

Welcome!

Thank you for coming to the Belle River Wind Project Public Meeting #1

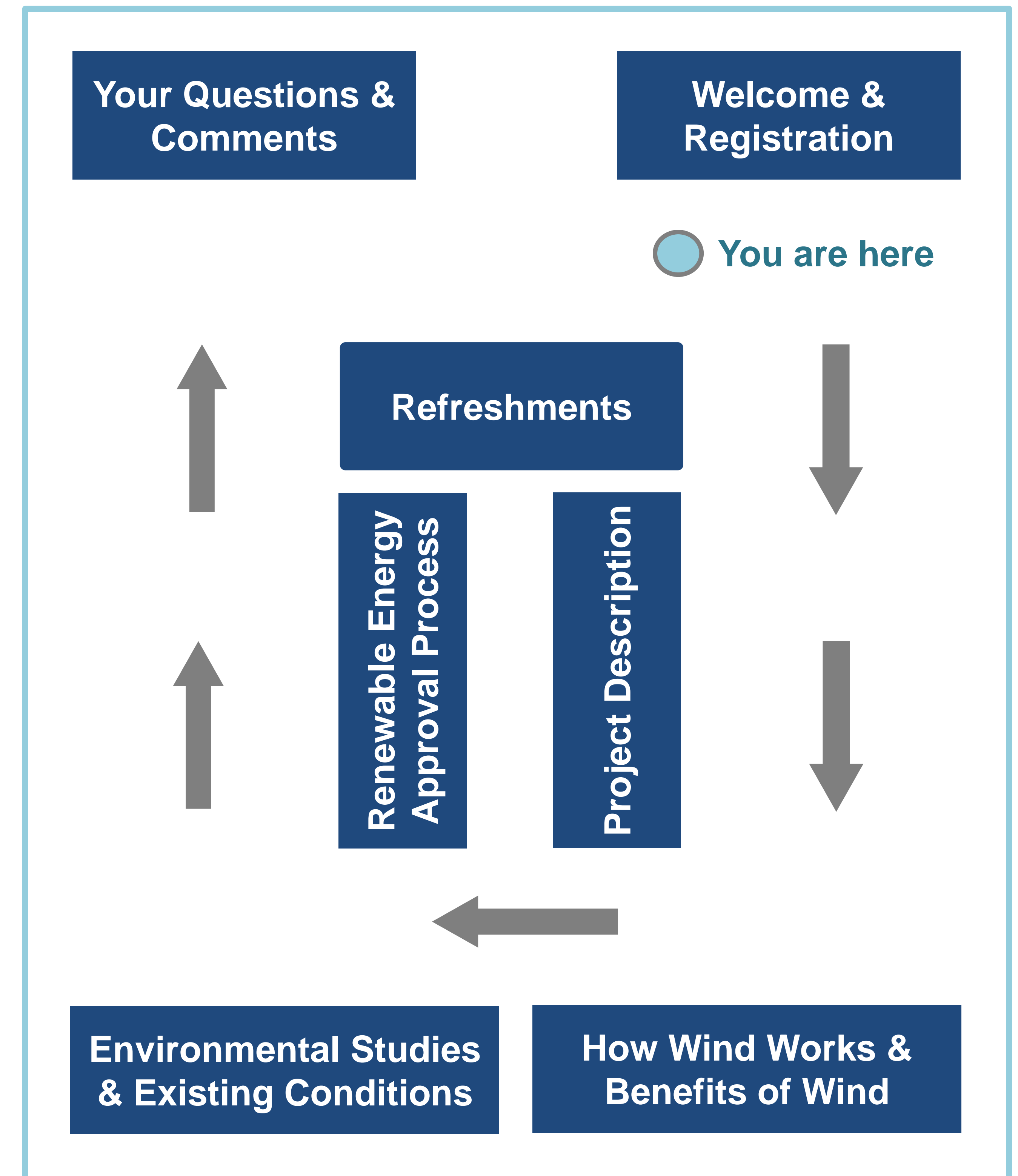


Please sign in and provide your contact information
if you would like to receive future information about the Project

Why We Are Here Tonight

Good planning involves the community. This public meeting is an important starting point for the Belle River Wind Project. The purpose of this meeting is to:

- Introduce you to the Belle River Wind Project and to provide an overview of the Renewable Energy Approval (REA) process
- Provide an opportunity to meet members of the Project Team and have your questions answered about the Project
- Obtain community input for consideration in the planning and design of the Project



Who is Belle River Wind?

- The Belle River Wind Project is being proposed by SP Belle River Wind Inc. GP (Belle River Wind), a partnership of Samsung Renewable Energy (Samsung) and Pattern Energy Group LP (Pattern Development)
- The Belle River Wind Project is anticipated to have nameplate capacity of up to 150 megawatts (MW) and is expected to host up to 65 turbines

Samsung, together with some of the world's leading renewable energy companies, is making 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.

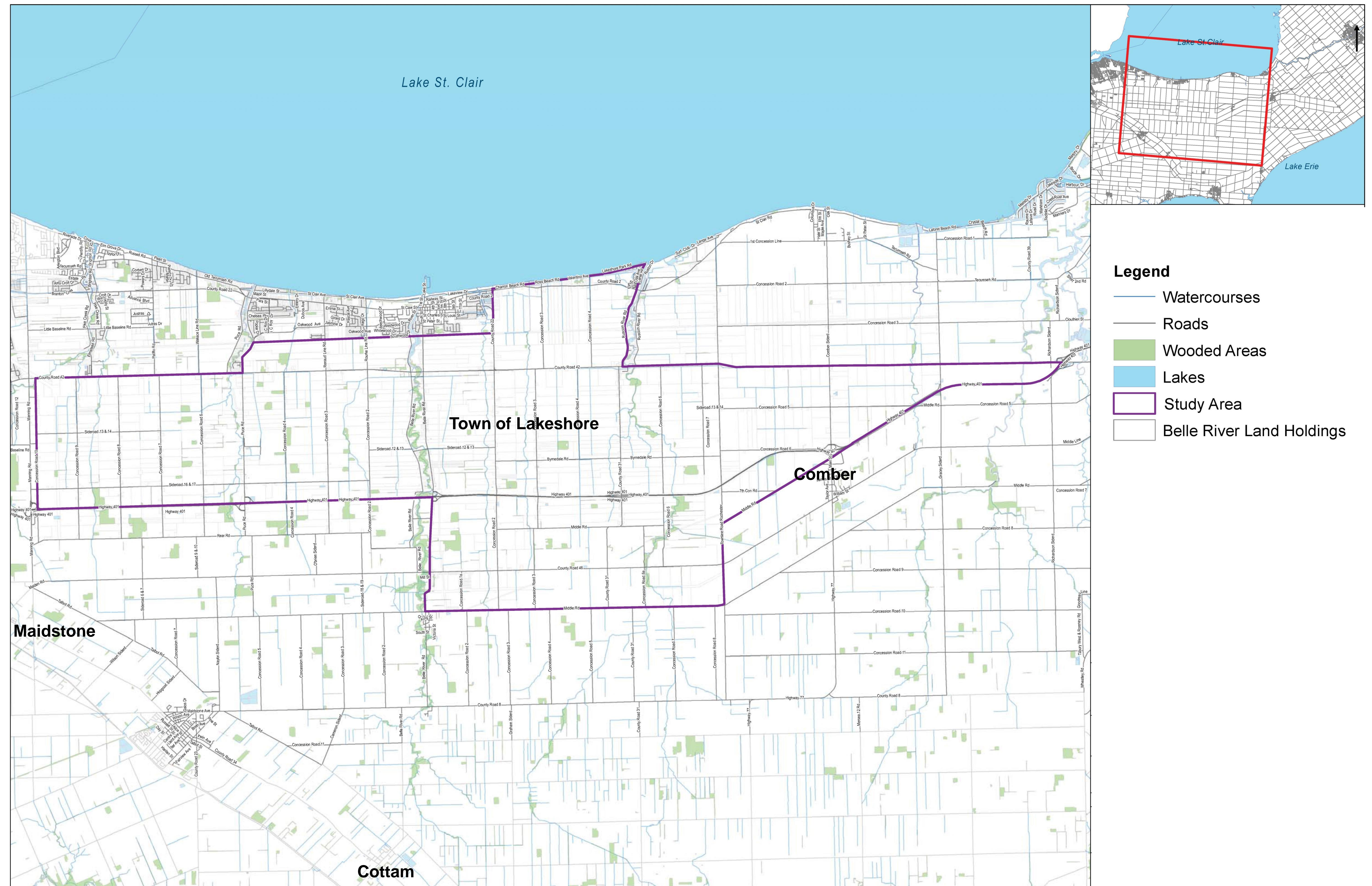
Pattern Development is a leader in developing renewable energy and transmission assets. The Pattern Development team has placed into operation more than 3,000 MW of wind power projects. A strong commitment to promoting environmental stewardship drives our dedication in working closely with communities to create premier renewable energy projects. Pattern Development operates and manages wind power projects through its affiliated public entity, Pattern Energy Group Inc. (Pattern Energy).



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Project Study Area



Project Design



- Belle River Wind is in the planning and early design stages of the Project and a Draft Project Description Report has been prepared
- The Project is proposed to include the installation of up to 65 wind turbines that will produce up to 150 MW of energy. The number and type(s) of turbines will depend on a number of factors, including: wind resource, siting restrictions, socio-economic or natural environment constraints, capacity of the electrical grid and interest shown by local landowners
- The major components of the Project include:
 - Wind turbine foundations and generators
 - Pad mounted step-up transformers
 - Collection system
 - Transmission line
 - Collector substation
 - Microwave tower
 - Meteorological towers
 - Access roads
 - Temporary staging areas
 - Operations building



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Proposed Transmission Line

- To connect the Belle River Wind Project to the provincial energy grid, a 230 kilovolt (kV) electrical transmission line will be built from the transformer substation to a connection point on the Hydro One network
- The transmission line will be located within the Project Study Area on private property and/or within existing municipal road right-of-ways
- There are several design options being considered for the transmission line, including burying the line or mounting it on new hydro poles
- If the transmission line is mounted on hydro poles, the poles could be made of wood, concrete or steel
- The location of the transmission line is presently under investigation and the final route will be determined after further studies are completed and input from stakeholders and the community is considered



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Wind Turbine Setback Requirements

- Under the Renewable Energy Approval (REA) process, the Ministry of the Environment and Climate Change has established required setbacks distances for all renewable energy facilities from receptors
- If Project related infrastructure (turbines, access roads, collector's 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

What is a Receptor?

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

Setback Requirements

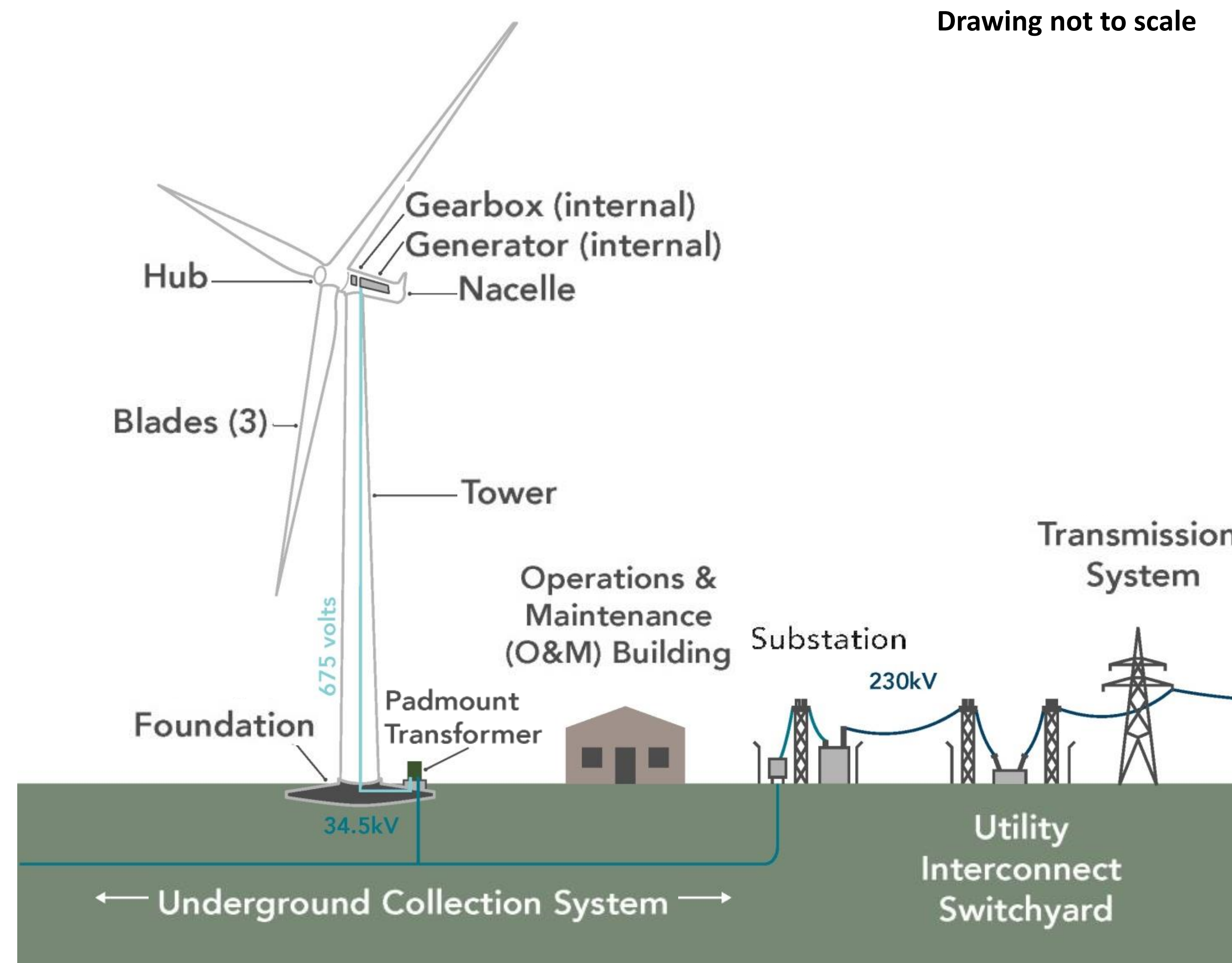
Feature	Setback Requirement
Non-participating receptor (see definition)	550 metres from turbine base
Public road right-of-way and railway right-of-way	Turbine blade length plus 10 metres from turbine base
Property line	Turbine height (excluding blades) from turbine base
Provincially significant southern wetland	120 metres
Provincially significant Area of Natural and Scientific Interest (ANSI) (Earth Science)	50 metres
Provincially significant ANSI (Life Science)	120 metres
Significant woodland	120 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



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How Wind Works



- 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 of a wind turbine:

- 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

Environmental Benefits of Wind Energy

- 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, sulfur dioxide and nitrogen oxides that are produced by other forms of electricity generation



Economic Benefits of Wind Energy

- Reduces reliance on imported fuel
- Quick to install and are low maintenance once in place
- Helps stabilize the cost of power
- Creates “green-collar” jobs in construction, operation and manufacturing



Community Benefits of Wind Energy



- Compatible with mixed land use (e.g., grazing, agriculture and hunting)
- Supports the local economy as Ontario goods and labour will be used during construction and operation
- 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 all service businesses (such as hotels and restaurants) during planning, construction and operation
- Provides a reliable supply of domestically produced energy



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Renewable Energy Approval (REA) Process

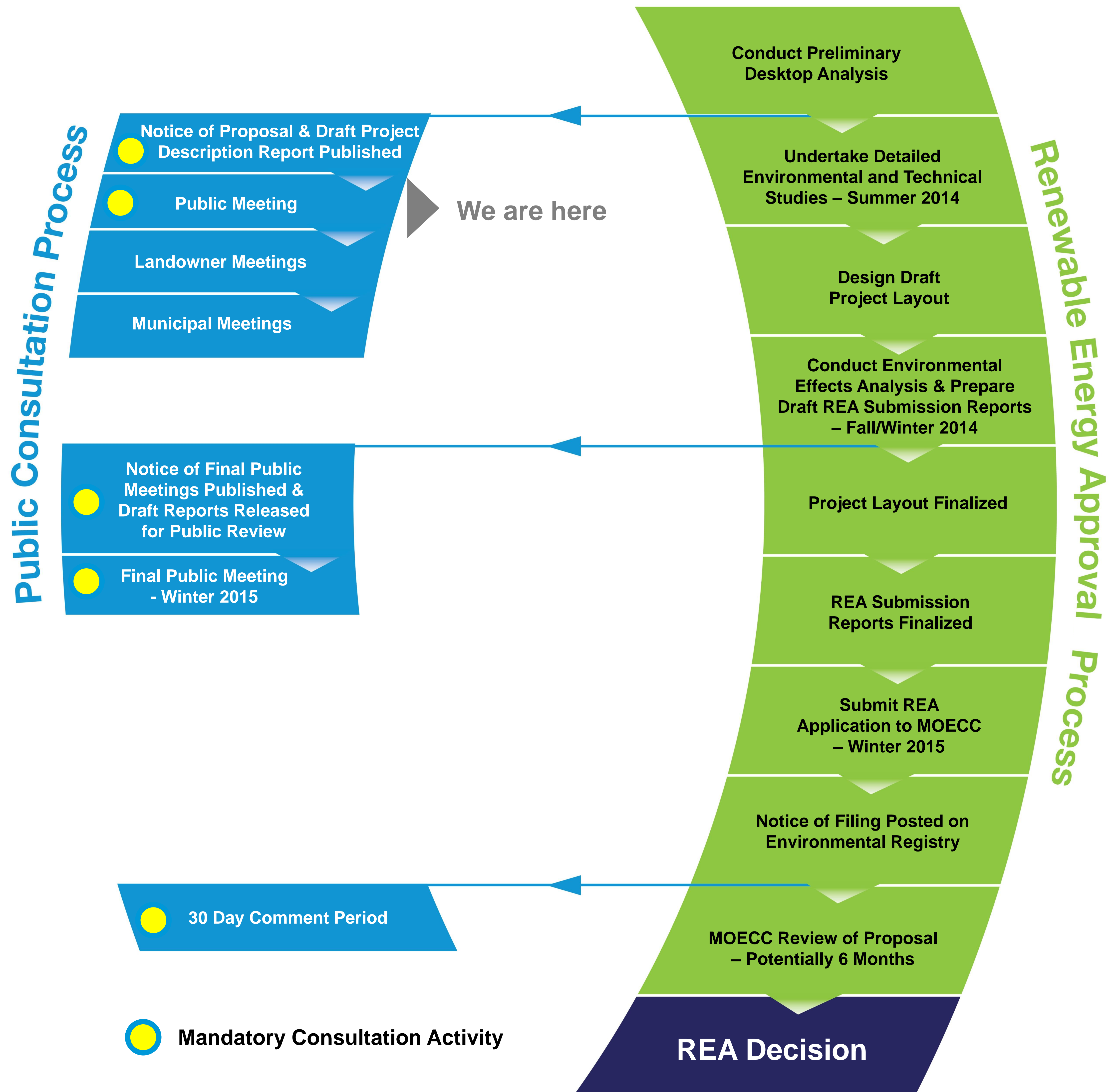
- The REA is issued under Ontario Regulation 359/09 (Renewable Energy Approvals under Part V.0.1 of the Act) under the *Environmental Protection Act*
- The REA application will outline how Belle River Wind proposes to design, build, operate and decommission the Project
- The Project is considered to be a Class 4 wind facility which means it has a nameplate capacity of 50 kW or greater and is not in direct contact with surface water, other than a wetland
- 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
 - Archaeological Assessment Reports
 - Heritage Assessment Report
 - Natural Heritage Assessment Reports
 - Water Body Assessment Reports
 - Noise Assessment Report
 - Wind Turbine Specifications Report
 - Consultation Report
- Additional environmental approval and permitting requirements from agencies, such as the Ministry of Natural Resources and Forestry, Ministry of Tourism, Culture and Sport, and the Lower Thames Valley Conservation Authority, will also be addressed as part of and subsequent to the Belle River Wind Project REA application
- Municipal permits and plans (e.g., Building Permit, Entrance Permit) will also be required from the Town of Lakeshore and County of Essex prior to construction



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Belle River Wind



Construction, Operation and Decommissioning

Construction Activities

- Clearing and grubbing of vegetation for temporary work areas
- Upgrading of existing and the construction of new access roads
- Site grading as necessary
- Preparation and establishment of construction staging areas
- Preparation of the collector substation laydown area
- Delivery of construction vehicles and equipment
- Construction of laydown areas and installation of Project components
- Erection of wind turbines
- Reclamation of construction laydown and staging areas

Operation Activities

- Preventative maintenance
- Meter calibrations
- Remote operation of the wind turbines
- Maintenance of electrical collector and transmission lines
- Grounds maintenance

Decommissioning Activities

- Disassembly and removal of Project components at the discretion of landowners and the town or county
- Reclamation of access roads at the discretion of landowners
- Disconnection of collector substation



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Natural Heritage



- The majority of the Project Study Area is dominated by annual row crops and has limited natural habitats such as occasional woodlands, wetlands 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 will be conducted in 2014 and 2015 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



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Water Bodies



- The water resources within the Project Study Area are predominantly agricultural drains. Some streams and other water bodies are also present and may provide suitable habitat for fish and mussel species
- A preliminary study identified six fish and two mussel species that were previously documented within or near the Project Study Area
- As part of the field work, all water features within a minimum of 120 metres of the Project will be examined by aquatic biologists



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Cultural Heritage & Archaeology

- Archaeological and Cultural Heritage assessments are being conducted to evaluate the potential for archaeological and cultural resources in the Project Study Area
- Stage 1 and Stage 2 Archaeological Assessments included an initial desktop review and site assessments by archaeologists to identify if artifacts are present within the Project Study Area
- Further assessments will be undertaken, as required, to identify mitigation measures if archaeological or cultural heritage resources are present



Land Use and Infrastructure

- Land within the Project Study Area is predominantly zoned for agricultural use but also includes non-farm residential, small-scale industrial, commercial and institutional type uses
- Active and non-active petroleum wells and a natural gas pipeline are also present
- Local land use, services and infrastructure will be identified through consultation with the Town of Lakeshore and County of Essex



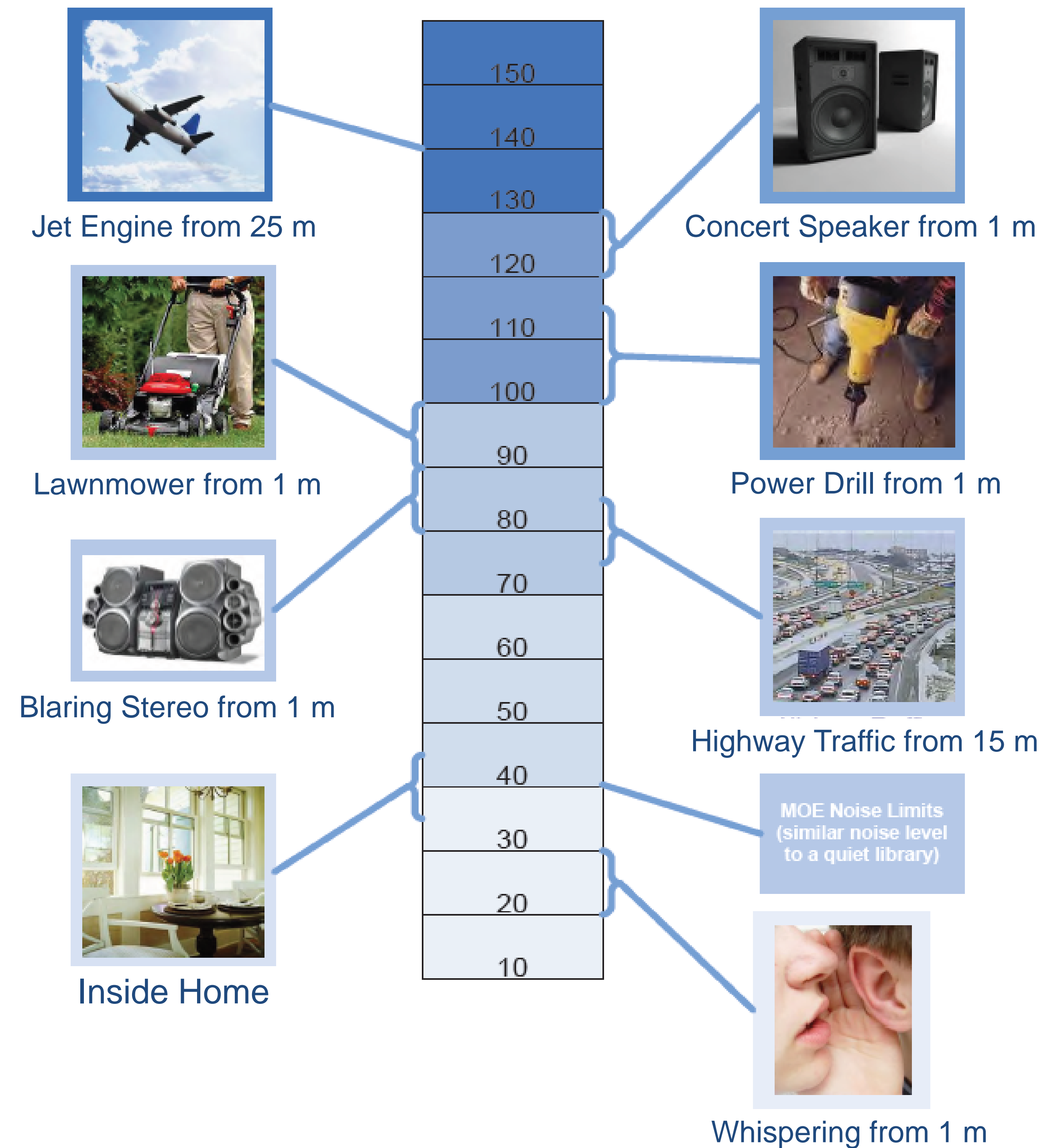
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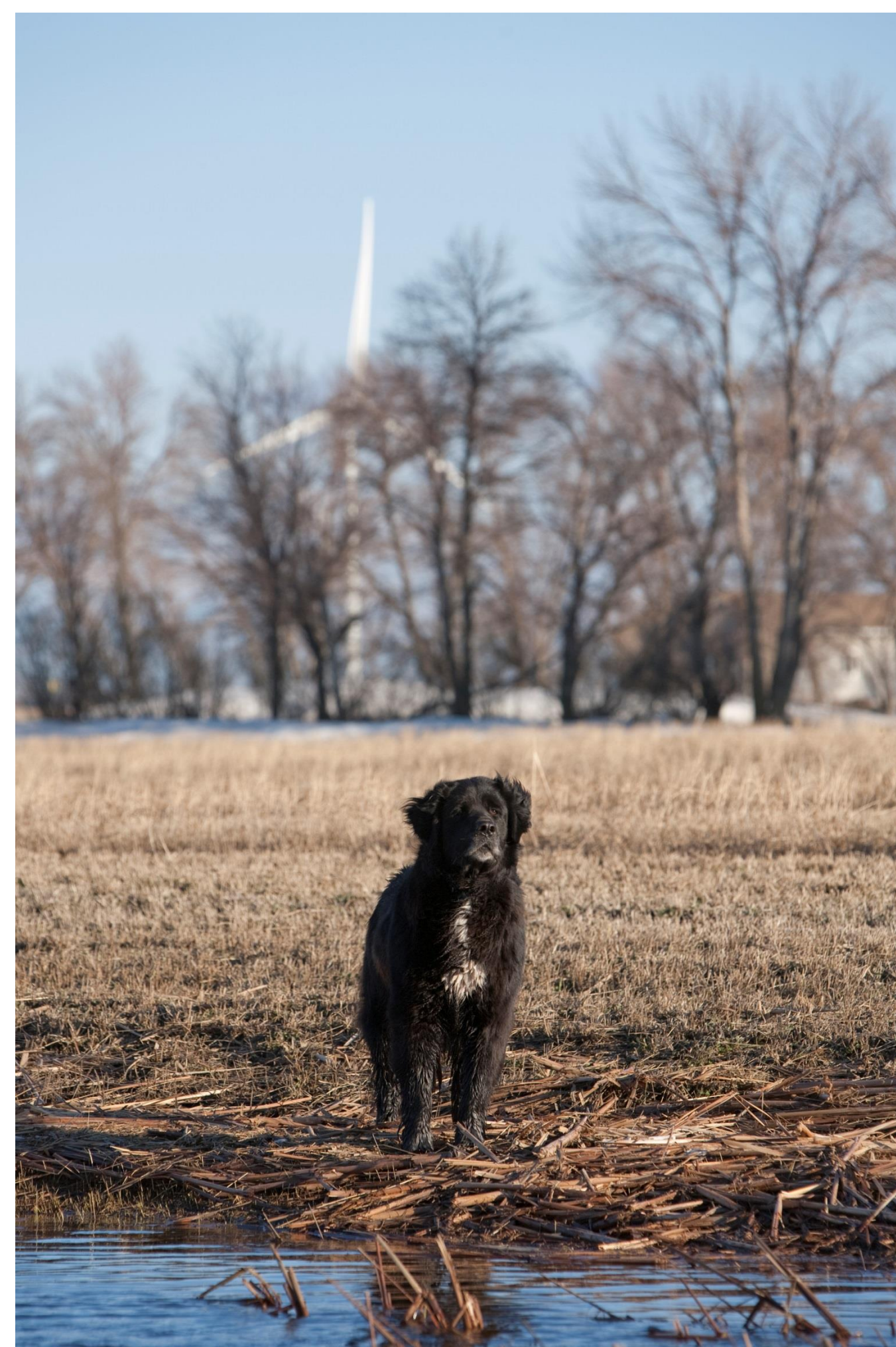
Noise

- Turbines will be placed at least 550 metres from the closest sound receptor (i.e., a home, building or facility that is sensitive to sound) and sound levels will be at or below 40 decibels (dBA) at 6 metres per second as required by Ministry of Environment and Climate Change noise guidelines for wind energy centres

Decibels (dBA) of Common Activities



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 more than 318,000 MW of installed wind energy capacity and 225,000 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

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

– Dr. Arlene King, 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

Thank You

Thank you for attending the first Belle River Wind Project Public Meeting

Next Steps for the Project:

- Summarize and respond to feedback received at this Public Meeting
- Develop the layout for the Project
- Prepare draft REA reports and circulate for public, agency, 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



To learn more about the Project or to provide feedback, please visit our website or contact:

www.belleriverwind.com
info@belleriverwind.com