



WELCOME!

Thank you for attending the Second Public Meeting
Under the Renewable Energy Approval (REA) Process for
the **Pendleton Solar Energy Centre!**

We are happy to meet with you again to share new
information about this clean, **renewable energy** project.
Today's intent is to present the draft reports of studies
conducted during the past few months and keep
collecting additional input from the community to be
considered for integration into our design.

Please review the display boards and feel free to ask us
any questions you may have.

We want to hear from you!

Please complete a comment form to share your feedback!
If you would like to be added to the Project mailing list,
please sign up at the front desk.

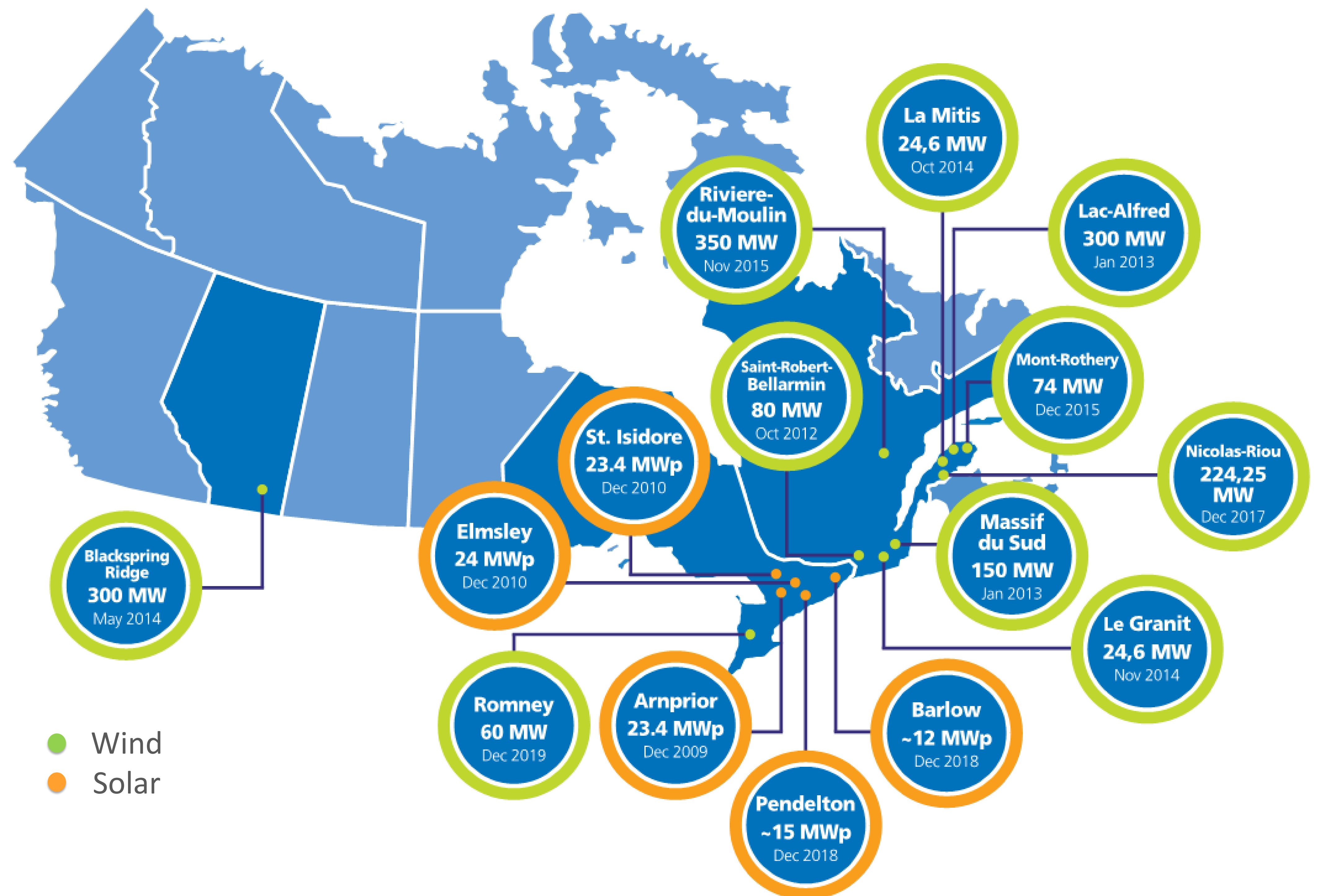
EDF EN Canada

- Development
- Construction
- Production and Asset management

EDF RS

- Operations & Maintenance

EDF Energies Nouvelles Canada



EDF Energies Nouvelles Canada

Put into Service, under Construction, or in Development

1,580+ MW Wind

95+ MW Solar

EDF Renewable Services in Canada

Under Contract

1 061MW Wind

516 MW Solar



PROJECT OVERVIEW

PROJECT NAME: Pendleton Solar Energy Centre

PROJECT OWNERS: EDF EN Canada and the
Algonquins of Pikwàkanagàn First Nation

HOST MUNICIPALITY: Township of Alfred and Plantagenet

RENEWABLE FUEL: Non-Rooftop Solar

CONTRACT CAPACITY: 12 MWac

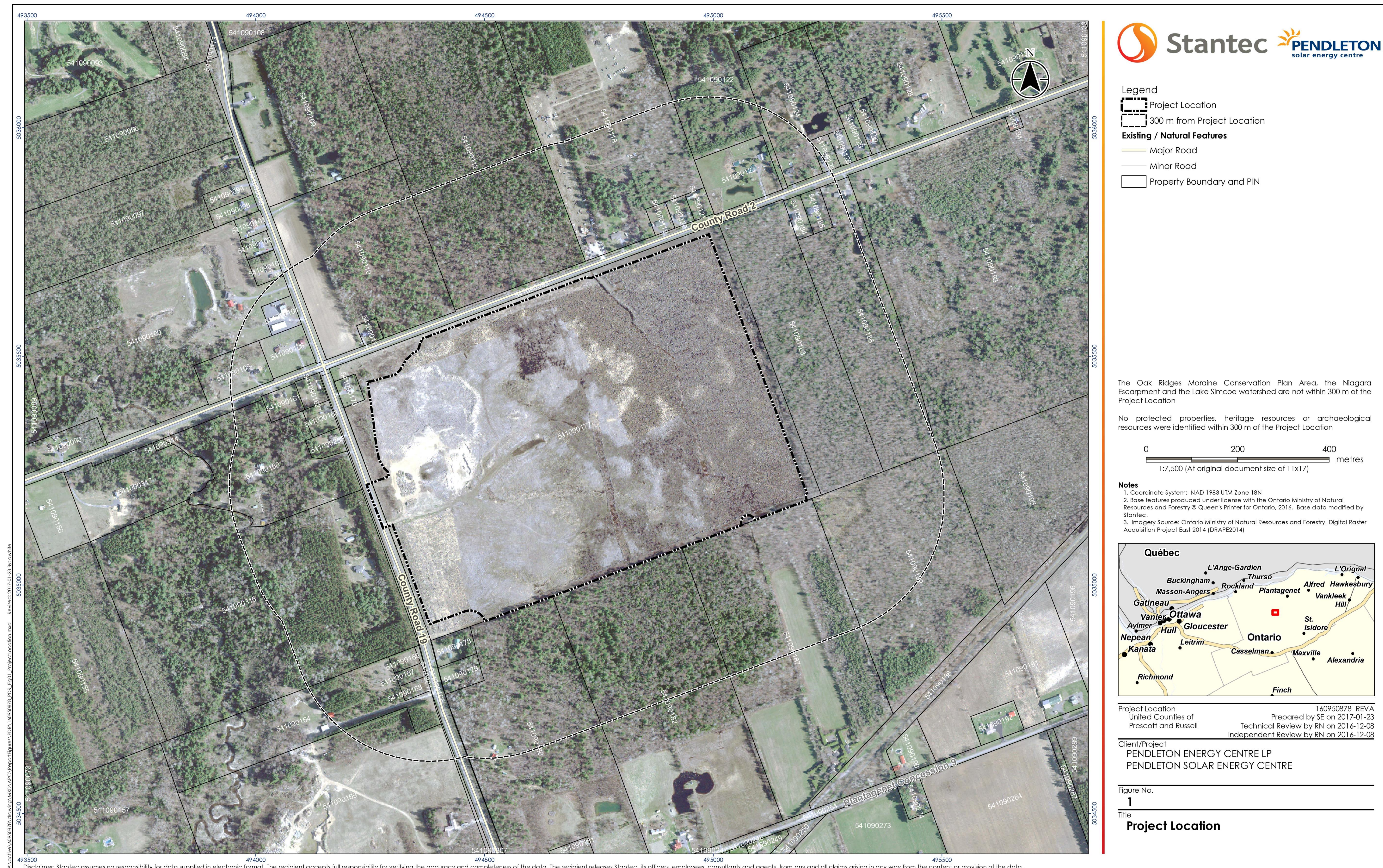
PROPOSED CONNECTION POINT

Located within the Township of Alfred and Plantagenet, on the existing distribution grid west of the site adjacent to County Road 19.

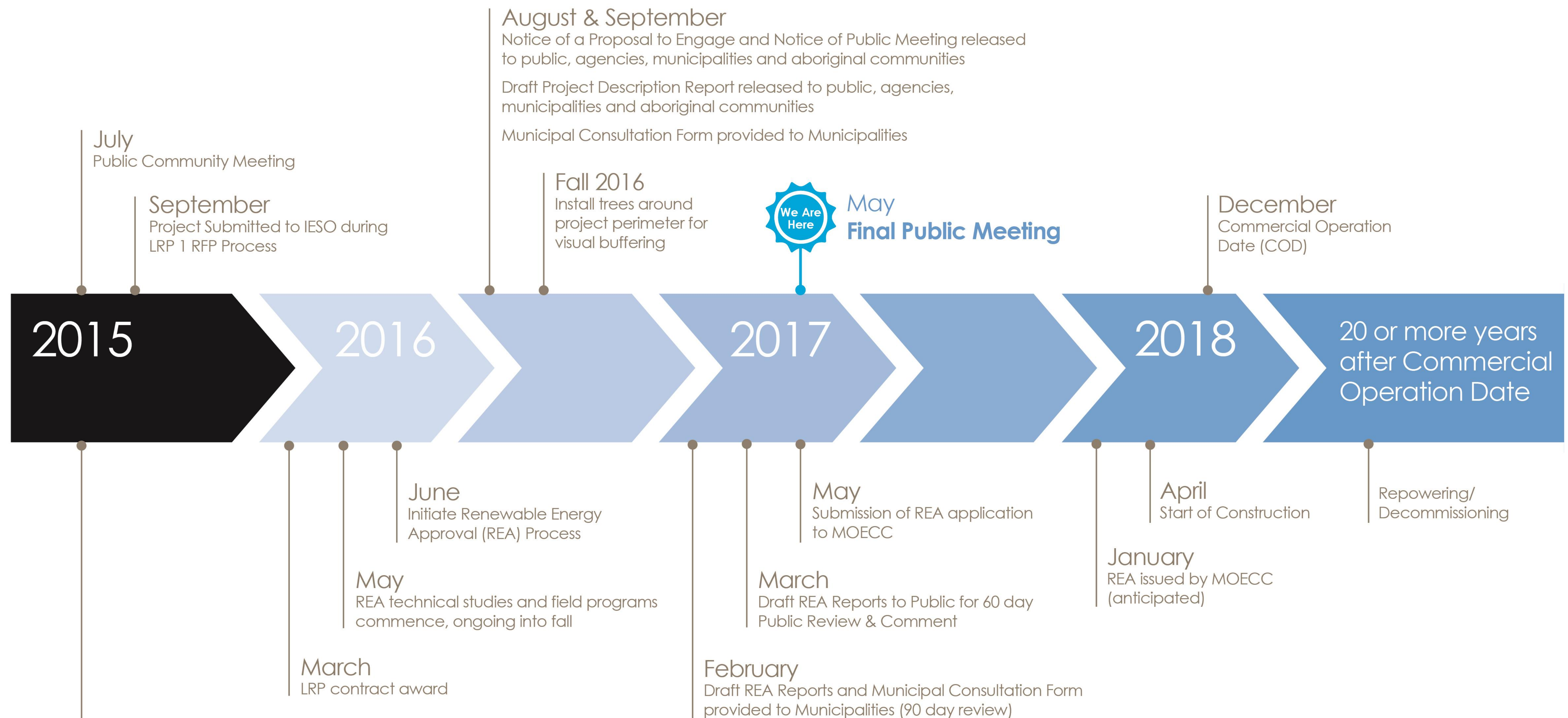
CONNECTION LINE

A very short (~20 m) Connection Line will run across County Road 19 from the Site to the distribution line.

Located on 140 acres of privately owned land, in the Township of Alfred and Plantagenet.



Project Timeline



Ongoing consultation with municipal staff, landowners, aboriginal communities, government agencies, special interest groups and members of the community.

RENEWABLE ENERGY APPROVAL REPORTS CONSTRUCTION PLAN

- The **Construction Plan Report** includes a summary of project construction and installation activities, potential construction environmental effects, and any necessary mitigation and monitoring measures.
- The Report addresses the construction period of the Project, scheduled to be Q1 2018 through to the end of Q4 2018.
- Environmental components addressed in the **Construction Plan Report** include:
 - ✓ Cultural Heritage and Archaeological Resources
 - ✓ Natural Heritage Features
 - ✓ Water Bodies & Aquatic Resources
 - ✓ Air Quality & Environmental Noise
 - ✓ Land Use and Socio-Economic Resources
 - ✓ Existing Utilities and Infrastructure
 - ✓ Waste Material Disposal & Accidental Spills

Report Summary

The Project has been sited in a manner that will minimize environmental effects. Construction of the Project can be completed using standard, well-known techniques to prevent, manage or mitigate potential effects to the environment.

- Before construction, a **Construction Environmental Management Plan (CEMP)** will be developed. The Project owner and its contractors will implement the **CEMP** to protect the environment and ensure compliance with the Renewable Energy Approval. As appropriate, the **CEMP** will also include procedures and plans for the following:

- Traffic Management Plan
- Waste Management Plan
- Emergency Response and Communications Plan
- Complaint Response Protocol

- During construction, a **Construction Environmental Effects Monitoring Plan (CEEMP)** will be implemented to assess the impacts of construction activities on environmental features and check that mitigation measures and contingency planning are effectively implemented. This will include trained, on site personnel responsible for monitoring implementation of the **CEEMP**.

RENEWABLE ENERGY APPROVAL REPORTS DESIGN AND OPERATIONS

- The Design and Operations Report describes the operational details of the project, its site plan, potential operational environmental effects, and any necessary mitigation and monitoring measures.
- The Report addresses the operations period of the Project, scheduled for a 20-year period, beginning in Q4 2018.
- Environmental components addressed in the Design and Operations Report are similar to the Construction Plan Report.
- In addition, the Design and Operations Report includes a site plan, facility design plan, and a facility operations plan.

Report Summary

The Project has been designed and will be operated in a manner that will minimize environmental effects. Operation of the Project will include continuous remote monitoring, and regular maintenance and inspection. These activities can be completed in a manner that will prevent, manage or mitigate potential effects to the environment.

- Prior to operation, an **Emergency Response and Communications Plan** will be developed for use by Project employees. The Plan will establish and maintain emergency procedures required to effectively deal with an emergency situation and minimize potential effects. The Plan will be used throughout the operational life stage of the Project.
- During operation, an **Environmental Effects Monitoring Plan (EEMP)** will be implemented to ensure mitigation measures and contingency planning are effectively implemented. The plan will describe activities during operation and how monitoring and contingency measures described in the **Design and Operations Report** will be implemented. This may include things such as:

- Monitoring ditches and culverts to ensure proper site drainage
- Vegetation management and monitoring
- Noise monitoring, if required

RENEWABLE ENERGY APPROVAL REPORTS

DECOMMISSIONING

- The **Decommissioning Plan Report (DPR)** provides a summary of project decommissioning activities, potential decommissioning environmental effects and any necessary mitigation and monitoring measures.
- The Project is expected to have an operational lifespan of 20 or more years, beginning in Q4 2018.
- At the end of the Project lifespan, it may be decommissioned or “repowered” with updated technology and continue to generate renewable energy.
- The **DPR** has assumed that the land will be returned to its current agricultural use. However, the **DPR** will be updated in advance of decommissioning to reflect the actual conditions, plans for the site and regulatory requirements in effect at that future time.

Report Summary

The Project can be decommissioned in a manner that will minimize environmental effects and restore the land to its current, pre-Project use. Decommissioning of the Project essentially reverses the construction sequence and can be completed using standard, well-known techniques to prevent, manage or mitigate potential effects to the environment.

Decommissioning of the project would generally consist of removal of all above-ground Project equipment, including:

- Solar panels, racking and inverter stations
 - Substation, collection system, storage infrastructure and perimeter fencing
 - Piles, foundations and buried cables at least one meter below surface
-
- A Rehabilitation plan would be developed to guide restoration of the site to agricultural use, or to a state suitable for the use planned at that time.
 - Environmental mitigation and monitoring requirements would be defined to ensure protection of nearby environmental features.
 - **Emergency Response and Communications Plans** that are relevant to decommissioning will be brought forward from the operations phase of the Project, such as procedures to address accidental spills and releases, waste management, and erosion and sediment control. This Plan will also remain in effect during decommissioning.

RENEWABLE ENERGY APPROVAL REPORTS

ACOUSTIC ASSESSMENT

- Solar photovoltaic panels do not produce any acoustic emissions.
- However, some acoustic emissions are generated when the facility is operating (during daylight hours) by the six (6) inverters and inverter step-up transformers, and one (1) grounding transformer.
- An **Acoustic Assessment** was completed for the Project to ensure it is designed in a manner that keeps acoustic emissions below 40 dB at applicable neighboring receptors, in compliance with Ministry of Environment and Climate Change (MOECC) requirements.
- This **Acoustic Assessment Report** was prepared based on MOECC requirements described in the following documents:
 - ✓ NPC-300, Environmental Noise Guideline.
 - ✓ Basic Comprehensive Certificates of Approval, User Guide v2.0, Appendix A, "Supporting Information to be Submitted for an Acoustic Assessment Report or Vibration Assessment Report Required by a Basic Comprehensive C of A", April 2004.

- The **Acoustic Assessment** used a very conservative scenario where all equipment is operating at maximum capacity and no additional mitigation is incorporated. Also, any acoustic shielding by solar panels was not considered in the assessment.
- All receptors (including vacant lots where a receptor could be built) within one kilometer of the Project Location were considered.

Report Summary

The Project design meets MOECC requirements for a Class 3 solar facility.

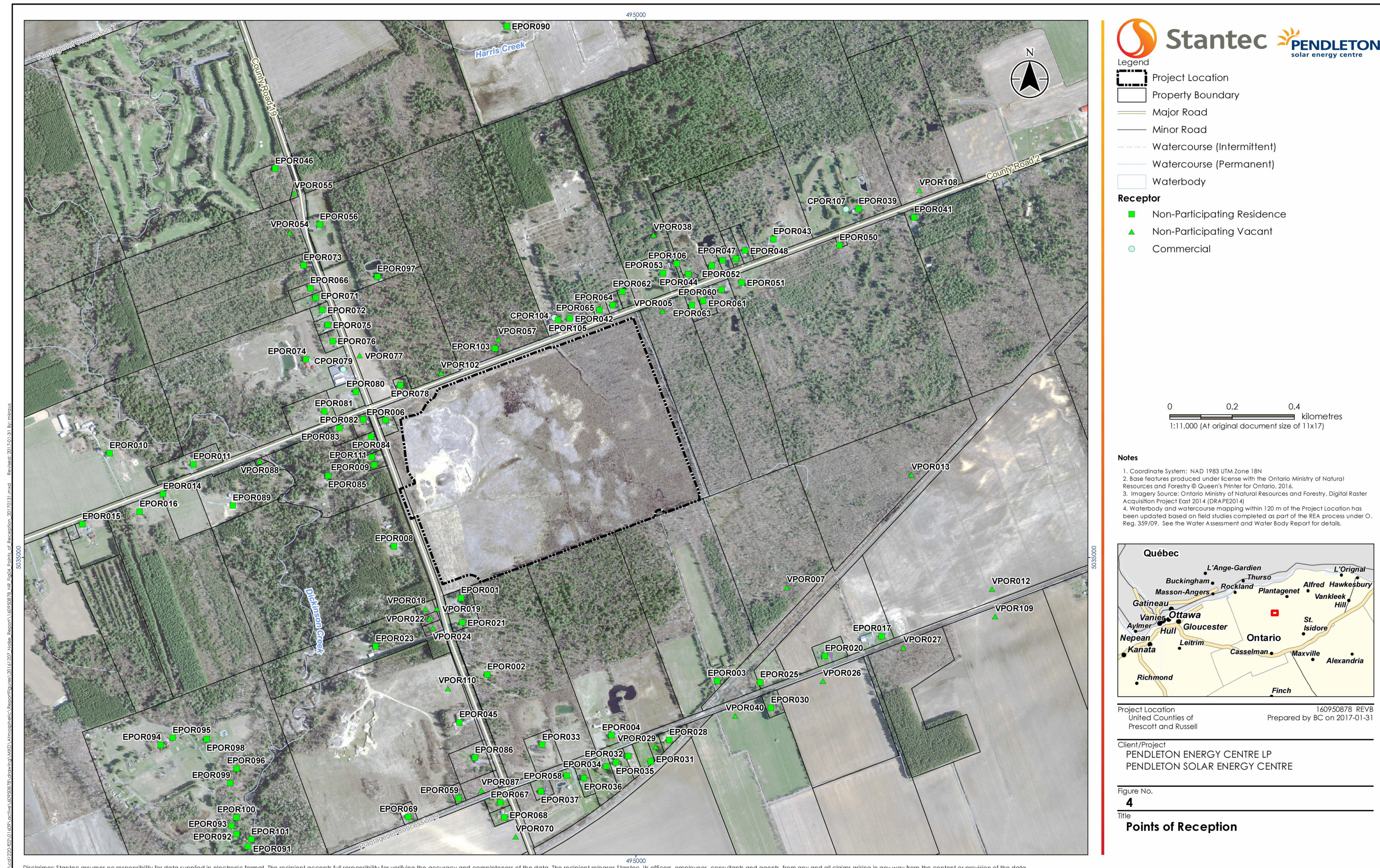
- The analysis demonstrated that the Project acoustic emissions comply with MOECC limits at all receptors within 1 km of the Project, without the need for any additional mitigation measures.
- Once operational, a noise audit will be completed to ensure the Project is operating in compliance with the Renewable Energy Approval. If the audit identifies higher acoustic emissions then mitigation measures will be implemented.

NOISE RECEPTORS

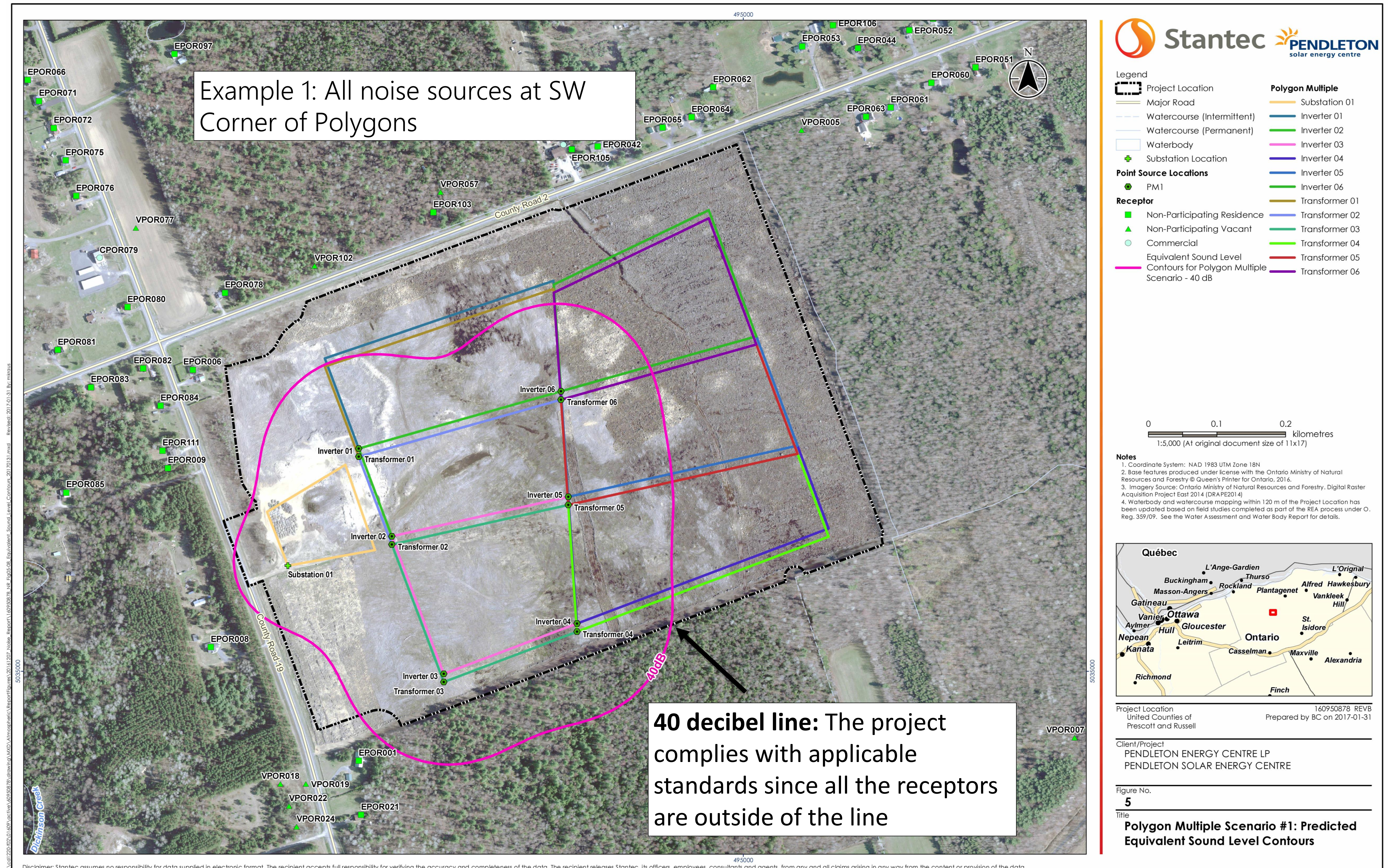
All receptors within 1 km of project mapped.

Legend:

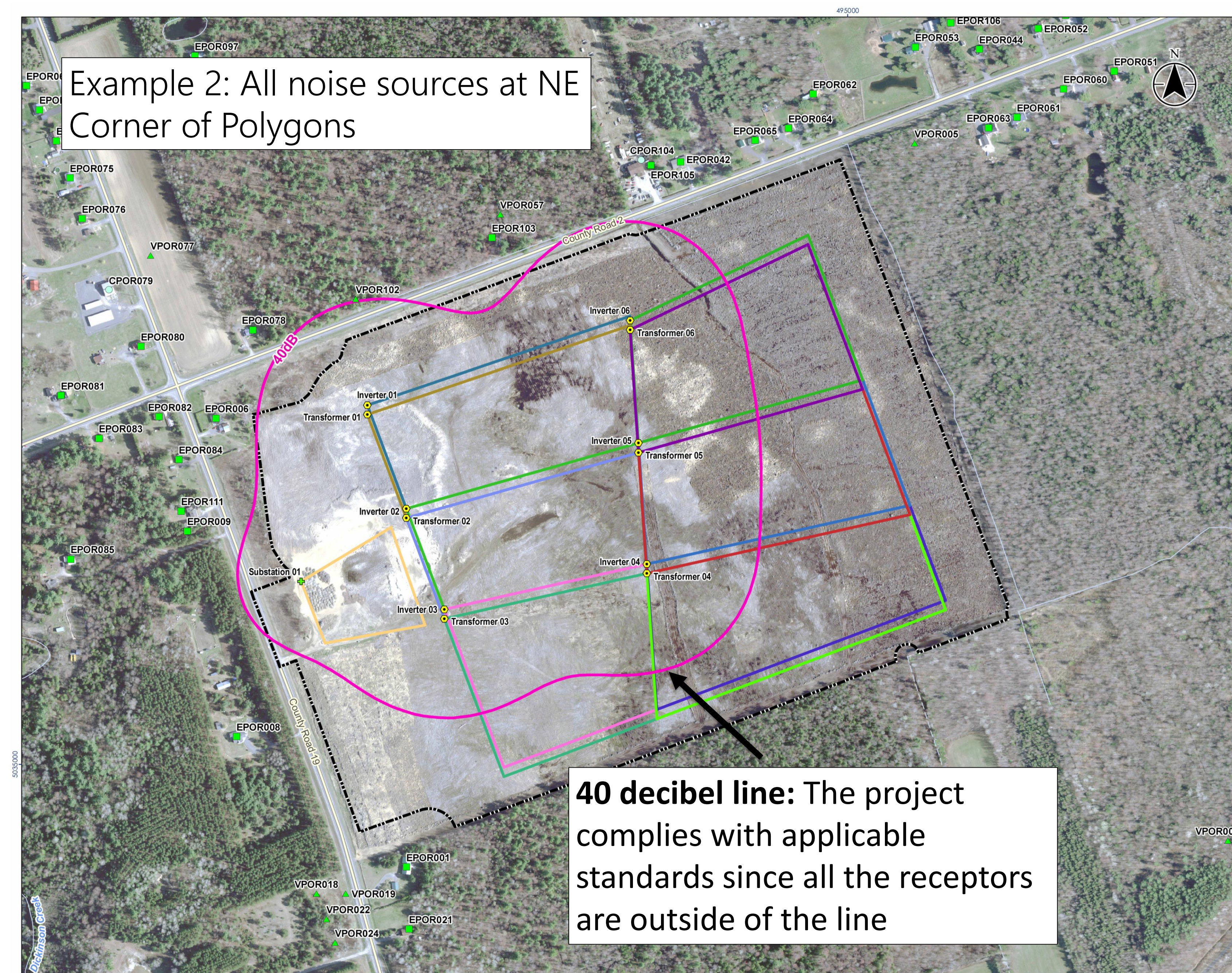
- Existing dwellings (EPOR)
- Vacant lots (VPOR)
- Commercial identified but not required to meet noise limit (CPOR)



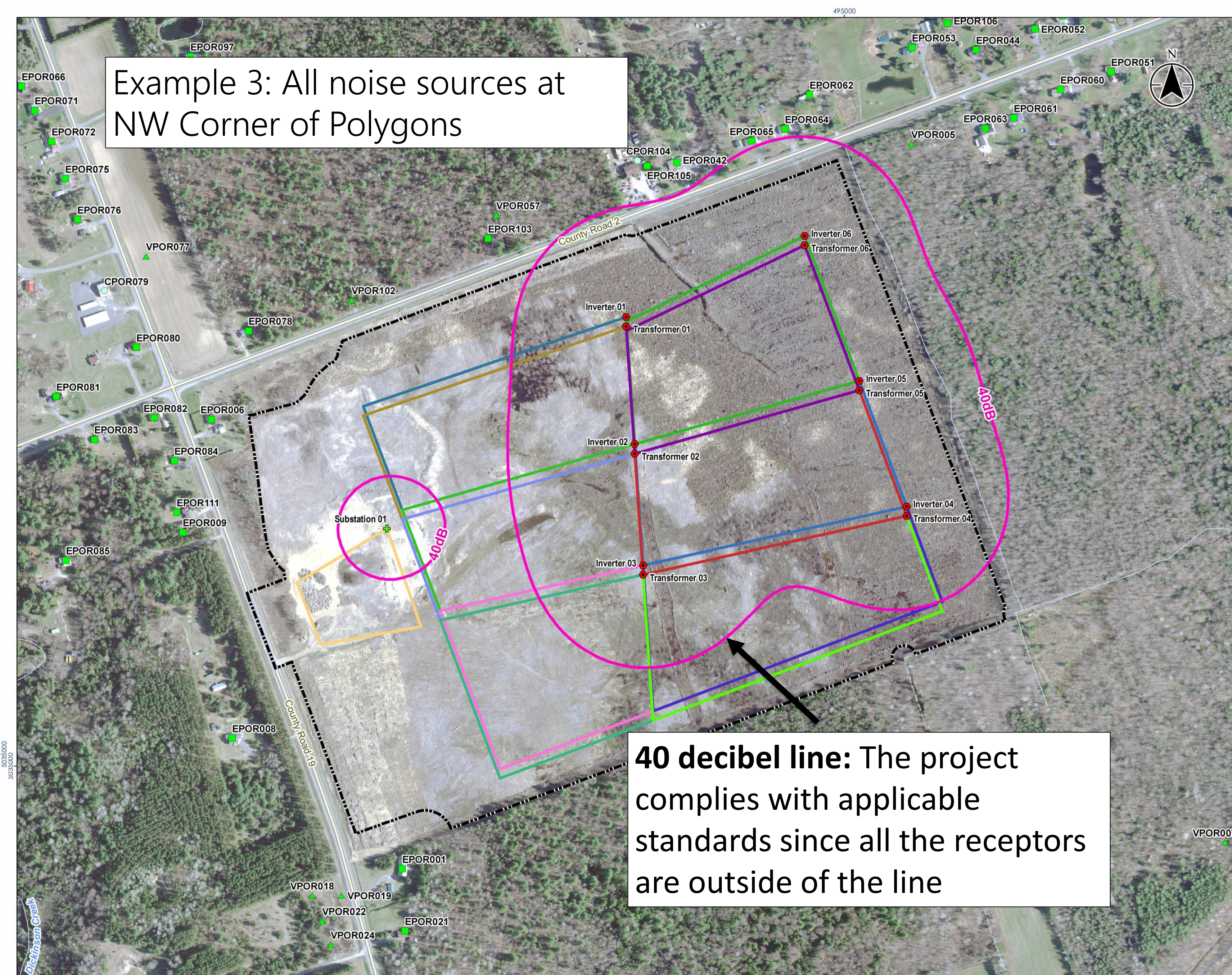
- Using polygon multiple method
- Determine shapes within which noise-generating equipment can be moved around, but remain within noise guidelines at applicable receptors
- REA permit may allow freedom to move equipment within polygons



Example 2: All noise sources at NE
Corner of Polygons



Example 3: All noise sources at
NW Corner of Polygons

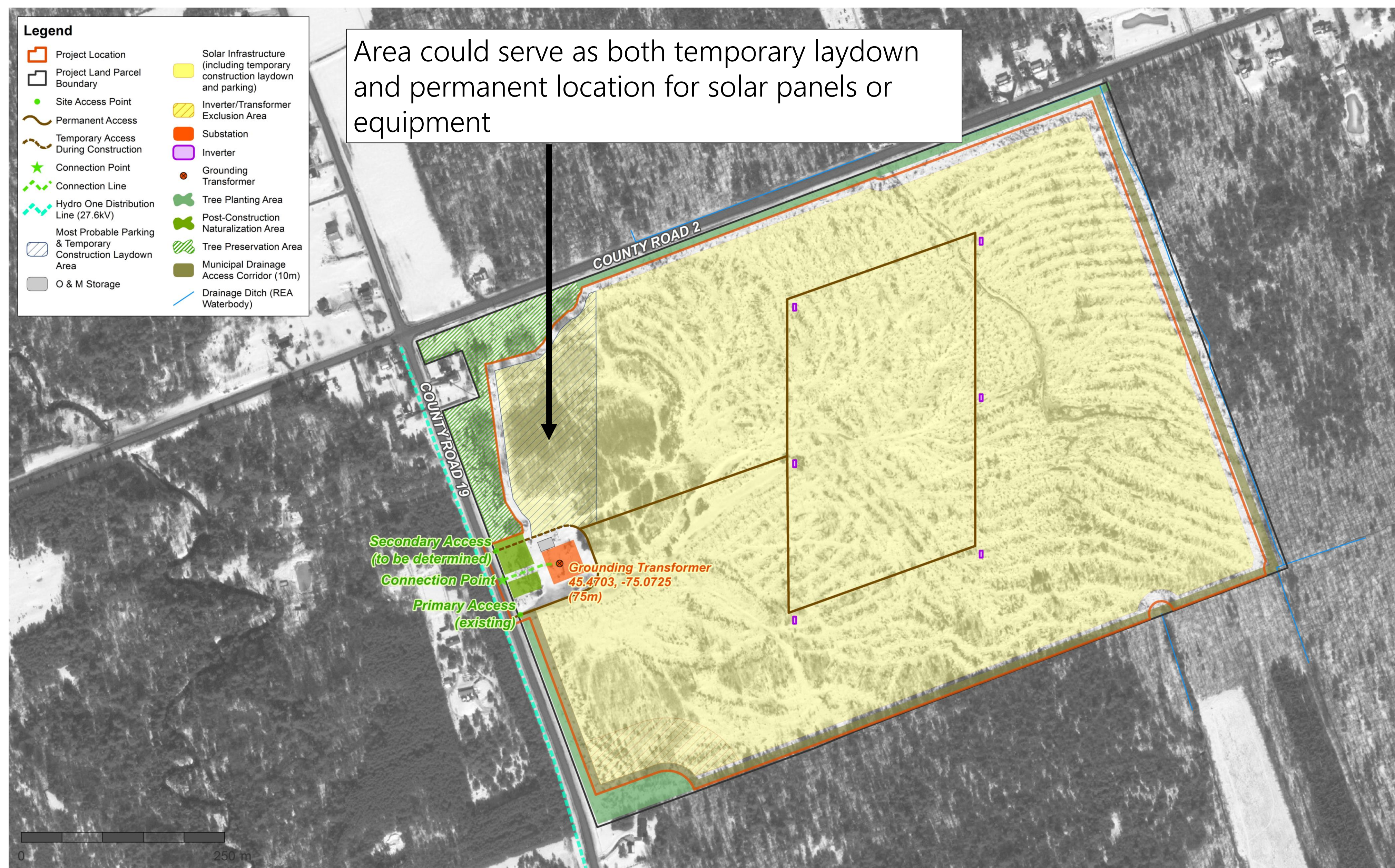


NOISE CONSIDERATIONS

- Some equipment, like transformers and inverters produce noise
- Sound propagation to neighboring receptors limited to 40 dB, equivalent to a quiet room

A COMPARISON OF SOUND PRESSURE AND SOUND PRESSURE LEVEL			
Sound Pressure, Pa		Sound Pressure Level, dB	
	20	120	
	10		Pneumatic Chipper (at 5 ft.)
Rock-n-Roll Band	5	110	Textile Loom
Power Lawn Mower (at operator's ear)	2	100	Newspaper Press
	1	90	Diesel Truck 40 mph (at 50 ft.)
Milling Machine (at 4 ft.)	0,5	80	
Garbage Disposal (at 3 ft.)	0,2		
Vacuum Cleaner	0,1	70	Passenger Car 50 mph (at 50 ft.)
	0,05		Conversation (at 3ft.)
Air Conditioning Window Unit (at 25 ft.)	0,02	60	
	0,01	50	
	0,005		
	0,002	40	Quiet Room
	0,001	30	
	0,0005		
	0,0002	20	
	0,0001	10	
	0,00005		
	0,00002	0	

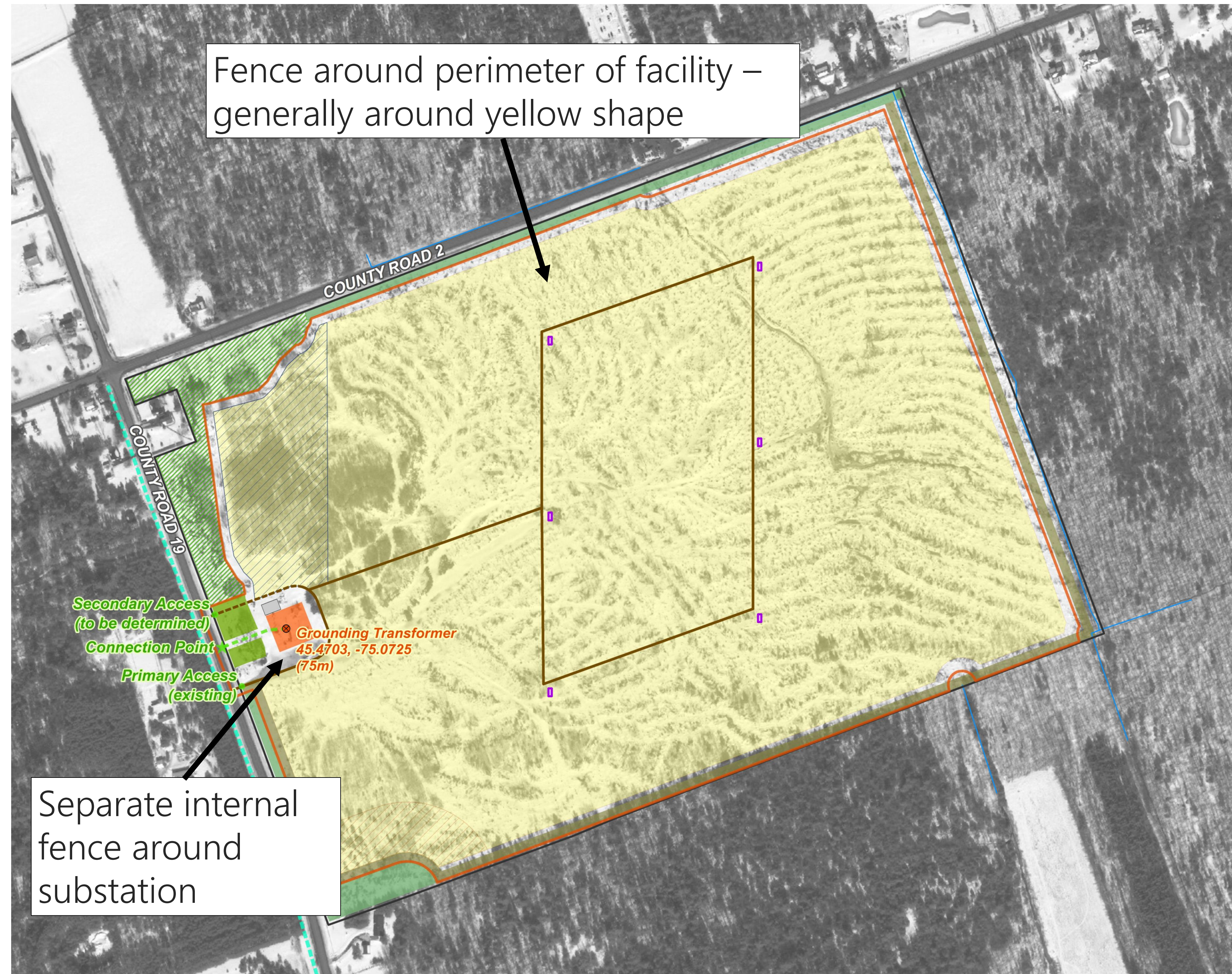
DESIGN CONSIDERATIONS TEMPORARY LAYDOWN



Cross hatched area:

- Area of compacted gravel to accommodate parking, materials and portable construction trailers
- Strip and stockpile topsoil and reuse for site landscaping
- Reclamation of temporary areas at the end of construction (remove gravel, replace topsoil and vegetate)

DESIGN CONSIDERATIONS FENCES



- 1.8 m high steel chain link fence topped with barbed wire
- Manual locking gates installed at primary entrances and possibly secondary entrance
- Second chain link fence constructed around the substation



Sample fence

The Project Location is situated within an active agricultural area and not within a natural feature.

Natural heritage features located within 50 m of the Project Location (i.e., Zone of Influence) were assessed for significance.

Field surveys included:

- Vegetation Community & Vascular Plants Assessment
- Wetland & Woodland Confirmation and Delineation (through Ecological Land Classification and Ontario Wetland Evaluation Survey Methods)
- Wildlife & Wildlife Habitat Assessment Surveys

One wetland and four woodland features are located within 50 m of the Project Location and are considered significant. A portion of one woodland extends into the Project Location.; however no work or Project components will be located in this area.

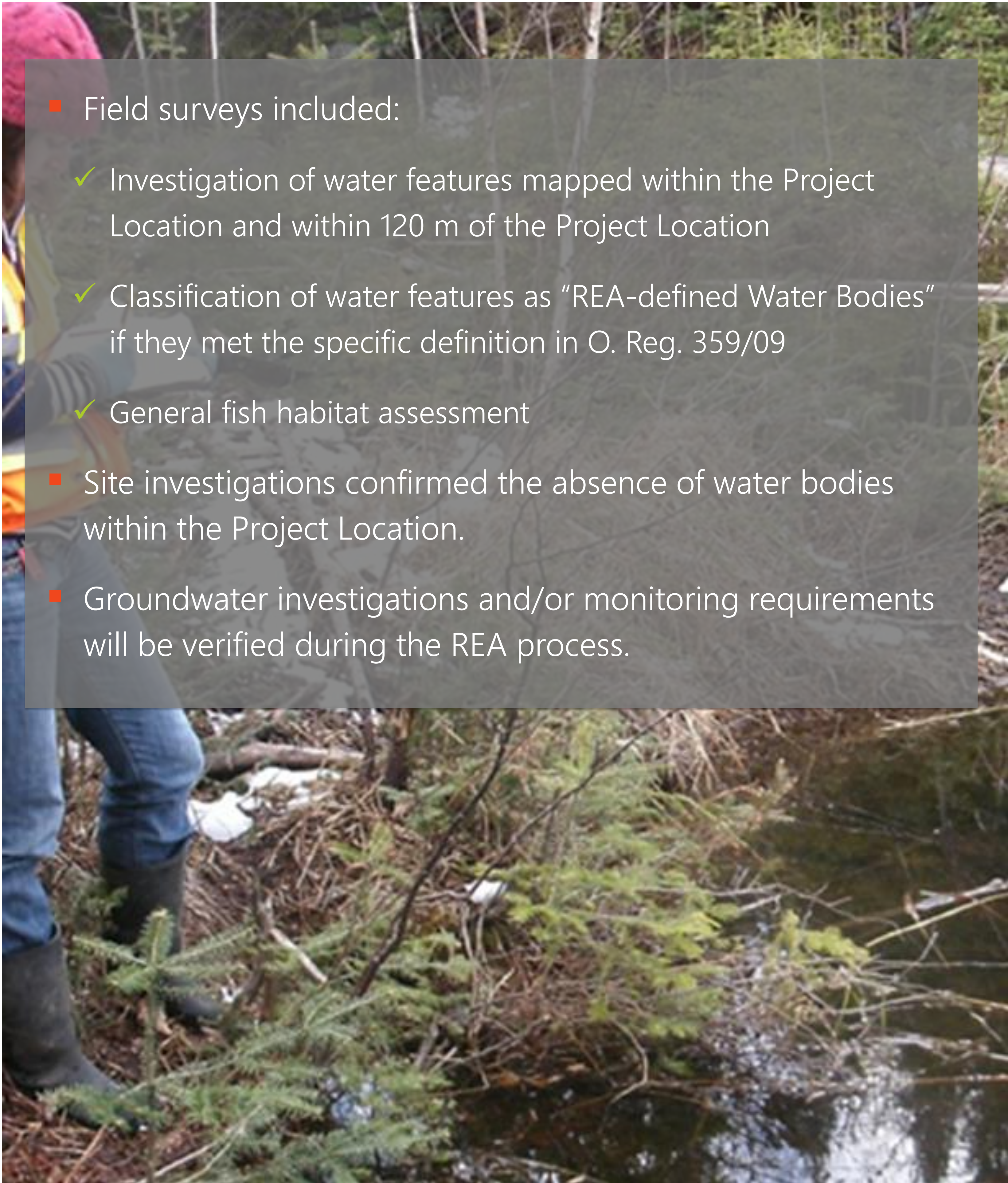
The report is currently under review with the Ministry of Natural Resources & Forestry.

Mitigation Measures

All Project components are sited outside wetland and woodland feature boundaries. Some standard best management practices to be applied to all construction activities include:

- No development permitted within the boundaries of significant wetlands or woodlands
- Edge of the work zone will be flagged/staked prior to construction
- Silt barriers will be erected along the edge of wetland/woodland boundaries where within 30 m of Project Location
- Environmental inspector(s) will monitor construction
- Maintenance activities, vehicle refueling or washing, and storage of chemicals and equipment will occur in properly protected and sealed areas located more than 30 m from significant wetlands/woodlands

Additional mitigation measures are listed in the [Natural Heritage Assessment & Environmental Impact Study, Construction Plan Report, and Design & Operations Report](#). The application of these mitigation measures are expected to address negative environmental effects of construction, operation and decommissioning of the Project on the natural heritage features located within the Project Location/Zone of Influence and their associated ecological functions.

- 
- Field surveys included:
 - ✓ Investigation of water features mapped within the Project Location and within 120 m of the Project Location
 - ✓ Classification of water features as “REA-defined Water Bodies” if they met the specific definition in O. Reg. 359/09
 - ✓ General fish habitat assessment
 - Site investigations confirmed the absence of water bodies within the Project Location.
 - Groundwater investigations and/or monitoring requirements will be verified during the REA process.

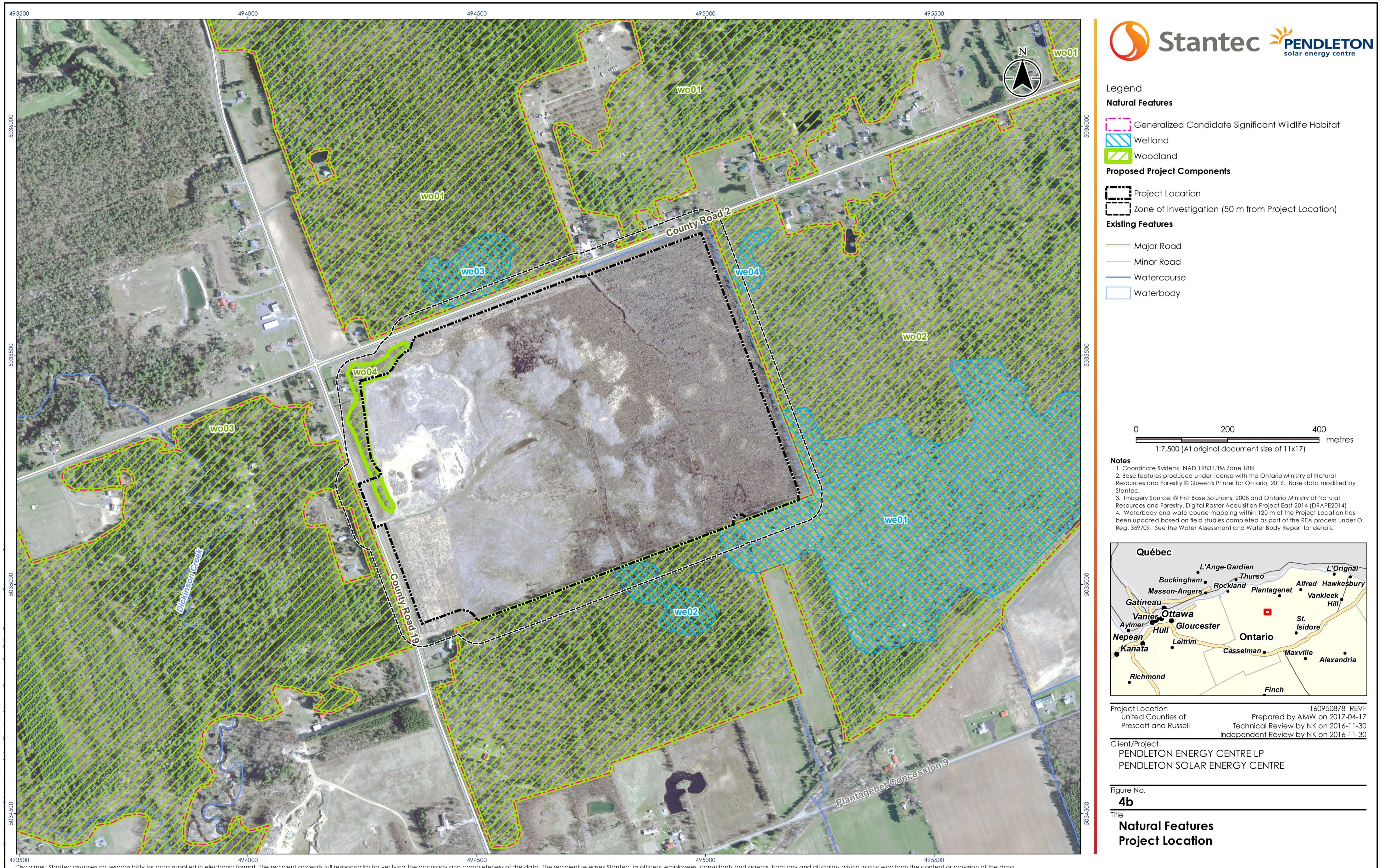
Mitigation Measures

Some standard best management practices to be applied to all construction activities include:

- Operate and store materials and equipment used for the purpose of site preparation and Project construction in a manner that reduces the risk of the entry of deleterious substances into surface waters
- Implement erosion and sediment control measures prior to construction and maintain measures during the construction phase to reduce the risk of the entry of sediment into the water

Additional mitigation measures are listed in the [Water Assessment & Water Body Report, Construction Plan Report, and Design & Operations Report](#). Based on the current Project layout and proposed environmental mitigation measures, no net effects to water bodies are expected to occur as a result of the Project.

NATURAL HERITAGE FEATURES



Stage 1 & 2 Archaeological Assessment Report

- Heritage and archaeological studies were completed according to the requirements of the Ministry of Tourism, Culture and Sport (MTCS).
- No built resources were identified within the Project Location and no cultural heritage landscapes or protected properties were identified in, or adjacent to, the Project Location.

Consideration of Potential for Heritage Resources

- Based on the [Stage 1 Archaeological Assessment](#), archaeological potential for Aboriginal and historic Euro-Canadian sites was deemed moderate to high. As such, a [Stage 2 Archaeological Assessment](#) was completed.
- No archaeological resources were found during the Stage 2 assessment of the Project Location.
- The [Stage 1 & 2 Archaeological Assessment](#) has been reviewed and accepted by the MTCS.
- No effects to archaeological or [heritage resources](#) are anticipated as a result of the Project.

Mitigation Measures

If any artifacts, soil features, or other cultural features of note are discovered during groundwork for the Project, the following procedures shall be adhered to:

- Work in the area of the site or artifacts shall halt immediately and the general contractor notified of the discovery
- The area of the site, along with a buffer zone of 5 m (as available) shall be cordoned off using a barrier/stakes and flagging tape
- The regional archaeologist from the MTCS shall be contacted to determine the appropriate course of action
- If human remains are discovered during Project activities the following procedures shall be adhered to:

- All work shall cease in the immediate area of the discovery and the environmental inspector notified immediately
- Remains shall be covered as soon as possible
- Local police and/or coroner shall be contacted immediately

Mitigation measures are not required for built resources, cultural heritage landscapes or protected properties as none exist within or adjacent to the Project Location.

REA STUDIES & REPORTS

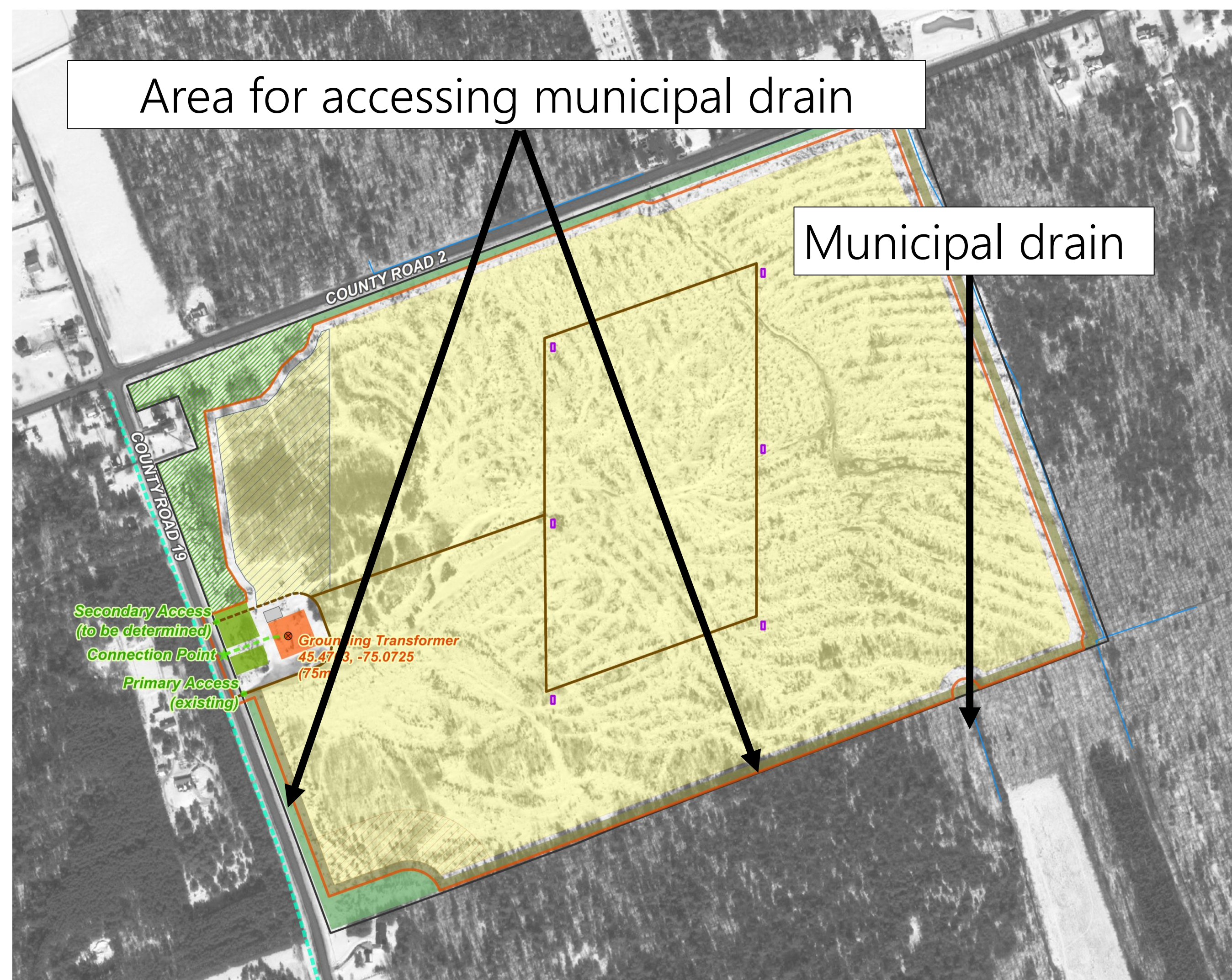
All reports, with the exception of the Consultation Report, were made available in draft form for public review and comment more than 60 days prior to this Public Meeting. Reports can also be found on the website, and hard copies are available here today.

REA DOCUMENTS	SUMMARY
PROJECT SUMMARY REPORT	A summary of each of the project reports identified below.
PROJECT DESCRIPTION REPORT	Provides high level project details such as project components, anticipated schedule, authorizations potentially required and potential environmental effects.
CONSTRUCTION PLAN REPORT	Includes a summary of project construction and installation activities, potential construction environmental effects and mitigation measures.
DESIGN AND OPERATIONS REPORT	Provides an overview of the project site plan, as well as potential operational environmental effects and mitigation. Includes discussion on emergency response and communications plan.
DECOMMISSIONING PLAN REPORT	A summary of project decommissioning activities, potential decommissioning environmental effects and mitigation measures.
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT	Provides an overview of the methodology and results of the Stage 1 (desktop) and Stage 2 (field study), and outlines the potential for the existence of archaeological resources within the project location boundary.
NATURAL HERITAGE ASSESSMENT / ENVIRONMENTAL IMPACT STUDY	Summarizes the findings of the terrestrial background research and field studies undertaken for the project. Identifies and proposes mitigation measures for significant natural heritage features identified within and surrounding the project location.
WATER ASSESSMENT AND WATER BODY REPORT	Summarizes the findings of the aquatic background research and field studies undertaken for the project. Identifies and proposes mitigation measures for water bodies identified adjacent to the project location.
ACOUSTIC ASSESSMENT REPORT	Identifies receptors and the propagation of sound from the facility to verify that sound from project will be limited to 40 dB (equivalent to a quiet room), at neighboring receptors.



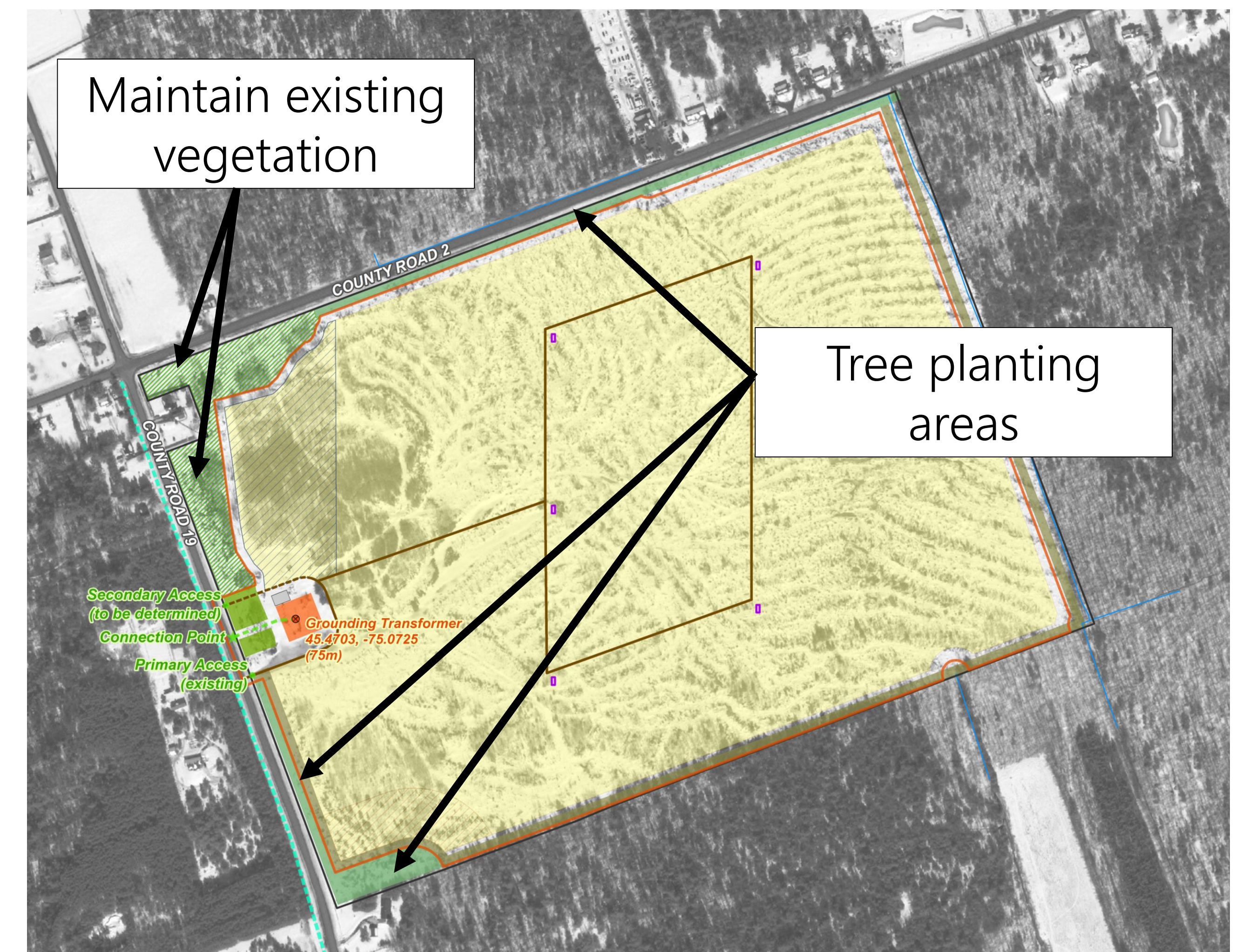
- Amount of roads to be minimized, only to access inverter/transformer skids and substation areas
- 4 m wide gravel roads with 1 m compacted shoulder on each side proposed within the site
- Temporary roads will be reclaimed at the end of construction

- Plan to seed the ground prior to construction to prevent erosion during construction
 - ✓ Intend to consult with South Nation Conservation Authority (SNCA) for suitable seed mix
- Site not disturbed by infrastructure will be vegetated (including under solar panels)
- Maintain corridor west and south of fenced area to provide access to municipal drain



Vegetation around / beneath panels

- Trees around site perimeter
- 1,236 trees planted in fall 2016
- 184 trees left to plant spring 2017 (108 cedars and 80 maples)



Proposed tree planting – green bar along SW corner, along CR 19 and along CR 2



Trees Along CR 2



Coniferous Trees Along CR 19



Coniferous Trees Along CR 19



Coniferous Trees Along CR 19

SOLAR PANEL RACKING

- Two designs being considered
 - ✓ Fixed tilt
 - ✓ Horizontal single axis tracking (HSAT)



Fixed Tilt



Horizontal single axis tracking



DESIGN CONSIDERATIONS FOUNDATIONS

- Generic helical pier, consisting of a central shaft with a circular helical blade welded at the bottom
- Machine augered holes and poured concrete footings



Concrete Footings



Helical Pier

SOLAR PARK EQUIPMENT



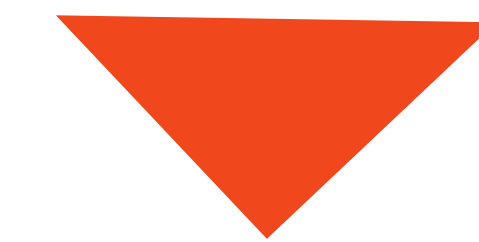
Install Piles and Racking



Mount Panels



A few inverters/transformers condition power to be compatible on local electricity grid



Finished Product (view from ground)



Finished Product (view from sky)



Substation includes necessary equipment to connect to the local electricity grid

BEING A GOOD NEIGHBOUR

When it comes to environmental benefits, solar can offer more than clean electricity



EDF EN Canada, working closely with local stakeholders, took advantage of the wild flowers and clover that typically grow within a solar park and installed beehives in the vicinity of Arnprior Solar park to enhance the biodiversity of the project by producing honey.

To further increase solar honey production, more hives are planned for 2017. Collection of more than 350 jars are anticipated. The honey produced is given as a gift to company employees, partners and project stakeholders.

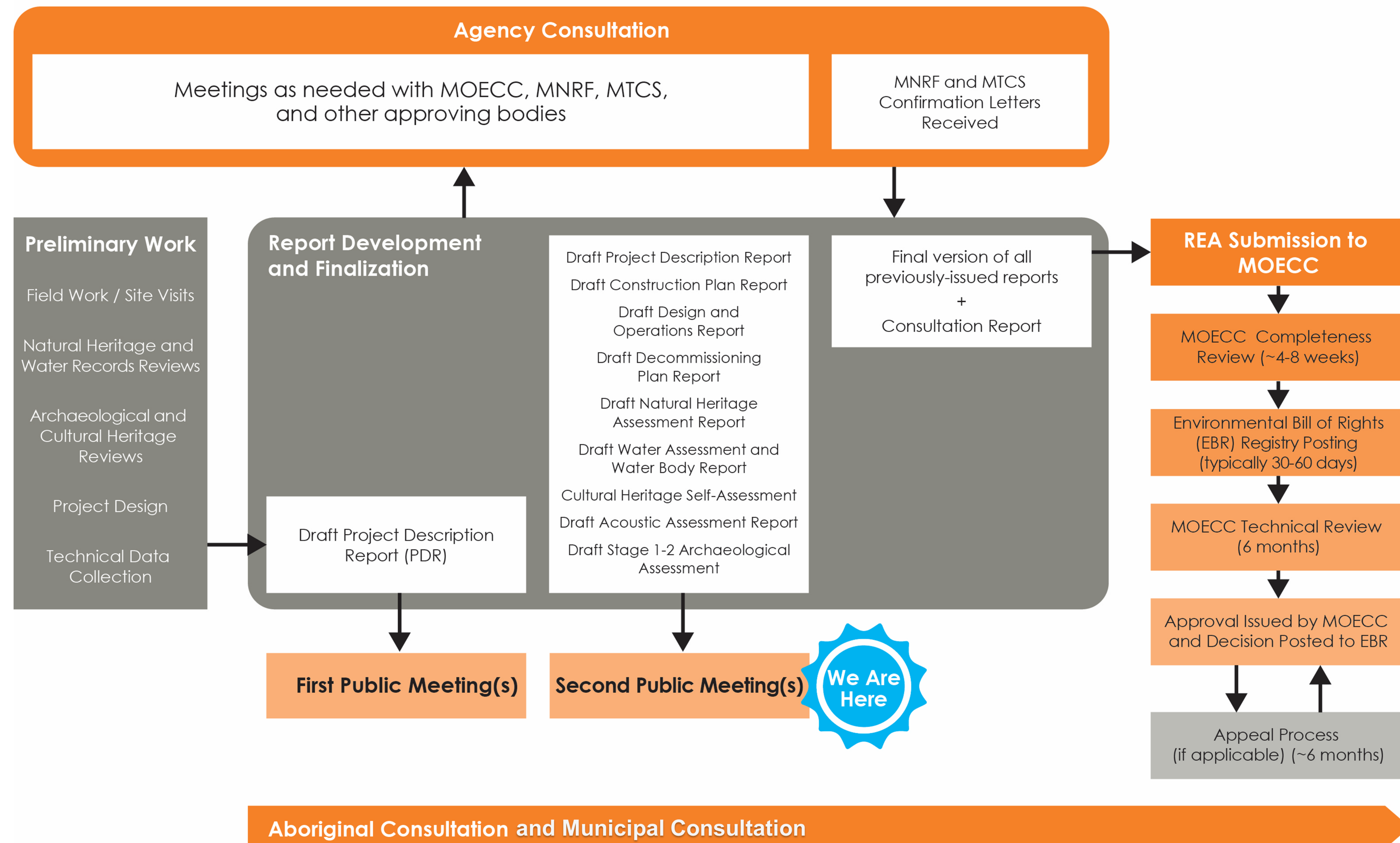
SUNNY & HONEY
100%
ARNPRIOR SOLAR
HONEY

Beehive installed by EDF EN Canada at Arnprior Solar in Ottawa area made possible by planting vegetation such as clover beneath solar panels.



THE RENEWABLE ENERGY APPROVAL PROCESS

Overview of Renewable Energy Approval Process



- Issued under Ontario Regulation 359/09 under the *Environmental Protection Act*.
- Stringent environmental approval process that needs to be satisfied before construction.
- Specifies how the Project will be designed, built, operated and decommissioned so that the environment is protected.



**WE WANT
TO HEAR
FROM YOU!**

Please share your questions and comments with us by filling out a questionnaire. Feel free to take extra questionnaires with you and share them with your friends and family.

Copies of the display boards from this Public Meeting, Project Newsletters and the Draft Renewable Energy Approval Reports are available on the website.

To learn more about the project proposal, public meeting, or to communicate your interests please contact us!

PendletonSolar@edf-en.ca

1-844-55-EDF-EN

<http://www.edf-en.ca/project/pendleton-solar-energy-centre/>

Fabiola Oribe, Associate Project Developer and Stakeholder Relations

Pendleton Energy Centre Limited Partnership

53 Jarvis Street, Ste. 300, Toronto, ON M5C 2H2

Phone Number: 877.697.9997 (ext. 4146)