Planning Report & Land Use Compatibility Review

Planning Report for Lily Lake BESS Facility
Municipal Support Resolution Request

Stantec

Prepared for:
16656048 Canada Inc. (Nexus Energy)

Date:
November 7, 2025

Prepared by:
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Project/File:
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Revision Record

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
1	Initial Submission	E Bays	7 Nov 25	M Smith	7 Nov 25		

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Executive Summary

Nexus Energy, on behalf of 16656048 Canada Inc., is proposing to develop a 10 MW (80 MWh AC) Battery Energy Storage System (BESS) at 277 Lily Lake Road, Selwyn Township, Peterborough County. The project is in response to the Independent Electricity System Operator's (IESO) Long-Term 2 Request for Proposals (LT2 RFP), aiming to address Ontario's growing energy needs through new resources by 2030.

Nexus Energy is a Toronto-based company specializing in electricity procurement, risk management, and renewable energy solutions, with a focus on expanding Ontario-based generation and storage assets.

This planning report has been prepared to support the request for a Municipal Support Resolution (MSR) from the Township of Selwyn- a requirement for the LT2 RFP. The MSR signals municipal alignment with the project and helps streamline community engagement and planning processes, though it does not replace formal land use approvals.

Projects of this nature may be subject to multiple provincial and federal acts including the Environmental Assessment Act, Planning Act, Municipal Act, Heritage Act, Environmental Protection Act, Conservation Authorities Act, Migratory Birds Convention Act, Fisheries Act, Species at Risk Act, and Endangered Species Act or its impending successor, the Species Conservation Act SCA. Based on our initial review, the project will be exempted from processes under the Environmental Assessment Act, Planning Act, Heritage Act, or Fisheries Act. Further environmental investigation is warranted to confirm the presence (or lack thereof) of species under the Migratory Birds Convention Act, Species at Risk Act, and Endangered Species Act.

Based on our initial review of the proposal and subject to the conclusions of the various future studies outlined in Section 8 of this report, the proposal aligns with the Provincial Planning Statement, Peterborough County Official Plan, and local zoning by-law. The proposed site layout is designed to avoid impacts on provincially significant wetlands and floodplains, with further studies planned to confirm compliance.

1 Introduction

Stantec has been retained by Nexus Energy to prepare this planning report in support of a Battery Energy Storage System (BESS) proposal at 277 Lily Lake Road in Selwyn Township (Peterborough County). The intent of this report is to introduce the project and proponent, describe the site and surrounding context, and provide a roadmap of the work to be completed before development of the project can proceed.

Nexus Energy is responding to the Independent Electricity System Operator's (IESO) Long-Term 2 Request for Proposals (LT2 RFP), a major electricity procurement initiative designed to address the province's growing energy needs. LT2 aims to secure approximately 2,000 MW of new energy-producing resources and 600 MW of new capacity by 2030 in Ontario. The initiative responds to increasing electricity demand driven by electrification in sectors like mining, steelmaking, transportation, and residential heating, as well as economic growth and the retirement of existing generation contracts.

As part of this process, the proponent is requesting a Municipal Support Resolution from the Township of Selwyn for the proposed project- a requirement of the LT2 RFP.

A Municipal Support Resolution is a formal declaration from a local municipal council indicating its support for a proposed energy project being submitted to the IESO. This resolution serves as part of the Municipal Support Confirmation, which is a mandatory requirement when a project is proposed. While it does not replace or guarantee land use approvals (such as zoning or site plan approvals) it signals for the proponent to further develop its proposal and is intended to streamline community engagement and planning processes.

This report is written for Township staff and members of Council, to provide them with adequate information to consider the granting of a Municipal Support Resolution (MSR) for the Lily Lake Storage Project . This report, and other materials submitted as part of this request, have been prepared to meet or exceed the requirements of the Township's Municipal Support Resolution Protocol for Utility Installations (By-law 2025-049).

2 About Nexus Energy

Nexus Energy is a Canadian energy market company which provides a range of tools and services for businesses to customize electricity procurement, risk management, and strategic hedging, all designed to stabilize energy costs and enhance operational efficiency. Based in Toronto, Nexus Energy provides energy solutions, undertakes market analysis and trading, offers renewable energy certificates and credits, and supports renewable technology development and acquisition.

Nexus Energy primarily serves the Eastern Canada and the Northeastern United States electrical energy markets and are in the process of expanding their operations into other markets. As part of their business growth initiatives, Nexus Energy continues to invest and expand their Ontario-based generation and energy storage assets.

2.1 About Battery Energy Storage Systems (BESS)

A Battery Energy Storage System (BESS) is a technology that stores electrical energy for later use, using rechargeable batteries, and then releases energy back into the electrical grid at times of greater energy demand. These systems are connected to the electrical grid and can store energy during non-peak periods, feeding this energy back into the grid when there is greater demand. BESS facilities range in size from small residential setups to large-scale installations that support entire communities or utility networks.

The primary purpose of a BESS is to enhance grid reliability, flexibility, and efficiency. It helps balance supply and demand, reduces overall system costs, supports renewable energy integration (like solar and wind), and provides backup power during outages. BESS reduce reliance on “peaker” plants- generation stations which operate intermittently to maintain grid stability during periods of high demand. Existing “peaker” plants are fossil fuel-based; therefore, the expansion of energy storage capacity has the potential to lower the greenhouse gas intensity of Ontario’s electrical grid and enables cleaner energy use.

3 Site Location and Context

The proposed project site is located on a portion of 277 Lily Lake Road in Selwyn Township, approximately 1400 m (0.8 miles) west of the intersection of County Road 12 and Lily Lake Road (Figure 1). While the entire property is 6.5 ha (16.2 acres) in area, the proposed project site is significantly smaller, covering approximately 0.4 hectares (1 acre) to the west of the existing homestead. For the purposes of this section of the report, the entirety of the property will be discussed.

The property is legally described as Part of Lot 4 Concession 1 as in R504884 former Township of Smith-Ennismore, now Township of Selwyn, County of Peterborough (PIN: 28417-0151). The property has an area of 6.5 ha (16.2 acres) and 580 m of frontage on Lily Lake Road.

The property includes a detached dwelling on private services (drilled well and septic system) and two unserviced outbuildings. The larger outbuilding to the south is currently used to house livestock which are pastured south of the building and in the two fields east and west of the homestead. To the west, a narrow portion of the property is covered by a wetland which drains south to Jackson Creek. The site is surrounded on all sides by well vegetated hedgerows.

The site and surrounding topography are composed of rolling hills interspersed and vales commonly occupied by wetlands and watercourses. The surrounding landscape is rural in nature with agricultural fields, farming operations, collections of dwellings on generous lots, and natural wetland and treed areas.

Figure 1: Aerial imagery of the site and surrounding uses. The area of the proposed facility is highlighted in red.

The following uses surround the property:

North: the property is bounded by Lily Lake Road (also known as Second Line Road), a paved local road with a posted speed limit of 50 km/h. Two detached dwellings, 272 and 276 Lily Lake Road, are located opposite the subject site and accessed by a shared driveway. Both dwellings have generous landscaped setbacks from Lily Lake Road. Portions of the forested area northwest of the site are identified as part of a provincially significant wetland by Ministry of Natural Resources (MNR) and County of Peterborough online mapping.

East: the property is bounded by vacant lands to the east. A private driveway accessing a detached dwelling, known as 315 Lily Lake Road, is also located east of the property.

South: the property is bounded by the Trans Canada Trail to the south which follows a former rail corridor. Opposite the trail are two fields and a forested area. Portions of the forested area are identified as part of a provincially significant wetland by MNR and County online mapping.

West: a small hamlet of six detached dwellings is located at the property's westernmost boundary at the intersection of Lily Lake and Stockdale Roads. West of the hamlet are other rural lands, dwellings, and open wetlands which drain south to Jackson Creek.

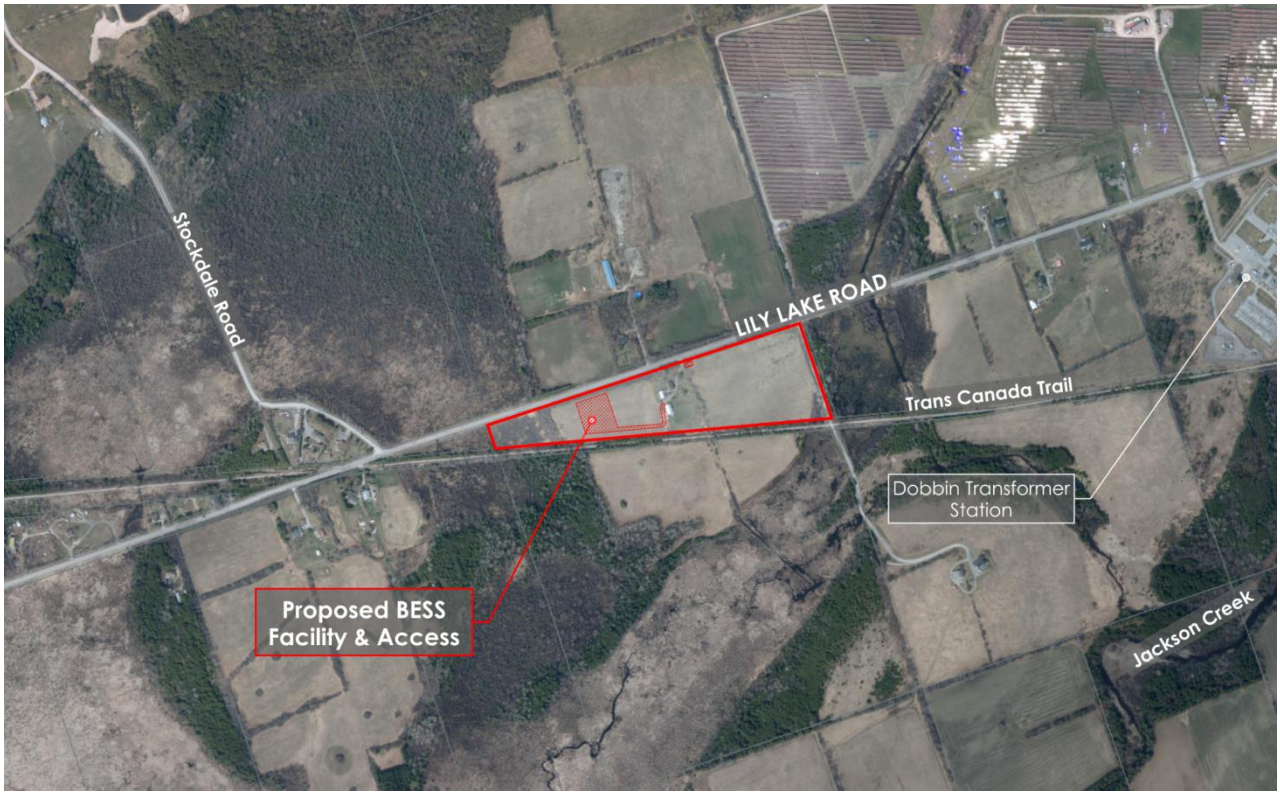

Figure 2: Aerial imagery of the site (red) and surrounding lands within 300 metres.

4 Proposed Development

Nexus Energy, on behalf of 16656048 Canada Inc., is currently exploring a battery energy storage system (BESS) project in the Township of Selwyn. The proposal will be a small-scale BESS with a storage capacity of approximately 10 MW (80 MWh). The Lily Lake Storage Project is being developed in response to the Long-Term 2 Capacity Services Request for Proposals (LT2 RFP) issued by the Government of Ontario through the Independent Electricity System Operator (IESO).

The site was selected due to its proximity to the Dobbin Transformer Station. Areas surrounding transformer stations often have higher hosting capacity (i.e.: ability for a grid to support distributed energy resources), meaning the grid can better accommodate new sources of energy injection or withdrawal. The site is also adjacent to a distribution line with sufficient capacity to support the proposed facility, while the location the site was selected to minimize impact on agricultural lands.

The project would consist of approximately 22 modular BESS containers, an internal access road, other necessary electrical cabling and infrastructure, and safety systems. Electrical service to the facility would be provided from a point of interface located next to the current driveway access to the dwelling.

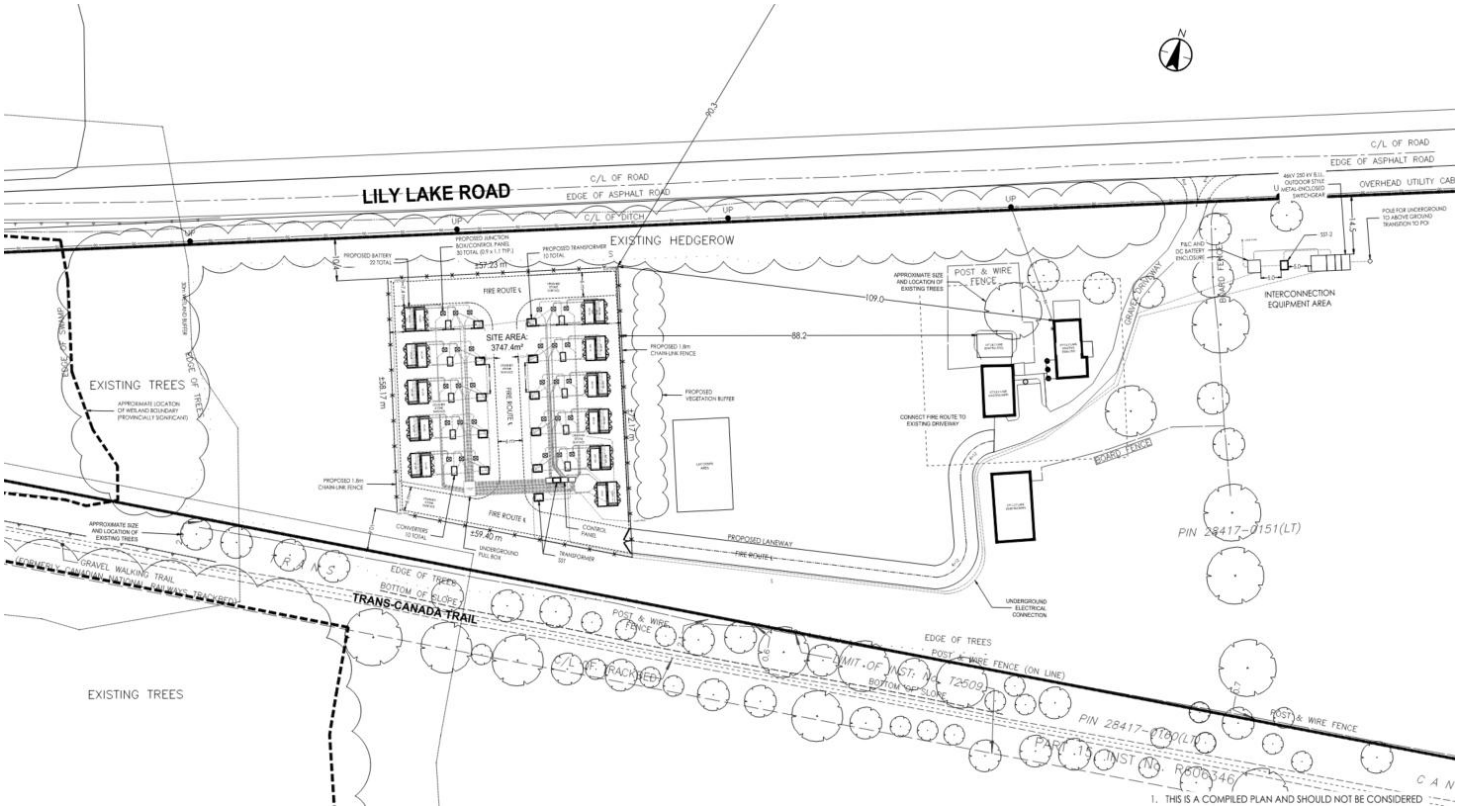

Figure 3: Preliminary Site Plan of the proposed BESS facility. The site is located to the west of the existing dwelling between Lily Lake Road and the Trans Canada Trail.

The BESS facility is modular in nature with each component having a particular design lifespan before it is decommissioned for refurbishment or recycling. Currently, the facility would operate for 20 years before decommissioning (i.e.: from 2030 to 2050) or repowering

The proposed development site would be approximately 0.4 hectares (1 acre) in area located west of the existing dwelling (see Figure 3) The exact location and layout of the infrastructure within the Project development area will be determined through further technical and engineering studies, equipment procurement, and any other required permitting/approvals.

Subject to the outcome of the LT2 RFP and Project development timelines, construction is proposed to begin in 2029 with a planned in service date in 2030.

At 10 MW, the proposal is generally considered a smaller BESS facility. The modest storage capacity enables Nexus Energy to design a facility with a smaller development footprint more compatible with the surrounding rural context and dwellings. Unlike larger BESS facilities, the proposal will connect to the existing 44 kV distribution lines running along Lily Lake Road without the need to run a new transmission corridor or to construct a substation.

4.1 Preliminary Construction and Operation Plan

Subject to the outcome of the LT2 RFP and Project development timelines, construction is proposed to begin in 2029. Site preparation, including temporary site access from Lily Lake Road; installation of erosion and sediment control measures; the clearing, stockpiling, and removal of vegetation and organic material could commence in spring 2029 depending on weather conditions. This would be followed by installing footings (to support the battery modules, attach larger electrical instruments, etc.) and gravel base placement for the BESS facility, emergency access, and point of interface. The battery modules would be delivered to the site by truck and placed on footings by a portable crane; wire pulling and electrical pad installation would occur in parallel before being backfilled with gravel to final grade. Fencing installation, final grading, landscaping, and further electrical work would continue for the balance of 2029 with the intent of the facility being operational in 2030.

Once operational the site requires limited attendance by staff as management and operation activities can be monitored remotely with staff performing site visits on an as needed basis. Site access would be through the existing residential driveway; access maintenance and snow clearing would be maintained throughout the year, with cleared snow being stored on-site outside of designated fire access routes. At this time, there are no plans for nighttime light of the facility to minimize both operation costs and the lighting overspill. Additional information can be found in the Preliminary Construction and Operation Plan.

4.2 Preliminary Decommissioning Plan

A Preliminary Decommissioning Plan has been prepared by Nexus Energy (dated October 29, 2025) for the facility and has been submitted as part of the Municipal Support Resolution request application.

All decommissioning activities will be carried out in accordance with all applicable federal, provincial, and municipal regulations including NFPA 855, the Ontario Electrical Safety Code (OESC), the Ontario Fire Code, Ontario Regulation 347 for waste management, and the Ministry of the Environment, Conservation and Parks (MECP) environmental protection guidelines in place at the time of decommissioning. The overarching goal of this plan is to achieve safe system dismantling, maximize recycling opportunities, minimize environmental impact, and restore the project site to pre-existing conditions or other acceptable use as approved of by the landowner and municipality at the time of decommissioning.

A comprehensive decommissioning cost estimate will be submitted to the Township once project design and technical details are finalized.

5 Community Outreach and Engagement

5.1 Pre-Consultation Meeting

Nexus Energy and Stantec arranged and attended a pre-consultation meeting on September 17, 2025. The meeting was organized by Township staff and attended by representatives from Hiawatha First Nation, Otonabee Region Conservation Authority, Peterborough County. This included the Township of Selwyn Fire Chief, Clerk and CAO, and Planning and Building Department team members.

The meeting allowed Nexus Energy and Stantec to introduce the proposal, respond to initial questions, and listen to initial feedback from stakeholders and approval authorities related to the approvals process. Discussion topics were subsequently summarized in the Record of Pre-Consultation.

5.2 Public Open House

Nexus Energy organized a public open house for the proposed project on the evening of Monday October 27, 2025. Public notice was couriered to the registered addresses of all landowners within 300 m of the property by FedEx (due to Canada Post mail service disruptions at the time). The notice was also emailed to seven Indigenous communities (Alderville First Nation, Beausoleil First Nation, Chippewas of Georgina Island, Chippewas of Rama First Nation, Curve Lake First Nation, Hiawatha First Nation, and Mississaugas of Scugog Island First Nation), the Otonabee Conservation Authority, and Township Council and staff- who posted the public notice to their website. A notice was also published in the Peterborough Examiner on September 26, 2025.

The public open house was held at the Peterborough Curling Club at 2195 Lansdowne Street West in Peterborough from 6:00pm to 8:00pm on Monday October 27, 2025. The event was arranged in an open house format, with display boards introducing Nexus Energy, the site and context, the proposed facility, and common topics related to BESS facilities and their operation (e.g., key environmental permits and approvals, future technical studies and reports, preliminary environmental constraint findings, fire safety and economic benefits). Staff from Nexus Energy and Stantec were in attendance to meet attendees, answer questions, and listen to community feedback. A sign-in sheet was available at the welcome table to collect contact information from attendees. A community engagement feedback form was also available for attendees to fill out and submit with questions or comments at the public open house (or take with them to send in at a later date). Written comments were requested by November 3, 2025, to be incorporated into the record to the Township of Selwyn.

Following the open house, Nexus Energy has prepared a Record of Consultation document which summarizes work related to community outreach and engagement efforts responds to concerns, issues, questions, or interests relating to the project within a consultation log.

6 Other Approvals and Permitting

Energy generation, storage, or transmission projects may be subject to a range of provincial and federal legislation on a broad range of topics. The intent of this legislation is to protect public interests, ensure accountability of proponents, and establish a framework to inform and engagement members of the public.

The following table provides a brief discussion of various legislation to which the project may be subject to review or permitting. Which acts and permitting will be required, will be determined by the findings of various field investigations and assessments discussed in Section 8 of this report.

Legislation	Applicability to Project
Environmental Assessment Act (Ontario)	The *Environmental Assessment Act* (EAA) is intended to ensure development projects are planned with careful consideration of their potential environmental impacts. Its purpose is to protect, conserve, and wisely manage Ontario's environment by requiring a structured assessment process that evaluates effects on natural, social, economic, cultural, and built environments. The Act emphasizes early identification and mitigation of environmental risks, encourages public and agency consultation, and promotes transparency and sustainable decision-making—primarily for public-sector initiatives, though some private-sector projects may also be subject to it. The transmission line and transmission station components of stand-alone BESS projects may be subject to the Class Environmental Assessment for Transmission Facilities (Class EA for TF), which is approved under the Ontario *Environmental Assessment Act*. Generally, the Class EA for TF is triggered for new, temporary or refurbished transmission lines ≥ 115 kilovolts (kV) and > 2 kilometres (km) in length, and new or expanded (with acquisition of land) transmission stations ≥ 115 kV, with some exclusions and exemptions.

	Due to the size of the Lily Lake Storage Project, the facility is proposed to connect directly (i.e., no transmission station) to the 44 kV distribution lines along Lily Lake Road. As such, the Class EA for TF process would not be triggered. There are no EAA requirements specific to the battery component of the BESS.
Planning Act (Ontario)	The *Planning Act* establishes a framework for local land use planning in Ontario and describes how land uses may be controlled and how land use planning decisions are made. The Act provides the basis for considering matters of provincial interest; the preparation of official plans, zoning by-laws and community improvement plans; subdivision control; and site plan control. Currently, we do not anticipate that the project will trigger an application under the Planning Act, as the facility is consistent with the County and Township Official Plans, complies with the Zoning By-law, and is exempted from Site Plan review by Site Plan Control By-law 2024-045. A pending amendment to the County Official Plan (County OP), which would redesignate part of the property to “Agriculture”, is currently with the Ministry of Municipal Affairs and Housing (MMAH) for review. Should the amendment be approved, an amendment to the County OP will be required to permit the facility.
Municipal Act (Ontario)	The *Municipal Act* gives municipalities broad powers to govern and regulate land use and development within their jurisdiction. Under the Act municipalities can require various types of agreements, including Development agreements, which are typically enforced through municipal by-laws and used to ensure that developments meet local standards and contribute to infrastructure and services. As discussed in the September pre-consultation meeting and outlined in the Municipal Support Resolution Protocol for Utility Installations, should the proposal not be subject to a Planning Act application, the Township will require Nexus Energy to enter into a Development Agreement. Municipalities have the authority to request these agreements under the Municipal Act.
Heritage Act (Ontario)	The *Heritage Act* seeks to protect features of historic and cultural significance. Part VI of the Act includes provisions for the proper investigation, documentation, and protection of archaeological resources. An archaeological assessment of the site has been requested by Hiawatha First Nation due to the site abutting a wetland area. A Stage 1 Archaeological Assessment would assess the site for features of archaeological potential and identify areas of archaeological potential, or, where ground conditions warrant, where archaeological potential may have been removed. Stage 1 Archaeological Assessments are to be submitted to the Ministry of Citizenship and Multiculturalism for review, with a written concurrence letter provided to the licensee upon acceptance. Further assessments may be recommended based on the Stage 1 results.
Environmental Protection Act (Ontario)	The *Environmental Protection Act* (EPA) is designed to safeguard and conserve the natural environment. Its primary purpose is to prevent, reduce, and eliminate pollution that could cause harm to human health, property, and ecosystems. The Act prohibits the discharge of contaminants into the air, water, and land that may result in adverse effects, such as environmental degradation, health risks, or interference with the enjoyment of property. It empowers the Ministry of the Environment to regulate and enforce environmental standards, issue compliance approvals, and take remedial action when necessary.

	Based on our work with other BESS facilities, the project may require the following approvals under the *Environmental Protection Act*: • Environmental Activity and Sector Registry (EASR) for Air/Noise: may be warranted due to noise generated by the facility. Noise generation and mitigation measures would be assessed through a Noise Impact Assessment (outlined in Section 8.5 of this report). • Environmental Compliance Approval (ECA) for Industrial Sewage: will be required to treat stormwater generated on the site for quantity and quality before being returned to the environment. Stormwater would also be reviewed by the Township and Otonabee Conservation. Note: There is a new proposal to allow stormwater management for electricity projects to fall under an EASR: https://ero.ontario.ca/notice/025-0600. As such, the process may change once further guidance is provided. The Stormwater Management Plan is discussed in Section 8.6 of this report.
Conservation Authorities Act (Ontario)	The *Conservation Authorities Act* is the legislation in Ontario that governs the 36 Conservation Authorities. As of April 1, 2024, all Ontario's Conservation Authority specific regulations were replaced with O. Reg. 41/24 (Prohibited Activities, Exemptions and Permits Regulation). A permit may be required if development activity or interfering with a wetland or watercourse is proposed within a regulated area of the Otonabee Region Conservation Authority (ORCA). Preliminary comments from ORCA note that they regulate the greater of the adjacent flood hazard, including a 15-metre regulated allowance; wetlands and their 30-metre regulated area of influence; or the erosion hazard and its associated allowance; as well as unstable soil or bedrock due to the presence of wetlands. Nexus Energy is proposing to setback the facility 30 metres from the adjacent wetland. However, further study (i.e.: a floodplain study) will be required to confirm the extent of the regulated area. Further consultation with ORCA will occur as the project progresses.
Migratory Birds Convention Act (Federal)	The *Migratory Birds Convention Act* (MBCA) protects migratory birds listed in the MBCA and applies to all lands in Canada regardless of ownership. Section 12 of the MBCA prohibits capturing, killing, injuring, taking, or disturbing migratory birds, their eggs and nests listed in the MBCA. Under Section 5 of the MBCA, killing or harming listed migratory birds and/or disturbing or destroying their nests or eggs is prohibited without authorization (e.g., "Nest Notification" through Environment and Climate Change Canada's Abandoned Nest Registry system, and permit, as appropriate). Field studies are required to confirm the presence of nests of listed species. Registering the activity happens immediately but then confirmation of whether the nest is unoccupied for the duration of the waiting period is required, which varies by species. An Environmental Impact Study will include fieldwork to investigate the presence of these species during the appropriate seasonal timing window.
Fisheries Act (Federal)	The *Fisheries Act* provides for the management and control of fisheries, the conservation and protection of fish, the protection of fish habitat and pollution prevention. Proponents are responsible for planning and implementing works, undertakings or activities in a manner that avoids harmful impacts, specifically the death of fish and the harmful alteration, disruption, or destruction (HADD) of fish habitat.

	A Request for Review from Fisheries and Oceans Canada (DFO) under the Fisheries Act is required if potential impacts to fish and fish habitat cannot be avoided (e.g., crossing watercourses and/or in water works for fish and fish habitat). Based on preliminary background review and site reconnaissance, there are no watercourses with fish habitat within the area of proposed development. As such, it is not anticipated at this time that the *Fisheries Act* will be triggered for this project.
Species at Risk Act	The federal *Species at Risk Act* (SARA) is administered by Environment and Climate Change Canada (ECCC) and/or Fisheries and Oceans Canada (DFO) with the intent to protect species from extirpation or extinction as a result of human activity. SARA includes the protection of species on federal land that are designated as • extirpated (EXT) • endangered (END) • threatened (THR) • special concern (SC) species are not afforded protection. Only fish, mussels and migratory birds are afforded protection on non-federal land. Other species may be afforded protection through an Order where unprotected critical habitat extends onto non-federal land. SARA Section 32(1) affords protection to individual species that are listed under SARA as EXT, END, or THR, while SARA Section 33 protects the habitat of these species. SARA Section 58 outlines protection of critical habitat. Schedule 1 of SARA lists species in Canada that are classified as being EXT, END, THR, or of SC. The more than 300 wild plant and animal species listed in Schedule 1 are afforded special measures to protect them and assist in their recovery. Species designated as special concern are not afforded protection. These measures include, amongst other things, prohibitions against: • The killing, harming, or harassment of these species • The damage or destruction of their residences • The destruction of any part of their critical habitat A SARA Permit would be required for any activity affecting a listed species. The presence of Species at Risk, or their habitat, in proximity to the development area would be determined through fieldwork in support of the Environmental Impact Study.
Endangered Species Act or new *Species Conservation Act (Ontario)*	The Protect Ontario by Unleashing our Economy Act, 2025 (Bill 5) received Royal Assent on June 5, 2025, and as a result, the ESA was amended and will be in effect until such time that the Species Conservation Act (SCA), 2025 is proclaimed. Field work is required to assess if species at risk or their habitat are present. As part of the work plan to prepare the Environmental Impact Study, the authors would engage with MECP to discuss the potential presence of SAR near the site and impacts to habitat to determine any permitting requirements, as required. An Environmental Impact Study will include fieldwork to investigate the presence of these species during the appropriate seasonal window

6.1 Planning Act

The *Planning Act* establishes a framework for local land use planning in Ontario and describes how land uses may be controlled and how land use planning decisions are made. The Act provides the basis for considering matters of provincial interest; the preparation of official plans, zoning by-laws and community improvement plans; subdivision control; and site plan control.

Based on our review of information currently available (see Section 7.1 to 7.4 of this report), the proposal is consistent with provincial policy, conforms to County and Township official plans, and complies with applicable provisions of the Zoning By-law. As there are no structures proposed, the proposed facility would not be subject to Site Plan Control review. The facility's anticipated lifespan of 20 years means that any leasing arrangements between the property owner and Nexus Energy will not exceed the timeframe to require Consent under Section 50(3) and 53 of the Planning Act.

Based on our assessment, the proposal currently would not trigger a planning approval under the *Planning Act*.

As discussed in Section 7.3 of this report, an adopted amendment to the County of Peterborough's Official Plan (County OP) is awaiting approval by the province. The effect of this amendment would be to redesignate the property to "Agricultural". Should the amendment be approved by the province in its current form the proposal would require a site-specific amendment to the County OP to permit the use.

6.2 Municipal Act

The Township's Municipal Support Resolution Protocol for Utility Installations notes that a Development Agreement will generally be required should the proposal be approved by the IESO. Under the *Municipal Act*, the Township can require a development proponent enter into a Development Agreements to ensure that developments meet local standards and contribute to infrastructure and services. The Protocol outlines various topics, or conditions which may be considered by Council in the preparation of a Development Agreement for a utility installation.

Nexus welcomes the opportunity to work with the Township to develop conditions which ensure development of the BESS facility is undertaken in a manner that protects or enhances community interests.

6.3 Endangered Species Act and Species Conservation Act

The provincial *Endangered Species Act* (ESA) (2007) prohibits willful harm of Extirpated, Threatened, or Endangered species that are listed in regulations under the Act. The ESA also prohibits willful damage to, or destruction of their habitats. The Committee on the Status of Species at Risk in Ontario (COSSARO) maintains a list of species that should be assessed and classified or reclassified. Based on criteria for classification, geographic limitation, and best available scientific information, COSSARO is responsible for

assessing, reviewing, and classifying species in Ontario. COSSARO submits reports regarding the classification of species and providing advice to the Minister of Environment, Conservation and Parks in accordance with the Act. The Species at Risk in Ontario (SARO) list regulation (O. Reg 230/08) under the ESA may be amended based on reporting from COSSARO, and once amended the species is protected based on its classification.

The *Protect Ontario by Unleashing our Economy Act*, 2025 (Bill 5) received Royal Assent on June 5, 2025, and, as a result, the ESA was amended and will be in effect until such time that the Species Conservation Act (SCA), 2025 is proclaimed. Recent amendments to the ESA include:

- Revised habitat definition replaced the previous definition in the ESA, focused on core elements of habitat such as breeding, rearing, staging, wintering, and hibernation areas.
- “Harass” was removed from the prohibitions.
- The government has discretion to add species to, or remove from, the Species at Risk in Ontario (SARO) List.

Otherwise, it is anticipated that similar restrictions, obligations, and required actions will remain under the SCA as those under the ESA, though Threatened or Endangered migratory birds and aquatic species will be protected under SARA versus the SCA. The SCA is proposing to use a “registration-first approach”, with most activities covered by registration, though a permit would still be required in some circumstances, for some activities. Regulations under the SCA, which will provide details on registration and exemption options, are currently under development. The exact timeline for enaction of the SCA is unknown, though it is not expected to occur until sometime after December 31, 2025. Therefore, it is likely that the project would fall under the SCA, based on the anticipated timelines of the project and the SCA.

7 Land Use Planning Framework

The following section provides a brief overview of the provincial, County, and Township land use policies which discuss the use of lands in the rural area, energy systems, and environmental stewardship.

7.1 Provincial Planning Statement

The Provincial Planning Statement (PPS) is issued under section 3 of the *Planning Act* and came into effect October 20, 2024. The PPS provides policy direction on matters of Provincial interest related to land use planning and development. As a key part of Ontario's policy-led planning system, the PPS sets the policy foundation for regulating the development and use of land province-wide, helping achieve the provincial goal of meeting the needs of a fast-growing province while enhancing the quality of life for all Ontarians.

Chapter 2: Building Homes, Sustaining Strong and Competitive Communities

The site is located in the rural area of Selwyn Township. Section 2.6 of the PPS states that (emphasis added):

1. *On rural lands located in municipalities, permitted uses are:*
    a. *the management or use of resources;*
    d. *agricultural uses, agriculture-related uses, on-farm diversified uses and normal farm practices, in accordance with provincial standards;*
    e. *home occupations and home industries;*
    g. *other rural land uses.*
2. *Development that can be sustained by rural service levels should be promoted.*
3. *Development shall be appropriate to the infrastructure which is planned or available, and avoid the need for the uneconomical expansion of this infrastructure.*

The site was selected based on existing line capacity which allows for development without the need for upgrades or improvements to available infrastructure. The use does not require on-site water (well) or wastewater (septic) facilities and can be sustained by existing rural service levels and infrastructure.

Section 2.9 of the PPS addresses Energy Conservation, Air Quality and Climate Change states that:

1. *Planning authorities shall plan to reduce greenhouse gas emissions and prepare for the impacts of a changing climate through approaches that:*
    c. *support energy conservation and efficiency;*
    d. *promote green infrastructure, low impact development, and active transportation, protect the environment and improve air quality; and*
    e. *take into consideration any additional approaches that help reduce greenhouse gas emissions and build community resilience to the impacts of a changing climate.*

As outlined in Section 2.1 of this report, BESS facilities enhance grid reliability, flexibility, and efficiency. It helps balance supply and demand, supports renewable energy integration (like solar and wind), and

provides backup power during outages. BESS reduce reliance on predominantly fossil-fuel powered "peaker" generation stations.

Chapter 3: Infrastructure and Facilities

Section 3.8 Energy Supply provides policy direction on development of energy supply (emphasis added):

1. *Planning authorities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, energy storage systems, district energy, renewable energy systems, and alternative energy systems, to accommodate current and projected needs.*

Energy storage systems are recognized as essential infrastructure that supports the growth and development of the province. As such, the proposed facility aligns with provincial objectives related to infrastructure and energy sustainability. The proposal is in response to a Request for Proposals issued by the province seeking to increase electricity demand to meet future projected needs driven by electrification in various sectors as well as economic growth and the retirement of existing generation contracts.

Chapter 4: Wise Use and Management of Resources

Section 4.1 addresses Natural Heritage:

1. *The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.*
4. *Development and site alteration shall not be permitted in:*
    a. *significant wetlands in Ecoregions 5E, 6E and 7E1; and*
    b. *significant coastal wetlands.*
7. *Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.*

Based on an initial field visit which investigated the boundary of the existing provincially significant wetland, the facility has been sited to ensure an adequate setback from this natural heritage feature. Additional investigation is to be completed through the preparation of an Environmental Impact Study (EIS) through the development process. Based on the observations and recommendations of the EIS the location and design of the facility will be adjusted to ensure no impact on natural heritage features.

Chapter 5: Protecting Public Health and Safety

Section 5.1 outlines that development shall generally be directed away from areas of natural or human-made hazards where there is an unacceptable risk to public health or safety or property damage and not create new or aggravate existing hazards.

Section 5.2 addresses Natural Hazards:

2. *Development shall generally be directed to areas outside of:*

a. *hazardous lands adjacent to the shorelines of the Great Lakes -St. Lawrence River System and large inland lakes which are impacted by flooding hazards, erosion hazards and/or dynamic beach hazards;*
b. *hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards; and*
c. *hazardous sites.*

4. *Planning authorities shall prepare for the impacts of a changing climate that may increase the risk associated with natural hazards.*
8. *Further to policy 5.2.7, and except as prohibited in policies 5.2.3 and 5.2.6, development and site alteration may be permitted in those portions of hazardous lands and hazardous sites where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:*

a. *development and site alteration is carried out in accordance with floodproofing standards, protection works standards, and access standards;*
b. *vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;*
c. *new hazards are not created and existing hazards are not aggravated; and*
d. *no adverse environmental impacts will result.*

As discussed in Section 3 and elaborated in Section 8.9, the property is impacted by a 1:100 floodplain to the east which has been modeled by the Otonabee Region Conservation Authority. Floodplain modelling will be completed in collaboration with ORCA. The modelling will be used to establish the elevation of water during the 1:100 flood, the edge of which would be mapped once detailed topographic mapping for the property has been completed. If warranted the facility location would be adjusted to ensure it is located outside of the floodplain.

7.2 Peterborough County Official Plan

The Township of Selwyn is a lower-tier municipality located in Peterborough County. The Township's Official Plan policies are located within the Peterborough County Official Plan, along with several other local townships.

The Official Plan that is currently in effect is the County of Peterborough Official Plan (1994) with amendments consolidated to June 2025. The Township of Selwyn Official Plan policies are found within Sections 6 and 7 of the County Official Plan (1994).

Per Section 4 of the Official Plan, the County permits alternative energy systems and renewable energy systems in settlement areas, rural areas, and Prime Agricultural Areas in accordance with provincial and federal requirements (4.7.3.4):

The County will permit all existing electrical facilities and all new facilities used directly for the generation and distribution of electric power and permitted under The Environmental Assessment Act in any land use designation, subject to other relevant studies and to the proponents of those facilities taking into account the established planning policies of the local municipality.

The Official Plan also directs the County to promote opportunities for energy facilities, and specifically, the use of renewable and alternative energy systems. Figure 4shows the current, in-effect designations for the Subject Lands as outlined in the 1994 Official Plan.

The property is designated primarily Rural, with portions of the land on the east and west sides of the site being subject to the designations Environmental Constraint Area, Natural Resource Area – Provincial Wetland, and Provincial Significant Wetland.

The Rural designation, per Section 6.2.2 of the Official Plan, applies to “areas where Class 4, 5, 6, and 7 and Organic soils under the Canada Land Inventory (CLI) Soil Capability for Agriculture predominate and areas where previous non-farm development has effectively limited the future of intensive farm activity.” All typical agriculture uses are permitted on these lands, as well as agricultural-related uses (such as farm related commercial industrial uses) and secondary uses (such as value-added agricultural production).

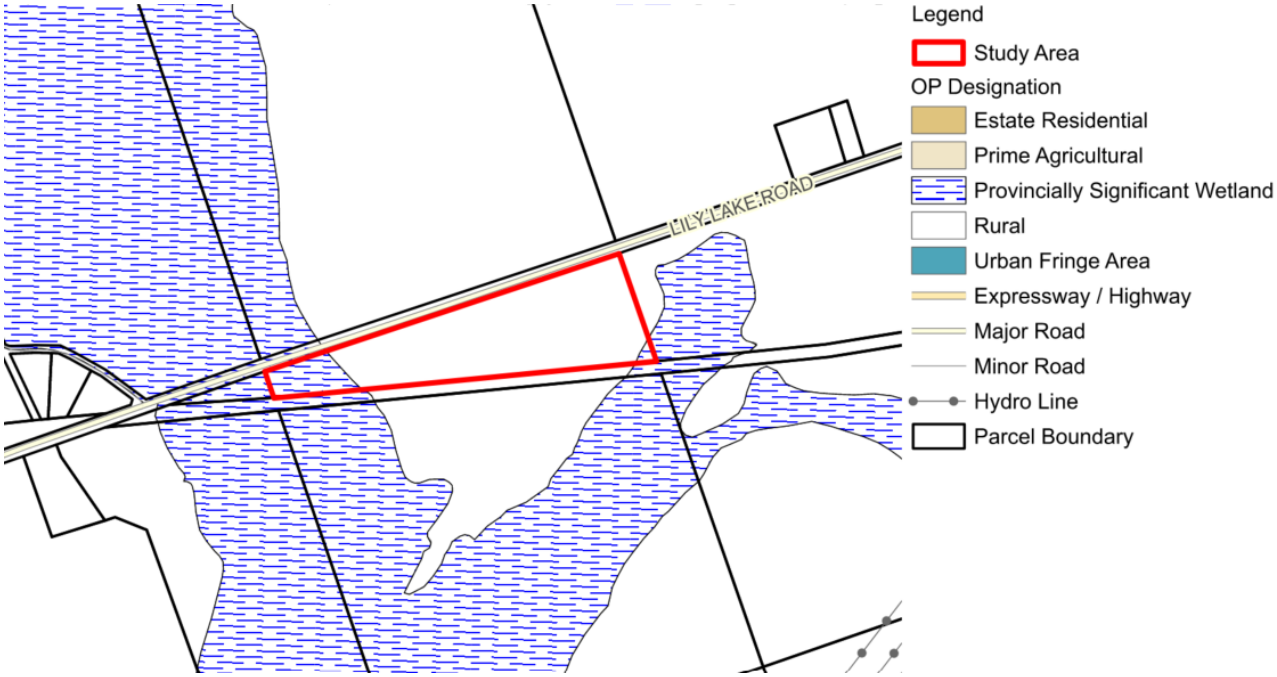

Figure 4: Extract from Schedule B of the County OP. The site is designated Rural and Provincially Significant Wetland.

The Environmental Constraint Area designation applies to “those lands having inherent environmental hazards such as flood or erosion susceptibility, poor drainage, organic soils, instability or any other similar physical characteristic or limitation and includes other non-provincially significant wetlands which, if developed upon, could result in the deterioration or degradation of the environment and cause property damage or loss of life” (6.2.15).

Further, the 1994 Official Plan provides the following direction on Environmental Constraint Areas:

> *The Township shall, wherever possible, endeavour to retain those lands designated as Environmental Constraint Areas in their natural state. The use of those lands shall respect the*

> *physical constraints and limitations in order to protect life and property, to minimize the alteration of the natural environment and, where appropriate, maintain the hydraulic capacity of the water courses and their related flood plains (6.2.15).*

Section 6.2.15.3 – Environmental Constraint Policies, subsection a) reads, "The erection of buildings and structures originating on the site or elsewhere, shall be prohibited except where buildings or structures are intended for floor or erosion control, landscape stabilization or essential utilities. Those works shall be in accordance with the regulations and the approval of the Otonabee Region Conservation Authority or the Ministry of Natural Resources…" In alignment with this policy, the Otonabee Region Conservation Authority (ORCA) provided comment during pre-consultation. The ORCA indicated that a permit would be required as well as the following studies and plans: Floodplain Study, Grading Plans, Site Plan, and Constraint Map.

The Official Plan stipulates that development is not permitted within Provincially Significant Wetlands. For lands that are adjacent to Provincially Significant Wetlands, permitted uses include those permitted within a wetland and established agricultural activities as defined in the Provincial Policy Statement.

Section 7.0 – Local Plan Policies: General Development provides overarching policy direction applicable to all land use designations, guiding the review and implementation of such proposals. Policy 7.2.7 provides a list of studies that may be required to support land approval application such as:

- Servicing Options Report
- Hydrogeological studies
- Engineered Drainage Plan/Storm Water Management
- Market Analysis/Justification Study
- Traffic Study
- Environmental Impact Analysis
- Archaeological Study
- Planning Study/Analysis
- Natural Resource Analysis (aggregates, mineral non-aggregates, forests, etc.)
- Noise Impact Study
- Agricultural Land Usage Justification
- Impact on Municipal/Other Services

Section 7.23 Electric Power Facilities states that:

> *7.23.1 The development of electric power facilities shall occur in an orderly manner to facilitate the efficient and reliable provision of adequate electric power. Electric power facilities shall be permitted in all land use designations without a Plan amendment provided that the planning of those facilities is carried out having regard to the policies of this Plan. The Township shall be consulted regarding the location of any new electric power facilities.*

While the general policy direction suggests that the electric power facilities are permitted in all land use designations, consultation with both the County and the Township will continue to ensure compatibility with adjacent land uses, adequate setback and buffers based on the conclusions of other supporting studies, and all planning and regulatory expectations are met.

Adopted Amendments Awaiting Ministry Approval

The County of Peterborough prepared a new Official Plan in 2022 (including official plan policies for those local townships included in the 1994 Official Plan). This Official Plan (2022) was adopted by the County Council and has been awaiting approval by the Ministry of Municipal Affairs and Housing (MMAH). In 2025,

the County sought additional feedback after revisions to the Official Plan (2022) were submitted to MMAH, as a result of 2024 provincial policy changes. The County adopted this updated Official Plan (2022) in early 2025 which reflected the 2024 provincial policy direction. The updated draft Official Plan is now awaiting MMAH approval once again. Therefore, at the time of the writing of this report, the Official Plan (1994) was in effect, and the Official Plan (2022) awaited approval from the MMAH. The Township's specific policies are contained in Section 11.6 of the Official Plan (2022).

Under the new County OP, the majority of the property will be redesignated to *prime agricultural lands* upon approval by the MMAH (Figure 5). This change comes as the result of the Growth Plan for the Greater Golden Horseshoe (2019), which identified prime agricultural areas and candidate areas, with prime agricultural areas to be protected for long-term use for agriculture. Despite the Growth Plan for the Greater Golden Horseshoe no longer being in force and effect, it has been assumed that the designations of prime agricultural lands, as contained in the Growth Plan, remain the best available information to illustrate the existing characteristics of the agricultural land base in Ontario.

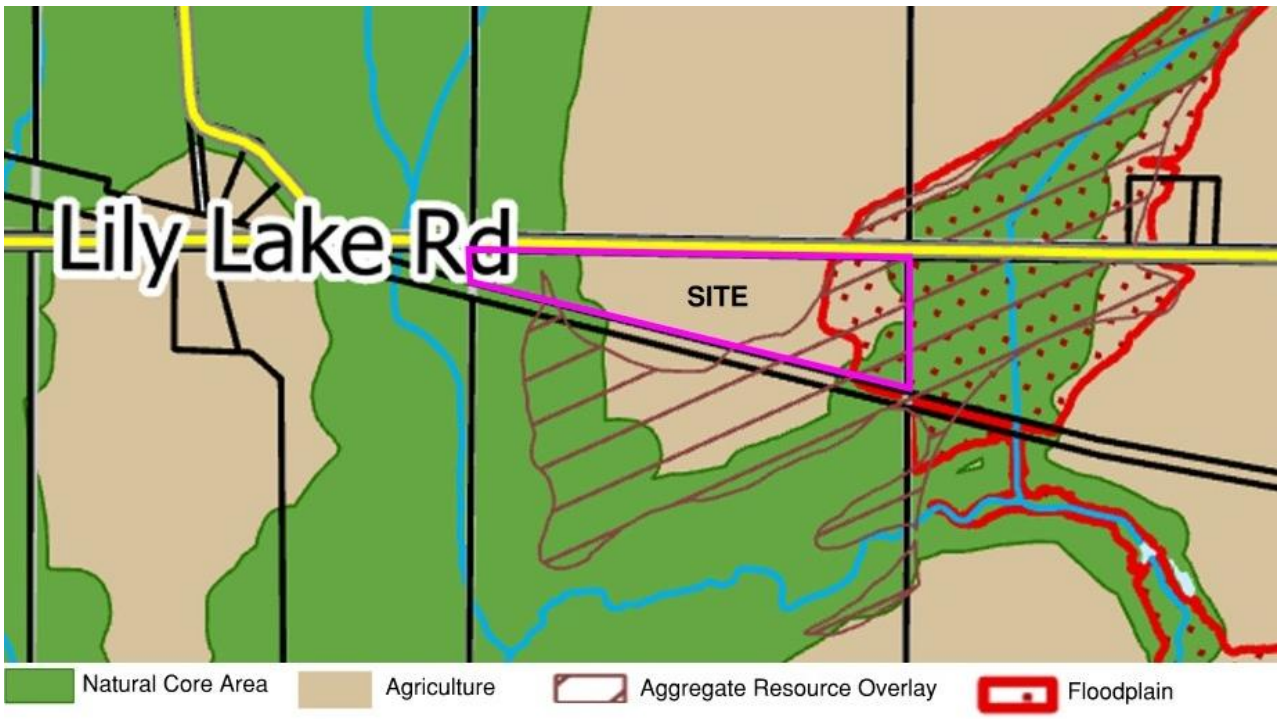

Figure 5: Extract from the adopted County OP. The property is designated Natural Core Area and Agriculture. A portion of the property is also impacted by an Aggregate Resource Overlay and mapped floodplain.

The Agriculture designation applies to areas where prime agricultural lands predominate and where the Province has identified the lands as being agriculturally productive through their Agricultural Systems mapping. Further, Section 4.1.2.1 states that the designation shall include agricultural uses, agriculture-

related uses, on-farm diversified uses, agri-tourism uses, existing residential uses, home occupations, home industries, wayside pits, conservation and forestry.

The Natural Core Area designation is intended to recognize wetlands and streams, together with lands that form a vegetation protection zone around these key hydrologic features. Section 4.3.1.1 provides that permitted uses in the Natural Core Area designation include fish, wildlife and forest management, conservation projects and flood or erosion control projects, existing agricultural uses and accessory uses, infrastructure uses, mineral aggregate operations, wayside pits and quarries, low intensity recreational uses, and existing uses on existing lots of record.

Eastern portion of the site is within the Aggregate Resource Overlay. Section 8.4 states that areas having mineral aggregate resource potential are identified by the overlay, with development on, or adjacent to, these areas only permitted in accordance with the underlying land use designation, and only where it can be shown that the proposed development has a greater public interest than the extraction of the resource and the development will not adversely affect the availability of the resource and long-term viability of the aggregate industry in the future.

The site is also subject to an existing Floodplain on the east. Section 6.4.1.b provides that development should generally be directed to areas outside of hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.

However, policies contained in Section 10.3.4 Utilities provide guidance on facilities and corridors for the transmission and distribution of water, oil, natural gas, hydro/electricity, telephone/cable and broadband/fibre.

1. *The location of new utility facilities and/or corridors is generally permitted within any land use designation provided:*
    - *Proposed utility development satisfies the policies for infrastructure development within the Natural Heritage System;*
    - *Such facilities do not adversely impact any adjacent use;*
    - *New utility corridors are located adjacent to existing utility and/or transportation corridors, wherever possible;*
    - *Communication towers for radio, internet, television and phone transmissions are not located within or adjacent to any residential area; and,*
    - *New electrical generating stations proposed by private corporations shall only be permitted by amendment to this Plan and shall be subject to all applicable provincial approvals unless such uses are exempt from Planning Act approvals through the provisions of the Environmental Assessment Act.*

5. *Large-scale renewable energy projects and alternative energy systems shall be permitted throughout the County in accordance with Provincial and Federal requirements. Such uses are generally permitted in any land use designation with the exception of the Agriculture, Employment, Rural Employment and Natural Core Area designations, must not be located within a flood plain or on other hazardous lands, and must avoid negative impacts on adjacent land uses. Proponents of large-scale renewable energy projects are encouraged to attempt the highest levels of cooperation, consideration, and communication with the County, local Municipalities, host property owners, and the local community during all phases of project development and operation.*
7. *Privately owned, small-scale renewable energy facilities are encouraged and may be permitted where deemed appropriate by the local Municipality. Ground mounted solar facilities may be*

permitted as an on-farm diversified use. All such uses may be regulated through the local Municipal Zoning By-Law and must be designed in accordance with all applicable federal and provincial legislation, regulations and licensing requirements.

Although the County generally supports the development of electrical generation facilities, an amendment to the new Official Plan (OP) may be required. The new OP permits privately owned, small-scale electrical generation facilities at the discretion of the local municipality—in this case, the Township of Selwyn. The proposed facility aligns with the intent of the new County OP and will need to demonstrate compliance to the applicable zoning regulation.

The timing of the new OP's approval/adoption remains uncertain. If the project proceeds under the current OP, a formal amendment may not be necessary. Nonetheless, even though electrical generation facilities are permitted under the existing policy framework in all land use designations, the proposed facility must still demonstrate compatibility with adjacent land uses. This will require support from technical studies, such as Environmental Impact Study (EIS) and Floodplain Study, to ensure compliance with planning and regulatory expectations. We anticipate that the proposed facility has a relatively small footprint allowing for the incorporation of appropriate setbacks and buffers, helping to mitigate potential impacts on surrounding environmental features.

7.3 Zoning By-law

The site is characterized by split zoning per the Corporation of the Township of Selwyn Comprehensive Zoning By-law (2009-021). The majority of the property is zoned Rural (RU) Zone while remainder of the site is zoned Environmental Protection (EP) Zone.

Rural (Ru) Zone permits a variety of residential and non-residential uses. White the EP Zone prohibits most uses, including residential.

Section 3.39 Public Uses and Utilities permits an electrical facility on any zone. Despite the site's zoning and permitted uses, Section 3.39.1 permits "*the use of any lot or the erection or use of any building or structure for the purposes of public services provided by the Corporation of the Township of Selwyn, or any Public Authority including any department of the County of Peterborough or any Department or Ministry of the Government of Canada or Ontario, or any Conservation Authority established by the Government of Ontario, and, for the purposes of this Section shall include Hydro One or private utility; any telephone or telecommunication, cable television or telegraph company; and, any natural gas distribution system operated by a Company which possesses all the necessary powers, rights, licenses and franchises".*

Furthermore, Section 3.39.3 Provisions provides the zoning provisions for site development.:

a)	Minimum Yard Requirements		
		i) Front Yard	10 m
		ii) Exterior Side Yard	10 m
		iii) Interior Side Yard	5 m
		iv) Rear Yard	10 m
b)	Maximum Lot Coverage - All Buildings and Structures		50%
c)	Minimum Setback from Street Centreline		
		i) County Road	23 m
		ii) Township Road	20 m
d)	Maximum Height of Buildings		10 m
e)	Minimum Landscaped Open Space		30%
f)	Outside Storage	No goods, materials or equipment shall be stored outside the building or structure located on the lot except as may otherwise be permitted under this By-law.	
g)	Maximum Height Exceptions	Section 3.39.3 d) of this By-law shall not restrict the development of structures that are required to be tall such as antennas, water towers and stand pipes.	
h)	Other Provisions	No building or structure erected in accordance with the provisions of this Section shall be used for the purpose of an office or maintenance or works depot.	

The proposed BESS facility is designed to be installed on a concrete pad and will not include any enclosed structures, rooms, or buildings that require regular human access. As a result, many of the typical zoning provisions—such as those related to building height, landscaping requirements, and lot coverage—are likely not applicable to this type of installation.

However, the determination of appropriate setbacks and buffer zones from adjacent natural heritage features will depend on the findings of future environmental studies. These studies will be critical in identifying any potential impacts and ensuring that the facility is appropriately sited to minimize environmental disruption.

Given the relatively small footprint of the proposed BESS installation, it is expected that the facility will be able to meet the minimum yard requirements and comply with environmental setback standards. This compact design supports compatibility with surrounding land uses and natural features, while also facilitating regulatory compliance.

8 Future Studies and Investigations

The following section provides a brief summary of the various studies and plans requested by the Township through the pre-consultation meeting on September 17, 2025. Each section summarizes the purpose of

each study, the potential impacts which may require further investigation and analysis, and any initial investigation of the site and facility which may be helpful to Township staff and Council in their consideration of the MSR request.

8.1 Archaeological Assessment

In Ontario, an archaeological assessment is required when a proposed development involves land identified as either containing a known archaeological site or having the potential to contain archaeological resources. This determination is typically based on municipal data and provincial screening criteria.

The Township of Selwyn provides specific guidance on when such assessments are necessary, in alignment with Section 4.6 – Cultural Heritage and Archaeology of the Provincial Policy Statement (PPS). While Township policy states that the authority for determining the need for an Archaeological Assessment rests with the Ministry of Citizenship and Multiculturalism (MCM), the authority was delegated to municipalities by the province in the case of *Planning Act* applications.

All archaeological assessments must be conducted by licensed archaeologists in accordance with the Ontario Heritage Act and must adhere to the standards and guidelines established by both the MCM and the PPS. These assessments identify, evaluate, and conserve (as appropriate) cultural heritage resources during the land use planning and development process.

An initial Stage 1 Archaeological Assessment is a desktop investigation of a site based on historical records, landform features, existing site features and conditions, and local or traditional knowledge Stage 1 assessment may also involve a property visit to confirm areas of potential. A Stage 1 assessment determines whether there is sufficient evidence of past human activities to warrant further investigation.

A Stage 2 Archaeological Assessment includes a preliminary fieldwork program. This typically includes the ploughing of fields (to expose near-surface features such as arrowheads, pottery shards, etc.) and excavating test pits on a five by five-metre grid in areas which cannot be ploughed. Depending on the conclusions of a stage II assessment, the site can either be cleared for development (should no resources be found) or further investigation may be warranted. In some cases, a development proposal can be modified to avoid archaeological resources.

Archaeological assessments are submitted to MCM's Public Register of Archaeological Reports with written clearance by the Ministry required before site alteration or development may occur. Nexus will undertake a Stage 1 Archaeological Assessment in support of the proposed development and, if warranted by the assessment's conclusions, advance work to complete a Stage 2 assessment in support of development approval.

8.2 Environmental Impact Study

Environmental Impact Study (EIS) is a standard requirement for a wide range of land use planning applications in Ontario, including Official Plan Amendments, Zoning By-law Amendments, Draft Plans of Subdivision or Condominium, Site Plan Approvals, Consents, and Minor Variances.

The primary purpose of an EIS is to identify, assess, and avoid or mitigate potential negative impacts of a proposed development on the natural environment. An EIS plays a critical role in informing the design, timing, and implementation of development proposals, through documenting ecological features and functions and making recommendations on appropriate protection, mitigation, and avoidance measures .

A preliminary site visit was conducted on October 9, 2025, to assess wetland limits within the Site Boundary and to inform recommendations on future surveys to be undertaken for the EIS. A desktop review of background documents has also been completed (October 2025) to identify natural features, wetlands/watercourses, fisheries records, wildlife accounts (e.g., migratory birds), and species at risk (SAR) and species of conservation concern (SOCC) occurrences, to apprise on further field investigations required.

Based on the findings of the preliminary site visit and desktop review, the following site-specific field investigations are recommended to document the location, extent and function of natural heritage features present within or adjacent to the Site Boundary:

- Spring/summer botanical inventories and delineation of vegetation communities to identify species composition, sensitivity, and significance, and the presence of any rare, Threatened, or Endangered plant species recorded in the area ((e.g., Black Ash (*Fraxinus nigra*)), as determined during the desktop review (currently proposed for 2026).
- Classification of the vegetation and wetland communities (ecosites and ecotypes) based on the Ecological Land Classification (ELC) System to identify the presence of any rare or specialized communities and assess for significant wildlife habitat, during botanical surveys.
- Fisheries surveys and habitat assessments in spring to detail watercourse conditions and species composition.
- Breeding bird surveys in summer (in 2026) to document bird nesting activity, especially migratory birds listed as Schedule 1 under the MBR (2022) ((e.g., Green Heron (*Butorides virescens*)) or SOCC/SAR ((e.g., Eastern Meadowlark (*Sturnella magna*)) recorded in the area during the desktop review that have potential habitat present, as determined through preliminary site visit.
- General wildlife habitat assessment to identify and describe habitat features, characteristics and potential usage, including the potential existence of specialized wildlife habitat, during each field investigation.
- Incidental wildlife observations to document wildlife species presence within the study area, during each field investigation.

There is a provincially significant wetland located outside of the development limits, though within the site boundary. An assessment of wetland areas in multiple seasons, during botanical inventories and ELC, will assist in confirming their limits.

Additional field investigations may later be determined to be required as a result of future consultation with the municipality and with regulatory agencies, such as the MECP.

8.3 Arc Flash

An arc flash is an electrical event where a high-voltage electric current jumps through the air between conductors or from a conductor to ground and are a potential risk of any system which conducts electricity. Arc flashes can cause intense heat, blinding light and noise, and can destroy facility infrastructure.

An Arc Flash Study is performed to evaluate the potential arc flash hazards present in an electrical power system. It is based on the results of a short-circuit study and a protective device coordination study. The purpose of the study is to determine the incident energy and arc flash boundary at electrical equipment; provide the required warning label information for each piece of equipment, and; make safety and operational recommendations to reduce arc flash risks.

An Arc Flash Study is prepared by an electrical engineer and summarizes performance requirements and how a facility has been designed to mitigate the risk of an arc flash event; these adjustments are completed before final design and summarized within the study. Arc flash potential will be studied during the design phase of the project, and any necessary mitigations will be put in place prior to approval.

8.4 Traffic Impact Study

Once operational, the site will generate negligible numbers of new vehicle trips. The facility is monitored and controlled remotely and does not require staff onsite to operate. Periodic inspections are performed as well as snow clearing operations during the winter months.

Based on the exceptionally low number of trips generated by the facility, the Transportation Impact Study will focus on the following topics:

Site access safety: would review sightlines from the driveway entrance based on horizontal and vertical road geometry and posted speed limits on Lily Lake Road.

Construction-related impacts and mitigation: would recommend haul routes for construction activities which minimize conflicts with residential areas, avoid local roads, and accommodates planning Township and County road and infrastructure work. Potential temporary construction-related impacts on the Lily Lake Road right-of-way (flagging, land closures, etc.) would be examined through the construction and operation plan.

The Traffic Impact Study will be competed in support for the development application.

8.5 Noise Impact Study

A Noise Impact Study assesses noise generated by the facility with respect to applicable regulatory guidelines.

BESS facilities generate noise from several components primarily due to the need for thermal management and power conversion. Noise sources typically include cooling systems to maintain battery temperatures, transformers for stepping voltage, and inverters to convert between direct and alternating current. In limited circumstances when there are grid disruptions, an on-site emergency generator (e.g., diesel or natural gas) may be installed and would also generate noise.

As the project is anticipated to register in the *Ontario Environmental Activity and Sector Registry* (EASR) at the permitting stage, the applicable regulatory guideline is the *Ministry of the Environment, Conservation and Parks* (MECP) publication entitled *Environmental Activity and Sector Registry - Limits and Other Requirements for Activities with Air Emissions (MECP 2021)*. Under this MECP guideline, noise sensitive points of reception (PORs) are located on properties that contain one or more of the following buildings:

- Buildings or structures that contain one or more dwellings
- Buildings used for commercial purposes that include one or more habitable rooms used as sleeping facilities, such as a hotel or motel
- Buildings used for institutional purposes, such as educational facilities and hospitals
- Buildings used for places of worship, except those located on land zoned for commercial or industrial use

A POR can also be located on a property zoned to permit noise sensitive land uses, even if the property is currently vacant and no building permit has been issued. However, the property cannot be an inaccessible vacant lot. Per the Environmental Noise Guideline NPC-300: Noise Criteria for Stationary and Transportation Sources – Approval and Planning (MECP 2013), an inaccessible vacant lot means a vacant lot on private land that cannot be accessed, or where the owner does not have a legal right to access in the future, through the use of a road by a motor vehicle, as defined in the *Highway Traffic Act*; or cannot be accessed through the use of a navigable waterway by a watercraft.

Based on the surrounding rural context, the proposal would be assessed as a Class 3 (Rural) Area. Generally, the daytime limit values of one-hour equivalent sound (L_{eq}, dBA) for both outdoor amenity areas and plan of window is 45 L_{eq} dBA (equivalent to whispered speech), whereas the nighttime limit is 40 L_{eq} dBA (equivalent to a quiet room).

Noise impacts at a POR are assessed by comparing the facility noise level with the applicable noise limit(s) from the MECP publication *Environmental Activity and Sector Registry - Limits and Other Requirements for Activities with Air Emissions* (EASR Publication). The facility noise level is predicted using an MECP approved and International Standard for Organization (ISO) compliant noise prediction software. If the facility noise levels are predicted to exceed the applicable noise limits, then noise mitigation measures would be investigated and recommended as needed to comply with the applicable noise limits.

Due to the size of the facility and, in particular, the absence of an electrical substation on the property, the proposal is anticipated to generate less noise than typical BESS facilities. Regardless, the Noise Impact Study will evaluate and provide mitigation recommendations, if warranted, for the facility to comply with provincial guidelines.

8.6 Stormwater Management Plan

Site grading, erosion and sediment control, and stormwater management are three interrelated components of detailed engineering for the site. The purpose of this work is to minimize soil movement and costs; prevent soil erosion and its impacts on surrounding lands; and ensure that stormwater generated from the site, once construction is completed, is stored on the site, treated, and related as a controlled rate to ensure no negative impacts on the receiving watercourse.

The future stormwater management works for the site will be required to meet the requirements of the *Environmental Protection Act*, *Ontario Water Resources Act*, and *Conservation Authorities Act*.

If the works are considered prescribed activities for the purposes of subsection 20.21 (1) of the *Environmental Protection Act*, and meet the criteria identified in O.Reg. 137/25, the prescribed activities require reporting on the Environmental Activity Sector Registry (EASR). For non-prescribed activities, an application shall be made to the Ministry of Environment and Climate Change (MECP) for an Environmental Compliance Approval (ECA) to permit the proposed stormwater management works.

It is assumed that the proposed use on site will be considered industrial and will not be exempt from requirements for an ECA. Stormwater runoff from the site will have to be captured, treated, and released at a controlled rate to the watercourse. Typically, the allowable release rate for discharge to a natural watercourse must not exceed the predevelopment release rate for given design storms.

An enhanced level of treatment equivalent to a minimum of 80% TSS removal will be required for the stormwater prior to being released; this level of treatment can be achieved utilizing a treatment train approach using generally accepted practices for greenfield development. Space would be allocated for filtration features such as grassed swales or a wet or dry pond for storage. The features will have to be located outside of the wetland’s setback, in the lowest areas of the site, and in proximity to the watercourse to allow for gravity drainage of the runoff.

8.7 Emergency Response Plan

BESS facilities are designed with extensive safeguards and monitoring systems intended to protect public health and safety. These safeguards are in place to minimize risks with lithium-ion battery technology, which is commonly used in these systems. These batteries can experience thermal runaway, a condition where overheating, if not properly managed, can lead to fires or explosions. Due to the reactions which occur, these types of fires can be more difficult to extinguish and have the potential to pose additional risks.

Emergency Response Plans (ERP) are essential to ensure coordinated action during incidents, including fire suppression, evacuation procedures, and communication with local emergency services. They also help mitigate environmental impacts, safeguard public safety, and protect public infrastructure and private property.

Nexus Energy has drafted an Emergency Response Plan (ERP) (dated October 29, 2025) which has been submitted as part of the Municipal Support Resolution request application for review by Township staff and Selwyn Fire. The purpose of this ERP is to define clear lines of communication, roles, and actions for effective emergency management and has been prepared in accordance with applicable Ontario legislation and industry best practices.

8.8 Greenhouse Gas Benefits Statement

The project will include installation of a 10 MW (80 MWh) BESS comprised of 20-22 battery containers. The purpose of the Project is to build resilience in the power distribution network by providing a reliable source of power during peak demand hours. This is in alignment with the Greater Peterborough Area Climate Change Action Plan, Chapter 9 – Selwyn, Strategy W5 for local energy security. BESS installations seek to achieve energy security by consuming energy (electricity) from the power grid during non-peak energy demand hours to charge battery containers and then provide this stored energy back to the grid during peak energy demand hours. In Ontario, facilities that are relied upon during peak demand hours are typically marginal natural gas-powered generation stations, and these facilities generate higher greenhouse gas (GHG) emissions than the Ontario grid average.

The BESS and other battery storage technologies can impact the quantity of GHG emissions from power generation. The power used to charge the BESS is taken from the grid during non-peak demand hours when the power generation GHG intensity is typically lower due to less reliance on fossil fuel-based generation technologies. The BESS then supplies its stored power back to the grid during peak demand hours, when the GHG emissions intensity is typically higher due to greater reliance on fossil fuel-based generation technologies. The potential GHG benefit of a BESS is dependent on the power generation GHG emissions intensity of the grid at the time of consumption (charging the BESS) compared to the intensity at the time of discharge (releasing power back to the grid) as well as the efficiency of the BESS – how much electricity is consumed to charge the BESS compared to how much electricity is released back.

The anticipated annual power consumption and delivery for the Project is 20,424 MWh consumed and 18,010 MWh discharged, which translates to a BESS process efficiency of 88%.

In order to assess the potential impact of the Project on climate change, a net benefit analysis of GHG emissions was completed. The goal of the analysis was to compare the potential GHG emissions that result from the Project to a baseline of GHG emissions if the Project were not to proceed. GHG emissions for the Project and a baseline were estimated following guidance and projected emission factors from The Atmospheric Fund's document, Ontario Electricity Emissions Factors and Guidelines (October 2025 edition). For assessment of GHG emissions from power consumed by the Project, Annual Average Emission Factors (Annual AEFs) for Ontario were used. A scenario that may represent a baseline if the

Project were not to proceed is the use of marginal facilities during on-peak hours and therefore on-peak Marginal Emissions Factors (MEFs) were used to estimate baseline GHG emissions.

Based on the analysis, the project has the potential to have a maximum annual net benefit of approximately 131 kilo-tonnes of carbon dioxide equivalent (kt CO_{2e}) over a 25-year lifespan. This represents a reduction in GHG emissions as compared to a scenario in which the Project does not move forward. This maximum potential GHG emission reduction due to the project is based on the following assumptions, in addition to the Project efficiency and the accuracy of projected emission factors in The Atmospheric Fund document:

1. The Project consumes electricity only during off-peak power demand hours from Ontario's electricity grid.
2. The off-peak power used by the Project to charge the BESS container units is excess electricity available on the grid that would not otherwise have been used.
3. The Project releases the stored energy in the BESS as electricity to the grid during peak demand hours. In the absence of the Project, the delivered power would have to be generated by power generation facilities on the margin.

Any change in these assumptions may result in the Project having a net negative impact in GHG emissions as compared to a baseline in which the Project were not to proceed (i.e. the Project may result in an increase in GHG emissions). The net benefit to GHG emissions from BESS installations may also be impacted by the long-term efficiency of such systems (power in versus power out) where the efficiency may decrease with time.

8.9 Floodplain Study

Otonabee Region Conservation Authority has identified the site as being upstream from Jackson Creek which flows eastward into the City of Peterborough before discharging into the Otonabee River. While 1:100 (100-year) floodplain elevations have been mapped for a tributary east of the property (with parts of the floodplain encroaching on the property's easternmost pasture) mapping has not been completed for the wetland and watercourse on the west portion of the property.

To ensure that development remains outside of the hazard lands we will assist ORCA to complete floodplain modelling of the adjacent tributary . The modelling will be used to establish the elevation of water during the 1:100 flood, the edge of which would be mapped once detailed topographic mapping for the property has been completed. If warranted the facility location would be adjusted to ensure it is located outside of the floodplain.

9 Closing

This report has been written to provide Township staff and members of Council with adequate information to consider the granting of a Municipal Support Resolution (MSR) for the project. This report, and other materials submitted as part of this request, have been prepared to meet or exceed the requirements of the Township's Municipal Support Resolution Protocol for Utility Installations (By-law 2025-049).

As part of this process, the proponent is requesting a Municipal Support Resolution from the Township of Selwyn for the proposed project- a requirement of the LT2 RFP.

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