Environmental Review Report

East Windsor Generation Facility Expansion

Capital Power Corporation

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Acknowledgement of Key Contributors in the Environmental Review Report (ERR)

Consultancy	Area of Expertise (Technical Study)
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Glos Associates Inc.	Architecture and Visual Rendering
Black and Veatch Canada	Design Build Engineering
Sargent and Lundy LLC	Stormwater Management

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Executive Summary

Capital Power Corporation (Capital Power), through its affiliate East Windsor (Expansion) L.P., is proposing the East Windsor Generation Facility Expansion (the Project) in the City of Windsor, Ontario. The Project is responsive to the Independent Electricity System Operator's (IESO's) call for additional natural gas generation capacity and will provide up to approximately 107 megawatts (MW) of additional gross generation capacity to the Windsor-Essex area and provincial electricity grid. The proposed Project is being designed to provide dependable capacity at peak times when Ontario's other generation sources are not capable of meeting demand. As a peaking facility, decisions on when the Project generates and dispatches electricity to the grid will be made by the IESO.

The Project consists of the construction and operation of a new simple cycle natural gas generation facility located adjacent to the existing East Windsor Cogeneration Centre (EWCC)[1] in the City of Windsor, Ontario. Simple cycle facilities use natural gas as fuel to power gas-fired turbines to generate electricity. The advantage of a simple cycle facility is that it can become operational within minutes, thereby enabling a quick response to spikes in electricity demand during peak usage periods. The selected gas turbine for the Project is capable of utilizing a blend of hydrogen and natural gas. There is currently no hydrogen supply to the site and therefore, the use of hydrogen is outside the scope of this Project.

The Project will be located within the existing EWCC fenceline but will be owned by a separate Capital Power entity (Capital Power East Windsor (Expansion) L.P.). The Project is IESO-contracted and will be operated and dispatched independently of the EWCC. The Project will make use of some existing infrastructure, including tying into the existing EWCC high-voltage interconnection line to avoid the need for a new connection to the provincial electricity grid.

Key project components include one General Electric (GE) 7E.03 simple cycle gas turbine generator and all associated infrastructure, including an inlet air filter, exhaust stack, fuel gas compressor, natural gas handling system, instrumentation and control systems, and a Generator Step-Up (GSU) transformer. Ancillary project components include an equipment building, storage building, stormwater management (SWM) system, and site servicing. The construction phase of the Project will generally consist of site preparation, equipment delivery, construction and installation of the gas turbine and associated infrastructure, and interconnection to the existing power grid. Additional areas for temporary staging and laydown will be required during the construction phase.

This Environmental Review Report (ERR) has been prepared to meet the requirements of the Environmental Screening Process for Electricity Projects (ESP) under Ontario Regulation (O. Reg.) 50/24 of the Ontario *Environmental Assessment Act* (EA Act). The ESP was undertaken in accordance with the process outlined in the *Guide to Environmental Assessment Requirements for Electricity Projects* (2024).

[1] The EWCC is located on the land leased from Ford Motor Company of Canada Ltd. In addition to generating electricity, the facility used to provide steam to the neighbouring Ford Motor company for their Ford Windsor engine plant. Since the closure of the engine plant in 2018, Ford has terminated the Steam Supply Agreement with EWCC, and EWCC now operates in simple cycle mode as a peaking plant.

The Guide requires the application of a screening criteria checklist to identify the potential effects of the Project on specific environmental criteria, where the definition of “environment” is the same as that in the EA Act and is broadly defined to include air, land and water as well as natural, cultural, social, and economic components.

The Project Site is a brownfield site owned by Capital Power and is comprised of several historically disturbed parcels of land within the fenceline of the EWCC. The Project Site is currently used by the EWCC for site access, parking, and formerly storage (removed at the City’s request). The manicured lawn and landscape features within the Project Site are currently maintained as part of the existing EWCC operations.

Due to the urbanized and industrial nature of the Project Site, a number of environmental criteria were screened out and did not require further assessment. An effects assessment was completed for the following screening criteria:

- Groundwater;
- Air Quality;
- Greenhouse Gas (GHG) Emissions;
- Noise and Vibration;
- Socio-economic Environment;
- Cultural Heritage;
- Aesthetically Pleasing Landscapes and Views;
- Climate Change Risk; and
- Human Health Risk.

Potential construction related Project effects are well understood and can be readily avoided or mitigated through the implementation of industry standard best management practices.
The Project will assist in meeting the IESO’s request for additional generation capacity, however for the duration of the operation phase it will contribute to air and noise emissions, as well as a small percentage increase in provincial electricity sector generated GHG emissions. Potential operation phase effects on local community character, aesthetically pleasing landscapes and views, and nearby cultural heritage features have been mitigated through the architectural design of the Project and landscaping attributes. From a visual aesthetics and community character perspective, the Project will be compatible with the existing EWCC and surrounding historic buildings and structures. Key operation phase processes, including air and noise emissions, and stormwater management, will be subject in the future to detailed permitting and approval requirements.

Engagement with interested and potentially affected parties, including adjacent property owners, Indigenous communities, regulatory agencies, interest groups, and members of the public, is a key part of the ESP. Through a variety of engagement methods, Capital Power reached out to potentially interested parties early in the process and at major Project milestones. This includes sharing a Draft ERR with Indigenous communities and the MECP to provide an opportunity to gather valuable feedback. Community feedback was received throughout the ESP and at a Public Open House. All input received throughout the ESP was considered during preparation of the Final ERR which is being made publicly available for a 30-day review period.

The conclusion of this ERR is that based on the results of the effects assessment, including the implementation of a series of mitigation measures, impact management and monitoring commitments, the Project is not predicted to cause significant environmental effects.

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Acronyms and Abbreviations

%	percent(age)
AAQC	Ambient Air Quality Criteria
ac	acre
ANSI	Area of Natural and Scientific Interest
ASI	Archaeological Services Inc.
BHIS	Built Heritage Impact Study
BHR	Built Heritage Resource
BIA	Business Improvement Area
CAAQS	Canadian Ambient Air Quality Standards
CCRA	Climate Change Resilience Assessment
CEMS	Continuous Emissions Monitoring System
CF	Commemorative Feature
CFA	Continuous Flight Auger
CH_4	methane
CHL	Cultural Heritage Landscapes
CIP	Community Improvement Plan
CN	Canadian National
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent units
COC	Contaminant of Concern
COTTFN	Chippewas of the Thames First Nation
dB	decibel
dBA	sound pressure level
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EA Act	*Environmental Assessment Act*
EASR	Environmental Activity and Sector Registry
EBA	Event Based Area
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
E-LT1 RFP	Expedited Long-Term Request for Proposals
EMS	Environmental Management System

EPA	*Environmental Protection Act*
ERCA	Essex Region Conservation Authority
ERR	Environmental Review Report
ERSPP	Essex Region Source Protection Plan
ESA	*Endangered Species Act*
ESA	Environmental Site Assessment
ESC	Erosion and Sediment Control
ESP	Environmental Screening Process for Electricity Projects
EWCC	East Windsor Cogeneration Centre
GE	General Electric
GHG	greenhouse gas
GSA	General Study Area
GSU	Generator Step-Up Transformer
ha	hectare
Hz	hertz
ID#	Identification number
IESO	Independent Electricity System Operator
IPZ	Intake Protection Zone
ISO	International Standards Organization
kg	kilogram
kg/m^2	kilograms per square metre
km	kilometre
kV	kilovolt
L	litre
L.P.	Limited Partnership
L/W	length to width
m	metre
m^2	square metre
m^3	cubic metre
masl	metres above sea level
mbgs	metres below ground surface
MCM	Ministry of Citizenship and Multiculturalism
MECP	Ministry of the Environment, Conservation and Parks (formerly Ministry of the Environment)
mm	millimetre

MNRF	Ministry of Natural Resources and Forestry
Mt	million tonnes
MW	megawatt
N_2O	nitrous oxide
NO_x	nitrogen oxide
NPC	Noise Pollution Control
O. Reg.	Ontario Regulation
ºC	degrees Celsius
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OPOR	Outdoor Point of Reception
OWRA	*Ontario Water Resources Act*
PAH	Polycyclic Aromatic Hydrocarbon
PEECC	Packaged Electronic and Electrical Control Compartment
PEMP	Project Environmental Management Plan
PHC	Petroleum Hydrocarbon
PM	Particulate Matter
POI	Point of Impingement
POR	Point of Reception
PSW	Provincially Significant Wetland
PTTW	Permit to Take Water
RH	Relative Humidity
SAR	Species at Risk
SARA	*Species at Risk Act*
SLHHRA	Screening Level Human Health Risk Assessment
SO_2	sulphur dioxide
SoCC	Species of Conservation Concern
SSP	Shared Socioeconomic Pathway
SWM	stormwater management
t	tonne
VOC	Volatile Organic Compound
WIFN	Walpole Island First Nation
WRF-ARW	Weather Research and Forecasting
ZOI	Zone of Influence

1.0 Introduction

1.1 Project Overview

Capital Power Corporation (Capital Power), through its affiliate East Windsor (Expansion) L.P., is proposing the East Windsor Generation Facility Expansion (the Project) in the City of Windsor, Ontario. The Project is responsive to the Independent Electricity System Operator's (IESO's) call for additional natural gas generation capacity and will provide up to approximately 107 megawatts (MW) of additional gross generation capacity to the Windsor-Essex area and provincial electricity grid. The proposed Project is being designed to provide dependable capacity at peak times when Ontario's other generation sources are not capable of meeting demand. As a peaking facility, decisions on when the Project generates and dispatches electricity to the grid will be made by the IESO.

The Project consists of the construction and operation of a new simple cycle natural gas generation facility located adjacent to the existing East Windsor Cogeneration Centre (EWCC)[2] in the City of Windsor, Ontario. Simple cycle facilities use natural gas as fuel to power gas-fired turbines to generate electricity. The advantage of a simple cycle facility is that it can become operational within minutes, thereby enabling a quick response to spikes in electricity demand during peak usage periods. The selected gas turbine for the Project is capable of utilizing a blend of hydrogen and natural gas. There is currently no hydrogen supply to the site and therefore, the use of hydrogen is outside the scope of this Project.

The Project will be located within the existing EWCC fenceline but will be owned by a separate Capital Power entity (Capital Power East Windsor [Expansion] L.P.). The Project is IESO-contracted and will be operated and dispatched independently of the EWCC. The Project will make use of some existing infrastructure, including tying into the existing EWCC high-voltage interconnection line to avoid the need for a new connection to the provincial electricity grid.

Key project components include one General Electric (GE) 7E.03 simple cycle gas turbine generator and all associated infrastructure, including an inlet air filter, exhaust stack, fuel gas compressor, natural gas handling system, instrumentation and control systems, and a Generator Step-Up (GSU) transformer. Ancillary project components include an equipment building, storage building, stormwater management (SWM) system, and site servicing. The construction phase of the Project will generally consist of site preparation, equipment delivery, construction and installation of the gas turbine and associated infrastructure, and interconnection to the existing power grid. Additional areas for temporary staging and laydown will be required during the construction phase.

This Environmental Review Report (ERR) has been prepared to meet the requirements of the Environmental Screening Process for Electricity Projects (ESP) under Ontario Regulation (O. Reg.) 50/24 of the Ontario *Environmental Assessment Act* (EA Act).

[2] The EWCC is located on the land leased from Ford Motor Company of Canada Ltd. In addition to generating electricity, the facility used to provide steam to the neighbouring Ford Motor company for their Ford Windsor engine plant. Since the closure of the engine plant in 2018, Ford has terminated the Steam Supply Agreement with EWCC, and EWCC now operates in simple cycle mode as a peaking plant.

1.2 Purpose of and Need for the Project

In December 2022 and March 2024, the IESO released its Annual Planning Outlook which identified a significant need for new power supply in the province (IESO 2022a, 2024). At the system level, the IESO is projecting a generation capacity deficit starting as early as 2025. After many years of stable supply, and at times, a surplus, the projected shortfall is being driven by 1) increasing demand due to expanding electrification and increasing business investment in the province, 2) refurbishment of the Pickering Nuclear Generating Station (Government of Ontario 2024) and refurbishment schedules at the Bruce and Darlington nuclear facilities, and 3) expiring IESO contracts (IESO 2022a, 2024). To address the projected shortfall, the IESO has identified that Ontario requires an additional 4,000 MW of new power supply between 2025 and 2027 (IESO 2022a, 2024).

While the need for new capacity is clear at the system wide level, the IESO has also identified several regions of the province with particularly pressing needs for new power supply. The Windsor-Essex area, representing the region west of London including the City of Windsor, is one of these regions, with the IESO forecast suggesting local demand will outstrip capacity as early as 2025.

The IESO's Resource Eligibility Interim Report, dated October 7, 2022, stated that without a limited amount of new natural gas in the near term, the IESO would be reliant on emergency actions such as load curtailments or rotating blackouts (IESO 2022b). The IESO's Pathways to Decarbonization (IESO 2022c) and Resource Eligibility Interim Report indicate that a moratorium on new natural gas generation would not be possible under the current demand forecast. The IESO has recommended procurement of a limited amount of natural gas-fired generation to help fuel the energy transition and maintain reliability.

Continuing to use natural gas in a limited way will also allow businesses and consumers to continue with their electrification plans and decarbonize the electricity system without risking reliability or impacts to economic growth (IESO 2022c).

In response to the regional and system wide shortfalls, the IESO launched a series of programs in 2022 to secure new capacity to meet the growing needs of the province. The IESO's Expedited Long-Term Request for Proposals (E-LT1 RFP) procurement program aimed to procure 600 MW of capacity from resources other than electricity storage facilities across Ontario. The Project was submitted into the RFP process and was ultimately selected in early 2023. The IESO and Capital Power executed a contract for the East Windsor Generation Facility Expansion in April 2023. To meet near-term requirements, the contract requires the Project to be operational by May 31, 2026.

1.3 Project Location

The Project will be located adjacent to the EWCC, primarily on lands owned by Capital Power. These lands represent a series of parcels, municipally known as 228 to 276 Cadillac Street (hereby referred to as the Project Site) (**Figure 1-1**). These parcels, along with others on the west side of Cadillac Street, were formerly residential properties that were acquired, and residences removed, as part of the original development of the EWCC. The Project Site is approximately 0.61 hectares (ha) or 1.49 acres (ac) in size.

The Project will make use of some existing EWCC infrastructure. The EWCC is located on the Ford Powerhouse property, on land leased from the Ford Motor Company of Canada Ltd. The current EWCC facility fenceline encompasses the Project Site lands, which are currently used for site access, parking, landscaped areas, and formerly storage (removed at the City's request). An Enbridge-operated gas yard that supplies the EWCC is located on Capital Power-owned lands directly south of the Project Site.

A more detailed description of the lands proposed to be used for the Project is provided in **Section 2.3**, and a description of additional areas that will be temporarily used during the construction phase of the Project is provided in **Section 2.5**. The spatial and temporal boundaries used for the effects assessment are presented in **Section 2.3**.

Detroit River

N

RIVERSIDE DRIVE EAST

MONTREUIL AVE

ALBERT RD

DROUILLARD RD

CADILLAC ST

Matilda Street Parking Lot

Ford Powerhouse

East Windsor Cogeneration Centre

Enbridge Gas Yard

BELLEVIEW AVE

PRATT PL

ERSKINE ST

STRABANE AVE

WYANDOTTE STREET EAST

CN Railway

ST LUKE RD

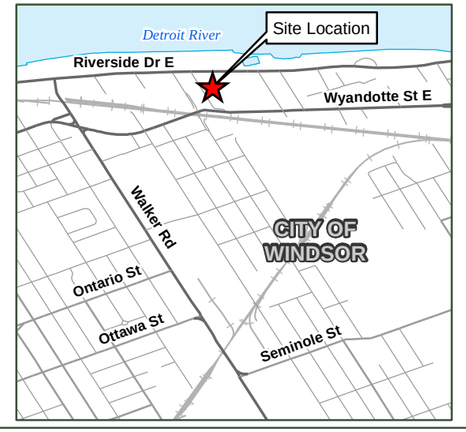
WALKER ROAD

EDNA ST

LEGEND:

- Capital Power Lands - Owned
- Capital Power Lands - Leased
- Project Site
- Parcel Fabric (City of Windsor)
- Railway

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023



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THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

PROJECT LOCATION

SLR

FIGURE NO:
1-1

DATE: July 2024

PROJECT NO: 241.30524.00024

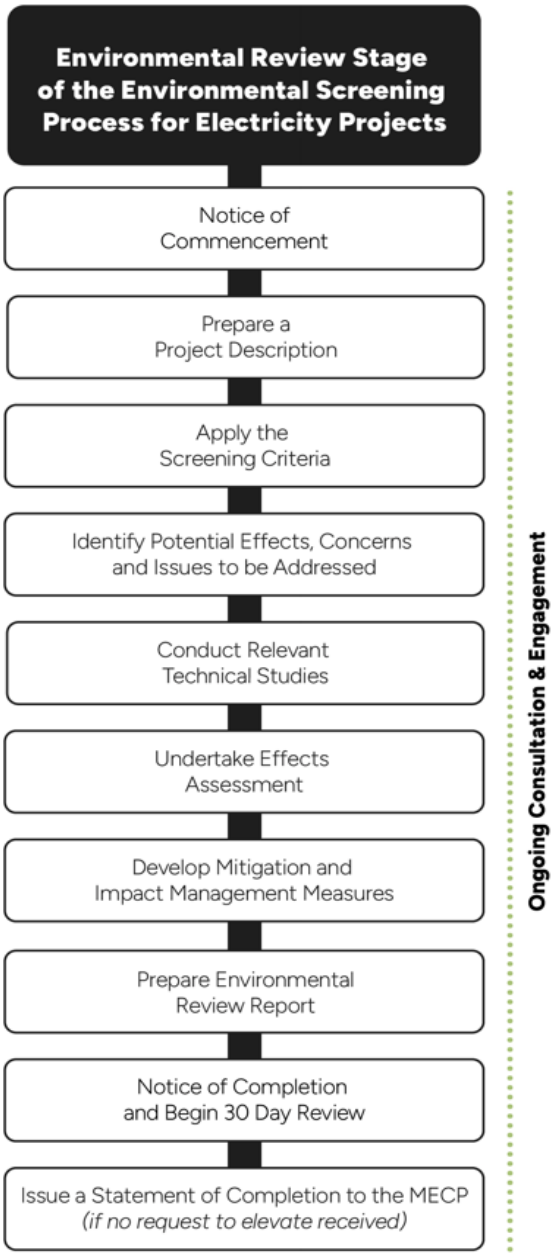
1.4 Regulatory Framework

Natural gas-fired generation projects are subject to the requirements of O. Reg. 50/24 under the *EA Act*[3]. These projects are subject to the ESP and must be carried out in accordance with the provincial *Guide to Environmental Assessment Requirements for Electricity Projects* (2024) (the Guide). The ESP is a proponent-driven process overseen by the Ministry of the Environment, Conservation and Parks (MECP).

A modification to a natural gas-fired generation facility that will result in a nameplate capacity increase of 5 MW or more is defined in O. Reg 50/24 as a "significant modification". A significant modification is classified as a Category B project, and is subject to the full review process set out in the ESP. The Project will have a nameplate capacity of more than 5 MW and is therefore subject to the ESP.

The ESP has two tiers of assessment: the Screening Stage, which can be based primarily on existing or readily available information, and the Environmental Review Stage, where additional work programs, studies and consultation are undertaken to assess environmental effects and/or address unresolved concerns and issues. Capital Power has voluntarily undertaken the Environmental Review Stage of the ESP for this Project. This ERR documents the outcome of the Environmental Review Stage and has considered the potential environmental effects of the Project. (**Figure 1-2**) provides an overview of the various steps for the Environmental Review Stage of the ESP[4].

Figure 1-2: Environmental Review Stage of the Environmental Screening Process for Electricity Projects



[3] At time of Project commencement in June 2023, O. Reg. 116/01 was in effect but has since been revoked by the Government of Ontario, and the Project is now subject to O. Reg. 50/24.

[4] *During the review period, anyone with outstanding environmental concerns could request that the Project be elevated from an Environmental Review to a Comprehensive Environmental Assessment (EA). For more information about how to submit an Elevation Request, refer to the Guide section B.4.1.1 (MECP 2024).*

In addition to the fulfillment of requirements under the EA Act, the Project will also require Environmental Compliance Approvals (ECA) (Air & Noise and Industrial Sewage) and municipal Site Plan Approval. Other municipal approvals are anticipated including building permits and a hoarding permit for the temporary closure of Cadillac Street. Work near heritage buildings must comply with Ministry of Citizenship and Multiculturalism (MCM) and municipal requirements.

No other federal, provincial, or municipal/local permits or approvals are anticipated to be required.

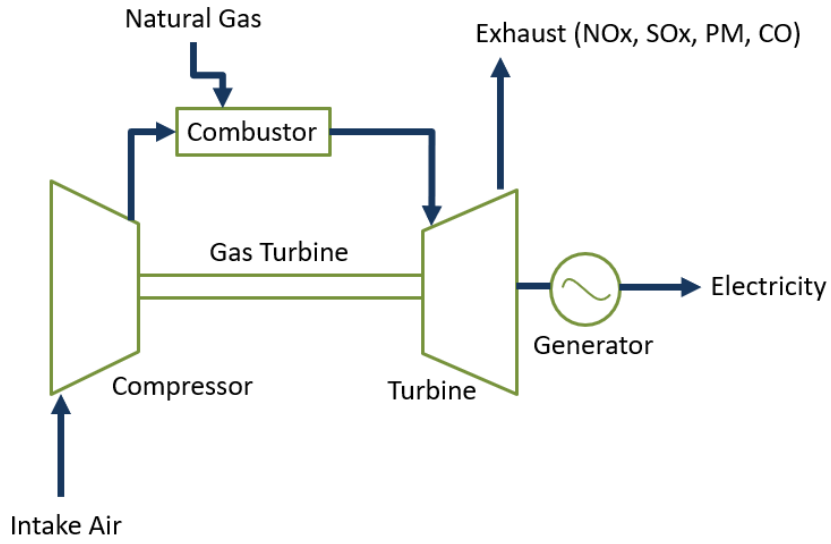
2.0 Project Description

The Project is a simple cycle natural gas fired peaking power plant which would provide the provincial grid and IESO with reliable and responsive peaking power supply.

Simple cycle natural gas generation facilities use natural gas as fuel to power turbines to generate electricity (**Figure 2-1**). The advantage of a simple cycle facility is that it can become operational within minutes, thereby enabling a quick response to spikes in demand during peak usage periods. The Project is designed to operate during peak demand hours, as determined by the IESO. Capital Power anticipates that the Project will typically operate for less than 150 hours per year.

The Project will be located within the existing EWCC fenceline and will share some existing infrastructure and services but will be owned and operated by a separate Capital Power entity. The Project is IESO-contracted and will be metered and dispatched independently of the EWCC. The Project Site layout and an overview of the key components and activities are presented in the sections below.

Figure 2-1: Simplified Process Flow Diagram



2.1 Generation Capacity

The maximum output that a natural gas generation facility can generate is dependent on atmospheric conditions such as temperature, relative humidity (RH), and elevation. The Project will have a gross nameplate capacity of 88.6 MW (at reference conditions of 60% relative humidity and 15 degrees Celsius [°C]). The nameplate capacity describes the MW of instantaneous electricity generation that the Project is capable of and is registered with government authorities (the IESO) for the purposes of classifying the power output of any given generation facility. In Ontario, *O. Reg. 54/04 – Part II.3 Projects – Designations and Exemptions* defines nameplate capacity as “the total of the design electricity generating capacities of all the generation units in the facility”. The nameplate capacity is specified by the original equipment manufacturer based on International Organization for Standardization (ISO) standards.

The maximum gross power that the Project is expected to generate ranges from approximately 87 MW (at 35°C, 43% RH) to 107 MW (at -20°C, 90% RH). Under average annual temperature conditions of 10°C and 69% relative humidity, the maximum gross output of the Project will be 89.2 MW.

The capacities of the existing EWCC and proposed Project are summarized in **Table 2-1**.

Table 2-1: Summary of Facility Capacity

Maximum Output	Project	Existing EWCC	Combined
Nameplate Capacity (15°C, 60% RH)	88.6 MW	84 MW	172.6 MW
Maximum Winter Output (-20°C, 90% RH)	107 MW	88 MW	195 MW
Maximum Summer Output (35°C, 43% RH)	87 MW	66 MW	153 MW
Average Annual Weather (10°C, 69% RH)	89.2 MW	82 MW	171.2 MW

2.2 Operating Regime

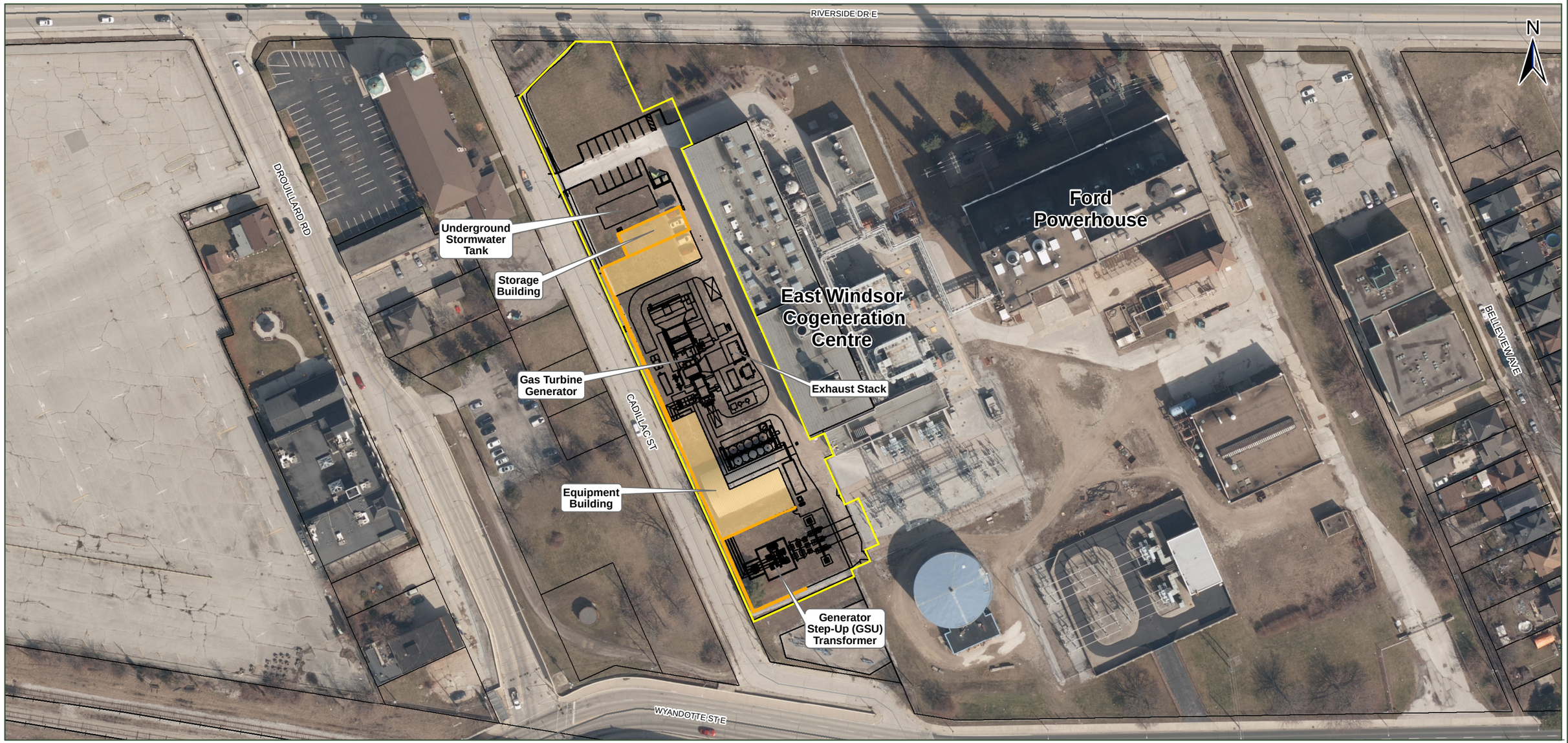
To meet the IESO's E-LT1 RFP requirements, the Project is designed as a peaking facility. The Project will play an important role in providing dispatchable power and peaking services to the Ontario grid during periods of high demand or as a result of sudden system disturbances. While the expansion is co-located adjacent to the EWCC, the two facilities are expected to operate independently of one another. Both are peaker plants, and both would be available for dispatch by the IESO to fulfill system demands.

Similar to the EWCC, the Project is expected to run infrequently as a peaking facility it must operate for less than 1,500 hours annually. Dispatch forecasting suggests that the unit may run less than 150 hours annually, with an average run time of approximately 2 to 4 hours. Although both facilities could be dispatched concurrently by the IESO, this scenario is anticipated to occur infrequently. The Project will also be capable of generating power under peak firing conditions during times when higher system demand (as requested by the IESO) is required. The need for peak firing may be realized during extreme conditions when additional output is needed. Peak firing leads to increased equipment maintenance given the increased firing temperatures and wear on system components. Given the stress peak firing places on the equipment, it is only intended to be used when required and for limited period of time to meet system needs.

2.3 Site Layout

The key Project components have been located within the Project Site boundary on lands owned by Capital Power and accessed via the existing EWCC driveway to/from Cadillac Street. The Project Site is approximately 0.61 ha (1.49 ac) in size, with some of that area representing the footprint of Project components and the remainder to be landscaped.

Project components extending beyond the Project Site boundary are associated with shared infrastructure. Interconnections with existing facilities on the EWCC Site are expected to include electrical interconnection with the existing EWCC switchyard, SWM infrastructure, fire water servicing, and use of an access laneway along the western edge of the EWCC building. Features such as site access and parking currently located within the Project Site will service both the EWCC and the Project. The conceptual Project layout, including the primary Project components, is presented in the preliminary detailed site plan drawing in **Figure 2-2**.



LEGEND:

- Project Site
- New Building (Wall)
- New Building (Roof)
- Equipment Layout
- Parcel Fabric (City of Windsor)
- Railway

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023

0 10 20 40 60 m

SCALE 1:1,250
PAGE SIZE 11 x 17
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THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

PROJECT SITE PLAN

SLR

FIGURE NO:
2-2

DATE: July 2024

PROJECT NO: 241.30524.00024

2.4 Project Components

2.4.1 Gas Turbine Generator

The Project will consist of one GE 7E.03 simple cycle natural gas fired turbine generator, including an inlet air filter, exhaust stack, fuel gas compressor, natural gas handling system, instrumentation and control systems, and a single GSU transformer.

The GE 7E.03 gas turbine is recognized as an industry leader for 60 hertz (Hz) industrial power applications. Its robust architecture and operational flexibility make it well-suited for a variety of peaking operations. With state-of-the-art fuel handling equipment, multi-fuel combustion system options, and advanced gas path features, the 7E gas turbine can accommodate a full range of fuel alternatives while helping to deliver better efficiency and lower emissions than other technologies in its class.

The 7E gas turbine's medium-size architecture lends itself to flexibility in plant layout and fast, low-cost additions of incremental power. The modular system allows for timely installation and commissioning with a start-up time of approximately 10-20 minutes.

Natural gas, supplied from the existing EWCC Enbridge-operated gas yard, will be compressed from the inlet supply to a pressure that is required by technical specifications prior to entering the gas turbine. Air will be drawn into the turbine via the inlet air filter, before entering into the compressor part of the turbine where the air is compressed, increasing pressure and generating heat. The hot, compressed air then flows into the combustor, where it is combined with compressed natural gas. The ignited mixture generates hot gas that moves through the turbine blades, forcing them to spin. This process converts chemical energy into mechanical energy.

The turbine system then captures the energy from the expanding gas, resulting in rotations of the shaft. The generator converts the mechanical energy from the shaft to electrical energy via rotation of a large magnet surrounded by coils of copper wire which aligns and moves electrons. A second set of coolers (fin-fan coolers) are included for process cooling. Fin fan coolers are a heat-exchange system designed to move various mediums through "fins" which are mechanically cooled via fans.

The Project will include a dedicated exhaust stack for emissions produced by the gas turbine unit. This exhaust stack will have a cross-section of approximately 3.4 metres (m) by 6.1 m and a height of 22.5 m above grade. The GE 7E.03 gas turbine selected for the Project is equipped with a dry low nitrogen oxide (NO_x) combustion system and is considered lower emission technology compared to other turbines in its class. A Continuous Emissions Monitoring System (CEMS) will be used to evaluate select contaminants emitted from the gas turbine.
The monitoring systems associated with the CEMS are assessed and verified on a regular basis using calibration gases.

The gas turbine generator system is linked to an isolated-phase bus via a generator circuit breaker. This bus facilitates the transmission of the generated power to the switchyard, establishing a connection between the facility's output and the grid (as described in subsequent sections). Additionally, the unit auxiliary transformer functioning as a step-down transformer and connected in parallel to the isophase bus duct, supplies power to auxiliary components such as fans and motors.

Other key auxiliary equipment include:

- An air-cooled heat exchanger designed to provide the closed cooling water requirements for components of the gas turbine generator and fuel gas compressor;
- A new Power Distribution Centre and Packaged Electric and Electronic Control Compartment (PEECC) that will include protection and control equipment; and
- An oil-water separator for the removal of any inadvertent oil from the water component prior to discharge to the on-site SWM system (**Section 2.4.4**).

The selected gas turbine, the GE 7E.03, is designed to be immediately capable of blending up to 35% hydrogen, which can be upgraded to 100% capability over time. However, hydrogen supply to the site is currently not available and therefore, the use of hydrogen is outside the scope of this Project and is not considered in the assessment within this ERR.

2.4.2 GSU Transformer and Grid Connection

The Project will make use of existing infrastructure for interconnection with the IESO-controlled provincial electricity grid, and therefore will not require a new direct connection to Hydro One Networks Inc. (Hydro One) infrastructure. The Project will be electrically independent of the existing EWCC and be metered and dispatched separately.

The existing switchyard will be expanded to accommodate the Project connection to the 115 kilovolt (kV) Hydro One infrastructure. The switchyard expansion at the southeast extent of the Project Site will consist of a GSU transformer to transform the generator voltage (13.8 kV) into a voltage suitable for transmission (115 kV) and will include breakers and other electrical instrumentation and infrastructure. A grounding grid and cabling will also be installed underground. Features of the GSU transformer include:

- Oil used and stored within the GSU transformer will be situated within a double walled containment system and connect to an oil/water separator to mitigate the risk of spills to the environment. The first stage of containment is within the transformer enclosures (e.g., conservator, tank) and the second stage of containment is from the transformer pit system. The transformer pit within which the transformer will be located will be concrete and sized (e.g., 110% of oil volume) to contain any inadvertent loss of oil from the system. The double walled containment system serves to meet water quality objectives for the Project by preventing any potential release of oil to the environment; and
- A noise abatement wall, with a 20 kilograms per square metre (kg/m^2) minimum density, will be installed around the GSU transformer. This wall will be approximately 10 m in height and extend for 3-5 m past the edge of the GSU transformer, in an L-shape around the western and southern edges of the GSU transformer. The west wall will be 26 m in length, and the south wall 19 m in length. The sound wall surrounding the GSU will be designed to contain architectural elements similar to those of the equipment and storage buildings (see **Section 2.4.4**).

The grid connection will be facilitated by two new H-frame structures, one in the new substation and one in the EWCC substation, to support the 3-phase 115 kV overhead power lines. Modifications to the existing substation protection and controls system will be required to accommodate the Project's interconnection.

2.4.3 Natural Gas Supply

The Project will be supplied by a high-pressure fuel gas pipeline originating from the EWCC Enbridge-operated gas yard. Capital Power will undertake limited works associated with with the gas feed connection, with the majority of interconnection work undertaken by Enbridge. Works undertaken by Enbridge associated with the gas yard, including expanding the capacity of the gas yard and associated component upgrades, are outside the scope of the Project and Enbridge will be responsible for obtaining applicable approvals.

2.4.4 Ancillary Features

2.4.4.1 Equipment and Storage Buildings

A 13 m tall equipment building is included in the design to mitigate operational noise emissions associated with the Project, as well as for visual aesthetic purposes. The equipment building runs parallel to the property line along Cadillac Street for approximately 97 m. The building will be 32 m in length on the north end and 26 m on the south end, leaving sufficient space between the building envelope and the EWCC for the purposes of emergency, maintenance, and operational access, along with adhering to Ontario Building Code requirements.

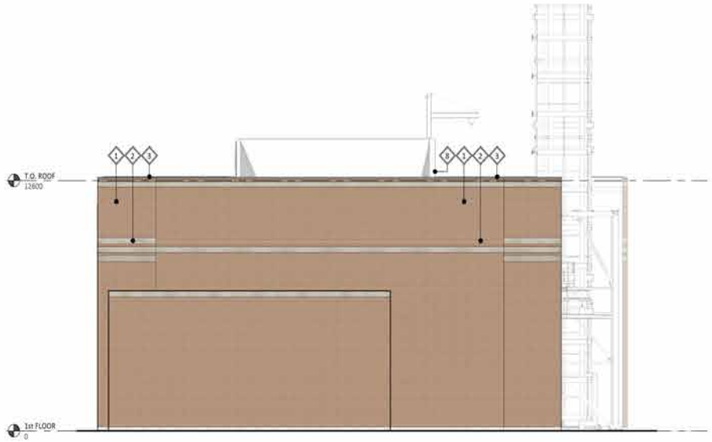
The equipment building will be designed to achieve compliance with provincially regulated noise limits. Currently, the walls of the equipment building assumes a 20 kg/m^2 minimum density to achieve the required noise abatement. The eastern side of the building facing the existing EWCC, and a portion of the roof will be open to facilitate the required air flow for safe equipment operation.

A 10 m tall storage building, approximately 8 m by 22 m in size, will be used to store spare parts and other materials required for operations and maintenance. It will be adjacent to the equipment building and finished with the same exterior treatment so as to present a graduated sightline of similar visual aesthetic when viewing the Project from Riverside Drive or Cadillac Street (**Figure 2-3**). The storage building will be set back from Riverside Drive to allow space for landscaping.

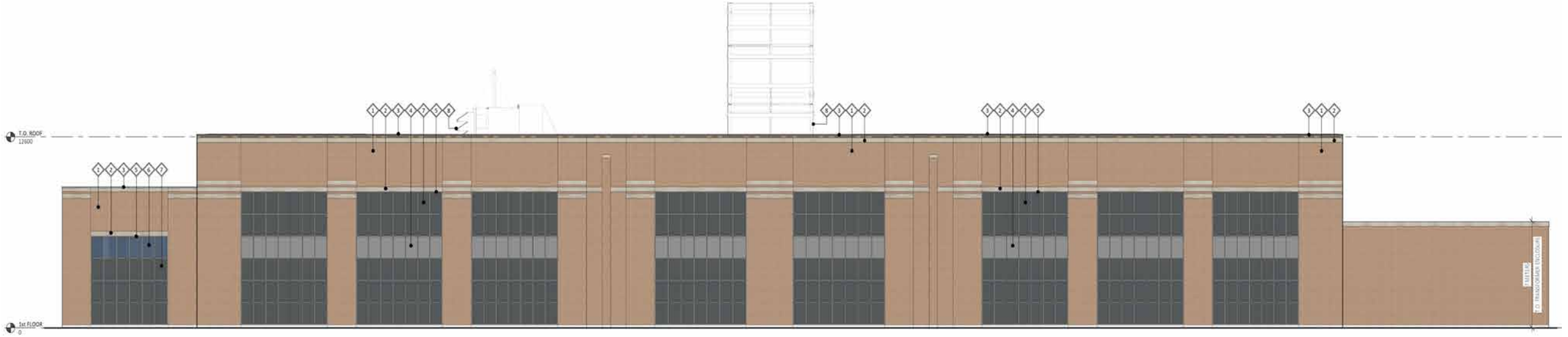
The final designs of both buildings are subject to Site Plan Approval. Capital Power is collaborating with a local architectural firm and the City of Windsor to design the building to integrate with the architectural influences of the existing EWCC building. Ongoing discussions with the City of Windsor as part of the Site Plan Approval process are being used to guide the design elements of both the equipment and storage buildings. While construction materials will be chosen based on the outcome of these discussions, the external finish of the buildings will be compatible with the surrounding historic industrial buildings and is proposed as brick veneer that matches the EWCC, with recessed glazing panels.

An architectural rendering of the proposed Project, including the equipment and storage buildings from a vantage point west of Cadillac Street (facing southeast), is shown in (**Figure 2-4**).

1 **NORTH ELEVATION**
SCALE: 1 : 125



2 **SOUTH ELEVATION**
SCALE: 1 : 125



3 **WEST ELEVATION**
SCALE: 1 : 125

MATERIAL LEGEND	
1	BRICK VENEER - COLOUR TO MATCH EXISTING
2	ACCENT MASONRY VENEER - COLOUR TO MATCH EXISTING
3	PREFINISHED PARAPET CAP FLASHING - FINISH TO MATCH EXISTING
4	ALUMINUM COMPOSITE PANEL - FINISH TO MATCH EXISTING
5	PRE-FINISHED ALUMINUM CURTAIN WALL ASSEMBLY
6	GLAZING PANEL
7	SPANDREL GLAZING PANEL
8	POWER PLANT EQUIPMENT

NOTES:
IMAGERY PROVIDED BY GLOS ARCH + ENG

EAST WINDSOR GENERATION
FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

EQUIPMENT BUILDING MATERIALS AND ELEVATIONS

SLR

FIGURE NO:
2-3

DATE: July 2024

PROJECT NO: 241.30524.00024

Figure 2-4: Architectural Rendering of Equipment and Storage Buildings

2.4.4.2 Packaged Electronic/Electrical Control Compartment

The PEECC is an enclosure that will house the various electronics and controls associated with the turbine system. The equipment in the enclosure can be accessed by trained staff for monitoring, system control, and maintenance as needed. Fiber optic communications lines installed with the electrical cabling will connect to the main control centre within the EWCC, which will function as shared infrastructure for the two facilities and enable Capital Power to monitor and adjust the performance of the facility on a real-time basis.

2.4.4.3 Stormwater Management

SWM for the Project is being designed to integrate with the existing EWCC SWM system. The EWCC SWM is governed by the current Amended ECA for Industrial Sewage (Permit No. 7192-7FBP6N), and consists of storm sewers, catch basins, an oil/grit separator, Goss Gully trap, and an in-ground, concrete rectangular stormwater storage tank (MOE 2008). Stormwater is discharged via an outlet into the City of Windsor storm sewer network which runs below Riverside Drive.

The SWM system is being designed to direct stormwater within the Project Site toward the northern extent of the property. Water will be directed to an oil and grit separator prior to connecting with a new underground storage tank. Water from the underground storage tank will be directed into a new forcemain and into the existing EWCC underground storage tank for ultimate discharge to the municipal storm sewer.

Although design of the SWM system is currently ongoing, all SWM infrastructure will be sized and designed to attenuate and manage runoff water from the 100-year storm event.

The preliminary design has sized the new underground storage tank associated with the Project for 280 cubic metres (m^3).

Stormwater runoff flows from the new underground storage tank at the Project Site to the existing EWCC underground storage tank will be restricted to 0.049 m^3/second (5-year predeveloped flow). Flow restriction will be achieved through new pumps that will be installed in the proposed underground storage tank with a maximum pump flow rate of 0.049 m^3/second.

Design and configuration of the Project will incorporate local and provincial design criteria requirements and will consider MECP and Essex Region Conservation Authority (ERCA) guidelines. The final SWM design will be determined during the permitting process and is subject to approval by the MECP and the City of Windsor.

2.4.4.4 Site Servicing

Operational staff will work from the EWCC or other Capital Power and contractor office locations; therefore, connections to the municipal water or sanitary infrastructure for the Project Site are not required.

The existing EWCC is connected to and serviced by the City of Windsor water supply system. The Project will use shared servicing and connect into the existing EWCC fire and service water system. No additional municipal infrastructure connections are required as a result of the Project.

The Project will require internet connection and a backup power source. These services are expected to be sourced from existing connections at the EWCC. However, if new connections are required, these are readily available from local providers and will be installed in accordance with utility requirements and municipal standards.

2.4.4.5 Site Access and Parking

The Project Site will be accessible via the existing site access off Cadillac Street. Parking spaces have been included in the site layout (**Figure 2-2**), including a barrier-free parking space to accommodate parking during operations. Fourteen spaces are currently proposed and will be confirmed during detailed design and the Site Plan Approval process with the City of Windsor.

2.4.4.6 Landscaping

Landscaping will be undertaken to blend the visual aesthetics of the Project with the existing aesthetics of the surrounding properties. Landscaping design details are being developed to support the Site Plan Approval application, and the plan is subject to approval from the City of Windsor and the intent is to use site-appropriate native species.

2.4.4.7 Security and Lighting

The entire Project Site will be enclosed by perimeter chain link fencing to prevent unauthorized access. Project lighting will be installed in conformance with applicable requirements and will be determined as part of detailed design. An Outdoor Lighting Photometric Plan, verifying use of full cut off (night sky friendly) fixtures, will be submitted to the City of Windsor for review and approval as part of the future Site Plan Approval process.

2.4.5 Temporary Construction Areas

Construction activities that include ground disturbance will be limited to the Project Site which includes a small portion of the EWCC Site associated with shared infrastructure. Temporary construction areas will be required for standard uses such as material storage and equipment laydown, staging, construction trailers, and contractor parking.

Various options have been evaluated by the Project team to determine a preferred approach for logistical purposes while reducing potential effects to nearby residents and businesses.

Throughout the construction phase, a portion of Cadillac Street will be temporarily closed, with the main Project Site access gate located at the north end of the closure area. The closed portion of the street and three vacant lots owned by Capital Power on the western side of Cadillac Street will comprise the main temporary construction area, in addition to the Project Site. With the exception of the small portions included in the Project Site boundary, use of the EWCC Site is expected to be limited to storage and laydown use within small portions of the site. However, as a conservative approach it has been assumed that the full extent of the EWCC Site may temporarily be used. A portion of the nearby Matilda Street parking lot will also be leased for use for contractor parking, material storage, and equipment laydown.

The primary driving route for worker traffic connecting the Matilda Street parking lot to the Project Site will be via Riverside Drive. The primary delivery routes will be via Riverside Drive from the west to access the main gate, or from Wyandotte Street for access to the southern portion of the Project Site on Cadillac Street. Drouillard Street will not be used as a primary route for Project traffic in order to reduce disruption to adjacent residents and businesses.

Construction planning includes a commitment to avoid ground disturbance within temporary construction areas, with particular attention to avoiding impacts to paved areas within leased areas such as the Matilda Street parking lot.

Temporary servicing during construction may include power and internet connection from local service providers if not available from the EWCC. Sanitary services will be provided by portable toilets and wash stations, and waste collection containers for off-site disposal. Waste materials will be removed and disposed of by a licensed contractor at approved off-site facilities.

Depending on the final Project schedule and detailed construction planning, offsite warehousing of some materials and components may be required. The Port of Windsor may also be used for shipment of some Project components.

Potential temporary construction material storage and equipment laydown areas are shown on (**Figure 2-5**).

2.5 Project Activities

2.5.1 Pre-Construction

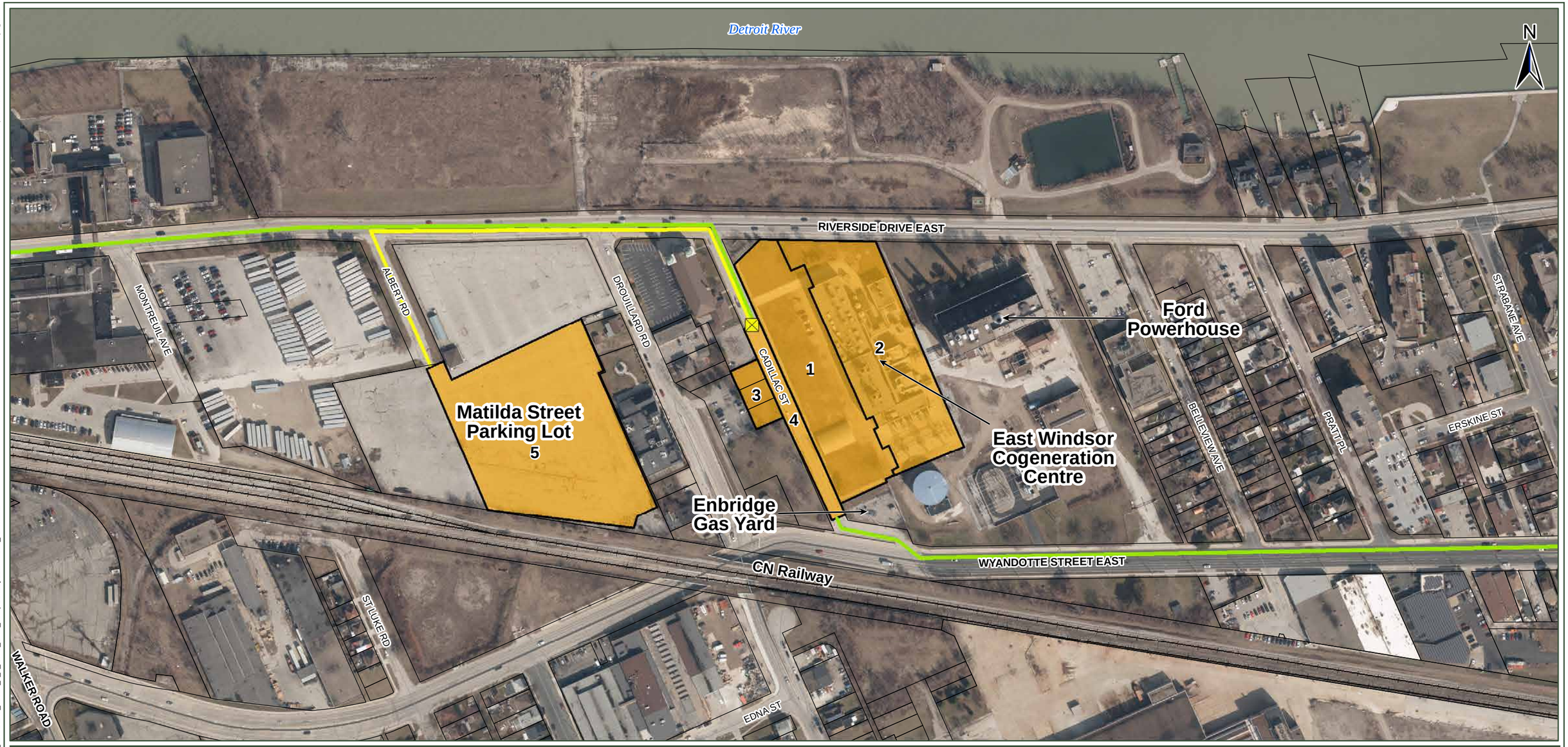
Pre-Construction includes all activities undertaken prior to the start of construction including, but not limited to:

- Construction planning and scheduling;
- Identification of potential hazards, surveying and utility clearances (e.g., overhead structures and wires, underground workings);
- Delineation of sensitive areas to be avoided within the Project Footprint, including staking, flagging and/or temporary fencing and installation of environmental protection measures (e.g., silt fencing or comparable);
- Vegetation removal and/or management; and
- Placement of temporary storage containers or structures.

Also included in this phase is the development of a Project Environmental Management Plan (PEMP), which will address the planning and management of various activities including, but not limited to:

- Vegetation management, including the removal of ornamental trees;
- Wildlife encounters;
- Construction noise and vibration;
- Fugitive dust emissions/control;
- Spill prevention and contingency planning;
- Erosion and Sediment Control (ESC);
- Construction SWM and dewatering;
- Storage and handling of any fuels, chemicals, waste, or hazardous waste;
- Soil handling and management, including stockpiling of excess soils and procedures in the event contamination is encountered;
- On and off-site traffic and road use; and
- Discovery of previously undocumented archaeological resources and/or burial sites.

The PEMP will also include any mitigation commitments or conditions of approval associated with future permitting and approval processes (see **Section 2.6** for additional information regarding the PEMP).



LEGEND:

- Parcel Fabric (City of Windsor)
- Construction Footprint
  1. Project Site (Capital Power Owned Lands)
  2. EWCC Site (Capital Power Leased Lands)
  3. Vacant Lands (Capital Power Owned Lands)
  4. Cadillac Street (Temporary Closure)
  5. Matilda Street Parking Lot (Capital Power Leased Lands)
- Primary Contractor Traffic Route
- Primary Delivery Routes
- Main Construction Access Gate
- Railway

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023

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EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

CONSTRUCTION STAGING AND LAYDOWN AREAS

SLR

FIGURE NO:
2-5

DATE: July 2024

PROJECT NO: 241.30524.00024

2.5.2 Construction

The construction phase is currently expected to be approximately 12 to 18 months in duration and will include site mobilization, early works including site preparation and foundation installation, equipment and storage building construction, equipment placement and installation, commissioning, and post-construction site restoration and landscaping. Temporary construction areas will be used and accessed as described in **Section 2.4.5** and shown on **Figure 2-5**.

It is estimated that there will be approximately 80 to 90 personnel at the Project Site during the peak of construction. Staff and contractors will park offsite at the vacant Capital Power-owned lands on the west side of Cadillac Street and/or in the Matilda Street parking lot. From there, personnel will walk or be shuttled to the Project Site.

2.5.2.1 Site Mobilization

Site mobilization activities will include but are not limited to:

- Temporary closure of the southern extent of Cadillac Street;
- Vegetation clearing (e.g., ornamental tree removal);
- Installation of components that do not require any ground disturbance, such as temporary site trailers, safety barriers, fencing, temporary lighting, temporary services (aboveground temporary power supply cables, water supply, network services, sanitation services); and
- Delivery of components, supplies, equipment, and material to laydown/storage areas (existing paved areas such as parking lots).

2.5.2.2 Early Works

Early works include the physical preparation of the site and installation of supporting infrastructure for the Project equipment. These activities include but are not limited to:

- Topsoil removal or storage, as required;
- Excavation, site grading (rough grade);
- Installation of drainage features and SWM components (permanent and temporary), and management of stormwater runoff;
- Installation of gravel pads and asphalt surfaces, including currently unpaved laydown/storage areas, as required;
- Installation of grounding grid, buried conduits and ducts, and buried pipes and cables;
- Installation of concrete/steel pads, footings, piles, foundations, and pedestals; and
- Ground / disturbed surface stabilization (compaction, gravelling).

Some of the key activities during this phase from an environmental effects perspective are:

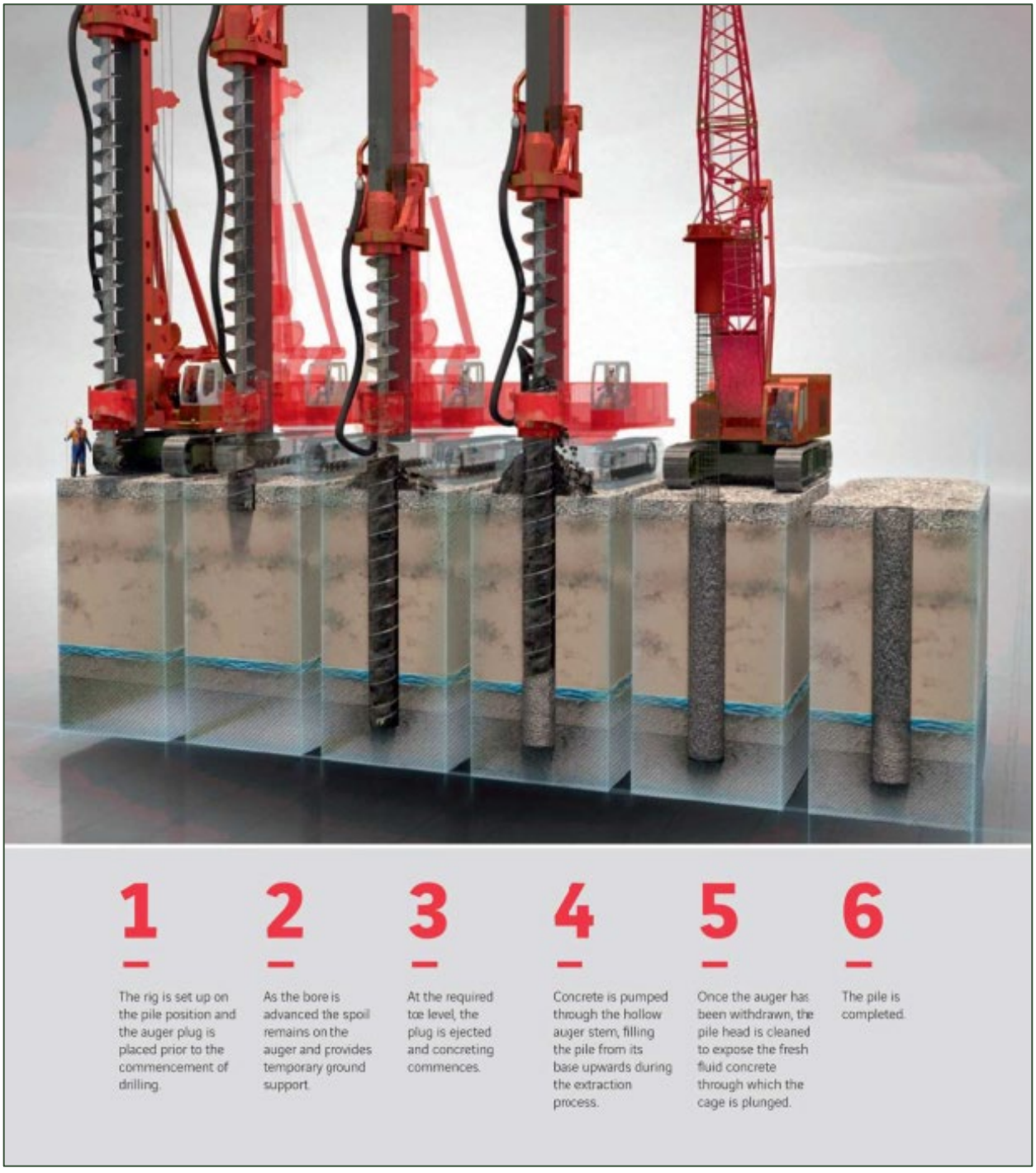
- *Excavation works*: The majority of the Project excavation works will be shallow in nature, only requiring topsoil to be removed for site grading purposes.

  Based on the current Project design, deeper excavation will be required in three locations associated with 1) the installation of the SWM tank (20 m x 10 m), 2) wash water drain tank (5 m x 3 m), and 3) oily wastewater separator (10 m x 5 m).

These excavations are expected to be approximately 5 m below ground surface (mbgs) and are expected to require some dewatering;

- *Foundation installation*: The majority of the foundation work associated with the Project will be undertaken through the use of a Continuous Flight Auger (CFA) drill rig. The CFA drill rig will be used for both pile advancement and final installation. The auger drills to the designed pile depth, and upon its withdrawal, the excavated soil and drill cuttings are extracted. Simultaneously, concrete is pumped under pressure into the ground to fill the cavity created by the auger (**Figure 2-6**). A reinforcement cage is then inserted into the fresh concrete. Use of the CFA method results in less noise and vibration emissions compared to conventional driven pile installation, making it an optimal installation method for populated urban settings and/or areas with weak soil conditions and high groundwater levels (Bachy Soletanche 2024); and
- *Water management:* Stormwater runoff in the work areas and any dewatering of groundwater in excavations will be managed in accordance with requirements outlined in the PEMP, which may include conditions of Project approvals such as the ECA (Industrial Sewage Works). The PEMP will outline the requirements associated with the collection, treatment, and discharge of water from the work areas in accordance with best management practices and regulatory requirements.

Figure 2-6: Continuous Flight Auger Pile Installation Overview



Source: Bachy Soletanche CFA Piles Installation pamphlet, 2024

2.5.2.3 Equipment Placement and Installation

Once the site is ready to receive the equipment, placement and installation activities will include but are not limited to:

- Final concrete finishing, cable placement, and grouting;
- Use of cranes and other equipment to offload, place, and secure major equipment to their respective foundations. While the use of a crane is required for the placement of major components such as the GSU transformer, turbine/generator, and stack, it may also be used for minor equipment as available;
- Erect scaffolding around major equipment for worker access, structural steel for building construction, and install cable trays;
- Install aboveground piping and ductwork and perform welding/pipefitting;
- Pull electrical and control cables through conduit/duct/pipes or cable tray (i.e., install lugs and splices), cable inspection (e.g., continuity check and Megger testing);
- Terminate low/medium voltage cables;
- Terminate high-voltage cables at interconnection point;
- Installation of veneer and glazing panels on the equipment and storage building steel framing and GSU sound wall; and
- Install permanent lighting.

2.5.2.4 Post-Construction

Upon completion of the construction and installation activities, final site cleanup will be undertaken including:

- Site recontouring in accordance with approved plans, including returning any disturbed areas to a Pre-Construction state or equivalent; and
- Landscape plantings in accordance with a planting plan approved by the City of Windsor as part of Site Plan Approval.

2.5.2.5 Commissioning

Prior to the Project supplying power to the provincial electricity grid, system commissioning and testing of all mechanical and electrical equipment will be completed according to manufacturer instructions and regulatory requirements. The commissioning period will confirm operational processes and procedures function as designed and will facilitate the transition of the Project from construction to operations.

2.5.3 Operations and Maintenance

Once in-service, the Project is expected be operated and maintained for a period of approximately 14 years (i.e., 2026 to 2040), as outlined in the IESO contract, with the potential for future contract extension if required by the IESO. Once commissioned, the Project will supply power to the grid when dispatched by the IESO. The dispatching of the Project will be independent of the existing EWCC, as they are two separate IESO-contracted peaking facilities that will operate independently of each other.

Although operated as two independent facilities, some synergies will be realized during the operations and maintenance phase as it relates to shared infrastructure and staffing. A small number of additional staff may be required during operation of the Project.

Under Capital Power's Environmental Management System (EMS), site specific operational standards and procedures will be reviewed and updated, as required, to include relevant aspects of the Project (see **Section 2.6.2** for additional information).

Project-related operational tasks requiring specific training will be conducted by qualified staff and/or contractors, including any work associated with accessing the Project's equipment. Maintenance activities during the operation phase are expected to consist of:

- Corrective maintenance such as replacement of equipment;
- Scheduled maintenance such as routine inspections and servicing of equipment and ancillary facilities;
- Unscheduled maintenance such as responding to alarms and fixing/replacing failed equipment;
- System inspections;
- Operation and monitoring of the SWM system in accordance with the final SWM Plan and applicable approvals; and
- Vegetation maintenance and control, as required.

2.5.4 Decommissioning

It is anticipated that the Project would be decommissioned after its contract period in accordance with regulatory requirements and standard industry practices in effect at the end of the Project's lifecycle. The decommissioning process is typically expected to include disconnecting the equipment components and removing the above ground components from the site. Underground equipment such as trenched cables, foundations, piling and piping may be left in place until such a time that the site is to be repurposed.

The duration of the decommissioning phase is currently unknown but, at this stage, it is assumed to be approximately one year.

2.6 Environment Management

Capital Power is a responsible and informed operator with a proven 15-year record of developing and operating successful energy projects in a progressive and environmentally responsible way. To this end, Capital Power is committed to life-of-Project environmental management measures to avoid or minimize any potential adverse environmental effects associated with their operations. Capital Power will carefully plan and manage all aspects of the Project, from concept development through to decommissioning, and employ a comprehensive environmental management strategy for the Project.

2.6.1 Guiding Principles

Capital Power is committed to developing all projects in an environmentally responsible manner consistent with the overall principles of sustainable development. Specific to this Project, Capital Power is committed to retaining the heritage urban nature of the area while providing a stable and secure electricity supply to the Windsor-Essex region and the provincial grid.

To this end, Capital Power will implement environmental planning and management strategies that avoid, minimize, or otherwise manage the potentially adverse environmental effects of the Project, and enhance positive ones, in a manner that complies with all laws and regulations while promoting sustainable development towards achieving provincial and federal “net-zero” goals. This will be done in a variety of ways, some of which include:

- Developing a modern, efficient, low emitting electricity generation project that partially fulfills the electricity demands of the Windsor-Essex region in the short- to medium-term;
- Implementing environmental protection, mitigation, and management strategies and concepts that avoid or minimize adverse environmental effects, and enhance positive effects;
- Adopting guiding principles for design and implementation of the Project, particularly those that protect air quality, sound quality, climate, and other environmental media;
- Incorporating feedback received from the public, stakeholders, Indigenous persons, and other parties so as to minimize environmental effects and address issues and concerns; and
- Promoting responsible and sustainable electricity production in the short- to medium-term while moving towards “net-zero” emissions.

In addition to the “mitigation by design” approach to the planning and design of the Project described throughout this ERR, a variety of environmental protection and management measures have been and will be adopted throughout the life of the Project. This will be done to promote the proper planning, design, construction, operations and maintenance, and ultimate decommissioning of the Project. These include but are not limited to some of the management systems, plans, and mitigation discussed in the subsections below.

2.6.2 Environmental Management System and Plans

Capital Power has a comprehensive EMS in place to manage environmental and regulatory obligations and risks associated with the construction and operation of all of its projects.

For management of environmental effects during construction, Capital Power will implement a PEMP. The PEMP which describes the plans and commitments for environmental protection applicable to the construction phase of the Project and provides guidance to manage construction that is compliant with applicable environmental legislation, permits, approvals, authorizations, and industry best practices. The PEMP will consolidate these measures into a single document for reference by all personnel working on the Project. All personnel will be trained on the implementation of the PEMP.

Each Capital Power facility has operational standards and procedures that help manage compliance with regulatory obligations.

For management of environmental effects during operations and maintenance, mitigation and management measures for the Project as outlined in the ERR and future permits and approvals will be incorporated into the standards and procedures currently in place for the existing EWCC. This may include the creation of Project-specific controls, management plans, monitoring and reporting protocols. This may also consist of updates to existing EWCC plans where shared servicing and/or resourcing is implemented such as the Emergency Response Plan.

Applicable site-specific measures will be outlined in the PEMP and site-specific operational standards and procedures.

2.6.3 Spill Prevention, Containment, and Response

The potential exists for spills during any construction activity. The potential effects of a spill could be the contamination of soils, groundwater, and/or surface water. By implementing proper handling of liquids (e.g., fuels and lubricants) during construction, the likelihood of accidental events that result in adverse effects to the environment will be prevented or greatly reduced. The PEMP will describe the management practices and procedures that will be used to prevent and manage spills, which will include but not be limited to:

- Standard containment facilities and emergency response materials will be maintained on-site as required;
- Refuelling, equipment maintenance, and other potentially contaminating activities are to occur in designated areas;
- Secondary containment infrastructure (double walled fuel tanks) and spill prevention systems (drip trays) are required for the housing of fuel(s), lubricating fluids, hydraulic fluids, antifreeze, or any other chemicals regardless of the volume; and
- Criteria and procedures for reporting spills to the MECP Spills Action Centre.

The EWCC has a comprehensive emergency response program that already includes spill response, including trained personnel, access to the necessary equipment, and arrangements with a licensed sub-contractor on-call 24-hours a day.

Hazardous materials are limited to fuels and lubricants that will be on-site for use in equipment and will be stored in appropriate storage containers and used in accordance with specific procedures (e.g., designated refuelling areas) during the construction phase. It is not anticipated that these materials will be stored in volumes that are associated with specific regulatory requirements or permits (e.g., volumes greater than 15,000 L require approval from the local source water protection agency, in this case the Essex Region Conservation Authority). However, these volumes will be determined during detailed construction planning and any applicable permits or approvals will be obtained.

During operations and maintenance, hazardous material storage will be integrated with systems and procedures already in place at the existing EWCC. Potential spills are considered unlikely, but if a spill occurred it is expected to be of a small volume and any potential the effects localized and readily mitigated. A Spill Prevention and Contingency Plan will also be developed prior to operation and will contain all required information, including those outlined in section 91.1 of the *Environmental Protection Act* (EPA) and O. Reg. 224/07.

Through the implementation of these measures, the probability of net negative environmental effects associated with spills are considered to be low.

2.6.4 Emergency Preparedness and Response

An Emergency Response Plan will be prepared and implemented during Project construction as part of the PEMP.

For operations and maintenance, the existing EWCC Emergency Response Plan will be updated to include the Project infrastructure. The Emergency Response Plan will be modified in consultation with the City’s fire department, including siting and design considerations to allow for emergency vehicle access.

2.6.5 Waste Management

While few wastes are expected to be generated during the operations and maintenance phase other than general office waste and the like, some waste materials may be generated during construction. Improper disposal of waste material generated during construction may result in contamination to soil, groundwater, and/or surface water resources. Litter generated during construction may also become a nuisance to nearby residents if allowed to blow off the construction site due to improper segregation and containment. As such, waste materials generated during construction will be temporarily stored on-site prior to their required reuse, recycling, and/or disposal at an appropriate MECP-approved off-site facility. A licensed waste contractor(s) will be retained for the hauling of waste to the appropriate facility in accordance with all applicable regulatory requirements.

The PEMP will describe best management practices to be implemented on-site for the temporary storage of non-hazardous waste materials, including but not limited to:

- Assessment of waste materials generated during construction and planning for the disposal of these materials in accordance with applicable permits and regulatory requirements;
- Collection and storage of construction waste within the Construction Footprint for transfer to licensed disposal facilities by a licensed contractor; and
- Portable washroom facilities to be provided and managed by a licensed contractor.

Hazardous materials that may require disposal are limited to fuels and lubricants that will be on-site for use in equipment. These materials are to be housed in appropriate storage containers during the construction phase by the construction contractor. Designated storage areas and requirements will be confirmed by the construction contractor as part of pre-construction activities.

As mentioned above, during operations and maintenance, the Project is not expected to generate new waste streams/materials in volumes that would require substantive changes to the existing EWCC waste management program. Operations staff will use the existing EWCC offices, including kitchens and washrooms. Small amounts of registerable waste will be produced by the maintenance of Project equipment (e.g., spent lubricants). Hazardous waste will continue to be managed in accordance with O. Reg. 347 and O. Reg. 323/22. As such, any potentially registerable waste will be removed from the general waste, labelled, and stored separately. Through the implementation of these measures, the probability of net negative environmental effects associated with the Project is considered to be low.

2.6.6 Wildlife Management

While the Project site contains no natural habitat and is fully fenced, there is potential for common urban wildlife species (including migratory birds) to be present at the work sites. Industry standard best management practices and the PEMP will describe the management practices and procedures that will be used in the event of wildlife encounters, which will include but not be limited to:

- Ornamental tree removal will occur between October 1 and March 31 to avoid the active window for bats and breeding bird season. If tree removal must occur outside this window, a wildlife sweep will be conducted to confirm the absence of nesting or roosting wildlife;

- Plans to reduce access and discourage the establishment of nests will be implemented within the Project Site; and
- Any excavation left overnight will be covered or sloped appropriately to prevent wildlife entrapment.

During operations and maintenance, response to wildlife encounters will adhere to site-specific operational standards and procedures.

2.6.7 Soil Management

The PEMP will describe the management practices and procedures that will be used to manage excess soil within the Project Site, which will include but not be limited to:

- Excess soil will remain on-site where possible for potential reuse as fill or for landscaping purposes. Excess soil required to be moved off-site will be conducted in compliance with O. Reg. 406/19 and MECP's *Management of Excess Soil – A Guide for Best Management Practices* (2014). All waste soil generated during construction (if applicable) will be segregated and disposed of in accordance with Ministry requirements; and
- Licensed contractors will be retained for hauling of waste soils to privately licensed landfill(s). Any soils which are inadvertently contaminated will be disposed of consistent with Part XV.1 of the *Environmental Protection Act* (EPA) and O. Reg. 153/04, Records of Site Condition.

Although there are no known contaminated areas within the Project Site, given the historical and current industrial use of the Project Site and adjacent lands, there is potential for encountering previously undocumented contamination during civil earthwork activities. The PEMP will include protocols and procedures to be undertaken in the event that contamination is encountered.

2.6.8 Discovery of Undocumented Archaeological Resources

The PEMP will include a protocol to address the discovery of undocumented archaeological resources, which will include but not be limited to the following measures:

- Should a previously unknown or unassessed deeply buried archaeological resource be uncovered during construction, work will cease immediately, and Capital Power will engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*;
- Once contacted, the licensed archaeologist will examine the material without further disturbing it to evaluate the cultural heritage value or interest and determine if further work is required;
- Consultation with MCM may be required, at the discretion of the archaeologist;
- Consistent with the City of Windsor's protocol, after cessation of site alteration, the City of Windsor's Planning & Building Department and the City's Manager of Culture and Events will be notified and confirm satisfaction of any archaeological requirements before work can recommence; and
- In the event of an Indigenous archaeological discovery, Indigenous communities will be contacted.

3.0 Assessment Methods and Scope

3.1 Assessment Methods

The ESP, including preparation of this ERR, was undertaken in accordance with the process outlined in the Guide, including the following key steps:

- Describe the Project including the technologies to be used;
- Describe the local environment and conditions, where the definition of “environment” is the same as that in the EA Act, and is broadly defined to include air, land and water as well as natural, cultural, social, and economic components;
- Apply screening criteria to identify the negative environmental effects that the Project has, or could potentially have, directly or indirectly on the environment at any stage in the Project life cycle in the absence of mitigation or management measures (**Appendix A**);
- Undertake an effects assessment of those Project effects that are determined by the environmental screening (**Appendix A**) to be “screened in”, including a description of:
    - potential environmental effects or concerns;
    - Project design or mitigation measures to avoid or reduce the environmental effects;
    - net effects that will remain after mitigation measures have been applied; and
    - the significance of net effects, which considers the value of the resource affected, magnitude of the effect, geographic extent of the effect, duration and frequency of the effect, reversibility of the effect, and its ecological/social context.

  The potential effects associated with the decommissioning phase of the Project are expected to be similar to those for construction. For the purposes of the ERR, the assessment for construction phase effects is also applicable to the decommissioning phase; and
- Conduct an overall assessment of the environmental advantages and disadvantages of the Project.

In addition to the requirements of the ESP, an additional MECP guidance document, the MECP Areas of Interest (v. August 2022), was reviewed for applicability to the Project and an appropriate level of detail included in the ERR to address MECP’s areas of interest. A concordance table has been provided in (**Appendix B)** to demonstrate where the specific MECP Areas of Interest have been considered within this ERR.

To support the assessment of environmental effects in the ERR, desktop and open-source information was supplemented by Project-specific information including preliminary engineering, field survey results, and various technical studies including those appended to the ERR.

The ERR also considered the results of the engagement program, including the receipt of data, information and interpretation, and feedback from government agencies, Indigenous communities, and the public.

3.2 Assessment Boundaries

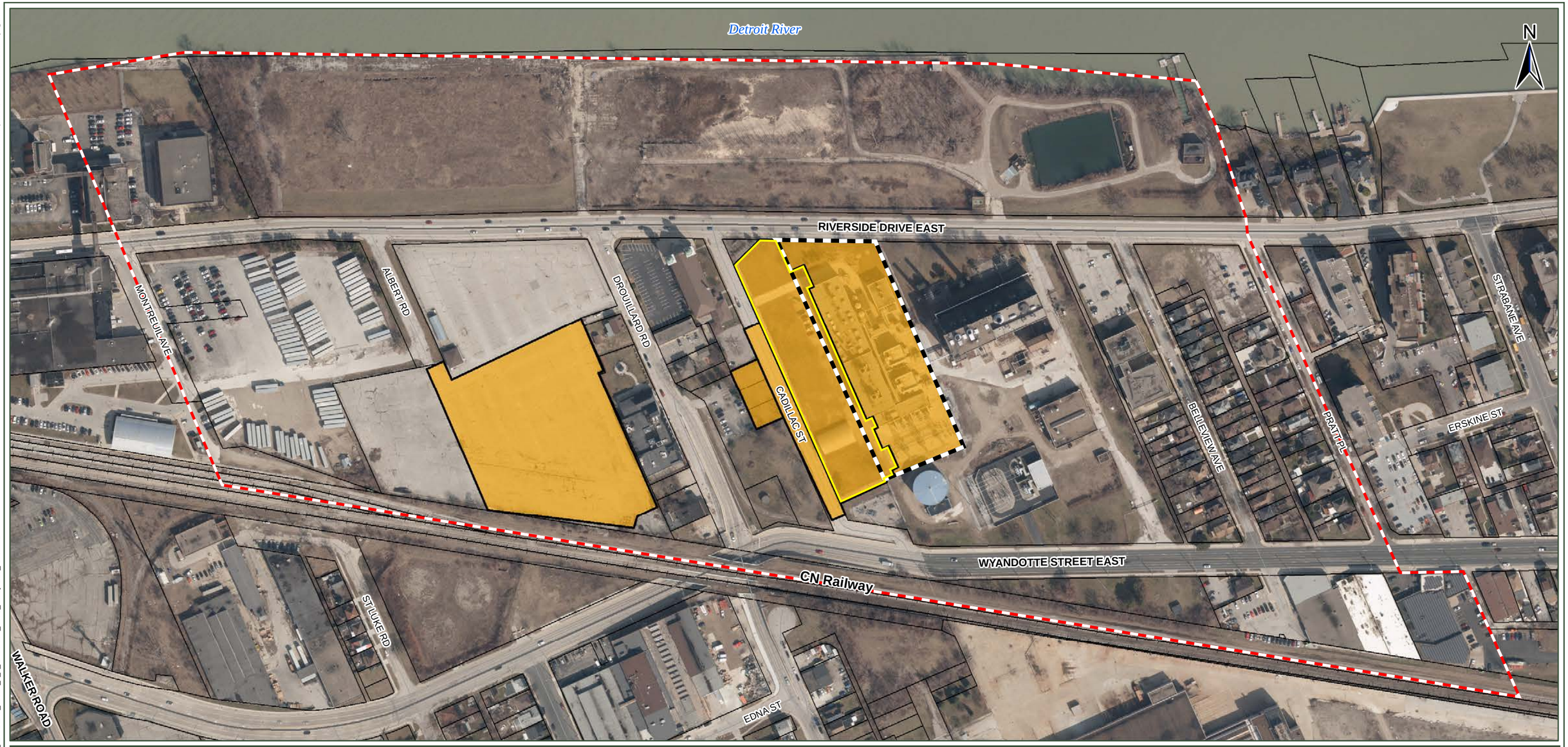
For the purposes of this ERR, spatial and temporal boundaries for the assessment were determined via examination of a series of geographic boundaries applied to the site Assessment spatial boundaries are shown in **Figure 3-1** and were defined as follows:

- **Project Site** – the portion of the Capital Power-owned lands occupied by the Project, including the gas turbine generator, main transformer station, storage and equipment buildings, electrical connection components, and key ancillary components/ infrastructure. Primarily associated with a series of parcels, municipally known as 228 to 276 Cadillac Street. Also includes small portions of adjacent lands associated with interconnection components installed for the purposes of sharing existing EWCC infrastructure.
- **EWCC Site** – the portion of the Ford Powerhouse property leased by Capital Power, where the existing EWCC is located (0.84 ha in size).
- **Construction Footprint** – includes the Project Site plus the temporary areas to be used during the construction phase (see **Figure 2-5**).
- **General Study Area** – for defining the General Study Area (GSA), a 500-m buffer was selected as the most appropriate starting point as it captures representative land uses in proximity to the Construction Footprint. The boundary was then refined based on existing land uses and physiographical features (e.g., roads and property lines) and is defined as follows:
    - Detroit River to the north;
    - CN railway to the south;
    - Montreuil Avenue to the west; and
    - Pratt Place to the east.

    The GSA is depicted in **Figure 3-1**. Environmental component-specific study area boundaries for the identification of potential environmental effects from the Project were determined based on the requirements of technical assessments and may not align with this GSA.

Temporal boundaries include construction, operations and maintenance, and decommissioning phases as described in :

- **Construction** – anticipated to have a duration of approximately 12 to 18 months, notionally beginning in Q1 of 2025 and after all applicable assessments, permits, and approvals have been obtained to enable construction to begin;
- **Operations and maintenance** – expected to be a period of 14 years (2026 to 2040), the length of the IESO contract, with the potential for future contract extension; and
- **Decommissioning** – approximately one year, at the end of the useful service life of the Project.



LEGEND:

- EWCC Site
- General Study
- Project Site
- Construction Footprint
- Parcel Fabric (City of Windsor)
- Railway

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023

0 25 50 100 150 m

SCALE 1:2,750
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

GENERAL STUDY AREA

SLR

FIGURE NO:
3-1

DATE: July 2024

PROJECT NO: 241.30524.00024

4.0 Engagement

4.1 Engagement Approach

The approach to engagement with interested and potentially affected parties, including adjacent property owners, Indigenous communities, regulatory agencies, interest groups, and members of the public, was developed using Capital Power's value driven approach to stakeholder engagement and the provincial ESP requirements as outlined in the *Guide to Environmental Assessment Requirements for Electricity Projects* (2024). The overarching objective was to notify potentially interested and affected parties of the proposed works, provide various channels for the community to provide feedback, identify concerns and possible impacts that parties believe the Project may pose, and address those concerns, where possible. Guidance was also sought from the Code of Practice outlined in the *Consultation in Ontario's Environmental Assessment Process* (MECP 2014).

As is the case with all projects, Capital Power's engagement approach is founded on respect, transparency, and a goal of developing enduring relationships that recognize the unique circumstances of individual communities and groups. Capital Power strives to engage parties who live near to, or have an interest in, its operations and developments. At the forefront of all initiatives, efforts are made to foster understanding and trust, laying the foundation for mutually beneficial relationships whenever possible.

Through a variety of engagement methods as outlined below in **Section 4.2**, Capital Power reached out to potentially interested parties early in the process and at major Project milestones.

Capital Power continues to welcome all questions and comments. As the Project progresses, any additional comments directed to Capital Power will be welcomed and dialogue will be undertaken to discuss comments and resolve any Project-specific issues, where possible.

4.2 Engagement Methods

Potentially interested and affected parties were contacted using a range of communication tools. These methods included e-mail, letter correspondence (direct mailings), phone calls, notices in the local newspaper, and a Project webpage. These methods were used to update interested parties of key Project information and milestones, as well as opportunities to provide feedback and engage in dialogue. An in-person Public Open House was held, and both virtual and in-person meetings were arranged upon request.

4.2.1 Project Contact List

The engagement program started with the identification of potentially interested parties. A Project Contact List was developed based on the previous mailing list used during approvals for the existing EWCC, MECP's *Environmental Assessment Government Review Team Master Distribution List* (March 2023)[5], input from MECP regarding potentially interested Indigenous communities, and the requirements of the ESP.

Potentially interested parties were identified as:

- Indigenous communities identified by the MECP as potentially affected by the proposed Project;
- Government (regulatory) review agencies with permitting or approval authority for the Project, or with potential interest in the Project based on review of the MECP's Master Distribution List (March 2023);
- Local regulatory review agencies, including staff from the City of Windsor and ERCA;
- Elected officials, including Members of Federal Parliament and Provincial Parliament for Windsor-Tecumseh and the City of Windsor Councillor for Ward 5;
- Utilities, including Canadian National Railway Company (CN) and Hydro One6;
- Interest groups or local organizations, including the Ontario Clean Air Alliance, Canadian Association of Physicians for the Environment, Environmental Defense, and the Windsor-Essex Regional Chamber of Commerce; and
- Nearby property owners and business operators, including the Ford Motor Company of Canada, Water's Edge Event Centre, and the Shoreview at Riverside retirement home.

The Project Contact List is used for notification purposes at key Project milestones, with communications sent via email (or letter mail where no email was identified). The Project Contact List is a "living" document and will continue to be updated throughout the Project, either through the identification of new contacts or the deletion of those that do not wish to be contacted further. A copy of the redacted Project Contact List (with personal information removed) is provided in (**Appendix C.1**).

4.2.2 Direct Mailings

A geographic area was identified for the purpose of direct mailings to potentially interested property owners, residents, business operators, and/or site managers in proximity to the Project.

[5] The *Environmental Assessment Government Review Team Master Distribution List* is an information source prepared and periodically updated by the Environmental Assessment Branch of the MECP. It is a list of federal, provincial, and municipal agency contacts and links to agency websites where additional information may be obtained for matters pertaining to EA submissions. The list includes a description of the type of EA projects to be circulated to each agency based on their jurisdiction and potential interest.

[6] Potential impacts to utilities' infrastructure, such as Rogers and/or Bell, are not anticipated. However, potential conflicts with existing utilities will be identified during the engineering and design process and if required, targeted consultation will be undertaken with applicable utilities during the construction planning process to resolve any potential interactions.

The notification limits were initially defined as an area approximately 500 m from the Project Site as it captured properties in the immediate area (shown in purple on **Figure 4-1**). This notification limit was used to capture all Canada Post "AdMail" distribution routes within this area (shown as the coloured streets on **Figure 4-1**).

Some additional mailing addresses beyond the initial notification limit were also included by default as part of Canada Post's AdMail distribution routes. The additional mailing addresses are denoted in **Figure 4-1** as anything outside of the initial notification limit (area in purple). In total, the final notification limit used for direct mailings included approximately 2,700 residences or businesses.

Figure 4-1: Mailing Notification Routes

Source: Canada Post, Your Targeting Report, June 2023

4.2.3 Project Email and Phone Number

Capital Power's contact information, including a business email address and phone number, were provided on all written notifications and correspondence to help establish a direct line of contact to the appropriate Capital Power Project team member:

Lawrence Nasen
Senior Specialist, Environment
Phone: 1-855-703-5005 | Fax: 780-392-5927
Email: info@capitalpower.com

4.2.4 Newspaper Publications

Notices were published at key Project milestones in the local newspaper, the Windsor Star. The Windsor Star is a free, daily community newspaper with a subscription base of approximately 49,000 within the City of Windsor. Project Notices were published as half-page ads.

4.2.5 Project Webpage

A dedicated Project webpage on the Capital Power website was published in November 2022 to share information online relating to the Project. The webpage provides a high-level overview of the need for new power supply in Ontario, a description of the Project and regulatory process, Project contact information, as well as links to Project documents for public review. The Project webpage will continue to be updated as the Project progresses through the permitting and approvals and construction stages. The webpage can be found at: https://www.capitalpower.com/operations/east-windsor-generation-facility-expansion/.

4.2.6 Meetings

Virtual or in-person meetings were arranged by Capital Power upon request. Offers to meet with interested parties were included throughout various Project communications, including the Project Introduction letters sent to Indigenous communities, and as part of the Notice of Commencement mailout sent to the Project Contact List. An in-person Public Open House was also held as further described below.

4.3 Notice of Commencement

Publication of a Notice of Commencement is a requirement of the ESP under the *Guide to Environmental Assessment Requirements for Electricity Projects* (2024). The Notice introduced the proposed Project and the beginning of the Environmental Review. An explanation of the ESP and an invitation to submit comments was provided. The Notice provided a map of the Project location, a brief description of the issues that were subject to detailed review as part of the ERR, Capital Power's contact information, and directed readers to the Project webpage for more detailed information.

The Notice of Commencement of an Environmental Review was published as a half-page ad in the *Windsor Star* on June 10, 2023. The Notice was additionally sent via email (or letter mail where no email was identified) on June 12, 2023, to all parties on the Project Contact List. On June 8, 2023, the Notice was delivered via Canada Post to all mailing addresses located along Canada Post's AdMail distribution routes within the Project notification limits (see **Figure 4-1** above). Copies of the Notice of Commencement, example email, and Canada Post AdMail details are provided in (**Appendix C.2**).

Following the Notice of Commencement, four comments were received from members of the public regarding noise, air quality, opposition to the Project in general, and a request to be added to the Project Contact List. **Table 4-1** below provides further details.

4.4 Public Engagement

4.4.1 Notice of Public Open House

The Notice of Public Open House was published on the Project webpage and in the Windsor Star on April 17, April 24, and May 1, 2024. Notification of the open house was also sent via email to all parties on the Project Contact List on April 15, 2024, including Indigenous communities, inviting them to attend. A newsletter providing Project background information and advertising the Public Open House (**Appendix C.3**) was also distributed the week of April 15, 2024, via Canada Post to all mailing addresses along Canada Post's AdMail distribution routes within the Project notification limits (see **Figure 4-1** above).

4.4.2 Public Open House

Capital Power hosted an in-person Public Open House on May 1, 2024, from 5:00 pm to 8:00 pm at the Giovanni Caboto Club, 2175 Parent Avenue, Windsor, to provide an opportunity for nearby property owners and Indigenous communities, businesses, and members of the public to:

- Learn more about the Project, including its need, proposed design and site layout, and the activities anticipated during both construction and operations;
- Learn about the outcome of technical studies completed to date, including potential effects and the proposed mitigation and monitoring measures;
- Hear about the next steps of the Project, including public review of the ERR and completion of the ESP, and future permitting and approvals; and
- Ask questions, provide feedback, and address any concerns regarding the Project with the Project team.

Opportunity was provided for attendees to participate in the engagement process by viewing the display materials set up around the room, asking questions, and providing feedback. Attendees were provided with comment forms for written submissions. No formal presentation was given.

The Public Open House was well attended by approximately 30 people, with 25 attendees signing in over the course of the evening (**Appendix C.3**). Display materials included:

- Background information on Capital Power;
- An overview of the growing demand for electricity in both Ontario and the Windsor-Essex region;
- A Project description including the location, layout, key components, architectural renderings, and proposed schedule;
- An overview of the regulatory framework and permitting and approval requirements; and
- Key findings of the technical effects assessments, including cultural heritage, noise, GHG emissions, air quality, and human health.

Copies of the display materials were provided to one attendee upon request, and they were subsequently made available on the Project website.

Capital Power team members and key technical discipline leads were stationed throughout the room to discuss the Project with attendees, answer questions, and record comments. In addition, IESO representatives were present to further elaborate on the need for the Project.

As shown in **Table 4-1**, questions and feedback from the Public Open House attendees were related to a variety of topics, ranging from the existing EWCC operations to results of technical studies, to general support for the project. The most frequently heard questions or comments were associated with understanding the need for the Project, potential effects during construction, and potential effects to air quality and human health.

Feedback forms were also available to the public, which asked how they learned about the open house, their main reason for attending, if the information presented was satisfactory, and if they had any outstanding questions or comments. Attendees could also provide their contact information if they wished to be added the Project Contact List, or to request additional follow-up.

A total of seven feedback forms were received and no written requests for follow-up were received. Several attendees were interested in the existing EWCC operations, and Capital Power committed to providing a site tour for these local residents (see **Section 4.4.3**). All attendees verbally confirmed that the Project Team had answered all their questions during the meeting.

(**Appendix C.3**) provides more detailed information, including a copy of the Project mailout, newspaper advertisement, display materials, sign-in and feedback forms (personal information obscured), and a summary of the questions/comments heard or received, and how they have been considered.

4.4.3 EWCC Site Tour

In response to discussions with a group of interested local residents at the Public Open House, a site tour of the existing EWCC was held on June 6, 2024 from approximately 10:30 am to 11:40 am. The local residents requested a site tour to better understand the location, set up and how the expansion Project will work within the existing EWCC site. The tour included an overview of how the existing EWCC plant operates and where the expansion Project will be situated. During the tour attendees were shown where the expansion will be in relation to their neighboring homes. Questions and/or comments received during the site tour were primarily focused on curiosity and understanding how the existing EWCC operates. The local residents who toured the EWCC site sent a letter and thank you card in follow-up to the site visit which was received on June 17, 2024 (see **Appendix C.3**).

4.4.4 Water’s Edge Event Centre

Engagement with the owner of the Water’s Edge Event Centre has been ongoing since the Notice of Commencement was issued in June 2023. Capital Power met in-person with the owner on July 7, 2023, to discuss the Project and any preliminary concerns, which included noise, vibration, visual impacts, parking, and other construction and operation impacts. Capital Power committed to further discussions regarding the approach to construction and any potential impacts from heavy equipment, as well as the possibility of renting the commercial units fronting Cadillac Street during construction. The Water’s Edge Event Centre owner responded on July 14, 2023, thanking Capital Power for the meeting and noting that he hopes to work with Capital Power on a solution to any issues of concern that could affect his business.

Various emails were exchanged throughout the period of July – December 2023 relating to negotiations associated with the availability of commercial rental units. An in-person meeting was also held on February 1, 2024 to discuss the Project in relation to the Water's Edge Event Centre. Project renderings and information on construction methods have been provided to the owner and discussions regarding the rental units are continuing.

In February 2024, Capital Power learned that two units associated with the Water's Edge Event Centre had been rented. Capital Power hand-delivered a letter to the residents of these units on March 25, 2024, informing them of the Project and offering to meet to provide further information.

4.4.5 Shoreview at Riverside Retirement Home

On September 13, 2023, Capital Power left a voicemail with the Shoreview at Riverside retirement home and followed-up via email by re-sending the Notice of Commencement on the same day. On January 25, 2024, Capital Power met in-person with the General Manager of the retirement home. Capital Power presented Project background information and answered follow-up questions regarding the Project boundaries, as Shoreview at Riverside is required to complete regular analysis of risks within approximately one km of the residence. The General Manager also expressed interest in the Emergency Response Plan being prepared for the Project.

A follow-up email was sent on January 30, 2024, which included further information on the Project and an offer to discuss emergency response planning. Capital Power will continue to find opportunities to meet with this stakeholder.

4.4.6 Summary of Public Comments

Table 4-1 provides a summary of the key comments and topics of concern received from the public throughout the ERR process. Copies of correspondence including comment sheets received at the Public Open House and Capital Power's responses to questions and comments are provided in (**Appendix C.3**).

Table 4-1: Summary of Public Comments

Theme	General Topics
EWCC	Existing Facility Operations (components/design, history of facility, dispatch)
Project Need / IESO	IESO (procurement process, contract award process)
	Need for Power (Ontario and Windsor-specific)
	Need for Natural Gas Generation (costs and benefits)
	Consideration of alternatives (energy storage, renewable energy)
	Project location (site selection)
	Costs (who pays for the Project)
Project Description	Components and Dispatching (frequency, dispatch process)
	Hydrogen (proposed use, future use)
Environmental Screening Process	Environmental effects scope (types of effects considered)
	Public engagement and review period
	City of Windsor's role
	Regulatory approvals process (sequence of process steps)
Construction	Construction timeline
	Vibration Impacts (effects on heritage buildings, mitigation measures)
Aesthetics	Building design (architecture, landscaping)
Noise	Noise in local area (during operation)
Air Quality	Air Quality emissions (will there be effects, would like to see reduction in emissions, will Project cause smog or produce dust, will it be clean burning, hope it will be efficient)
Greenhouse Gas (GHG) Emissions	GHG Emissions (what will the emissions be, are details available)
Health Effects	Health concerns (health risks, impacts on people with asthma)
Socio-Economic	Cadillac Street Park (access restrictions)
	Employment opportunities (construction, operation)
	Nearby land use changes (potential new developments in study area)
Other	Requests to be added to Project Contact List
	Project support (good project, needed in this area)

4.5 Agency Engagement

Engagement with the MECP, the City of Windsor and other government agencies began early in the Project planning phase as detailed in the Record of Engagement (**Appendix C.4**). All those listed on the Project Contact List were provided with a copy of the Notice of Commencement, Notice of Public Open House, and Notice of Completion. Correspondence exchanged with government agencies is further described below.

4.5.1 Ministry of the Environment, Conservation and Parks

The MECP is the provincial ministry with jurisdiction over the ESP and future ECA processes; therefore, Capital Power will continue to engage with the MECP as needed throughout the Project planning process. Key points of contact to-date are summarized below and copies of key correspondence have been included in (**Appendix C.4**):

- The MECP was first contacted in November 2022 as part of the early project planning works to confirm provincial permitting requirements and obtain a preliminary list of potentially interested Indigenous communities. Preliminary Project information was provided and a meeting with the MECP staff was held on December 16, 2022, to provide an overview of the IESO procurement process and the proposed Project and discuss approval requirements. Further correspondence through February and March 2023 included preliminary guidance on applicable approval processes and a preliminary list of potentially interested Indigenous communities.
- A meeting was held with the MECP on July 7, 2023 to provide a Project update and discuss future ECA application processes.
- The MECP formally acknowledged the Notice of Commencement on July 10, 2023, and in their response, included the list of potentially interested Indigenous communities and guidance on the ESP. Their letter also included an introduction to the delegation of procedural aspects of consultation with Indigenous communities, a guide for preliminary screening for Species at Risk (SAR), and a document identifying the MECP's "Areas of Interest" (August 2022) with respect to the ESP. Guidance material was reviewed, and applicable information has been considered and/or incorporated in this ERR.

The Draft ERR was shared with the MECP for review on April 12, 2024, and comments received from the MECP during the period of April to June 2024 are provided in (**Appendix C.4)**, and addressed within this ERR, where applicable.

Capital Power will continue to correspond with the MECP throughout completion of the ESP and during the future permitting and approvals phase related to the ECA (Air & Noise) and ECA (Industrial Sewage Works) applications.

4.5.2 Ministry of Citizenship and Multiculturalism

The MCM responded to the Notice of Commencement on July 11, 2023. They indicated that MCM's interest in the Project includes archaeological resources, built heritage resources, and cultural heritage landscapes. Guidance was provided related to MCM standards and requirements for the evaluation of these resources.

The MCM recommended that the MCM's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* be completed to determine whether there may be potential impacts to these cultural heritage resources and if so, next steps.

MCM requested to be notified if a Cultural Heritage Evaluation Report will be completed and asked to be provided a copy before issuing the Notice of Completion. The MCM further recommended that if the property or Project area is determined to be of cultural heritage value or interest and alterations or development is proposed, a Heritage Impact Assessment be prepared by a qualified consultant to assess potential Project impacts. The MCM requested that a copy of the Heritage Impact Assessment be provided for their review, along with the City of Windsor, Indigenous communities, and that the report be made available to local organizations or individuals who have expressed interest in review.

As requested by the MCM, both the *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* () and the *Built Heritage Impact Study: 2879 Riverside Drive East* () were provided to the MCM for review and comment on April 29, 2024, and comments were received on May 29, 2024. The MCM noted that the reports were found to be consistent with the best practice guidance prepared by the Ministry; however, comments were provided to assist with cultural heritage due diligence documentation. MCM's comments were addressed, and the final reports were provided to MCM on June 28, 2024.

Any further comments received from MCM will be addressed as the Project proceeds.

4.5.3 City of Windsor

Engagement with the City of Windsor began prior to the Notice of Commencement in mid-to-late 2022 as part of the IESO E-LT1 RFP process. Engagement and discussions ultimately resulted in receipt of a Municipal Council Support Resolution for this Project on January 16, 2023. The Municipal Council Support Resolution was provided as part of Capital Power's submission to the IESO.

On February 28, 2023, City of Windsor Planning Division staff were contacted to initiate the Site Plan Approval pre-consultation process to identify the City of Windsor's interests and approval requirements. During the period of March 1 to May 29, 2023, Capital Power submitted conceptual Project description information for the City of Windsor's review and feedback and received preliminary guidance regarding Site Plan Approval submission requirements and identification of other potentially applicable municipal approvals. Correspondence during this period included various emails and phone calls where the City of Windsor provided feedback and asked questions, and Capital Power provided responses and clarifications and submitted updated or supplementary information as needed.

The Notice of Commencement was shared with City of Windsor staff and Councillors on June 9, 2023, prior to its formal issuance to the rest of the Project Contact List.

Based on continued Project engineering and selection of the gas turbine and generator unit, Capital Power provided a revised Project design and site plan to the City of Windsor for review and feedback on July 7, 2023. During the period of July to December 2023, the City of Windsor and Capital Power corresponded via various meetings, emails, and phone calls. The City of Windsor expressed concerns related to the visual aesthetic of the proposed design, and provided comments and guidance related to noise, trees and landscaping, SWM, and the overall Site Plan Approval process. Staff also directed Capital Power to the City's Ford Powerhouse District and Ford City Community Improvement Plans (CIPs), as well as excerpts compiled from the City's Official Plan.

Additionally, City of Windsor planning staff provided guidance in November 2023 related to the application process for the temporary closure of Cadillac Street.

In response to the City of Windsor's concerns related to visual aesthetics, Capital Power prepared architectural renderings to accompany the site layout drawings and made a series of adjustments to the proposed design to accommodate the City of Windsor's feedback and alignment with local CIPs.

As a result, Capital Power revised the Project design to enclose as much of the equipment as possible within an equipment building structure, integrated the storage building into the design of the equipment building, and retained a local architecture firm to design the storage and equipment buildings to mimic the Ford Powerhouse and existing EWCC administration building. On December 22, 2023, City of Windsor planning staff accepted the proposed design and provided formal direction on the Site Plan Approval requirements. Since then, various technical submissions to the City of Windsor have been made as part of the Site Plan Approval process, and Capital Power will continue to provide information in support of the future formal application process.

Discussions also occurred with the City of Windsor's Chief Fire Prevention Officer (Windsor Fire & Rescue Services) on October 23, 2023 regarding the existing Emergency Response Plan and fire route considerations for the Project. On November 15, 2023, the Chief Fire Prevention Officer confirmed that the fire route would be in front of the building at the road and there is space to hook up the sprinkler connection on the north side.

Both the *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* () and the *Built Heritage Impact Study: 2879 Riverside Drive East* () were provided to the City of Windsor's heritage planning staff for review and comment on April 26, 2024, and comments were received on May 23, 2024. Heritage planning staff agreed with both reports, noting that the recommendations and mitigation measures outlined therein will be requested as part of Site Plan Approval or pre-permit conditions. Heritage planning staff also agreed to waive the requirement for a Built Heritage Impact Study for the Ford Powerhouse and requested that the Construction Vibration Control Study include specific reference to the consideration of potential impacts on the Ford Powerhouse. The City of Windsor's comments were addressed in the final Cultural Heritage Report, Built Heritage Impact Study, and Construction Vibration Control Study (**Appendix D.9**) and the finalized cultural heritage reports were provided to City of Windsor heritage planning staff on June 28, 2024.

As the design is further refined, Capital Power will continue to work with the City of Windsor as part of the Site Plan Approval application process.

4.5.4 Essex Region Conservation Authority

The ERCA was included on the Project Contact List and the Notice of Commencement was shared with ERCA staff on June 12, 2023. Capital Power also sent a request to the ERCA Risk Management Office on February 23 and March 22, 2024, requesting input on any concerns related to source water protection. A response was received on April 3, 2024, confirming that the Project is located within both an IPZ-2 and EBA. ERCA also provided a list of Significant Drinking Water Threats (SDWT), activities in the EBA and IPZ-2 areas, that would trigger the need for and application under Section 59 of the Ontario *Clean Water Act*.

In response to the Notice of Public Open House, on April 18, 2024, a different ERCA staff member recommended contacting the ERCA Risk Management Office regarding source protection plan policies that may apply to Project. Capital Power was able to confirm in an email sent April 26, 2024 that no activities identified as SDWTs were planned for the Project.

The City of Windsor is anticipated to involve the ERCA as needed during the City's Site Plan Approval process.

4.5.5 Hydro One

Hydro One, Secondary Land Use, Asset Optimization, Strategy & Integrated Planning responded to the Notice of Commencement on June 22, 2023, confirming that Hydro One has existing high voltage transmission facilities within the study area. Hydro One requested confirmation that their infrastructure and associated rights-of-way will be completely avoided, or if not possible, to allocate appropriate lead-time in the project schedule to collaboratively work though potential conflicts with Hydro One. Hydro One also requested to be kept informed of the Project, noting that they must be consulted during all stages of the Project.

Capital Power confirmed during the System Impact Assessment work completed as part of the IESO E-LT1 RFP process that no downstream Hydro One infrastructure would be impacted as a result of this Project. Further, on May 7, 2024, in response to the Notice of Public Open House, Hydro One confirmed there are no existing Hydro One transmission assets in the area. Since then, Capital Power has continued to work with Hydro One to identify appropriate planning and design with respect to Hydro One infrastructure and approval requirements and will continue to engage with them as the Project progresses.

4.6 Indigenous Community Engagement

The MECP provided a preliminary list of Indigenous communities that the MECP recommended be engaged during early Project planning via email on March 22, 2023. Following the Notice of Commencement, on July 10, 2023 the MECP provided the formal Project-specific list of Indigenous communities identified by the Crown as potentially affected by the Project and delegated the procedural aspects of rights-based consultation to Capital Power. The list included: Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point First Nation, Chippewas of the Thames First Nation (COTTFN), Delaware Nation, Munsee-Delaware Nation, Oneida Nation of the Thames, and the Walpole Island First Nation (WIFN). Capital Power also identified the Three Fires Group and the Métis Nation of Ontario as potentially interested Indigenous groups and they were added to the Project Contact List (**Appendix C.5**).

Communications with all Indigenous communities[7] both before and during the ESP for the ERR included the following touchpoints to-date:

- April 12, 2023 – Letters introducing the proposed Project were sent prior to notifications being issued to the broader public. The letters introduced Capital Power, the need for new power supply in the province as determined by the IESO, outlined the proposed Project, and extended an invitation to meet with the Project Team to learn more about the Project;
- May 17, 2023 – Project update regarding IESO contract award;
- June 9, 2023 – Notice of Commencement of an Environmental Review;

[7] The Delaware Nation and the Munsee-Delaware Nation were not originally included in MECP's initial list sent March 22, 2023. As such, they were not included in the April 12, May 17, and June 9, 2023 touchpoints. Similarly, the Three Fires Group did not receive all Project communications as further discussed in Section 4.6.9 below.

- February 23, 2024 – Project update regarding ERR review, availability of capacity funding, results of archaeological review, the upcoming Public Open House, and a community visit request; and
- July 5, 2024 – Notice of Completion.

A summary of the additional community-specific notification and engagement activities is provided below.

4.6.1 Aamjiwnaang First Nation

Aamjiwnaang First Nation's community is located on the shores of the St. Clair River in Ontario. In 1827 they signed Treaty 29 which created four reserves: one along the southern boundary of St. Clair Township; one at Sarnia; and two on Lake Huron (one located at Kettle Point and one at the mouth of the Au Sauble River).

In addition to formal Project notices and updates, on July 11, 2023, communication with Aamjiwnaang First Nation's Band Manager was made via voicemail, and an email was sent later that day as a follow-up which included previous correspondence. No response was received.

Capital Power updated the Aamjiwnaang First Nation on the Draft ERR and its key findings on February 23, 2024. The update also invited the community to review the documents and a request for capacity. Capital Power followed up with an email on March 4, 2024, and a phone call on March 13, 2024. The community requested capacity information, and on March 20, 2024 Capital Power acknowledged this request by sending a capacity agreement. To date, no response has been received from Aamjiwnaang First Nation. Capital Power will address any comments from the Aamjiwnaang First Nation as the Project continues.

4.6.2 Caldwell First Nation

Caldwell First Nation's community is in Leamington, Ontario, and their traditional territory includes Point Pelee and Pelee Island. In 2020, Caldwell settled their land claim that lasted over 220 years and secured a reserve in Leamington.

On July 11, 2023, via phone call with the Chief, Caldwell First Nation requested that all previous project notifications be reissued. Capital Power re-sent all related project information and correspondence to the Caldwell First Nation in a follow-up email that same day. No response was received.

Capital Power updated the Caldwell First Nation on the Draft ERR and its key findings on February 23, 2024. The update also invited the community to review the documents and requested a meeting to discuss capacity review funding. Capital Power followed up with an email on March 4, 2024, and a follow-up call was made by Capital Power on March 13, 2024. On April 11, 2024, Caldwell First Nation's Environment and Consultation Department Manager requested that Project documents be submitted for review, and that same day, Capital Power provided a Capacity Funding Agreement for review. On April 12, 2024, a link was provided to download the Draft ERR, including a request for comments by May 12, 2024. On April 29, 2024, Caldwell First Nation advised Capital Power that review of the agreement was in process, and on May 8, 2024, Caldwell First Nation sent Capital Power their own Technical Review Agreement Form. Capital Power responded that same day, noting that review of the agreement was underway, providing a link to the Public Open House materials, and offering to meet to try to resolve any concerns before the public review period.

Between May 9 and June 10, 2024, email correspondence was exchanged regarding requested changes to the agreement, project plan and scheduling, and extension of the comment deadline. To date, no capacity funding agreement has been signed and no comments have been provided by Caldwell First Nation.

Any comments received from Caldwell First Nation will be addressed as the Project progresses.

4.6.3 Chippewas of Kettle and Stony Point First Nation

Chippewas of Kettle and Stony Point First Nation's community is located on unceded territory located along the south shore of Lake Huron at Kettle Point, Ontario. The Chippewas of Kettle and Stony Point are signatories to the 1827 Treaty 29 or the Huron Treaty.

On July 11, 2023, Capital Power followed-up with the Chippewas of Kettle and Stoney Point First Nation via phone call and re-sent all related correspondence to the Consultation Representative via email that same day. No response was received.

On March 4, 2024, Capital Power provided the Chippewas of Kettle and Stoney Point First Nation with an update regarding the timing of Draft ERR for review, if they chose to do so. On March 13, 2024, a follow-up call was made by Capital Power, a new email address was provided by the Chippewas of Kettle and Stoney Point First Nation, and the information previously sent was provided that same day to the new email address. On April 9, 2024, the community requested to be included in reviewing the ERR, and an email was sent to the new consultation person with the document list and capacity agreement.

Comments on the Draft ERR from the Three Fires Group, on behalf of the Chippewas of Kettle and Stony Point First Nation, were received on June 14, 2024. Their letter indicated that although they have no specific concerns with the Project, they have broader concerns regarding cumulative impacts of natural gas and other development projects that have occurred and are occurring throughout their traditional territory. Capital Power is committed to ongoing dialogue with the Three Fires Group, on behalf of the Chippewas of Kettle and Stony Point First Nation and is in the process of coordinating further discussions related to these broader concerns. Any further Project-specific comments received from the Chippewas of Kettle and Stony Point First Nation will be addressed as the Project progresses.

4.6.4 Chippewas of the Thames First Nation

The community of the COTTFN is located approximately 24 km west of St. Thomas, Ontario. They were the sole signatories of the Longwoods Treaty which was negotiated between 1818 to 1822. Additionally, they are signatories of the London Township Treaty of 1796, the Sombra Treaty of 1796, Treaty 29 of 1827, and the McKee Treaty of 1790.

On June 5, 2023, COTTFN responded to the Project introduction letter and provided a copy of the COTTFN Consultation Protocol. Capital Power acknowledged receipt on June 6, 2023. A voicemail was left with COTTFN's Consultation Coordinator on June 26, 2023, and a follow-up email was sent on July 7, 2023, which answered COTTFN's previous questions regarding archaeology and the Project's use of hydrogen.

On July 27, 2023, a meeting was held with COTTFN to discuss the Project and COTTFN's consultation process. On August 22, 2023, Capital Power followed-up with COTTFN's Consultation Coordinator regarding the consultation protocol, and an updated protocol was received from COTTFN on August 23, 2023. In response, Capital Power requested clarity on the engagement service fee. It was agreed that the matter of fees for COTTFN's review of the Project studies would be further discussed closer to when the studies would be available.

On January 26, 2024, Capital Power noted that the Draft ERR was forthcoming and that COTTFN should expect more information in the coming weeks. Capital Power updated the COTTFN on the Draft ERR and its key findings on February 23, 2024. The update also invited the community to review the documents and a request for capacity. Capital Power followed up with an email on March 4, 2024. Capital Power provided COTTFN with a draft capacity funding agreement on March 19, 2024, and subsequently responded to COTTFN's requests for information on the agreement. Emails were exchanged between April 8 and May 7, 2024 regarding the capacity funding agreement.

Comments on the ERR from the COTTFN and a third-party reviewer were received on June 14, 2024. Comments and questions related to topics that included the need for the Project including design, economics and alternatives, environmental impacts including air quality and GHG concerns, and editorial corrections. Capital Power met with COTTFN on June 24, 2024 to discuss the comments on the Draft ERR and during the meeting and in follow-up email correspondence agreed on the approach for documentation of their comments within the ERR. Capital Power is committed to ongoing dialogue with the COTTFN and is in the process of preparing detailed responses to their questions and concerns on the Draft ERR, which were also considered during finalization of the report. Any further Project-specific comments received from the COTTFN will be addressed as the Project progresses.

4.6.5 Delaware Nation

Delaware Nation's community is located approximately 24 km west of St. Thomas, Ontario on the south side of the Thames River. Their reserves are located within the unincorporated community of Muncey and are splintered into several non-contiguous areas made up of individual lots within the Chippewas of the Thames reserve. While not signatories, Delaware Nation was granted land through the London Township Purchase of 1796 and the McKee Purchase or Treaty 2 of 1790.

Delaware Nation was first contacted on July 14, 2023 after MECP's July 10, 2023 correspondence indicated that the Delaware Nation was also to be engaged. Capital Power sent Delaware Nation a request to engage, including an introductory letter, Project background, the Notice of Commencement, and a link to the Project website.

On July 20, 2023, Capital Power spoke to a representative of Delaware Nation who confirmed receipt of the Project materials, agreed to pass them on to the Chief, and said “everything is fine” if Capital Power does not hear back. No response was received.

Capital Power updated the Delaware Nation on the Draft ERR and its key findings on February 23, 2024. The update also invited the community to review the documents and a request for capacity. Capital Power followed up with an email on March 4, 2024. A follow-up call was made by Capital Power on March 13, 2024, and a new email address was provided by the Delaware Nation. The information previously sent was forwarded that same day to the new email address.

To date, no comments have been received from the Delaware Nation. Any comments received from the Delaware Nation will be addressed as the Project progresses.

4.6.6 Munsee-Delaware Nation

The Munsee-Delaware Nation’s community is located approximately 24 km west of St. Thomas, Ontario on the west bank of the Thames River. Like the Delaware Nation, their reserves are located within the unincorporated community of Muncey and are splintered into several non-contiguous areas, made up of individual lots within the Chippewas of the Thames reserve. While not signatories, Munsee-Delaware Nation was also granted land through the London Township Purchase of 1796 and the McKee Purchase or Treaty 2 of 1790.

The Munsee-Delaware Nation was initially contacted via phone call on July 12, 2023 after MECP’s July 10, 2023 correspondence indicated that the Munsee-Delaware Nation was also to be engaged. On July 13, 2023, Munsee-Delaware Nation were sent the request to engage, including an introductory letter, Project background, the Notice of Commencement, and a link to the Project website. On July 20, 2023, Capital Power spoke to a representative of the Munsee Delaware Nation who requested that the Project materials be re-sent and said that the information would be forwarded to the Band manager. The request to engage was re-sent that same day, but no response was received.

Capital Power updated the Munsee-Delaware Nation on the Draft ERR and its key findings on February 23, 2024. The update also invited the community to review the documents and a request for capacity. Capital Power followed up with an email on March 4, 2024.
On March 13, 2024, a follow-up call was made by Capital Power, a new email address was provided by the Munsee-Delaware Nation, and the information previously sent was forwarded that same day to the new email address.

To date, no comments have been received from the Munsee-Delaware Nation. Any comments received from the Munsee-Delaware Nation will be addressed as the Project progresses.

4.6.7 Oneida Nation of the Thames

Oneida Nation of the Thames’ community is located alongside the Munsee-Delaware Nation, Delaware Nation, and COTTFN communities near St. Thomas, Ontario. Oneida Nation of the Thames were granted land through the London Township Purchase of 1796, and the McKee Purchase or Treaty 2 of 1790.

On July 11, 2023, Capital Power spoke via phone call with a representative of the Oneida Nation of the Thames who confirmed receipt of the Project materials and said they would be forwarded to the appropriate contact. No further correspondence or Project-related comments were received.

Capital Power updated the Oneida Nation of the Thames on the Draft ERR and its key findings on February 23, 2024. The update also invited the community to review the documents and a request for capacity. Capital Power followed up with an email on March 4, 2024. A follow-up call was made to the community on March 13, 2024, and the Oneida Nation of the Thames representative confirmed that the information had been forwarded to their Committee but they had not yet heard back.

To date, no comments have been received from the Oneida Nation. Any comments received from the Oneida Nation of the Thames will be addressed as the Project progresses.

4.6.8 Walpole Island First Nation

WIFN's community is located on Walpole Island, Ontario, in the mouth of the St. Clair River on Lake St. Clair. It is unceded territory and the reserve also includes Squirrel Island, St. Anne Island (surrounded by Syme and Johnson Rivers), Seaway Island (except a small U.S. portion), Bassett Island, and Potawatomi Island. WIFN are signatories to the 1790 McKee Treaty, also referred to as the Detroit Treaty, as well as the 1796 Chenail Ecarte Treaty.

On April 13, 2023, WIFN responded to the Project introduction letter and requested a meeting with Capital Power.

The meeting was held virtually on April 27, 2023 to introduce the Project and discuss WIFN's interests in relation to the Project. On April 28, 2023, Capital Power sent a follow-up email which included the meeting presentation materials and as requested by WIFN, a list of other Indigenous communities being engaged as per MECP's direction. On May 8, 2023, a summary of the meeting was provided to WIFN, along with discussion regarding a second meeting in the community. On May 9, 2023, WIFN circulated materials previously mentioned in the introductory meeting, including academic papers and legal documents.

A second meeting with WIFN was held in person at the WIFN Cultural Centre on July 7, 2023. The meeting included discussion on the materials provided by WIFN on May 9, 2023, particularly the history of Indigenous peoples in the area, the nature of historic deeds, and how these deeds differ from the treaties made with the Crown. Capital Power provided a Project update, and WIFN asked to be notified when studies would be available for review so they could advise their consultants, as well as discuss capacity funding with Capital Power. Further discussion occurred regarding WIFN economic participation and benefits, and construction contracting and operations employment opportunities. WIFN noted they want to see the Project built in an environmentally sound manner as possible, requested cultural awareness sessions be incorporated into morning safety briefings during construction, and any issues that arise involve WIFN's elected Council. A summary of the meeting discussions was provided to WIFN by Capital Power on July 12, 2023. On August 22, 2023, Capital Power committed to keeping WIFN updated regarding when technical reports would be available for their review.

On January 3, 2024, WIFN requested an update meeting. A meeting between Capital Power and WIFN took place at the WIFN Cultural Heritage Center on January 24, 2024, and the meeting summary was issued to WIFN by Capital Power on February 2, 2024.
Further information on the ERR review process, findings of the archaeological review, and capacity funding was then sent to WIFN on February 8, 2024. WIFN indicated that they wanted to see the Draft ERR before they would discuss a capacity funding arrangement.

On March 22, 2024, Capital Power emailed WIFN a list of the anticipated ERR documents and approximate page numbers. A draft capacity funding agreement was also provided at that time. The offer to further meet WIFN regarding community benefits was also extended.

On April 2, 2024 Capital Power sent a follow up email, then followed up with a call on April 8 and left a voicemail, and then followed up with an email the same day. On April 11 and 12, 2024 Capital Power sent information to the new contact taking over the files for WIFN. WIFN responded on May 2, 2024 indicating they are still confirming who would be the point of contact for external projects while there are organization transitions. Capital Power sent an email on May 16, 2024 indicating there was an extension for the review.

To date, no comments have been received from the WIFN. Any comments received from the WIFN will be addressed as the Project progresses.

4.6.9 Three Fires Group

The Three Fires Group is a wholly First Nation-owned economic development corporation headquartered in the Chippewas of Kettle and Stony Point First Nation, with owned-and-operated investments in tourism, real estate, retail, and a full-service professional services division. They are part of a confederacy that make up the Anishinabek Nation which includes the Ojibway, Chippewa, Odawa, Potawatomi, Mississauga, Algonquins, Delawares, and Oji-Cree. Their interests stretch across territories and borders, from Alberta to Ontario, and Quebec and the Atlantic provinces into Michigan, Wisconsin, and Minnesota.

The Three Fires Group approached Capital Power in September 2022 regarding partnership opportunities through the IESO E-LT1 RFP process. As a result, the Three Fires Group was invited to meet to further discuss the Project on December 4, 2022. A meeting was held on January 10, 2023. At that time, Capital Power learned that the Three Fires Group does not invest in facilities fueled by natural gas or other fossil fuels. The parties agreed to keep open the possibility of working together in the future.

Capital Power kept the Three Fires Group informed of the Project via issuance of all formal Project notices. Capital Power received an email on April 9, 2024 from Chippewas of Kettle and Stony Point First Nation stating a new person from the Three Fires Group was taking over the consultation. The Three Fires Group submitted comments on behalf of the Chippewas of Kettle and Stony Point First Nation (see **Section 4.6.3**).

Any comments received from the Three Fires Group will be addressed as the Project progresses.

4.6.10 Métis Nation of Ontario

The Métis Nation of Ontario represents Métis people and communities in Ontario that are a part of the Métis Nation. In 2019, the Métis Nation of Ontario and the Government of Canada signed the Métis Nation of Ontario-Canada Métis Government Recognition and Self-Government Agreement. The Agreement, for the first time, recognized that the Métis communities represented by the Métis Nation of Ontario hold the inherent right to self-government and self-determination. The Agreement also provided a path for the Métis Nation of Ontario to transform into a recognized Indigenous government. The Métis Nation of Ontario Office in Windsor is the closest to the Project Site.

In addition to formal Project notices and updates, on July 11, 2023, Capital Power spoke to a Métis Nation of Ontario staff member who confirmed receipt of the Project materials and said they would forward them to the consultation contact. No response was received.

On March 6, 2024, Capital Power provided the Métis Nation of Ontario with an update regarding the Project, forthcoming Draft ERR, and Public Open House. No response was received.

To date, no comments have been received from the Métis Nation of Ontario. Any comments received from the Métis Nation of Ontario will be addressed as the Project progresses.

4.7 Other Engagement

Commercial meetings and discussions have been held regarding the Project with:

- Ford Motor Company of Canada, as an adjacent landowner of the Ford Powerhouse property, including a meeting with a representative from Ford on November 2, 2023;
- Enbridge, related to operations of the gas yard adjacent to the Project Site; and
- The owner of the Matilda Street parking lot for temporary storage and laydown.

No concerns related to the Project have been identified by these parties to-date.

4.8 Summary of Key Outcomes

A summary of the key engagement outcomes is provided in **Table 4-2**, documenting how input has been taken into account in the Environmental Review process and in Project planning and development. A copy of relevant correspondence and communications is included in the Record of Engagement as (**Appendix C)**.

As the Project progresses through detailed design and permitting and approval processes, if further comments are received from those having an interest in the Project, dialogue will be undertaken to address comments and resolve any remaining issues, where possible.

Table 4-2: Summary of Key Engagement Outcomes

Commentor	Summary of Key Comments	How Comments were Considered
Local Residents, Property and Business Owners	• General concerns primarily related to air, GHG, vibration, noise emissions and health effects.	• Although not required as part of the ESP, to be transparent Capital Power has made the technical supporting documents in **Appendix D** publicly available. • In response to anticipated public concerns, a Screening Level Human Health Risk Assessment was undertaken in relation to Project operational emissions (**Appendix D.11**). • Capital Power provided a site tour of the existing EWCC for several local residents who also attended the Public Open House.
Ministry of the Environment, Conservation and Parks (MECP)	• Guidance related to MECP's Areas of Interest provided. • Noise Assessment report received comments associated with modelling methods, text clarifications, sound level limits, and calculation standards. • Recommended consistency edits to the Screening Checklist. • Questions related to the structure and organization of project documents relating to spills prevention and contingency planning. • Additional detail was requested regarding the implementation of recommendations in the 2007 Phase I and Preliminary Phase II ESA report prepared as part of the original EWCC development.	• A concordance table identifying how MECP's Areas of Interest have been considered in the ERR has been prepared and provided in **Appendix B**. • The Noise Assessment was updated to address the MECP comments (**Appendix D.3**). Modelling was updated to normalize the directivity patterns, calculations were updated to reflect the recommended reference material, and the report text and tables were updated in accordance with MECP feedback, • The Screening Checklist (Appendix A) was updated to correct the discrepancy. • Clarification was added to the ERR Section 2.6.3 regarding the Spill Prevention and Contingency Plan to be developed prior to operation. • Clarification was added to the ERR related to the context regarding the in 2007 Phase I and Preliminary Phase II ESA completed in 2007.
City of Windsor	• The City of Windsor expressed concerns related to the visual aesthetic of the proposed Project and requested design changes to align with the City's vision and goals for the area as outlined in the Ford Powerhouse District and Ford City Community Improvement Plans (CIPs).	• In response to the City of Windsor's concerns related to visual aesthetics, Capital Power made a series of adjustments to the proposed design to accommodate the City of Windsor's feedback and alignment with local CIPs. The Project design was changed to enclose as much of the equipment as possible within an equipment building structure, integrated the storage building into the design of the equipment building, and retained a local architecture firm to design the storage and equipment buildings to mimic the Ford Powerhouse and existing EWCC administration building. Detailed architectural renderings were prepared to accompany the site layout drawings.
COTTFN	• Provided recommendations associated with the landscaping design. • Provided comments and questions on the Draft ERR related to topics that included the need for the Project including design, economics and alternatives, environmental impacts including air quality and GHG concerns, and editorial corrections	• Capital Power is committed to ongoing dialogue with the COTTFN and is in the process of preparing detailed responses to their questions and concerns on the Draft ERR, which were also considered during finalization of the report. Minor changes and clarifications were made to the ERR in response to input from COTTFN (e.g., clarification that Capital Power intends to use site-appropriate native species in the landscaping design). • Any further Project-specific comments received from the COTTFN will be addressed as the Project progresses.
Three Fires, on behalf of the Chippewas of Kettle and Stony Point First Nation	• Provided comments on the Draft ERR related to cumulative impacts and use of natural gas	• Capital Power is committed to ongoing dialogue with the Three Fires Group, on behalf of the Chippewas of Kettle and Stony Point First Nation and is in the process of coordinating further discussions related to these broader concerns. Any further Project-specific comments received from the Chippewas of Kettle and Stony Point First Nation will be addressed as the Project progresses.

4.9 Notice of Completion

The Notice of Completion of an Environmental Review Report explained that this ERR has been filed for public review and comment for a period of 30-calendar days (**Appendix C.2**). The Notice of Completion indicated where the ERR can be reviewed online and in hard copy. The Notice of Completion formally requested written comments within the 30-day comment period, starting on July 5, 2024 and ending on August 6, 2024. As per the ESP requirements, the notice also included results of the screening and details regarding the request to elevate process.

The Notice of Completion was sent to the Project Contact List on July 5, 2024, and sent via Canada Post AdMail to all mailing addresses within the Project notification limits earlier that same week. The notice was also published in the *Windsor Star* on July 5, 2024, and made available on the Project website.

5.0 Existing Conditions

The Project Site is a brownfield site owned by Capital Power and is comprised of several historically disturbed parcels of land that are located along the east side of Cadillac Street, within the fenceline of the EWCC. These parcels of land, along with others on the west side of Cadillac Street, were formerly residential properties that were acquired, and residences removed, as part of the original development of the EWCC between 2008 and 2009.

The existing adjacent EWCC Site is located on land leased from Ford (previously part of the larger Ford Windsor Engine Plant operations), as the facility originally provided steam to the Ford Powerhouse. Operations at the Ford Windsor Engine Plant ceased in 2018. The Project Site is currently used by the EWCC for site access, parking, and formerly storage (removed at the City's request). The manicured lawn and landscape features within the Project Site are currently maintained as part of the existing EWCC operations.

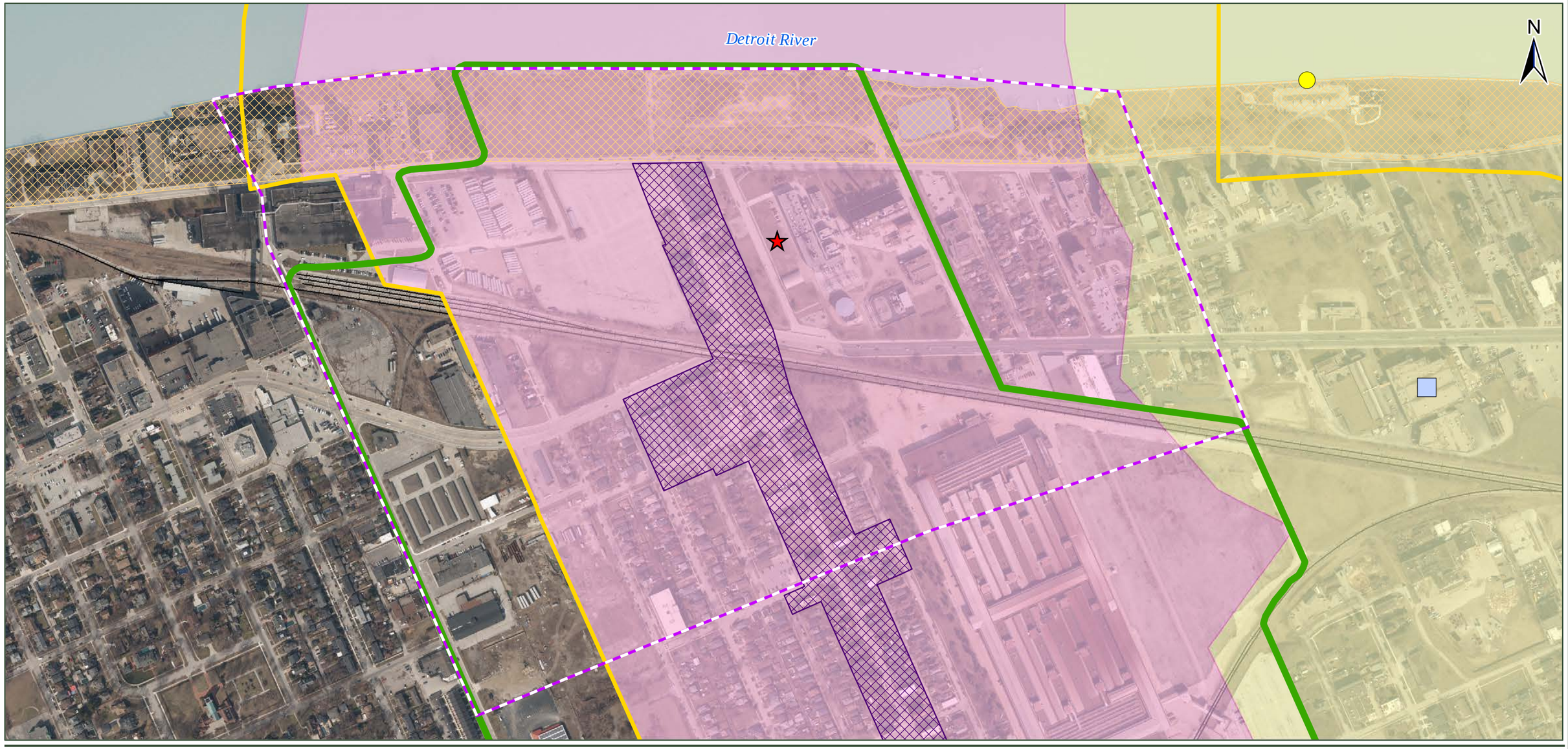
The following sections present more details regarding existing environmental conditions within the GSA, unless otherwise noted. For some environmental components, a different study area boundary was applied based on the requirements of technical assessments.

5.1 Surface Water

The Project Site is located approximately 135 m south of the Detroit River. There are no natural surface water features on or adjacent to the Project Site. The Project Site currently varies in elevation from 181.3 metres above sea level (masl) in the southeast to 179.0 masl in the northwest, and as such, currently drains by sheet flow to the north and west, but ultimately drains into the Detroit River (Sargent and Lundy 2023).

The existing EWCC has a SWM system that consists of on-site storm sewers, oil/grit separators, gulley traps, catch basins, and manholes. In addition, there is a belowground stormwater storage tank with a storage capacity of 424 m^3 located at the northeast corner of the EWCC Site. The system collects stormwater runoff from the EWCC facility roof drains, roads, and operational and parking areas to eventually convey it to municipal storm sewer inlets located along Riverside Drive. The City of Windsor storm sewers eventually drain to the Detroit River (City of Windsor 2024). The EWCC SWM system is subject to the terms and conditions of the facility's Amended ECA (Industrial Sewage Works) (MOE 2008), including ongoing monitoring requirements.

The source of the City of Windsor's drinking water is the Detroit River and its tributaries, Turkey Creek, Little River, and Canard River (City of Windsor 2024). The entirety of the GSA is located within both an IPZ-2 and an EBA as per the Source Protection Information Atlas (SPIA 2024), ERCA Public Interactive Mapping (ERCA 2023a), and as confirmed by ERCA in correspondence dated April 3, 2024 (**Figure 5-1**). IPZs are areas where run-off could carry contaminants that could impact source water at municipal drinking water intakes. IPZ-2 areas are areas where water (and contaminants) could reach the intake within two hours (ERCA 2023b). EBAs are areas where modeling has demonstrated that a spill from certain activities (e.g., fuel spill) could contaminate sources of drinking water. As such, mandatory policies related to the handling and storage of large volumes of liquid fuel apply (ERCA 2023b). According to Map 19 of the Essex Region Source Protection Plan (ERSPP) (ERSPP 2019), the GSA falls primarily within the 3 million litre (L) EBA, and the eastmost portion of the GSA falls within the 15,000 L EBA. The volumetric quality associated with each of these EBAs reflects the modelled volume applied. The 3 million L EBA, primarily associated with the GSA, is located downstream of the municipal water intake area and associated drinking water system.



LEGEND:

- Land Use Study Area (approx. 500 m buffer)
- Project Site
- Ford City Community Improvement Plan (CIP) Project Area
- Ford City Business Improvement Area (BIA)
- Shoreline Portion of ERCA Regulation Limit (Derived from Online Mapping)
- Intake Protection Zone 2
- Events Based Area, 3 million (L)
- Events Based Area, 15,000 (L)
- Intake
- Drinking Water System (Albert H. Weeks Water Treatment Plant)
- Railway

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023

0 50 100 200 300 m

SCALE 1:5,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

POLICY AREAS

SLR

FIGURE NO:
5-1

DATE: July 2024

PROJECT NO: 241.30524.00024

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The ERSPP (2019) policy 4 states that "*the Ministry of Environment [or MoE, now the MECP] shall ensure that the terms and conditions of ECAs adequately manage existing and future storage of stormwater management facilities in order to protect sources of drinking water.*"

5.2 Groundwater

The EWCC Site is located in the Essex Clay Plain sub region of the St. Clair Plain physiographic region (Chapman and Putnam 1984). Surficial geology within the vicinity of the Project Site consists of massive to well laminated fine-textured glaciolacustrine deposits comprised of silts and clays with minor sands and gravels (Chapman and Putnam 1984). A review of the Ontario Geotechnical Borehole database (MNRF 2012) and MECP water well records (MECP 2024) show the thickness of the silty clay unit extends to a depth of approximately 34 to 36 metres below ground surface (mbgs). A thin dense unit of basal till generally underlies the lacustrine deposit. This unit is underlain by limestone/dolostone/shale bedrock of the Detroit River Formation (Devonian age).

Regional groundwater flow is generally to the north/northwest, towards the Detroit River. A review of MECP water well records for the area show that groundwater in nearby monitoring wells was generally observed between 1 and 2 mbgs.

Dillon (2007d) completed a Phase I and Preliminary Phase II Environmental Site Assessment (ESA) in conjunction with the Golder Associates (2007) geotechnical investigation, for the EWCC Site. A summary of the site-specific subsurface conditions from these investigations is provided below.

As part of a geotechnical assessment (Golder 2007), five boreholes were drilled throughout the EWCC Site prior to its construction. These boreholes were advanced to depths of approximately 12.7 mbgs. Subsurface conditions logged from the 5 boreholes indicate that the surficial granular fill material overlays an extensive deposit of clay and clay till. Silty clay till identified in the upper 1.3 to 2.1 m was weathered to a mottled brown and grey coloration. This silty clay till was underlain by approximately 2.3 to 3.1 m of very stiff to hard brown silty clay till. This was further underlain by grey silty clay till from a depth of 4.4 to 12.7 mbgs, which also included some occasional sand seams. A deeper unit of clayey silt till was identified in the southern portion of the EWCC Site at a depth of 10.5 to 12.7 mbgs. Groundwater was observed in two of the five boreholes during drilling and ranged between 5.3 to 7.6 mbgs. A groundwater monitoring well was installed in one of the boreholes. Following development of the well, groundwater was observed at 3.05 mbgs ten days after drilling. This groundwater monitoring well has since been abandoned and is no longer in place.

As part of the Phase I and Preliminary Phase II ESA (Dillon 2007d), three additional boreholes were drilled directly south of the geotechnical boreholes to target areas of potential environmental concern as identified in the Phase I ESA. The soil and lithology profiles logged during the Phase II ESA were similar to those identified as part of the Golder (2007) geotechnical program. The aggregate/fill layer was slightly thicker (up to 0.7 m) in the area of a former above ground storage tank. This aggregate/fill layer was underlain by native brown clayey-silt to silty-clay till with varying gravel content. Groundwater was observed at 1 mbgs in the monitoring well installed as part of the Phase II ESA.

The most recent geotechnical study was undertaken by WSP in 2023. A total of six boreholes were advanced on the Project Site, five to a depth of 24.8 mbgs and one to a depth of 41.1 mbgs. The drilling investigation confirmed similar soil and lithology profiles across the Project Site as the previous subsurface investigations.

Boreholes were advanced along the mid to southern portion of the Project Site, with a 3.8 m thick sand unit encountered between 11.9 and 15.7 mbgs in the centre of the Site. A silty sand till was noted in the southern portion from 34.9 to 38.9 mbgs. Bedrock was found at a depth of 38.9 mbgs at this location before borehole termination at 41.1 mbgs (WSP 2023).

Geologic logs showed grey colouring of soils at approximately 4 to 5 mbgs, indicating permanent saturation which could be indicative of long-term groundwater conditions. It was noted that perched groundwater conditions above this depth were possible, whereby groundwater could accumulate in the shallow fills and coarser material before slowly infiltrating. The groundwater table was assessed to be at a depth of approximately 2 mbgs and with the potential for perched groundwater to rise to the surface.

5.3 Land Use

A study area representing an approximate 500 m radius surrounding the Project Site was applied for the consideration of existing land uses as described below (**Figure 5-2**).

5.3.1 Provincial Plans and Policies

The GSA is located outside of all special Provincial policy areas (e.g., Greenbelt Plan, Growth Plan), but is subject to the policies of the overarching Provincial Policy Statement (PPS 2020) (**Appendix D.1**).

The Project is consistent with the Provincial Policy Statement (2020) and the Proposed Provincial Planning Statement (2023). No other Provincial Plans are applicable to the East Windsor Planning District in which the Project Site is located.

Under the Provincial Policy Statement (2020), a simple cycle gas generation facility would be considered under the definition of “Major Facilities”. The province aims to protect “Major Facilities” from encroachment by sensitive land uses for the long-term. The Project is consistent with Provincial Policy 1.2.6 related to Land Use Compatibility, and Policy 1.6.11 relating to Energy Supply. The addition of a peaking power generation plant to an existing power plant is consistent with and meets the outcomes envisaged by the Province in Sections 1.2.6 (Land Use Compatibility) and 1.6.11 (Energy Supply).

A review of the proposed Provincial Planning Statement (2023) indicated that the 2020 policies under Sections 1.2.6 (Land Use Compatibility) and 1.6.11 (Energy Supply) have been largely transcribed but renumbered as Sections 3.5 (Land Use Compatibility) and 3.8 (Energy Supply). Therefore, the Project is also considered consistent with the Proposed Provincial Planning Statement (2023). The detailed review of the Project in context of land use plans and policies is provided in (**Appendix D.1**).

5.3.2 Municipal Plans and Policies

5.3.2.1 City of Windsor Official Plan (2020)

The City of Windsor Official Plan Schedule A, Planning Districts & Policy Areas, indicates that the GSA falls within the East Windsor Planning District. Schedule A-1 confirms there are no Special Policy Areas located within the GSA, including mature neighbourhoods, traditional commercial streets, or areas in the vicinity of traditional commercial streets. Based on Schedule B of the City of Windsor Official Plan, the GSA is not located within a Greenway System. The GSA is south of the adjacent Greenway Linkage, which extends along a portion of the waterfront property north of Riverside Drive.

Based on Schedule C, the only Development Constraint Area within the GSA is the CN railway, and based on Schedule C-1, the GSA retains both high and low archaeological potential (**Section 5.10**).

The Project Site and immediately adjacent properties are designated as Business Park and Mixed Use Node in Schedule D of the Official Plan (**Figure 5-2**). This signifies that the land uses within approximately 200 m of the Project Site are compatible uses, as the City of Windsor has permitted this mix of residential, commercial, institutional, and industrial land uses within this radius through a comprehensive review of the City's Official Plan. Specifically, the Business Park land use designation "*provides for business and industrial uses of a similar quality and character to locate together in highly visible areas according to a comprehensive development plan*". The existing EWCC and the proposed Project fall under the "Infrastructure" designation, as defined by the Official Plan, and are consistent with the permitted land uses (**Appendix D.1**).

Industrial use of the Business Park designated lands are permitted as per Policy 7.3.6 (Utilities and Other Infrastructure Policies) and under Policy 6.4.4.1 which states that permitted uses include "*selected industrial uses which: i) do not create nuisances such as noise, dust, vibration or odour; ii) confine industrial operations within a building and/or structure; and iii) do not require outside storage*".

Within the Mixed Use Node policies, Policy 6.9.2.3.d indicates that new development shall be located where the surrounding development pattern is compatible with Mixed Use Node development. The Official Plan does not define Mixed Use Node development, but Mixed Use Centres are defined as "*large sites developed according to a comprehensive development plan or nodal developments at the intersections of Controlled Access Highways and/or Arterial Roads*" (**Appendix D.1**).

The Official Plan also identifies Business Park under Employment Policy 6.4.2.4 which states that *"all development within areas designated as Industrial and Business Park to be subject to site plan control, with the exception of Public Open Space uses".* Policy 6.9.2.6 similarly requires "*all development within areas designated Mixed Use Node to be subject to site plan control*." As such, the Project is subject to site plan control by the City of Windsor and Section 8.7 (Built Form) requires it to be *"complementary to adjacent development in terms of its overall massing, orientation, setback and exterior design, particularly character, scale and appearance"* (**Appendix D.1**).

Lands designated as Mixed Use Corridor generally extend through the GSA along Wyandotte Street, and also include the City's Albert H. Weeks Water Treatment facility located outside of and east of the GSA. Across from Riverside Drive to the north, lands are designated as Waterfront Port and Industrial, and in the northeast corner of the GSA, as Waterfront Residential. To the south, within approximately 500 m of the Project Site, lands are similarly designated as Business Park, Industrial, Mixed Use Corridor, and Mixed Use Node, including the previous Ford Windsor Engine Plant. Residential uses are also present and were historically built adjacent to and within walking distance of these industrial facilities. The residential uses are buffered by industrial buildings, on lands designated Industrial, that are situated between the residential neighbourhood and the Project Site (**Figure 5-2**).

The Official Plan Schedule G designates Riverside Drive as a Civic Way, and Schedule F designates it as a Scenic Drive (**Section 5.11**). Schedule F also shows that Wyandotte Street is a Class II Arterial Road and Drouillard Road is a Class I Collector Road.

5.3.2.2 City of Windsor Zoning By-law 8600 (2021)

The Project is consistent with and conforms to the regulations of the City of Windsor Zoning By-law 8600. According to By-law 8600 and the City of Windsor Zoning District Map 6, the Project Site is zoned as Commercial District 4.5 which allows public utilities and accessory uses within this zone (**Appendix D.1**).

Directly north of the Project Site, across from Riverside Drive East, lands are zoned as Manufacturing District. The CN railway is similarly zoned as Manufacturing District, as are lands south of the CN railway, as well as pockets zoned Residential District (Medium Density Housing). To the northeast there is a small area zoned Residential District (Low Density and Medium Density), and to the east of the Project Site, there are areas zoned Institutional District (Church, School, Hospital, Residential Care Facility) and Residential District (Medium Density Housing). To the west, there are lands zoned Institutional District (Church, School, Day Nursery), Commercial District (Parking Area, Public Parking Area and Highway Commercial), Manufacturing District (Heavy Industrial), and Green District (Public Park). In addition, Specific Zoning Exemptions occur on lands throughout the GSA.

5.3.2.3 Community Improvement Plan (CIP) Areas

The GSA is additionally located within the Ford Powerhouse District CIP area and the Ford City CIP (City of Windsor 2018) area (**Figure 5-1**). Municipalities such as the City of Windsor prepare CIPs to "*set out, in an 'official' way, what a municipality intends to do to address an unsatisfactory state of affairs in a certain defined area*" (City of Windsor 2024). As such, the Ford Powerhouse District CIP (Dillon 2007) was prepared to help guide the development of the Project area prior to construction of the existing EWCC. It included a number of land use, environmental, design, and economic objectives, policies, and recommendations for redevelopment of the Project area. The Ford Powerhouse District CIP recommended the preservation of Our Lady of the Rosary Church (now the Water's Edge Event Centre), façade treatments for the EWCC "*to ensure that it blends with the historic context of the existing Ford Powerhouse,*" and an improved pedestrian crossing to Cadillac Street Park on Drouillard Road. The Ford Powerhouse District CIP also recommended rezoning of both the EWCC and the Project Site to Commercial District 4.5 (as noted in **Section 5.3.2.2** above) to "*mitigate potential impacts and permit future expansion of the Ford Powerhouse site*."

The Ford City CIP (City of Windsor 2018) was more recently created "*to encourage the redevelopment of vacant or underutilized existing commercial/mixed use and residential buildings and sites*", and to ensure such redevelopment within the Ford City neighbourhood is consistent with the community design guidelines and principles envisioned for the area. Substantial efforts have been made in the design of the Project buildings to adhere to the guidelines and policies outlined in the Ford City CIP.

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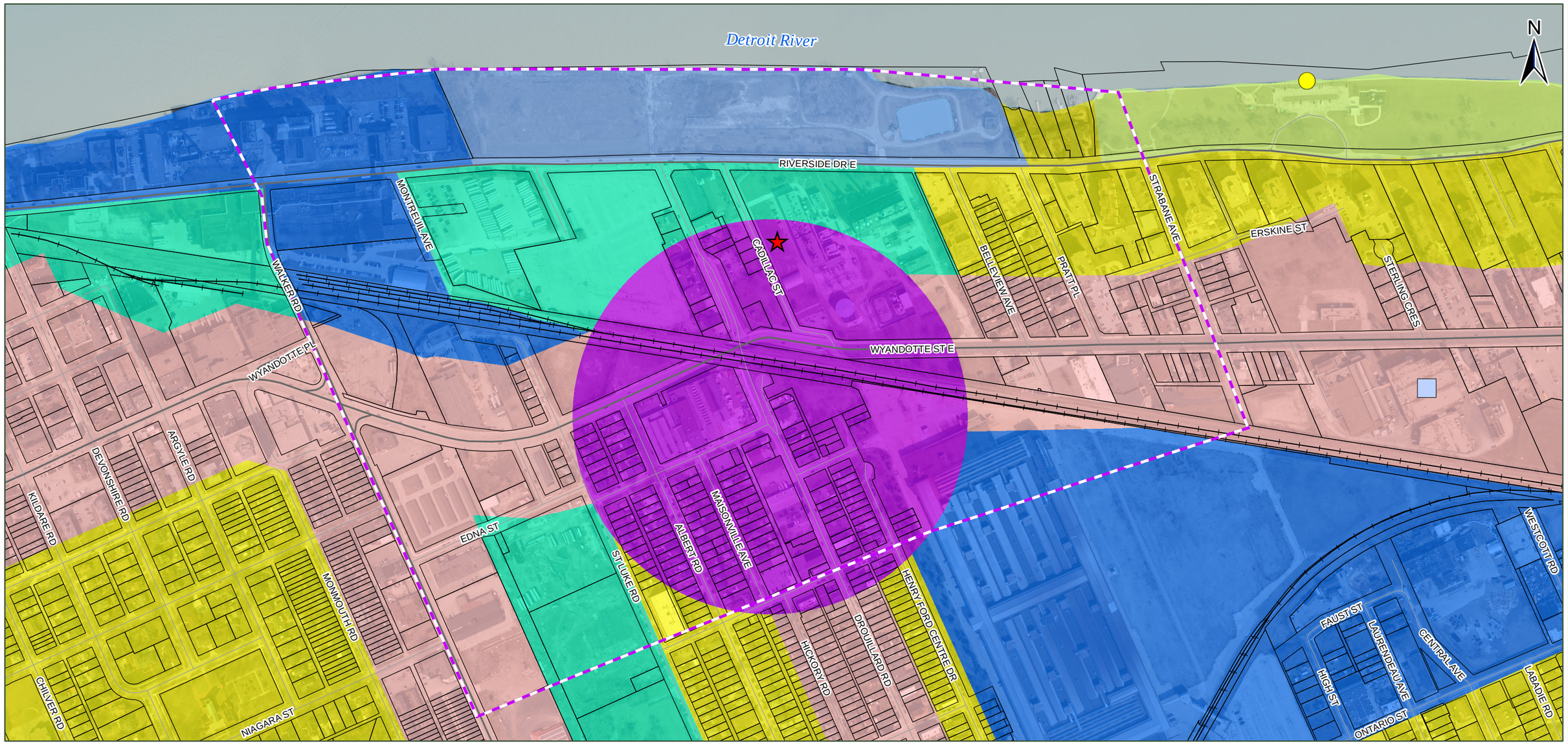

LEGEND:

- Land Use Study Area (approx. 500 m buffer)
- Project Site
- Parcel Fabric (City of Windsor)
- Railway
- Intake
- Drinking Water System (Albert H. Weeks Water Treatment Plant)

Land Use - City of Windsor Official Plan

- RESIDENTIAL
- BUSINESS PARK
- WATERFRONT RESIDENTIAL
- MIXED USE CORRIDOR
- WATERFRONT RECREATION
- WATERFRONT PORT
- MIXED USE NODE
- INDUSTRIAL

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023

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SCALE 1:5,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

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EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

LAND USE DESIGNATIONS

SLR

FIGURE NO:
5-2

DATE: July 2024

PROJECT NO: 241.30524.00024

5.3.3 Hazard Lands

The ERCA Regulation Limit defines the presence of hazard lands that could be unsafe for development due to naturally occurring processes associated with wetlands, flooding, erosion, unstable soils or bedrock, and/or steep slopes (ERCA 2023a). As shown in **Figure 5-1**, the Project Site is located outside of the ERCA Regulation Limit (O. Reg 158/06) which is associated with the Detroit River and extends along Riverside Drive (ERCA 2023a).

5.3.4 Contaminated Lands

A Phase I and Preliminary Phase II ESA were completed in 2007 in support of the original development of the EWCC (Dillon 2007d). The Phase I and II ESA identified elevated levels of Petroleum Hydrocarbon (PHC) fraction F4 at one borehole location, and elevated metals at a second borehole. These borehole locations are within the existing EWCC footprint, in areas that were excavated to install the existing infrastructure. Although the 2007 study does not relate to the lands proposed for development of the current Project, the results offer context on the historical use of the lands adjacent to the Project Site.

Currently, there are no known areas of contamination on the Capital Power-leased or owned land and no areas undergoing remediation. The Project is sited on former residential properties that have since been developed as manicured lawn and parking within the EWCC fenceline. Further, according to the Federal Contaminated sites inventory, there are no identified suspected, active, or closed contaminated sites within the GSA (Government of Canada 2023a). However, given the historical and current industrial use, there is potential for contamination to exist within the Project Site and adjacent lands.

5.4 Atmospheric Environment

The following section provides the regional and local meteorology and air quality context relevant to the GSA. Regional and local historical climate data was sourced from the Government of Canada Past Weather and Climate Historical Dataset (Government of Canada 2023).

5.4.1 Regional Climate

As part of southern Ontario, Windsor experiences a warmer, more humid climate than the subarctic northern region of the province. Windsor is the most humid city in the region and sees four distinct seasons marked by warm, humid summers and cold, wet winters. It is situated at a similar latitude as Northern California and the mean annual temperature is recorded as 10°C.

Temperatures are moderated by delayed cooling of the lakes to the north and south that lessen the summer and winter climate extremes, delay autumn frosts, and reduce day and night temperature differences. On average, January is the coldest month of the year and July the warmest. Precipitation is relatively evenly distributed seasonally, though more precipitation is typically observed during the summer months. Proximity to the Great Lakes produces abundant winter snow cover in some areas of the region, as well as floods, ice storms, heavy fog, hail, and blizzards.

5.4.2 Local Meteorology

Meteorological data from the Windsor Airport (Windsor A) station[8] was used to identify temperature, precipitation, and wind speed and wind direction for the purposes of characterizing local meteorological conditions. Based on meteorological data collected from 1981–2010[9], monthly averages of temperature, precipitation, and wind speed and direction from the Windsor A station are summarized below.

5.4.2.1 Temperature

Daily average, maximum, and minimum temperatures for each month are presented in **Table 5-1**. The extreme maximum temperature recorded was 40.2°C in June, while the extreme minimum temperature recorded was -29.1°C in January.

Table 5-1: Monthly Average and Extreme Temperatures at Windsor A Station, 1981-2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Daily Average (°C)	-3.8	-2.6	2.3	8.9	15	20.5	23	22	17.9	11.3	5.1	-1.2
Standard Deviation	2.9	2.3	1.8	1.5	2	1.3	1.3	1.4	1.4	1.6	1.7	2.8
Daily Maximum (°C)	-0.3	1.1	6.7	14.1	20.4	25.8	28.1	26.9	22.9	15.8	8.8	2
Daily Minimum (°C)	-7.3	-6.3	-2.2	3.7	9.5	15.3	17.9	17.1	12.8	6.7	1.4	-4.3
Extreme Maximum (°C)	17.8	20.4	26.6	31.1	34	40.2	38.3	37.7	37.2	32.2	26.1	19.6
Extreme Minimum (°C)	-29.1	-23.4	-19.7	-9.5	-2.8	2.8	5.6	5.2	-1.1	-5	-15.6	-23.4

5.4.2.2 Precipitation

Table 5-2 provides monthly average precipitation, divided into rainfall and snowfall. The month with the highest average rainfall recorded was September, with the lowest average rainfall being recorded in the month of January. The highest average snowfall during winter months over the recorded period was January, with the lowest average snowfall being in October. The extreme daily rainfall and snowfall are 94.6 mm and 36.8 cm in April and February respectively.

[8] The Windsor Airport station is operated by NAV Canada, located at Latitude 42°16'34.000" N, Longitude 82°57'19.000" W, which is seven km east from Windsor centre. The station elevation is 189.60 m, climate identifier (ID) 6139530, World Meteorological Organization ID 71538, and Transport Canada ID YQG.

[9] The timeframe for the meteorological data (1981–2010) reflects the accessibility of statistics from Environment and Climate Change Canada.

Table 5-2: Average Monthly and Extreme Precipitation at Windsor A Station, 1981-2010

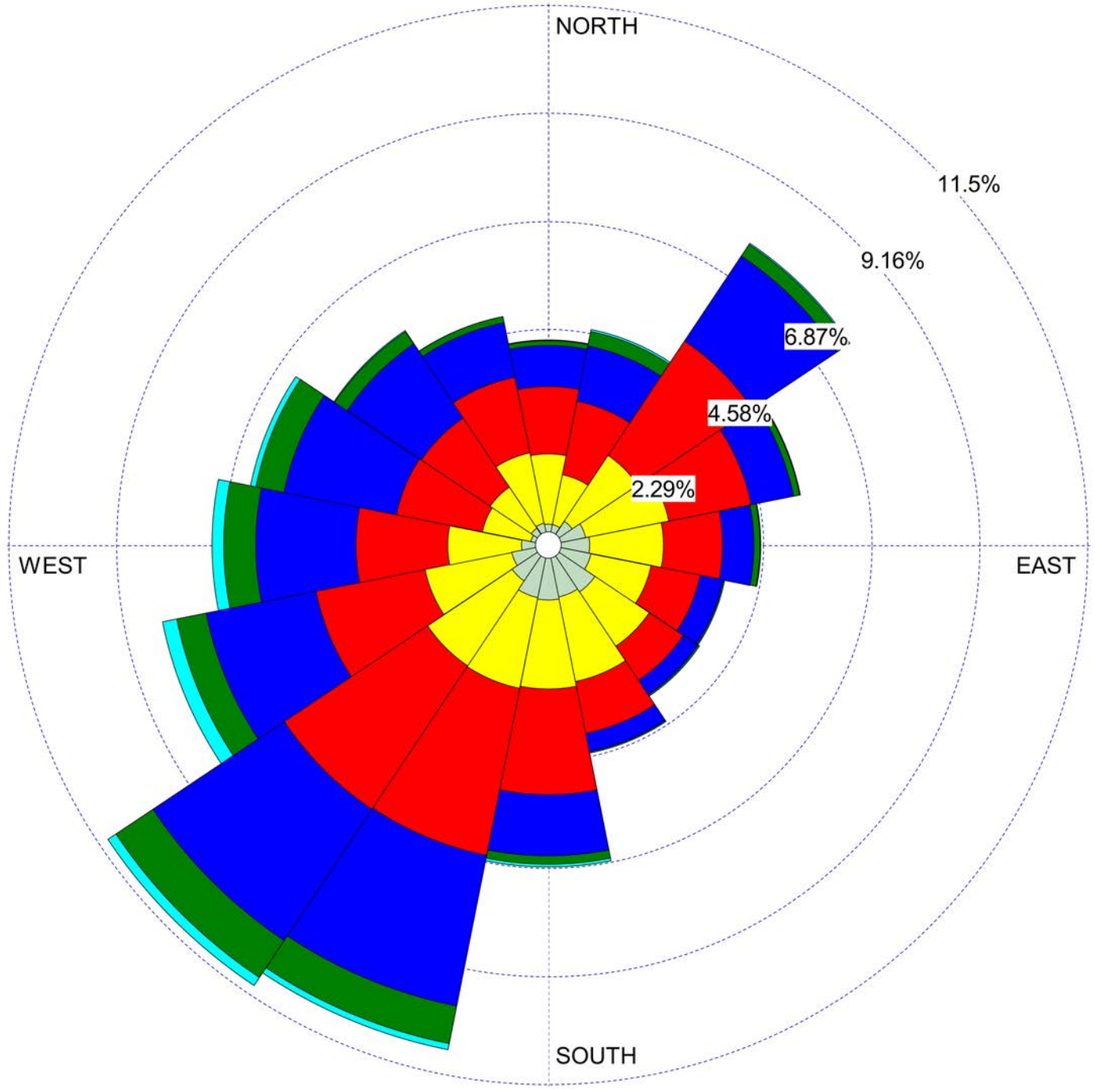
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)	32.4	35.6	50.9	77.7	89.3	86.1	89.2	72.6	93.9	72	74.5	48.3
Snowfall (cm)	37.2	30.5	20.9	5.8	0	0	0	0	0	0.6	5.5	28.8
Precipitation (mm)	62.1	62.2	70	83	89.3	86.1	89.2	72.6	93.9	72.6	79.6	74.1
Extreme Daily Rainfall (mm)	43	70.6	46.4	94.6	54.9	78	82	79.4	89	71.6	48.4	72.6
Extreme Daily Snowfall (cm)	28.2	36.8	22.4	16	0.5	0	0	0	0	13.8	34.8	32.3

5.4.2.3 Wind Speed and Direction

In June 2023, SLR submitted a request to MECP to use site-specific meteorological data for the Project air dispersion modeling. Site-specific meteorological data referenced the Windsor Airport data as a reasonable reflection of the meteorological conditions for the assessment. A five-year (2018-2022) dataset was prepared by the MECP, with wind sector dependent land use specific to the Project Site. Surface wind data was sourced from NAV Canada's Windsor Airport station, with gaps filled with those of the MECP prognostic dataset for the Windsor Airport station from the advanced research version of the Weather Research and Forecasting (WRF-ARW) model.

Surface data, as obtained from MECP, was used to generate a wind rose[10] for the years between 2018 and 2022. **Figure 5-3** presents the wind rose data, with predominant winds from the southwest and northeast quadrants. The average wind speed is approximately 4.48 m/s while the calm winds are 0.00%.

[10] A wind rose is a graphic tool showing how wind speed and direction are typically distributed at a location.



LEGEND:

WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 0.00%

NOTES:
STATION #61395
WIND SPEED DIRECTION (BLOWING FROM)
START DATE: 1/1/2018 - 00:00
END DATE: 12/31/2022 - 23:59
TOTAL COUNT: 43824 HRS
CALM WINDS: 0.00%
AVG. WIND SPEED: 4.48 M/S

PAGE SIZE 11 x 17

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY
AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION
FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

WIND ROSE (2018 - 2022)
AT THE WINDSOR AIRPORT STATION

SLR

FIGURE NO:
5-3

DATE: July 2024

PROJECT NO: 241.30524.00024

5.4.3 Ambient (Background) Air Quality

A review of the MECP and National Air Pollution Surveillance ambient monitoring stations in the Windsor area was undertaken to identify monitoring stations that are near the Project and representative of background air quality concentrations. The ambient monitoring station used for this assessment was the Windsor Downtown station (ID 12008) located at 467 University Avenue West. Data from this station spans the years 2018-2022 and provides concentrations for the following air contaminants of concern (COCs): Particulate Matter 2.5 microns in diameter and less ($PM_{2.5}$), Nitrogen Oxides (NO_x), Carbon Monoxide (CO), and Sulphur Dioxide (SO_2).

Particulate Matter 10 microns in diameter and less (PM_{10}) is not measured in Ontario; therefore, background concentrations were estimated by applying a $PM_{2.5}/PM_{10}$ ratio of 0.54 (Lall et al. 2004). The 90th percentile ambient concentrations are provided in **Table 5-3**.

Table 5-3: Background Ambient Air Quality Concentrations, 2018 - 2022

COC	Averaging Period	90th Percentile Ambient Concentration (µg/m^3)	Monitoring Station
CO	1-hr	385	Windsor Downtown (12008)
	8-hr	379	Windsor Downtown (12008)
NO_x	1-hr	46	Windsor Downtown (12008)
	24-hr	42	Windsor Downtown (12008)
PM_{10}	24-hr	25	Windsor Downtown (12008)
$PM_{2.5}$	24-hr	13	Windsor Downtown (12008)
	Annual	9	Windsor Downtown (12008)
SO_2	10-min	5	Windsor Downtown (12008)
	1-hr	3	Windsor Downtown (12008)
	Annual	2	Windsor Downtown (12008)

5.5 Noise

The area surrounding the Project Site is defined as Class 1 Urban, as per the MECP's *Environmental Noise Guideline – Stationary and Transportation Sources* (Noise Pollution Control [NPC]-300) (MECP 2013). This NPC guideline describes a Class 1 Area as "*an area with an acoustical environment typical of a major population centre, where the background noise is dominated by the urban hum*", where urban hum "*means aggregate sound of many unidentifiable noise sources due to the activities of people and primarily composed of road traffic related sound sources."*

Ambient sound levels surrounding the EWCC were previously assessed (Dillon 2021) and accepted by the MECP as part of the most recent EWCC ECA Amendment (ECA A-500-4130410774, dated April 20, 2022). The 2021 assessment that supported the EWCC ECA Amendment identified the primary contributors to background noise as sounds from adjacent industrial facilities, local road traffic, and railway traffic.

As per the MECP noise guidelines, a "Point of Reception" (POR) means any point on the premises of a person where sound or vibration originating from other than those premises is received.

A total of four PORs have been identified as being representative of the most sensitive receptors in the vicinity of the Project Site, labelled R1, R2, R3, and R4 in **Figure 5-4**. These PORs and their associated Outdoor Points of Reception (OPOR) locations (i.e., R1_O, R2_O, R4_O) are consistent with the locations used in previous assessments of the adjacent EWCC:

- **R1 is the four-storey Shoreview at Riverside retirement home at 245 Drouillard Road**. A receptor height of 10.5 m was assumed, representing a receiver in the open plane of a fourth storey window. A receptor at a height of 1.5 m (ID: R1_O) was also assessed in the side yard of the retirement home, at a point closest to onsite noise sources. This receptor represents the OPOR location for the dwelling and was assessed for daytime and evening impacts as per NPC-300;
- **R2 is a two-storey commercial/residential building at 229 Cadillac Street**. This building is located at the southeast corner of the Water's Edge Event Center. A receptor height of 4.5 m was assumed, representing a receiver in the open plane of a second storey window. A receptor at a height of 1.5 m (ID: R2_O) was also assessed in the side yard of the building, at a point closest to onsite noise sources. This receptor represents the OPOR location for the building and was assessed for daytime and evening impacts as per NPC-300;
- **R3 is a three-storey residential apartment building at 3177 Riverside Drive East**. A receptor height of 7.5 m was assumed, representing a receiver in the open plane of a third storey window. This apartment building does not have patios, terraces, or any OPORs. As such, noise impacts were only assessed at the façade of the building;
- **R4 is a two-storey residential dwelling at 3336 Riverside Drive**. A receptor height of 4.5 m was assumed, representing a receiver in the open plane of a second storey window. A receptor at a height of 1.5 m (ID: R4_O) was also assessed in the backyard of the residential dwelling, at a point closest to onsite noise sources. This receptor represents the OPOR location for the dwelling and was assessed for daytime and evening impacts as per NPC-300.

There have been no significant changes in land use surrounding the Project Site and existing EWCC since the 2021 assessment and subsequent MECP approval in 2022. Therefore, the 2021 assessment has informed the existing noise conditions for the ERR.

LEGEND:

- Project Site
- Existing EWCC
- Existing Buildings
- Wall
- Parcel Fabric (City of Windsor)
- Railway
- Receptor

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023

0 25 50 100 150 m

SCALE 1:2,500
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

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AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION
FACILITY EXPANSION
224 CADILLAC DRIVE, WINDSOR ONTARIO

ENVIRONMENTAL REVIEW REPORT

REPRESENTATIVE NOISE RECEPTORS

SLR

FIGURE NO:
5-4

DATE: July 2024

PROJECT NO: 241.30524.00024

5.6 Natural Environment

An ecological site reconnaissance was completed by SLR on June 5, 2022, to assess the presence of vegetation communities, potential wildlife habitat, and Species at Risk (SAR) within and near the Project Site and existing EWCC (**Appendix D.4**). Given the Project Site is located within the fenceline of an existing industrial property with limited vegetation and habitat potential, vegetation community mapping and targeted SAR surveys were not completed. Rather, evidence of wildlife presence was recorded from incidental direct sightings, and indirectly from such indicators as calls, nests, tracks, scat, browse, and burrows.

5.6.1 Rare, Threatened, or Endangered Species

The site reconnaissance visit focused on confirming the presence or absence of potential habitat for rare, threatened or endangered species (**Appendix D.4**). As the Project Site contains no natural habitat, the only SAR with the potential to occur within the Project Site are those known to occupy anthropogenic habitats such as structures and some ornamental trees.

SAR with potential to occur within the Project Site are Chimney Swift (*Chaetura pelagica*), Barn Swallow (*Hirundo rustica*), and SAR bats including Little Brown Myotis (*Myotis lucifugus*), Eastern Small-footed Myotis (*Myotis leibii*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*).

- Chimney Swift was observed foraging overhead within the Project Site during the site reconnaissance. Chimney Swift is designated as Threatened under the *Endangered Species Act, 2007* (ESA) and *Species at Risk Act, 2002* (SARA). Chimney Swift is commonly observed in urban areas as it roosts and nests in the chimneys of anthropogenic structures. There are no unused and uncapped chimneys within the Project Site with potential to provide habitat for Chimney Swift, although these features likely exist in the surrounding area;
- Barn Swallow may occur within the Project Site as it also nests in anthropogenic structures, though it was not observed during the site reconnaissance. Barn Swallow was recently redesignated from Threatened to Special Concern under the ESA and is listed as Threatened under the SARA;
- SAR bats have the potential to roost in trees and anthropogenic structures within the Project Site. Very limited habitat potential for SAR bats is present within the Project Site. Potential habitat consists of a few ornamental trees that may provide marginal habitat for day roosting.

5.6.2 Protected Natural Areas and Wetlands

The Government of Ontario's Natural Heritage Area Mapping does not identify any Earth or Life Science Areas of Natural or Scientific Interest (ANSI), Provincially Significant Wetlands (PSW) or local wetlands on or within the vicinity of the GSA (MNRF 2023a). Additionally, the City of Windsor Official Plan, Schedule B (2024) does not identify any Natural Heritage area or greenway system linkages on or within the GSA.

5.6.3 Wildlife and Wildlife Habitat

The limited vegetation within the Project Site does not provide habitat to sustain wildlife populations; however, common urban species including Raccoon (*Procyon lotor*), Eastern Gray Squirrel (*Sciurus carolinensis*), Striped Skunk (*Mephitis mephitis*), and Virginia Opossum (*Didelphis virginiana*) may occur.

5.6.4 Fish and Fish Habitat

The Detroit River is located approximately 135 m north of the Project Site and is the nearest known feature with fish habitat. The Project Site does not contain any watercourses or waterbodies and therefore, does not contain any fish or fish habitat (DFO 2023, and **Appendix D.4**).

5.6.5 Migratory Birds

Chimney Swift (*Chaetura pelagica*) were seen foraging within the Project Site during the site reconnaissance. Chimney Swift are a long-distance migratory species. The GSA also has the potential to be used by some common migratory bird species; however, no migratory birds were identified nesting or roosting on the Project Site (**Appendix D.4**). Unused anthropogenic structures on the Project Site have the potential to provide roosting and nesting habitat for other migratory birds (**Appendix D.4**).

5.6.6 Valued Ecosystems or Vegetation

Vegetation within the Project Site consists almost entirely of manicured lawn. Manicured lawn also extends along the northern portion of the EWCC Site within the fenceline. Several ornamental trees and shrubs are planted within the existing fenceline along Riverside Drive and Wyandotte Street. Planted tree and shrub species include Blue Spruce (*Picea pungens*), Little-leaf Linden (*Tilia cordata*), Norway Maple (*Acer platanoides*), Honey Locust (*Gleditsia triacanthos*), Horse Chestnut (*Aesculus hippocastanum*), White Mulberry (*Morus alba*), and Common Lilac (*Syringa vulgaris*) (**Appendix D.4**).

5.7 Resources

5.7.1 Agriculture

The GSA is located in an urban area and does not contain agricultural land or resources (City of Windsor Official Plan, Schedule D, 2024, and OMAFRA 2023).

5.7.2 Minerals, Aggregates or Petroleum

There are no identified pits or quarries within the GSA (Government of Ontario 2023), nor does the GSA contain any designated aggregate resource areas (City of Windsor Official Plan, Schedule C, 2012).

The GSA does not contain any petroleum resources. A dedicated underground pipeline provides natural gas to the property (City of Windsor Official Plan, Schedule C, 2012, and OGSR Library 2022).

5.7.3 Forest Resources

According to the Ministry of Natural Resources and Forestry (MNRF) Forest Resources of Ontario (2021), the GSA is not located within a forest resource area (MNRF 2023b).

5.7.4 Game and Fisheries

The GSA is in an urban area, and as such, hunting is not permitted. Further, the urban nature of the GSA does not provide opportunity for game hunting. Similarly, there are no watercourses in the GSA, and therefore, no opportunity for fishing (Google Maps 2023). The Detroit River is located immediately north of the GSA.

5.8 Socio-economic Environment

The socio-economic study area surrounding the Project Site is consistent with the GSA. The GSA is fragmented with industrial, residential, park, and business land uses (**Figure 5-4**). The Project Site is located within the planning district of East Windsor, east of the Downtown and Walkerville Districts.

5.8.1 Local Neighbourhoods

The GSA is within the East Windsor district, which is bordered by the Detroit River to the north, Walker Road to the west, Tecumseh Road to the south, and Raymo Road, National Street and Jefferson Boulevard to the east. It is a mix of industrial, residential, park, and business land use (City of Windsor Official Plan, Schedule D 2024).

The City of Windsor completed census snapshots for each of the planning districts in Windsor with the 2016 census data (City of Windsor 2017)[11]. In 2016, the East Windsor district had:

- 20,494 residents with 66% of the population being between the ages of 15 and 64 years old;
- 5,656 families (defined as a married or common-law couple, with or without children, or a lone parent living with at least one child, in the same dwelling); and
- An average household income of $58,364.

Data from the 2021 census shows that the City of Windsor's population grew by 5.7% between 2016 and 2021, from 217,188 to 229,660. There is no current data for the East Windsor district based on the 2021 census data.

The Shoreview at Riverside retirement home is located within the GSA on Drouillard Road. The retirement home has a total of 66 units operated by approximately 34 staff members. The home features an outdoor space including a patio, seating, and a “garden offering views of the Detroit River” (Oxford Living 2020).

At the eastern extent of the GSA is a residential area with a mix of single detached and semi-detached houses and apartment buildings. The streets in the neighborhood are typically lined with sidewalks and treed boulevards.

[11] At time of this report, the 2021 census data was not available at the district level.

The East Windsor Planning District snapshot from 2016 showed that the district overall includes 63% single-detached houses, 13% apartments (in buildings with five or more stories), and 24% semi-detached, row housing, duplexes, or apartments (in buildings less than five stories).

The west portion of the GSA includes the Matilda Street parking lot, the Water's Edge Event Centre, and Shoreview at Riverside retirement home (Google Maps 2023). There is a single detached house approximately 45 m west of the Project Site on Drouillard Road. There are two semi-detached houses on the west side of Drouillard Road, approximately 85 m from the Project Site. Within the GSA, a three-story apartment building (i.e., Arcadian Apartments) is located east of the Ford Powerhouse and the existing EWCC, and further, on the east side of Belleview Avenue, there is a row of single detached homes.

To the south, Wyandotte Street and a CN railway are located at the boundary of the GSA, with lands adjacent to the GSA to the south represented by a mix of industrial, commercial, and residential uses. Historically, it was common for residential dwellings to be built adjacent to, and within walking distance of industrial facilities such as the Ford Windsor Engine Plant (**Appendix D**.**1**).

There are no residential neighbourhoods in the northern portion of the GSA. A plot of land at the northern extent of the GSA, north of Riverside Drive and adjacent to the Detroit River, is owned by the Ford Motor Company of Canada Ltd. and contains a reservoir and treed lot, all bordered by a fence.

5.8.2 Community Services and Infrastructure

There are no schools, medical facilities, or City-owned recreational facilities located within the GSA. There is one park within the GSA, Cadillac Street Park, which is located on the west side of Cadillac Street immediately across from the Project Site (**Figure 5-1**). This small park is an open space with a few trees and park benches. The next closest park to the Project Site is Alexander Park, located northeast of the GSA and approximately 425 m to the west along the Detroit River. The Park includes a playground, trails, park benches, and parking that are used by local residents and visitors.

The closest police station is the Windsor Police Headquarters, located approximately 3 km west of the Project Site on Goyeau Street. Fire Station 2 on Milloy Street is 2.5 km south of the Project Site. The Essex-Windsor Emergency Medical Services Station 11 is the closest Emergency Medical Services Station, located on Mercer Street approximately 2.5 km southwest of the Project Site.

Municipal water distribution, stormwater, and sewage collection infrastructure exists along most municipal roads in the GSA, including roads to the north (Riverside Drive), west (Cadillac Street), and south (Wyandotte Street). The City's Albert H. Weeks Water Treatment facility is located southeast of the GSA (**Figure 5-1)**.

5.8.3 Employment and Economy

The City of Windsor Community Strategic Plan (2006) and its Official Plan (2020) focus on four interrelated themes: economy, society, environment, and government. Specifically, the City of Windsor wants to attract professionals, individuals, and families; address the community's appearance and reputation; and capitalize on tourism. The City of Windsor endeavours to work with other levels of government, the private sector, and stakeholders to attract and retain investment to sustain its employment base (City of Windsor 2023a).

A Business Improvement Area (BIA) is an area established within a district to promote local businesses. In accordance with the Ontario *Municipal Act*, the establishment of a BIA must have City of Windsor approval. BIAs are recognized in Windsor's Community Strategic Plan and its Official Plan. Activities that promote a BIA are organized by a not-for-profit organization comprised of area businesses. These organizations are valued for their contribution to community economic development at a grassroots level (City of Windsor 2023b).

The East Windsor district has two BIAs: the Ford City BIA and the Pillette Village BIA (**Figure 5-5**). The Ford City BIA is located within the GSA, encompassing Drouillard Street west of the Project Site. The Pillette Village BIA is located approximately 1.5 km east of the GSA, and both BIAs include approximately 40 businesses each. The goal of the BIA is to encourage residents and visitors in the area to shop locally (Pillette Village 2023).

Other major businesses in the GSA include:

- Hiram Walker & Sons Limited, located approximately 500 m to the west of the Project Site. This industrial site has been home to the distillery since 1858. The property includes staff parking and parking for Hiram Walker trucks. Adjacent to the Hiram Walker property is a large parking lot referred to in this report as the Matilda Street parking lot;
- Caesars Windsor Hotel and Casino is located approximately 2.5 km west of the Project Site at 377 Riverside Drive. It offers a large casino floor and over 750 guestrooms, ten restaurants, coffee shops/cafes, and bars/lounges;
- The Water's Edge Event Centre is located at the corner of Cadillac Street and Riverside Drive, approximately 15 m from the Project Site (**Figure 5-5**). The Event Centre offers over 6,000 square feet of indoor event space along with approximately 58 parking spaces for guests (The Water's Edge Event Centre 2016);
- Sky Mobile Corporation is located next to The Water's Edge Event Centre on Drouillard Road, approximately 60 m to the west of the Project Site. Sky Mobile Corporation is a telecommunications company, providing their services throughout southern Ontario. The office is a single floor building with approximately eight parking spaces (SkyMobile n.d.).

CN property exists south of Wyandotte Street, forming the southern extent of the GSA (**Figure 5-5**). South of the GSA, commercial and industrial land uses include the former Ford Motor Company Engine Plant property.

Southeast of the GSA there are four businesses between the rail tracks and Wyandotte Street. Three of the businesses are industrial (i.e., Greco Aluminum Railings Ltd, Checker Industrial, and Windsor Starter's Powerhouse), and the fourth business is in a two-story converted house that hosts IES Associates, an engineering consulting firm.

Southwest of the GSA, at the southwestern intersection of Wyandotte Street and Drouillard Road, are several businesses including Champion Products, TAC Group Inc, Windsor Auto Electric, Low Price Auto Glass, Essex Linen Supply and Mr. Bubbles Car Wash (Google Maps 2023). There are no businesses located in the north portion of the GSA.

5.8.4 Transportation Network and Traffic

The Project Site is bounded by municipal roads to the north (Riverside Drive), west (Cadillac Street), and south (Wyandotte Street).

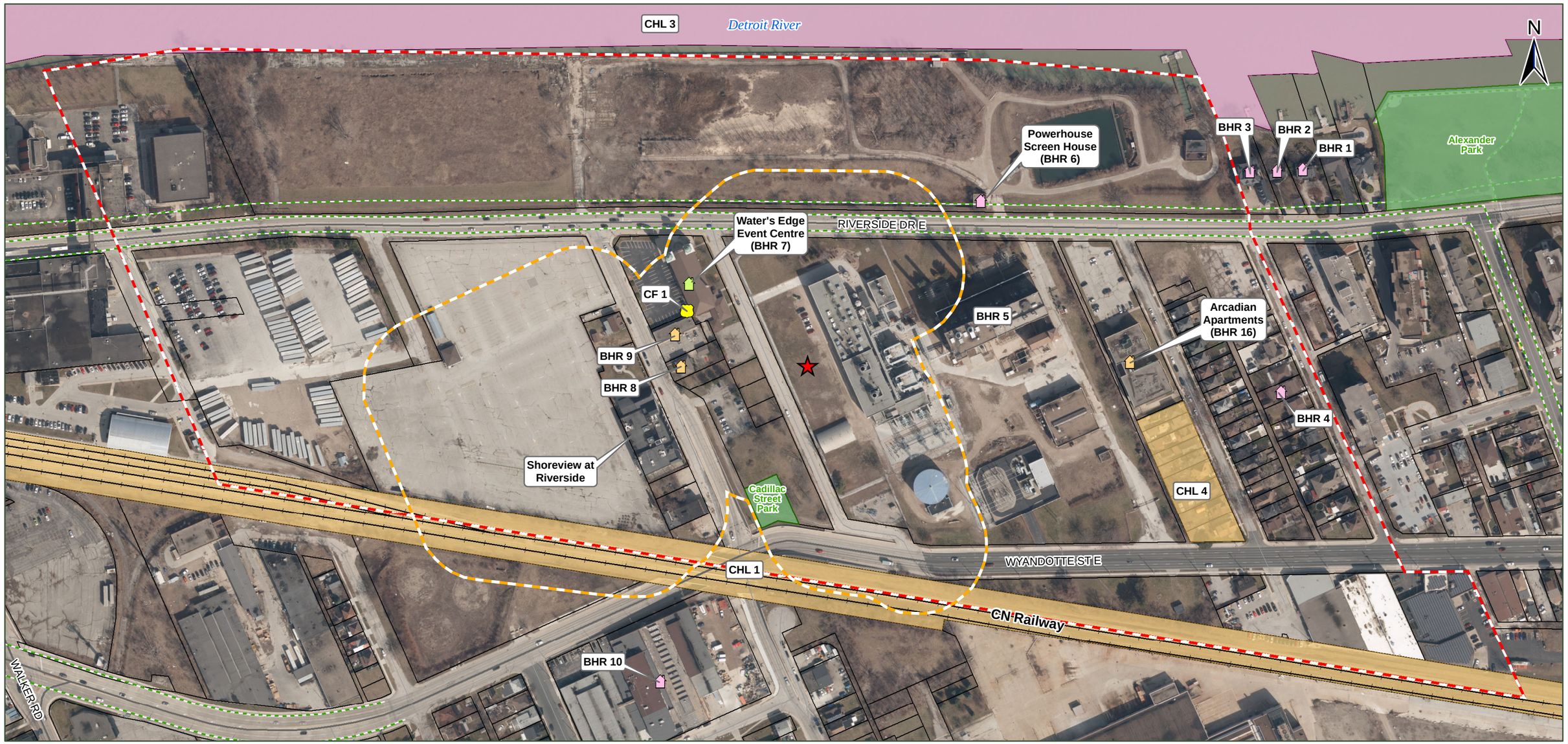
Drouillard Road falls within the GSA and is west of the Project Site running parallel to Cadillac Street. Schedule F of the City of Windsor Official Plan designates:

- Riverside Drive as a Scenic Drive, designed to carry low to moderate volumes of traffic;
- Wyandotte Street as a Class I Arterial Road, designed to carry high volumes of traffic without providing direct property access;
- Cadillac Street as a Local Road, designed to carry low volumes of traffic and a minimum right-of-way width of 20 m; and
- Drouillard Road as a Class I Collector Road, designed to carry moderate volumes of traffic.

There are bike lanes on Riverside Drive that are part of the TransCanada Trail and the Windsor Loop. The Windsor Loop is a 42.5 km circular loop that connects the City of Windsor around its perimeter, joining neighbourhoods and providing access to the TransCanada Trail (MapMyCity 2023).

There is one bus route that services the GSA. The Windsor Bus Crosstown 2 follows Wyandotte Street. The buses come during rush hour approximately every 10 minutes. There are two bus stops within the GSA, the first approximately 40 m southwest of the Project Site, located between Drouillard Road and Cadillac Street on Wyandotte Street, and the second approximately 286 m southeast of the Project Site at the intersection of Wyandotte Street and Belleview Avenue (City of Windsor 2023c).

The area is also serviced by CN. The CN railway is used for freight and by Via Rail as part of their Windsor – Quebec City corridor.



LEGEND:

- General Study Area
- Cultural Heritage Specific Study Area (construction area plus 50 m buffer)
- Project Site
- Parcel Fabric (City of Windsor)
- Parks (City of Windsor)
- Railway
- Trails / Bike Lanes

Heritage Features (Identified by ASI)

- Designated under Part IV of the *Ontario Heritage Act*
- Identified during background research and field review
- Listed on the City of Windsor's Municipal Heritage Register
- Identified during background research and field review
- Listed on the City of Windsor's Municipal Heritage Register
- Commemorative Feature

NOTES:

PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023
BUILT HERITAGE RESOURCE (BHR), CULTURAL HERITAGE LANDSCAPES (CHL) AND COMMEMORATIVE FEATURE (CF) DATA PROVIDED BY ARCHAEOLOGICAL SERVICES INC.

0 25 50 100 150 m

SCALE 1:2,750
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

SOCIO-ECONOMIC FEATURES

SLR

FIGURE NO:
5-5

DATE: July 2024

PROJECT NO: 241.30524.00024

5.9 Cultural Heritage

A Cultural Heritage Report (**Appendix D.5**) prepared by Archeological Services Inc. (ASI) identified cultural heritage areas of significance within the GSA for desktop review of local cultural heritage features. A cultural heritage-specific study area was also used to focus the field review and assessment on features potentially affected by Project activities and is represented by a 50 m buffer of the Construction Footprint (**Figure 5-5**).

A review of federal, provincial, and municipal registers, inventories, and databases, as well as field review, revealed that within 50 m of the Construction Footprint, there are three known and two potential built heritage resources (BHRs), one known commemorative feature (CF) and one potential cultural heritage landscape (CHL; **Table 5-4**).

Other known and potential cultural heritage features within the GSA but outside the 50 m cultural heritage specific study area are discussed further in (**Appendix D.5**). One noteworthy feature is the Detroit River, which flows along the northern edge of the GSA and is a known CHL that was designated to the Canadian Heritage River System in 2001.

Further review of Our Lady of the Rosary Church, which has been converted to the Water's Edge Event Centre (BHR 7), was undertaken by ASI due to its close proximity to the Construction Footprint; this more detailed information is provided in the Built Heritage Impact Study (**Appendix D.6**). BHR 7 is located on the southwest corner of Riverside Drive and Cadillac Street (**Figure 5-5**). The property on which the heritage building is situated also extends south along Cadillac Street and includes a later twentieth-century two-storey addition and associated parking lot that occupies approximately the southeastern third of the property (known as 229 Cadillac Street). Heritage attributes on the property are restricted to the former church building located at 2879 Riverside Drive.

Table 5-4: Known and Potential Built Heritage Resources, Cultural Heritage Landscapes, and Commemorative Features

Cultural Heritage Area of Significance Within 50 m of the Construction Footprint	Description
Built Heritage Resources	
Ford Powerhouse 3001 Riverside Drive / 3150 Wyandotte Street (BHR 5)	This *known* Industrial BHR is located on the south side of Riverside Drive, to the west of Belleview Avenue. This structure was constructed to be the Powerhouse for the Ford Motor Company in 1923 by architect Albert Kahn. The building features an irregular footprint and is of varying heights. The building generally features a flat roof. A raised enclosed walkway connects the main building to the southern portion of the building, which may have been a later addition. The building features early Art Deco style influences, including lavish low-relief ornamentation seen in the decorative brick banding and decorative metal tiles, as well as the decorative stone entrance way. The building is primarily clad in red brick with some decorative stone accents. The building features large multi-storey windows in steel frames. Potential heritage attributes include the significance of this building in the development of Ford City and the Ford Motor Company of Canada, the Art Deco influences, such as decorative brick and stone details, the size and massing, and the large rectangular windows.
3150 Riverside Drive (BHR 6)	This *known* BHR is located on the north side of Riverside Drive, to the west of Belleview Avenue, and sits north of the main Powerhouse building (BHR 5). This structure was constructed to be the Powerhouse Screen House for the Ford Motor Company in 1922 by architect Albert Kahn (City of Windsor, 2022). The Screen House is a single-storey building with a flat roof and a square footprint. The entrance is located on the east elevation. The building is clad with brick with decorative stone detailing. The building features large rectangular windows in steel frames with stone lintels. The building appears in the 1954 aerial photograph (**Appendix D.5**, Figure 5). Potential heritage attributes include the size and massing, decorative stone detailing, and the potential connection to the development of the Ford City community and Ford Motor Company of Canada.
Our Lady of the Rosary Church (now The Water's Edge Event Centre) 2879 Riverside Drive (BHR 7)	This *known* BHR is located on the southwest corner of Riverside Drive and Cadillac Street. The church was constructed circa 1907 to replace the original building which had been lost to fire. The building features both Renaissance Revival and Classical Revival details. Twin bell towers flank the gabled entrance of the church. The stone steps that lead to the entrance slightly curve to the west and split into two staircases to wrap around a small stone balcony. The building is clad in red brick with buffed brick decorative details. Varying window shapes are seen throughout the church, including a large rose window over the front entrance and semi-circular windows. Known heritage attributes include: its association with early French settlement, its association with Ford City and the Ford Motor Company, its involvement in the Ford City riot of 1917, its symmetrical front façade with bell towers, Renaissance style staircase, red brick and white brick trim, the copper dome atop both bell towers, and the rose window over the entranceway.

Cultural Heritage Area of Significance Within 50 m of the Construction Footprint	Description
232 Drouillard Road (BHR 8)	This *potential* commercial BHR is located on the east side of Drouillard Road, south of Riverside Drive. The has Modernist style influences, including the flat roof, rectangular footprint, concrete foundation, and simple geometric forms. The building is a one-storey commercial building clad is brick with stone accents under the windows and following the roofline. The building features long, rectangular windows. The off-centred main entrance is on the west elevation and has a similar design to the windows, creating a consistent geometric pattern. Due to the location of the property, which sits on the edge of two mapping areas, it is difficult to see a structure in the extant location. However, given its architectural style, the structure was likely constructed in the mid-twentieth century. Potential heritage attributes include: its Modernist architecture, size and massing, and decorative brick and stone details.
240 – 244 Drouillard Road (BHR 9)	This *potential* BHR is located on the east side of Drouillard Road, south of Riverside Drive. The residence is an example of the Foursquare architectural style with square footprint, hipped roof with centred hipped dormer, and symmetrical front façade. The residence features a veranda with flat roof. The lower level is clad in stone veneer and the upper level clad in vinyl siding. The residence has a concrete block foundation and a paved pedestrian pathway to the front entrance. Due to the location of the property, which sits on the edge of two mapping areas, it is difficult to see a structure in the extant location. However, given its architectural style and the general history of the neighbourhood and development of workers housing, the residence was likely constructed in the 1920s or 1930s. Potential heritage attributes include its Foursquare architecture, symmetrical front façade, and the residences connection to the growth of Ford City and potentially the Ford Motor Company.
Commemorative Feature	
The Blockade Plaque (CF 1)	This *known* CF is located on the north elevation of 232 Drouillard Road near the intersection of Drouillard Road and Riverside Drive. The plaque speaks to the Blockade that took place on September 12, 1945, when workers of the Ford Motor Company of Canada went on strike. The plaque has an adjoining mural to the east of it. The plaque and mural appear to be a joint effort by the Greater Drouillard Revitalization efforts, City of Windsor, Federal Government, and Ford Motor Company of Canada, Limited. Several other plaques and murals are found in the Desktop Study Area on Drouillard Road south of Wyandotte Street.
Cultural Heritage Landscapes	
Rail Corridor (CHL 1)	This *potential* CHL follows the former CN railway corridor of the Great Western Railway that traverses generally east-west through the GSA. The tracks continue to be active. Potential heritage attributes include the historical rail infrastructure, particularly the overpass at the intersection of Drouillard Road and Wyandotte Street, and the connection to the industrial growth of Windsor and the communities of Ford City and Walkerville.

5.10 Archaeological Resources

An archaeological review of the Construction Footprint was undertaken by ASI to confirm whether all areas to be used as part of the Project, both temporarily and permanently, can be considered clear of archaeological concern or if additional archaeological assessment is required (**Appendix D.7**). In summary, no further work is required, and all areas being considered for use as part of the Project are clear of archaeological concern.

Both a Stage 1 and Stage 2 Archaeological Assessment (Dillon 2007b) were completed prior to construction of the existing EWCC. The entirety of the Ford Powerhouse property, including the existing EWCC Site and Capital Power-leased area, was cleared of archaeological concern.

Although the 2007 archaeological assessment did not include the Capital Power-owned lands along the east side of Cadillac Street where the Project will be located, a review of historical aerial imagery confirmed that residential structures previously occupied this area and were demolished between 2007 and 2009. Therefore, these properties have been subject to deep and extensive disturbance and based on the MCM's *Criteria for Evaluating Archaeological Potential*, are considered clear of archaeological concern (**Appendix D.7**).

Similarly, historical aerial imagery of the vacant Capital Power-owned lands on the west side of Cadillac Street to be used temporarily for vehicle parking or equipment and materials laydown and storage, confirms that the structures, assumed to be former residences, on these three parcels were also demolished between 2007 and 2009 for development of the EWCC. These properties have also been subject to deep and extensive disturbance and are considered clear of archaeological concern under the MCM checklist (**Appendix D.7**).

The ASI review confirmed that the Matilda Street parking lot at 240 Albert Road exhibits high archaeological potential given its location within 300 m of the Detroit River and is not able to be cleared through use of the MCM checklist. However, temporary use of this property during construction is limited to equipment and materials laydown and storage or vehicle parking. Therefore, given there will be no ground-disturbing activities below the paved surface, there are no archaeological concerns for temporary use of the parking lot.

5.11 Aesthetically Pleasing Landscapes and Views

The Project Site is located adjacent to Riverside Drive which is identified as a designated themed street under City of Windsor Official Plan Section 6.11.11.1 and has been classified as a Civic Way and Scenic Drive under the Official Plan. Schedule G. Policy 7.2.6.8 (b) (vii) states that "*the municipal streetscape of scenic drives shall be guided by the urban design policies in this Official Plan*". The City of Windsor strives to screen infrastructure from the public right-of-way through policies outlined under Section 6.11.11.2; however, it is generally recommended that developments incorporate a combination of low masonry walls, decorative fencing, and landscaping.

The architecture of the existing EWCC was designed to complement the historic features of the Ford Powerhouse using similar colors and stone masonry in consideration of the Ford Powerhouse CIP guidelines. After construction of the EWCC, landscaping, including implementation of a planting plan, was completed to further mitigate the visual impacts of the facility and the loss of existing on-site vegetation (Dillon 2007a).

The Ford City CIP identifies Neighbourhood Gateway Areas at the intersections of Wyandotte Street and Drouillard Road, and Riverside Drive and Drouillard Road. Given its location along the Detroit River, the Riverside Drive and Douillard Road area identifies the opportunity for a Riverfront Park and the redevelopment of adjacent vacant and underutilized properties. The area of Wyandotte and Drouillard presents an opportunity to further enhance the area with landscaping, art, and improved pedestrian connections.

Urban design guidelines apply to the following elements of traditional main street buildings:

- Preserve original building materials, including masonry work, doors and windows;
- Improve visual connection with the street, including the screening of mechanical equipment; and
- Building elements.

The Ford City CIP presents the policies and urban design guidelines as general enough to be applied existing commercial/mixed-use buildings and infill development within the Ford City CIP area.

The Cadillac Street Park is a small park with less than 0.10 ha (0.25 ac) of open green space, with trees and a short walking path between Cadillac Street and Drouillard Road and a City of Windsor Pumping Station (City of Windsor 2024).

6.0 Effects Assessment

6.1 Screening of Potential Effects

Application of the screening criteria provided in the *Guide to Environmental Assessment Requirements for Electricity Projects* (2024) consisted of answering a series of “yes” or “no” questions to reflect the potential interactions of the Project as described in the Project Description (**Section 2.0**) with the environment. The Guide explicitly states that net effects (i.e., effects that remain after implementation of mitigation measures) are not to be considered when conducting the screening exercise. Where the screening exercise identifies a potential environmental effect, the process requires that an answer of “yes” be applied to the screening question, even if it is likely to be successfully mitigated.

As further described in the screening checklist (**Appendix A**), the following environmental components have been identified as being potentially affected by the Project and therefore, have been included in the environmental effects assessment of the ERR in subsequent sections:

- Groundwater;
- Air Quality;
- Greenhouse Gas (GHG) Emissions;
- Noise and Vibration;
- Socio-economic Environment;
- Cultural Heritage;
- Aesthetically Pleasing Landscapes and Views;
- Climate Change Risk; and
- Human Health Risk.

Some additional criteria in the screening checklist were not screened out, but these potential effects are not site- or Project-specific and are well understood and can be readily avoided or mitigated through the implementation of industry standard best management practices. The following screening criteria were identified as warranting additional information regarding the potential for negative environmental effects (refer to **Section 2.6**):

- Will the Project cause potential negative effects on surface or ground water from accidental spills or releases to the environment?
- Will the Project result in the creation of waste materials requiring disposal?

Section 2.6 also provides additional information regarding criteria in the screening checklist that have been screened out as no potential effects are anticipated, however contingency measures will be in place for unexpected events.

Due to the urbanized and industrial nature of the Project Site, no other potential effects were identified during the screening that might affect environmental components not listed above (**Appendix A**).

6.2 Groundwater

6.2.1 Potential Effects

6.2.1.1 Construction

During construction, the Project has the potential to divert groundwater flow and/or quantity related to water management activities that may be realized during excavation work. Accidental spills also have the potential to affect groundwater quality; these effects are addressed as spill response measures in **Section 2.6.3**.

The review of available groundwater conditions within and around the Project Site indicated the presence of groundwater at approximately 2 mbgs (see **Section 5.2**). While the groundwater encountered at 2 mbgs is located within silty clay till material, the potential for perched conditions may result in groundwater being present closer to grade. The silty clay till material present within the Project Site generally has low permeability, and therefore extensive dewatering during construction is not expected for the type and/or scale of earthworks associated with the Project.

Localized excavations at depths of approximately 5 mbgs have the potential to require some temporary dewatering. All other earthworks activities are limited to shallow excavations and therefore no substantial interaction with groundwater is anticipated.

As a means of evaluating the potential for construction dewatering to affect groundwater flows and quantity, the dewatering requirements for the largest anticipated excavation was estimated based on the following assumptions:

- Dimensions of the excavation footprint will be approximately 20 m x 10 m and extend to a depth of 5 mbgs;
- The static water level within the Project Site lies at 1 mbgs;
- A trench extending 1m below the base of the excavation will be needed for dewatering purposes during construction. This 1m deep trench will maintain dry working conditions within the excavation, resulting in an overall drawdown of 5 m;
- Site geology consists of clay or clay till that extends from ground surface to a depth of at least 8 mbgs. More permeable sand seams were noted in some boreholes during the recent geotechnical investigation (WSP 2023); however, these layers appear to be discontinuous and do not extend across the entire Project Site;
- A hydraulic conductivity value of 10^{-9} m/s was assumed. This is on the higher range (and therefore more conservative) of the values for clays reported in industry-accepted literature including Freeze and Cherry (1979);
- An arbitrary ground surface elevation was selected at 100 masl. This value does not affect the dewatering estimates but was chosen to simplify calculations.

For the purposes of estimating how water will flow into the excavation and be dewatered, it was assumed the entire system acts as a large well and will be dewatered by a series of closely spaced wells. The length and width of the overall foundation area is approximately 20 m by 10 m, resulting in a ratio of excavation length to width (L/W) greater than 1.5.

As a result, the dewatering calculations for the excavation combine the equations for radial flow to a well with the equation for flow to a trench from a line source (Equation 6.1) for an unconfined aquifer (Powers et al. 2007).

Equation 6.1

$$Q = \frac{\Pi K(H^2 - h^2)}{ln\frac{R_o}{r_s}} + 2\left[\frac{\mathrm{x}K(H^2 - h^2)}{2L}\right]$$

The dewatering calculation for the largest excavation area is projected to result in a dewatering rate of approximately 577 L/day (0.4 L/min). Additionally, based on the above estimate, the radius of influence for dewatering is about 5.4 m, and therefore is not predicted to extend to distances outside of the Project Site. Based on these dewatering estimates, the regulatory permitting threshold of 50,000 L/day will not be exceeded and therefore a Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR) is not expected to be required. Any groundwater seepage into excavations during construction will likely be limited and could be managed through on-site sumps and vac trucks.

Very little water management is anticipated to be required related to the advancement of piling foundations. Although the pilings will be advanced to depths of 24 to 30 mbgs and therefore anticipated to intercept groundwater, the proposed CFA method generally results in no void spaces being present within the hole, as concrete is injected into the hole as the auger flight is retracted.

6.2.1.2 Operations and Maintenance

During operations and maintenance, there are no features of the Project that will interact with groundwater and therefore no potential effects are anticipated. Accidental spills also have the potential to affect groundwater quality; these effects are addressed in **Section 2.6.3**.

6.2.2 Mitigation

In the event dewatering is required, the PEMP will include groundwater management measures to be implemented during construction. Avoidance and mitigation measures will include, but are not limited to:

- The handling, transfer, testing, monitoring, and disposal of groundwater generated during construction in accordance with applicable regulatory requirements and the Project contract documents, as applicable.
- General groundwater monitoring considerations during construction and provision of guidance for groundwater monitoring following construction activity, where applicable.
- Identification of the anticipated groundwater quantity and dewatering zone of influence that will be encountered during construction, and if approvals are needed for the water taking, such as a Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR).
- The storage, transfer, and disposal and/or treatment of the groundwater collected during construction, and approvals for the water disposal and/or treatment if applicable, based on the quantity and quality. Pumped water will be discharged to the existing EWCC SWM system and will be evaluated to confirm water quality meets required criteria for the system. The plan will consider the current industrial use of the property and use field measured data to support any conclusions and/or management recommendations.

6.2.3 Summary of Net Effects

Construction dewatering, if required, will likely include very small amounts of groundwater and be dominated by precipitation and runoff from the surrounding areas. Dewatering volumes are expected to be well below regulatory permit requirements of 50,000 L/day and is expected to be managed through on-site sumps and vac trucks.

Given the limited number and localized extent of excavations, temporary and minor dewatering requirements, and implementation of mitigation measures, no adverse net effects on groundwater are anticipated.

6.3 Air Quality

6.3.1 Potential Effects

6.3.1.1 Construction

Construction activities associated with the Project will rely on the use of a wide range of mobile equipment such as rollers, rammers, piling rigs, backhoes, and cranes. The engine exhaust from these vehicles, especially from those operating on diesel fuel, represent a source of particulate matter (PM) and other emissions, including nitrogen oxides (NO_x), carbon monoxide (CO), sulphur dioxide (SO_2), total suspended particulates, Polycyclic Aromatic Hydrocarbons (PAHs), and Volatile Organic Compounds (VOCs). Tailpipe emissions from vehicle traffic related to material delivery and contractor vehicles also contribute to increased emissions during construction.

Fugitive dust emissions can result from Project-related civil earthworks which involve the disturbance of soils, through the loading, unloading, and transfer of materials, and from wind erosion of storage stockpiles. Earthworks anticipated within the Project Site include (but are not limited to) site grading, pile advancement, trenching, pit excavation, soil stockpiling/handling/hauling, and site compacting. Dust emissions from civil earthworks will be primarily associated with activities undertaken within the Project Site. While all temporary laydown and storage areas will be paved or involve no soil disturbance, dust emissions may occur due to material spillage, the transportation of uncovered material, or from dirty equipment. Additionally, paved roads surrounding a construction area can become dust ladened if left unattended, and vehicle traffic on these roads can cause the re-suspension of dust.

Due to the temporary/limited duration nature of construction activities, there are no specified air quality criteria. Furthermore, construction activities are exempt from air quality-related permitting in the Province of Ontario. Regardless, many of the construction activities will not occur continuously (i.e., intermittent) and would likely not occur concurrently.

6.3.1.2 Operations and Maintenance

An air quality assessment of the Project was undertaken to evaluate air emissions associated with Project operations to confirm compliance with applicable regulatory limits (**Appendix D.2**). The evaluation considered Project-specific emissions, as well as the broader cumulative context of the overall airshed.

The proposed GE 7E.03 gas turbine selected for the Project is equipped with a dry low NO_x combustion system and is considered lower emission technology compared to other turbines in its class.

The combustion of natural gas associated with the simple cycle gas turbine generator results in emissions of air contaminants of concern (COCs), including:

- NO_X (in the form of Nitrogen Dioxide or NO_2);
- CO;
- PM; where total particulate matter and fine particulate matter are assessed for the Project, with fine particulate matter defined as particulate sizes 2.5 microns in diameter and less ($PM_{2.5}$), and 10 microns in diameter and less (PM_{10}); and
- SO_2.

VOCs, PAHs and to a lesser extent, metals, can be detected in the exhaust stream, as a result of the combustion process. However, modelling results of these compounds predicted they will be released in trace amounts and therefore these compounds were not included in combined effects analysis for this project. The results of the analysis of these compounds are reported in (**Appendix D.2**).

Ontario's EPA is the primary provincial legislative framework for regulation of air emissions, with requirements outlined specifically in the Air Quality Regulation, O. Reg. 419/05. The MECP administers the EPA and is the key regulatory authority for establishing applicable emission limits, reviewing applications for approvals under the EPA, and for compliance. Following completion of the ESP, the Project will require an ECA (Air & Noise) issued under the EPA. The two aspects to air emission compliance under O. Reg. 419/05 include:

- Emission limits at the source (i.e., exhaust stack) outlined in Guideline A-5; and
- Criteria for emission levels at points of impingement (POI) as outlined in the Air Contaminant Benchmark List.

Guideline A-5 specifies emissions limits for natural gas fired turbines at the source (i.e., exhaust stack) for NO_X, CO and SO_2 under normal operating conditions. The emission rates for the Project were calculated using specified equations from the guideline to confirm that emissions from the exhaust stack will meet these provincial requirements. The results of the calculations demonstrated that the gas turbine will be compliant with the Guideline A-5 emission limits.

Air quality dispersion modelling was completed using USEPA AERMOD version 22112 (AERMOD), following the steps outlined in Guideline A-11 (Air Dispersion Modelling Guideline for Ontario, 2017). AERMOD combines stack parameter input data, emission rates calculated in accordance with Guideline A-5, terrain, and meteorological data to model a Gaussian plume to simulate the dispersion of COCs into the atmosphere.

The dispersion model was used to predict concentrations of selected COCs at identified Points of Impingement (POIs). POIs are maximum concentrations located at and beyond the property line of a Project Site. Two types of POI were included in the model: a 16 x 16 km nested receptor grid with POIs placed every 10 metres along the Project Site property line, and 15 sensitive receptors. Sensitive receptors were selected to represent locations where extended human occupancy is experienced, such as residences and hotels. Details regarding the receptors assessed are reported in (**Appendix D.2**).

The MECP's Air Contaminant Benchmark List (ACB List) identifies the standards and guidelines to be used for the purposes of POI assessments prepared as part of the ECA process. The applicable criteria from the ACB List were used to compare to the Project -specific dispersion modelling results at receptors to confirm Projects compliance with O. Reg 419/05 for use in the future ECA application process.

In addition to the compliance test that will be required for environmental approval, a combined effects analysis was conducted to consider the existing ambient air quality conditions in the local region. The criteria used to evaluate the results of the dispersion modelling in the context of the regional air quality regime were the Provincial Ambient Air Quality Criteria (AAQC) and Federal Canadian Ambient Air Quality Standards (CAAQS):

- The AAQC standards are provincially based, non-regulatory, ambient air quality values that are set based on either human health or environmental effects at concentrations of a contaminant in air below which adverse effects are not likely to occur. The MECP first sets AAQCs (non-regulatory) and uses them to establish air quality standards (regulatory) based on health and environmental effects. AAQCs are used to assess air quality from all sources whereas air standards are used to assess the performance of regulated facilities under the local air quality regulation (MECP 2020).
- The CAAQS are non-regulatory, ambient air quality values based on factors including health and environmental effects, current air quality levels in other jurisdictions, projected trends, and elements of achievability. CAAQS are intended to be used as indicators to help manage regional air quality and drive the improvement of air quality across Canada. CAAQS are established to work with regional air quality management systems (AQMS) to control and monitor air quality at the regional level but not intended to be directly applied to individual facilities (CCME 2020) or the compliance of individual facilities. As a conservative measure, the individual facility emissions were combined with the existing facility emissions and the ambient background and, similar the Provincial AAQCs, compared to the CAAQS.

Five operating scenarios were modelled for the selected COCs. The scenarios chosen are intended to represent the normal operating conditions and worst-case emissions expected under different operating and environmental conditions. Scenarios assumed all equipment will run 24 hours per day, 7 days per week which is a highly conservative assumption since, similar to the existing EWCC, the Project is a peaking facility and is expected to run infrequently. As a peaking facility, it must not operate for more than 1,500 hours annually. Dispatch forecasting developed for the Project suggests that the unit may run less than 150 hours annually, with an average run time of approximately 2 to 4 hours.

For the Project, modelling results show that the Project will be associated with increases to local and regional air quality emissions, however, emissions of identified COCs at POIs are predicted to remain below their respective O. Reg. 419/05 limits for the selected operating scenarios. Details for all scenarios are provided in (**Appendix D.2**) and results are summarized below for the normal operating scenario and start-up scenario (**Table 6-1** and **Table 6-2**).

Table 6-1: COC Concentrations at POI Compared to Scenario A Criteria for 100% Load Normal Operations Scenario (Cold Temperature) – Project Only

Contaminant	CAS #	Total Emission Rate (g/s)	Maximum POI Concentration (µ/m^3)	Averaging Period (hours)	MECP POI Limit (µ/m^3)	Limiting Effect	Percentage of MECP POI Limit (%)
Nitrogen Oxides	10102-44-0	4.95	2.131	24	200	Health	1.07
			39.858	1	400	Health	9.96
Carbon Monoxide	630-08-0	7.80	75.360	0.5	6000	Health	1.26
Sulphur Dioxide	7446-09-5	0.44	1.385	1	100	Health & Vegetation	1.39
			0.001	annual	10	Health & Vegetation	0.01
Particulate Matter (total particulate or total suspended particulate matter)	N/A	0.63	0.271	24	120	Particulate	0.23

Note: Air Dispersion Model Used – AERMOD: ACB list particulars, Source Benchmark – Standard; Reg. Schedule # B1

Table 6-2: COC Concentrations at POI Compared to Scenario E Criteria for Start-up Condition – Project Only

Contaminant	CAS #	Total Emission Rate (g/s)	Maximum POI Concentration (µ/m^3)	Averaging Period (hours)	MECP POI Limit (µ/m^3)	Limiting Effect	Percentage of MECP POI Limit (%)
Nitrogen Oxides	10102-44-0	6.45	4.01	24	200	Health	2.0
			59.23	1	400	Health	14.8
Carbon Monoxide	630-08-0	13.14	144.82	0.5	6000	Health	2.4
Sulphur Dioxide	7446-09-5	0.35	1.56	1	100	Health & Vegetation	1.6
			0.01	annual	10	Health & Vegetation	0.1
Particulate Matter	N/A	0.61	0.38	24	120	Particulate	0.3

Note: Air Dispersion Model Used – AERMOD; ACB list particulars, Source Benchmark – Standard; Reg. Schedule # B1

The air quality assessment also considered a combined modeling scenario whereby both the existing EWCC and the Project would run simultaneously for the normal operating condition. Although both facilities could be dispatched concurrently by the IESO, this scenario is anticipated to occur infrequently. In this combined analysis, historical ambient data were added to the modelling results. The combined assessment can further be considered conservative since it is expected the current EWCC emissions will also contribute to ambient conditions discussed in **Section 5.4.3**. Both the EWCC and the Project are modelled at normal operating conditions, operating simultaneously and continuously, 24 hours a day, 7 days a week.

Modelling results for the combined assessment predict that despite high background concentrations for two COCs, concentrations at sensitive receptors are below their respective AAQC and CAAQS thresholds for the normal operating scenario. Results of the combined effects analysis are provided in (**Appendix D.2**) and are summarized below in **Table 6-3** and **Table 6-4**.

Table 6-3: Combined Concentration Results for Scenario A 100% Load Normal Operating Scenario Compared to AAQC (Project + EWCC)

COC	Averaging Period	90th Percentile of Ambient Background Concentration (µg/m³)	Project and Existing EWCC Concentration at Sensitive Receptor (µg/m³)	Combined Maximum at Sensitive Receptor (µg/m³)	AAQC Limits (µg/m³)	Sensitive Receptor Percentage of Limit
NO_X	1-Hour	46.1	88.73	134.8	400	34%
	24-Hour	42.3	26.57	68.8	200	34%
CO	1-Hour	385	64.05	449	36,200	1%
	8-Hour	379	35.78	415	15,700	3%
SO_2	10-min	4.5	5.88	10.4	178.2 (67 ppb)	6%
	1-Hour	2.75	3.57	6.32	106.4 (40 ppb)	6%
	annual	1.68	0.01	1.71	10.6 (4 ppb)	16%
PM_{10}	24-Hour	24.9	2.67	27.6	120	23%
$PM_{2.5}$	24-Hour	13.4	2.67	16.0	27	59%
	annual	8.48	0.01	8.49	8.8	96%

Note:

[1] The AAQC limits for SO_2 and NO_2 are in the unit of Part Per Billion (ppb). The (ppb) unit converted to µg/m³ by using following factors:

SO_2: (µg/m³) = (ppb) * 2.66

NO_2: (µg/m³) = (ppb) * 1.88

[2] Predicted results from dispersion modelling for the combined scenario includes emissions from both the Project and existing EWCC facility.

Table 6-4: Combined Concentration Results for Scenario A 100% Load Normal Operating Scenario Compared to CAAQS (Project + EWCC)

COC	Averaging Period	90th Percentile of Ambient Background Concentration (µg/m³)	Combined Concentration at Sensitive Receptor (µg/m³) *	Cumulative Concentration at Sensitive Receptor (µg/m³)	CAAQS Targets (ppb)	Sensitive Receptor Percentage of Targets
NO_2	1-Hour	38.17	11.78	49.95	42 (78.9 µg/m³)	63%
	annual	21.61	0.16	21.77	12 (22.5 µg/m³)	97%
SO_2	1-Hour	2.75	0.99	3.74	65 (172.9 µg/m³)	2%
	annual	1.68	0.01	1.69	4 (10.6 µg/m³)	16%
$PM_{2.5}$	24-Hour	13.45	0.74	14.19	27 µg/m³	53%
	Annual	8.48	0.01	8.49	8.8 µg/m³	96%

Note:

[1] The CAAQS limits for SO_2 and NO_2 are in the unit of Part Per Billion (ppb). The (ppb) unit converted to (µg/m³) by using following factors:

SO_2: (µg/m³) = (ppb) * 2.66

NO_2: (µg/m³) = (ppb) * 1.88

[2] Predicted results from dispersion modelling for the combined scenario includes emissions from both the Project and existing EWCC facility.

***CAAQS Statistical Form:**

The 1-hour NO_2 CAAQs is based on the 3-year average of the annual 98th percentile of the NO_2 daily-maximum 1-hour average concentrations.

When the emission profiles of the Project are combined with those of the existing EWCC and ambient background, predicted concentrations fall within the thresholds of both the AAQCs and CAAQS.

In the case of annual $PM_{2.5}$, the predicted combined concentrations are 96% of the 8.8 (µg/m³) threshold recognized in both the AAQC and CAAQS. However, the total emissions from the Project and existing EWCC attribute less than 1% to the combined concentration with the high background concentrations contributing to the air quality condition.

Similarly, in the case of the CAAQS for nitrogen dioxide (NO_2), a species of NO_X, ambient conditions contribute the most to the combined concentration. Specifically, the Project and existing EWCC contributes less than 1% (0.16 µg/m^3) of the combined concentration of 21.77 µg/m^3 which is 97% of the CAAQS.

As noted above, these modelling predictions are based on highly conservative operating scenarios However, even with the conservative considerations in the assessment, the Project, in combination with the existing EWCC and local background conditions, is anticipated to be within the AAQCs and CAAQS.

6.3.2 Mitigation

The PEMP will outline the industry best management practices to be implemented for the management of air quality effects during construction. The document *Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities* (Environment Canada, 2005) provides several mitigation measures for reducing emissions during construction and will be considered during development of the PEMP. Avoidance and mitigation measures will include, but are not limited to:

- Stationary and mobile equipment will adhere to federal emission standards and will be regularly maintained;
- Minimize, where possible, the number of vehicles and engines operating at any one time;
- Limit idle times of vehicles and engines. Shut off engines when not in use;
- Maintain paved areas by keeping them clear of dust as much as possible, including sweeping as required based on visual inspection, swift removal of spilled material, and clean the wheels and empty cargo holds of vehicles prior to leaving the site;
- Project traffic will be restricted to public roadways (i.e., the routes shown on **Figure 2-5**), temporary workspaces, or the Project Site;
- Project traffic will adhere to posted speed limits on public roadways, and reduced speed limits will be implemented in all temporary laydown and storage areas and the Project Site;
- The use of enclosed cargo holds on trucks and vehicles or cover open bodied trucks that are transporting fill, aggregate, or other earthen materials;
- Lower drop distances when unloading material onto piles or surfaces;
- Apply a water spray or dust suppressant to materials being transferred or stockpiled, as needed; and
- Materials (stockpiled soil) that contain loose particles that have the potential to become airborne will be covered, controlled, or shipped off-site as appropriate.

Mitigation for air quality during operations has been included in the Project design, as the GE 7E.03 gas turbine selected for the Project is equipped with a dry low NO_X combustion system and is considered lower emission technology compared to other turbines in its class. No further mitigation measures are proposed for Project operations because emissions are predicted to meet the applicable air quality limits. Site operational activities will adhere to site-specific operational standards and procedures.

6.3.3 Summary of Net Effects

Potential effects associated with construction are anticipated to be temporary and localized, and readily managed through implementation of standard industry best management practices. The Project will result in increases to local and regional air quality emissions; however, emissions are predicted to remain in compliance with O. Reg. 419/05 and are predicted to be below AAQC and CAAQS limits. No significant net adverse effects are predicted as a result of air quality emissions during Project construction and operation.

6.4 Greenhouse Gas Emissions

6.4.1 Potential Effects

6.4.1.1 Construction

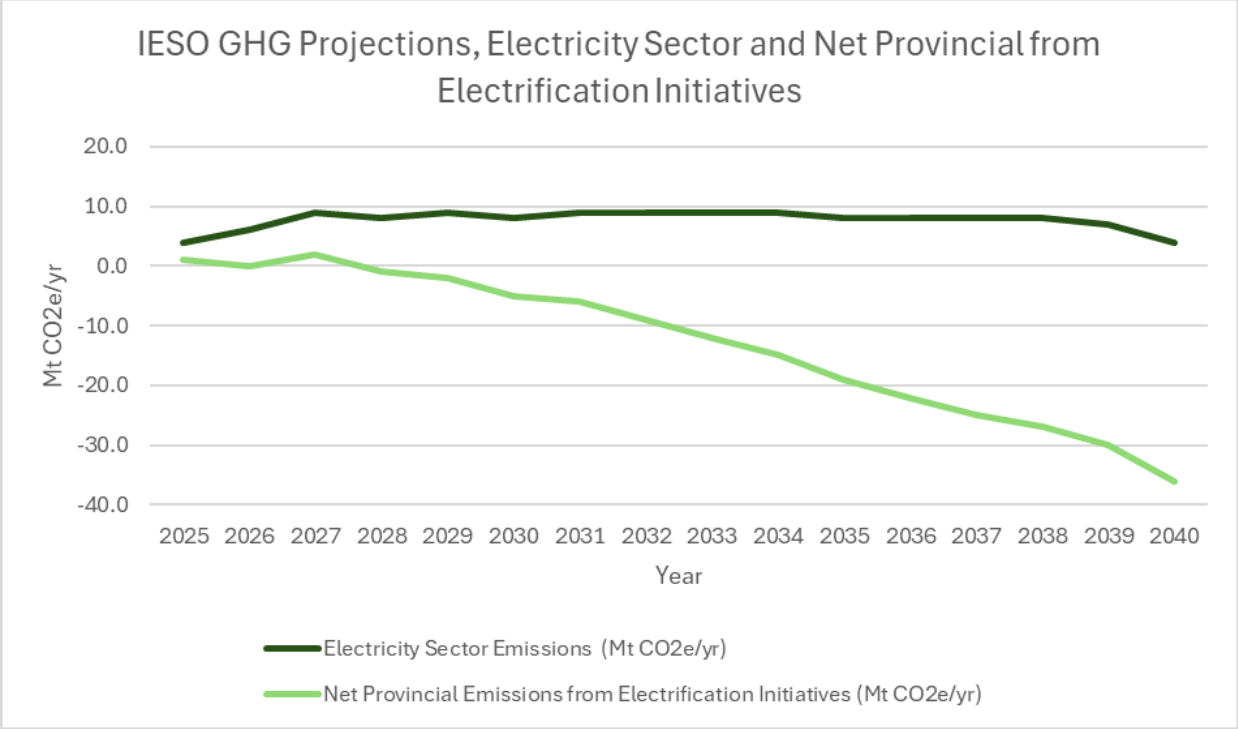
A greenhouse gas (GHG) is any atmospheric gas that absorbs and re-emits infrared radiation, thereby acting as a thermal blanket for the planet and warming the lower levels of the atmosphere. GHGs are released to the atmosphere from several natural and anthropogenic (human activity) sources (IPCC 2021). Project construction will result in GHG emissions (carbon dioxide [CO_2], methane [CH_4], and nitrous oxide [N_2O]) from the combustion of diesel fuel in heavy equipment. Emissions will also result from construction traffic throughout the 12 to 18-month construction period.

6.4.1.2 Operations and Maintenance

A GHG Assessment was undertaken to predict the potential GHG emissions resulting from operation of the Project (**Appendix D.8**).

To provide context for the assessment, the IESO forecast of future emissions for the Ontario electricity sector was reviewed. The continued use of natural gas in a limited way will allow businesses and consumers to advance electrification plans and decarbonize Ontario's electricity system. Overall, the use of natural gas for electricity purposes from 2026 through 2040 will increase GHG emissions from the electricity generation sector compared to existing GHG emissions. An increase in electricity sector emissions is not expected to translate to an increase in economy wide provincial GHG emissions. The IESO forecasts that two major electrification initiatives will impact the broader economy emissions: increased usage of electric vehicles and electrification of industrial equipment (IESO 2022a, 2024). As a result of these initiatives, the overall GHG emissions for the province are projected to decrease with increased electricity usage (**Figure 6-1**). Therefore, even though emissions associated with electricity generation are forecasted to increase, there will be an overall, Province-wide decrease in GHG emissions associated with the switch to using more electricity in vehicles and industrial equipment (IESO 2022c).

Figure 6-1: Greenhouse Gas Emissions for the Ontario Electricity Sector 2025 - 2040



Source: IESO 2024

During Project operations, GHG emissions will result from the use of natural gas as fuel to power the turbine to generate electricity. The GHG Assessment undertaken for the Project quantified the estimated GHG emissions in carbon dioxide equivalent units (CO_2e) per year associated with the Project, incorporating a Project-specific dispatch profile developed by Capital Power based on the IESO-forecast demand. Analytical software was utilized to model a variety of complex market inputs to predict how the Project will likely be dispatched by the IESO under future market conditions. The assessment was undertaken in consideration of the MECP's *Considering Climate Change in the Environmental Assessment Process* (Government of Ontario 2017), including use of a quantitative assessment approach for the evaluation of Project emissions.

The quantitative assessment included evaluation of the Project emissions, as well as a combined scenario that included the Project and the existing EWCC. The predicted emissions for the existing EWCC were also included as comparable and functionally equivalent GHG emissions that would occur in the absence of the Project. This condition is referred to as the Business-as-Usual scenario, which was used to determine if the operation of the Project would result in a net increase or decrease in GHG emissions. Details are provided in (**Appendix D.8**) and results are summarized below.

The projected GHG emissions are presented in **Table 6-5** as tonnes (t) of CO_2e per year during the 2026 – 2040 period.

Table 6-5: 2026 – 2040 Estimated Cumulative GHG Emissions (Project + EWCC)

Year	Estimated EWCC GHG Emissions (t CO_2e /year)	Estimated Project GHG Emissions (t CO_2e /year)	Estimated Cumulative GHG Emissions (t CO_2e /year)
2026	3,719	3,568	7,287
2027	2,936	4,032	6,968
2028	2,299	3,141	5,439
2029	2,715	2,800	5,515
2030	2,004	1,998	4,101
2031	1,457	1,937	3,394
2032	2,029	2,614	4,643
2033	1,056	2,316	3,372
2034	1,076	1,844	2,920
2035	1,003	1,902	2,906
2036	1,153	1,950	3,103
2037	1,072	2,403	3,475
2038	1,101	2,788	3,889
2039	1,190	2,613	3,804
2040	1,077	2,860	3,937

The estimated annual GHG emission totals for the Project are projected to peak at approximately 4,032 t of CO_2e in 2027. When considered within the provincial context, the Project is predicted to contribute between 0.02% and 0.07% annually to the projected Ontario GHG emissions for the electricity sector between 2026 and 2040.

In terms of regulatory reporting requirements, Project emissions are predicted to be below the 10,000 t of CO_2e per year threshold associated with specified reporting requirements under the *Canadian Environmental Protection Act* and O. Reg. 390/18 under Ontario's EPA. However, since the facility is an electricity generation facility, it is a designated facility in Schedule 2 of O. Reg. 241/19 under Ontario's EPA and is required to report under the provincial Emission Performance Standards Program.

Cumulative GHG emissions for the Project and the existing EWCC will increase GHG emissions. However, due to the projected short-term need of natural gas fired electricity generation required by the IESO to meet provincial electricity demand, the increase in GHG associated with electricity generation is expected to increase province wide, in the short-term, until other sources of generation can be stabilized.

6.4.2 Mitigation

During construction, many of the same mitigation measures provided in **Section 6.4.2** to mitigate air emissions would also aid in reducing GHG emissions and will be considered during development of the PEMP.

No mitigation measures are proposed for Project operations and maintenance. Site operational activities will adhere to site-specific operational standards and procedures.

6.4.3 Summary of Net Effects

The Project is predicted to contribute ≤0.07% annually to the IESO's 2024 GHG projections for the Ontario electricity sector. With the increasing electricity demand in the province as well as the reduced capacity of nuclear electricity generation, the IESO will be relying on natural gas electricity generation facilities to increase output to meet the increased demand in the short term. The Project will assist in meeting IESO forecasted increased demand, while contributing a small percentage of overall provincial electricity sector generated GHGs. No significant net adverse effects are predicted as a result of GHG emissions during Project construction and operation.

6.5 Noise and Vibration

6.5.1 Potential Effects

6.5.1.1 Construction

During Project construction, noise and vibration will be generated by the operation of heavy equipment at the Project Site, delivery and movement of components and materials within laydown areas, and by associated vehicular traffic onsite and along the delivery routes. No blasting will be required.

In Ontario, although there are no limits on overall construction noise levels, there are limits on the noise levels which can be emitted from specific items of equipment, and limitations on the timing of construction activities. The MECP stipulates limits on noise emissions from individual items of equipment rather than for overall construction noise (**Table 6-6**), while municipalities develop and implement noise by-laws that may identify timing restrictions for construction activities (i.e., City of Windsor Noise By-law 6716).

Table 6-6: NPC-115 Maximum Noise Emission Levels for Typical Construction Equipment

Type of Unit	Maximum Sound Level[1]	Distance (m)	Power Rating (kW)
Excavation Equipment[2]	83	15	<75
	85	15	>75
Pneumatic Equipment[3]	85	7	-
Portable Compressors	76	7	-

Notes:

[1] Maximum permissible sound levels presented here are for equipment manufactured after January 1, 1981.

[2] Excavation equipment includes bulldozers, backhoes, front end loaders, graders, excavators, steam rollers and other equipment capable of being used for similar applications.

[3] Pneumatic equipment includes pavement breakers.

Construction noise impacts are temporary in nature, and largely unavoidable. However, Capital Power has selected the CFA pile installation method for pile foundation installation where technically feasible, specifically for the purposes of mitigating potential construction-related noise and/or vibration impacts.

Given the proximity of the Project Site to nearby sensitive land uses, in particular the heritage property at 2879 Riverside Drive (see **Section 5.9**), there is potential for construction activities to generate ground vibrations that could impact adjacent structures, even with the use of a CFA pile installation method. To evaluate these potential effects, a Vibration Control Study was completed to establish the Zone of Influence (ZOI) and identify potential construction vibration effects due to planned construction of the Project (**Appendix D.9**). In the absence of finalized construction details, the assessment was undertaken using a conservative scenario based on the assumption that all equipment will be used at the Project Site boundary (i.e., the Capital Power property line).

Results of the analysis found that the 2 mm/s ZOI encroaches upon the Water's Edge Event Centre (formerly Our Lady of the Rosary Church, BHR 7) property. The ZOI encroachment is not associated with the heritage building itself, but with the frontage of the two-storey addition on the southeastern portion of the property known as 229 Cadillac Street. Despite not being a designated heritage attribute of BHR 7, there is potential for construction vibration to transmit into the heritage building through the structural addition at 229 Cadillac Street because the buildings are connected. To complete the conservative assessment, the more stringent vibration criteria was applied to both buildings. The assessment of potential effects on BHR 7 in context of the Vibration Control Study is provided in **Section 6.7.**

6.5.1.2 Operations and Maintenance

During operations, the Project will not be a significant source of vibration and therefore an operational vibration assessment was not needed. However, a noise assessment was undertaken to predict sound level emissions associated with Project operations and to assess potential noise-related effects on local receptors to confirm compliance with applicable regulatory limits (**Appendix D.3**).

Ontario's EPA is the primary provincial legislative framework for the regulation of noise emissions from industrial facilities. This includes operational noise from natural gas generation facilities.

The MECP administers Ontario's EPA and is the key regulatory authority for establishing applicable noise limits, reviewing applications for approvals under the EPA, and for compliance. Following completion of the ESP, the Project will require an ECA (Air & Noise) issued under Ontario's EPA, and must operate within the provincially regulated noise limits.

Noise guidelines for stationary source noise (such as those from the Project) impacting surrounding noise sensitive uses are given in the MECP's NPC-300 guidelines. The noise assessment for the ERR was undertaken using the same technical modeling and analytical methods as the ECA application documentation required by the MECP. The modelled noise impacts were calculated using Cadna/A, a prediction software consistent with the ISO 9613-2 standard. The model took into consideration the site layout and location of the noise sources and the surrounding buildings. Details are provided in (**Appendix D.3**) and results are summarized below.

Due to the presence of numerous noise sources in the areas surrounding the existing EWCC (**Section 5.5**), applicable site-specific noise limits have been previously defined for the existing natural gas generation facility. The site-specific noise limits most recently accepted by the MECP for the existing EWCC were part of the 2022 ECA Amendment. As there have been no significant changes in land use surrounding the Project Site and existing EWCC since the 2021 assessment and subsequent MECP ECA Amendment approval in 2022, the noise performance limits from the previous EWCC studies were used for the purposes of the assessment.

The assessment considered by the regular operations scenario modelled all Project equipment operating simultaneously (excluding emergency equipment). Regular operations assume all noise sources are in continuous use, with the exception of the rooftop HVAC units which are assumed to have a 50% duty cycle during nighttime hours. As shown in **Table 6-7**, the predicted Project sound levels for regular operations during daytime (7:00 am to 7:00 pm), evening (7:00 pm to 11:00 pm) and nighttime (11:00 pm to 7:00 am) periods are predicted to meet the applicable MECP NPC-300 sound level limits.

Table 6-7: Predicted Sound Levels at Points of Reception during Regular Operations (Project Only)

Façade Point of Reception ID	Point of Reception Description	Time of Day	Project Sound Level at POR (L_{eq} dBA)	Performance Limit (L_{eq} dBA)	Compliance with Limit (yes / no)
R1	Shoreview at Riverside retirement home (fourth storey window)	Day	50	58	yes
		Evening	50	58	yes
		Night	50	58	yes
R1_O	Shoreview at Riverside retirement home (side yard)	Day	49	58	yes
		Evening	49	58	yes
R2	229 Cadillac Street residence (second storey window)	Day	50	56	yes
		Evening	50	53	yes
		Night	50	53	yes
R2_O	229 Cadillac Street residence (side yard)	Day	49	56	yes
		Evening	49	53	yes
R3	3177 Riverside Drive apartment (third storey window)	Day	51	60	yes
		Evening	51	59	yes
		Night	51	59	yes
R4	3336 Riverside Drive residence (second storey window)	Day	40	57	yes
		Evening	40	56	yes
		Night	40	56	yes
R4_O	336 Riverside Drive residence (back yard)	Day	39	57	yes
		Evening	39	56	yes

The assessment also considered a combined modeling scenario whereby both the existing EWCC and the Project would run simultaneously. Though this scenario is expected to be infrequent, it is possible and as such, was modeled within the noise assessment as a conservative scenario. As shown in **Table 6-8**, though the combined (EWCC and Project) predicted sound levels will result in increases to the background surrounding sound level, for regular operations during daytime, evening, and nighttime periods, the combined sound levels are also predicted to meet the applicable MECP NPC-300 sound level limits.

Table 6-8: Combined Predicted Sound Levels at Points of Reception Façade during Regular Operations (Project + EWCC)

Façade Point of Reception ID	Point of Reception Description	Time of Day	EWCC Sound Level at POR (L_{eq} dBA)	Project Sound Level at POR (L_{eq} dBA)	Combined (Project + EWCC Sound Level at POR (L_{eq} dBA)	Performance Limit (L_{eq} dBA)	Compliance with Limit (yes / no)
R1	Shoreview at Riverside retirement home (fourth storey window)	Day	48	50	52	58	yes
		Evening	48	50	52	58	yes
		Night	48	50	52	58	yes
R1_O	Shoreview at Riverside retirement home (side yard)	Day	46	49	50	58	yes
		Evening	46	49	50	58	yes
R2	229 Cadillac Street residence (second storey window)	Day	50	50	52	56	yes
		Evening	50	50	52	53	yes
		Night	49	50	52	53	yes
R2_O	229 Cadillac Street residence (side yard)	Day	48	49	51	56	yes
		Evening	48	49	51	53	yes
R3	3177 Riverside Drive apartment (third storey window)	Day	59	51	59	60	yes
		Evening	59	51	59	59	yes
		Night	59	51	59	59	yes
R4	3336 Riverside Drive residence (second storey window)	Day	49	40	50	57	yes
		Evening	49	40	50	56	yes
		Night	49	40	50	56	yes
R4_O	336 Riverside Drive residence (back yard)	Day	4	39	49	57	yes
		Evening	48	39	49	56	yes

In summary, the noise modelling predicts that the Project will result in an increase to the existing sound level; the modelled sound levels are predicted to meet all applicable MECP NPC-300 sound level limits. Furthermore, the results of a conservative combined scenario of the existing EWCC plus Project noise levels are also predicted to meet the applicable MECP NPC-300 limits. The predicted change due to the addition of the Project in a conservative scenario will be approximately 3-4 decibels (dB), which is generally defined as a “just perceivable change” to the subjective human ear.

6.5.2 Mitigation

The PEMP will outline the industry best management practices to be implemented for the management of noise and vibration effects through the construction period. Avoidance and mitigation measures will include, but are not limited to:

- Adherence to the City of Windsor Noise By-law 6716 requirements, including any restrictions on the time periods allowing construction activities. If required, Capital Power could seek a temporary noise by-law exemption permit from the City of Windsor;
- Use of a CFA drill rig for the advancement and installation of foundation piles where technically feasible;
- Maintain vehicles and equipment to limit engine noise. Noise abatement equipment on machinery shall be in place, properly maintained, and in good working order;
- Include a provision in construction contract documents that any initial noise complaint will trigger verification that the general noise control measures agreed to are in place. Any complaints raised shall be addressed as soon as practicable; and
- In the presence of persistent noise complaints, sound emission standards for the various types of construction equipment used for the Project shall be checked to ensure that they meet the specified limits contained within MECP’s NPC-115 – *Construction Equipment* publication.

Prior to construction, Capital Power may complete a more detailed vibration assessment to validate results when additional construction details (specifically heavy equipment use and underground utility locations) are available. Unless a future detailed assessment based on detailed construction information demonstrates that the ZOI will not encroach on the property, a monitoring program will be undertaken for potential effects on the heritage building at 2879 Riverside Drive. The program and associated protocols are outlined in (**Appendix D.9**) and will be verified by a vibration specialist prior to construction, including the following measures:

- Pre-Construction survey consultation;
- Pre-Construction measurement of background vibrations;
- Pre-construction inspection of adjacent buildings and structures within the vibration ZOI (dependent on landowner permission);
- Identification of avoidance and mitigation measures; and
- A vibration monitoring program during construction using seismographs and real-time alerts intended to instigate corrective actions such as the use of alternate equipment to reduce vibration impacts.

Mitigation for noise during operations and maintenance has been included in the Project design, including the design of the equipment building. Currently, the wall assumes a 20 kg/m^2 minimum density to achieve the required noise abatement. A noise abatement wall, with 20 kg/m^2 minimum density, will also be installed around the GSU transformer. No other mitigation measures are proposed during Project operations because noise emissions are predicted to meet the applicable MECP NPC-300 sound level limits. Site operational activities will adhere to site-specific operational standards and procedures.

6.5.3 Summary of Net Effects

Construction noise and vibration effects are anticipated to be localized and temporary, with any audible noise and perceptible vibration beyond the Construction Footprint expected to be minor and short-term in nature. Operational noise is predicted to meet regulatory limits. With the implementation of mitigation measures, no significant net adverse effects are predicted as a result of noise and vibration emissions during Project construction and operation.

6.6 Socio-economic Environment

6.6.1 Potential Effects

6.6.1.1 Construction

During construction, residents, visitors and clients of local businesses in the vicinity of the Project Site and along the equipment delivery (haul) routes, including Wyandotte Street and Riverside Drive (**Figure 2-5**), will notice the construction traffic, noise and vibration, and air quality effects including dust emissions. These effects will likely be considered a nuisance to some but are not likely to prevent people from undertaking their day-to-day activities.

Effects related to construction activities including dust and noise will be managed through the use of standard industry best practices as discussed in **Sections 6.4** and **6.6**. Use of the CFA pile installation method, where technically feasible, is expected to significantly reduce construction-related noise and vibration impacts.

The increase in traffic from construction personnel and construction deliveries has the potential to disrupt local property access on occasion. It is anticipated that there will be a total of approximately 25 to 50 large equipment deliveries directly to the Project Site during the construction phase, and approximately the same number of specialty equipment deliveries throughout the construction period. This includes equipment such as cranes, concrete trucks, and earth movers. There will also be weekly deliveries of materials to the laydown area at the Matilda Street parking lot. In addition, it is estimated that there will be approximately 80 to 90 personnel at the Project Site during the peak of construction. Staff and contractors will park offsite at the vacant Capital Power-owned lands on the west side of Cadillac Street and/or in the Matilda Street parking lot. From there, personnel will walk or be shuttled to the Project Site.

Drouillard Road will not be used for Project traffic to reduce the potential for disturbance to most residents and businesses closest to the Project Site, including access to the Shoreview at Riverside retirement home and Water's Edge Event Centre. Rather, only Riverside Drive and Wyandotte Street will be used for construction deliveries. Increased traffic along Riverside Drive will be temporary and very localized (i.e., between the Matilda Street parking lot and the Project Site), and Wyandotte Street is an arterial street.

Access to the commercial/residential building at 229 Cadillac Street will remain open, with the portion of Cadillac Street to be temporarily closed constrained in a way that would still provide tenants access to the residential parking lot. In the event there are no tenants requiring access to the parking lot, the road closure may extend north pending consultation with tenants and agreement with the landowner. No other residences or businesses are located on Cadillac Street.

The increase in personnel vehicle and trucks has little potential to create significant delays or permanently alter how people move around the community. Increased traffic during peak hours is not expected to be of sufficient magnitude to measurably change intersection levels of service nor to the City of Windsor bus service.

There is the potential for the Project to disrupt local resident activities undertaken at Cadillac Park due to increased noise (including traffic noise) and dust. The temporary closure of Cadillac Street during construction will not affect park access given the primary entrance and parking lot are located off Drouillard Road. Moreover, it is expected that the park is used primarily by local residents who would walk there. Some visitors of Cadillac Street Park may use the associated parking lot. The increase in traffic from construction personnel and construction deliveries is not anticipated to be of sufficient magnitude to measurably change the ability of vehicles to enter and exit the parking lot as usual. However, there is some potential for an accident to occur should drivers and pedestrians not be vigilant of each other's presence.

While the duration of construction is estimated to be approximately 12 to 18 months, nuisance effects will be less pronounced once major equipment deliveries have been completed and construction and commissioning activities are undertaken within the new building enclosure. None of these effects will preclude business activities from continuing during construction or preclude landowners and residents from accessing their property.

A small workforce may choose to purchase goods and services within the GSA and beyond, which may provide a small positive effect on local business activity.

6.6.1.2 Operations and Maintenance

Project operations and maintenance could adversely affect the character of the community near the Project Site if it fundamentally changes those community assets, attributes, or qualities that that have a positive influence on community character[12]. However, the Project represents an expansion of an existing use rather than a new type of industrial land use. The Project will strengthen the area's existing industrial presence dominated by the EWCC and the neighbouring Ford Powerhouse, Hiram Walker & Sons Limited, and other industrial land uses in the GSA. Further, through consultation with the City of Windsor, substantial efforts have been made in the design of the buildings to adhere to the guidelines and policies outlined in the Official Plan, and Ford Powerhouse and Ford City CIPs.

These guidelines and policies address development within the CIP project areas, and along Riverside Drive East as a designated Civic Way and designated Scenic Drive.

[12] Community character refers to the unique or distinctive qualities of a community. Community character is determined by a community's land uses and other community features such as population, employment, business activity, and geographical/environmental features.

Therefore, adverse changes to community character are not anticipated because:

- The architectural design of the Project and its landscaping will be compatible with the existing EWCC and surrounding historic buildings and structures and consistent with the guidelines and policies outlined in the Official Plan;
- There are no anticipated effects on local businesses during operations and maintenance as the Project will not substantively differ from existing adjacent land uses;
- Air and noise emissions during Project operations and maintenance are predicted to remain in compliance with provincial regulations as discussed in **Section 6.3** and **6.5** respectively.
- There are no anticipated effects on traffic during operations and maintenance as the Project will not substantively differ from existing adjacent land uses; and
- The Project is not expected to measurably increase the population of local communities through a large workforce.

6.6.2 Mitigation

The PEMP will outline the industry best management practices to be implemented for the management of potential Project effects on the socio-economic environment during the construction phase. Avoidance and mitigation measures will include, but are not limited to:

- The PEMP will include mitigation measures related to nuisance emissions including air quality and dust (**Section 6.3)** and noise and vibration (**Section 6.5**).
- Maintain safe public access to the commercial/residential building on Cadillac Street (if necessary). *Accessibility for Ontarians with Disabilities Act* compliant curb ramps will be provided along any pedestrian detour path.
- Install signage and wayfinding measures to provide advance warning for pedestrian detours and ease of navigation and movement.
- Regularly inform operators of the Water's Edge Event Centre, the Sky Mobile Corporation, the Shoreview at Riverside retirement home and owners of private property along Cadillac Street and Drouillard Street of the Project schedule and timing of road closure and construction activities.
- Advertise the availability of the existing 311 system available to City of Windsor residents and business operators for registering of public complaints and allow for their resolution in accordance with the City's policies.
- A Traffic Management Plan will be developed and implemented for the construction phase, including provisions for the following:
    - Traffic controls at entry/exit locations to allow safe access / egress for vehicles entering / exiting.
    - Construction traffic will adhere to the required or common practice with respect to time of use in the commercial designated zone.
    - All Project-related vehicles must adhere to traffic, road-use and safety laws.
    - Construction traffic on Riverside Drive and Wyandotte Street shall be limited to off-peak hours to the extent feasible.

- Parking of trucks or other vehicles along Cadillac Street shall be restricted. No construction vehicles shall be permitted on Drouillard Road south of the entrance to the Matilda Street parking lot.
- Signage and wayfinding measures shall be placed around the Project to direct pedestrians safely around active work areas.

Mitigation for effects on the socio-economic environment during operations and maintenance phase has been included in the Project design, through the architectural design of the storage and equipment buildings to mimic the Ford Powerhouse and existing EWCC administration building. Site operational activities will adhere to site-specific operational standards and procedures.

6.6.3 Summary of Net Effects

With the implementation of mitigation measures, net effects on the socio-economic environment in the community are anticipated to be restricted to the construction phase and related to minor temporary nuisance effects. No significant net adverse effects are predicted during Project construction and operations and maintenance.

6.7 Cultural Heritage

6.7.1 Potential Effects

6.7.1.1 Construction

A Cultural Heritage Report (**Appendix D.5**) evaluated the potential of the Project to affect BHRs, CHLs, and the CF within the GSA. The evaluation identified four BHRs within 50 m of the Construction Footprint that that may be affected by the Project due to potential vibration impacts during construction. A detailed Built Heritage Impact Study (BHIS) was completed for BHR 7, the feature located nearest to the Project Site, to determine any direct or indirect impacts of the proposed work on its cultural heritage value and/or attributes (**Appendix D.6**).

Figure 6-2: Water's Edge Event Centre (formerly Our Lady of the Rosary Church)

Source: ASI (2024)

Since the Project Site is located across the street from the heritage property, temporary construction areas will include lands adjacent to the southeastern portion of the heritage property consisting of the two-storey addition and associated parking lot, and the main site access route will be along Riverside Drive to the immediate north of the heritage property.

The BHIS determined that there will be no direct adverse negative impacts to any of the cultural heritage attributes of BHR 7, which are restricted to the former church building, as a result of the Project. However, indirect effects were identified as possible during construction where activities on or near the property may adversely affect its cultural heritage value or interest and/or heritage attributes. Potential effects include impacts to BHR 7 through construction-related vibrations and an increase in construction vehicle and equipment traffic that has the potential to result in accidental collisions with heritage attributes (**Appendix D.6**).

As described in **Section 6.5**, a Vibration Control Study was completed to confirm a worst-case scenario construction vibration Zone of Influence (Vibration ZOI), to determine potential mitigation measures required to protect BHRs (see **Section 6.5** and **Appendix D.9**). The results of the study indicate that in a worst-case scenario, vibration effects will encroach on the southeastern portion of the heritage property, although the buildings themselves are outside the Vibration ZOI (see **Section 6.5**).

The other three BHRs within 50 m of the Construction Footprint, including the Ford Powerhouse (BHR 5) are located outside the Vibration ZOI and therefore no potential effects on these features are anticipated. Although BHR 5 (Ford Powerhouse) is located on an adjacent property, the evaluation found that the limited potential for effects on this resource did not warrant a detailed BHIS. The City of Windsor has confirmed their agreement with waiving this requirement given that suitable mitigation measures (if required) can be employed as part of the Site Plan Approval process.

6.7.1.2 Operations and Maintenance

The Cultural Heritage Report (**Appendix D.5**) evaluation found that during Project operations and maintenance, no effects are anticipated related to significant views, changes in land use, or isolation of any heritage attributes for any identified property as a result of the Project.

6.7.2 Mitigation

The PEMP will include a detailed mitigation and monitoring plan that outlines how construction activities and staging will be planned and undertaken to avoid unintended negative effects on identified BHRs. Avoidance and mitigation measures will include, but are not limited to:

- Erecting temporary fencing or barricades;
- Establishing buffer zones; and
- Issuing instructions to construction crews to avoid identified features.

A more detailed vibration assessment is recommended to validate the results of the preliminary assessment as additional construction details (specifically heavy equipment use) are developed. In the absence of a future detailed assessment demonstrating that the Vibration ZOI will not encroach on the heritage property, a detailed vibration monitoring program will be undertaken as described in **Section 6.5**.

6.7.3 Summary of Net Effects

With the implementation of the proposed avoidance measures and vibration monitoring program designed to instigate corrective actions in real-time, no adverse direct or indirect effects to any cultural heritage features are anticipated.

6.8 Aesthetically Pleasing Landscapes and Views

6.8.1 Potential Effects

6.8.1.1 Construction

Construction sites and activities are a common part of the urban and industrial setting of the Project. There are limited vantage points for public views of the Project Site, and no potential effects on aesthetically pleasing landscapes and views are anticipated during the construction phase.

6.8.1.2 Operations and Maintenance

Riverside Drive, located adjacent to the northern extent of the existing EWCC and Project Site, is classified under the City of Windsor Official Plan as a Civic Way and Scenic Drive. Riverside Drive provides both vehicle and pedestrian traffic with scenic views of the Detroit River and local heritage features including the Ford Powerhouse and former Our Lady of the Rosary Church, now the Water's Edge Event Centre. Adjacent roads and local neighbourhoods also have pleasing views of the Detroit River and these historic buildings.

The City of Windsor Official Plan aims to protect and improve views and vistas of significant landmarks and features by ensuring they are not obstructed, dominated, or marred by any proposed development. The presence of the Project on the landscape, as a new development within the GSA, has the potential to affect aesthetically pleasing landscapes and views within the GSA.

6.8.2 Mitigation

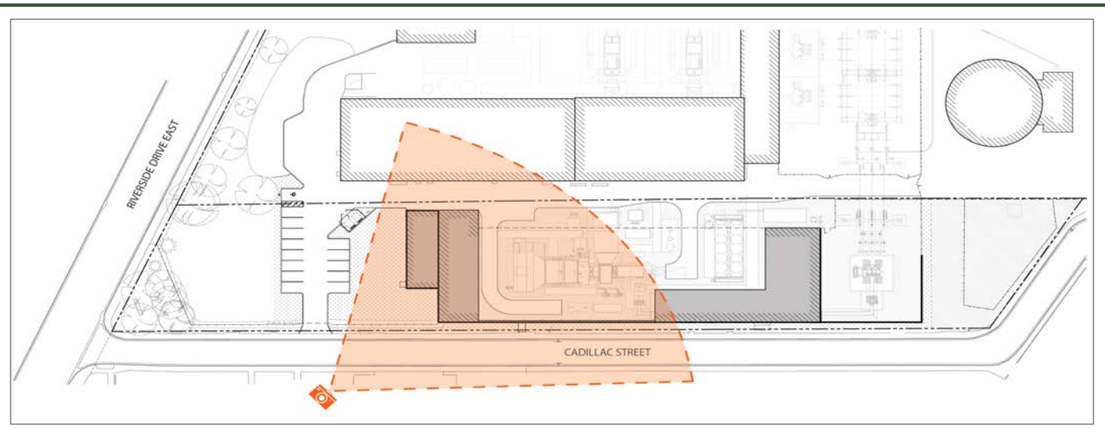
As it relates to the visual aesthetics and landscaping features associated with the Project, the design of the equipment and storage buildings has been completed in accordance with pre-consultation discussions with City of Windsor planning officials. The final designs for the buildings, landscaping, and lighting are subject to City of Windsor approval as part of the Site Plan Approval process:

- For all aspects of the Project's design elements, special consideration has been given to the two applicable CIPs: the Ford Powerhouse CIP and Ford City CIP. The two CIPs, alongside pre-consultation discussions with the City of Windsor, guided the visual aesthetic and design elements of exterior facing buildings to mimic those of the existing heritage buildings within the Project Site and GSA. Specifically, the Project has been designed to complement the adjacent Ford Powerhouse by using similar colours, brick veneer, and architectural features (**Figure 6-3**, **Figure 6-4**, **Figure 6-5**, and **Figure 6-6**). Overall, a high standard of design has been applied to the overall site design and the building's exterior;

- The Project design also includes landscaping features and the planting of ornamental species, with a focus on native species, throughout the site to further mitigate visual effects. A preliminary landscaping design, subject to City of Windsor approval, was developed to be consistent with existing features currently present within the EWCC property and Project Site. The proposed landscaping within the Project Site is intended maintain a balance between the human activities and natural systems;
- An Outdoor Lighting Photometric Plan will be developed as part of detailed design and is subject to City of Windsor approval. The Outdoor Lighting Photometric Plan will include use of full cut off (night sky friendly) fixtures as required by the City of Windsor.

Existing Condition

Architectural Rendering



NOTES:
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EAST WINDSOR GENERATION
FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

ARCHITECTURAL RENDERING - VIEW FROM CADILLAC STREET, FACING SOUTHEAST

SLR

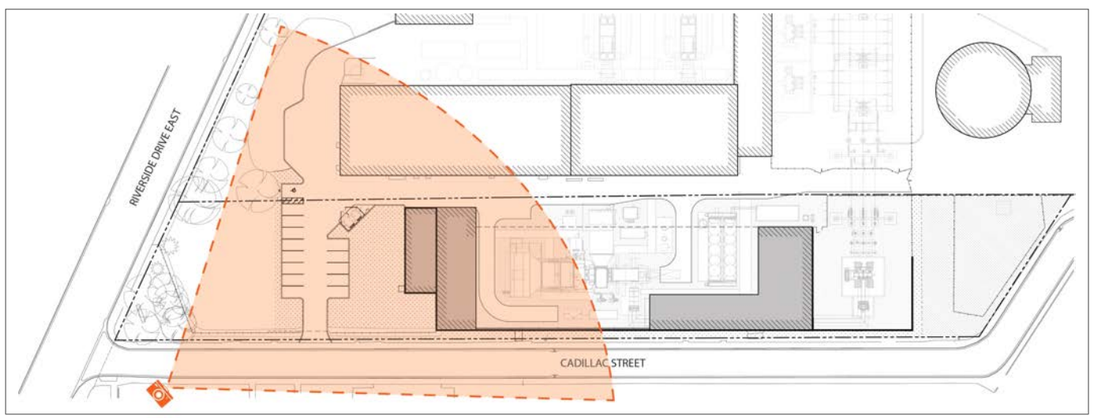
FIGURE NO:
6-3

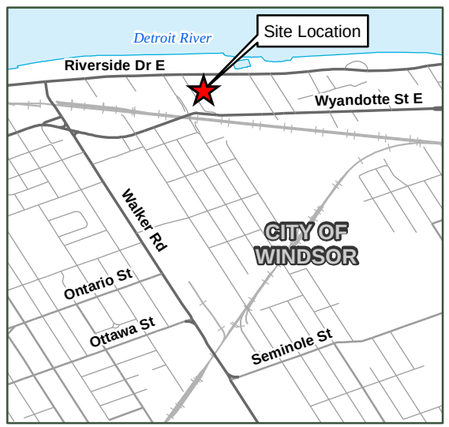
DATE: July 2024

PROJECT NO: 241.30524.00024

Existing Condition

Architectural Rendering





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FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

ARCHITECTURAL RENDERING - VIEW FROM CADILLAC STREET AND RIVERSIDE DRIVE INTERSECTION, FACING SOUTHEAST

SLR

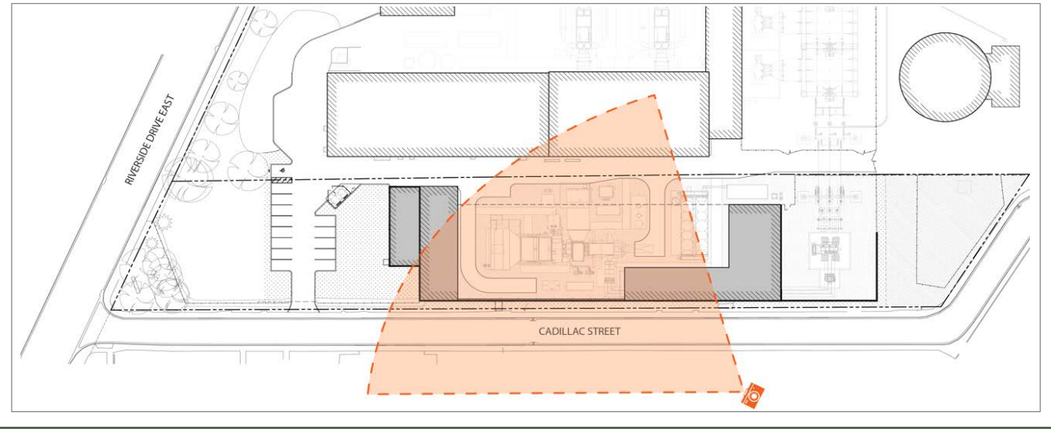
FIGURE NO:
6-4

DATE: July 2024

PROJECT NO: 241.30524.00024

Existing Condition

Architectural Rendering



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EAST WINDSOR GENERATION
FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

ARCHITECTURAL RENDERING - VIEW FROM CADILLAC STREET PARK, FACING NORTHEAST

SLR

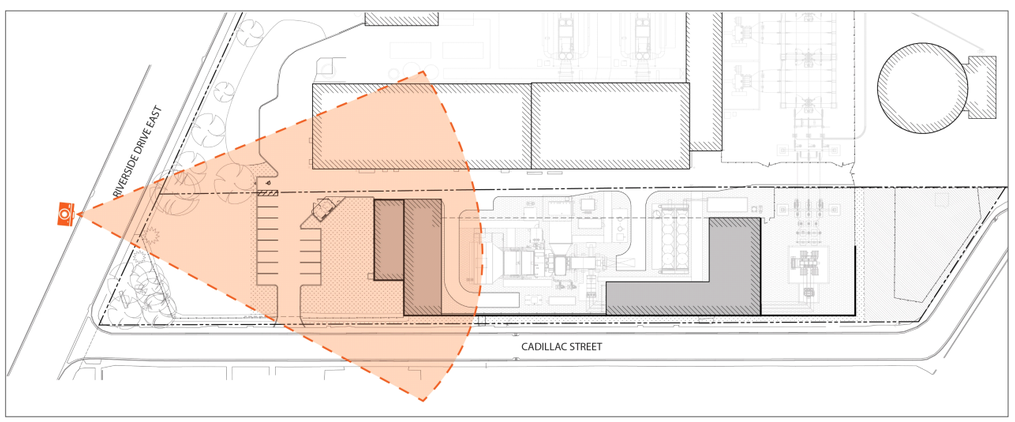
FIGURE NO:
6-5

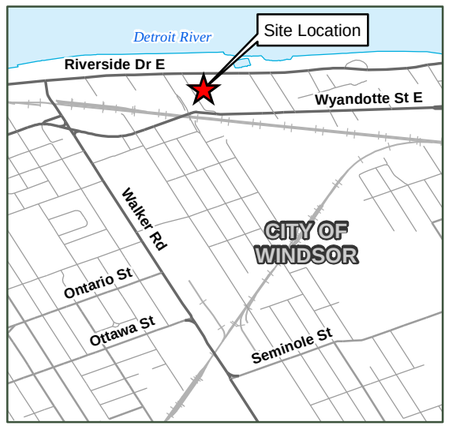
DATE: July 2024

PROJECT NO: 241.30524.00024

Existing Condition

Architectural Rendering





NOTES:
IMAGERY AND RENDERINGS PROVIDED BY GLOS ARCH + ENG

EAST WINDSOR GENERATION FACILITY EXPANSION

ENVIRONMENTAL REVIEW REPORT

ARCHITECTURAL RENDERING - VIEW FROM RIVERSIDE DRIVE, FACING SOUTH

SLR

FIGURE NO:
6-6

DATE: July 2024

PROJECT NO: 241.30524.00024

6.8.3 Summary of Net Effects

The Project will not alter or block scenic views from Riverside Drive of the Detroit River, a Cultural Heritage Landscape, or views of the historic Ford Powerhouse buildings and structures from Riverside Drive, other adjacent roads and local neighbourhoods within the GSA. With the Project designed as planned and the implementation of mitigation measures, net adverse effects on aesthetically pleasing landscapes and views are not anticipated.

6.9 Climate Change Risk

A Climate Change Resilience Assessment (CCRA) was completed to consider the potential interactions between current and projected future climate events, and the potential vulnerability of the individual elements of the Project (**Appendix D.10**). The document *Considering Climate Change in the Environmental Assessment Process* (MECP 2017) sets out the MECP's guidelines for considering climate change risks in the preparation, execution, and documentation of EA studies in Ontario. The extent to which climate change is considered within the context of the EA can be qualitative or quantitative in nature and scaled to the project's level of environmental effect.

The approach used in the assessment is comparable to the high-level screening approach of the Public Infrastructure Engineering Vulnerability Committee (PIEVC) protocol (PIEVC 2022). This approach includes reviewing and analysing available climate data to determine probabilities of climate events occurring under established climate change models that consider various GHG emission scenarios known as Shared Socioeconomic Pathways (SSP). The SSP climate scenarios SSP2-4.5 (moderate emissions – middle of the road) and SSP5-8.5 (high emissions–continued fossil-fuel development) developed by the United Nations Intergovernmental Panel on Climate Change were used to project future climate events. As for the climate data considered, historical data was used for the current climate period, with future climate data forecasted for the 2050s time period (which considers the future years 2041 to 2070) and the 2080s (which considers the future years 2071 to 2100).

The assessment included:

- A Project-specific CCRA risk register developed to evaluate exposure and the likelihood and consequences of climate events (e.g., extreme temperatures and precipitation) on the proposed Project components;
- Adaptation recommendations for moderate to high potential risks to the proposed Project; and
- Determination of the relative resilience of the proposed Project as a whole.

Consequences to people (health and safety), environmental, financial, regulatory, and production factors were considered to develop quantitative risk ratings and to prioritize risks. While the Project lifespan is expected to conclude before the end of the 2050s time period (2041-2070), risks were also projected for the 2080s time period (2071-2100). These extended projections consider the possibility of the extension of the Project's lifespan as well as provide insight into the potential severity of climate-related impacts should shifts and increases in temperature and precipitation occur earlier than anticipated.

No high risks were identified by the CCRA under current or future climate change scenarios for the current Project design using the SSP2-4.5 and SSP5-8.5 scenarios.

Given the Project's location in southern Ontario, it is exposed to warmer air mass influences from the south, resulting in higher probabilities of extreme heat-related impacts. As a result, low to moderate risks were identified for the Project components considered in the CCRA. The Project was identified to be at a moderate risk level of pluvial flooding (i.e., from rainfall). Special consideration was given to tornado events and high wind events due to their potentially high consequence and low likelihood of occurrence.

Potential adaptation measures to mitigate identified risks include recommendations related to frequency of site inspections and monitoring. Adaptation measures are provided in more detail in (**Appendix D.10**).

The findings of the CCRA conclude the Project is considered to be resilient to current and future climate events that may interact with the Project elements during its lifespan (25+ years). Overall, the design of the Project and its respective components are expected to limit the negative effects of climate events on the Project. Additionally, normal operation and maintenance procedures, health, and safety practices, as well as emergency risk management, are expected to adequately limit the current and future effects of climate change before high to very high consequences occur at the Project site.

6.10 Human Health Risk

Screening Level Human Health Risk Assessment (SLHHRAs) are qualitative or quantitative evaluations of the potential for elevated human health risks, typically focused on specific exposure scenarios that are considered "worst-case". The SLHHRA was prepared for the Project in response to anticipated public concerns and is provided in (**Appendix D.11**).

The primary objective of the SLHHRA was to evaluate the potential for adverse short- and long-term health effects to individuals in the surrounding community related to the operational air quality emissions from the Project. The risk evaluation focused on the potential for sensitive human receptors living near the operating Project to be exposed via the inhalation of key COCs. The evaluation considered Project-specific emissions, as well as the broader cumulative context of the overall airshed (i.e., also considering existing regional background conditions and contributions from the existing EWCC facility) at key receptor locations in the community.

The SLHHRA is based on the results of the Air Quality Assessment (**Section 6.3**), which indicated the key COCs related to Project emissions include oxides of nitrogen (NO_x) and fine particulate matter ($PM_{2.5}$). Other criteria air contaminants were also evaluated in the Air Quality Assessment, including CO and SO_2; however, their cumulative concentrations were predicted to be low and consequently they were not identified as key COCs for the SLHHRA. Similarly for other possible COCs (e.g., VOCs, PAHs, and metals), potential emissions were expected to be below a level indicative of potential human health concern. As such, the SLHHRA focused on NO_x and $PM_{2.5}$ as the key COCs for human exposure via inhalation.

The results of the SLHHRA indicate:

- For NO_x, the existing 90th percentile regional background concentrations either approach (i.e., 1-hour) or exceed (i.e., 24-hour and annual average) levels that could pose a potential adverse health risk to sensitive receptors living in this area of Windsor. Worst-case short-term (i.e., 1- or 24-hour time periods) contributions of the existing EWCC facility, as well as the proposed Project, do add to the existing elevated background concentrations.

- However, if the average contribution of these two facilities is considered, short-term contributions to the cumulative NO_x concentrations at the worst-case receptor locations are minimal compared to the regional background concentrations. In terms of chronic exposure, while regional background concentrations already exceed the health-based benchmark in the Windsor area, the existing EWCC facility and the proposed Project provide a negligible contribution to the overall cumulative concentrations predicted for the surrounding sensitive receptor locations (i.e., the worst-case project contribution is 0.3% of the regional background concentration).
- For $PM_{2.5}$, the existing 90th percentile regional background concentrations either approach (i.e., 24-hour) or exceed (i.e., annual average) levels that could pose a potential adverse health risk to sensitive receptors living in this area of Windsor. For short-term (i.e., 24-hour) exposure, the cumulative concentrations predicted at the surrounding sensitive receptor locations indicate a negligible likelihood of adverse health effects due to inhalation, even under worst-case conditions. For chronic (i.e., annual average) exposure, while regional background concentrations already exceed the health-based benchmark in the Windsor area, the existing EWCC facility and the proposed Project provide a negligible contribution to the overall cumulative concentrations predicted for the surrounding sensitive receptor locations (i.e., the worst-case project contribution is 0.08% of the regional background concentration).

The results of the assessment indicate that while regional background concentrations of both NO_x and $PM_{2.5}$ are elevated above their respective health-based benchmarks in the Windsor area, the air emissions from the Project will not result in a significantly elevated health risk to the surrounding community.

7.0 Summary and Conclusion

The following sections summarize the advantages and disadvantages that have been identified for the Project.

7.1 Advantages

The Project will provide a reliable and dependable source of power to the provincial grid which can be called upon during times when peak demand is realized. The additional energy output from the Project will support the IESO in addressing the need for more power supply in the province to help fuel the province's energy transition and maintain grid reliability. Continuing to use natural gas in a limited way will also allow businesses and consumers to continue with their electrification plans and decarbonize the electricity system without risking reliability or impacts to economic growth (IESO 2022c). Additionally, the Project is considered an expansion of an existing generation facility and further optimizes a previously unused parcel of brownfield land within an urban setting.

7.2 Disadvantages

With a forecasted increase in electricity demand in the province, as well as the reduced capacity of nuclear electricity generation, the IESO will be relying on new and existing natural gas electricity generation facilities to meet the increased demand in the short-term. The Project will assist in meeting IESO forecasted increased demand, however for the duration of the operation phase it will contribute to air and noise emissions, as well as a small percentage increase of the overall provincial electricity sector generated GHGs.

7.3 Summary of Commitments

Based on the results of the technical studies, effects assessment, and engagement activities undertaken during the preparation of the ERR, the following mitigation, impact management and monitoring commitments will be implemented for the Project (**Table 7-1**).

Table 7-1: Summary of Mitigation / Impact Management Commitments

Environmental Component	Commitment (includes mitigation, impact management and monitoring)
Construction	
Groundwater	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures in the event dewatering is required, including but not limited to: • The handling, transfer, testing, monitoring, and disposal of groundwater generated during construction in accordance with applicable regulatory requirements and the Project contract documents, as applicable; • General groundwater monitoring considerations during construction and provision of guidance for groundwater monitoring following construction activity, where applicable; • Identification of the anticipated groundwater quantity and dewatering zone of influence that will be encountered during construction, and if approvals are needed for the water taking, such as a PTTW or EASR; • The storage, transfer, and disposal and/or treatment of the groundwater collected during construction, and approvals for the water disposal and/or treatment if applicable, based on the quantity and quality. Pumped water will be discharged to the existing EWCC SWM system and will be evaluated to confirm water quality meets required criteria for the system. The plan will consider the current industrial use of the property and use field measured data to support any conclusions and/or management recommendations.
Air Quality	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Consideration of measures in the document Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Environment Canada, 2005); • Stationary and mobile equipment will adhere to federal emission standards and will be regularly maintained; • Minimize, where possible, the number of vehicles and engines operating at any one time; • Limit idle times of vehicles and engines. Shut off engines when not in use; • Maintain paved areas by keeping them clear of dust as much as possible, including sweeping as required based on visual inspection, swift removal of spilled material, and clean the wheels and empty cargo holds of vehicles prior to leaving the site; • Project traffic will be restricted to public roadways, temporary workspaces, or the Project Site; • Project traffic will adhere to posted speed limits on public roadways, and reduced speed limits will be implemented in all temporary laydown and storage areas and the Project Site; • Use enclosed cargo holds on trucks and vehicles or cover open bodied trucks that are transporting fill, aggregate, or other earthen materials; • Lower drop distances when unloading material onto piles or surfaces; • Apply a water spray or dust suppressant to materials being transferred or stockpiled, as needed; and • Materials (stockpiled soil) that contain loose particles that have the potential to become airborne will be covered, controlled, or shipped off-site as appropriate.
Noise	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Adherence to the City of Windsor Noise By-law 6716 requirements, including any restrictions on the time periods allowing construction activities. If required, Capital Power could seek a temporary noise by-law exemption permit from the City of Windsor; • Use of a CFA drill rig for the advancement and installation of foundation piles, where technically feasible; • Maintain vehicles and equipment to limit engine noise. Noise abatement equipment on machinery shall be in place, properly maintained, and in good working order; • Include a provision in construction contract documents that any initial noise complaint will trigger verification that the general noise control measures agreed to are in place. Any complaints raised shall be addressed as soon as practicable; and • In the presence of persistent noise complaints, sound emission standards for the various types of construction equipment used for the Project shall be checked to ensure that they meet the specified limits contained within MECP's NPC-115 – *Construction Equipment* publication.
Vibration	Unless a future detailed assessment based on detailed construction information demonstrates that the ZOI will not encroach on the property, a monitoring program will be undertaken for potential effects on the heritage building at 2879 Riverside Drive. The program and associated protocols will be verified by a vibration specialist, including the following measures: • Pre-Construction survey consultation; • Pre-Construction measurement of background vibrations; • Pre-construction inspection of adjacent buildings and structures within the vibration ZOI (dependent on landowner permission); • Identification of avoidance and mitigation measures; and • A vibration monitoring program during construction using seismographs and real-time alerts intended to instigate corrective actions such as the use of alternate equipment to reduce vibration impacts.

Environmental Component	Commitment (includes mitigation, impact management and monitoring)

Socio-economic Environment	Implementation of any future requirements from the City of Windsor.
	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to:
	• Mitigation measures related to air emissions, dust, noise and vibration (i.e., use of the CFA pile installation method, where technically feasible);
	• Maintain safe public access to the commercial/residential building on Cadillac Street (if necessary). *Accessibility for Ontarians with Disabilities Act* compliant curb ramps will be provided along any pedestrian detour path;
	• Install signage and wayfinding measures to provide advance warning for pedestrian detours and ease of navigation and movement;
	• Regularly inform operators of the Water's Edge Event Centre, the Sky Mobile Corporation, the Shoreview at Riverside retirement home and owners of private property along Cadillac Street and Drouillard Street of the Project schedule and timing of road closure and construction activities;
	• Advertise the availability of the existing 311 system available to City of Windsor residents and business operators for registering of public complaints and allow for their resolution in accordance with the City's policies;
	• A Traffic Management Plan will be developed and implemented for the construction phase, including provisions for the following:
	  ○ Traffic controls at entry/exit locations to allow safe access / egress for vehicles entering / exiting;
	  ○ Construction traffic will adhere to the required or common practice with respect to time of use in the commercial designated zone;
	  ○ All Project-related vehicles must adhere to traffic, road-use and safety laws;
	  ○ Construction traffic on Riverside Drive and Wyandotte Street shall be limited to off-peak hours to the extent feasible;
	  ○ Parking of trucks or other vehicles along Cadillac Street shall be restricted. No construction vehicles shall be permitted on Drouillard Road south of the entrance to the Matilda Street parking lot.
	• Signage and wayfinding measures shall be placed around the Project to direct pedestrians safely around active work areas.

Cultural Heritage	Implementation of any future requirements from the MCM and/or City of Windsor. Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Erecting temporary fencing or barricades; • Establishing buffer zones; and Issuing instructions to construction crews to avoid identified features; and • Implementation of mitigation and monitoring measures related to vibration.
Spills	Implementation of any future requirements from the MECP, City of Windsor and/or Essex Region Conservation Authority. Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Standard containment facilities and emergency response materials will be maintained on-site as required; • Refuelling, equipment maintenance, and other potentially contaminating activities are to occur in designated areas; • Secondary containment infrastructure (double walled fuel tanks) and spill prevention systems (drip trays) are required for the housing of fuel(s), lubricating fluids, hydraulic fluids, antifreeze, or any other chemicals regardless of the volume; and • Criteria and procedures for reporting spills to the MECP Spills Action Centre.
Emergency Preparedness and Response	Adherence to the PEMP, which will include an Emergency Response Plan.
Waste Management	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Collection and storage of construction waste within the Construction Footprint for transfer to licensed disposal facilities by a licensed contractor; • Assessment of waste materials generated and planning for the disposal of these materials in accordance with applicable permits and regulatory requirements; • Portable washroom facilities will be provided and managed by a licensed contractor; and • Designated storage areas and requirements for any hazardous materials that may require disposal.
Wildlife Management	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Ornamental tree removal will occur between October 1 and March 31 to avoid the active window for bats and breeding bird season. If tree removal must occur outside this window, a wildlife sweep will be conducted to confirm the absence of nesting or roosting wildlife; • Plans to reduce access and discourage the establishment of nests will be implemented within the Project Site; • Any excavation left overnight will be covered or sloped appropriately to prevent wildlife entrapment.

Environmental Component	Commitment (includes mitigation, impact management and monitoring)
Soil Management	Adherence to the PEMP, which will identify applicable site-specific mitigation and management measures, including but not limited to: • Retaining excess soil on-site where possible. Excess soil required to be moved off-site will be conducted in compliance with O. Reg. 406/19 and MECP's Management of Excess Soil – A Guide for Best Management Practices (2014). All waste soil generated during construction will be segregated and disposed of in accordance with Ministry requirements; • Licensed contractors will be retained for hauling of waste to privately licensed landfill(s). Any soils which are inadvertently contaminated will be disposed of consistent with Part XV.1 of the Environmental Protection Act (EPA) and O. Reg. 153/04, Records of Site Condition; • An Excess Soil Management Plan will be prepared and implemented during construction. With the implementation of the Excess Soil Management Plan, net effects are not anticipated; and • Protocols and procedures to be undertaken in the event contamination is encountered.
Archaeology	No ground-disturbing activities within the Matilda Street Parking Lot (240 Albert Road). Adherence to the PEMP, which will include protocols and procedures for unexpected finds, including: • Should archaeological resources be found during grading, construction or soil removal activities, all work in the area must stop immediately and the City's Planning & Building Department, the City's Manager of Culture and Events, and the MCM must be notified and confirm satisfaction of any archaeological requirements before work can recommence; • In the event that human remains are encountered during grading, construction or soil removal activities, all work in the area must be stopped immediately and the site secured. The local police or coroner must be contacted to determine whether or not the skeletal remains are human, and whether the remains constitute part of a crime scene. The Local police or coroner will then notify the MCM and the Registrar at the Ministry of Public and Business Services Delivery if needed, and notification and satisfactory confirmation be given by the MCM.
Operation	
Air Quality	Implementation of any future requirements from the MECP as part of the ECA process. Adherence to site-specific operational standards and procedures, including implementation of an Air Quality Monitoring Program.
Noise	An application for an ECA (Air & Noise) will be submitted to the MECP, with technical content deemed acceptable by the MECP and approval issued prior to operations. Capital Power will operate the Project in compliance with regulatory requirements and specific approval conditions.
Aesthetically Pleasing Landscapes and Views	Implementation of any future requirements from the City of Windsor related to: • Final design of the equipment and storage buildings in to mimic those of the existing heritage buildings within the Project Site and GSA using similar colours, brick veneer, and architectural features; • Final design of the landscaping plan, including the planting of ornamental species, with a focus on native species; • Final Outdoor Lighting Photometric Plan including use of full cut off (night sky friendly) fixtures.
Stormwater Management	Implementation of any future requirements from the MECP, City of Windsor and/or Essex Region Conservation Authority as part of the ECA and Site Plan Approval processes, and adherence to the Final Stormwater Management Plan.
Spill Prevention and Contingency Planning	A Spill Prevention and Contingency Plan will be developed prior to operation containing all required information, including those outlined in section 91.1 of the *Environmental Protection Act* (EPA) and O. Reg. 224/07
Emergency Preparedness and Response	The existing EWCC Emergency Response Plan will be updated to include the Project infrastructure. The Emergency Response Plan will be modified in consultation with the City's fire department, including siting and design considerations to allow for emergency vehicle access.
Waste Management, Wildlife Management	Adherence to site-specific operational standards and procedures, including integration with systems and procedures already in place at the existing EWCC.

7.4 Conclusion

The IESO has identified the need for the procurement of a limited amount of new natural gas-fired generation capacity to help meet the needs of the province and Windsor-Essex area. The use of natural gas generation in a limited way supports Ontario's energy transition and serves to maintain a reliable and stable energy supply. The Project will provide approximately 107 MW of additional capacity to support the energy needs of both the regional population and Ontario's growing electricity needs.

The conclusion of this ERR is that based on the results of the effects assessment, including the implementation of mitigation measures, the Project is not predicted to cause significant environmental effects. Capital Power intends to proceed with the Project subject to the implementation of mitigation measures and other commitments, and receipt of applicable permits and approvals.

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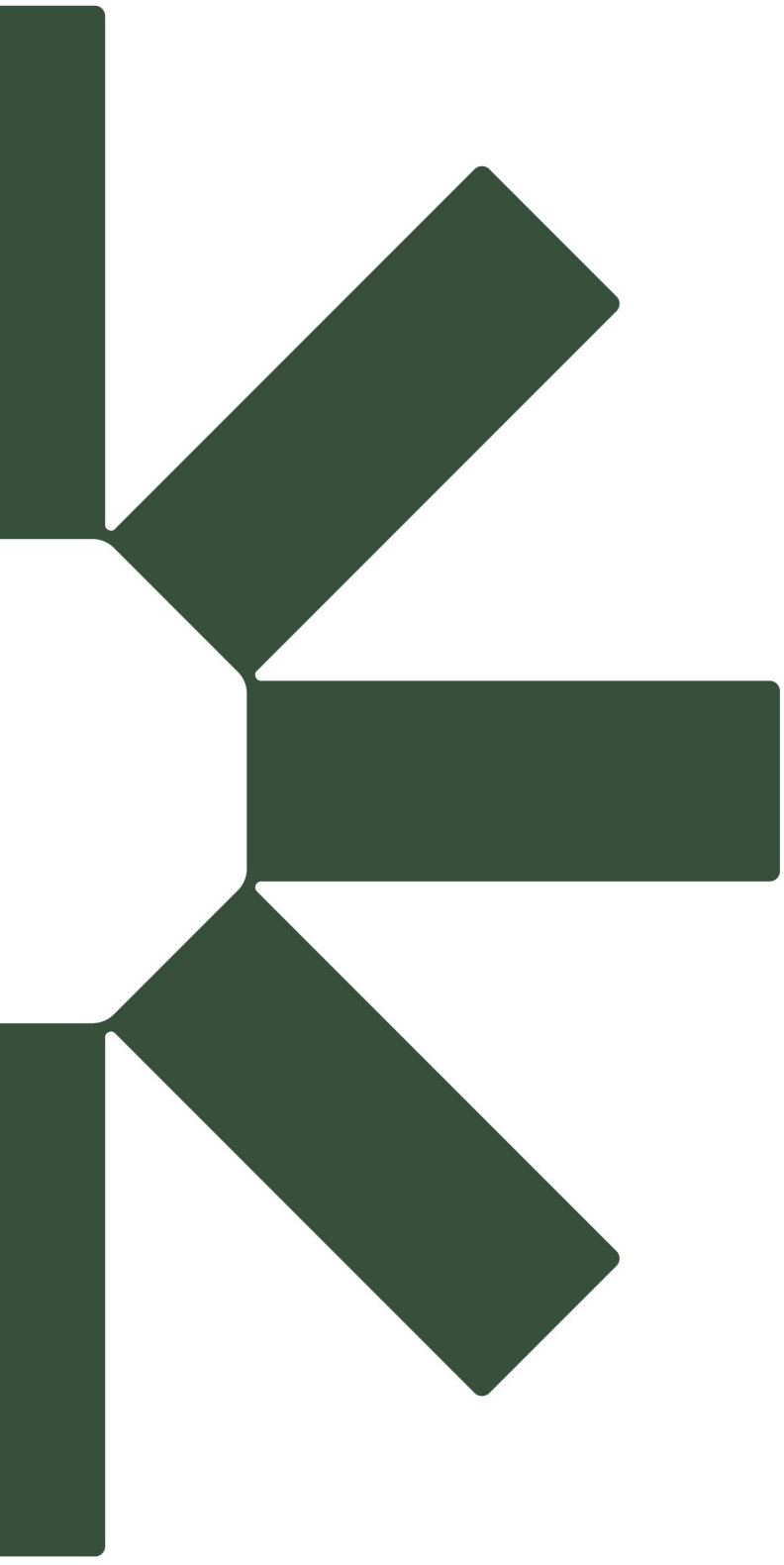

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