 1,000 cubic feet, to build the footings for the 400' high wind turbines has not been considered. The impact of disturbing the fractured limestone and the resulting impact on the Perch Lake fishery and drinking water has not been studied.

McLeans Mountain is the northerly outcrop of the Niagara Escarpment, which is protected by the Niagara Escarpment Plan in southern Ontario. It is fractured limestone. There are three communications towers up there: the tallest is 200'. Otherwise, that rock has not been disturbed for centuries.

McLean's Mountain drains into Perch Lake, which is a spring fed lake supporting important fisheries. Once the company begins to blast out the huge holes for the foundations of 43 turbines, the hydrogeology will be disturbed and the contaminated water will impact Perch Lake. Limestone aquifers generally contain high concentrations of carbon, sulphur, nickel, vanadium and kerogen. All vanadium compounds should be considered toxic. We have no information on the water quality of the McLean's Mountain aquifer. It is difficult, if not impossible, to predict how water travels through fractured limestone. Northland has not studied the Perch Lake fishery and has not done hydro-geological work on McLean's Mountain.

At Perch Lake there is a First Nations traditional ceremonial site which is used by the people of Sheguiandah to this day. According to your out-of-date map of turbine locations. 13 turbines will surround this ceremonial site. Under the Class EA "Proposed transfer of Crown Land to UCCM First Nations" ownership of this site is scheduled to be transferred to Sheguiandah F.N. Your REA makes no mention of this proposed land transfer. This is a most serious omission.

Residents on and around McLean's Mountain, including farmers, rely on well water. Their wells could become contaminated by water released during blasting. The water for our house and apiary trickles down from a series of springs along the escarpment. We urge you to do hydrogeological studies to predict the impact of the blasting on near-by wells.

There are also pockets of natural gas seeping out of the limestone in many locations on Manitoulin Island. It would be impossible to control a blast if it hits a pocket of natural gas. We urge NPI to survey McLean's Mountain for natural gas pockets and outlets, for the safety of your own employees.

The concerns of landowners about health effects, noise and property values have not been answered. The concerns of the two First Nations who oppose this undertaking have not been answered. The duty to consult with First Nations has not been met.

We strenuously oppose this project on the following grounds:

1. NPI did not comply with the minimum GEA requirements for Notice and Public Consultation.
2. There has been a significant change in the scale and scope of the undertaking.
3. NPI's bat study is invalid. The company did not study spring bat migration as recommended by MNR Sudbury.
4. NPI made NO study of the impacts from blasting 43 huge holes in McLean's Mountain. There are likely impacts on: the Perch Lake fishery, Sheguiandah F.N.,drinking water, agriculture, surface water and air quality.
5. NPI did not do a Stage 2 archeological study as recommended by its consultant.
6. NPI has not satisfied its duty to consult the three First Nations impacted by this undertaking. Two of those First Nations officially and strenuously oppose this development.
7. NPI failed to notify many landowners about its undertaking.
8. NPI falsely claims that land values will appreciate.
9. NPI has not conducted a federal EA on its submarine hydro cable crossing the navigable water of the North Channel.

We respectfully request that you reply to my concerns. Please confirm receipt of this letter.

Sincerely,

[redacted]

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns and Responses Regarding Natural Environment

Comment: *"We are particularly concerned about the effects of blasting the foundations for these turbines. The impact of the blasting 43 holes, which would have to be at least 1,000 cubic feet, to build the footings for the 400' high wind turbines has not been considered. The impact of disturbing the fractured limestone and the resulting impact on the Perch Lake fishery and drinking water has not been studied."*

"McLean's Mountain drains into Perch Lake, which is a spring fed lake supporting important fisheries. Once the company begins to blast out the huge holes for the foundations of 43 turbines, the hydrogeology will be disturbed and the contaminated water will impact Perch Lake(…). Residents on and around McLean's Mountain, including farmers, rely on well water. Their wells could become contaminated by water released during blasting (…)"

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. The project will not reduce the rate of rain water ground infiltration in the larger area. We are aware, previous to any construction; many people in the community are hauling water to their wells at various times of the year.

Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"There are also pockets of natural gas seeping out of the limestone in many locations on Manitoulin Island. It would be impossible to control a blast if it hits a pocket of natural gas. We urge NPI to survey McLean's Mountain for natural gas pockets and outlets, for the safety of your own employees."*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial tests show that the rock near the surface is fractured and permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

Additional geotechnical investigations have been initiated and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines can be erected in a variety of soil/rock conditions. The risk of turbine collapse is extremely low. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

<u>Concerns and Responses Regarding Human Health</u>

Comment: *"The concerns of landowners about health effects, noise and property values have not been answered."*

NPI Response:

The May 2010 report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH). The report concludes that "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine siting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health.

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To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. All of the proposed wind turbines are greater than 550 meters away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding First Nations

Comment: *"The concerns of the two First Nations who oppose this undertaking have not been answered. The duty to consult with First Nations has not been met"*

Comment: *"At Perch Lake there is a First Nations traditional ceremonial site which is used by the people of Sheguiandah to this day. (….) Under the Class EA "Proposed transfer of Crown Land to UCCM First Nations" ownership of this site is scheduled to be transferred to Sheguiandah F.N. Your REA makes no mention of this proposed land transfer. This is a most serious omission."*

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

Sent: Friday, April 16, 2010 7:32 AM
To: jtem@northlandpower.ca; commissioner@eco.on.ca; Agatha Garcia-Wright (ENE); rickmartin@northlandpower.ca; arlene.king@ontario.ca; info@ombudsman.on.ca; info@oahpp.ca; bduguid.mpp@liberal.ola.org; dmcguinty.mpp.co@liberal.ola.org; info@townofnemi.on.ca; minister.moe@ontario.ca; McKinnon, Don; dca@northlandpower.ca
Subject: McLeans Mountain Wind Project-Community Concerns

April, 2010
To All Government and Company Officials:
Re: McLean's Mountain Wind Project and Community Concerns
The purpose of this letter is to advise you of the many concerns that people living on and off of Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

Economic Impacts

- Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? Once the infra-structure is approved for this first project, the road is already paved for many more companies to follow. Firms such as Greenhead Energy and others will also be offered government subsidies and will easily be able to plug into the main grid (which has to first be upgraded for Northland's expansion). Vacationers and long time island residents who used to enjoy the peace and quiet of the natural world will leave and take their economic resources elsewhere.

Environmental Concerns

- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock foundation support turbines the height of a 40 storey high building over the lifespan of the

turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?

- Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone: How can Northland assure other land owners that their ground water supplies will not be changed, disappear or become contaminated with all this drilling going on over such a large area? Drilling and construction activity would definitely adversely affect underground water flow which would contaminate many spring-fed lakes, ponds and drinking water sources.

- Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?

First Nations Concerns

- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored and continues to be ignored," said Chief Shining Turtle of Whitefish River First Nation and UCCM tribal chair.
- The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK. The UCCM and the Wikwemikong Unceded First Nation all stated their opposition to the Northland power project.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

Infrasound and Human Health Impacts

- See below for details, including references. For full information, please visit www.WindVigilance.com

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland

Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McLean's Mountain Wind Farm.**

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated: "We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "… there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability.… it's ruining their lives – and it's genuine…".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines. [7], [8],[9],[10] Families including children have abandoned their homes to protect their health. This cannot be denied.

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines. [11], [12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13],[14],[15] and that wind turbine induced "Annoyance was further associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "…chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]

The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects. [19]

"Health Canada advises…that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the **McLean's Mountain Wind Farm** is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.
Specific concerns about the REA include but are not limited to:
The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.
The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.
The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.
There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.
In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.
For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment “There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits.” [22]
In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]
The request for proposal further states:
"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]
The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]
The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and “The claim that their "lives have been ruined" by the noise is not an exaggeration…” [26]
The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27],[28]
This deficiency is further illustrated by the Ministry of Environment’s January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]
It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA.

Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [32]

The research gaps include among others, investigation of 'health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development."

The World Health Organization states "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof."[33]

In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" and authoritative bodies including those in Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise. Please visit www.WindVigilance.com for full details. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours truly,

Please be advised that this letter has also been sent to:

James C. Temerty, Chairman of the Board, Northland Power Inc. (**please distribute copies to all board members),**

Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, Arlene King, Chief Medical Officer of Health, Ministry of Health and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

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[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010

http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009,
http://windvigilance.com/primer_ahe.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009
[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in different living environments
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents
[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009,
http://windvigilance.com/primer_ahe.aspx
[21] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305
[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695 www.merx.ca
[24] ibid
[25] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec
31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663
[27] Ontario Regulation 359/09 Made Under The Environmental Protection Act Renewable Energy Approvals Under Part V.0.1 of the Act, September 24, 2009
[28] “October 2008 Noise Guidelines for Wind Farms” Ontario Ministry of Environment
[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696 www.merx.ca
[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC
[31] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

[32] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010
[33] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns and Responses Regarding Economic Impacts

Comment: *"Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Concerns and Responses Regarding Natural Environment

Comment: *"Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage (…)"*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial geotechnical tests show that the rock near the surface is fractured and permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

Additional geotechnical investigations have been initiated and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines can be erected in a variety of soil/rock conditions. The risk of turbine collapse is extremely low. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

Comment: *"Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone (…)"*

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. Further, the project will not reduce the rate of rainwater ground infiltration in the larger area. Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?"*

NPI Response:

Extensive studies on the natural environment have been conducted for the proposed project. These studies include the input of the Ministry of Natural Environment (MNR) and Environment Canada (EC) to ensure that the natural environment on Manitoulin Island is protected. A Natural Environment Assessment, in consultation with the MNR and EC was also conducted for this project. The assessment concluded that the risk to rare, threatened and endangered species in the area is low and minimal significant adverse effects are anticipated. Additional field work was conducted in 2010 as per the MNR direction. Some turbines have been removed and some changes were made to the turbine and road locations to avoid wetland areas that now have to be avoided under the REA process. The results of this work will contribute to the final Environmental Management and Protection Plan (EMPP). NPI will implement mitigation measure where required. A new natural heritage assessment document has been prepared and submitted to the Ministry of Natural Resources for review and comment.

Concerns and Responses Regarding First Nations

Comment: *"At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made (…)"*

The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation (….)"

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

<u>Concerns and Responses Regarding Decreased Property Values</u>

Comment: *"There is increasing evidence that Industrial Wind Turbines (IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project (…)"*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's' Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm

(http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that "To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value."

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Infrasound and Human Health Impacts

Comment: *"(…) For full information, please visit www.WindVigilance.com"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The May 2010 report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).*
>
> *Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).*
>
> *Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance*
> *(Jakobsen 2005, Leventhall 2006) (…)."*

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

All of the proposed wind turbines are greater than 698 meters away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

Concerns and Responses Regarding Set-back Distances between Industrial Wind Turbines and Nearby Homes and Dwellings

Comment: *"The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp."*

NPI Response:

The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine sighting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

The Ontario's Chief Medical Officer of Health, Dr. Arlene King, recently sent a memorandum to all Medical Officers of Health and Environmental Health Directors stating the following about wind energy and human health: "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health.

To see the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf

To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding "Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Comment: *"(…) The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms (…)"*

NPI Response:

The Chief Medical Officer of Health (CMOH) Report "The Potential Health Impact of Wind Turbines" dated May 2010 concludes that "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects"' and that "The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct adverse health effects. However, some people might find it annoying. It has been suggested that annoyance may be a reaction to the characteristic "swishing" or fluctuating nature of wind turbine sound rather than to the intensity of sound.

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. Further, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

March 18th, 2010.

Mr. R.Martin, Manager,
McLean's Mountain Wind Farm Project
P.O. Box 73
Little Current , ON. P0P 1K0

Re: Request for a Moratorium on the Construction of the McLean's Mountain wind farm

Dear Mr. Martin.
I wish to add my voice in support of others in the Municipality of NEMI who are urging for a moratorium on the development of wind farms as is being sought. by the Municipality of West Grey. There are several reasons for such a moratorium.

First, there is mounting evidence from other areas of the world that wind farms generate low frequency sound that causes severe medical problems including high blood pressure, migraines and loss of sleep. In some cases power developers have bought back properties when the owners were no longer able or willing to stand the compromise to their health. If the incidence of medical problems was isolated one might suggest that there might be causes that were separate from the installation of a wind farm. But this is not the case. There are many such reports; sufficient in fact, to warrant a stop to wind farm development until a full, scientific study has been made by an independent authority.

Other areas of the world where wind farms have been established have done so with setbacks of 2 km rather than the 550m set out by the Ministry of the Environment. Furthermore, the setback of 550m focuses on distance from existing dwellings and not to property lines. This is a crucial point because land owners who wish to subdivide their land for future development will most likely never be able to sell that land.

Second, over and above the issue of sound is that of vibration. Another correspondent, John, N. Strickland, a retired geologist has described the nature of the McLean's Mountain rock structure. One of the effects of the erosion that Mr. Strickland mentions has led to the plateau having a soil cover that is frequently less than a metre in depth. Turbines will be anchored to the rock and the vibration will be propagated for a considerable distance. No where have I seen the issues of propagation distance and intensity addressed with respect to the present proposed wind farm

Third, is the issue of who is going to accept the financial responsibility for compensation in the case of illness, loss of property value, or purchase of the property at the market value prior to the construction of a wind farm in the case when the occupants are unable

to continue to live in their home owing to the suffering that sound and vibration have caused.

Fourth, Northland Power down-played other issues at their presentation at Little Current on June 25th, 2009. One issue concerns the access roads that will be necessary to move the large crane, and the turbine itself, to each construction site. Whereas the actual site of each turbine was presented nothing was said about the access roads. According to the map presented in the consultant's report there will be about 27 km of new, gravel road constructed with a width of 10 metres. This amounts to 27 ha of land that will need to be restored to its previous state. The consultants only state that upon decommissioning the sites will be "rehabilitated and returned to their previous state". Re-seeding is mentioned but no species are given. Are we to understand that re-seeding will be with native species? What will be done with the large quantity of gravel that was used to build the roads? Where will soil be obtained to allow the establishment of vegetation? In my opinion, based upon my knowledge of what mining companies are required to submit with respect to restoration of land at the time of mine closure, the information given by the consultants is simply not sufficiently detailed.

I am writing as a part-time resident of Howland Township and as an environmental biologist at Laurentian University in Sudbury, ON. My wife and I purchased property and built and all-season dwelling so as to be able to retreat frequently from our busy lives and enjoy the solitude and silence that Manitoulin Island provides.

I am not against wind power as an alternate source of energy and have visited large wind farms in Alberta and in South Australia. They share one thing in common and that is that they are a great distance from human habitation. Such is not the case with McLean's Mountain. The population may not be dense but it is there.

The consultants seem to have drawn much of their report from existing reports and literature. Certainly, no one made any effort to contact me as a property owner and to request my opinions. Clearly, there has been an effort to address the potential danger to wildlife in the case of bats and birds and other species at risk such as Blandings turtle. There is no mention however, of another species, and one that is endangered; namely, the eastern cougar. This animal is slowly making a come-back in eastern Canada and nothing should be done to compromise its recovery. There is no question of this animal's presence on Manitoulin Island because I have personally photographed the tracks and had an independent authority verify my identification. I find it strange that the consultants have made no mention of cougars and the possible impact that the wind farm would have on its movements and ability to hunt successfully.

The points that I have made above suggest the need for a moratorium on development until such time as all the concerns have been addressed in such a way that none of the citizens who will be affected by the construction of a wind farm are victimized.

Yours sincerely,

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

Re: McLean's Mountain Wind Project
Request for a Moratorium on the Construction of the McLean's Mountain wind farm

Thank you for your letter of March 18th, 2010 (copy enclosed) expressing your concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns Regarding Human Health

Comment: *"First, there is mounting evidence from other areas of the world that wind farms generate low frequency sound that causes severe medical problems including high blood pressure, migraines and loss of sleep (…)"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The recent (May 2010) report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).*
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> *Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).*
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> *Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance*
> *(Jakobsen 2005, Leventhall 2006) (…)."*

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

All of the proposed wind turbines are greater than 698 meters away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

Concerns Regarding Setbacks

Comment: *"Other areas of the world where wind farms have been established have done so with setbacks of 2 km rather than the 550m set out by the Ministry of the Environment. Furthermore, the setback of 550m focuses on distance from existing dwellings and not to property lines. This is a crucial point because land owners who wish to subdivide their land for future development will most likely never be able to sell that land"*

NPI Response:
The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act*. NPI is obligated to meet provincially identified setbacks. NPI is siting all of the proposed wind turbines at least 698 meters from sensitive noise receptors and has confirmed that the final wind turbine layout meets all REA setbacks.

Concerns Regarding Natural Environment

Comment: *"Second, over and above the issue of sound is that of vibration. Another correspondent, John, N. Strickland, a retired geologist has described the nature of the McLean's Mountain rock structure. One of the effects of the erosion that Mr. Strickland mentions has led to the plateau having a soil cover that is frequently less than a metre in depth. Turbines will be anchored to the rock and the vibration will be propagated for a considerable distance. No where have I seen the issues of propagation distance and intensity addressed with respect to the present proposed wind farm"*

NPI Response:
The initial tests indicate that there is nothing inherent in the geology of the project area to suggest that vibration propagation will be an issue. Detailed engineering that will be conducted for the proposed project will consider the propagation of vibrations. NPI will also ensure that each wind turbine is tested prior to construction to confirm that geological conditions are suitable.

Concerns Regarding Property Values

Comment: *"Third, is the issue of who is going to accept the financial responsibility for compensation in the case of illness, loss of property value, or purchase of the property at the market value prior to the construction of a wind farm in the case when the occupants are unable to continue to live in their home owing to the suffering that sound and vibration have caused."*

NPI Response:
Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's' Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther

Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns Regarding Construction Activities

Comment: *"Fourth, Northland Power down-played other issues at their presentation at Little Current on June 25th, 2009. One issue concerns the access roads that will be necessary to move the large crane, and the turbine itself, to each construction site. Whereas the actual site of each turbine was presented nothing was said about the access roads (….)."*

NPI Response:

During the project construction phase truck traffic will increase along Highway 540, Highway 6 as well as the local roads within the project area in order to deliver turbine parts and accessories to the project. There will also be an increase in regular vehicular traffic as construction workers drive to the construction site. Project related traffic volumes will be substantially reduced after all turbine components are on site. Any damaged roads will be repaired to their pre-construction condition or better at the expense of NPI. Once in operation project related traffic will be limited to maintenance staff. Some vegetation disturbance and removal will occur during the construction phases of the proposed wind farm. Vegetation survey field work has been conducted to aid in the positioning/routing of the project components. The nature of the anticipated impacts is documented in the ESR (2009) and further elaborated in the supplementary REA documentation. NPI will minimize the removal of vegetation and where required, replant areas with native vegetation to maintain biodiversity.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]
P0P 1K0

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your email of March 18th, 2010 (copy enclosed) on behalf of Ken Ferguson, expressing concern regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns and Responses Regarding Tourism and Economic Impacts

Comment: *"(...)this organization feels strongly that prominently located wind turbine farms, such as the one currently at issue … will detract from tourist's enjoyment of Manitoulin and will, in fact deter them from choosing our area as a holiday destination."*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Perceptions regarding the visibility of wind turbines are subjective. NPI, in the siting of the turbines, has attempted to balance the visibility of the turbines with maximizing the output of the turbines. Visual simulations have been prepared as part of the Environmental Screening process. The visual simulations are being updated to reflect the new layout. The machines used for this project will blend in well with the surrounding area.

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

[redacted]

Sent: Thursday, April 15, 2010 10:29 PM
To: jtem@northlandpower.ca; commissioner@eco.on.ca; agatha.garciawright@ontario.ca; rickmartin@northlandpower.ca; arlene.king@ontario.ca; info@ombudsman.on.ca; info@oahpp.ca; bduguid.mpp@liberal.ola.org; dmcguinty.mpp.co@liberal.ola.org; info@townofnemi.on.ca; minister.moe@ontario.ca; McKinnon, Don; dca@northlandpower.ca
Subject: Wind turbines on Manitoulin Island

April, 2010

To All Government and Company Officials:

Re: McLean's Mountain Wind Project and Community Concerns

The purpose of this letter is to advise you of the many concerns that people living on and off of Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

Economic Impacts

- Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? Once the infra-structure is approved for this first project, the road is already paved for many more companies to follow. Firms such as Greenhead Energy and others will also be offered government subsidies and will easily be able to plug into the main grid (which has to first be upgraded for Northland's expansion). Vacationers and long time island residents who used to enjoy the peace and quiet of the natural world will leave and take their economic resources elsewhere.

Environmental Concerns

- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock

foundation support turbines the height of a 40 storey high building over the lifespan of the turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?

- Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone: How can Northland assure other land owners that their ground water supplies will not be changed, disappear or become contaminated with all this drilling going on over such a large area? Drilling and construction activity would definitely adversely affect underground water flow which would contaminate many spring-fed lakes, ponds and drinking water sources.
- Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?

First Nations Concerns

- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored and continues to be ignored," said Chief Shining Turtle of Whitefish River First Nation and UCCM tribal chair.
- The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK. The UCCM and the Wikwemikong Unceded First Nation all stated their opposition to the Northland power project.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

Infrasound and Human Health Impacts

- See below for details, including references. For full information, please visit www.WindVigilance.com

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McLean's Mountain Wind Farm.**

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated:

"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "… there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability…. it's ruining their lives – and it's genuine…".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines. [7], [8],[9],[10] Families including children have abandoned their homes to protect their health. This cannot be denied.

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines. [11], [12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13],[14],[15] and that wind turbine induced "Annoyance was further associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "…chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]
The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects. [19]

"Health Canada advises…that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the **McLean's Mountain Wind Farm** is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.

Specific concerns about the REA include but are not limited to:

The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.

The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.

The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.

There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.

In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.

For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment "There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits." [22]

In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]

The request for proposal further states:

"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]

The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]

The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and “The claim that their "lives have been ruined" by the noise is not an exaggeration…” [26]

The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27],[28]
This deficiency is further illustrated by the Ministry of Environment’s January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]

It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA.

Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [32]

The research gaps include among others, investigation of ‘health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development.”

The World Health Organization states “In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof.”[33]

In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled “Wind Turbine Sound and Health Effects” and authoritative bodies including those in

Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise. Please visit www.WindVigilance.com for full details. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours truly,

[redacted]

Please be advised that this letter has also been sent to:

James C. Temerty, Chairman of the Board, Northland Power Inc. (**please distribute copies to all board members),**

Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, Arlene King, Chief Medical Officer of Health, Ministry of Health and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

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[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010 http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009, http://windvigilance.com/primer_ahe.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009
[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-

15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in different living environments
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents
[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009,
http://windvigilance.com/primer_ahe.aspx

[21] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305
[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695 www.merx.ca
[24] ibid
[25] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec 31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663
[27] Ontario Regulation 359/09 Made Under The Environmental Protection Act Renewable Energy Approvals Under Part V.0.1 of the Act, September 24, 2009
[28] "October 2008 Noise Guidelines for Wind Farms" Ontario Ministry of Environment
[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696 www.merx.ca
[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC
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[32] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010
[33] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Comment: *"Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation

activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Concerns and Responses Regarding Natural Environment

Comment: *"Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage (…)"*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial geotechnical tests show that the rock near the surface is fractured and permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

Additional geotechnical investigations have been undertaken and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

can be erected in a variety of soil/rock conditions. The risk of turbine collapse is extremely low. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

Comment: *"Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone (…)"*

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. We are aware, previous to any construction; many people in the community are hauling water to their wells at various times of the year. Further, the project will not reduce the rate of rainwater ground infiltration in the larger area. Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?"*

NPI Response:

Extensive studies on the natural environment have been conducted for the proposed project. These studies include the input of the Ministry of Natural Environment (MNR) and Environment Canada (EC) to ensure that the natural environment on Manitoulin Island is protected. A Natural Environment Assessment, in consultation with the MNR and EC was also conducted for this project. The assessment concluded that the risk to rare, threatened and endangered species in the area is low and minimal significant adverse effects are anticipated. Additional field work was conducted in 2010 as per the MNR direction. Some turbines have been removed and some changes were made to the turbine and road locations to avoid wetland areas that now have to be avoided under the REA process. The results of this work will contribute to the final Environmental Management and Protection Plan (EMPP). NPI will implement mitigation measure where required. A new natural heritage assessment document has been prepared and submitted to the Ministry of Natural Resources for review and comment.

<u>Concerns and Responses Regarding First Nations</u>

Comment: *"At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made (…)"*

Comment: *The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and*

First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation (….)"

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

Concerns and Responses Regarding Decreased Property Values

Comment: *"There is increasing evidence that Industrial Wind Turbines (IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project (…)"*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of

Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that *"*To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value.*"*

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Infrasound and Human Health Impacts

Comment: *"(…) For full information, please visit www.WindVigilance.com"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The May 2010 report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).*
>
> *Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).*
>
> *Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance*
> *(Jakobsen 2005, Leventhall 2006) (…)."*

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

All of the proposed wind turbines are greater than 630 meters away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

Concerns and Responses Regarding Set-back Distances between Industrial Wind Turbines and Nearby Homes and Dwellings

Comment: *"The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp."*

NPI Response:

The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine sighting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

The Ontario's Chief Medical Officer of Health, Dr. Arlene King, recently sent a memorandum to all Medical Officers of Health and Environmental Health Directors stating the following about wind energy and human health: "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health. To see the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf
To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding "Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Comment: ***"****(…) The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms (…)"*

NPI Response:

The Chief Medical Officer of Health (CMOH) Report "The Potential Health Impact of Wind Turbines" dated May 2010 concludes that "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects"' and that "The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct adverse health effects. However, some people might find it annoying. It has been suggested that annoyance may be a reaction to the characteristic "swishing" or fluctuating nature of wind turbine sound rather than to the intensity of sound.

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. Further, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

①

[redacted]

Please distribute to all board members

Northland Power Inc.
James C. Temerty, Chairman of the Board
30 St. Clair Ave. W.
Suite 1700
Toronto, Ontario M4V 3A1

Dear Sir or Madam:

Thank you for taking time to read my letter. I wrote a similar letter to an Agatha Garcia-Wright in August 2009 but did not receive any response nor acknowledgement of it. Recently, I have been directed to pass on my concerns to you.

Our family is now a sixth generation family on Manitoulin Island here in Honora. Our farm is right beside the escarpment where the turbines are to perch. Until a few months ago, last August, we were totally unaware that there would be any windmills near our farm. Why were we never notified of something which will drastically affect us for the rest of our life and that of our children and grandchildren.

I'll explain how I learned for sure about the windmill plan. One day, last summer, our dog barked a greeting to a man who stood on our driveway looking eastward across our field onto the beautiful hill on our neighbours uninhabited ranch/farm. (He has cattle part-time there.) When I spoke to this man, he simply stated that he was here to take GPS readings of the hills that were in the region of the windfarms. At that point, I had been under the impression that there was a rumour of a plan for a few (6 or 7 perhaps) windmills on the McLean Mountain area down near Little Current, 20 km away, hidden in some empty bush far

(2)

from anyone to be used as a pilot project. Anyway, this gentleman told me that he was a farmer from Northern Ontario and that I need not worry because I would really only see 3 or 4 turbines from my window. (Now it seems the plan is for many more there). I do not remember the rest of his exact words but he was apparently trying to assure me that the prestine beauty still would be unchanged.

Although I expect none of my comments/concer make sense to you or anyone else, I'll still tell you. I have pictures of the rainbows over that hill and gorgeous streams of sunlight on the untouched beauty of the reds and golds of autumn. From there we watch God's replenishing power in the spring (like right now) as the first green tinge of poplars give way to the bright leaves of the birches, maples, etc. and finally the escarpment spends its summer in rich green. Who would ever believe that we, our children and grandchild would be forced to look upon ugly monster towering before our eyes.

I felt rather shocked at the information which I heard from the man in our yard as we continued to stand and talk. I mentio that my daughter, who owns Honora Bay Riding Stable, had recently heard that there were to be many turbines on the bluf and she was upset at their proximity to her overnight trails. Her riding trails and small camp property on Beach Lake is over that exact bluff.

"Oh, yes," he said, "I was just over at he

been talking to her and she gave me an earful." (I remember those exact words.) Of course I did not know that as our home farm is not in view of the part of the farm where Kyla has her stable and horses.

I then asked them which type of blade was to be used, a two or three blade. Since my husband and I had recently been in Europe and had gleaned information that the two blade were the ones being used now I was surprized at his answer of three and wondered at the regression to three blade. Apparently, European studies show less environmental damage, less noise and equal power with two bleades. I took pictures of the massive parts being loaded onto barges heading into the North Sea to be planted there instead of on land as they are now finding growing ill health problems from the motion, noise, lights and changed air patterns anywhere near people. The gentleman again "assured" me that three blades were better and quieter. I wonder where he got his information.

Now, about efficiency. Why is anyone daring to consider such putting up such health and environmental hazards as these huge windmills are proving to be when they are so grossly expensive and yet so ineffecient in their purpose of providing power. Why not do some studies, prepare smaller, efficient windpower sources and probably only need a few turbens? Doesn't it also make more sense to use something like our re-usable sunshine power which God provides for solar energy

(4)

with little noticable damage compared to those massive expensive semi-useless mills.

Another thing about these windmill farms which puzzles me is why none of the full watts of energy is going to help the local people on Manitoulin. It seems we will continue to pay premium plus prices for power while all that is produced here will be shipped out. That is not how our ancestors did things here. They worked together for the benefit of their family and community. Manitoulin still wants to do that. Even Alberta, etc. with their oil first looks after their local people. Why not here?

I am also concerned that if one big windmill farm is blowing to the east right beside our home that some government influenced company will expropriate our lovely hill on the west overlooking the North Channel too. If so, our daughter's recently built horse stable and business will be wrecked, our cows will have no pasture, our farm will be worthless and our grandchildren will no longer have the freedom to roam the fields, pick the berries or wild apples or sled down the hills. We also know that Kyla will again experience those headaches, insomnia palpatations and illness she experienced while working in Europe near turbines.

I too have health issues since childhood with anything that turns before my eyes or which turns me. Headaches, nausea and fainting haunts me with motion.

(5)

We have two granddaughters living part time in the bustle of Southern Ontario. We regularly remove them from the unhealthy environment of the city. After a few weeks on Manitoulin we return them unstressed, rosy-cheeked full of energy and reeking like the horses they have been riding. There was an article handed out at one of the council meetings this winter, from the Globe and Mail I think, it basically said that the noise level and flashes of lights caused by a windmill farm would be equal to what city people regularly experience and live with. Hard to awful to have that on Manitoulin. It sure did not assure me that windmill farms were not a health hazard. Quite the opposite!! Manitoulin as a natural SPA. We have definite environmental benefits to enjoy here and share with you. Please do not allow them to be destroyed for the residents and visitors who need quietness, darkness, natural fresh air and the gentle beauty here.

It seems that the owners and caregivers of this wonderful island do not count enough to even be asked whether they want to be sacrificed for the large populations who do not care whether they decimate our peace or not as long as they have comfort from our wind produced hydro.

Now, I have a very important request for you. Please give us, in writing, a

complete enverionmental assessment with assurance that our well, which is fed from the escarpment, will not have any damage in quanety nor quality from your drilling, blasting, construction, etc. This well provides clear, clean, wonderful water from those rocks and is pumped through our field to the house and barn. You must be sure there will be no harm to it or to other wells from our neighbours either.

I realize that my letter is rather lengthy but as a co-farm owner, Registered Nurse, mother and grandmother, who it seems may suddenly be forced to contend with flashing lights, loud buzzing turbines, see great swaths of trees removed, and live with these effects of "progress", I felt it was my duty to write when I usually stay out of politics

I am looking forward to your expected reply.

Yours truly,

[redacted]

By the way, I later learned that "the man" who stopped was named, Rick Austin

April, 2010

[redacted]

To All Government and Company Officials: Please read and consider our very heartfelt concerns regarding this devastating project planned for our doorsteps. It is unbelievable that anyone could even think of killing our lifestyle.

Re: McLean's Mountain Wind Project and Community Concerns

The purpose of this letter is to advise you of the many concerns that people living on and off of Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

Economic Impacts

- Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? Once the infra-structure is approved for this first project, the road is already paved for many more companies to follow. Firms such as Greenhead Energy and others will also be offered government subsidies and will easily be able to plug into the main grid (which has to first be upgraded for Northland's expansion). Vacationers and long time island residents who used to enjoy the peace and quiet of the natural world will leave and take their economic resources elsewhere.

Our farm sits directly under the turbine plans. There goes any hope of maintaining its value

Environmental Concerns

- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock foundation support turbines the height of a 40 storey high building over the lifespan of the turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?
- Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone: How can Northland assure other land owners that their ground water supplies will not be changed, disappear or become contaminated with all this drilling going on over such a large area? Drilling and construction activity would definitely adversely affect underground water flow which would contaminate many spring-fed lakes, ponds and drinking water sources.
- Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?

* Our well is fed by the rocks on the escarpment. Please prove by environmental studies and assure us in writing that no adverse affects will occur to our well water.

First Nations Concerns

- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate

consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored and continues to be ignored," said Chief Shining Turtle of Whitefish River First Nation and UCCM tribal chair.

- The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK. The UCCM and the Wikwemikong Unceded First Nation all stated their opposition to the Northland power project.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

How true for us. Our pristine view of the North Channel and the escarpment will be destroyed. We have no retirement fund. Our farm is our investment. We never will sell for its value.

Infrasound and Human Health Impacts

- See below for details, including references. For full information, please visit www.WindVigilance.com

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McLean's Mountain Wind Farm.**

Please put my families name on your records for this. There will be illness from movement lights and noise

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated:

"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "... there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability....it's ruining their lives – and it's genuine...".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines.[7,8,9,10] Families including children have abandoned their homes to protect their health. This cannot be denied.

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines. [11, 12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13,14,15] and that wind turbine induced "Annoyance was further

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[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., *Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for* American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010 http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009, http://windvigilance.com/primer_ahe.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009
[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in *different living environments*
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents

associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "...chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]
The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects.[19]
Please think what those disturbances can do to our children's sons
"Health Canada advises...that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the **McLean's Mountain Wind Farm** is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.

Specific concerns about the REA include but are not limited to:

The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.

The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.

The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.

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[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009, http://windvigilance.com/primer_ahe.aspx

There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.

In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.

For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment "There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits." [22]

In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]

The request for proposal further states:

"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]

Please be aware that we live on Manitoulin to be away from noise of industry. We accept lower incomes and work long hours in the fresh air in order not to have city like noise

The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]

The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and "The claim that their "lives have been ruined" by the noise is not an exaggeration…" [26]

The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27,28]
This deficiency is further illustrated by the Ministry of Environment's January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]

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[21] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305
[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695
www.merx.ca
[24] ibid
[25] W. David Colby, M.D et al., *Wind Turbine Sound and Health Effects, An Expert Panel Review 2009*, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec 31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663
[27] Ontario Regulation 359/09 *Made Under The Environmental Protection Act Renewable Energy Approvals Under Part V.0.1 of the Act*, September 24, 2009
[28] "October 2008 Noise Guidelines for Wind Farms" Ontario Ministry of Environment
[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696
www.merx.ca

It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA. It is proven facts that city dwellers living with noise have higher stress levels and health issues Do not tell us with them too.
Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [32]

The research gaps include among others, investigation of 'health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development."

The World Health Organization states "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof."[33] We need to hear the frogs and birds not turbines.
In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" and authoritative bodies including those in Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise.

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[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC
[31] *World Health Organization, Guidelines for Community Noise.1999*
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[32] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010
[33] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

Please visit www.WindVigilance.com for full details. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours truly, a very concerned

[redacted]

James C. Temerty, Chairman of the Board, Northland Power Inc. **(please distribute copies to all board members),**

Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, Arlene King, Chief Medical Officer of Health, Ministry of Health and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

Please note: I left the city area of Toronto nearly 40 years ago to farm in the quietness of Manitoulin. Now you want to put city type lights and noise right beside me here in Honora that ruins my lifestyle, home and retirement as well as those of our kids and grandkids. Please read this carefully. Thanks

April, 2010

To All Government and Company Officials:

Re: McLean's Mountain Wind Project and Community Concerns

The purpose of this letter is to advise you of the many concerns that people living on and o[redacted] Manitoulin Island have regarding the Industrial Wind Turbine Project that is being proposed by **Northland Power Inc.** As one of many concerned citizens, I would like to see the following issues addressed in full prior to any construction on this project beginning:

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- Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage. A camp in Bidwell road area is supplied by gas from the ground. A well driller in NEMI had his rig and a recently constructed large new home burn up when he was drilling for water well and struck a gas pocket. When Northland does test drilling and then digs large holes to form the bases for 43 separate turbines, such explosions could easily occur threatening project employees, equipment and nearby habitats. How will the company prevent and/or deal with such unplanned explosions? Will a soft limestone rock foundation support turbines the height of a 40 storey high building over the lifespan of the turbine? If they do stand for 20 years, who will pay for the turbines to be taken down when they have outlived their usefulness?
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- At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate

consultation with Island First Nations has been made. A legal requirement of the Ontario government, as proclaimed by the Supreme Court of Canada, consultation, "has been ignored and continues to be ignored," said Chief Shining Turtle of Whitefish River First Nation and UCCM tribal chair.

- The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation. Recently the Sheguiandah First Nation supported this resolution made by AOK. The UCCM and the Wikwemikong Unceded First Nation all stated their opposition to the Northland power project.

Decreased property values

- There is increasing evidence that Industrial Wind Turbines(IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project. Many people who have tried to move away from IWT's have found themselves unable to sell their properties. Others who have invested their life savings in their home or farm find they cannot afford to sell. This is a particularly bad predicament for those who are experiencing adverse health effects due to their close proximity to Industrial Wind Turbines.

Infrasound and Human Health Impacts

- See below for details, including references. For full information, please visit www.WindVigilance.com

Set-back distances between Industrial Wind Turbines and nearby homes and dwellings

- The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp.

Re: Response to the Project Proposal and the new Renewable Energy Approval application regarding Adverse Health Effects and Industrial Wind Turbines

Further to these concerns, I would like to advise Northland Power Inc. and any other corporation, individual, consulting group, government ministry or agency involved in the obtainment and or granting of licence that you will be held responsible if I or any of my family members or group suffer adverse health effects or other negative consequences as a result of exposure to the industrial wind turbines in the **McLean's Mountain Wind Farm.**

The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.[1]

[1] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association

In a radio interview an author of the A/CanWEA Panel Review W. David Colby, M.D. stated:

"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."[2]

The A/CanWEA Panel Review acknowledges wind turbine noise induced symptoms may include palpitations, insomnia, nose bleeds, dizziness, nausea, eye strain, feeling vibration and headache. [3]

In 2010 Geoff Leventhall an author of the A/CanWEA Panel Review is quoted as stating "... there was no doubt people living near the turbines suffered a range of symptoms, including abnormal heart beats, sleep disturbance, headaches, tinnitus, nausea, visual blurring, panic attacks and general irritability....it's ruining their lives – and it's genuine...".[4]

The A/CanWEA Panel Review does not provide any science based guidelines that would mitigate these health risks.[5]

The Ontario Ministry of Health and Long Term Care also acknowledge wind turbines may cause annoyance, stress and sleep disturbance.[6]

Globally there are people reporting adverse health effects from exposure to industrial wind turbines.[7,8,9,10] Families including children have abandoned their homes to protect their health. This cannot be denied.

In Ontario there are now over 100 family members reporting adverse health effects from exposure to industrial wind turbines.[11, 12]

Peer reviewed studies of European industrial wind turbine facilities have documented high annoyance and sleep disturbance in respondents.[13,14,15] and that wind turbine induced "Annoyance was further

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[2] W. David Colby, M.D., Sounding Board, 97.9 FM The Beach December 17, 2009
[3] W. David Colby, M.D et al., *Wind Turbine Sound and Health Effects, An Expert Panel Review 2009*, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[4] Countryside News, Wind turbines set to get bigger, January 28 2010 http://www.walesonline.co.uk/countryside-farming-news/countryside-news/2010/01/28/wind-turbines-setto-get-bigger-91466-25701853/
[5] W. David Colby, M.D et al., Wind Turbine Sound and Health Effects, An Expert Panel Review 2009, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[6] Arlene King M.D., Ontario Ministry of Health and Long Term Care Memorandum, October 21, 2009, http://windvigilance.com/primer_ahc.aspx
[7] Amanda Harry M.D., Wind Turbines Noise and Health, 2007 UK
[8] Michael A. Nissenbaum M.D., http://windvigilance.com/mars_hill.aspx
[9] WindVOiCe© http://windvigilance.com/
[10] Nina Pierpont M.D., Wind Turbine Syndrome, 2009
[11] WindVOiCe© http://windvigilance.com/
[12] Hansard Reports, proceedings from April 15th, and April 16th , 2009 The Green Energy Act, Bill 150, Standing Committee on General Government, Ontario http://www.ontla.on.ca/web/committee-proceedings/committee_transcripts_details.do?locale=en&Date=2009-04-15&ParlCommID=8856&BillID=2145&Business=&DocumentID=23801
[13] Pedersen, E. and K. Persson Waye. 2004. Perception and annoyance due to wind turbine noise: A dose–response relationship, Journal of the Acoustical Society of America 116: 3460–3470.
[14] Pedersen, E. and K. Persson Waye. 2007. Wind turbine noise, annoyance and self-reported health and well being in *different living environments*
[15] Pedersen et al., 2008,Project WINDFARMperception Visual and acoustic impact of wind turbine farms on residents

associated with lowered sleep quality and negative emotions. This, together with reduced restoration possibilities may adversely affect health." [16]

Annoyance may adversely affect physiological health. Research indicates that for "...chronically strong annoyance a causal chain exists between the three steps health – strong annoyance – increased morbidity."[17]
The subjective experience of noise annoyance and stress can, through central nervous processes, lead to an inadequate neuro-endocrine reaction and finally to regulation diseases.[18]

The World Health Organization recognizes annoyance and sleep disturbance as adverse health effects.[19]

"Health Canada advises...that there are peer-reviewed scientific articles indicating that wind turbines may have an adverse impact on human health."[20]

The Renewable Energy Application (REA) and proposal for the **McLean's Mountain Wind Farm** is inadequate and does not specifically address the risk of adverse human health effects associated with the operations of industrial wind turbines.

Therefore, this project cannot be approved.

Specific concerns about the REA include but are not limited to:

The REA does not specifically discuss the risk of human adverse health effects from exposure to industrial wind turbine operations. The REA does not expressly require **Northland Power Inc.** to address the risk of human adverse health effects from exposure to industrial wind turbine operations. This is a flaw in the REA process.

The ability of those individuals to rely on the shielding effect of an environmental assessment (REA) is greatly diminished by the elimination of the awareness of any flaws in the assessment procedure or grant of licence. It has been stated that such an awareness should trigger an intensive exercise of due diligence to ascertain and deal with the potential risks to others of the project. The REA does not address how the project proponent **Northland Power Inc.** intends to prevent the widely acknowledged wind turbine induced adverse health effects such as annoyance, stress and sleep disturbance and adverse physiological and psychological symptoms.

The REA indicates the **Northland Power Inc.** intends to adhere to Ontario wind turbine noise guidelines and regulations. **Northland Power Inc.** is advised that adherence to government regulations does not guarantee that individuals will not experience adverse health effects and therefore does not remove responsibility.

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[16] Eja Pedersen and Kerstin Persson Waye ,Wind turbine noise, annoyance and self-reported health and well-being in different living environments, February, 2007
[17] Niemann, H, et al., WHO LARES Final report Noise effects and morbidity, 2004
[18] Maschke, C., et al Health Effects of Annoyance Induced by Neighbour Noise, Noise Control Engineering Journal, 2007, 55(3): 348-356.
[19] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[20] Safe Environs Program, Health Canada Environmental Assessment Nova Scotia, August 6, 2009, http://windvigilance.com/primer_ahe.aspx

There is no scientific evidence that the current Ministry of Environment wind turbine noise guidelines and regulations are adequate to protect Ontario individuals from suffering wind turbine induced adverse health effects.

In addition the current Ministry of Environment wind turbine noise guidelines and regulations fail to incorporate key Noise Management strategies and protocols endorsed by the World Health Organization.

For example the World Health Organization considers enforcement of health based noise guidelines imperative to health protection.[21] According to the Ontario Ministry of Environment "There is currently no scientifically accepted field methodology to measure wind turbine noise to determine compliance or non compliance with a Certificate of Approval limits." [22]

In a January 2010 request for proposal issued by The Ministry of Environment it states "Unlike typical industrial noise sources, measurement of audible noise from wind turbines in general raises technical challenges" [23]

The request for proposal further states:

"...the MOE Noise Guidelines for Wind Farms, October 2008 do not contain a measurement method for assessing the actual noise impact." and that "The Ministry requires a consultant to assist in the development of a measurement procedure to assess noise compliance of existing wind farms with the applicable sound level limits"[24]

The A/CanWEA Panel Review also acknowledges that wind turbine low frequency noise may cause annoyance.[25]

The physiological and psychological symptoms caused by low frequency noise annoyance can be serious and "The claim that their "lives have been ruined" by the noise is not an exaggeration..." [26]

The current Ministry of Environment wind turbine noise guidelines and regulations do not have any science based guidelines or regulations to protect individuals from the adverse health effects of wind turbine low frequency noise. [27,28]
This deficiency is further illustrated by the Ministry of Environment's January, 2010 request for proposal to solicit assistance in "determining how or whether to regulate low frequency noise emissions from wind turbines".[29]

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[21] World Health Organization, Guidelines for Community Noise,1999 http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[22] Correspondence from Ministry of Environment Sept 30, 2009 ENV1283MC2009-4305
[23] MERX 189608: MGS - RFP Provision of Expert Advice on Measuring Audible Noise from Wind Turbines - OSS-078695 www.merx.ca
[24] ibid
[25] W. David Colby, M.D et al., *Wind Turbine Sound and Health Effects, An Expert Panel Review 2009*, Prepared for American Wind Energy Association and Canadian Wind Energy Association
[26] Leventhall HG. Low frequency noise and annoyance. Noise Health [serial online] 2004 [cited 2009 Dec 31];6:59-72. Available from: http://www.noiseandhealth.org/text.asp?2004/6/23/59/31663
[27] Ontario Regulation 359/09 Made Under The *Environmental Protection Act* Renewable Energy Approvals Under Part V.0.1 of the Act, September 24, 2009
[28] "October 2008 Noise Guidelines for Wind Farms" Ontario Ministry of Environment
[29] MERX 189612: MGS - RFP Provision of Expert Advice on Low Frequency Noise from Wind Turbines - OSS-078696 www.merx.ca

It is acknowledged that wind turbine shadow flicker may cause annoyance in humans.[30] Annoyance is an adverse health effect.[31] In the past Ontario wind energy projects have included Shadow Flicker Reports as part of their Environmental Screening Reports / Environmental Review Reports. The REA does not require the wind energy proponent to address the risk of shadow flicker. A shadow flicker report based on authoritative guidelines designed to protect human health must be conducted before the **Northland Power Inc.** can be approved.

The current Ontario wind turbine noise guidelines or regulations are based on conservative computer modelling. They are not based on independent third party human health studies designed to protect human health. The MOE has not provided peer-reviewed scientific evidence detailing how the guidelines or regulations were derived. The MOE has not provided peer-reviewed scientific evidence to demonstrate that a minimum 550 m setback will protect humans from the acknowledged adverse physiological and psychological effects associated with industrial wind turbines. According to the MOE 2008 Guidelines, the noise limits allow up to 51 dBA at 10 m/s which is over a 10 fold increase in acoustic energy from that of 40 dBA.

Dr. R. Copes, member of the Ontario Agency for Public Health and Promotion, along with others have identified a number of research gaps related to industrial wind turbines and related adverse health effects. [32]

The research gaps include among others, investigation of 'health effects from long-term exposure to low levels of low frequency sound…practical measurement methods for attributing sound specifically to wind turbines…impact of wind turbine sound on sleep physiology…epidemiological data to assess health status before and after wind farm development."

The World Health Organization states "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be take to protect the public health, without awaiting the full scientific proof."[33]

In summary the American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" and authoritative bodies including those in Ontario acknowledge that industrial wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms.

The government of Ontario has been advised about these adverse health effects and cannot claim ignorance. The REA ignores the risks to health and is an unconscionable approval process knowingly supported by the Ontario government.

Northland Power Inc. cannot proceed until the independent 3rd party human health studies have been conducted to determine authoritative setbacks and noise levels including that of low frequency noise.

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[30] National Research Council (NRC). Environmental Impacts of Wind-Energy Projects, 2007, NRC, Washington, DC
[31] World Health Organization, *Guidelines for Community Noise*,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1
[32] National Collaborating Center for Environmental Health, Wind Turbines and Health by Karen Rideout, Ray Copes, Constance Bos, January 2010
[33] World Health Organization, Guidelines for Community Noise,1999
http://www.euro.who.int/mediacentre/PR/2009/20091008_1

Please visit www.WindVigilance.com for full details. I look forward to receiving a response, and/or at very least acknowledgement of receipt of my comments.

Yours tr[redacted]

Please be advised that this letter has also been sent to:

James C. Temerty, Chairman of the Board, Northland Power Inc. **(please distribute copies to all board members),**

Gord Miller, Environmental Commissioner of Ontario, Ministry of the Environment
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals Branch, Rick Martin, McClean's Mountain Wind Farm, *Arlene King, Chief Medical Officer of Health, Ministry of Health* and Long Term Care Public Health Division, Andre Marin, Ombudsman of Ontario, (please apply to file # 222-520) The Ontario Agency for Health Protection and Promotion, Brad Duguid Ministry of Energy and Infrastructure, Dalton McGuinty, Premier, The Town of North Eastern Manitoulin Island, John Gerretsen, Ministry of Environment, Don McKinnon Consulting, and David Cheung-Atkinson, Project Manager, Northland Power Inc.

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

Concerns and Responses Regarding Economic Impacts

Comment: *"Manitoulin is a tourist based economy: With the Ontario Power Authority having just approved 60 MW of the McLean's Mountain project, with another 40 MW awaiting approval and another 100+ MW for future expansion as per the Ontario Power Authority web site, how can Northland and government officials assure residents and visitors that this island will not soon be covered with hundreds of Industrial Wind Turbines? (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on tourism and recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Concerns and Responses Regarding Natural Environment

Comment: *"Soft rock and gas pockets all over the island: Manitoulin is known locally for the existence of extensive gas pockets and limestone rock. A fire burns yearly unless extinguished in Kagawong due to surface leakage (…)"*

NPI Response:

Gas pockets are unlikely to be found during construction as the foundations extend to a depth of only three (3) meters. The initial geotechnical tests show that the rock near the surface is fractured and permeable and therefore unlikely to contain gas. Care will be taken during the drilling of additional bore holes prior to construction and the excavation during construction to protect against the unlikely release of gas.

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

Additional geotechnical investigations have been initiated and will confirm the characteristics of the rock and provide input to the design for the turbine foundations to support the turbines. Wind turbines can be erected in a variety of soil/rock conditions. The risk of turbine collapse is extremely low. The foundations that will be used for the turbines on this site are the same as the ones used in locations with sandy soil. The large spread foundation disperses the mass of the turbine equally over a significant footprint to enhance its stability.

Comment: *"Surface ground water contamination due to extensive drilling for multiple anchor rods for each turbine to unknown depths, in soft, unstable limestone (…)"*

NPI Response:

Given the nature of a wind farm (and the specific mitigation measures proposed for this project), the project is highly unlikely to have any impact of surface or ground water resources. Given the shallow depth of the foundations, three (3) meters and the fractured and permeable nature of the geology, no measurable effects on ground water flow is expected. We are aware, previous to any construction; many people in the community are hauling water to their wells at various times of the year. Further, the project will not reduce the rate of rainwater ground infiltration in the larger area. Based on the bore holes information collected to date, the water table is expected to be well below the depth of turbine foundation excavation. There is no reason to expect that turbine excavation activities would have an effect on the underground water or surface water in the area given the shallow depth of the excavations.

Comment: *"Adverse consequences for soil, vegetation, trees, birds, bats and other wildlife both during construction and operational phases. With Manitoulin being home to so many rare species and plants, how can Northland possibly address and mitigate such extensive losses as a result of their project?"*

NPI Response:

Extensive studies on the natural environment have been conducted for the proposed project. These studies include the input of the Ministry of Natural Environment (MNR) and Environment Canada (EC) to ensure that the natural environment on Manitoulin Island is protected. A Natural Environment Assessment, in consultation with the MNR and EC was also conducted for this project. The assessment concluded that the risk to rare, threatened and endangered species in the area is low and minimal significant adverse effects are anticipated. Additional field work was conducted in 2010 as per the MNR direction. Some turbines have been removed and some changes were made to the turbine and road locations to avoid wetland areas that now have to be avoided under the REA process. The results of this work will contribute to the final Environmental Management and Protection Plan (EMPP). NPI will implement mitigation measure where required. A new natural heritage assessment document has been prepared and submitted to the Ministry of Natural Resources for review and comment.

<u>Concerns and Responses Regarding First Nations</u>

Comment: *"At Northland's public consultation meeting on March 22, 2010 The United Chiefs and Councils of Manitoulin (UCCM) declared their continued opposition to the project until appropriate consultation with Island First Nations has been made (…)"*

The AOK First Nation has also expressed opposition to this project, sighting concerns regarding improper consultation, and improper setbacks to protect the health of their community and First Nation Land. AOK is also calling for a minimum 2-2.5 km setback distance between turbines and the boundaries of their Nation (….)"

NPI Response:

Communication with First Nation communities that may have interests in the proposed project has been ongoing for several years and in compliance with government requirements. In February 2011, Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations (UCCMM), has entered into a 50/50 partnership with Northland Power Inc. to share equity in the McLean's Mountain 60 MW Wind Farm Project and on-going renewable power developments.

Membership of UCCM include M'Chigeeng First Nation; Sheguiandah First Nation; Sheshegwaning First Nation; Aundeck-Omni-Kaning First Nation; Whitefish River First Nation; and Zhiibaahaasing First Nation. UCCMM formed Mnidoo Mnising Power to lead renewable energy projects on Manitoulin Island in order to protect First Nations' rights, heritage and ensure the future for First Nations' youth.

Band Council resolutions are in place with each band council supporting their position in this agreement.

Concerns and Responses Regarding Decreased Property Values

Comment: *"There is increasing evidence that Industrial Wind Turbines (IWT) cause significant loss of property values to nearby lands. Recently in Ontario an appeals review board through MPAC (Municipal Property Assessment Corporation) ruled in favour of a 50% assessed reduction in property value on a property due to excessive noise from a transformer station in a wind farm project (…)"*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's' Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that *"*To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value.*"*

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Infrasound and Human Health Impacts

Comment: *"(…) For full information, please visit www.WindVigilance.com"*

NPI Response:

Infrasound or low frequency noise emissions were characteristics of some of the earlier models of wind turbines. This was attributed to early designs in which the turbine blades are downwind of the main tower. This phenomenon does not occur with modern upwind turbine technology (MOE, 2005). Infrasound has been studied extensively for current wind turbine technologies (JCAA, June 2006; HGC, 2006; Defra, 2003). At present, there are a significant number of wind turbines in operation in Ontario, including in several in proximity to residences; with no adverse impact from infrasound.

A study performed by HCG (2006) conclude, "All in all, based on Canadian and international studies, infrasound generated by wind turbines should not be considered a concern to the health of nearby residences. At the closest distances at which residences are typically located near large wind turbines, approximately 300 meters, the infrasonic levels are low enough to not be of concern. In any event, the discussion of whether or not infrasound poses a health risk at low levels is somewhat academic since, in the absence of wind turbines, comparable infrasonic levels are present in the natural environment." The evidence is that the current turbine technologies do not present any adverse impact related to the generation of infrasound.

The May 2010 report on *The Potential Health Impacts of Wind Turbines*, Chief Medical Officer of Health (CMOH) indicates that:

> *"There is no scientific evidence, however, to indicate that low frequency sound generated from wind turbines causes adverse health effects. Low frequency sound and infrasound are everywhere*

in the environment. They are emitted from natural sources (e.g., wind, rivers) and from artificial sources including road traffic, aircraft, and ventilation systems. The most common source of infrasound is vehicles. Under many conditions, low frequency sound below 40Hz from wind turbines cannot be distinguished from environmental background noise from the wind itself (Leventhall 2006, Colby et al 2009).

Low frequency sound from environmental sources can produce annoyance in sensitive people, and infrasound at high sound pressure levels, above the threshold for human hearing, can cause severe ear pain. There is no evidence of adverse health effects from infrasound below the sound pressure level of 90dB (Leventhall 2003 and 2006).

Studies conducted to assess wind turbine noise indicate that infrasound and low frequency sounds from modern wind turbines are well below the level where known health effects occur, typically at 50 to 70dB. A small increase in sound level at low frequency can result in a large increase in perceived loudness. This may be difficult to ignore, even at relatively low sound pressures, increasing the potential for annoyance
(Jakobsen 2005, Leventhall 2006) (…)."

The report concludes that "low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.

All of the proposed wind turbines are greater than 698 metres away from any residence, so there should clearly be no issue. The MOE noise standard also meets the range of the Health Canada guidelines of 40 dB(A) to residences.

Concerns and Responses Regarding Set-back Distances between Industrial Wind Turbines and Nearby Homes and Dwellings

Comment: *"The 550 metre setback outlined in Ontario's Green Energy Act is clearly not enough compared to other norms and standards around the world (see statements from the World Health Organization in the section below on Noise and Health Effects); I strongly urge Northland Power Inc. to exercise the Precautionary Principle and structure their project so that 2-2.5 km is the minimum distance between a turbine and any other dwelling such as a home, cottage or hunt camp."*

NPI Response:

The Province of Ontario has some of the most stringent regulations in North America regarding wind turbine siting and sounds restrictions and Northland Power intends to meet or exceed these regulations. It is important to note that although wind energy is relatively new to Ontario, it's a very well-established and proven form of electrical generation around the world. For more than thirty (30) years, tens of thousands of people have been living near wind turbines with no ill effects.

The Ontario's Chief Medical Officer of Health, Dr. Arlene King, recently sent a memorandum to all Medical Officers of Health and Environmental Health Directors stating the following about wind energy and human health: "(…) there is no scientific evidence, to date, to demonstrate a causal association between wind turbine noise and adverse health effects."

I would like to bring your attention to a report released December 2009, authored by an international panel of medical doctors and sound experts titled "Wind Turbine Sound and Health Effects: An Expert Panel Review". It concluded that sound from wind turbines has no direct harmful effect on human health.

To see the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf

To see an executive summary of the report, please visit:
http://www.canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects-Executive_Summary.pdf

For more information on the effects of sound from wind turbines on human health please refer to the comment response tables provided in the Draft Renewable Energy Approval (REA) package.

Concerns and Responses Regarding Adverse Health Effects and Industrial Wind Turbines

Comment: ***"****(…) The December 2009 American Wind Energy Association and Canadian Wind Energy Association sponsored report entitled "Wind Turbine Sound and Health Effects" (A/CanWEA Panel Review) acknowledges that wind turbine noise, including low frequency noise, may cause annoyance, stress and sleep disturbance and as a result people may experience adverse physiological and psychological symptoms (…)"*

NPI Response:

The Chief Medical Officer of Health (CMOH) Report "The Potential Health Impact of Wind Turbines" dated May 2010 concludes that "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects"' and that "The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct adverse health effects. However, some people might find it annoying. It has been suggested that annoyance may be a reaction to the characteristic "swishing" or fluctuating nature of wind turbine sound rather than to the intensity of sound.

The proposed project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA) under the *Green Energy Act* and NPI is complying with all of the REA requirements. Further, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval.

Some additional concerns that you raise in your April 26th, 2010 letter (copy enclosed) include your comments regarding the need for a complete environmental assessment as well as the question regarding efficiency of wind farms.

Please be advised that an environmental assessment was completed for this proposed project and a copy of the Environmental Impact Statement/Environmental Screening Report (EIS/ESR) was made available for public review in July 2009 as required under the former *Ontario Environmental Assessment Act* and the requirements of Regulation 116/01 (Electricity Projects). Furthermore the EIS ESR document was provided supplementary information as required under the Ontario Regulation 359/09 – Renewable Energy Approval (REA) process under the *Green Energy Act*. The supplementary information was provided in the Draft REA package released for public review in January 2010.

All available modern turbines are designed with three blades which maximizes their efficiency and power generation abilities. A modern wind turbine produces electricity 70-85% of the time, but it generates different outputs dependent on wind speed. Over the course of a year, it will generate about 30% of the theoretical maximum output. This is known as its load factor. A modern wind turbine will generate enough electricity to meet the demands of more than a thousand homes over the course of a year. Furthermore a wind turbine produces enough clean electricity in 3 to 5 months to offset all of the greenhouse gas emissions emitted in its manufacture – and it will produce clean electricity for another 20-25 years. A modern wind turbine is designed to operate for more than 20 years.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

NORTHLAND
POWER

MCLEANS MOUNTAIN WIND PROJECT
23 a Vankoughnet St., Little Current, ON P0P1K0 BOX 73
PHONE: 705-368-0303 FAX: 705-368-0606

FAX

To: Beatrice From: Kirsten

Company: Dillon Date: March 1, 2010

Fax # 905-901-2918 Time: 2:55 pm

No. of pages including cover: 2

If total number of pages are not received in good order, please call
705-368-0303

[redacted]

Beatrice could you please provide some attention to this letter from [redacted] concerning our January 2010 REA, [redacted] today made a follow up phone call about this matter

Thank Kirsten

PLEASE DELIVER COPIES TO: _____

ORIGINAL TO FOLLOW: ( ) MAIL ( ) COURIER ( ) NO

[redacted]

January 26, 2010

Northland Power
McLean's Mountain Wind Farm
23A Vankoughnet St East
Little Current, ON
P0P 1K0
Attn: Mr. Rick Martin

Dear Sir:

RE: January 11 Notice Letter

Thank you for your time on the phone on January 21 to discuss the recent information provided to us on your wind farm project in the McLean's Mountain area. As I had noted we have a 380 acre land parcel with a cabin and a recently built new building on Burnett's sideroad. I would like to confirm the items we discussed that day.

- The coloured map provided of the area on your web page information does not show our residence on our property
- This map also does not show the wetlands area between the two blue coloured lines which is approximately 25 acres in size (1500' x 750'). This is a wetland that ourselves and Ducks Unlimited had a project on about 10 or so years back where they built a control dam to regulate the water levels. There has been a good deal of migratory bird activity here in the spring and fall with the ducks and geese as DU controls the water levels in the wetland.
- This wetland area is north or upstream from the local fish and games clubs pickerel ponds near the snowmobile trail from the Perch Lake area.

We would appreciate if you could update your map models to include our residence plus the wetlands area and that all regulatory considerations for any tower placements take these items into consideration. We would also wish to make a suggestion for the location of Tower 19 on the map. From our experience the waterfowl that fly into our wetland area primarily enter from the north and the south, if Tower 19 was placed further north than its current position shown on the map then that may be of benefit to provide as little disruption as possible to the waterfowl when in the area of the wetlands.

Please confirm receipt of this letter, if you require any further information do not hesitate to call me.

Regards,

[redacted]

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of January 26th, 2010 (copy enclosed) expressing your concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

Revised mapping can be viewed at the upcoming PIC.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre

[redacted] [redacted] Apr. 27 2010 10:53PM P1

To: Don McKinnon

From: [redacted]

Date: April 27, 2010

RE: Maclean's Mountain Windfarm

Northland Power Inc.
James C. Temerty, Chairman of the Board
30 St. Clair Ave. W.
Suite 1700
Toronto, Ontario M4V 3A1

By Fax
RE: Maclean's Mountain Windfarm ESR deficiencies

April 27, 2010

Dear Mr. Temerty:

I am glad the comment period on the Northland Power Maclean's Mountain wind farm to allow me time to write another letter. I was very surprised that my concerns, sent to Northland Power and to MOE via e-mail on August 23, 2009 were not addressed in your response to the letters from the public. Therefore I am writing again, outlining again the issues I find are missing from your Environmental Screening Report (ESR).

I do not want it appear that I am against development. I am an environmental consultant who works doing ESRs and EISs for other types of development, such as new aggregate licenses, subdivisions, etc. I have participated in ESRs for a proposed wind farm as well. I am not anti wind power, nor am I anti development. However, as a professional I can say that not every windy place is an appropriate location for a wind farm. A large wind farm is not a consistent use for a place like the township of Northeastern Manitoulin and Islands (NEMI) where the economy is based on cottaging and hunting. The argument has been made that the wind farm will provide input to the economy, but I do not see a credible quantitative analysis to prove that the potential input from the NP project will justify destroying the existing economy.

I have read the Environmental Screening Report (ESR) on the Northland Power (NP) website. This screening has many oversights where serious potential impacts are not even mentioned, let alone adequately mitigated. On the whole, the company has defined the project area much too narrowly, intentionally excluding areas where impacts from the wind farm will occur. Northland must still adequately screen, assess, and mitigate the many economic, recreational, aesthetic, and local community character impacts that will result from the turbines, or else the project should not be allowed to go ahead.

Below are specific points where Northland has not adequately screened the impacts of the Maclean's Mountain Wind Farm.

1) The examples used in the screening are not comparable to the Manitoulin situation.
Northland Power has not used relevant comparisons in its socio-economic assessment. The company's screening claims that property values in NEMI will not fall and bases this conclusion on the what happened in Melancthon Township (Dufferin County). However, Melancthon Township does not have an economy based primarily on tourism, cottaging,

and outdoor recreation and thus is not a good measure for Manitoulin Island. The second example used by the company in the screening was in Scotland, and the raw information is not easily available to the public. Thus, there is no way for the public to see whether this area is at all comparable and whether it is reasonable for Northland to use it as the basis of its conclusions.

This leads me to believe that the company does not wish to be transparent on this issue. I believe that Northland has intentionally avoided using the best direct comparison in their assessment of the potential impacts to cottaging because the company knows there will be a serious impact to property values. The most directly comparable example would be the wind farm at Gros Cap, a cottaging area outside Sault Ste. Marie, just 4 hours from Manitoulin Island. At this site, there has been a major impact to the cottaging property values.

2) Northland did not adequately screen impacts to recreational use.
In the ESR, it appears that NP has almost completely ignored potential impacts to outdoor recreation. The only examples of recreation the company examines are La Cloche Provincial Park (on the other side of the North Channel from the project area) and the viewing platform on Maclean's Mountain. They have completely neglected to mention that the primary driver of the economy in NEMI is recreation, namely tourism, cottaging, and outdoor recreation such as hunting, fishing, hiking, and boating. This lack of analysis is an unacceptable oversight.

Cottaging
The company has drawn the project boundary to exclude the numerous cottages at White's Point, Honora Bay, Tamarack Lane, along Lake Manitou, and the North Channel, as well as directly within the study area at Maclean's Mountain. The turbines will be visible to all of these areas in the daytime (based on the company's own simulations), and all will be affected by nighttime lighting of the turbines. There will be a serious impact to the aesthetic value of the landscape around these cottages. A loss of aesthetic value could cause a fall in land value, yet NP makes no mention of this. Furthermore, cottagers provide a major input to the seasonal economy of NEMI in terms of buying gasoline, groceries, supplies, services such as car and boat repair, as well as paying to participate in local events. Any decline in cottaging will obviously have a serious economic impact. Better mitigation than "painting the turbines white" (ESR section 6.6) is required.

Of course turbines do not prevent cottagers from using their properties for recreation; however, the major draw of a cottage is the rural aesthetic and lack of industry in the area. Forty-three wind turbines is not a consistent use within a cottaging area. In assessing noise from wind turbines, the levels of noise are low if you compare them to the daily sounds of city traffic. However, one of the reasons people own a cottage is to be able to get away from city noise and go somewhere quiet. The value of a place with only natural noise (wind, waves, leaves rustling) is hard to quantify, but this is another aspect in which the impacts will cause a loss of value of these cottages.

Hunting, Hiking, Boating

In assessing other recreational uses, NP has again not faced the issues head on. Of course, wind turbines do not kill White-tailed Deer, but deer and other game will move out of the project area during construction, and probably will return in only reduced numbers due to the noise and vibrations of the turbines. Most non-farm landowners in the project area use their property for hunting. Indeed, hunting is the top reason that a large number of owners in the Green Bush have property there. If hunting is no longer viable, these properties will no longer be useable for this purpose and may no longer be wanted, thus providing another impetus for a loss of land value.

Again, the presence of wind turbines does not prevent anyone from hunting on his or her property; however, enjoying the bush is part of the hunting experience. Sitting quietly and waiting for a deer will not be the same inside the study area both because there will be fewer deer around and because of the sound of the turbines. There is no mention of this impact in NP's ESR.

Several studies, including a recent one by the Manitoulin Area Stewardship Council, have shown that hunting provides a large input to local economy, especially in the shoulder season when it is much needed. If hunting declines, there will be a serious impact to the local economy. Again, this is not mentioned anywhere.

NP makes no mention of impacts to the best known hiking trail on Manitoulin Island, which is the Cup and Saucer Trail, located just 3 km south of the project. This trail receives thousands of visitors every year, and a study by the Escarpment Biosphere Conservancy showed that these visitors provide significant input to the local economy. This trail leads to the highest point on Manitoulin Island and rewards the hiker with one of the most expansive panoramas in Ontario. Obviously, arriving at the top of the escarpment to view 43 wind turbines will not provide the same experience. Not mentioning this impact is a serious oversight on NP's part. It should have been mentioned in several areas including aesthetic values, significant landscapes, and recreational values. If people no longer want to hike up the Cup and Saucer, it will have an economic impact as well.

Another major part of NEMI's seasonal economy which is not mentioned by NP is boating on the North Channel. Yachts and large sailboats come into Little Current to dock and pick up supplies, and they patronize several marinas for services. The night time lighting of the turbines at Maclean's Mountain will be visible from Little Current dockages, as well as from popular natural anchorages on the islands on the south side of the North Channel. Turbines will be visible during the day from most of this area as well. One of the main reasons for the popularity of this area as cruising waters is the natural aesthetics of the landscape, its rural and undeveloped character, and the dark starry skies. A large wind farm on Maclean's Mountain will certainly change the North Channel boating experience, potentially causing a further decline in seasonal revenue for Little Current.

NP provides no mitigation measures for the changes that will occur to neighbourhood and community characteristics as a result of the wind farm. In the ESR Section 6.6, NP says no mitigation is required because the area is sparsely populated. This is not really true: it is only partially true because population fluctuates between summer and winter and because the project has intentionally been screened far too narrowly, excluding the surrounding cottage areas. This certainly makes it seem that the company knows about these potentially serious impacts and is trying to avoid dealing with them.

3. Decommissioning has not been screened or ensured.
There is no mention of how the turbines will be decommissioned or any impacts from the decommissioning. Furthermore, there is no agreement or contract for anyone to provide the decommissioning. A lack of proper decommissioning could be both an environmental and human safety hazard. To ask the local taxpayers to pay for the process after the profits have been made and the company has left is unacceptable.

It is unacceptable to allow turbines to go up without any way to ensure they are taken down and removed responsibly. This is a serious gap in the screening process. I hear NEMI expects to sell the turbines for scrap metal in 20 years, but it is likely that the decommissioning costs would far exceed the value of the metal. To suggest NEMI can handle decommissioning takes advantage of a lack of expertise in a small town council.

In conclusion, it certainly appears that there will be a serious impact to the economy of NEMI as a well as a loss in value of cottage and recreational properties, impacting landowners and causing a loss of assessment revenue, further impacting NEMI. Until the public is presented with a more credible analysis on economic impacts, I will find it hard to believe that the input to the local economy that Northland predicts would justify the impacts to the local economy, which supports almost everyone else in the area, and to the township, which provides the services and infrastructure we need to be able to live here.

Since I did not hear back from you regarding these concerns after my letter of August 23, 2009, and these concerns were not mentioned or addressed in your response to the public, I insist that Northland Power act responsibly and show how these potential impacts will be avoided or mitigated. I await your response.

I ask that you please circulate this letter to the other members of the board for their consideration. Thank you for your attention to this matter.

Sincerely,

[redacted]

cc:
David Cheung-Atkinson, Project Manager, Northland Power Inc.
Brad Duguid, Ministry of Energy and Infrastructure
Agatha Garcia-Wright, Director, Environmental Assessment and Approvals MOE
John Gerretsen, Ministry of Environment
Andre Marin, Ombudsman of Ontario
Rick Martin, McLean's Mountain Wind Farm
Don McKinnon, Dillon Consulting
Gord Miller, Environmental Commissioner of Ontario
The Manitoulin Expositor

NORTHLAND POWER
McLean's Mountain Wind Farm Project

P.O. Box 73, Little Current ON, P0P 1K0

May, 2011

[redacted]

RE: McLean's Mountain Wind Project and Community Concerns

Thank you for your letter of April 2010 (copy enclosed) expressing community concerns regarding the proposed McLean's Mountain Wind Farm. Responses to your comments have been deferred until now to reflect the many changes that have been made to the project to be compliant with the Renewable Energy Approval (REA) regulations.

Several of the northernmost turbines and southwestern perimeter turbines have been removed largely due to public input. This results in a reduction in the number of wind turbines. Northland Power Inc. (NPI) is also currently proposing the use of 100 metre wind turbine towers which will lower the number again to 24-26 units. The proposed project will require the construction of a transmission line to connect with the Hydro One transmission system that is located on Goat Island.

NPI has also entered into a 50/50 partnership with Mnidoo Mnising Power, a company formed by the United Chiefs and Councils of Mnidoo Mnising First Nations, to share equally in the McLean's Mountain Wind Farm.

NPI is committed to providing up-to-date information about wind energy and the McLean's Mountain Wind Farm to help people stay informed about our project. As the Project Manager for this important project, I am committed to ensuring the project is a success from everyone's perspective and I welcome your input.

NPI will be holding a Public Information Centre (PIC) on Wednesday, May 18, 2011 to inform stakeholders of the recent changes made to the project that are described above. The project layout will be presented at the PIC. The Notice of Public Information Centre is attached.

I trust that the following responses address the concerns and questions you have expressed in your letter.

<u>Concerns and Responses Regarding Economic Impacts</u>

Comment: *"On the whole, the company has defined the project area much too narrowly, intentionally excluding areas where [economic] impacts from the wind farm will occur (…)"*

NPI Response:

The defined project area relates to the area in which turbines are to be sited. In some cases, (e.g. visual) the potential for effects outside the project area were considered. Cottages in the area, largely focused along the Island shoreline, are well removed from the project. Furthermore, cottages along the shore would likely face over the water to the north and east. As such, their properties would not likely experience visual effects.

Comment: *"Another major part of NEMI's seasonal economy … is boating on the North Channel. The night time lighting of the turbines …will be visible from Little Current dockages, as well as from popular natural anchorages (…). Turbines will be visible during the day (…)"*

NPI Response:

The proposed McLean's Mountain Wind Farm is expected to have no negative impacts on Manitoulin Island Tourism. NPI has considered the potential for effects of the project on recreation activities. The project is well removed from the Lake Huron shoreline areas around the Island. The closest wind turbine (the westernmost turbine, turbine #42) is about 1.5 km from the Lake Huron shoreline. The easternmost wind turbine (turbine #9) of the project area is greater than 3 kilometres from the Lake Huron shoreline. Appreciating that tourist interests vary by individual, it is NPI's opinion that the view of the wind farm, especially from Honora Bay, will be complementary and will not negatively affect the viewscape.

Back in 2004 I was involved in conducting a survey about the wind farm, requested by the municipality. The survey results indicated over 95% support of a wind farm by locals and visitors to Little Current. Boaters especially noted that the Turbines provide a landmark coming into the port of Little Current. NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months

Impacts to the night sky should be minimal. The amount of lighting required should not unduly impact residents, cottagers or boaters in the area. Current lighting systems ensure pilot safety, minimal impact on birds and minimal impacts on the night sky viewing and are unobtrusive for communities. Light shrouds and shielding will be used where appropriate to minimize the impact of night time lighting.

Comment: *"NP makes no mention of impacts to the best known hiking trail on Manitoulin Island, which is the Cup and Saucer Trail, located just 3km south of the project. This trail receives thousands of visitors every year, and a study by the Escarpment Biosphere Conservancy showed that these visitors provide a significant input to the local economy. Obviously arriving at the top of the escarpment to view 43 wind turbines will not provide the same experience."*

NPI Response:

NPI is aware of the Cup and Saucer trail, the entrance to which is off of Bidwell Rd (east of Hwy 540) that is located to the south of the western group of turbines. The trail extends to the west/south of Bidwell Rd and away from the turbines. And while it is possible that some of the turbines could be visible from portions of the trail, possible views to the north, as the trail would be at least 3 km away from the closest

turbines, it is the opinion of NPI that the project would have minimal impact on a user's decision to use this trail and on the user's experience.

Comment: *"Several studies, including a recent one by the Manitoulin Area Stewardship Council, have shown that hunting provides a large input to the local economy, especially in the shoulder season when it is much needed (…) Enjoying the bush is part of the hunting experience (…) Sitting quietly and waiting for deer will not e the same inside the study area both because there will be fewer deer around and because of the sound of the turbines.*

NPI Response:

NPI is aware that project area is used for hunting activities. While construction activity could result in some game species (e.g. deer) moving out of the immediate area during the construction period, once the turbines are operational there is no evidence to suggest that the turbines would reduce the deer population in the area. Further, all the turbines are located on private land and these lands would not be open to hunting by the public unless landowner permission is provided. As such, over the long term, there is little reason to expect that the project would affect hunting activity in the area.

NPI recognizes the importance of enjoyment of one's property and the surrounding environment. The wind farm will not interfere with the peace and quiet you currently enjoy, except during the construction period, and even then you many not experience disruption depending on the location of your property. Once the turbines are operational, NPI will be required to meet the 40 dBA limit at all identified receptors and would be required to mitigate/resolve any exceedances as per the terms of the REA approval. Forty dBA is the equivalent of the sound in a quiet office building or library and should not interfere with your peaceful enjoyment of the land.

Comment: "*A large wind farm is not a consistent use for a place like [NEMI] where the economy is based on cottaging and hunting (…) I do not see a credible quantitative analysis to prove that the potential input from the NP project will justify destroying the existing economy."*

NPI Response:

Wind farms can have positive effects on the local tourism economy. There are 6,000 wind turbines in Denmark, for example, which are used for marketing tourism. Local tourism associations may use wind turbines to promote "green tourism". This is particularly targeted towards the German market, where the public is known to have a high level of interest in both environmental issues and in new technology. In a Scottish study[1] 43% of respondents said a wind farm would have a positive effect on their inclination to visit the Argyll area, an area of high landscape value. About the same proportion of respondents said it would make no difference, while less than 8% felt that it would have a negative effect. Nine out of ten tourists visiting some of Scotland's top beauty spots say the presence of wind farms makes no difference to the enjoyment of their holiday. Twice as many people would return to an area because of the presence of a wind farm than would stay away, according to a poll carried out by MORI Scotland Commercial tour companies provide guided tours of several wind farms in the Pincher Creek, Alberta region. Several wind farms in Australia attract so many visitors that commercial tour operators provide opportunities for the public to get a close up view of the wind farms.

[1] *Tourist Attitudes Toward Wind Farms,* MORI Summary Report, September 2002 www.bwea.com/pdf/MORI.pdf

NPI does not expect that the presence of the turbines would factor into a person's decision on whether to visit the Island. This project may have the potential to attract visitors. At NPI's Miller Mountain project in Quebec, 3500 tourists visited the project in 2008. The Providence Bay Wind Farm located to the south east of the MMWF project, approximately 45 kilometres away, established an interpretation centre for the project, which attracts numerous visitors over the summer visitor months.

Concerns and Responses Regarding Decreased Property Values

Comment: *"Northland Power has not used relevant comparisons in its socio-economic assessment. The company's screening claims that property values in NEMI will not fall and bases this conclusion on what happened in Melancthon Township (…) The most directly comparable example would be the wind farm at Gros Cap, a cottaging area outside Sault Ste. Marie."*

NPI Response:

Based on the consultations undertaken with the local residents, NPI is aware of the public concerns over the loss of property values due to the proposed development of the McLean's Mountain Wind Farm. The vast majority of evidence on the impact of wind farms on land values comes from Europe, Australia and United States of America (USA). The studies conducted in these countries indicate wind farms have no material effect on property values. Data from Ontario is beginning to emerge as more wind farms are constructed, and the experience from those projects also suggests that wind farms do not decrease property values.

A 2006 study conducted by Blake, Matlock and Marshal Ltd. for Windrush Energy suggests that wind farms have not negatively affected property values. "Property Value Study: the Relationship of Windmill Development and Market Prices" aimed to determine if the development of wind farms in the Melancthon area has had any impact on the growth of property values in the Township. Property values before and after wind farm development in the Township of Melancthon where compared to values in East Luther Grand Valley Township, a neighbouring and similar township except for its lack of wind farms. Property values in Melancthon were also compared to those in Dufferin County. The analysis showed that property values in the Township of Melancthon grew similarly to the rest of the County, and increased more than East Luther Grand Valley Township. Wind farm development was not found to have diminished property values.

The Canadian Hydro Developers Inc. also compared housing price ranges on Wolfe Island and Simcoe Island in Ontario, before and after the development of the wind farm (http://www.shearwind.com/glen_dhu_community/fact_sheet.html). Findings indicate that Township of Melancthon experienced a stronger growth rate in sales price per property, than the adjoining East Luther Grand Valley Township. The findings of this particular research indicate that the presence of the Wind Farm in Melancthon Township has not had an adverse impact on values within that municipality.

A study conducted in the Chatham-Kent area, where there are a number of wind turbines, found no evidence that wind farms have any measurable affect on rural residential market values. The study was conducted during May and June of 2009 by John Simmons Realty Services Ltd. and Canning Consultants Inc. and was commissioned by the Canadian Wind Energy Association to review possible effects of wind energy developments on real estate values on near-by properties. This information was provided at the

March 22nd, 2010 Public Information Centre (PIC) that was held in Little Current. To review the study, please visit:
http://www.canwea.ca/pdf/talkwind/PropertyValuesConsultingReportFebruary42010.pdf

The appeals review board through MPAC (Municipal Property Assessment Corporation) referred to a very specific case in which a particular transformer was not functioning properly, causing excess noise. MPAC uses market and sales analysis to determine property values and has provided an outline of how they assess properties. This information was displayed on a large panel at the March 22nd, 2010 PIC and states that *"*To date, MPAC's analysis of sales does not indicate that the presence of wind turbines that are either abutting or in proximity to a property has either a positive or negative impact on its value.*"*

Our direct contact with real estate sales representatives have indicated that there has been no effect on property values as a result of the Prince Wind Farm near Sault Ste. Marie. This information was presented at the March 2010 PIC. It is also our understanding that since the McLean's Mountain Wind Farm has been in advanced development stages adjacent properties including Farms have been sold at quite appreciated values.

Concerns and Responses Regarding Decommissioning

Comment: *"There is no mention of how the turbines will be decommissioned or any impacts from the decommissioning (…)"*

NPI Response:

A decommissioning plan has been prepared by NPI. The decommissioning plan identifies the specific Project components that will be removed, the costs associated with the removal of the components and the associated scrap value. The cost of decommissioning will be paid by the company that owns the contract with the government at the end of its useful life. We expect this to be Northland Power Inc. Acknowledging that the decommissioning responsibility is a requirement of any company who holds a contract under the FIT process. The decommissioning plan is an integral part of the REA requirement.

Please feel free to contact me for more detailed information. My phone number is 705-271-5358 and my email is rickmartin@northlandpower.ca.

Thank you.

Rick Martin
Project Manager
Northland Power Inc. Little Current Office

Encl. Notice of Public Information Centre