Tilbury Battery Storage Project – Restoration Plan

Draft Report

July 23, 2024

Prepared for:
Tilbury Battery Storage Inc.

Prepared by:
Stantec Consulting Ltd.

Project Number:
160901037

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Acronyms / Abbreviations

BESS	battery energy storage system
EA	Environmental Assessment
ESC	Erosion and Sediment Control
Hydro One	Hydro One Networks Inc.
IESO	Independent Electricity System Operator
kV	kilovolt
LTVCA	Lower Thames Valley Conservation Authority
MECP	Ministry of the Environment, Conservation and Parks
MTF	Minor Transmission Facilities
MW	megawatt
O. Reg.	Ontario Regulation
ROW	right-of-way
SCADA	Supervisory Control and Data Acquisition
the Project	Proposed Tilbury Battery Storage Project
the Proponent	Tilbury Battery Storage Inc.
TCA	temporary construction area

1 Introduction

1.1 Project Overview

Tilbury Battery Storage Inc. (the Proponent) is proposing the construction and operation of the Proposed Tilbury Battery Storage Project (the Project). The Project is a battery energy storage system (BESS) with a capacity of approximately 80 megawatts (MW), four-hour duration, in the Municipality of Lakeshore, Ontario.

The Project was selected by the Ontario Independent Electricity System Operator (IESO) as part of its Expedited Long-Term Request for Proposals for storage capacity in May 2023. The Project is subject to the Class Environmental Assessment for Minor Transmission Facilities (MTF Class EA) (Hydro One 2022)[1] in accordance with the Ontario *Environmental Assessment Act*.

As described in Section 3.3.3 of the MTF Class EA, some projects are not expected to have significant environmental effects and do not require the completion of the full Class EA Process, but rather can follow the Class EA Screening Process. Such projects are compared to the screening criteria on a case-by-case basis to determine if they have the suitable technical parameters and environmental situations to allow them to be screened out of the full Class EA Process. The Proponent retained Stantec Consulting Ltd. (Stantec) to prepare the Class EA for an MTF Screening Report for the Project. Based on the Class EA, no adverse net environmental effects are anticipated from the Project and therefore the Project qualified to be carried out under the Screening Process as described in Section 3.3.3 of the MTF Class EA. Notice of Successful Screening under the MTF Class EA was submitted to the MECP on May 10, 2024.

The Project will consist of containerized batteries, inverters, medium voltage transformers, internal gravel access roads, buried collector and communication cabling, a small transmission substation, and potential garage and operations and maintenance building. The Project will connect to the existing Hydro One Networks Inc. (Hydro One) 115 kilovolts (kV) transmission line. Figures showing the Project Location (**Figure 1**) and Proposed Facility Components (**Figure 2**) are provided in Appendix A. Upon completing the life-span of the Project, the site will be restored to pre-existing conditions and maintain the pre-construction land use after final restoration.

[1] Notice of Commencement was issued under Hydro 2022, therefore will continue in accordance with the Class Environmental Assessment for Minor Transmission Facilities. We acknowledge the MTF Class EA has since been amended to the Class Environmental Assessment for Transmission Facilities (Hydro 2024).

1.2 Purpose

This Restoration Plan describes the Project activities planned during the decommissioning phase and the recommended mitigation measures to address anticipated potential negative environmental effects associated with the development of the Project.

1.3 Existing Conditions

1.3.1 Vegetation Communities and Vascular Flora

The Project Area is predominantly row crop agriculture (soybeans, wheat), as well as residential and industrial properties (Figure 2.2).

A deciduous hedgerow is situated along the eastern property line of the northern parcel, which is dominated by gray dogwood (Cornus racemosa), green ash (Fraxinus pennsylvanica), and spreading dogbane (Apocynum androsaemifolium). A naturalized ditch runs along the southern boundary of the Project Area containing shrub thicket species including pale dogwood (Cornus obliqua), gray dogwood and riverbank grape (Vitis riparia), as well as other species commonly found along the disturbed area associated with field edges and roadside edges.

1.3.2 Birds

As a component of the MTF Class EA, a Environmental Review and Constraints Analysis was undertaken and 15 bird species were documented. Two species, European Starling (*Sturnus vulgaris*) and Osprey (*Pandion haliaetus*), were confirmed breeding within the study area for the EA but outside of the proposed Project Area and therefore will not be disturbed as the result of the Project.

The Project Area is dominated by cultivated agricultural habitat, with an isolated hedgerow community, and therefore has negligible habitat available to breeding birds.

1.3.3 Herpetofauna

During the MTF Class EA, no herpetofauna species were observed.

The Project Area is dominated by agricultural habitat and no wetlands are identified, therefore there is negligible habitat available for herpetofauna.

1.3.4 Mammals

During the MTF Class EA, two common mammal species were observed, including woodchuck (*Marmota monax*) and muskrat (*Ondatra zibethicus*) within the study area for the EA.

The Project Area is dominated by agricultural habitat, which typically provides negligible habitat for mammals, however the deciduous trees may provide suitable habitat for Little Brown Myotis, a Regulated SAR bat. These trees are outside of the proposed Project Area and will not be affected by the Project.

1.3.5 Insects

During the MTF Class EA, no insect species were observed. Thicket habitats in the EA study area but outside of the Project Area were noted to contain Common Milkweed (Asclepias syriaca), and may be suitable for Monarch (Danaus Plexippus), however due to the small size of these habitats, it is unlikely that they would be considered significant habitat warranting protection.

The Project Area is dominated by agricultural habitat, which provides negligible habitat for insect species.

1.3.6 Fish and Mussels

No features within the Project Area are identified that would support fish or mussel species.

2 Probable Future Use of the Project Location

The Project is anticipated to have an operational lifespan of 22 years. At the end of the Project's lifespan, the Project components are expected to be decommissioned and the lands restored as described in **Section 3**. If Project economics remain viable after the anticipated operational lifespan, the facility could be "repowered" and contracted for an additional operational period. This process may include the replacement and/or upgrading of Project components based on technology available at the time.

Should the Proponent choose to extend operation of the Project after the initial anticipated operational lifespan of 22 years, the Proponent would engage in consultation activities as appropriate and as required by regulations and requirements in effect at the time of decommissioning. However, for the purpose of this report, it is assumed that the Project will be fully decommissioned and restored at some point in its life cycle.

It is anticipated that after decommissioning and restoration, the lands used for the Project will be returned to their current 2024 land use as agricultural lands, and/or deciduous hedgerows. Information in this Restoration Plan will be updated, if required, in advance of decommissioning and restoration. The updated report would consider the land use requirements, any changes to decommissioning and restoration activities and associated mitigation measures, and applicable regulatory requirements in effect at that time. It would also contain updated maps showing the exact location of Project components for decommissioning.

3 Decommissioning

At the end of the Project's life, the Project components are expected to be decommissioned and the lands restored (including rehabilitated) to their pre-construction condition. Decommissioning activities are expected to take approximately 3-6 months.

3.1 Decommissioning

All decommissioning and restoration activities will be performed as per the requirements of relevant governing agencies and will be in accordance with relevant statutes in effect at the time of decommissioning and with consideration of industry standard practices. Should the construction of the Project not be completed, the following decommissioning and restoration requirements will still apply.

3.1.1 Pre-Dismantling Activities

The Project will be de-energized and isolated from all external electrical transmission lines. Temporary erosion and sedimentation control (ESC) measures and other appropriate environmental protection measures will be established prior to land disturbance during decommissioning activities. The proposed mitigation and restoration measures from the construction phase will apply.

3.1.2 Equipment Dismantling and Removal

The following subsections describe the process that will be undertaken to dismantle the various components associated with the Project and provide a brief overview of the potential environmental effects associated with each decommissioning activity. The majority of potential environmental effects related to decommissioning are similar to those during construction and are detailed, along with mitigation measures.

All components and materials will be removed from the site by truck. **Table 3.1** in Section 3.3 summarizes how the materials will be reused, recycled or disposed of.

3.1.2.1 Inverter Stations and Electrical System

Step-up transformers would be drained of oil and removed (if applicable), along with their associated inverters and their concrete pads/foundations. Potential negative environmental effects may include soil erosion and sediment transport to water bodies or natural heritage features such as wetlands, woodlands and wildlife habitat, as well as the potential for spills related to the removal of oil.

Above ground electrical lines in the municipal right-of-way (ROW) may be removed in consultation with the Municipality of Lakeshore and local utility companies. Below ground electrical lines will be removed. Potential negative environmental effects for removal of electrical lines are similar to those during construction and may include temporary loss of wildlife habitat (for lines in the municipal ROW), accidental intrusion into adjacent woodlands or wildlife habitat, disturbance to wildlife, and vegetation removal beyond the area to be decommissioned and/or areas previously reclaimed. Dust generation and sedimentation of natural features and water bodies may also occur.

If required, the Project's interconnection infrastructure to the electrical power distribution infrastructure owned and operated by Hydro One will be removed in accordance with Hydro One requirements at the time of decommissioning.

3.1.2.2 Substation and Switchyard

Decommissioning of the Project substation will include the examination for leaks/spills of the oil containment pit for the transformer, prior to removal of the transformer. All above-ground electrical and other equipment including switches, breakers, relays, housing for relays, and Supervisory Control and Data Acquisition (SCADA) equipment will be removed. The concrete foundations, oil containment pit, and granular and geotextile materials would be removed and disposed of as per **Table 3.1**. Potential negative environmental effects will include soil disturbance from removal of the electrical system, and the potential for spills and contamination related to the storage and removal of oil.

3.1.2.3 Access Roads and Graveled Compound

Where access roads and graveled compound areas are to be removed, the granular and geotextile materials, along with any culverts installed for storm water flow, will be removed and site will be remediated as required to current provincial standards. Potential negative environmental impacts will be related to soil disturbance as discussed above for inverters and electrical system. Excavation and transportation of granular material may result in localized exhaust emissions, dust, and temporarily increased traffic on local roads.

3.2 Site Rehabilitation/Restoration

Most of the lands within the Project Area are currently being used for row crop agricultural purposes, as well as residential and industrial purposes. Despite the dominance of cultivated fields, a deciduous hedgerow and a small meadow/thicket community are also present. This section describes the rehabilitation and restoration of the site.

3.2.1 Agricultural Lands

Agricultural lands that have become compacted due to facility operation or decommissioning activities must be de-compacted to a minimum of 30 cm (12") using suitable equipment.

Regrading may be required to even out the land surface. The grading should be done in a way that will not impact the flow of surface water to wetlands, water bodies and nearby Lower Thames Valley Conservation Authority (LTVCA) regulated areas. The Proponent will consult with LTVCA to confirm any permitting requirements for regrading.

Following grading and decompacting, topsoil will be added to recreate a suitable growing medium for agricultural purposes. Where possible, the topsoil salvaged during project construction will be utilized. If sufficient salvaged topsoil from the Project Area is not available, topsoil should be transported to the Project Area and be the same or similar texture as per the material in place prior to construction of the Project (confirm by checking adjacent topsoil) and would be tested prior to importation to confirm textures are similar and prevent transmission of agricultural pests to the property and/or potential contaminated soil. Topsoil depths should be consistent to the depths of the adjacent fields. When replacing topsoil, grading should match the grades of the adjacent fields and it should be placed as evenly as feasible over the Project Area where topsoil salvage was conducted (see agricultural areas in **Figure 2.2**).

The land will be planted with agricultural crops and/or other vegetation by the landowner or their lessee to stabilize the soil. ESC measures should be installed adjacent to ditches and left in place until the cover crop is fully established.

3.2.2 Vegetated Buffer and Forested Lands

The deciduous hedgerow along the eastern property line in the northern portion of the property (see **Figure 2.2**) will be restored using the same process as for agricultural lands. The land will be re-planted with similar native species (see **Section 1.3**).

3.2.3 Water Bodies and Wetlands

Water bodies and wetlands (as per O. Reg. 359/09) have not been identified within 120 m of the Project Area. No water bodies or wetlands will require restoration as a result of the Project's decommissioning and restoration activities.

Decommissioning activities will be discussed with LTVCA as necessary, to determine applicable current guidelines, permitting, site-specific mitigation, and/or remediation plans that apply at the time of decommissioning.

3.2.4 Stormwater Management

Stormwater management practices may include various Low Impact Development Practices (Bioretention Areas, Dry Detention Ponds, and Swales/Bioswales). Prior to construction, care must be taken to construct as many drainage features as reasonably practical to manage the site water immediately. Stormwater management features should be removed, and grading should meet pre-existing conditions as identified in the Stormwater Management Report completed for the Project.

3.2.5 Municipal Road Allowances

Electrical lines located either above- or below-ground in the municipal ROW may be removed, in consultation with the Municipality of Lakeshore, LTVCA, and utility companies as applicable. Where removal disturbs the ROW, the land will be restored to pre-construction conditions.

3.2.6 Spills

Strict spill prevention and spill response procedures will be in place during construction, operation and decommissioning, and it is not anticipated that cleanup or remediation of lands affected by spills will be needed during decommissioning.

During decommissioning, oil from transformers will be removed prior to removal of transformers to minimize the potential for spills. However, there is the potential for spills of oil or gas to occur during routine operation, maintenance and decommissioning. Should a spill occur that requires remediation of lands, this will be done in compliance with applicable regulations and in consultation with the MECP to restore the lands to their pre-construction condition.

3.3 Managing Excess Materials & Waste

Prior to decommissioning the Project, The Proponent should complete a waste audit and prepare a waste reduction work plan in accordance with any applicable guidelines or requirements from the MECP or relevant regulations in effect at the time of decommissioning.

Much of the facility would consist of reusable or recyclable materials; as a result, there would be minimal residual waste for disposal from decommissioning the facility. Typical waste materials and modes of disposal, recycling, or reuse are presented in **Table 3.1** below:

Table 3.1: Typical Battery Storage Facility Decommissioning Waste Materials and Modes of Disposal

Component	Typical Mode of Disposal
Concrete foundations	Crush and recycle as granular material
Electrical Cabling	Recycle
Transformers, inverters and switchgear	Salvage for reuse or recycle
Granular material	Reuse or dispose of in landfill
Oils/lubricants	Recycle through licensed reprocessing company
Geotextile material	Dispose of in landfill
Fencing	Salvage for reuse or recycle for scrap
Electrical line poles	If metal, salvage for reuse or recycle for scrap. If wooden, dispose of in landfill or recycle for other uses.
Miscellaneous non-recyclable materials	Dispose of in landfill

4 Decommissioning Notification and Communications

Advance notification of decommissioning will be provided to Municipality of Lakeshore, the County of Essex, Walpole Island First Nation, Aamjiwnaang First Nation, Caldwell First Nation, Deshkan Ziibiing (Chippewas of the Thames First Nation), Chippewas of Kettle and Stony Point First Nation, Oneida Nation of the Thames, and Métis Nation of Ontario, the LTVCA, other government agencies and the public. Notification may be in the form of letters, newspaper notices or digital advertisements, phone calls and/or updates on the Project website and will meet current standards at the time of decommissioning. This Restoration Plan will be reviewed and updated as needed at least 6 months prior to the Project's retirement date..

5 Other Approvals

The Proponent will obtain applicable authorizations, permits and approvals required at the time of decommissioning from the appropriate government and regulatory agencies/bodies. Authorizations, permits, and approvals that may be required at the time of decommissioning are provided in **Table 5.1**.

Table 5.1: Potential Decommissioning Permits and Approvals

Administering Agency	Permit / Approval	Rationale
Municipal		
County of Essex and/or Municipality of Lakeshore	Road Occupancy Permit	Prior to conducting any work within a municipal road ROW.
	Noise By-law Exemption	If decommissioning activities are required during the prohibited times outlined in the Municipality of Lakeshore Noise *By-law No. 106-2007*.
	Moving Permit(s)-Oversize/Overweight Load	Required if the vehicle/load is greater than specified dimensions.
	Road Use Agreement (updated)	Road conditions survey to assess pre- and post-decommissioning conditions of municipal roads to be used for material delivery and equipment movement. Traffic and/or Transportation Management Plan showing adherence to road safety and suitability, including adherence to load restrictions on municipal roads.
Provincial		
LTVCA	O.Reg. 41/24: Prohibited Activities, Exemptions and Permits	Work within floodplains, water crossings, river or stream valleys, hazardous lands and within or adjacent to wetlands.
MECP	Record of Site Condition	A change of property use and/or ownership.
MECP	Approvals under the *Endangered Species Act*, 2007	If provincially-listed Species at Risk or their habitat is present.
Ministry of Labour	Notice of Project	Notification before decommissioning begins.
Ministry of Transportation	Special Vehicle Configuration Permit	Use of non-standard vehicles to transport large components.
	Transportation Plan	Adherence to road safety and suitability.
	Highway Entrance Permit	Interference or obstruction of the highway.
	Change of Access and Heavy/Oversize Load Transportation Permit	Compliance with provincial highway traffic and road safety regulations.
	Wide or Excess Load Permit	Transportation of oversized or overweight loads that exceed the limits set out in the *Highway Traffic Act*. Compliance with provincial highway traffic and road safety regulations.

6 References

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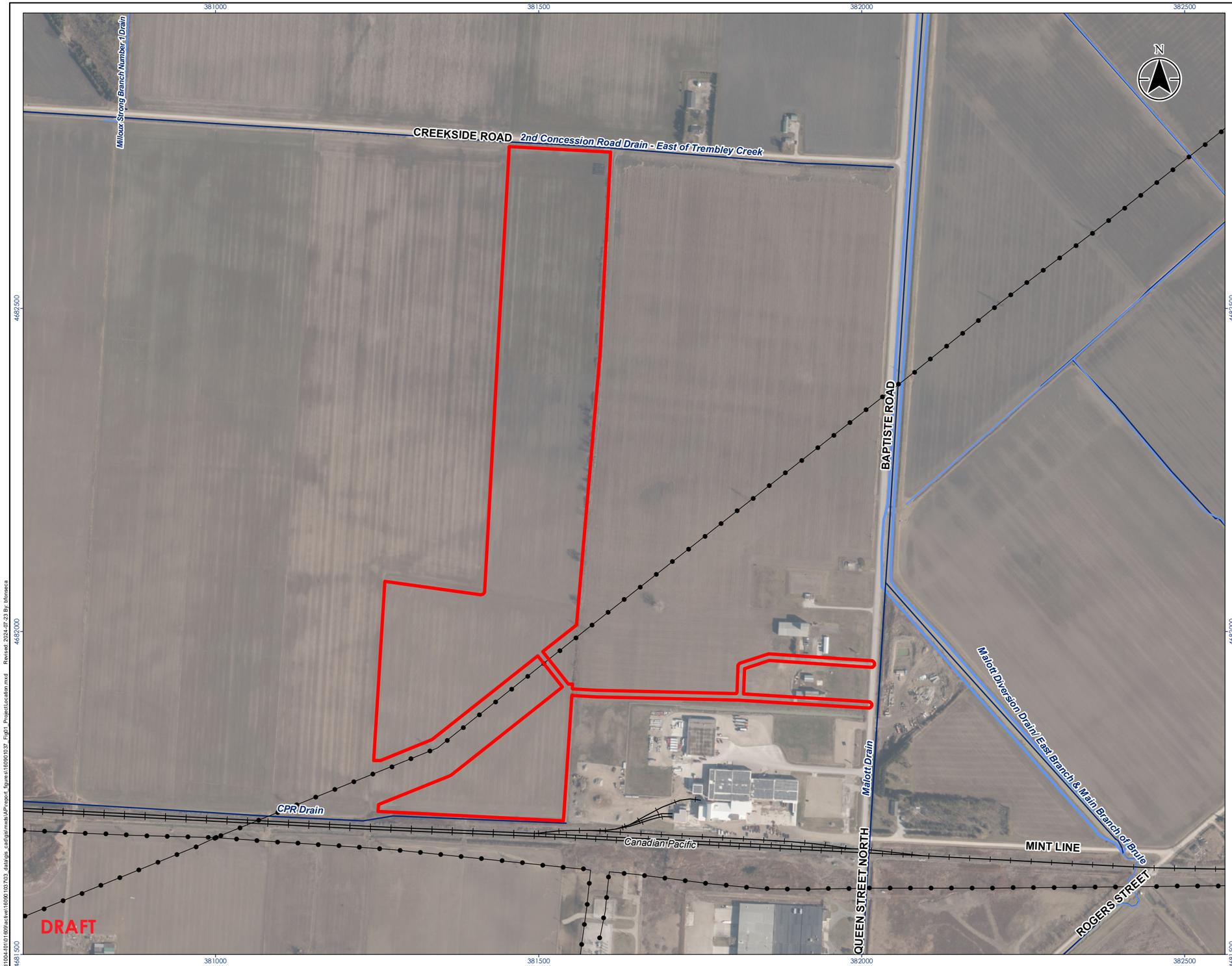
Appendices

Appendix A Figures



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Legend
- Project Location
- Constructed Drain
- Hydro Line
- Railway
- Watercourse (Permanent)
- Waterbody

0 100 200 m

1:6,000 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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3. Orthoimagery © First Base Solutions, 2024. Imagery Date, 2023.

Project Location
Municipality of Lakeshore/ Chatham Kent

160901037 REV2
Prepared by BF on 2024-07-23

Client/Project
TILBURY BATTERY STORAGE INC.
EXISTING CONDITIONS: TILBURY BATTERY STORAGE

Figure No.
1

DRAFT

Title
Project Location

BORALEX

Tilbury Battery Storage Concept Map

Project Site

- Parcel perimeter

Proposed Layout

BESS

- Augmentation
- Initial

Medium-Voltage Transformer

- Augmentation
- Initial
- HONI Point of Interconnection
- Project Connection Point
- Interconnection Line
- Substation
- Substation Transformer

Proposed infrastructure

Access Road

- Option 1
- Option 2
- Fence
- Control Building
- Firewater Storage
- Office Trailer & Storage Container
- Stormwater Management Pond

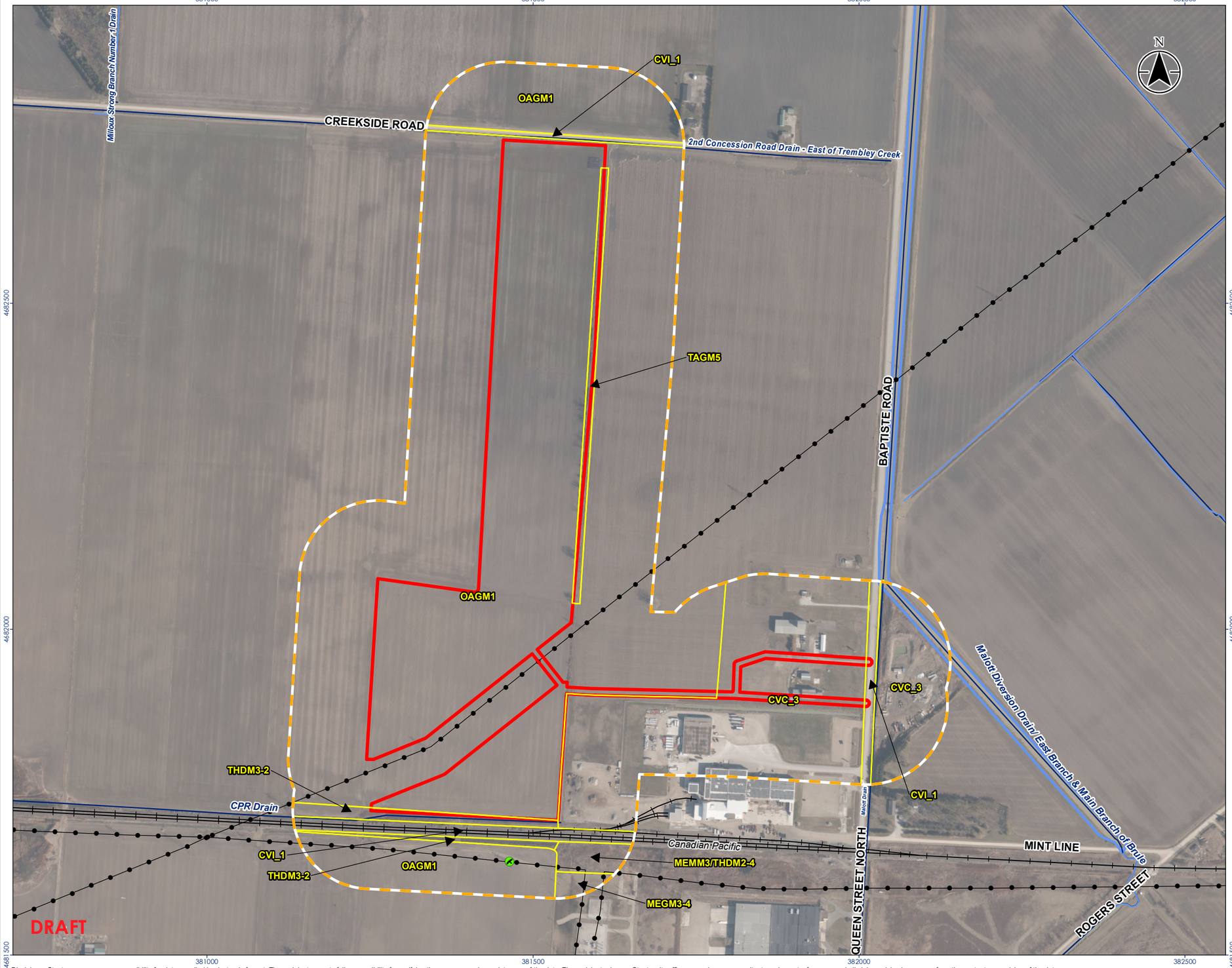
Existing infrastructure

- Road
- Railway

HONI Transmission Line

- Existing 115kv Line
- New 230kv Line

Projection : NAD83 UTM Zone 17N
Basemaps : Google Satellite
2024-05-08



Stantec

Legend

- Project Location
- Study Area (120 m)
- Osprey Nest - Hydro Tower (NRSI, 2022)
- Constructed Drain
- Hydro Line
- Railway
- Watercourse (Permanent)
- Ecological Land Classification (ELC)
- Waterbody

ELC Description (Stantec 2024)

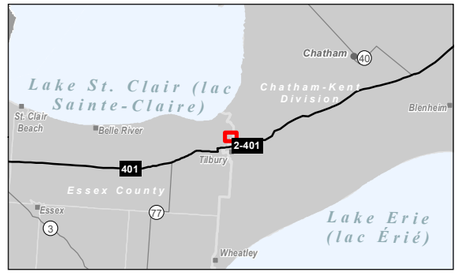
- CVC_3 (Heavy Industry)
- CVI_1 (Transportation)
- MEGM3-4 (Kentucky Blue Gras Graminoid Meadow Type)
- MEMM3 (Dry - Fresh Mixed Meadow Ecosite), THDM2-4 (Gray Dogwood Deciduous Shrub Thicket Type)
- OAGM1 (Annual Row Crops)
- TAGM5 (Fencerow)
- THDM3-2 (Native Shrub Deciduous Hedgerow Thicket Type)

0 100 200 m

1:6,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024.
3. Ospery Nest observation derived from Map 2 Existing Conditions, Natural Resource Solutions Inc. (NRSI).
4. Orthoimagery © First Base Solutions, 2024. Imagery Date, 2023.



Project Location
Municipality of
Lakeshore/ Chatham Kent

160901037 REV2
Prepared by BF on 2024-07-22
Technical Review by AW on 2024-07-18

Client/Project
TILBURY BATTERY STORAGE INC.
EXISTING CONDITIONS: TILBURY BATTERY STORAGE

Figure No.
1

DRAFT

Title
Existing Conditions