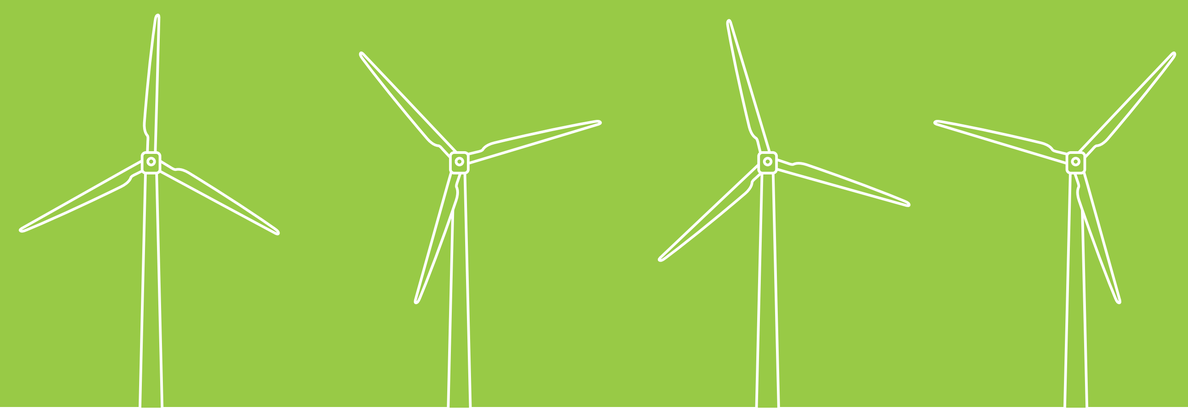
Welcome!



Thank you for coming to the North Kent Wind 1 Project Public Meeting.

Your questions and comments are important to us.

Please be sure to sign in and complete a comment sheet.

Why Are We Here?

Good Planning Involves the Community

This Public Meeting is an important starting point for the North Kent Wind 1 Project.

The purpose of this meeting is to:

- Introduce the North Kent Wind 1 Project and provide an overview of the Renewable Energy Approval (REA) process
- Obtain community feedback to be considered in the planning and design of the Project
- Provide an opportunity to speak with the Project team and have your questions answered about the Project

Who We Are

North Kent Wind 1

North Kent Wind 1 LP, by its general partner, North Kent Wind 1 GP Inc. ("North Kent Wind 1"), is a joint venture limited partnership owned by affiliates of Pattern Renewable Holdings Canada ULC ("Pattern Development") and Samsung Renewable Energy Inc. ("Samsung Renewable Energy").

The proposed Project would produce a total nameplate capacity of up to 100 megawatts (MW) of electricity. The total number of turbines will be dependent on the type(s) of turbines that will be used, the individual MW generation capacity of each turbine, and potential changes to the overall nameplate capacity. Once the turbine model has been selected, the layout design and the number of turbines will be finalized and presented during the consultation process.

Samsung Renewable Energy

Samsung Renewable Energy, together with some of the world's leading renewable energy companies, has made an unprecedented $5-billion private-sector investment in Ontario to create the largest cluster of wind and solar power anywhere on the planet. Thanks to Samsung's Green Energy Investment Agreement with the Government of Ontario, we are creating 9,000 jobs while producing 1,369 MW of clean energy.

Pattern Development

Pattern Development is a leader in developing renewable energy and transmission assets. With a global footprint spanning the United States, Canada, Mexico, Chile and Japan, Pattern Development's highly-experienced team has brought more than 4,000 MW of renewable power projects to market. Our mission is to develop projects built for lasting success. We have expertise in all project stages: resource analysis, site development, power marketing, finance, construction, operations and asset management. Our affiliate company, Pattern Energy Group Inc. (Pattern Energy), has a portfolio of 16 wind power projects with a total owned interest of 2,112 MW.

How Can You Get Involved?

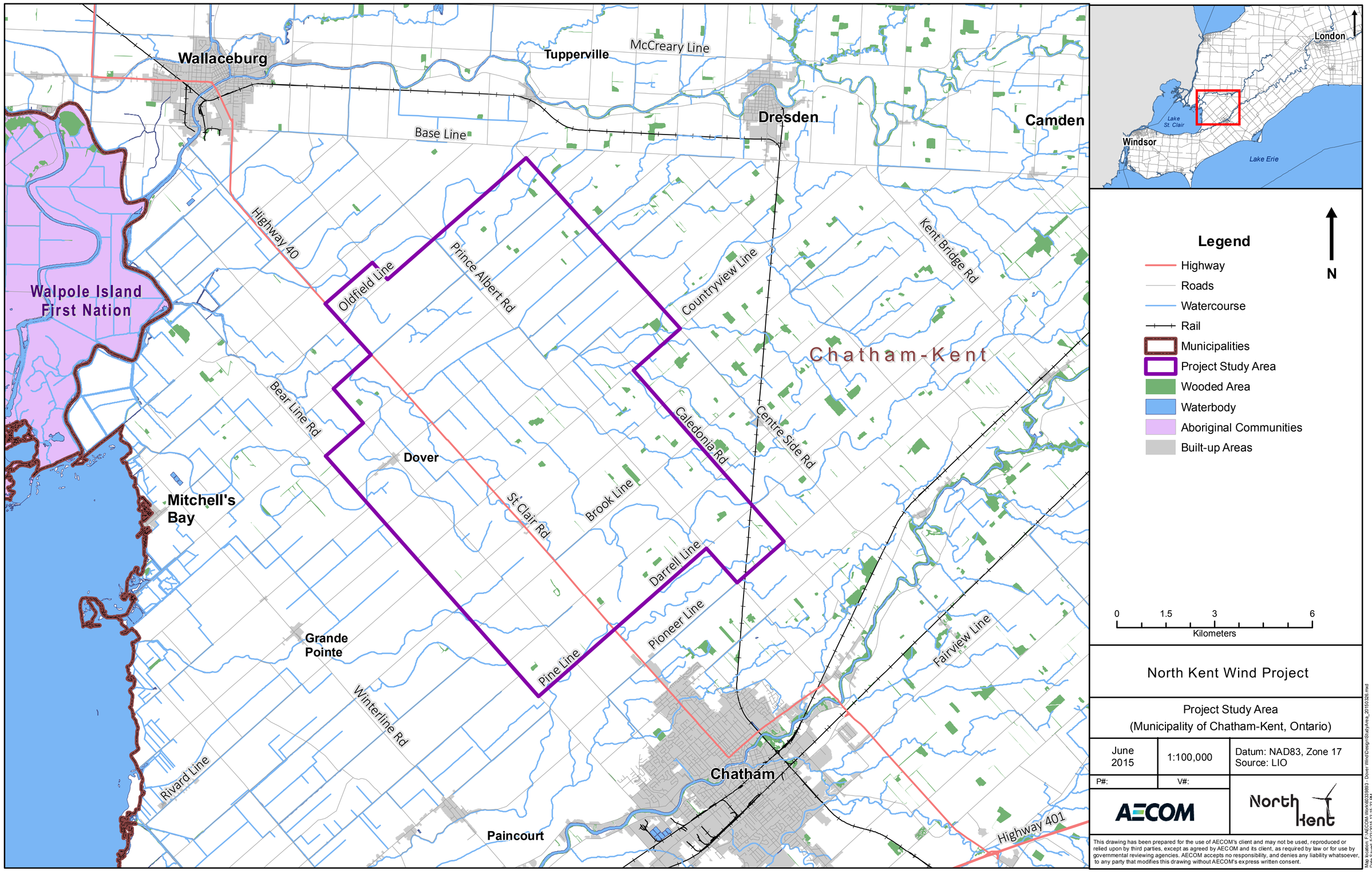
We're Interested in What You Have to Say!

As you are reviewing the information presented, we encourage you to ask questions and provide your thoughts about the North Kent Wind 1 Project.

Throughout the course of the North Kent Wind 1 Project REA process, you may visit our website at: www.northkentwind.com to access up-to-date information.

We also encourage you to provide feedback to the Project team at any point during the study process by contacting us at: **info@northkentwind.com.**

Project Study Area



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Pattern Development

Planning and Early Design Stage

Design of the North Kent Wind 1 Project

» We are in the planning and early design stages and a Draft Project Description Report has been prepared

» The North Kent Wind 1 Project is expected to produce a total nameplate capacity of up to 100 MW of electricity

» The turbine number, model and height will depend on various factors including: wind resource, siting restrictions, and socio-economic or natural environment constraints

» The major components of the North Kent Wind 1 Project are anticipated to include:

- Wind turbine generators and foundations
- Pad-mounted step-up transformers
- Turbine access roads
- Buried and overhead electrical collector system and ancillary facilities
- Collector substation
- Microwave tower
- Meteorological towers
- Interconnection station
- Operations and maintenance building
- Temporary construction staging areas

How Wind Works

Harnessing the Wind

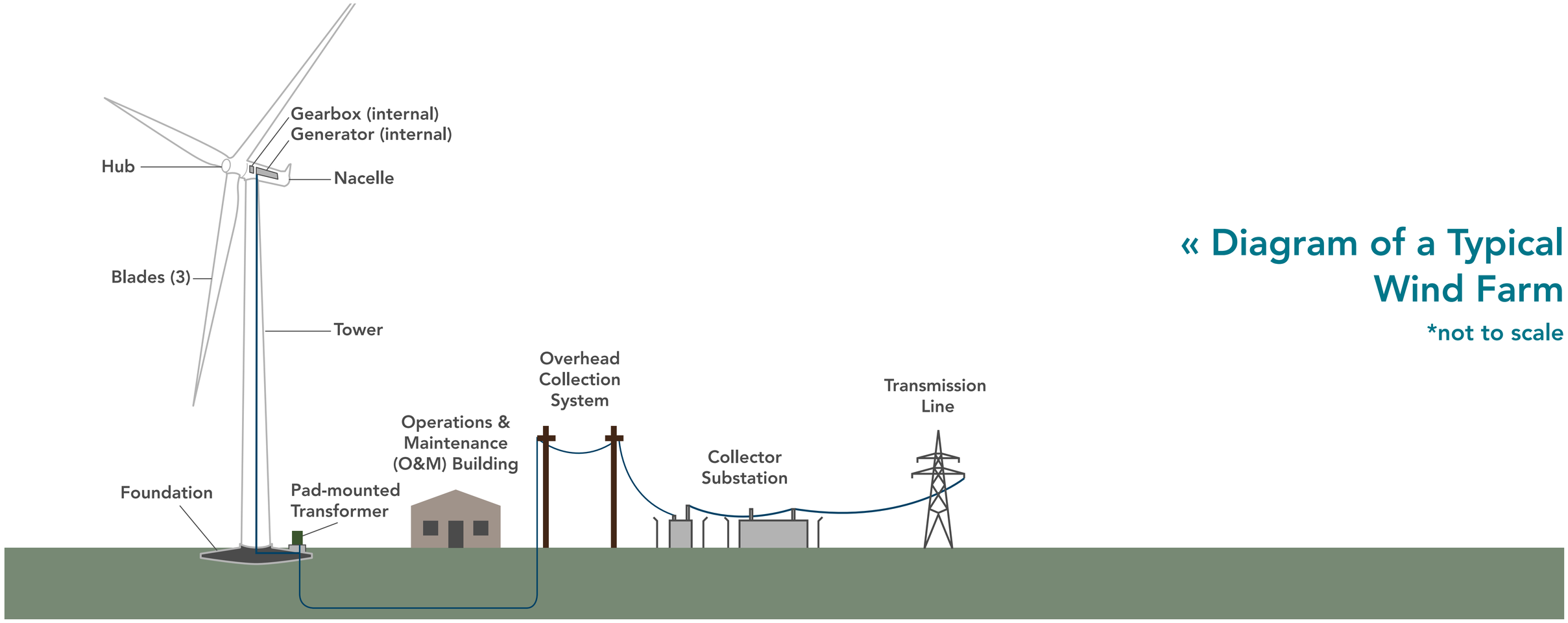
- Wind turbines capture kinetic energy in surface winds and convert it into electrical energy using large blades mounted on tall towers
- As wind moves over turbine blades, it causes "lift" – the same effect used by airplane wings
- Lift makes the blade rotate, which turns the shaft
- The turning shaft creates electricity within a generator, which in turn creates electricity that can be sent to the power grid

Main Components

- Blades which convert the wind's energy into rotational shaft energy
- A nacelle (enclosure) containing a drive train, usually including a gearbox and generator
- A tower to support the rotor and drive train
- Electronic equipment such as controls, electrical cables, ground support and equipment
- Transformer which converts the electricity to a common voltage

Ancillary Components

- Operations and maintenance building to monitor day-to-day operations
- Collector system to carry electricity from the turbines to the collector substation
- Collector substation to collect the electrical collector lines and transform the collector line voltage (34.5 kV) to a transmission voltage (230 kV)



« Diagram of a Typical Wind Farm

*not to scale

Benefits of Wind Energy

Community

- Compatible with mixed land use (e.g., grazing, agriculture and hunting)
- Strengthens the local tax base, helping to improve municipal services, including schools, police and fire departments
- Provides a steady income to farmers and property owners
- Increases revenue for service businesses (e.g., hotels and restaurants) during planning, construction and operation

Economic

- Reduces reliance on imported fossil fuels
- Quick to install and are low maintenance once in place
- Helps stabilize the cost of energy
- Creates thousands of "green-collar" jobs in construction, operation and manufacturing
- Supports the local economy as Ontario goods and labour will be used during construction and operation
- Provides a reliable supply of domestically produced energy

Environmental

- Wind is a clean and inexhaustible resource
- Modern wind energy generating equipment is efficient, reliable and environmentally friendly
- Renewable energy will help reduce dependence on other forms of electricity generation that contribute to greenhouse gas emissions and poor air quality
- Wind power generation can help reduce the amount of carbon dioxide, sulphur dioxide and nitrogen oxides that are produced by other forms of electricity generation

Renewable Energy Approval Process

REA Process

The REA is issued under Ontario Regulation 359/09 (Renewable Energy Approvals under Part V.0.1 of the Act) under the *Environmental Protection Act.*

The REA application will outline how North Kent Wind 1 proposes to design, build, operate and decommission the Project.

Additional environmental approval and permitting requirements from agencies such as the Ministry of Natural Resources and Forestry, Ministry of Tourism, Culture and Sport, the St. Clair Region Conservation Authority, and the Lower Thames Valley Conservation Authority will be addressed as part of and subsequent to the North Kent Wind 1 Project REA application.

Municipal permits and plans (e.g., Building Permit, Entrance Permit) will also be required from the Municipality of Chatham-Kent prior to construction.

The following reports will be prepared and made available for public review as part of the REA process:

- Project Description Report
- Construction Plan Report
- Design and Operations Report
- Decommissioning Plan Report
- Wind Turbine Specifications Report
- Consultation Report
- Archaeological Assessments
- Heritage Impact Assessment
- Natural Heritage Assessment
- Water Body Report
- Noise Impact Assessment

REA Process Diagram

Renewable Energy Approval Process:

- Conduct Preliminary Desktop Analysis

Public Consultation Process:

- Notice of First Public Meeting and Proposal & Draft Project Description — JUNE 3, 2015
- Public Meeting — TODAY
- Landowner Meetings
- Agency and Municipal Meetings

- Undertake Detailed Environmental and Technical Studies — SUMMER 2015
- Design Draft Project Layout
- Conduct Environmental Effects Analysis & Prepare Draft REA Reports — SUMMER/FALL 2015
- Finalize Project Layout

- Notice of Draft Site Plan Report Published & Draft Site Plan Report Released for Public Review
- Notice of Second Public Meeting Published & Draft Reports Released for Public Review
- Second Public Meeting — FALL 2015

- Finalize REA Reports
- Submit REA Application to the Ministry of the Environment and Climate Change (MOECC) — WINTER 2015
- Notice of Filing Posted on Environmental Registry

- 30-Day Comment Period

- MOECC Review of Proposal — ~ 6 months
- REA Decision

= REA consultation activity

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Pattern Development

Turbine Siting Process

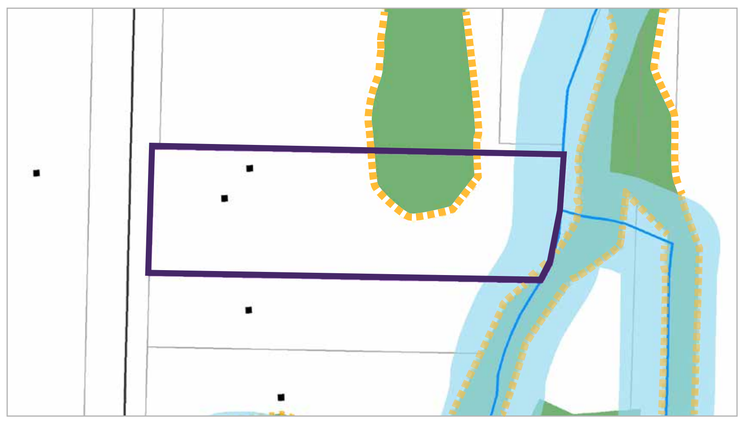
Steps for Developing a Site Plan

1. Identify a sufficient wind resource and study the wind conditions for several consecutive years
2. Work with local landowners to option land for wind turbines and supporting Project infrastructure (i.e., collector lines and access roads)
3. Identify technical and environmental constraints based on input from Project engineers, ecologists and aquatic biologists, heritage experts, local landowners, First Nation and other Aboriginal communities as well as government agencies
4. Identify locations to site Project infrastructure within the remaining land available (see figures to the right) while adhering to the setback distances prescribed by the province (i.e., Ontario Regulation 359/09)

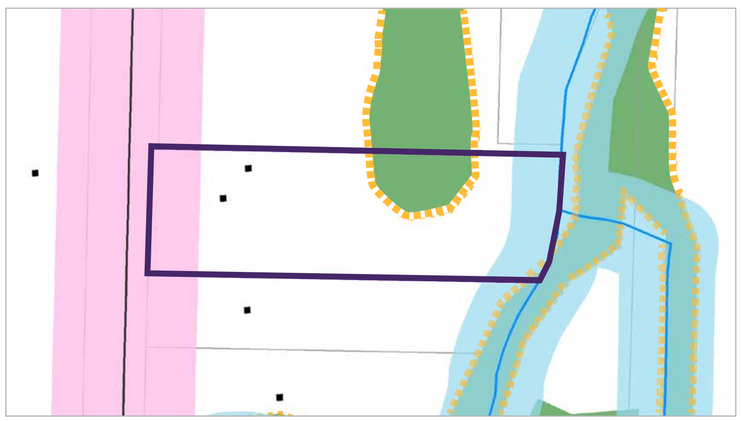
- Project components can be sited within the setbacks for some terrestrial features provided that an Environmental Impact Study is completed and mitigation measures are identified

Work with local landowners to option land

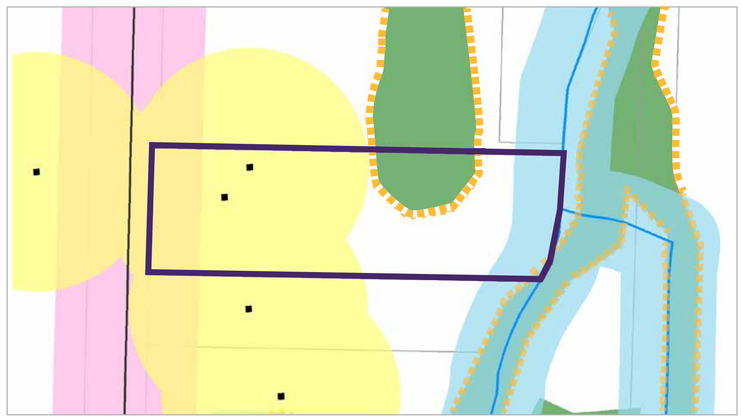
Identify natural constraints



Identify aquatic constraints



Identify local infrastructure constraints



Identify socio-economic constraints

Site turbine within remaining land available

Turbine Location
Noise Receptor
Roads
Watercourse
Parcels
Wooded Areas

Setback
Terrestrial Setback
Aquatic Setback
Local Infrastructure Setback
Socio-Economic Setback

Wind Turbine Setback Requirements

Project Related Infrastructure

Under the REA process, the Ministry of the Environment and Climate Change has established required setback distances from receptors for all renewable energy facilities.

If Project related infrastructure (turbines, access roads, collector system, etc.) is located within the setback distances, additional analysis (i.e., Environmental Impact Study) will be provided in the REA application and summarized in the final Project Description Report.

A preliminary list of environmental components being considered includes:

- Terrestrial and Aquatic Environment (Natural Heritage and Waterbodies)
- Surface Water and Groundwater
- Topography, Geology and Soils
- Sound
- Air Quality
- Current Use of Land and Resources

What Is a Receptor?

Existing buildings or vacant lots that are, or could potentially be, used for overnight accommodations (e.g., homes) or as an educational facility, health care facility, day nursery or place of worship.

Hospital

School

Setback Requirements

Feature	Setback Requirement
Non-participating receptor (see definition)	» 550 metres from turbine base
Public road right-of-way and railway right-of-way	» Turbine blade length plus 10 metres from turbine base
Property line	» Turbine height (excluding blades) from turbine base
Provincially significant southern wetland	» 120 metres
Significant woodland	» 120 metres

Feature	Setback Requirement
Provincially significant ANSI (Life Science)	» 120 metres
Provincially significant Area of Natural and Scientific Interest (ANSI) (Earth Science)	» 50 metres
Significant wildlife habitat	» 120 metres
Lake	» 120 metres from the average annual high water mark
Permanent or intermittent stream	» 120 metres from the average annual high water mark
Seepage area	» 120 metres

Construction, Operation and Decomissioning

Construction Activities

- Delineation of areas for construction equipment and laydown of Project components as well as important natural features, and installation of erosion and runoff controls
- Clearing and grubbing of vegetation for temporary work areas and installation of temporary facilities
- Construction of access roads
- Site grading, as necessary
- Delivery of construction vehicles and equipment
- Installation of wind turbine foundations and crane pads
- Erection of wind turbines
- Installation of pad-mounted transformers and above and/or below ground electrical collector system
- Construction of collector substation
- Installation of meteorological and microwave towers
- Construction of interconnection station
- Construction of operations and maintenance building
- Reclamation of temporary construction areas

Operation Activities

- Preventative maintenance of Project components
- Meter calibrations
- Remote operation of the wind turbines
- Maintenance of electrical collector system
- Access road maintenance

Decommissioning Activities

- Disassembly and removal of Project components
- Reclamation of disturbed areas
- Disconnection of point of interconnect

Providing Clean and Safe Power

Ontario doctors, nurses and other health professionals support energy conservation combined with wind and solar power to help us move away from the use of coal for energy generation.

More than 80 countries around the world are using commercial wind power today, and wind energy is broadly understood to be one of the safest and most environmentally-friendly forms of electricity generation.

With approximately 370,000 MW of installed wind energy capacity and 240,000 wind turbines operating around the world, hundreds of thousands of people live near and work at operating wind projects.

The balance of scientific evidence and human experience to date clearly concludes that wind turbines do not adversely impact human health. These conclusions are supported by a body of work by medical and scientific experts.

Source: Canada Association of Physicians for the Environment, Registered Nurses' Association of Ontario, the Lung Association, the Asthma Society of Canada, and Ontario College of Family Physicians. Global Wind Energy Council, Wind in the Numbers, Global Statistics 2014.

"According to the scientific evidence, there isn't any direct causal link between wind turbine noise and adverse health effects."

Dr. Arlene King, Former Chief Medical Officer of Health, Province of Ontario

"Opposition to wind farms on the basis of potential adverse health consequences is not justified by the evidence."

Dr. David Colby, Medical Officer of Health, Chatham-Kent

Health Canada determined noise from wind turbines does not have any measurable effect on illness and chronic disease, stress, quality of sleep or overall quality of life.

Health Canada, November 6th, 2014

Natural Heritage

The Project Study Area is dominated by annual row crops and has limited natural habitats such as woodlands and meadows.

During field monitoring, biologists will examine all habitat within a minimum of 120 metres of the proposed Project to identify:

- Woodlands
- Wetlands
- Significant Wildlife Habitat

Wildlife habitat assessments were initiated in the spring of 2015 and are being undertaken to determine the extent of potentially significant wildlife habitats within the Project Study Area.

Site-specific wildlife surveys will be conducted prior to Project development to assess the temporal and spatial use of the Project Study Area by individual species and verify any potential effects that the Project may have on these species and their habitat.

Water Bodies and Groundwater

The water resources within the Project Study Area include agricultural drains, permanent, intermittent and ephemeral streams, and rivers. These water resources may provide suitable habitat for fish and mussel species.

As part of the field work, all water features within a minimum of 120 metres of the Project will be examined by aquatic biologists. This investigation will review general site conditions as well as representative watercourses including permanent and intermittent water features.

A hydrogeological assessment will be conducted to ensure there will be no effects on groundwater quality, quantity or movement resulting from construction or operations of the Project.

Archaeology and Cultural Heritage

Archaeological and heritage assessments are being conducted to evaluate the potential for archaeological and cultural resources in the Project Study Area.

The Stage 1 Archaeological Assessment consisted of an initial desktop review to to gather information about the Project Study Area's geography, history, current land conditions and any previous archaeological research within the vicinity. This assessment was completed in the spring of 2015.

The Stage 2 Archaeological Assessment is being conducted during the summer of 2015. It consists of archaeologists completing pedestrian surveys, i.e., walking through ploughed fields at intervals to document any artifacts encountered.

Further assessments will be undertaken, as required, to identify mitigation measures if archaeological or cultural heritage resources are present.

Sound, Land Use and Infrastructure

Sound

Turbines will be placed at least 550 metres from the closest sound receptor and sound levels will be at or below 40 decibels (dBA) at 6 metres per second as required by the Ministry of Environment and Climate Change noise guidelines for wind energy centres

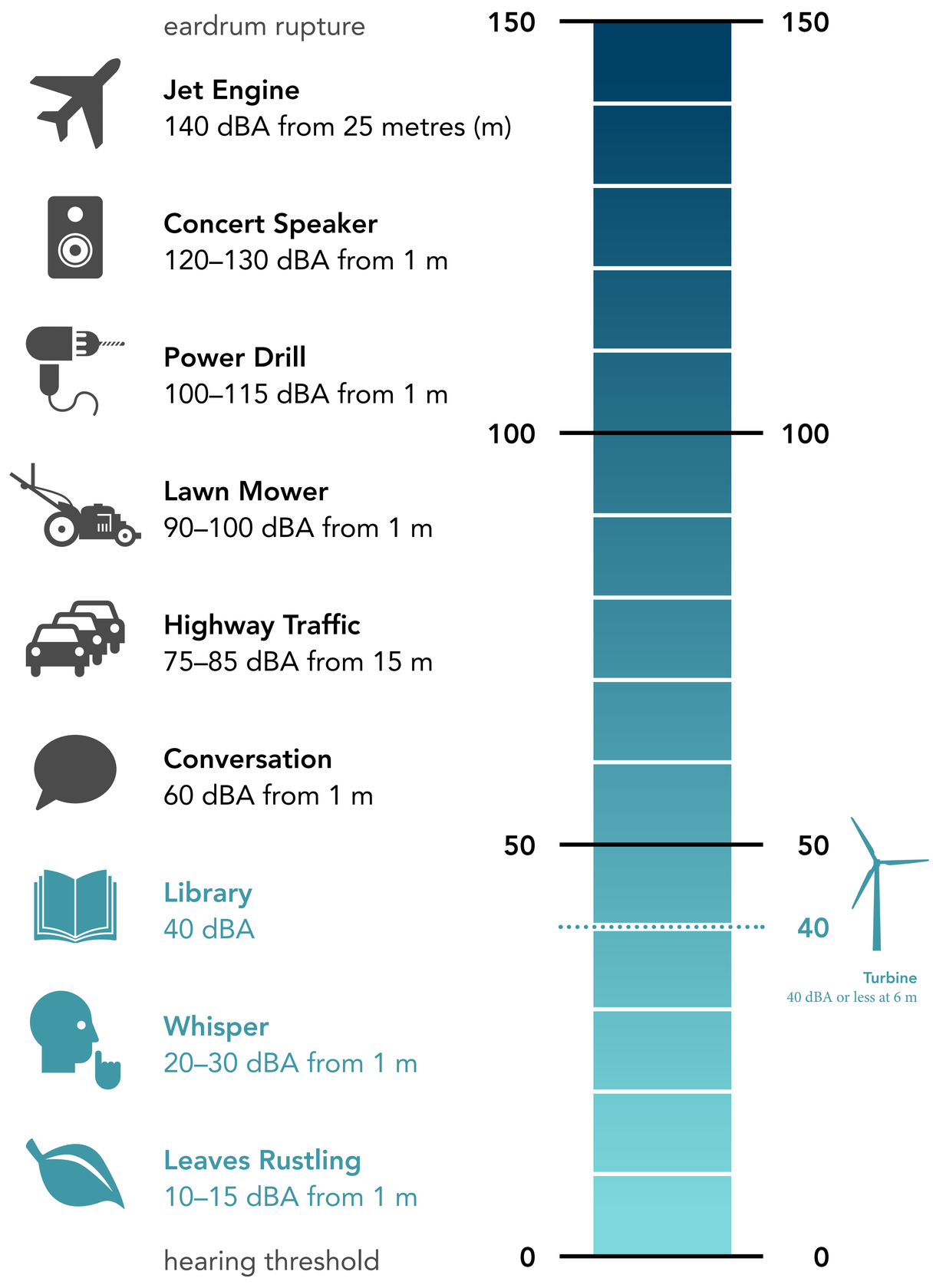
Land Use and Infrastructure

Land uses in the Project Study Area is predominantly designated and zoned for agricultural use but also includes non-farm residential uses, surplus farm dwelling lots, older estate lots, general industrial and rural industrial zones.

Local services and infrastructure will be identified through consultation with the Municipality of Chatham-Kent and the Ministry of Transportation.

Active and non-active petroleum wells and natural gas pipelines are present in the Project Study Area. An assessment of petroleum resources will be conducted to determine the effects of the Project on these resources.

Decibels (dBA) of Common Sounds



Thank You

For Attending the North Kent Wind 1 Project Public Meeting

Next Steps for the Project:

- Summarize and respond to feedback received at this Public Meeting
- Finalize the layout for the Project
- Prepare Draft REA Reports and circulate for public, agency, First Nation and Aboriginal Communties and stakeholder review
- Hold a second Public Meeting

We value your feedback and want to hear what you think. Please help yourself to some refreshments and complete a comment sheet before you leave or send it to us before July 22, 2015.

Email: info@northkentwind.com
Phone: 855-780-3859
Mail: North Kent Wind 1, 2050 Derry Road West, 2nd Floor, Mississauga, ON L5N 0B9

To learn more about the Project or to provide feedback, please visit our Project website via the following link: www.northkentwind.com