NOTICE OF DRAFT SITE PLAN AND NOTICE OF FINAL PUBLIC MEETING

Extended Hours in West Lincoln

To be held by Niagara Region Wind Corporation regarding a Proposal to Engage in a Renewable Energy Project

Project Name: Niagara Region Wind Farm
Project Location: The proposed project is located within Haldimand County and Niagara Region (including the Townships of Wainfleet and West Lincoln and the Town of Lincoln). The electrical interconnection components are located within the Town of Lincoln and the Township of West Lincoln, in Niagara Region, and in Haldimand County in southern Ontario.
Dated at Haldimand County and Niagara Region this the 5th of December 2012.

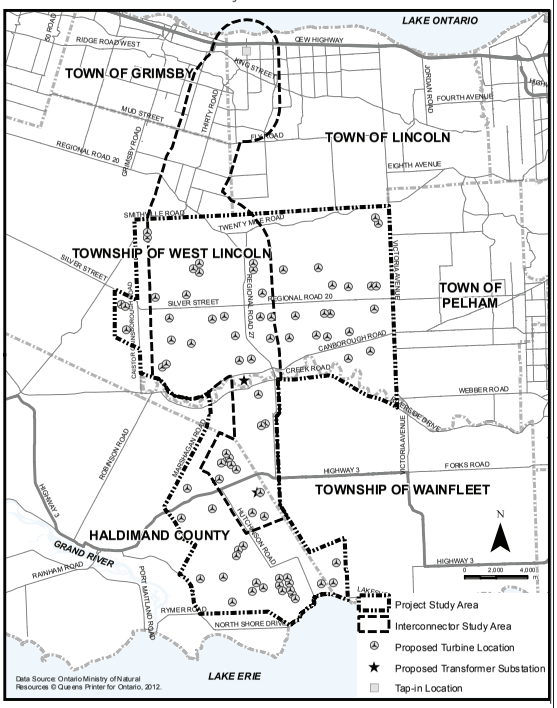
Niagara Region Wind Corporation ("NRWC") is planning to engage in a renewable energy project in respect of which the issuance of a renewable energy approval is required. The distribution of this notice and the project itself are subject to the provisions of the *Environmental Protection Act (Act)* Part V.0.1 and Ontario Regulation 359/09, as amended, (Regulation), which covers Renewable Energy Approvals. This notice is being distributed in accordance with Section 15 of the Regulation prior to an application being submitted and assessed for completeness by the Ministry of the Environment. This Notice of Draft Site Plan is in reference to the inclusion of a new substation for the Project. The other substation and all turbine locations, as well as noise receptors, remain the same. The legal effect of the publishing of this Notice is such that pursuant to Section 54(1.2) of the Regulation, NRWC does not have to take into account a noise receptor as defined by the Act that did not exist as of the day before NRWC published the Draft Site Plan for the Project.

The project team will be holding a series of Public Meetings, as required under section 16(1) of the Regulation. The purpose of these meetings will be to present the findings of the Draft Renewable Energy Approval (REA) Reports, and to present proposed revisions to the Draft Site Plan, released in August 2012. We are offering multiple meeting locations and dates for this event. The sessions will be drop-in style, and each session will be identical so that you can attend whichever session is most convenient:

	Tuesday, February 5, 2013	Wednesday, February 6, 2013	Thursday, February 7, 2013
1:00 to 4:00 p.m.	Town of Grimsby Peach King Centre Auditorium 162 Livingston Ave. Grimsby	Town of Pelham Old Pelham Town Hall 491 Canboro Road Ridgeville	Township of Wainfleet Firefighters' Memorial Community Hall 31907 Park Street Wainfleet
5:30 to 8:30 p.m.	Town of Lincoln Bled Hall 4650 South Service Road Beamsville	Township of West Lincoln Wellandport Community Centre 5042 Canborough Road (RR#63), Wellandport **EXTENDED HOURS: 4:30 – 10**	Haldimand County Lowbanks Community Centre 2633 Northshore Drive Lowbanks

Project Description:
Pursuant to the Act and Regulation, the facility, in respect of which the project is to be engaged in, is considered to be a Class 4 Wind Facility. If approved, this facility would have a total maximum name plate capacity of 230 MW consisting of 77 turbines (80 potential locations identified). The project location is shown in the adjacent map.

NRWC has been refining the project location and completing technical and environmental studies in preparation for finalizing the project layout. The proposed revisions to the Draft Site Plan include amending the location of the electrical interconnection components further south to accommodate a new location for a second substation. The results of the noise modeling meet the current provincial standards with mitigation. The proposed revisions are incorporated in the Draft REA Reports (see list below) and will be discussed at the Public Meetings.



The "Project Study Area" was established to scope the siting of the proposed wind turbines, collector lines, access roads and temporary work areas. The "Interconnector Study Area" was established to scope the location of the proposed 115kV transmission line, transformer substations and tap-in location. The "Project Location" occurs within these areas, is identified in the Draft REA reports and will be presented at the public meetings.

Documents for Public Inspection:
The applicant, NRWC, has prepared supporting documents in order to comply with the requirements of the Act and Regulation. Written copies of the draft supporting documents will be available for public inspection starting December 5, 2012 to February 5, 2013 at the locations listed below and on the project website (www.nrwc.ca):

- Draft Project Description Report
- Draft Construction Plan Report
- Draft Design & Operations Report (includes Property Line Setback Assessment Report and Noise Study Report)
- Draft Decommissioning Plan Report
- Draft Natural Heritage Assessment & Environmental Impact Study Report
- Draft Environmental Effects Monitoring Plan
- Draft Water Assessment and Water Body Report
- Draft Protected Properties Assessment
- Draft Heritage Assessment
- Draft Stage 1 Archaeological Assessment
- Draft Stage 2 Archaeological Assessment
- Draft Wind Turbine Specifications Report

Document Viewing Locations:

Town of Grimsby Municipal Office, 160 Livingston Avenue, Grimsby
Grimsby Public Library, 18 Carnegie Lane, Grimsby
Haldimand County Municipal Office, 45 Munsee Street North, Cayuga
Cayuga Public Library (Haldimand), 28 Cayuga Street North, Cayuga
Haldimand County Dunnville Satellite Office, 111 Broad Street East, Dunnville
Town of Lincoln Municipal Office, 4800 South Service Road, Beamsville
Lincoln Public Library (Fleming Branch), 4996 Beam Street, Beamsville
Region of Niagara Municipal Office, 2201 St. Davids Road, Thorold

Town of Pelham Municipal Office, 20 Pelham Town Square, Fonthill
Pelham Public Library, 43 Pelham Town Square, Fonthill
Township of Wainfleet Municipal Office, 31940 Highway #3, Wainfleet
Township of Wainfleet Public Library, 31909 Park Street, Wainfleet
Township of West Lincoln Municipal Office, 318 Canborough Road, Smithville
West Lincoln Public Library, 318 Canborough Road, Smithville
Wellandport Public Library, 5042 Canborough Road, Wellandport
Caistorville Public Library, 9549 York Street, Caistorville

Project Contacts and Information:
To learn more about the project, or to communicate questions or comments, please contact:
Project Email Address: info@nrwc.ca Project Website: www.nrwc.ca Project Phone Number: 905-390-3306 or 1-855-720-2892 (toll free)

Robert Daniels, Vice President
Niagara Region Wind Corporation
277 Lakeshore Road East, Suite 211
Oakville, ON L6J 6J3

J.A. (Al) Leggett, BA, MCIP, RPP
Project Manager, Stantec Consulting Ltd.
300 - 675 Cochrane Drive West Tower
Markham, ON L3R 0B8

Information will be collected and used in accordance with the Environmental Protection Act and Freedom of Information and Protection of Privacy Act. This information will be used to assist NRWC in meeting applicable environmental approvals requirements. This material will be maintained on file for use during the project and may be included in project documentation. Unless indicated otherwise, personal information and all comments will become part of the public record and publicly released as part of project documentation.

Welcome

Final Public Meeting for the Niagara Region Wind Farm

Thank you for coming!

We are happy to share new information about this clean, renewable energy project with you, based on our progress over the past 18 months.

Our team of experts are present today. Please review the display boards and feel free to ask us any questions you may have.

We want to hear from you!
If you would like to be added to the Project mailing list, please sign up at the front desk.

nrwc

Objectives of this Public Meeting

- Provide a status update on the Project layout and design.
- Present the findings of the Draft Renewable Energy Approval (REA) Reports (released December 2012).
- Respond to questions regarding the Draft REA Reports and the Project.
- Provide an overview of the REA process and current status.
- Receive the community's input and feedback for consideration by the Project Team.
- Outline next steps, including submission of the REA application to the Ministry of the Environment (MOE).

Tonight's meeting is the Final Public Meeting for the Project under Section 16 of Ontario Regulation 359/09. We anticipate submission of the REA application to the MOE within the next 6 weeks.

nrwc

Who Are We?

Niagara Region Wind Corporation (NRWC) is a Canadian renewable energy company focused on the development of wind power in Canada.

NRWC is a partnership between Daniels Power Corporation and Renewable Energy Business Ltd., two privately held Ontario companies committed to renewable energy projects.

The Study Team for this Project includes:

Stantec Consulting Ltd. (Renewable Energy Approval process)

Hatch Ltd. (Engineering)

Intrinsik Inc. (Health)

Bridgepoint Group Ltd. (Media & Communications)

Enercon (Turbine Manufacturer)

PCL (Construction)

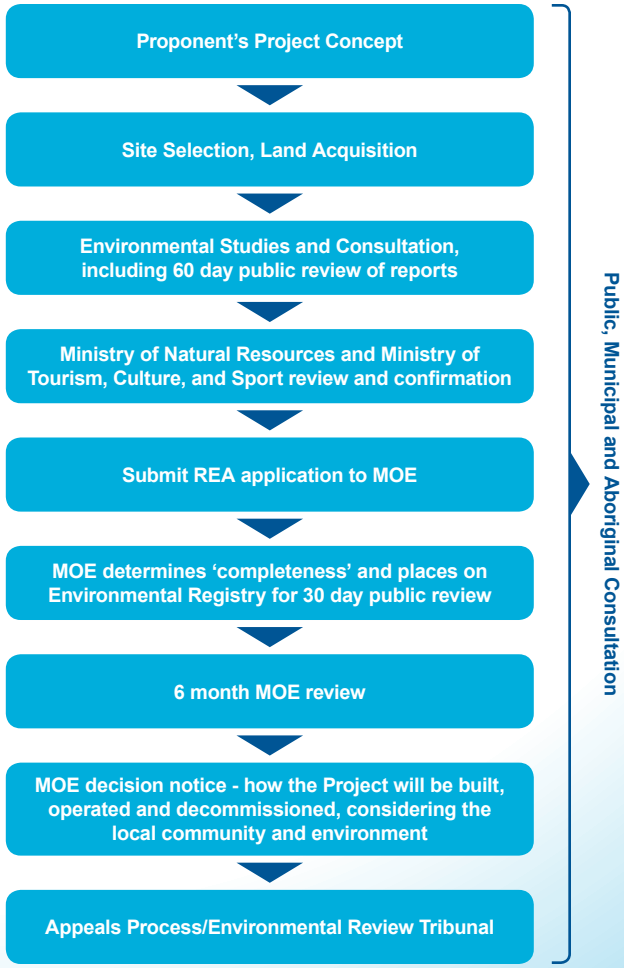
Project Contact Information

Website: www.nrwc.ca Email: info@nrwc.ca
Phone: 905-390-3306 or 1-855-720-2892 (toll free)

nrwc

Renewable Energy Approval Process

- The *Green Energy* and *Green Economy Act* (GEA), and related amendments to other provincial legislation, received Royal Assent in the Ontario Legislature on May 14, 2009.
- The Project will require a REA according to Ontario Regulation 359/09 (Renewable Energy Approvals under Part V0.1 of the Act) under the *Environmental Protection Act*. This regulation became law on September 24, 2009, with amendments in 2011 and 2012, and replaces the previous Ontario *Environmental Assessment Act* process for wind projects.
- The REA application for the Project will include a comprehensive assessment and plan related to Project design, construction, operation, maintenance and decommissioning.
- All non-REA approvals (Conservation Authorities, Endangered Species, and Municipal) will be initiated during the REA process.



nrwc

Project Overview

230 MW

The total nameplate capacity of this project will be 230 MW (1 MW can power approximately 250 Ontario homes, for a total of 57,500 homes)

77 Turbines

There will be 77 ENERCON E101 wind turbine generators (80 potential locations identified), each with a rated capacity of 3.0 MW. One or more turbines may have a generating capacity of less than 3 MW, for a total of 230 MW.

Study Area

The turbines will be located in West Lincoln and Wainfleet in Niagara Region and parts of Haldimand County, with the transmission line proposed in parts of Haldimand County, Wainfleet, Lincoln and West Lincoln.

Power Purchase Agreement

This Project was awarded a Power Purchase Agreement (FIT Contract) by the Ontario Power Authority in February, 2011. The contract guarantees 13.5 cents per kwh over 20 years.

Components

Other Project components include: underground/overhead collector lines and transmission line, fiber optics, two transformer substations, a manual disconnect switch (tap-in), junction boxes, construction laydown areas and turbine access roads with culverts (where required).

Additional details regarding Project design can be found in the Draft Project Description Report (December 2012) available for review at www.nrwc.ca, local libraries and municipal offices.

nrwc

Project Changes Affecting All Hosting Municipalities

Project Changes Since Draft Site Plan Release (August 15, 2012), incorporated in REA Documents

- Change of turbine hub height from 124 m to 135 m is being considered to improve energy production. All studies under the REA conservatively assessed both proposed turbine heights.
- Addition of second transformer substation and extension of transmission line in Haldimand County to improve electrical system efficiency.
- Refinement of collection system routing and junction box locations to improve electrical efficiency.
- Consideration of alternate transmission line routes to allow for flexibility during municipal consultation.
- Refinement of access road routes to accommodate landowner preferences and archaeological results.
- Consideration of overhead construction of transmission line over the Welland River and collector line over the Welland Feeder Canal.
- Decision to bury transmission line within the Niagara Escarpment Plan area.
- Refinement of construction laydown areas at proposed transformer substations.

Additional natural heritage, aquatic and archaeological field studies have been completed to accommodate and assess these Project changes, the results of which are included in the draft REA Documents.

The proposed changes will not result in additional negative impacts.

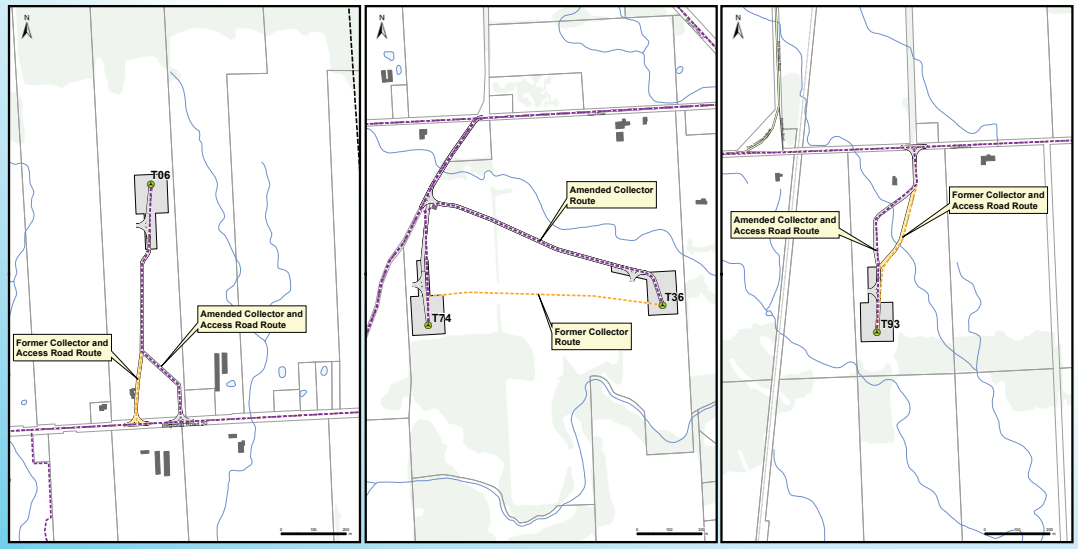
nrwc

Project Changes Since REA Documents Were Made Public In December

- Amended the collector line and access road location to Turbine T06 to accommodate landowner preference for agricultural production.
- Amended the collector line between Turbines T36 and T74 to follow the proposed access road.
- Amended the collector line and access road location to Turbine T93 to accommodate landowner preference for agricultural production.

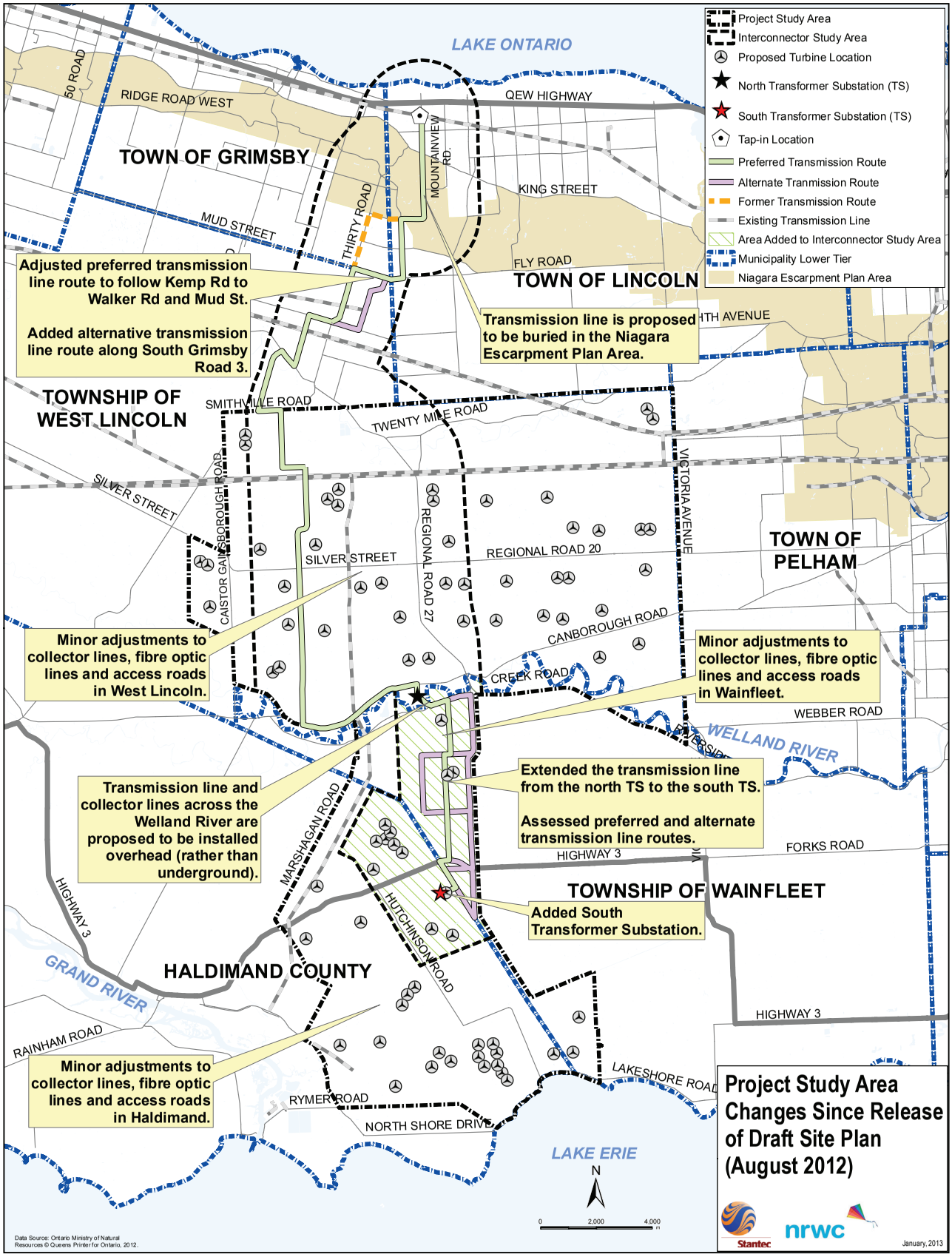
Additional natural heritage, aquatic and archaeological field studies have been completed to accommodate and assess these Project changes, the results of which will be included in the final REA Documents.

The proposed changes will not result in additional negative impacts.



nrwc

Project Study Area Changes Since Release of Draft Site Plan (August 2012)



Note that since the Draft Site Plan Release on August 15, 2012, the number and location of the wind turbines have not changed and the location of the north transformer substation has not changed.

Transmission

Components related to transmission of power generated by the turbines to the Hydro One Networks Inc. (HONI) grid include:

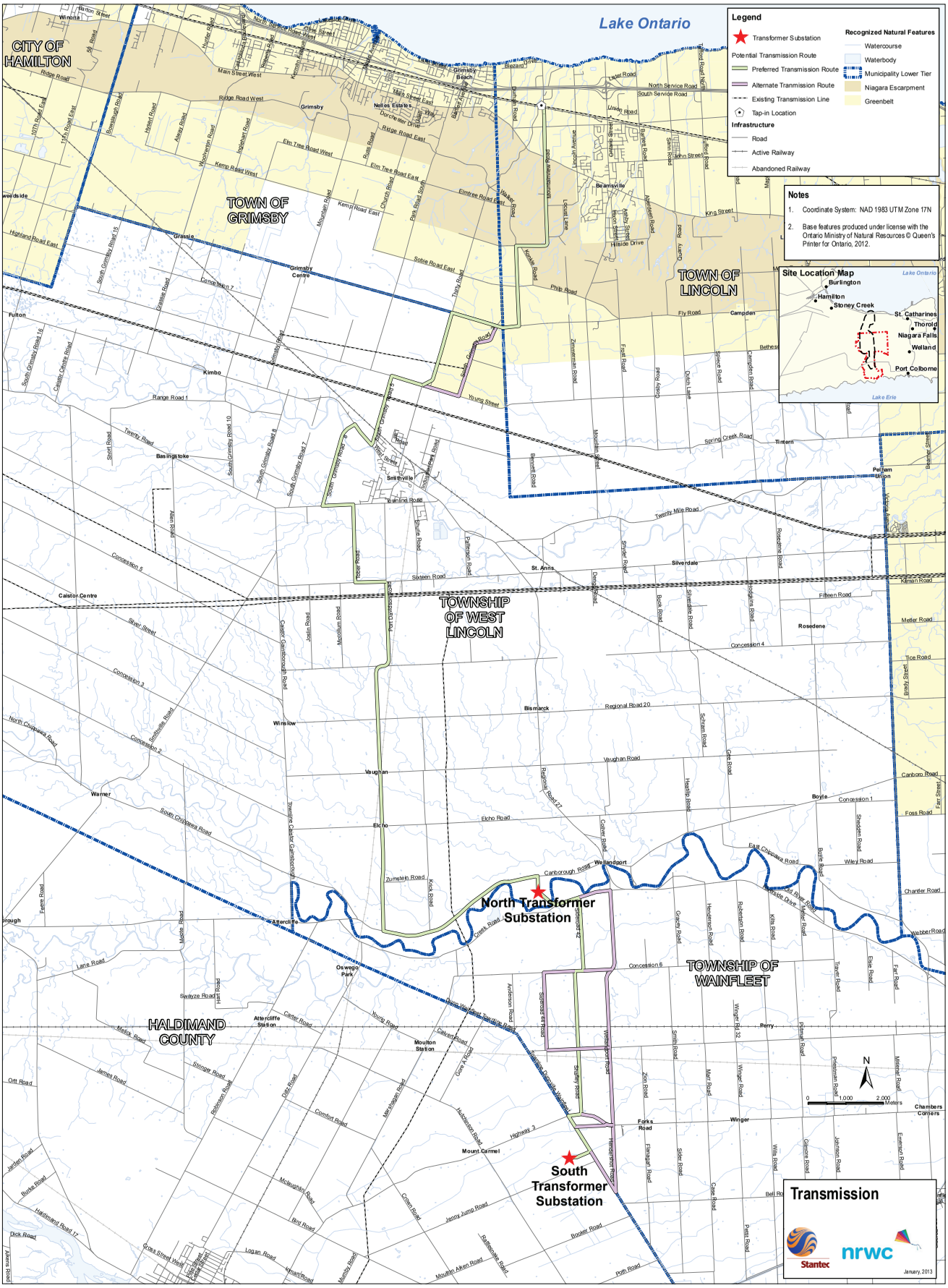
- South Transformer Substation - the collection point for the power produced by the south wind turbines. Power is transformed from 34.5 kV to 115 kV.
- North Transformer Substation – the collection point for the power produced by the north wind turbines. Power is transformed from 34.5 kV to 115 kV.
- Transmission line – transports the power from the south transformer substation to the north transformer substation and then to the Tap-in Location. The 44 km transmission line is almost exclusively within municipal road rights-of-way.
- Tap-in Location – the interconnection point where the Project transmission line connects to an existing HONI 115 kV transmission line parallel to the QEW that feeds power into the Provincial grid.

The majority of the transmission line will be constructed on overhead monopole structures approximately 23 m in height made from either wood, steel or concrete. One exception is the route through the Niagara Escarpment Plan (NEP) Area where the transmission line will be installed underground.

The REA assessed a preferred transmission line route and several alternate transmission line routes. The final route of the transmission line and configuration (pole structure and which side of road) will be confirmed through consultation with local municipalities and Local Distribution Companies through 2013.

The construction of the transmission line requires a Leave to Construct (LTC) approval from the Ontario Energy Board (OEB) under Section 92 of the Ontario Energy Board Act. NRWC consulted with the OEB in 2012 and intends to submit the LTC application in early 2013.

nrwc


Lake Ontario
CITY OF HAMILTON
TOWN OF GRIMSBY
TOWN OF LINCOLN
TOWNSHIP OF WEST LINCOLN
TOWNSHIP OF WAINFLEET
HALDIMAND COUNTY
North Transformer Substation
South Transformer Substation
Legend
Transformer Substation
Potential Transmission Route
Preferred Transmission Route
Alternate Tranmission Route
Existing Transmission Line
Tap-in Location
Infrastructure
Road
Active Railway
Abandoned Railway
Recognized Natural Features
Watercourse
Waterbody
Municipality Lower Tier
Niagara Escarpment
Greenbelt
Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
Site Location Map
Burlington
Hamilton
Stoney Creek
St. Catharines
Thorold
Niagara Falls
Welland
Port Colborne
Lake Erie
N
0
1,000
2,000
Meters
Transmission
Stantec
nrwc
January, 2013

Developing the Project Layout

- A key component of the REA process is establishing common setbacks for all renewable energy projects in the Province.
- The location of Project components was determined in consideration of these setbacks, and in consultation with landowners and regulatory agencies.

Feature	Setback Distance
Non-participating noise receptor	550 m from turbine base, 500 m from transformer, below 40.0 dBA noise level
Public road right-of-way and railway right-of-way	Turbine blade length + 10 m (from turbine base)
Property line	Turbine height (excluding blades) (from turbine base)
Provincially significant wetland	120 m (can be closer if Environmental Impact Study (EIS) Undertaken)
Provincially significant ANSI (Earth Science)	50 m (can be closer if EIS Undertaken)
Provincially significant ANSI (Life Science)	120 m (can be closer if EIS Undertaken)
Significant woodland	120 m (can be closer if EIS Undertaken)
Significant wildlife habitat	120 m (can be closer if EIS Undertaken)
Lake or a permanent or intermittent stream	120 m from the average annual high water mark (can be closer if EIS Undertaken)
Seepage area	120 m (can be closer if EIS Undertaken)

- All turbines were sited outside of the Greenbelt and Niagara Escarpment Plan Area
- Siting of Project components targeted already disturbed areas (agricultural fields) on participating properties.

nrwc

Renewable Energy Approval Process Reports

1. Project Description Report
2. Construction Plan Report
3. Design & Operations Report
   - Property Line Setback Assessment Report
   - Noise Study Report
   - Environmental Effects Monitoring Plan
4. Decommissioning Plan Report
5. Consultation Report
6. Natural Heritage Assessment and Environmental Impact Study
7. Water Assessment Report and Water Body Report
8. Protected Properties Assessment
9. Heritage Impact Assessment
9. Archaeological Assessment
10. Wind Turbine Specifications Report

All reports, with the exception of the Consultation Report, were made available in draft format for review and comment in December 2012 on-line and various viewing locations across all affected municipalities, 60 days before the Final Public Meeting, in accordance with O. Reg. 359/09.

The Consultation Report will incorporate comments received during the final public meetings, as well as correspondence received from municipalities, agencies and other stakeholders, for submission to the MOE.

nrwc

Project Description

The Draft Project Description Report (PDR) has been revised and updated to reflect changes to the Project based on the completion of various technical and environmental studies over the past 18 months.

The Draft PDR provides a description of project components, schedules, activities, ownership, processes, potential environmental effects, and a list of key permits and approvals still required.

As outlined in the Draft PDR, Project components include:

- **77 Enercon E-101 wind turbines with a capacity of 3 MW each (one or more turbines may have a generating capacity of less than 3 MW), for a maximum installed nameplate capacity of 230 MW. 80 potential turbine locations have been included in the layout whereas only 77 will be constructed.**
- **Overhead and underground collector lines will run from each turbine along municipal road allowances to one of two transformer substations (TS). Junction boxes are proposed where two collector lines connect and continue as one line.**
- **Fibre optic cables will follow similar routes to provide a communication connection to monitor and control each turbine.**
- **Two main step-up transformers will convert power from 34.5 kV to 115 kV at the south and north TS.**
- **A transmission line will connect the south TS to the north TS and further on to the tap-in location near the QEW east of Grimsby.**
- **Access roads will be built primarily on private property to provide access to the turbines during construction and operation (maintenance).**
- **Additional project components include existing meteorological towers, temporary construction laydown areas and water crossings.**

nrwc

Construction Activities

Construction is expected to occur from September 2013 to December 2014. Activities will include:

Activity	Estimated Schedule
Surveying and geotechnical assessment	August 2013 – July 2014
Site clearing and preparation of staging areas prior to delivery materials.	September 2013 – September 2014
Installation of Erosion and Sediment Controls	September 2013 – September 2014
Delivery of construction materials, construction of access roads (including culverts) and crane pads	September 2013 – September 2014
Delivery of turbine components	September 2013 – September 2014
Installation of turbine foundations	September 2013 – September 2014
Wind turbine erection	November 2013 – December 2014
Installation of electrical components (including collector lines, fibre optic cables, junction boxes, transformer substations, transmission lines, and tap-in location)	September 2013 – September 2014
Reclamation of temporary work areas, final grading, topsoil replacement (all temporary work areas will be restored to pre-construction conditions)	June 2014 – December 2014
Project testing	July 2014 – December 2014
Turbine commissioning and operation	December 2014

There will be no long term on-site storage of waste during Project construction.

nrwc

Construction

Overall Construction Period is 15 Months.

Typical Per Site Construction is as follows (estimated duration):

- Building of Roads and Excavation of Turbine Foundation – 12 days
- Construction of Foundations / Backfill and Construction of Crane pad – 20 days
- Concrete Curing – 28 days (minimal traffic during this time)
- Tower & Nacelle Delivery, Assembly & Installation – 25 days
- Commissioning – 10 days

Turbine Foundations

Each turbine will be installed on top of a foundation. A typical turbine foundation is approximately 21 m in diameter, with a poured-in-place reinforced concrete foundation, buried to a depth of 3.5 m.

Laydown Area & Crane Pads

Proposed laydown areas adjacent to each turbine location measure 100 m x 120 m which includes a gravel crane pad of 50 m x 75 m.

Access Roads

15 m wide during construction, reduced to 5 m for operations.

Collector Lines

New 34.5 kV collector lines (buried on private lands, above or below ground in the municipal road allowance) from step-up transformers at the base of each turbine to the substations.

Substations

Fenced areas approximately 100 m x 100 m in size.

Storage Area

Fenced area near T-31 and Northern Substation for storage of materials during construction and operation of the Project. Approximate size is 10 acres each.

nrwc

Operations and Maintenance

- NRWC will have a specialized Contractor to undertake on-going operations and maintenance.
- Operation activities include daily monitoring of wind turbines and function of the substations, maintenance activities, and monitoring of meteorological data.
- An on-line system and technician will monitor the Project 24 hours a day to identify any issues for quick response.
- An Emergency Response and Communications Plan will be developed prior to operation.

Decommissioning

- Project components are expected to be in service for the term of the 20 year Ontario Power Authority Feed-In Tariff contract. At that point, a decision will be made to continue operations, update equipment (called 'repowering'), or decommission.
- Decommissioning involves removal of all project components for reuse or recycling, and restoring the land to pre-construction conditions, using relevant environmental protection and mitigation measures.
- NRWC is responsible for all aspects of the decommissioning of the Project including the associated costs.

nrwc

Proposed Wind Generation Technology: Enercon E101

Uniqueness of ENERCON turbines

- Maximum sound power level of 105 dBA
- Rated capacity of up to 3 MW
- Gearless, direct-drive generator results in quieter operation than most traditional turbines with gearboxes
- Concrete tower creates a durable structure for the turbine
- Aerodynamic blade and nacelle designs help to reduce turbulence and noise level
- Integrated and robust mechanical design enables turbine to operate from low wind speeds (2-3 m/s) up to storm conditions (28-34 m/s)
- Absence of hydraulic fluid and lubricating oils in the nacelle makes for an environmentally friendly machine
- Aesthetics of green feet and grey tower help blend turbine into the landscape

nrwc

Acoustic Assessment Report

The Ministry of the Environment (MOE) requires a minimum distance of 550 m from the base of a turbine to any non-participating noise receptors (including residences, schools, places of worship, and health care facilities, amongst others). In addition, the MOE requires that cumulative noise levels from turbines and transformer substations cannot exceed 40.0 decibels (dBA) at these receptors.

During operations, mechanical and aerodynamic sound is emitted from turbines, transformer substations and maintenance equipment and vehicles.

An Acoustic Assessment was prepared under the applicable guidelines to ensure Project compliance with MOE requirements. The assessment considered both proposed wind turbine hub heights under consideration (124 m and 135 m).

Cumulative assessment completed to account for noise from other proposed/existing turbines in the area, and to demonstrate compliance with 40.0 dBA.

Mitigation Measures

Turbines have been sited to meet both the 550 m setback and the 40.0 dBA or less noise requirement for non-participating receptors.

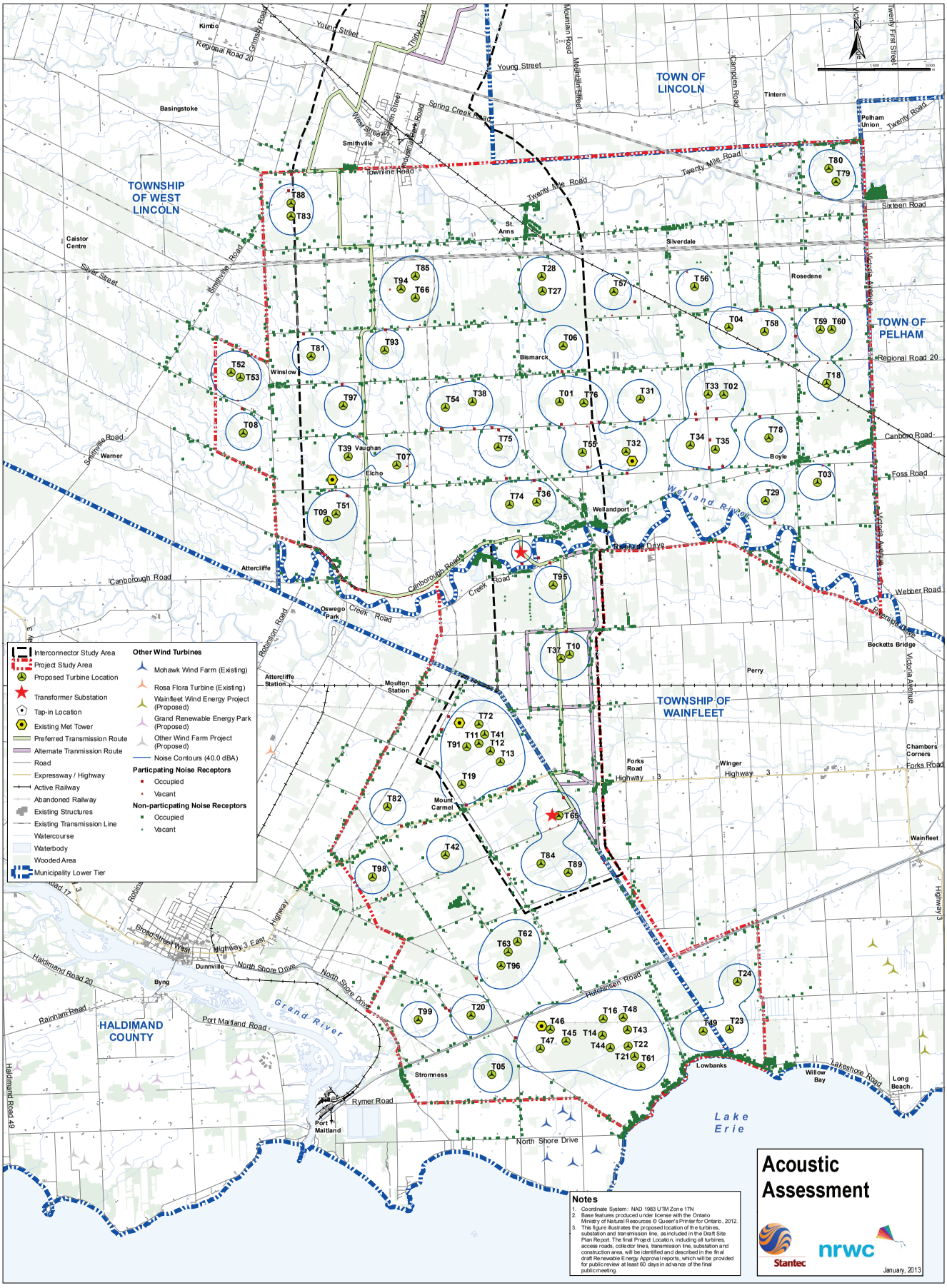
All engines associated with maintenance equipment would be equipped with mufflers and/or silencers in accordance with MOE and/or Ministry of Transportation (MTO) guidelines and regulations.

Routine Project maintenance will ensure infrastructure is operating properly and efficiently.

Acoustic audits will be conducted prior to and following operations, as a requirement of the REA approval.

In the event that a malfunctioning turbine results in noise emissions that are above MOE requirements, the problematic turbine(s) will be shut down until corrective measures are taken. Net effects: noise emissions from the turbines and transformer stations will occur, but levels will comply with MOE requirements.

The assessment concluded that all NRWC turbines and transformer substations will be compliant with MOE requirements of a maximum sound level below 40.0 dBA at the nearest non-participating noise receptor. The Noise Assessment was conservatively undertaken using a 124 m tower.


Interconnector Study Area
Project Study Area
Proposed Turbine Location
Transformer Substation
Tap-in Location
Existing Met Tower
Preferred Transmission Route
Alternate Tranmission Route
Road
Expressway / Highway
Active Railway
Abandoned Railway
Existing Structures
Existing Transmission Line
Watercourse
Waterbody
Wooded Area
Municipality Lower Tier
Other Wind Turbines
Mohawk Wind Farm (Existing)
Rosa Flora Turbine (Existing)
Wainfleet Wind Energy Project (Proposed)
Grand Renewable Energy Park (Proposed)
Other Wind Farm Project (Proposed)
Noise Contours (40.0 dBA)
Particpating Noise Receptors
Occupied
Vacant
Non-particpating Noise Receptors
Occupied
Vacant
TOWN OF LINCOLN
TOWNSHIP OF WEST LINCOLN
TOWN OF PELHAM
TOWNSHIP OF WAINFLEET
HALDIMAND COUNTY
Lake Erie
Grand River
Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
3. This figure illustrates the proposed location of the turbines, substation and transmission line, as included in the Draft Site Plan Report. The final Project Location, including all turbines, access roads, collector lines, transmission line, substation and construction area, will be identified and described in the final draft Renewable Energy Approval reports, which will be provided for public review at least 60 days in advance of the final public meeting.
Acoustic Assessment
Stantec
nrwc
January, 2013

Natural Heritage Assessment and Environmental Impact Study

Background Review:

A Records Review of existing data was completed based on information received from the Ministry of Natural Resources, Niagara Peninsula Conservation Authority, Grand River Conservation Authority and the Niagara Escarpment Commission.

Fieldwork Completed in 2011 and 2012 included:

- Ecological Land Classification Surveys and Vegetation Surveys
- Woodland Habitat Assessments
- Fall and Spring Migratory Bird Surveys
- Winter Raptor Surveys, including surveys for Short-eared Owls
- Amphibian Call Count Surveys
- Bat Maternity Roost Habitat Assessments
- Breeding Bird Surveys

Natural Features within 120 m of the Project include:

- Wetlands, including Provincially Significant Wetlands, Locally Significant Wetlands and unevaluated wetlands
- Significant Woodlands
- Significant Wildlife Habitat features including:
  - Breeding and migratory bird habitat
  - Amphibian habitat
  - Habitat for winter raptors
  - Deer congregation areas
  - Snake hibernacula
  - Turtle nesting habitat
  - Rare vegetation communities and plant species, including Honey Locust
  - Special concern and rare wildlife species, including Short-eared Owls
- 3 Life Science Areas of Natural and Scientific Interest (ANSI) and 1 Earth Science ANSI
- Niagara Escarpment Plan Area and associated natural features
- Greenbelt Protected Countryside
- No Provincial Parks or Conservation Reserves occur within the study area.

nrwc

Natural Heritage Assessment and Environmental Impact Study

Avoidance

- All project components are located in active agricultural fields or disturbed areas.
- Project components have been sited to avoid wetlands, woodlands and wildlife habitats, where feasible.
- Construction in agricultural fields identified as significant winter raptor habitat will avoid the winter raptor roosting period.

Mitigation

- Avoid vegetation clearing (hedgerows, grasslands) during the migratory bird nesting period.
- Implement and maintain erosion and sediment control measures during construction.
- Dewatering during excavation will require filtration and protection of adjacent natural features.
- Implement contingency plan in case of frac-out during directional drilling of collector lines.
- Maintain current drainage patterns.
- Temporary construction areas will be clearly marked and located outside natural features.
- All refueling and material stockpiling will occur well away from natural features
- No herbicides will be used within significant features or wildlife habitats.

Monitoring

- Construction monitoring to ensure compliance with approved plan and mitigation measures.
- Environmental Effects Monitoring Plan (EEMP) will include:
  - Disturbance Monitoring to assess potential disturbance effects on:
    - Migratory Birds
    - Winter Raptors, including Short-eared Owls
    - Wetland and Woodland Hydrology
  - Mortality Monitoring to assess operational effects on birds and bats
  - Adaptive Management Plan

Restoration

- All disturbed areas will be restored to existing conditions.
- Vegetation Monitoring Plan and Restoration Plan will be implemented.

Net Effects

- No significant adverse impacts are anticipated on significant natural features based on the implementation of the proposed mitigation, restoration, monitoring and adaptive management plan measures.
- Indirect impacts are expected to be short term, temporary in duration and mitigated by standard site control measures, restoration and an adaptive management plan.

The Natural Heritage Assessment and Environmental Impact Study has been reviewed by the Ministry of Natural Resources and written confirmation will be obtained from the MNR prior to submission.

nrwc

Water Assessment and Water Body Report

A records review was completed to identify known water features and potential Fisheries habitat.

Fish communities were assessed at selected water bodies within 120 m of construction activities, and a general aquatic habitat assessment was conducted.

146 water bodies were identified within 120m of Project components.

Project operation does not require any water-taking activities for regular or unplanned maintenance.

Potential Effects

- In-water work could potentially affect 36 water bodies containing fish habitat – Fisheries Act Authorization may be required from Fisheries and Oceans Canada, due to culvert crossings associated with turbine access road and collector line installation.
- Potential contamination to groundwater from accidental spills.

Mitigation

- New culverts will be designed and constructed to maintain flow and minimize impacts on fish passage and erosion.
- Construction staging activities would occur in designated areas, at least 30 m from watercourses.
- Spills will be reported immediately to the MOE Spills Action Centre, as applicable.
- An Emergency Response Plan will be developed.
- Vegetation removal in the vicinity of watercourses will be minimized to the extent possible, and areas will be revegetated as soon as possible following construction.
- Work in or near watercourses will be reviewed and permitted by the Conservation Authority - all work will comply with permit requirements to protect aquatic organisms and their habitat.

Monitoring

Construction

- An Environmental Monitor will be on-site during work in or near watercourses to ensure compliance with specifications, site plans, and permits (e.g. Erosion and sediment control measures).
- An Environmental Monitor will perform routine checks of all work in or near water, and all installed mitigation measures. Repairs will be recommended as necessary to prevent impacts to aquatic organisms and their habitat.

Post-Construction

- Post-construction monitoring will occur to ensure site stability and identify needed repairs.
- Additional post-construction monitoring may be conducted, consistent with permitting requirements.

Net Effects

- No potential impacts to surface water, fish and fish habitat are anticipated with proper installation of Project components and appropriate use of maintenance equipment.

nrwc

Archaeological Assessment

The Stage 1 and 2 Archaeological Assessment (AA) completed for this Project was conducted in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* prepared by the Ministry of Tourism, Culture and Sport (MTCS). The Stage 1 AA included a review of aerial imagery, existing archaeological potential maps, information regarding registered archaeological sites in the vicinity, local physiography and topography, Census returns, 19th century maps of the project area and soil integrity.

The Stage 1 AA determined that all Project areas not previously intensively and/or extensively disturbed had the potential to contain archaeological resources and that Stage 2 AA of all Project infrastructure should occur.

A Letter of acceptance for the Stage 1 Archaeological Assessment – the initial desktop study - was issued by the Ministry of Tourism, Culture and Sport in January 2013.

Field work for the Stage 2 AA involved monitors from local Aboriginal communities, and was completed using both pedestrian survey at 5 m intervals in open, ploughed fields, and test pit excavation at 5 m intervals in woodlots. All areas of potential Project disturbance were assessed using one of these methods. A total of 191 archaeological locations were documented during the Stage 2 AA.

- 41 artifact clusters and 100 isolated findspots were identified and recorded for which the cultural heritage interest and value of the site has been sufficiently addressed at the Stage 2 Archaeological Assessment, and no further assessment is required.
- 50 archaeological sites were identified which meet criteria for further assessment and have been recommended to proceed to a Stage 3 assessment.

The Stage 2 Archaeological Assessment – the field work – is currently under review with the MTCS.

Mitigation

Prior to the start of construction, Stage 3 AA will be required at 50 sites, and Stage 4 AA will also be conducted, if required.

In the event that archaeological resources are accidentally encountered during construction:

- all work within the vicinity of an archaeological find will be suspended;
- the Ministry of Tourism, Culture and Sport would be contacted; and,
- Aboriginal communities would be contacted.

No net effects to archaeological resources are anticipated.

Heritage and Protected Properties Assessment

A Heritage Assessment and Protected Properties Assessment was completed for this Project, and included a review of historic period maps, aerial imagery, Census data, and municipal/agency records and inventories held by Niagara Region, Haldimand County, Town of Grimsby, Townships of Wainfleet, West Lincoln, and Lincoln, Ontario Ministry of Tourism, Culture and Sport, and the Ontario Heritage Trust.

Heritage Assessment

Potential Effects

- Although 77 built heritage resources and 34 cultural heritage landscapes were identified, no direct operation- or construction-related impacts were identified.
- Two built heritage resources, the Elcho United Church Cemetery and West Lincoln McCaffrey Cemetery, have potential for visual impacts.

Mitigation

- Work directly with Elcho Cemetery Board to design and install an appropriate visual barrier around the cemetery to protect views.
- Install transmission line poles on east side of Port Davidson Road (opposite side of road from the West Lincoln McCaffrey Cemetery).

Minimal indirect visual impacts anticipated.

Protected Properties Assessment

Potential Effects

- Although 12 protected properties were identified, no direct operation- or construction-related impacts were identified.
- Potential for visual impacts to the Mount Carmel Cemetery and Mount Carmel United Brethren Church.
- Comfort Barn is a protected property hosting Project Infrastructure.

Mitigation

- Work directly with the municipality and cemetery board to design and erect appropriate visual barriers (i.e., tree plantings, fencing) on the northern, western and southern boundaries of the Mount Carmel cemetery.
- Junction box at the intersection of Hutchinson Road and Highway 3 should be located at the northwest corner of the intersection.

Minimal indirect visual impacts anticipated.

nrwc

Health & Wind Power

Public health and safety will be considered during all stages of the Project.

Audible/Inaudible Noise: Ontario's Chief Medical Officer of Health (May 2010) conducted a review of the scientific literature related to wind turbines and public health. The review concluded 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. The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct health effects, although some people may find it annoying."

Shadow flicker: Scientific evidence suggests that shadow flicker from wind turbines does not pose a risk of photo-induced seizures; modern wind turbines simply do not rotate at a speed that has been linked to this condition (generally less than 20 rpm vs. over 60 rpm).

EMF: Health Canada (2012) has stated:

> "Health Canada does not consider that any precautionary measures are needed regarding daily exposures to EMFs at ELFs. There is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors".

nrwc

Health & Wind Power

Overall, health and medical agencies agree that when sited properly, wind turbines are not causally related to adverse effects*.

"Ontario doctors, nurses, and other health professionals support energy conservation combined with wind and solar power – to help us move away from coal".**

Many studies have been conducted world-wide to examine the relationship between wind turbines and possible human health effects (e.g., audible/inaudible noise, shadow flicker, electromagnetic fields (EMF)).

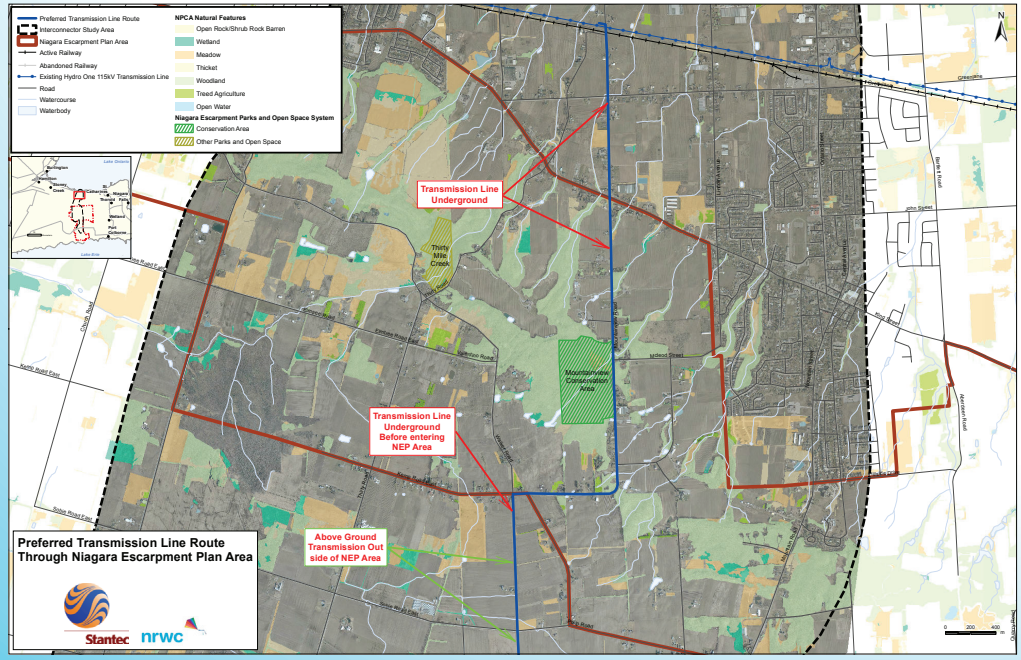
Scientists and medical experts around the world continue to publish research in this area. In fact, Health Canada will be undertaking a study of wind turbine projects across the country, with results expected in 2014. It is important to note that Health Canada has not called for a moratorium on new wind projects across Canada while they undertake their research. Through our health consultants, NRWC is committed to keeping informed on this issue.

*Chatham-Kent Public Health Unit, 2008; Australian Government, National Health and Medical Research Council, 2010; Australian Government, 2011; Massachusetts Department of Environmental Protection (MassDEP) and Massachusetts Department of Public Health (MDPH), 2012.

**Ontario College of Family Physicians, Registered Nurses Association of Ontario, Canadian Association of Physicians for the Environment, Physicians for Global Survival, the Asthma Society of Canada, and the Lung Association.

nrwc

Niagara Escarpment Commission



A Development Permit is required from the Niagara Escarpment Commission (NEC) for the construction of the underground transmission line within the Mountainview Road right-of-way through the Niagara Escarpment Plan Area.

The Project Team has consulted with the NEC, as well other stakeholders including the Town of Lincoln, Niagara Peninsula Energy Inc., Bruce Trail Association, Niagara Peninsula Conservation Authority and local residents to refine the location, design and construction of this section of transmission line.

A corridor and route selection study was completed for NRWC that identified Mountainview Road as the preferred transmission line route. This study was peer reviewed by Morrison Hershfield on behalf of the NEC which supports the selection of Mountainview Road as the preferred route.

A Development Permit application was submitted to the NEC in November 2012. Approval of this application is anticipated in February 2013 following consultation with NEC staff and consideration by the Niagara Escarpment Commission.

nrwc

Timeline

On-going consultation with agencies and local community members, Aboriginal communities, and municipalities

2011

- Feed-In-Tariff contract awarded – February 2011
- Field programs and technical work commenced – Summer, 2011
- Notice of Proposal to Engage in a Renewable Energy Project – July 2011
- Community Meeting – July 26, 2011
- Draft Project Description Report provided to Ministry of the Environment, Aboriginal Communities, and The Niagara Escarpment Commission – August 3, 2011
- Draft Project Description Report provided to Municipalities – August 3, 2011
- Public Meeting #1 – September 13, 14 and 15, 2011

2012

- Notice of Draft Site Plan, Revised Study Area and Public Meeting released – August 2012
- Draft Project Description Report and Site Plan Report released – August 2012
- Notice of Draft Site Plan, Revised Study Area and Public Meeting; Draft Project Description Report; and, Site Plan Report – August 2012
- Public Meeting # 2 – September 2012
- Municipal Consultation Form provided to Municipalities – November 2012
- Notice of Draft Site Plan and Notice of Final Public Meeting – December 2012'

2013

- TODAY: Final Public Meetings – (February 5, 6 and 7, 2013)
- REA Application Submitted to MOE – Spring 2013
- REA Issued by MOE Anticipated – Fall 2013
- Start Construction – Fall 2013

2014

- Repowering/Decommissioning (Approximately 25 years after COD)

nrwc

Community Benefits

NRWC plans to be an active and good neighbour.

We will be establishing a Community Benefits Fund, where a portion of the Project's revenue will be reinvested in the local community, with the input of local municipalities.

The Project would also be a positive benefit to the community:

- Approximately $5 million in new local property tax revenue over 20 years, and approximately $80 million in revenue to local landowners, would be generated
- Employment during construction and operations
- Secondary source of income for local farmers and landowners
- New supply of safe and clean energy
- Helps to meet Ontario's commitment to renewable energy and phasing out of coal-fired power plants
- Helps to meet forecasted energy demand while reducing greenhouse gas levels
- The Project Team has committed to giving back to each municipality by establishing local community vibrancy funds
- In communities with turbines, NRWC is committed to contribute $3,500 per MW per year for 20 years
- In communities with transmission lines, NRWC is committed to contribute $5,000 per kilometer per year
- The way in which these funds will be spent will be determined locally

nrwc

Economic Benefits

The Niagara Region Wind Project will provide significant economic benefits for the local community.

A study conducted by AECOM Canada Inc. to explore employment and income impacts shows that the Project has the ability to significantly positively impact unemployment rates in the region and across Ontario.

The Niagara Region Wind Project will create approximately 770 jobs annually during the four-year development and construction period and 120 long-term jobs during the subsequent 20-year operational period.

The project will generate $230 million in direct Ontario-based capital expenditures.

NRWC will be contributing over $20 million to local project communities through community vibrancy funds

In September 2011, ENERCON announced it will be building two manufacturing facilities in the area:

1. A tower manufacturing facility; and,
2. A converter and control panel manufacturing facility.

On June 8, 2012, ENERCON Canada announced the establishment of a converter and control panel manufacturing facility on Bartlett Road in the Town of Lincoln.

1. The facility will create over 50 new high quality, skilled jobs, and hiring has already commenced.
2. The facility represents a $5 million investment.
3. This represents over $9.39 million in contributions back to our communities.
4. NRWC's contract with ENERCON Canada to supply and maintain 77 wind turbines has anchored this investment in the Town.

nrwc

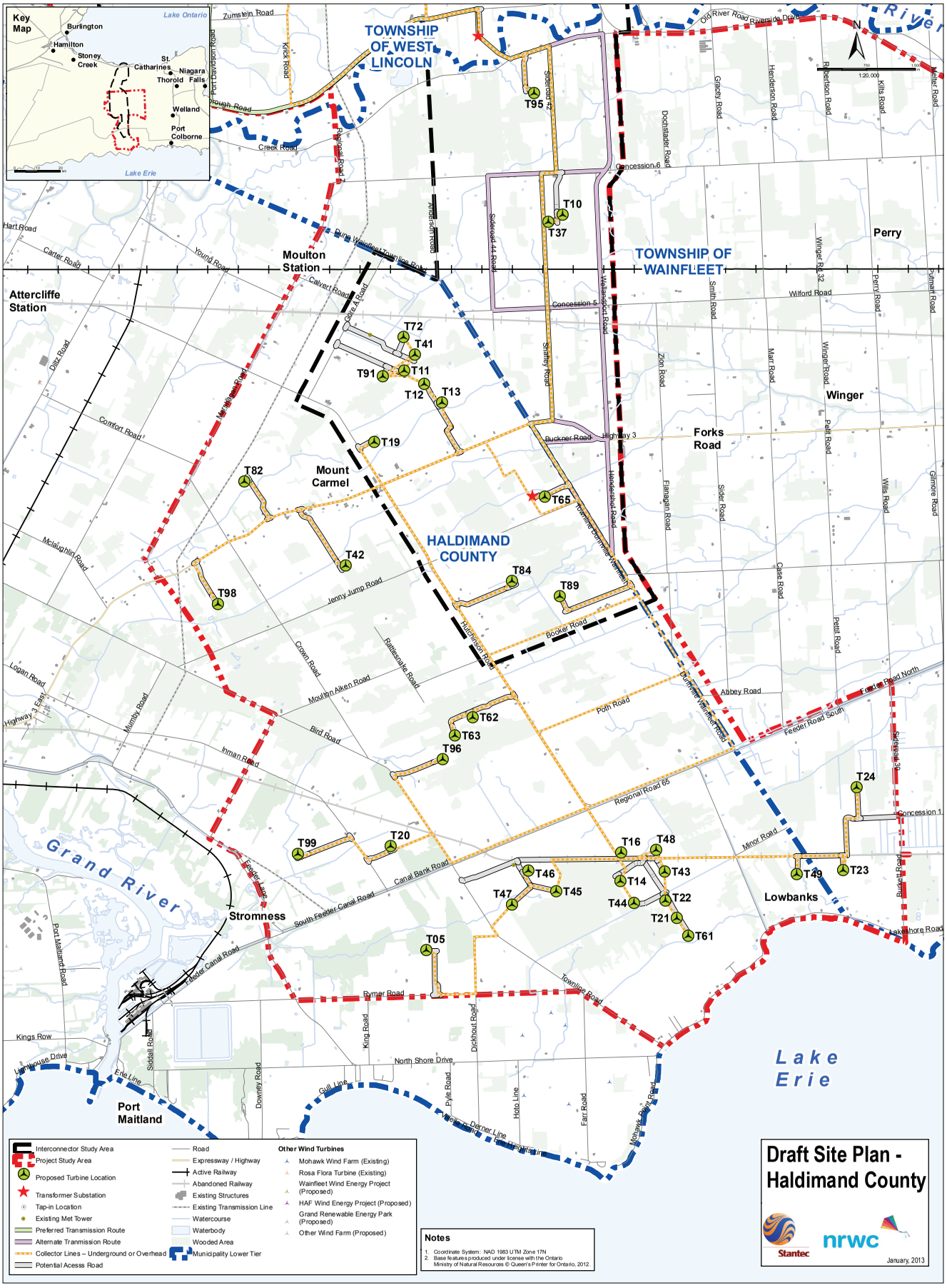
We Want to Hear From You!

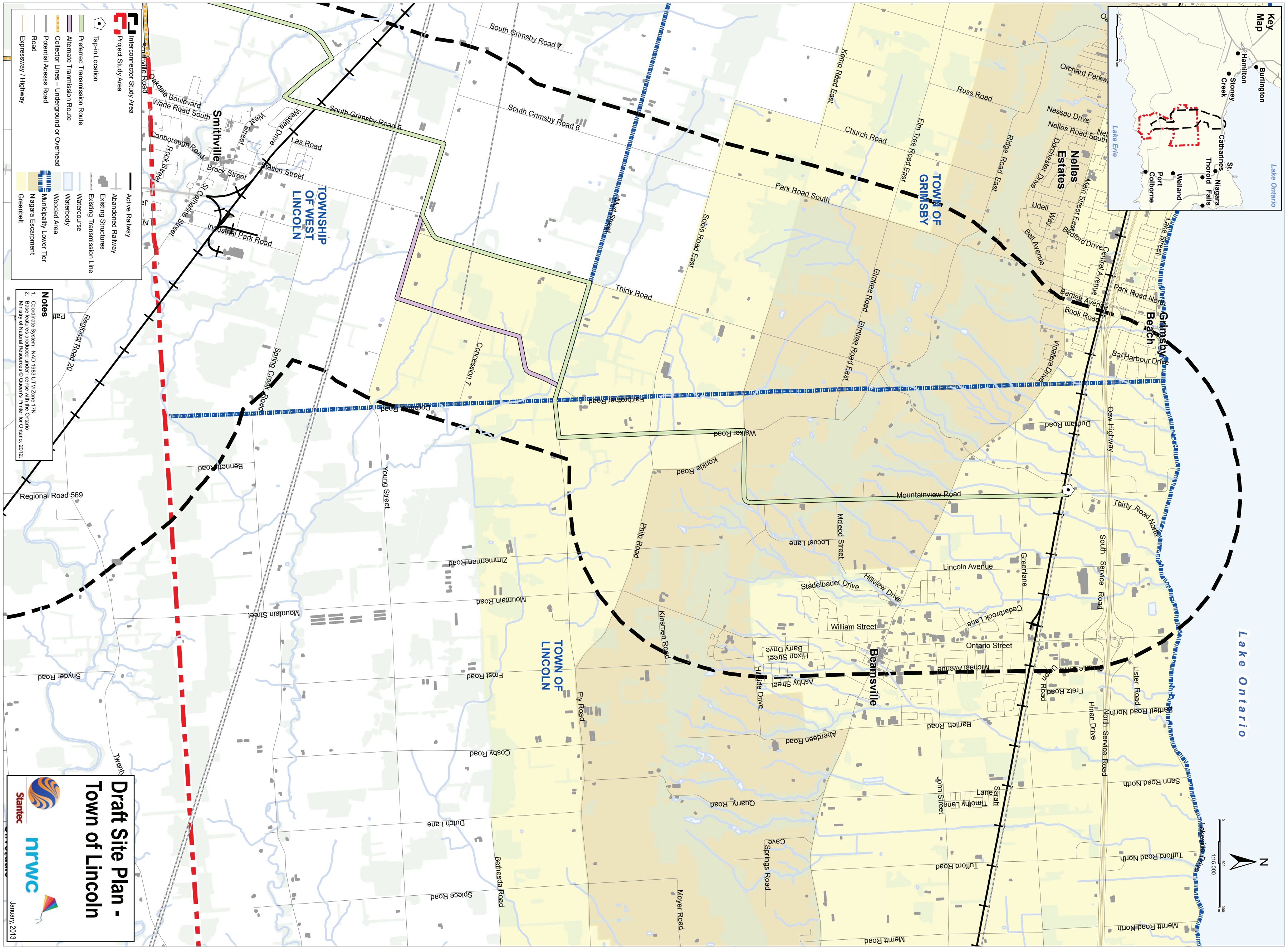
Opportunities for feedback:

- Any comments received by February 14, 2013 will be considered and included in the Consultation Report to be provided to the MOE as part of the REA application.
- Sign up at the front entrance to be added to the project notification list.
- Pick up and fill out a paper questionnaire today.
- Call us to share your thoughts toll-free at 1-855-720-2892.
- Email your thoughts to info@nrwc.ca.
- Visit us on the web at www.nrwc.ca for copies of our information boards and for additional project details.

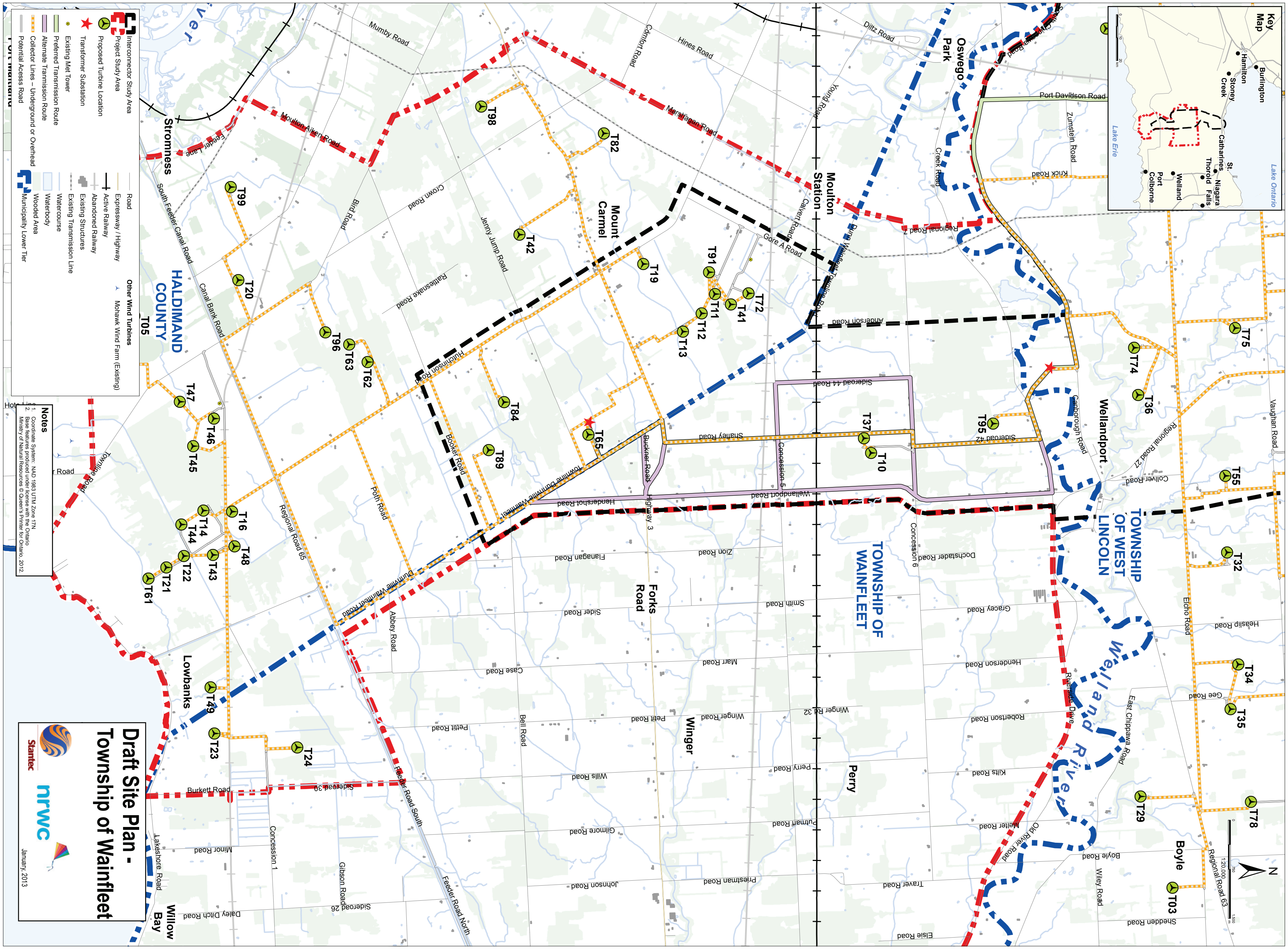
Copies of the display boards from this Public Meeting are available on the Project website (www.nrwc.ca). The Draft REA Reports will continue to be available for review online and at various viewing locations across the affected municipalities. Please reference the Notice of Final Public Meeting for details on where to view to these reports.

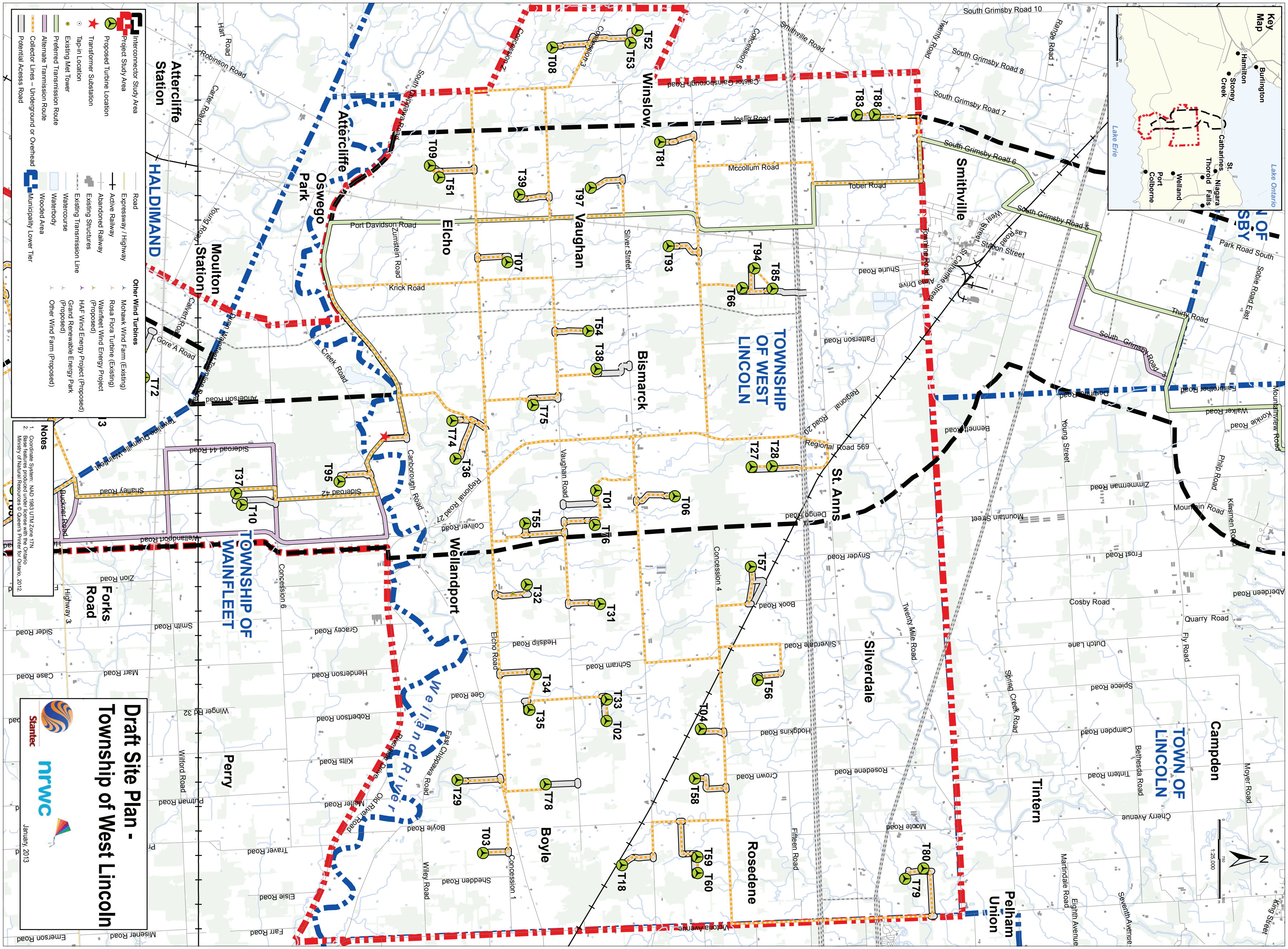
nrwc


Key Map
Lake Ontario
Burlington
Hamilton
Stoney Creek
St. Catharines
Niagara Falls
Thorold
Welland
Port Colborne
Lake Erie
TOWNSHIP OF WEST LINCOLN
TOWNSHIP OF WAINFLEET
HALDIMAND COUNTY
Perry
Winger
Forks Road
Moulton Station
Attercliffe Station
Mount Carmel
Stromness
Lowbanks
Port Maitland
Grand River
Lake Erie
T95
T10
T37
T72
T41
T91
T11
T12
T13
T19
T82
T65
T42
T84
T89
T98
T62
T63
T96
T99
T20
T16
T48
T46
T43
T14
T47
T45
T44
T22
T21
T61
T05
T24
T49
T23
Concession 6
Concession 5
Concession 1
Regional Road 65
Feeder Road North
Feeder Road South
Abbey Road
Bowker Road
Jenny Jump Road
Moulton Aiken Road
Canal Bank Road
South Feeder Canal Road
Feeder Canal Road
Rymer Road
North Shore Drive
Townline Road
Lakeshore Road
Old River Road
Riverside Drive
Wilford Road
Highway 3
Highway 3 East
Sideroad 44 Road
Sideroad 45
Shaffley Road
Wellandport Road
Hendershot Road
Townline Dunnville Warner
Huff Inlet Road
Rathbestake Road
Crown Road
Bird Road
Inman Road
Minor Road
Buckley Road
Skeggs Line
Gale A Road
Calvert Road
Young Road
Carter Road
Hart Road
Creek Road
Rough Road
Kirk Road
Port Davidson Road
Zumstein Road
Regional Road 7
Dune Wainfleet Township Road
Dillic Road
Comfort Road
Mclaughlin Road
Logan Road
Munroy Road
Port Maitland Road
Kings Row
Lighthouse Drive
Erie Line
Siddall Road
Downey Road
King Road
Dickhout Road
Gull Line
Pyle Road
Hoto Line
Farr Road
Mohawk Point Road
Derner Line
Main Ridge Line
Gracey Road
Henderson Road
Robertson Road
Kills Road
Meller Road
Docksteader Road
Smith Road
Perry Road
Winger Rd 32
Tunnell Road
Zion Road
Mar Road
Winger Road
Petit Road
Flanagan Road
Slider Road
Wills Road
Gilmore Road
Chase Road
Pettit Road
Merrittsville Road
Dillic Road
Comfort Road
Mclaughlin Road
Logan Road
Munroy Road
Port Maitland Road
Kings Row
Lighthouse Drive
Erie Line
Siddall Road
Downey Road
King Road
Dickhout Road
Gull Line
Pyle Road
Hoto Line
Farr Road
Mohawk Point Road
Derner Line
Main Ridge Line
Townline Road
Rymer Road
North Shore Drive
Lakeshore Road
Buckley Road
Skeggs Line
Feeder Lane
Interconnector Study Area
Project Study Area
Proposed Turbine Location
Transformer Substation
Tap-in Location
Existing Met Tower
Preferred Transmission Route
Alternate Tranmission Route
Collector Lines – Underground or Overhead
Potential Acess Road
Road
Expressway / Highway
Active Railway
Abandoned Railway
Existing Structures
Existing Transmission Line
Watercourse
Waterbody
Wooded Area
Municipality Lower Tier
Other Wind Turbines
Mohawk Wind Farm (Existing)
Rosa Flora Turbine (Existing)
Wainfleet Wind Energy Project (Proposed)
HAF Wind Energy Project (Proposed)
Grand Renewable Energy Park (Proposed)
Other Wind Farm (Proposed)
Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
Draft Site Plan - Haldimand County
Stantec
nrwc
January, 2013



Draft Site Plan - Town of Lincoln
Interconnector Study Area
Project Study Area
Tap-in Location
Preferred Transmission Route
Alternate Tranmission Route
Collector Lines – Underground or Overhead
Potential Acesss Road
Road
Expressway / Highway
Active Railway
Abandoned Railway
Existing Structures
Existing Transmission Line
Watercourse
Waterbody
Wooded Area
Municipality Lower Tier
Niagara Escarpment
Greenbelt
Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
Key Map
TOWNSHIP OF WEST LINCOLN
TOWN OF GRIMSBY
TOWN OF LINCOLN
Smithville
Beamsville
Grimsby Beach
Nelles Estates
Lake Ontario
Stantec
nrwc
January, 2013


Draft Site Plan -
Township of Wainfleet
Stantec
nrwc
January, 2013
Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
Interconnector Study Area
Project Study Area
Proposed Turbine Location
Transformer Substation
Existing Met Tower
Preferred Transmission Route
Alternate Transmission Route
Collector Lines – Underground or Overhead
Potential Access Road
Road
Expressway / Highway
Active Railway
Abandoned Railway
Existing Structures
Existing Transmission Line
Watercourse
Waterbody
Wooded Area
Municipality Lower Tier
Other Wind Turbines
Mohawk Wind Farm (Existing)
Key Map
Burlington
Hamilton
Stoney Creek
St. Catharines
Niagara Falls
Thorold
Welland
Port Colborne
Lake Ontario
Lake Erie
HALDIMAND COUNTY
TOWNSHIP OF WAINFLEET
TOWNSHIP OF WEST LINCOLN
Welland River
Stromness
Mount Carmel
Moulton Station
Oswego Park
Wellandport
Forks Road
Winger
Perry
Boyle
Lowbanks
Willow Bay
1:20,000


Draft Site Plan -
Township of West Lincoln
January, 2013
Stantec
nrwc
Interconnector
Project Study Area
Proposed Turbine Location
Transformer Substation
Tap-in Location
Existing Met Tower
Preferred Transmission Route
Alternate Transmission Route
Collector Lines - Underground or Overhead
Potential Access Road
Road
Expressway / Highway
Active Railway
Abandoned Railway
Existing Structures
Existing Transmission Line
Watercourse
Waterbody
Wooded Area
Municipality Lower Tier
Other Wind Turbines
Mohawk Wind Farm (Existing)
Rosa Flora Turbine (Existing)
Wainfleet Wind Energy Project (Proposed)
HAF Wind Energy Project (Proposed)
Grand Renewable Energy Park (Proposed)
Other Wind Farm (Proposed)
Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
Key Map
1:125,000
TOWNSHIP OF WEST LINCOLN
TOWNSHIP OF WAINFLEET
TOWN OF LINCOLN
HALDIMAND
Smithville
St. Anns
Silverdale
Rosedene
Wellandport
Vaughan
Bismarck
Elcho
Winslow
Boyle
Perry
Tintern
Campden
Welland River