# WELCOME

## To the St. Columban Wind Project Open House!

Thank you for coming. We are here to answer your questions, and provide information on the proposed wind facility. Please view the display panels, speak with members of the study team, and complete a questionnaire with your comments.

ST. COLUMBAN ENERGY LP

# Objectives of This Public Open House

- Provide a status update on the proposed
   St. Columban Wind Project (the Project).
- Provide an overview of the Renewable Energy Approval (REA) process.
- Share results of the environmental studies which have been completed to date.
- Answer questions about the Project and outline next steps.
- Receive the community's input and feedback for consideration by the Project team as St. Columban Energy LP finalizes the reports for submission to the Ministry of the Environment (MOE).



# St. Columban Energy LP

#### The Project

- Municipality of Huron East, Township of Howick, and Municipality of Morris-Turnberry
- 15 Turbines, 33 MW (maximum capacity)
- A 34.5 kV approximately 43 km underground electrical interconnection line
- Infrastructure includes access roads, buried electrical collector lines, two points of connection to the existing Hydro One network, a transformer station, and two small unserviced electrical control buildings
- All Project components are on private land and within municipal rights-of-way

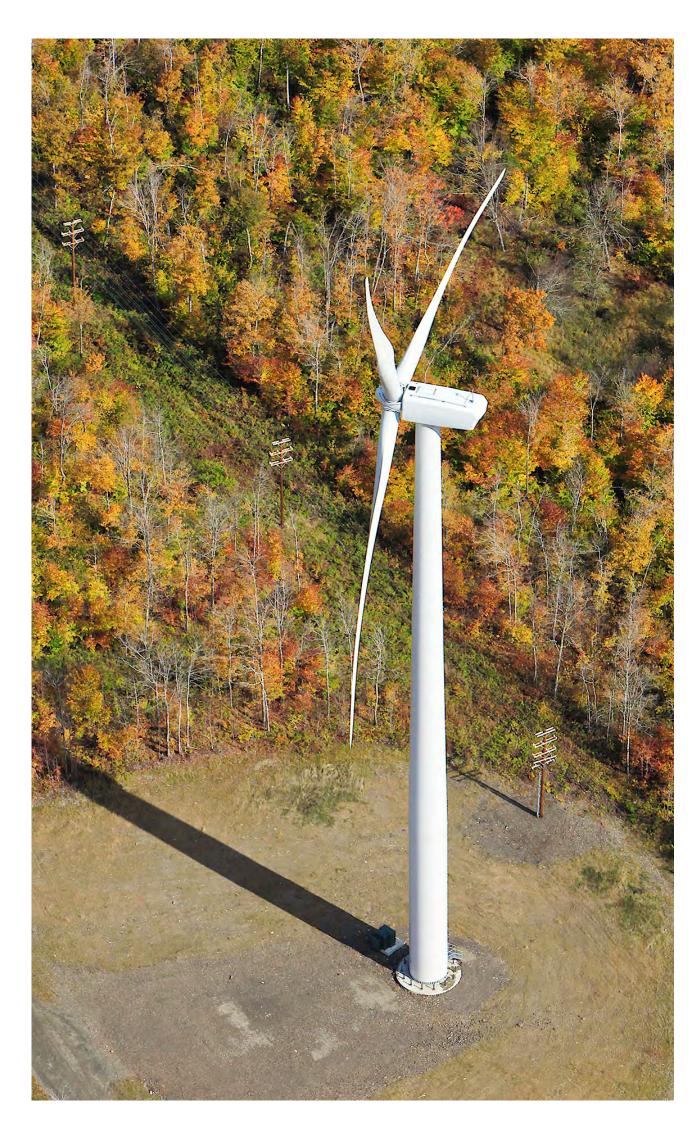
#### **Project Benefits**

- Zero emissions helps meet forecasted energy supply requirements while reducing greenhouse gas levels
- Helps meet Ontario's commitment to renewable energy and phasing out of coalfired power plants
- New local investment
- Secondary source of income for farmers and landowners

# Site Selection - Why St. Columban?

- Good Wind Regime 6 years of wind monitoring have verified the site capacity
- Sufficient distance between the turbines to account for wind energy loss between turbines
- Compatible Land Uses agricultural land requiring a small footprint for Project components
- Landowner Interest in hosting turbines
- Electrical Interconnection the project has access to connect to transmission capacity on the Hydro One provincial grid

- Environment studies of local environmental features show that the Project will have no/low impact on wildlife and natural features
- Local economic benefit jobs, municipal tax revenue, keeps famers farming as supplemental income on participating lands
- Site Access good existing road infrastructure
- Flat Topography



# Wind Project Study Area and Project Location



## Wind Turbine Details

15 Siemens SWT 2.3-101/SWT 2.3-113 wind turbine generators with a maximum installed nameplate capacity of 33 MW.

Manufacturer	Siemens	Siemens
Model	SWT 2.3-113	SWT 2.3-101
Name plate capacity (MW)	2.3 MW	2.3 MW
Hub height above grade	99.5 m	99.5 m
Blade length	55 m	49 m
Full blade diameter	113 m	101 m
Blade sweep area	10,000 m	8,000 m
Speed range	6-13 rpm	6-16 rpm
Frequency spectrum	60 Hz	60 Hz

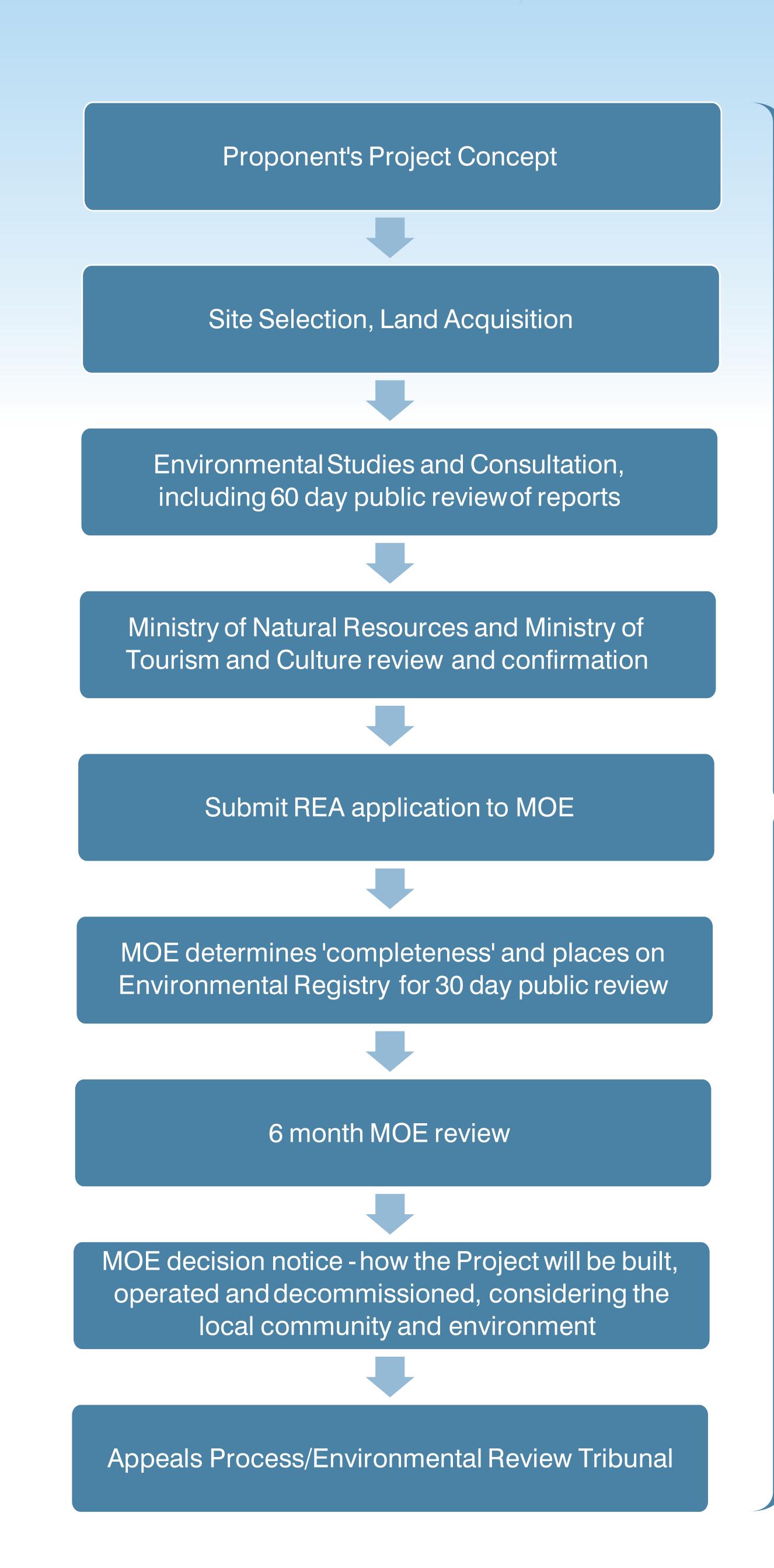
To be conservative, two turbine models are being assessed as part of the Renewable Energy Approval (REA) process – the SWT 2.3-113 (113m blade span) and the SWT 2.3-101 (101m blade span).

- For the noise assessment, the SWT 2.3-101 is being assessed, due to its higher noise level.
- For potential impacts to the natural environment, and property line setback assessments, the SWT 2.3-113 is being assessed, due to its longer blade length.

This conservative approach will ensure the 'worst case scenario' is being assessed.

# Renewable Energy Approval (REA) 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, was amended on January 1, 2011, and replaces the previous Ontario *Environmental Assessment Act* process for wind projects.
- The REA application for the St. Columban Wind 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 sought during the REA process.



# Renewable Energy Approval Process - Setbacks

- A key component of the REA process is the establishment of common setbacks for all renewable energy facilities in the Province.
- Where Project related infrastructure will be located within the setback distances, additional analysis, including an Environmental Impact Study, will be provided in the REA application and summarized in the Final Project Description Report.
- Key setbacks which will be applied throughout the design of the Project are as follows:

Feature	Setback Distance	
Non-participating noise receptor	550 m (from turbine base)	
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	
Provincially significant ANSI (Earth Science)	50 m	
Provincially significant ANSI (Life Science)	120 m	
Significant valleyland	120 m	
Significant woodland	120 m	
Significant wildlife habitat	120 m	
Lake or a permanent or intermittent stream	120 m from the average annual high water mark	
Seepage area	120 m	

## Technical Studies

Environmental studies have been completed to fully understand the local environment and have been considered in the development of the Project layout.

The technical studies include in-depth analysis of:

- Wildlife and wildlife habitat, including Species at Risk and Significant Wildlife Habitat
- Bird breeding, wintering, and migration areas
- Waterbodies and aquatic resources
- Woodlands, vegetation, and other significant natural features (e.g. wetlands and Areas of Natural and Scientific Interest)
- Archaeological Features, Built Heritage Features and Protected Properties

All of the technical studies will be provided within the REA reports in draft form for public review and comment at least 60 days before the Final Public Open House, planned for late spring 2012.



### Health and Wind Power

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

- Many studies have been conducted world-wide to examine the relationship between wind turbines and possible human health effects.
- In Ontario "Ontario doctors, nurses, and other health professionals support energy conservation combined with wind and solar power to help us move away from coal"

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

- In "The Potential Health Impact of Wind Turbines" (May 2010), Ontario's Chief Medical Officer of Health examined the scientific literature related to wind turbines and public health, considering potential effects, such as dizziness, headaches, and sleep disturbance. The report concluded that:
  - "...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."
  - The report also concluded 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, the report states that there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects.
- Overall, health and medical agencies agree that sound from wind turbines is not loud enough to cause hearing impairment and is not causally related to adverse effects\*.
- Scientists and medical experts around the world continue to publish research in this area. Through our health consultants, St. Columban Energy LP is committed to keeping informed on this issue.

<sup>\*</sup>e.g., Chatham-Kent Public Health Unit, 2008; Minnesota Department of Health, 2009; Australian Government, National Health and Medical Research Council, 2010; Australian Government, 2011

## Noise Assessment

- A Noise Assessment
   Report has been
   completed for the
   Project to ensure it
   complies with MOE
   requirements.
- Sound levels will be below 40 dBA, and all turbines have been sited more than 550m from all non-participating receptors (including residences).



# Natural Heritage Assessment

Natural features within 120 m of the Project Location (proposed construction area) were assessed (where access was granted) for significance and potential effects of construction, operation and decommissioning of the Project. **Findings:** 

- There are no wetlands within the proposed construction area. There are provincially significant and locally significant wetlands within 120 m of the proposed construction area; these were all conservatively assessed by the Project Team as provincially significant to ensure their protection.
- One Life Science Area of Natural and Scientific Interest (ANSI) was found within 120 m of the proposed construction area for the interconnection line.
- One deer yard was found within 120 m of the northern end of the proposed underground electrical interconnection line route.
- Public input resulted in a 2011 survey for Tundra Swans.
- No seasonal concentration areas for birds were identified.
- Two potential woodland amphibian breeding ponds were identified within 120 m of the proposed construction area.
- No animal movement corridors, bat hibernacula (overwintering) or maternity roosts were identified.
- Although the Project is within an area where species at

risk may be found, it is anticipated that the Project will not have negative impacts on these species or their habitats. If, after completion of the species at risk analyses, it is determined that there is potential to negatively impact the species or its habitat, the Project will ensure that the affected species and/or its habitat will receive an overall benefit by working closely with MNR.

Mitigation measures will be put in place to reduce or eliminate potential effects to provincially significant wetlands and significant woodlands. The Project has been sited to avoid natural features, and the interconnection line will be entirely within the municipal road allowance, significantly reducing or even eliminating potential effects on adjacent natural features.

Potential impacts on all features were not determined to be significant and can be mitigated through standard practices and timing windows.



# Water Body Assessment

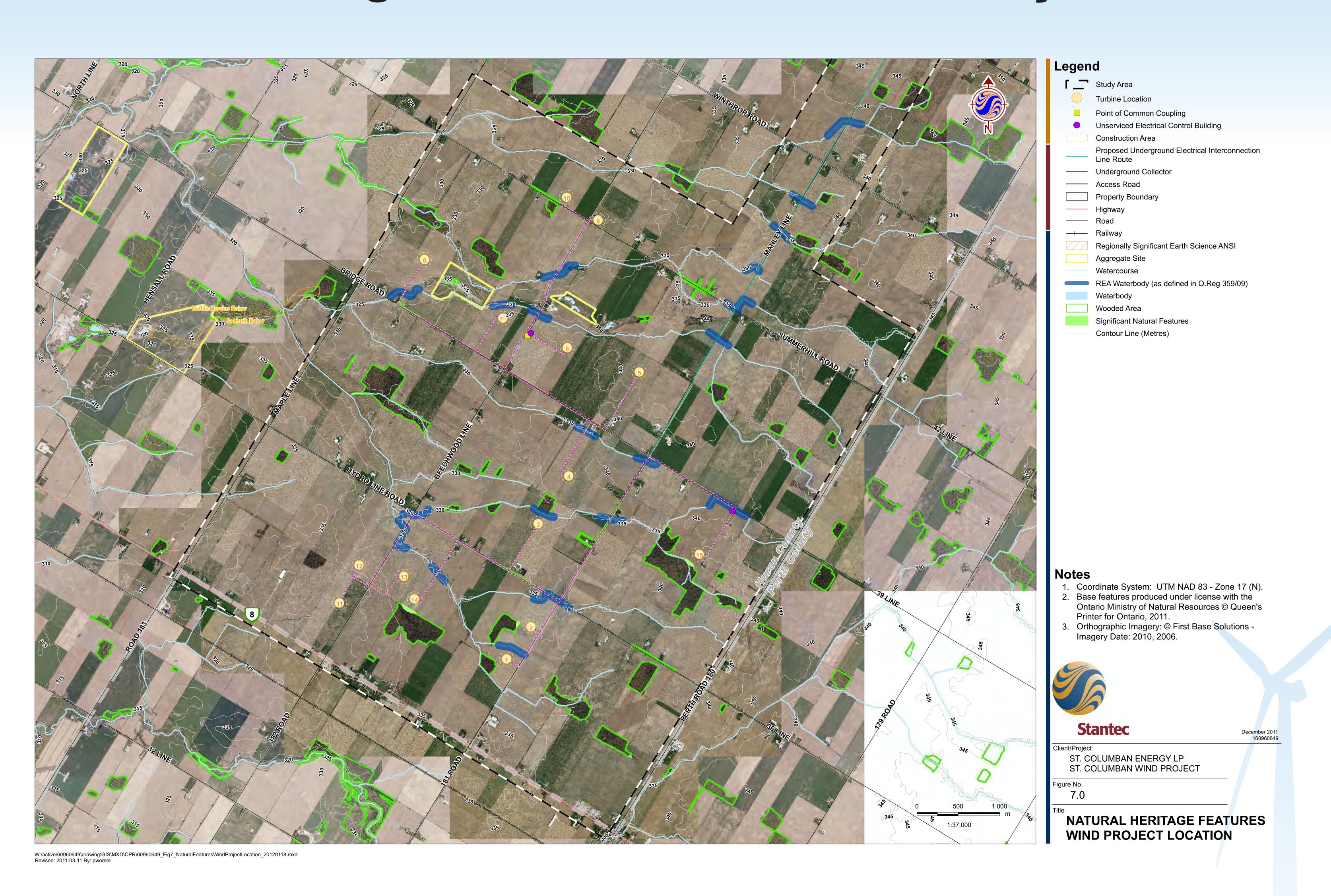
#### **Water Features**

- Seven watercourses are present within 120 m of the
   No impacts to fish or fish habitat are anticipated if Wind Project Location (construction area); three are within the construction area – Ryan Drain (T7), Woods Drain (T3) and Carpenter Drain (T1)
- Water crossings with culverts are required at Krouskopf Drain (T4), Ryan Drain (T6), Canada Company Drain (T14), and Woods Drain (T15); T14 and T15 will require resizing of existing culverts
- Twenty-three watercourses are within 120 m of the construction area for the underground electrical interconnection line – all will be crossed by directional drilling under the watercourses
- Project infrastructure, including access roads and buried electrical cable, could impact watercourses
- Mitigation will include direction drilling, construction of appropriate sediment and erosion controls, and using Operational Statements from the Department of Fisheries and Oceans

mitigation measures are followed.



## Natural Heritage Assessment & Water Body Assessment



# **Built Heritage, Protected Properties and Archaeological Assessments**

Stage 2 Archaeological Assessment (field studies) conducted for all Project components

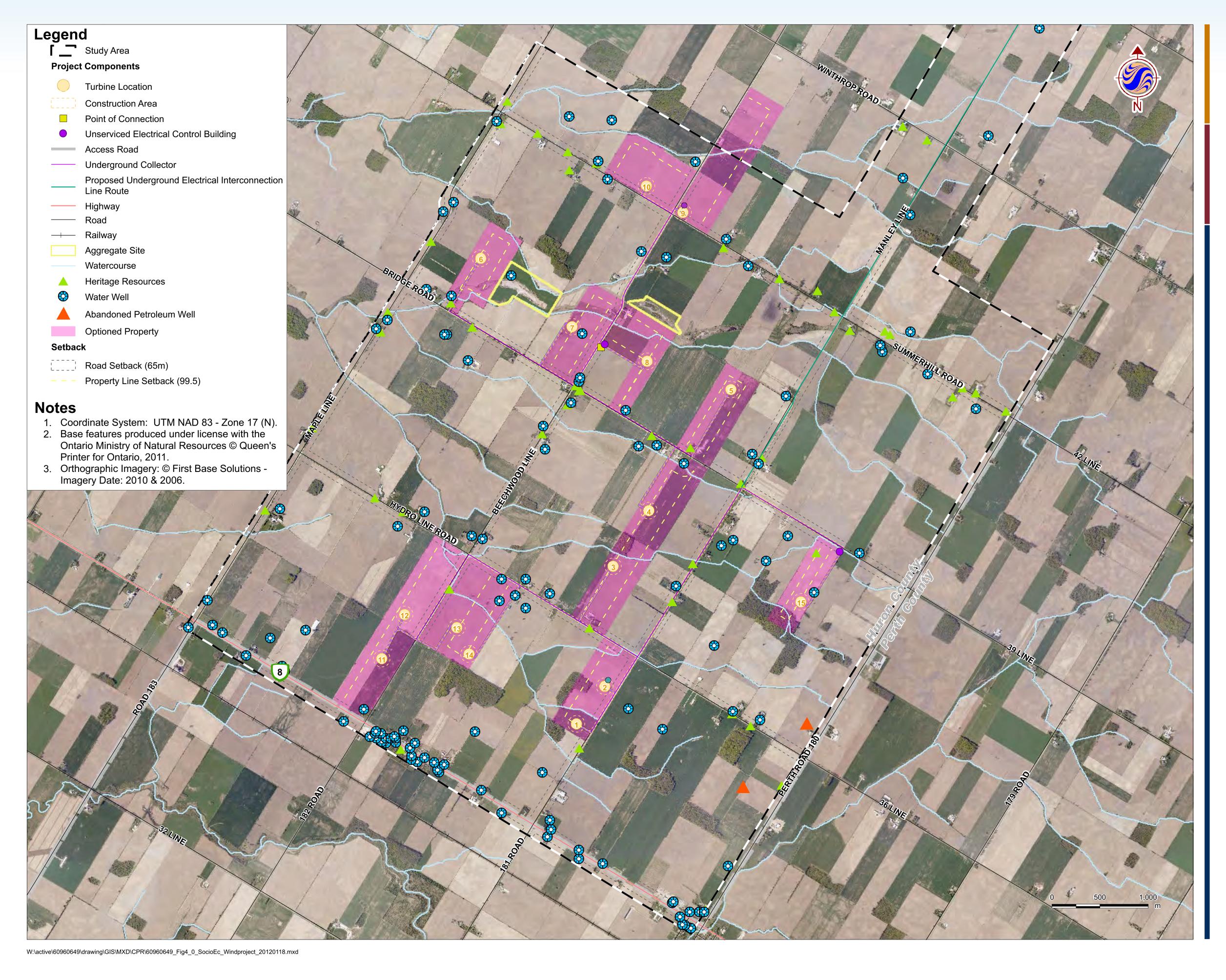
No archaeological features found.

47 significant built heritage resources and two significant cultural heritage landscapes were identified within the Study Area and assessed for Project-related effects. Potential negative effects were identified for 17 properties and 2 cultural heritage landscapes.

#### Mitigation includes:

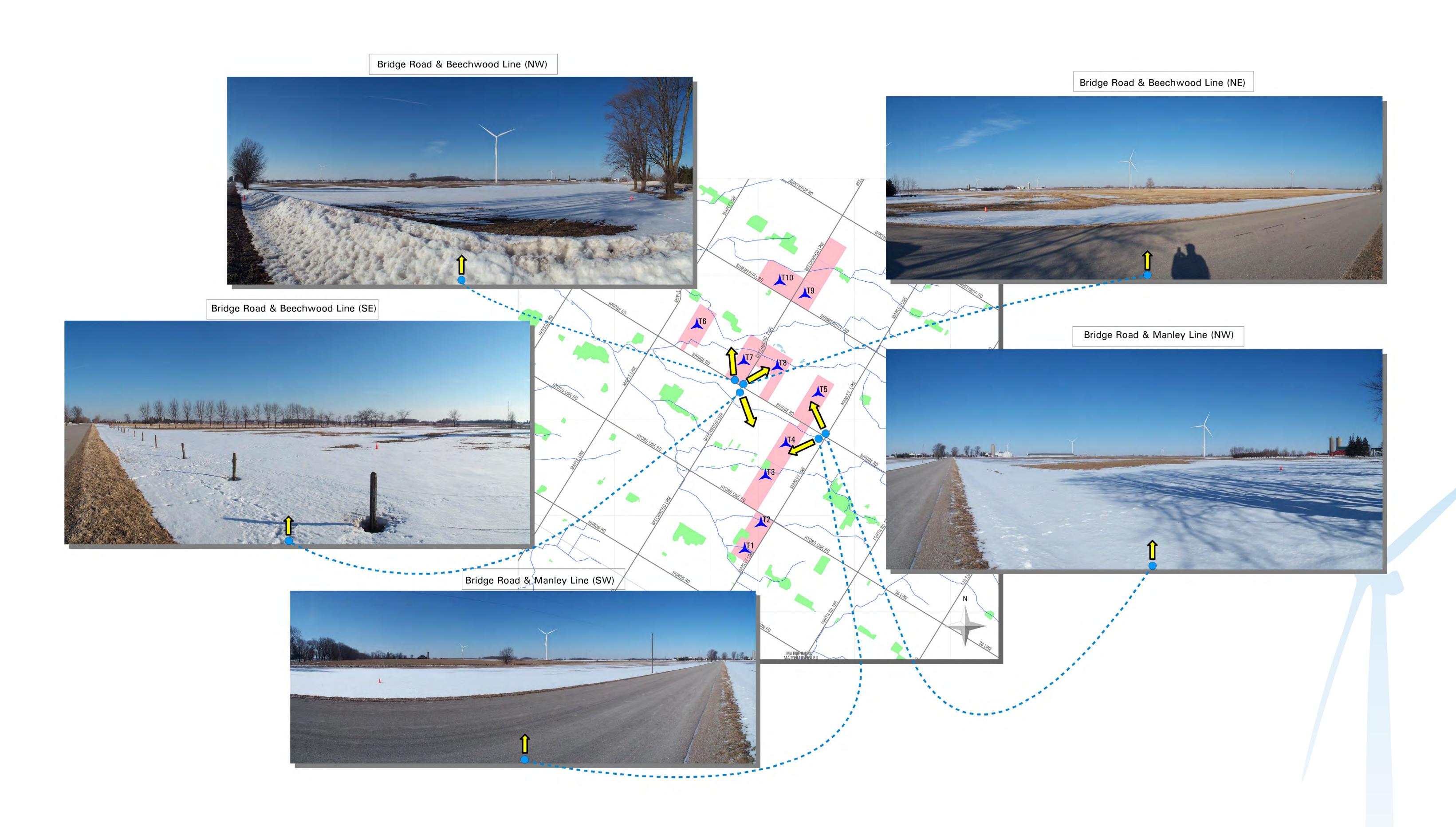
- A study by a qualified engineer to determine acceptable levels of vibration
- Monitor vibrations during sub-grade construction
- Halt activities if vibration levels exceed maximum thresholds
- Avoid removal of trees in vicinity of properties and avoid damaging tree roots

Also, five 19<sup>th</sup> and 20<sup>th</sup> century windmills were identified in the Study Area, and the team recommends these not be removed during construction and operation of the Project.

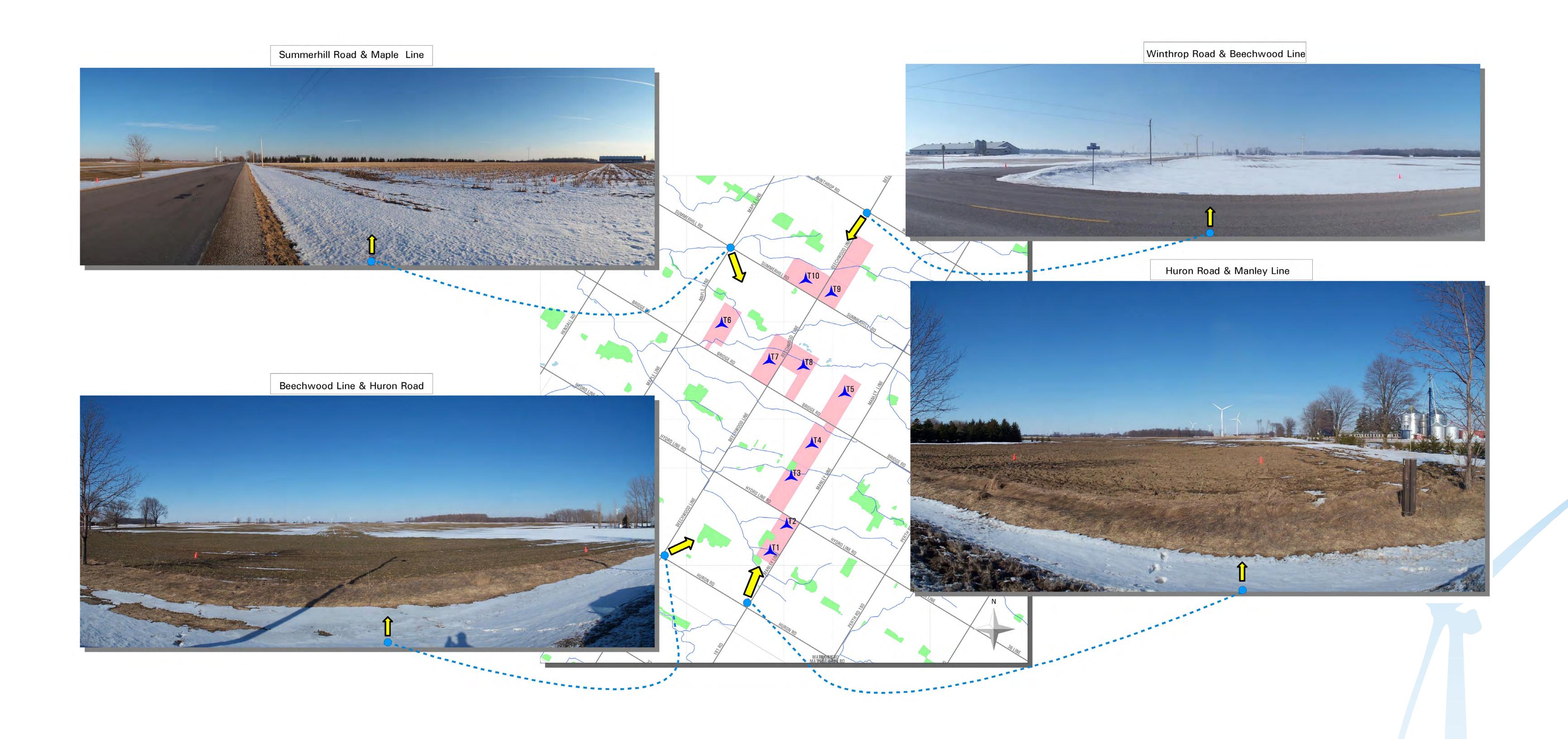


# Visual Impact Assessment

Visual assessments were conducted during the ESR phase in 2009. While some newly proposed turbines have not been assessed, the majority have been, and the figures below give an indication of the visual impact of turbines within the Study Area.



# Visual Impact Assessment



# Renewable Energy Approval Reports

The following reports will be prepared and submitted as part of the REA application:

- Project Description Report (a Draft is already posted on the project website)
- Construction Plan Report
- Design and Operations Report, includes:
  - Preliminary Property Line Setback Assessment
  - Noise Assessment
- Decommissioning Plan Report
- Wind Turbine Specifications Report

- Natural Heritage Assessment / Environmental Impact Study
- Water Assessment / Water Body Report
- Heritage Impact Assessment
- Protected Properties Assessment
- Stage I Archaeology Assessment
- Stage II Archaeological Resources Assessment Report
- Consultation Report



All reports, with the exception of the Consultation Report, will be made available in draft form for public review and comment at least 60 days prior to the Final Public Open House. Notification of the release of the draft reports will be provided.

# Project Schedule Overview

Initiate Public REA Process – Winter 2011 2011 Draft Project Description Report and Site Plan made available – March 2011 Undertake REA Technical Studies – throughout 2011 (supplemented with 2006-2009 ESR studies) Draft REA Reports and Municipal Consultation Form provided to Huron East and Huron County – May 2011 Public Open House #1 – May 2011 We Are Here 2012 Public Open House #2 – January 2012 Draft REA Reports and Municipal Consultation Form provided to Huron East, Howick, Morris-Turnberry and Huron County – January 2012 Draft REA Reports to Public – February 2012 60 - day Public Review and Comment Period Final Public Open House – late Spring 2012 REA Submission – Spring 2012 30 – day Environmental Registry public review period - date determined by MOE 2013 REA Decision – late 2012 Start of Construction – July 2013 Commercial Operation Date (COD) - early 2014 Repowering/Decommissioning – Approximately 20.5 years after COD

### We Want Your Feedback!

Please share your questions and comments with us by filling out a questionnaire.

You can also contact the Project team by:

Email: Shawna.Peddle@stantec.com

Project Email: stcolumbanwind@vereseninc.com

Phone: 519-836-6050

Mail: José Menendez Shawna Peddle

VP Business Development, East Senior Project Manager

St. Columban Energy LP

Stantec Consulting Limited

222-3rd Avenue SW, Suite 900

70 Southgate Drive, Suite 1

Calgary, AB T2P 0B4

Guelph, ON N1G 4P5

You may also visit us on the project website at: http://www.vereseninc.com/our-business/power/wind.html

Copies of the display boards from this Public Open House and the Draft Project Description Report are available on the website.