



York Battery Energy Storage System (BESS) Project



Virtual Public
Community Meeting
June 20, 2023

Welcome!

Meeting Overview

- Background on Capital Power
- The need for new generation and capacity in Ontario
- York Battery Energy Storage System (BESS) Overview
- Class Environmental Assessment (EA) for Minor Transmission Facilities Process and Other Regulatory Approvals
- Project Timeline
- Questions & Answers

June 20, 2023



Land Acknowledgement

In the spirit of reconciliation, we respectfully acknowledge that we operate within the ancestral homelands, traditional and treaty territories of the Indigenous peoples of Turtle Island, or North America.

We also recognize that we are on the traditional territories of the **Wendat, the Haudenosaunee and the Anishinaabe peoples**. In light of National Indigenous Peoples Day on June 21, we want to acknowledge the diverse Indigenous communities located in this region and whose presence continues to enrich the broader community.

Capital Power Highlights

- Publicly-traded company (TSX: CPX) headquartered in Edmonton
- ~800 employees; regional offices in Boston, Toronto and Calgary
- Own ~7,500 MW of power generation produced at **29 facilities** in Canada and U.S. **5 Facilities and ~1500 MW in Ontario**
- Named one of the World's Most Ethical Companies® by the Ethisphere Institute (2019-2022)

- In Operation**
- Wind
 - Solar
 - Gas
 - Dual Fuel (*Genesee 1, 2, 3 shown as one facility)
 - Waste Heat
 - Landfill Gas



Providing Safe, Reliable Electricity to Ontario

Five facilities

1,500 megawatts

40 employees

Millions spent annually on contracted support and equipment

York Energy Centre

Goreway Power Station

East Windsor Cogeneration Centre

Port Dover and Nanticoke Wind Energy

Kingsbridge Wind Energy Project





Capital Power invests to create impact Over **\$5.5M** donated in 2022 to power **sustainable communities**

Equity & Culture - Wellbeing - Climate Action

Partnering with local organizations:

- Carrot Fest (Bradford West Gwillimbury)
- Cawthra Mulock Nature Reserve
- Holland Marsh Soupfest
- Crime Stoppers
- Schomberg Village Association
- Inn From the Cold
- Margaret Bahen Hospice
- Doane House Hospice



Need for the Project: The Growing Demand for Electricity in Ontario

Ontario's Independent Electricity System Operator

- Independent Electricity System Operator (IESO) is responsible for planning and operating Ontario's electricity grid.
- IESO forecasts changes in electricity demand and supply to ensure that Ontario ratepayers have an affordable, reliable supply of electricity to meet their needs.



The Future Need for Power in Ontario

- IESO has identified a need for new generation in the province through its Annual Planning Outlook ("APO").
- Ontario's electricity supply will be reduced in the near term:
 - Potential retirement of the Pickering Nuclear Generating Station and other nuclear refurbishments.
- Demand for electricity is increasing in Ontario due to:
 - Population growth, electrification of certain sectors and vehicles, economic growth in the mining, industrial, and agricultural sectors.
- The APO considers many potential solutions for the expected shortfall and concludes that new generation capacity is required.



Ontario Supply and Demand, 2023 to 2041

Energy Demand by Scenario

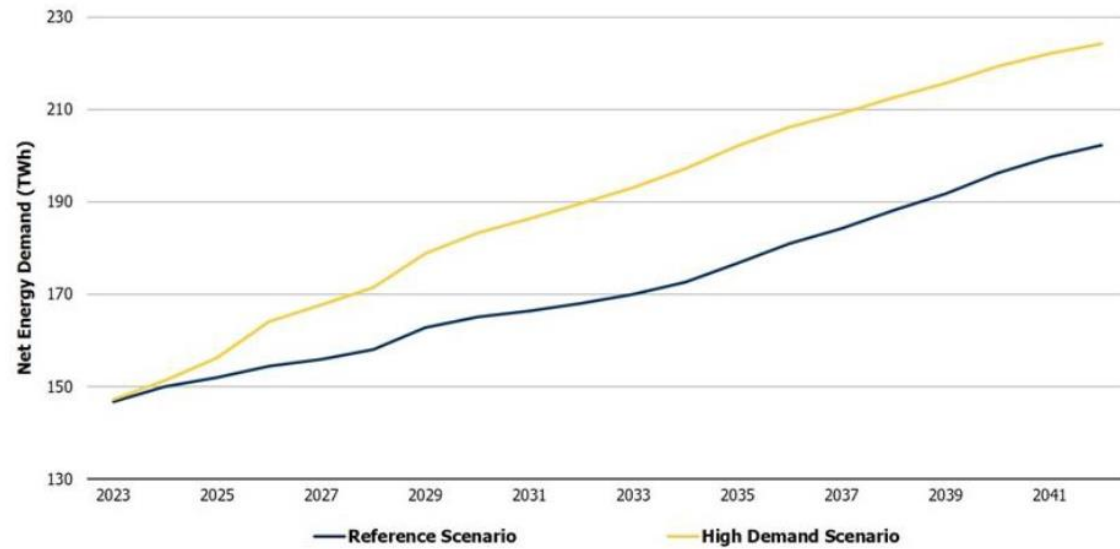
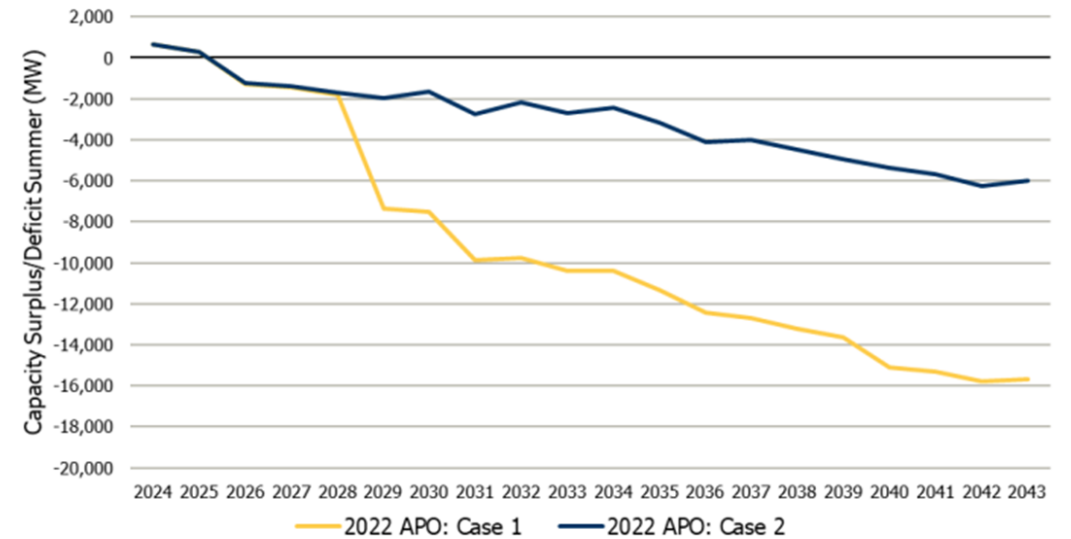


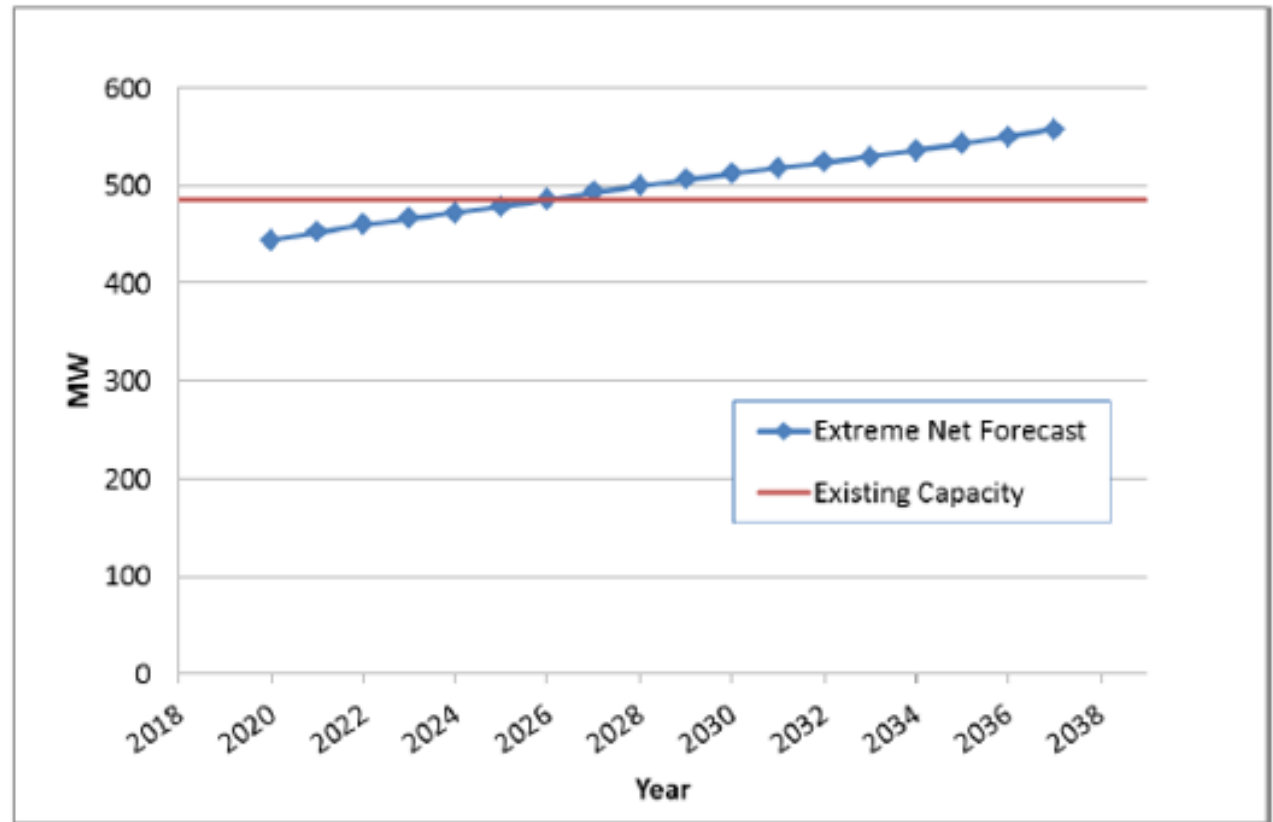
Figure 19 | Summer Capacity Surplus/Deficit



Source: <https://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Planning-Outlook>

Local Need

- Township of King and surrounding area are seeing the need for new capacity.
- The IESO forecast suggests local demand will outstrip existing capacity by 2027.



York BESS helping to fill Ontario's electricity capacity needs

- The IESO is seeking a total of 4,000 MW of new capacity to help meet anticipated capacity shortfalls.
- On May 16, 2023, the IESO announced the York BESS had been selected for a contract to supply power for 22 years.
- Seven other BESS projects (~739 MW) were awarded contracts in IESO's Expedited Long-Term RFP (E-LT1 RFP) process.
- Subsequent IESO RFP processes are expected to meet the 4000 MW procurement target.

Battery Energy Storage Systems

Battery Energy Storage System (BESS) Overview



- BESS facilities help balance the electricity grid:
 - Charged when demand is low and feed electricity into the grid when demand is high and/or generation from other resources is low.
- Use lithium-ion batteries, the most common type for utility-scale energy storage.
- BESS enclosures are similar in size to shipping containers, approx. 9m x 3m x 2m.



Battery Energy Storage System (BESS) Overview

- Numerous interconnected, weather-proof modular enclosures.
- Include a range of state-of-the-art systems to ensure optimal performance characteristics, such as:
 - Temperature control, HVAC, fire detection & suppression, energy control systems
- Maintenance requirements are minimal given the simplicity of the design.



Global Growth of BESS Projects

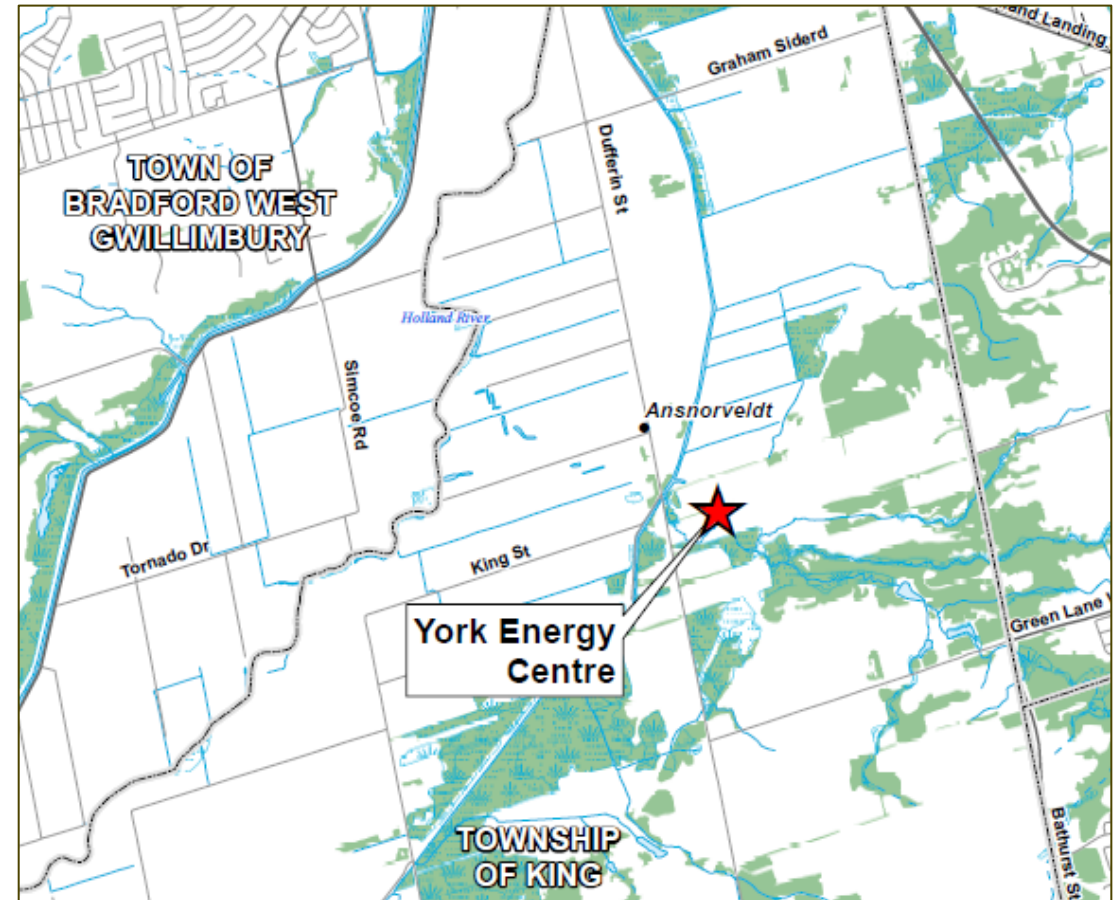
- BESS facilities are becoming vital to the effort of moving to lower-carbon sources of power.
- Large-scale systems are well-known elsewhere. The U.S. had over 8,200 MW of BESS installed by late 2022. Global installed BESS is expected to reach 80,000 MW by 2030.
- Smaller scale systems are already in wide use throughout Ontario. Growth is expected in 2023, as the federal government and all provincial governments work to enable power storage development to help the transition to net-zero.



Proposed York BESS Project

Project Location

- Township of King, York Region.
- South of the community of Ansnorveldt and the Holland River.
- Municipally known as 18815 Dufferin Street.
- Capital Power-owned parcel adjacent to the York Energy Centre (YEC).



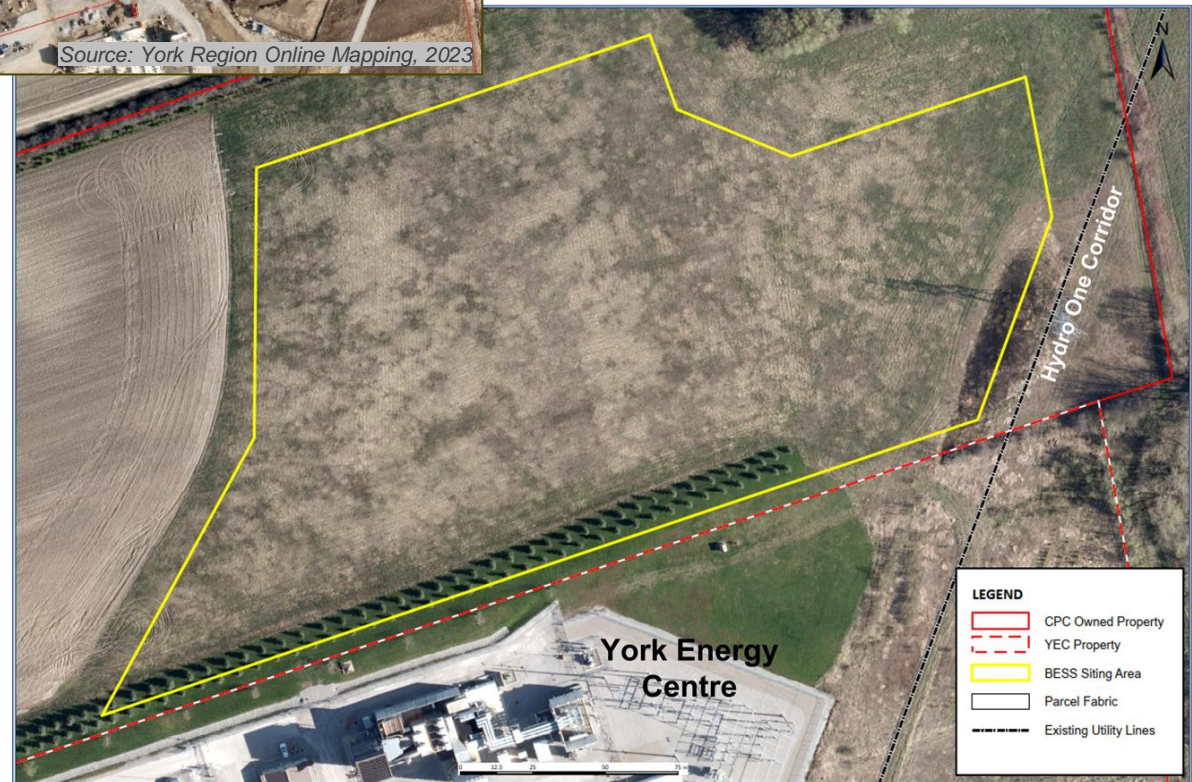
Project Overview

- BESS has a nameplate capacity of 120 MW of electricity for up to 4 hours.
- Connection to provincial grid via a new 34.5 kV: 230 kV transformer station and tap line.
- Ancillary components:
 - Other electrical components
 - Internal graveled access laneways
 - Stormwater management
 - Temporary construction areas
 - Fencing
- Standalone facility, operating independently of the YEC.



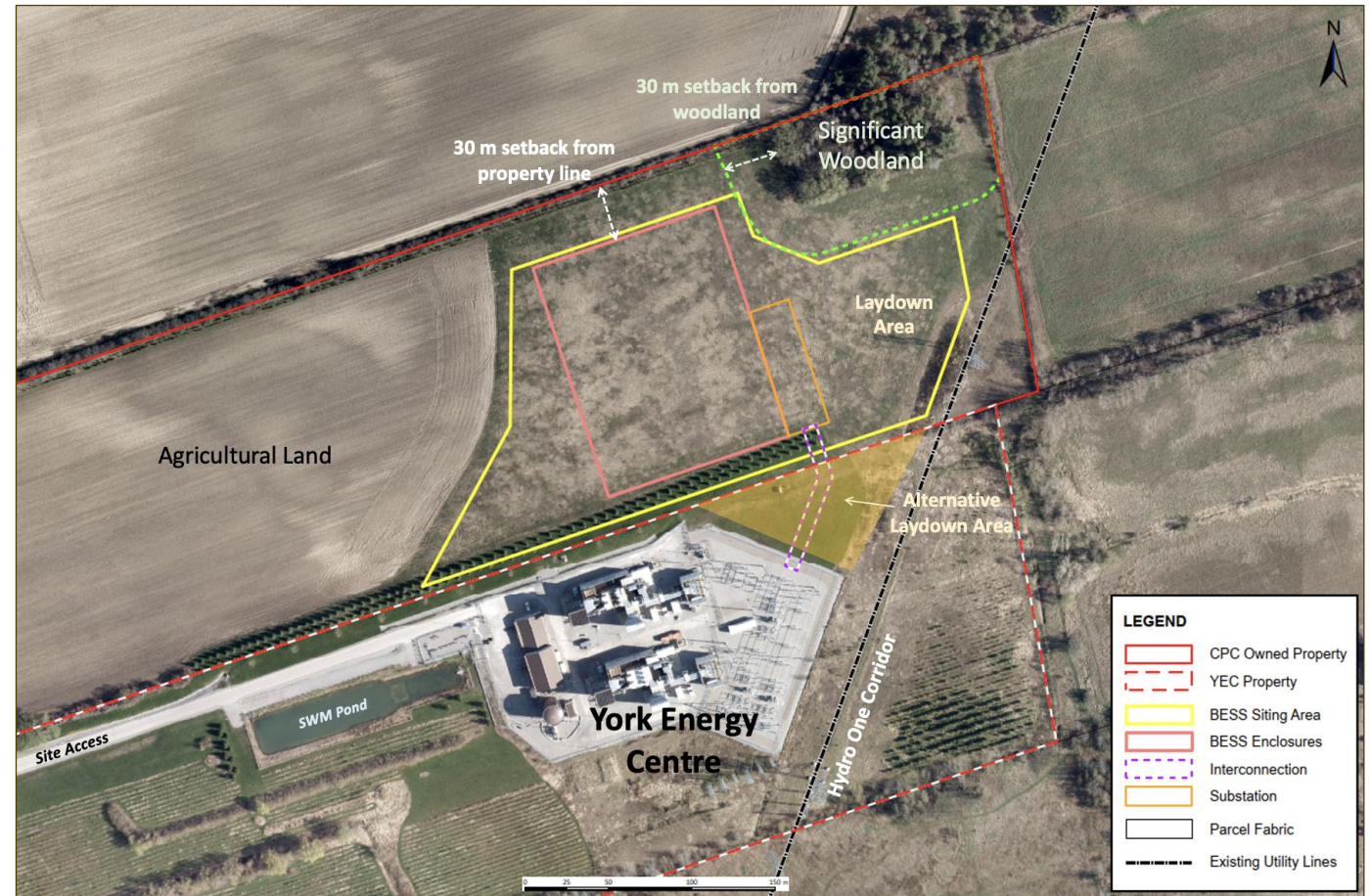
BESS Site

- Former laydown area used during construction of the YEC.
- Currently a mowed field.
- Footprint approximately 1.5 ha (4 acres).
- A larger “BESS Siting Area” is shown to allow for micro-siting during detailed engineering.

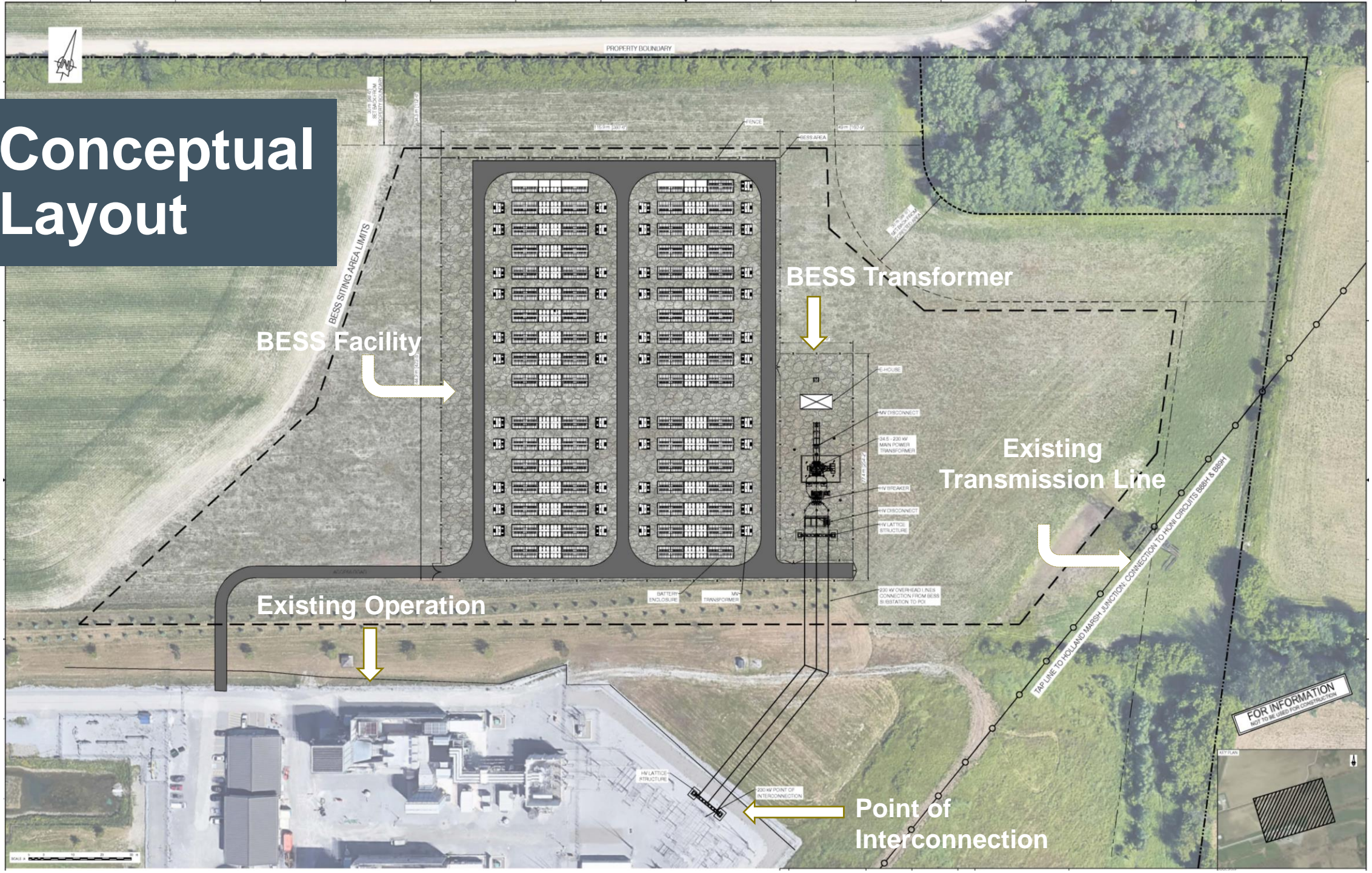


Key Project Design Elements

- Sited to avoid active agricultural area.
- 30 m setback from woodland.
- Use of YEC infrastructure avoids need for new construction of some components.
- Trees/shrubs planted to create visual screening.
- No air emissions.



Conceptual Layout





BESS Construction

- Construction duration: approx. 1yr
- Access: via existing YEC entrance.
- Site preparation:
 - Site clearing and grading
 - Earthworks
 - Stormwater management features
- Foundations: slab-on-grade or helical screw pile.
- BESS enclosure delivery & installation using mobile cranes.
- Electrical and mechanical installation activities.
- Commissioning.
- Installation of fencing, gates & site remediation, including landscaping.



Regulatory Approval Processes & Ongoing Technical Studies

Regulatory Approvals

- Class Environmental Assessment for Minor Transmission Facilities (Class EA):
 - BESS facilities do not have requirements under the *Environmental Assessment Act*.
 - Construction of high voltage transformer station (≥ 115 kV) triggers the EA requirement.
 - BESS Project as a whole is being assessed as part of the Class EA process.
- Site Plan Approval – Township of King
- Other approvals are also required before the Project can proceed:
 - Environmental Activity and Sector Registry (EASR), Noise – Ministry of the Environment, Conservation and Parks (MECP)
 - Environmental Compliance Approval (ECA) for Industrial Sewage, Stormwater – MECP



Example of a 34.5 kV: 230 kV transformer

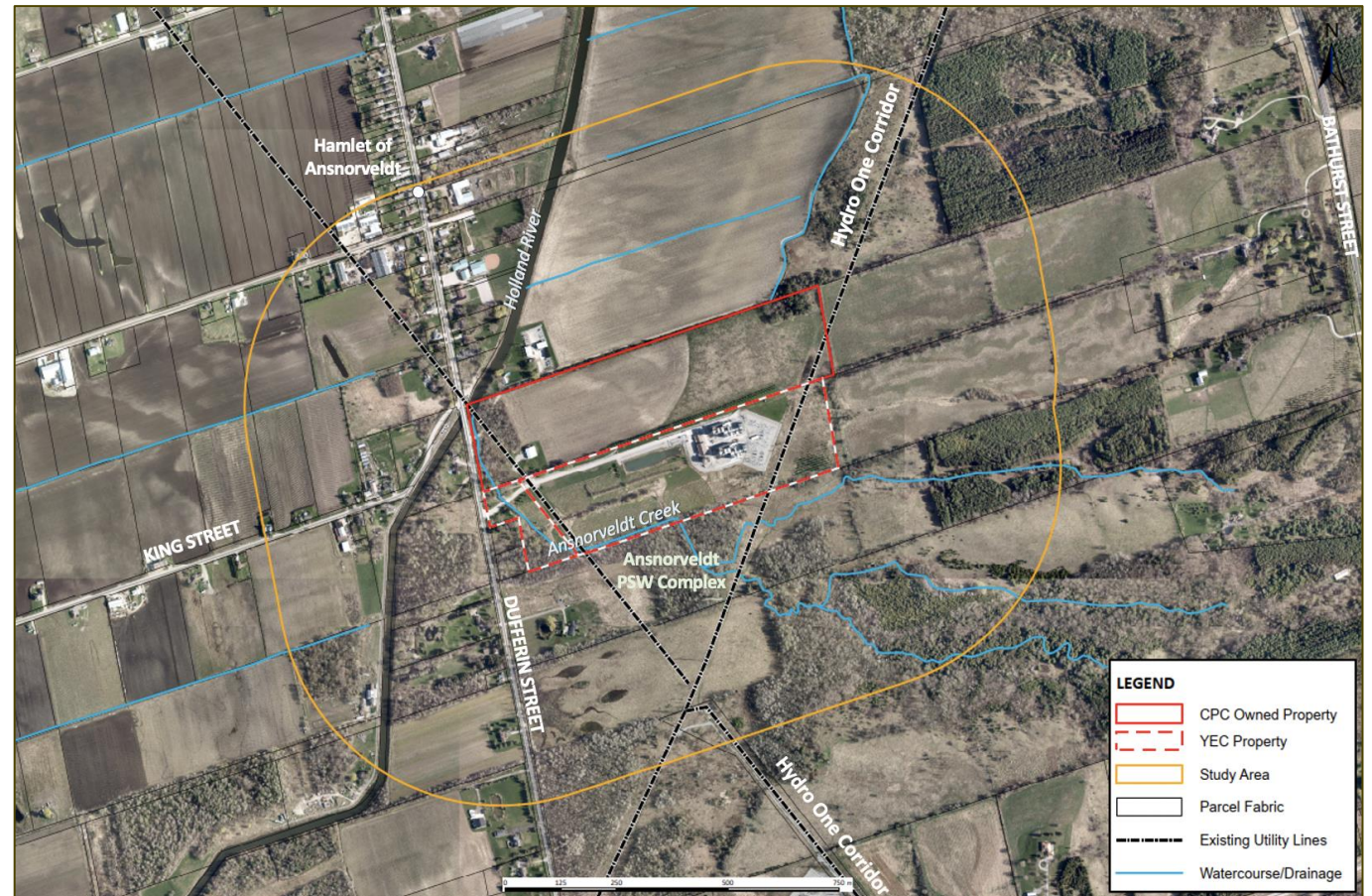
Technical Studies

- Studies related to the following environmental factors are underway to inform the project design, Class EA Process and future permit applications:
 - Land Use Planning
 - Natural Environment (Ecology)
 - Agricultural Lands and Operations
 - Stormwater Management
 - Hydrogeology
 - Landscaping (Visual Aesthetics)
 - Traffic & Access
 - Noise
 - Cultural Heritage Resources (Built Heritage, Heritage Landscapes, Archaeology)
 - Emergency Response Planning
 - Various construction and engineering plans and drawings



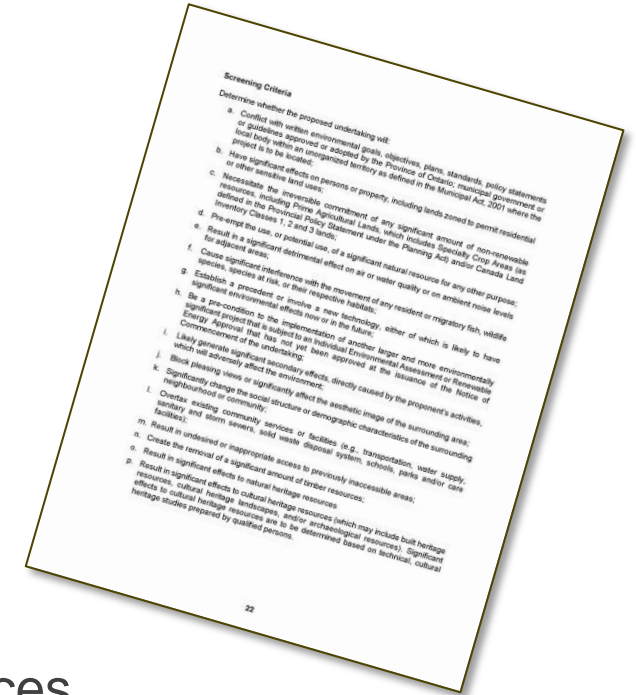
Study Area & Existing Features

- Key features in the Study Area include:
 - Hamlet of Ansnorveldt
 - Holland River
 - Ansnorveldt Creek
 - Ansnorveldt Provincially Significant Wetland
 - Significant woodland
 - Residences & businesses
 - Agricultural areas
 - Dufferin Street



Class EA Screening Process

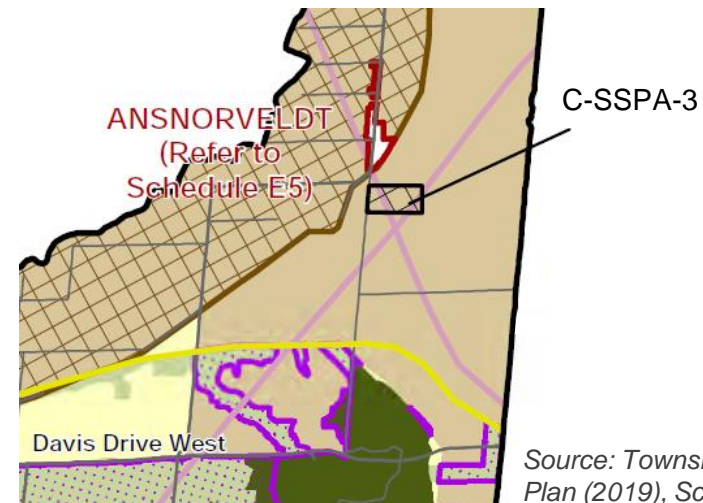
- Process for projects with predictable environmental effects.
- A series of questions to evaluate the potential for significant impacts that cannot be avoided and/or mitigated.
- Key areas include:
 - Government Objectives, Plans & Policies
 - Natural Heritage
 - Agricultural Lands & Operations
 - Air & Noise
 - Water Resources
 - Cultural Heritage Resources
 - Neighborhoods & Communities
- A key part of the Screening Process is engaging with government agencies, Indigenous communities, and the public to identify potential environmental concerns. Capital Power is committed to addressing concerns related to this Project.



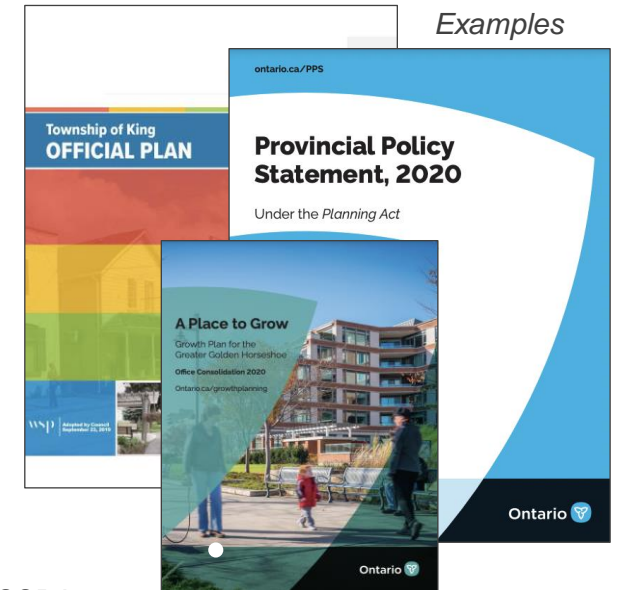
Government Objectives, Plans & Policies

- Project meets provincial government goals, objectives, plans, policies & guidelines.
- Township of King Official Plan designates the property as Countryside Site Specific Policy Area 3 (C-SSPA-3):
 - Site specific policies guide what land uses are permitted & associated development requirements.
 - C-SSPA-3 permits energy storage facilities subject to municipal Site Plan Approval.

Applicable Permitting Process:
Site Plan Approval – Planning Justification Report

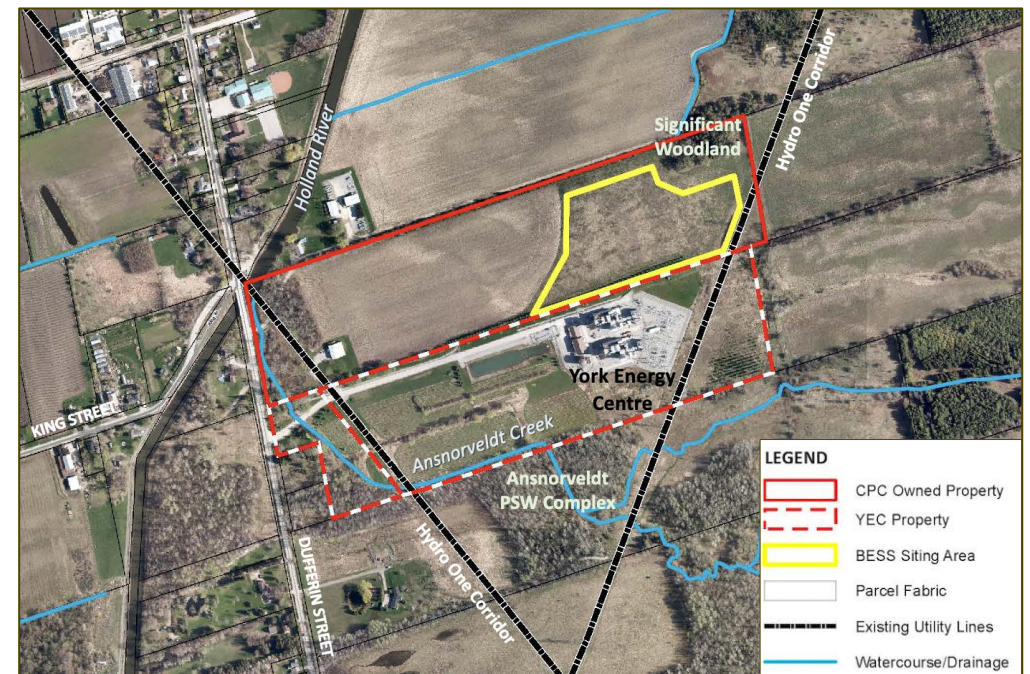


Source: Township of King Official Plan (2019), Schedule E



Natural Heritage

- Potential impacts to natural heritage features have been avoided through siting & design.
- The BESS site is currently proposed within a mowed field (former laydown).
- Project will not interfere with species at risk, wildlife, fish, or habitat:
 - Ansnorveldt Creek crosses the property more than 400 m from the BESS Site.
 - Ansnorveldt Provincially Significant Wetland (PSW) is located more than 200 m from the BESS Site, south of the existing YEC.
 - Setback of 30 m to be maintained from the significant woodland at the back of the site.



Applicable Permitting Process:
Site Plan Approval – Natural Heritage Report



Agricultural Lands & Operations

- Potential impacts to agricultural lands & operations have been mitigated through siting & design:
 - BESS area previously used for materials storage/laydown during construction of the YEC.
 - No active agricultural land will be removed from production and there will be no effects on agricultural operations.
 - Attempts to resume agricultural operations in the area were not successful.
- Property is identified in the Official Plan as Prime Agricultural Area:
 - Provincial Policy Statement permits non-agricultural uses in prime agricultural areas if there is an identified need and there are no reasonable alternative locations.

Applicable Permitting Process:

Site Plan Approval – Agricultural Impact Assessment



Air & Noise

- BESS facilities do not produce air emissions.
- Noise emissions must meet provincially mandated limits. Preliminary acoustic (predicted sound) modelling demonstrates that the Project will comply with provincial noise limits at nearby receptors:
 - 45 decibels during the daytime (7am-7pm), 40 decibels during the nighttime (7pm-7am)
- Noise emissions will be subject to a detailed acoustic assessment in accordance with MECP requirements as part of the EASR process.
- Noise barrier wall ~5 m in height may be required, dependent on final site configuration and equipment selection.

Applicable Permitting Process:
Site Plan Approval, EASR – Noise Report



Water Resources

- No anticipated effects to groundwater quantity or quality:
 - Shallow excavations – no groundwater takings anticipated.
- No anticipated effects to surface water quantity or quality:
 - BESS not located near any natural surface water features.
 - Stormwater management (SWM) design is underway – will discharge to existing YEC SWM pond.
 - Potential construction-related effects such as run-off or sedimentation will be managed through standard Erosion and Sediment Control (ESC) practices.



Applicable Permitting Process:

Site Plan Approval – Hydrogeology Report, SWM Plan; ECA (Industrial Sewage) – SWM Plan



Cultural Heritage Resources

- Project is not anticipated to impact cultural heritage resources (built heritage resources, cultural heritage landscapes or archaeological resources):
 - No known built heritage or cultural heritage landscapes present.
 - Previous archaeological assessments cleared the Project area of archeological concerns.
- Cultural Heritage & Archaeological experts will review the project to confirm no impacts to these resources and ensure compliance with the *Ontario Heritage Act*.
- Engagement with Indigenous communities is an important part of the Project.

Applicable Permitting Process:

None Anticipated (to be confirmed by licensed archaeologist & cultural heritage specialist)



Neighborhoods & Communities

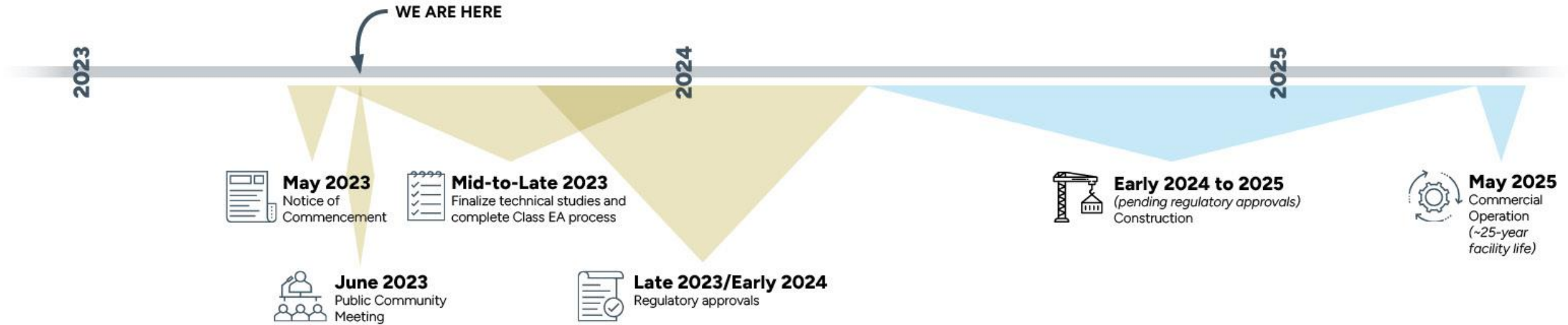
- During operation, Project is not anticipated to affect nearby residents, private property, or surrounding neighborhood & community:
 - Sited entirely on Capital Power owned and operated lands.
 - Existing facility entrance will be used for BESS access.
 - Provincial thresholds for noise will not be exceeded.
 - Landscaping features (native trees and shrubs) will be planted for visual screening.
 - Minimal maintenance requirements, therefore limited site activity.
- Temporary, localized minor emissions related to construction will be mitigated using standard management practices (e.g., truck traffic, noise & dust).

Applicable Permitting Process:

Site Plan Approval – Traffic Plan, Landscape Plan, Noise Study



Project Timeline



Capital Power will continue to engage the community throughout the permitting & approvals process, which includes finalizing technical studies, designs and mitigation



Community & Indigenous Engagement

Capital Power will continue to share information as the Project proceeds through construction and into operation.



Questions & Answers

Contact us

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www.capitalpower.com/operations/york-energy-centre-bess

