Atura Power

Initial Project Description

Proposed Riverside Generating Station

SEPTEMBER 2025

Initial Project Description

Proposed Riverside Generating Station

Atura Power

PREPARED FOR:

Atura Power
1415 Joshuas Creek Drive, Unit 200
Oakville, Ontario L6H 7G4

PREPARED BY:

SLR Consulting (Canada) Ltd.
100 Stone Road West, Suite 201
Guelph, ON N1G 5L3

Land Acknowledgement

Atura Power respectfully acknowledges that the proposed Riverside Generating Station will be located on the traditional territory of the Anishinaabeg peoples, including the Ojibwe, Odawa, and Potawatomi Nations, who form the Three Fires Confederacy.

This land is part of the territory covered by Treaty 29 and is home to many Indigenous Nations who have cared for these lands and waters for generations and continue their responsibilities as stewards to this day.

We honour their enduring presence, knowledge systems, and cultural resilience. As we live and work on these lands, we are reminded of our shared responsibility to act as respectful stewards, to listen to Indigenous voices, and to uphold our responsibilities with humility, care, and accountability.

Atura Power is committed to building respectful, meaningful, and mutually beneficial relationships with Indigenous Peoples and communities across Ontario — in the spirit of peace, friendship, and trust.

Table of Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

°C	degrees Celsius
µg/m³	micrograms per cubic metre
AAQC	Ontario Provincial Ambient Air Quality Criteria
AMFN	Aamjiwnaang First Nation
ANT	Anthropogenic
CAAQS	Canadian Ambient Air Quality Standards
CEMS	Continuous Emissions Monitoring System
CEMP	Construction Environmental Management Plan
CEPA	*Canadian Environmental Protection Act*
CER	Clean Electricity Regulations
CFN	Caldwell First Nation
CH_4	Methane
CKSPFN	Chippewas of Kettle and Stony Point First Nation
COD	Commercial Operation Date
COTTFN	Chippewas of the Thames First Nation
CO_2	Carbon Dioxide
CO_2e	Carbon dioxide equivalent units
CO	Carbon Monoxide
CTG	Combustion Turbine Generator
CUM1	Mineral Cultural Meadow
CUP	Cultural Plantation
CUW1	Mineral Cultural Woodland
dBA	A-weighted decibels
DNC	Delaware Nation Council
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
ESC	Erosion and Sediment Control
GHG	Greenhouse Gas
GJ/h	gigajoules per hour
ha	hectare(s)
HE	Cultural Hedgerow
HHV	Higher Heating Value
Hydro One	Hydro One Networks Inc.
IAA	*Impact Assessment Act*
IAAC	Impact Assessment Agency of Canada
IESO	Independent Electricity System Operator
IPD	Initial Project Description

kV	kilovolt
km	kilometre(s)
LHV	Lower Heating Value
L/day	Litres per day
LSA	Local Study Area
LT2 RFP	Long Term 2 Request for Proposals
m	metre(s)
MAM2	Meadow Marsh
masl	metres above sea level
MCM	Ontario Ministry of Citizenship and Multiculturalism
MECP	Ontario Ministry of the Environment, Conservation and Parks
MJ/m^3	Megajoules per cubic meter
MNO	Métis Nation of Ontario
MOEE	Ontario Ministry of Energy and Electrification
MDN	Munsee-Delaware Nation
mm	millimetres
MW	megawatt(s)
NF_3	Nitrogen trifluoride
NO_X	Nitrogen Oxides
NO_2	Nitrogen Dioxide
N_2O	Nitrous Oxide
ONTT	Oneida Nation of the Thames First Nation (Onyota'a:ka)
OP	Official Plan
OPG	Ontario Power Generation
OWS	oil/water separator
O. Reg.	Ontario Regulation
PA	Project Area
PFC	Perfluorocarbons
$PM_{2.5}$	Fine Particulate Matter
RAP	Reconciliation Action Plan
SAEHP	Sarnia Area Environmental Health Project
SAR	Species at Risk
SLR	SLR Consulting (Canada) Ltd.
SF_6	Sulphur hexafluoride
SO_2	Sulphur dioxide
SWM	Stormwater Management
TS	Transformer Station
TWh	terawatt-hour(s)
WIFN	Walpole Island First Nation

Part A: General Information

This document has been prepared in accordance with the *Impact Assessment Act* (IAA) (2019) and the "Guide to Preparing an Initial Project Description and a Detailed Project Description" (2024).

This document describes the proposed Riverside Generating Station (the Project), the preliminary engagement undertaken with Indigenous communities, the public and agencies, as well as the project components, existing environmental conditions, potential effects, and the proposed mitigation measures.

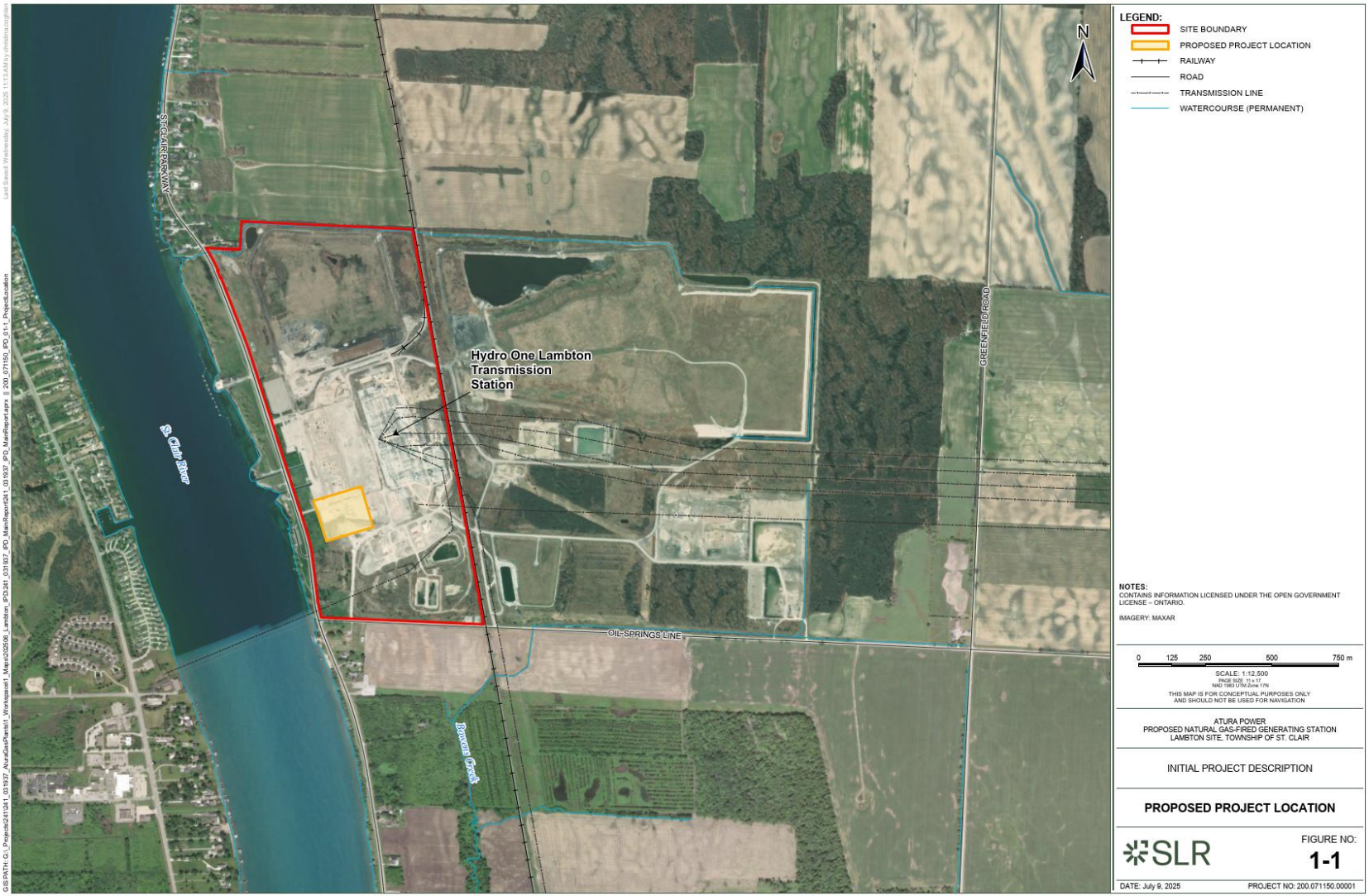
1. Project Information

The proposed Riverside Generating Station (the Project) will redevelop a portion of the site of the former Lambton Generating Station to a natural gas-fuelled facility. Formerly a coal-fuelled generating station, the facility was shut down in 2013 and subsequently demolished. The Project would redevelop a portion of the site with the capacity to provide a gross output capacity of approximately 500 megawatts (MW) of electricity to Ontario's electricity grid. The generating station is proposed to be a natural gas-fuelled, simple cycle combustion turbine generator unit and systems to support the new generating station.

Atura Power is currently planning to bid this Project into the Independent Electricity System Operator (IESO)'s Long-Term 2 Request for Proposals (LT2 RFP) procurement process. In the initial window (of 4 possible windows), which Atura Power intends to participate in, the IESO expects to announce successful proponents by mid-2026 for projects that will have a COD (Commercial Operation Date) by May 1, 2030.

The site is located approximately 16 kilometres (km) south of Sarnia in St. Clair Township, County of Lambton in the Province of Ontario. This site was selected based on its industrial nature and previous use as a generating station, proximity to natural gas supply, proximity to communities with increasing electricity needs, and existing provincial electricity grid connections. The property on which the Project will be located is owned by Ontario Power Generation (OPG) and bound by the St. Clair Parkway to the west and a CSX-owned rail line to the east. To the south, the property is bound by Oil Springs Line, and to the north by private residential and agricultural properties. The shoreline of the St. Clair River is located adjacent to the St. Clair Parkway, along the western boundary of the site (see Figure 1-1 and refer to Section 13 for further details)

Figure 1-1: Proposed Project Location



2. Proponent Information

Atura Power plays a key role in Ontario's electricity system by generating safe and reliable electricity.

Atura Power was established in 2019 as a wholly-owned subsidiary of OPG. The Company is the largest operator of gas-fired power plants in Ontario. Its current portfolio includes the following natural gas generating stations:

- Brighton Beach Generating Station (540 MW);
- Halton Hills Generating Station (710 MW);
- Napanee Generating Station (900 MW); and
- Portlands Energy Centre (550 MW).

Atura Power is also diversifying its fleet by actively advancing projects in green hydrogen and battery energy storage and exploring solar technology as an additional renewable opportunity. These projects and activities are not associated with this project.

2.1 Proponent Name and Information

Portlands Energy Centre L.P. (doing business as Atura Power) or an affiliate
200-1415 Joshua Creek Drive
Oakville, ON L6H 7G4

2.2 Primary Representative

Beatrice Ashby, RPP, MCIP, MES
Project Manager, Atura Power
(905) 483-6370
Beatrice.Ashby@aturapower.com

2.3 Project Team

Atura Power contracted SLR Consulting Ltd. (SLR) to develop this document with the support of the following key contributors:

- Engineering and Design: Burns & McDonnell Canada Ltd.;
- Engagement: Avaanz Ltd.;
- Archaeology: Archaeological Research Associates Ltd.; and
- Land Use Planning: MacNaughton Hermsen Britton Clarkson Planning Limited

3. Municipal and Public Engagement Summary

3.1 Municipal Engagement

The following municipal agencies were consulted:

- St. Clair Township
- City of Sarnia
- County of Lambton

3.1.1 Overview of Municipal Engagement

Municipal outreach and engagement continue with the host community of St. Clair Township, the broader Lambton County, (including the City of Sarnia), and both provincial and federal parliamentary representatives for the Sarnia-Lambton region.

Atura Power initiated Project-specific information sharing and relationship building with St. Clair Township staff and elected officials in early 2025. This built upon previous engagement in late 2024 by Atura Power's parent company, OPG, regarding the potential redevelopment of the Lambton site for electricity generation purposes and addressing future demand forecasts in Ontario.

Engagement activities specific to the Project commenced in March 2025 with an introductory presentation to the Mayor of St. Clair Township and municipal staff. This was an opportunity to share Atura Power's interest in submitting a proposal for the Project under the IESO LT2 RFP procurement process and solicit feedback on how best to engage the broader team of staff and elected representatives (i.e. Council). Since that time, Atura Power continues to engage in two-way dialogue with St. Clair Township and regularly provides Project updates as it pertains to schedules, milestones, engagement, on-site activities, and more.

To date, Atura Power has provided the following information to St. Clair Township (see Appendix A):

- Notifications describing anticipated fieldwork on the Project site;
- A summary of Atura Power's engagement strategy and plans regarding the IESO LT2 RFP procurement process;
- A presentation summarizing the proposed Project description;
- The Project notice and an invitation to a public meeting*;
- A summary of the public meeting including materials and topics of interest raised by constituents,
- A preliminary copy of the Riverside IPD, and

- Assorted documents as required by the IESO LT2 RFP procurement process.

**Note, materials were also shared with neighbouring City of Sarnia and County of Lambton municipal leaders.*

In May 2025, Atura Power shared a presentation of the proposed Project to St. Clair Township Council. The presentation included: (see Appendix A):

- Overview of IESO's LT2 RFP procurement process;
- Summary proposed Project description;
- Description of Project need;
- Proposed site location (including a map);
- Existing site features;
- Early fieldwork and technical studies;
- Indigenous engagement;
- Community engagement activities; and
- Proposed Project timeline.

In June 2025, Atura Power hosted a public meeting on the Project and invited municipal leaders from St. Clair Township and the broader Lambton County. Elected officials including the St. Clair Township Mayor, Deputy Mayor, two Council members (Wards 1 & 2), as well as the Chief Executive Officer of the Sarnia-Lambton Economic Partnership attended.

On July 14, 2025, municipal Council for St. Clair Township unanimously passed a motion to support the Project.

3.1.2 Key Concerns and Comments Raised by Municipalities

Atura Power is committed to engaging with municipal leaders to understand their interests and priorities as noted in Section 3.1.1. By working closely with St. Clair Township, Atura Power will better understand the priorities of municipal leadership and those of their constituents. This will ensure Atura Power advances plans and work in a manner that best meets the needs and interests of the host community through this Project.

Through early engagement efforts, the following questions and comments were raised by municipal leaders:

- Proposed capacity of the Project;
- Opportunity to pursue additional technologies on the Project site;
- Employment and procurement opportunities;
- Atura Power's existing gas portfolio and project management experience;

- Foreign vs domestic source of natural gas to be used during Project operations;
- Potential environmental effects related to the St. Clair River;
- Construction traffic considerations;
- Municipal water supply and wastewater discharge considerations; and
- Interest/desire to see the Project be awarded by the IESO and proceed beyond the LT2 RFP procurement process.

In general, municipal leaders engaged on the Project have noted strong support for the Project and expressed an eagerness to understand how they can assist with advancing the Project through the IESO procurement process and contribute to its success. This support included tabling a motion for a Municipal Support Resolution. It is acknowledged that engagement on the Project is in its early stages and municipal leaders will continue to provide further comments and/or initiate discussion regarding the proposed Project as it progresses.

3.1.3 Plans for Future Municipal Engagement

Atura Power is committed to building relationships and collaborating with municipal leaders and will continue to do so over the life of the Project. As the Project progresses, Atura Power will continue to share Project updates and information with St. Clair Township leaders through:

- Email correspondence;
- Project notifications;
- Project site visits;
- Virtual and/or in-person meetings with municipal leadership (including Council meetings);
- Updates to the Project webpage (e.g., Project timelines, access to a repository of Project-related documentation); and
- Other engagement activities as requested.

Atura Power will continue to support municipal engagement by providing timely responses to Project-related enquiries received by the Project team and/or via the Project email address. To support consistent information sharing with municipal contacts, Atura Power will continue to update the Project contact list to ensure any staff or elected officials who express interest in receiving Project notifications from Atura Power receive those materials.

Should Atura Power receive approvals to proceed with the Project, a Community Benefit Agreement with St. Clair Township will be implemented to ensure that the Project facility provides value for the host community and addresses local priorities longer term. To ensure comprehensive Project records and robust information sharing, Atura Power will track all engagement and communication with municipal leaders and include them as part of the Project record.

3.2 Public Engagement

In May 2025, Atura Power began an engagement program to provide the public with Project-specific information and collect and respond to feedback, questions and/or concerns. Atura Power initiated this engagement program by informing the public of preliminary Project planning activities. A summary of the key public engagement activities undertaken to date is provided below.

3.2.1 Overview of Public Engagement Activities

In May 2025, Atura Power distributed the Project notice to property owners and tenants surrounding the Project site boundary. The Project notice was also shared with the broader public through newspaper advertisements in *The Independent* and *The Sarnia Observer* (see Appendix B). The Project notice included a description of the proposed Project, a map of the project site, and an outline of the IESO's LT2 RFP procurement process. An invitation to the upcoming public meeting, dedicated email address and a link to the Project webpage were also provided (see Appendix B).

Potentially affected and interested Indigenous communities received a copy of the Project notice prior to the public release of the notice. Federal and provincial members of Parliament, locally elected leaders, municipal staff, and industry advocacy groups also received a copy of the Project notice and an invitation to Atura Power's public meeting.

In June 2025, Atura Power hosted in-person public meeting in St. Clair Township at the St. Clair Parkway Golf Course. An advertisement for the public meeting was shared via Atura Power's social media (LinkedIn) and promoted by St. Clair Township through social media (Facebook) (see Appendix B) and on the municipal homepage. The meeting featured display boards (see Appendix B) communicating project information and the Atura Power project team were available to answer questions and learn about local priorities as it pertains to the Project. Comment forms were made available to collect feedback from attendees and were responded to by a member of the project team following the event.

Approximately 55 participants attended the public meeting, including members of the public and nearby residents, industry advocacy organizations, members of local business, local and regional elected officials, and representatives from Indigenous communities.

Atura Power developed and maintains a public facing Project webpage, www.aturapower.com/riverside, with Project information and a contact form for feedback. Atura Power also maintains a stakeholder contact list of interested individuals and parties. This list is updated regularly and reviewed prior to distribution of Project notifications. It is also updated to include any individual who submits a comment or feedback to the comment form on the Project webpage or via the dedicated Project email address.

All comments and feedback received via the comment form on the Project webpage and the dedicated Project email address are responded to by a member of the Project team. Incoming comments and outgoing responses are all tracked and incorporated into an engagement database for record keeping purposes.

Implementation of the public engagement program is ongoing and will continue throughout the life of the Project (see Section 3.2.3).

3.2.2 Key Concerns and Comments Raised by Public

Atura Power is committed to meaningful public engagement, aiming to understand the interests and priorities of the community as they relate to the Project. Through ongoing dialogue, Atura Power seeks to deepen this understanding and ensure its approach and considerations incorporate these priorities as work advances.

- General themes of questions and comments received by the public during early engagement efforts include:
- Project details and timelines (including proposed technology);
- Site layout and technical design;
- Site operations;
- Environmental effects related to water, air, noise, traffic, and aesthetics;
- Engagement conducted to date and anticipated future engagement plans;
- Employment and procurement opportunities;
- Economic development and future development opportunities (including the exploration of additional technologies on site); and
- Local/regional industrial development.

Project engagement is still in its early stages and members of the public will continue to provide further comments and/or concerns regarding the proposed Project as it progresses.

3.2.3 Plans for Future Public Engagement

Atura Power is committed to building positive relationships with members of the public. As part of its ongoing public engagement program, Atura Power will continue to engage the public through engagement activities, which may include:

- **Project notifications:** invitations to public meetings, emails sharing anticipated Project activities or key milestones;
- **Public meetings:** public engagement events during which members of the public will be invited to learn more about the Project (e.g., through display boards and/or presentations), share questions or comments with the Atura Power Project team, and submit feedback via comment forms;
- **Updates to the Project webpage:** details regarding anticipated environmental and permitting processes, Project timelines, and copies of Project documentation available for public review; and

- Other related engagement activities.

Atura Power will also continue to support the local and regional community by providing timely responses to Project-related enquiries received via the Project email address.

To support the distribution of Project notifications, Atura Power and will continue to update the Project stakeholder contact list.

Atura Power will continue to track all engagement and communication with members of the public and include them as part of the Project record.

4. Indigenous Engagement

The following Indigenous communities have been engaged as part of the Riverside Generating Station Project (Project):

- Aamjiwnaang First Nation (AMFN)
- Caldwell First Nation (CFN)
- Chippewas of Kettle and Stony Point First Nation (CKSPFN)
- Chippewas of the Thames First Nation (COTTFN)
- Delaware Nation Council (DNC)
- Métis Nation of Ontario (MNO)
- Munsee-Delaware Nation (MDN)
- Oneida Nation of the Thames First Nation (Onyota'a:ka) (ONTT)
- Walpole Island First Nation (WIFN)

4.1 Overview of Engagement Activities to Date

4.1.1 Engagement Activities Prior to Riverside Generating Station Project

Engagement activities specific to the Project began in January 2025; however, Atura Power began the process of building relationships with potentially affected and interested Indigenous communities in May 2023, as part of engagement associated with the IESO Expedited Long-term 1 (LT1), LT1, and Same Technology Upgrades Request for Proposal procurement processes. Since then, Atura Power has continued to engage with communities through various activities

Atura Power has offered multiple engagement options to align with and respect each community's unique preferences and protocols. As a result, the frequency and format of engagement have varied, but generally included a combination of the following activities:

- Email notifications;

- Virtual and/or in-person meetings;
- Access to project-specific webpages with project descriptions and related resources;
- Direct contact with the Atura Power project team through dedicated project email addresses;
- Ad hoc meetings, as requested by communities; and
- Project site visits.

Atura Power has provided funding for community events and cultural gatherings and has participated in these events when invited by the communities.

Capacity funding and monitoring agreements have been developed in collaboration with communities to ensure they have the financial resources needed to participate in project-related activities, such as fieldwork and report reviews

Opportunities for Indigenous equity participation in the Project have been shared with several communities through ongoing engagement. Atura will continue working with all five treaty First Nations to explore potential economic partnerships and pathways for involvement in the Project.

Section 4.1.2 describes Atura Power's engagement activities with potentially affected and interested Indigenous communities specific to the Project, beginning in January 2025.

4.1.2 Engagement Activities Regarding the Riverside Generating Station Project

4.1.2.1 Aamjiwnaang First Nation

Project-specific engagement with AMFN began January 16, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges and both in-person and virtual meetings. Topics of discussion have included meeting logistics, engagement protocols, capacity funding, monitoring agreements, and Project schedules. Project documents, including information on natural heritage assessment activities, were shared with AMFN as well as the meeting agenda and presentation materials.

An in-person meeting took place on February 28, 2025. Topics of discussion included an overview of the Project, potential partnership opportunities, and capacity funding. A virtual meeting took place on July 10, 2025, to discuss monitoring activities and engagement protocols. AMFN was also one of four Indigenous communities that participated in an in-person meeting on July 23, 2025, that included a Project update and group discussion regarding the development of the draft IPD. Priorities and areas of interest discussed during the meeting are described in Section 4.2.1.

AMFN has indicated interest in continuing to stay involved in the Project, with a particular interest in natural heritage. Engagement between Atura Power and AMFN is ongoing.

4.1.2.2 Caldwell First Nation

Project-specific engagement with CFN began January 14, 2025, when Atura Power presented the Project during a site visit to the Brighton Beach Generating Station. Subsequent Project-specific engagement activities have included email exchanges and virtual meetings. Topics of discussion have included upcoming field studies, term sheets, capacity funding, monitoring agreements, and engagement with CFN's consultants. Project documents were shared with CFN including meeting agendas and presentation materials.

Virtual meetings regarding potential partnership opportunities took place on February 27, April 25, May 2, and June 17, July 16, and August 15, 2025. CFN was also one of four Indigenous communities that participated in an in-person meeting on July 23, 2025, that included a Project update and group discussion regarding the development of the draft IPD. Priorities and areas of interest discussed during the meeting are described in Section 4.2.1.

CFN has indicated interest in continuing to stay involved in the Project, with an interest in natural heritage and participating in future ecological field studies. Engagement between Atura Power and CFN is ongoing.

4.1.2.3 Chippewas of Kettle and Stony Point First Nation

Project-specific engagement with CKSPFN began January 16, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges, virtual meetings, and an in-person career fair at CKSPFN on March 19, 2025. Topics of discussion have included meeting logistics, capacity funding, partnership opportunities, monitoring agreements, and economic development information such as vendor partnerships and supply chain management. Project documents were shared with CKSPFN as well as all meeting agendas and presentation materials.

Virtual meetings took place on January 28, 2025, March 5, 2025, April 24, 2025, May 5, 2025, and June 2, 2025. Meeting topics included an introduction to the Project and other potential projects; capacity funding; and updates on Project activities, including fieldwork, technical studies, and engagement milestones. Meeting topics also included discussions related to cumulative effects. CKSPFN has shared written feedback describing their interests and priorities related to cumulative effects. Atura Power and CKSPFN are working together to understand and discuss these interests.

CKSPFN was also one of four Indigenous communities that participated in an in-person meeting on July 23, 2025, that included a Project update and group discussion regarding the development of the draft IPD. Priorities and areas of interest discussed during the meeting are described in Section 4.2.1.

CKSPFN has indicated interest in continuing to stay involved and participate in the Project. Engagement between Atura Power and CKSPFN is ongoing.

4.1.2.4 Chippewas of the Thames First Nation

Project-specific engagement with COTTFN began January 16, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges, virtual meetings, and planning for upcoming monitoring activities. Topics of discussion have included meeting logistics, capacity funding, monitoring agreements, Project schedules, and economic development through corporate partnerships. Project documents were shared with COTTFN including meeting agendas and presentation materials.

Virtual meetings took place on January 30, 2025, and April 25, 2025. Meeting topics included an overview of the Project, capacity funding, and partnership opportunities. COTTFN was also one of four Indigenous communities that participated in an in-person meeting on July 23, 2025, that included a Project update and group discussion regarding the development of the draft IPD. Priorities and areas of interest discussed during the meeting are described in Section 4.2.1.

COTTFN has indicated interest continuing to stay involved in the Project, particularly in monitoring and fieldwork participation for natural heritage surveys and archaeological activities. Engagement between Atura Power and COTTFN is ongoing.

4.1.2.5 Delaware Nation Council

Project-specific engagement with DNC began January 16, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges in which Atura Power has shared Project information including upcoming fieldwork and technical studies. Project-specific comments have not been received from DNC to date; however, Atura Power will continue to engage with DNC and welcomes the community's participation in engagement activities.

4.1.2.6 Métis Nation of Ontario

Project-specific engagement with MNO began February 12, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges in which Atura Power has shared Project information including upcoming fieldwork and technical studies, and the Project notice. Project-specific comments have not been received from MNO to date; however, Atura Power will continue to engage with MNO and welcomes the community's participation in engagement activities.

4.1.2.7 Munsee-Delaware Nation

Project-specific engagement with MDN began January 16, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges in which Atura Power has shared Project materials including upcoming fieldwork and technical studies. Project-specific comments have not been received from MDN to date; however, Atura Power will continue to engage with MDN and welcomes the community's participation in engagement activities.

4.1.2.8 Oneida Nation of the Thames First Nation Onyota'a:ka

Project-specific engagement with ONTT began January 16, 2025, with an email introducing the Project. Subsequent Project-specific engagement activities have included email exchanges in which Atura Power has shared Project information including upcoming fieldwork and technical studies. Project-specific comments have not been received from ONTT to date; however, Atura Power will continue to engage with ONTT and welcomes the community's participation in engagement activities.

4.1.2.9 Walpole Island First Nation

Project-specific engagement with WIFN began January 16, 2025, with an email introducing the Project. Subsequent engagement activities have included email exchanges, virtual meetings, and planning for upcoming monitoring activities. Topics of discussion have included consultation protocols, project schedules, capacity funding, monitoring agreements, and participation in archaeological activities. Project documents were shared with WIFN including meeting agendas and presentation materials.

Virtual meetings took place on February 10, March 26, and June 13, 2025. Meeting topics included an overview of the Project and other potential projects; capacity funding; partnership opportunities; and updates on Project activities including fieldwork, technical studies, the environmental assessment process, and engagement milestones.

WIFN has indicated interest in continuing to stay involved in the Project, particularly in fieldwork monitoring and review of technical studies. Engagement between Atura Power and WIFN is ongoing.

4.2 Comments and Concerns Raised by Indigenous Communities

4.2.1 Project-specific Key Comments and Concerns Raised by Indigenous Communities

Atura Power is committed to engaging with communities to understand their interests and priorities. Atura Power continues to initiate meetings and other touch points with communities and through these means, are hopeful to learn what is important to communities and ways they may be able to address community priorities.

Through the early engagement efforts to date, the following priorities have been identified by potentially affected and interested Indigenous communities:

- Cumulative effects, specifically;
  - Air quality and human/environmental health,
  - Water quality and quantity, and
  - Continued land alienation and loss of restoration opportunities;
- Project timelines;

- Consultation requirements and engagement protocols;
- Regulatory processes;
- Capacity of communities to engage;
- Participation in fieldwork;
- Review of technical documents;
- Economic development;
- Sustainability; and
- Project alignment with existing energy mandates.

In July 2025, Atura Power organized an in-person meeting with interested Indigenous communities to share information on the proposed Project and associated IPD, gather feedback from communities on the draft IPD, and support relationship building between all meeting participants. Four communities, including AMFN, CFN, CKSPFN and COTTFN, participated in the meeting which was held in Windsor, Ontario, on July 23, 2025.

During the meeting, Atura Power provided a summary of the proposed Project description and relevant Project updates (e.g., recent fieldwork completed on site). Next, Atura Power provided an overview of the federal Impact Assessment process and summarized preliminary content in the draft IPD. At this time, Atura Power invited participants to provide their feedback on the development of the IPD and draft content. Participants identified the following priorities and areas of interest for consideration in the IPD:

- Factors influencing Project site selection;
- Consultation and collaboration to realize mutual benefits;
- Archaeological findings on site and related approaches to risk management;
- Cumulative effects from the perspective of ‘the spirit of the land’ to Anishinaabe people;
- Air quality assessment and methodology;
- Wildlife and wildlife habitat compensation;
- Opportunities for carbon offsetting (e.g., tree planting); and
- Socio-economic benefits and opportunities for Indigenous communities.

Atura Power appreciates the feedback participants provided to inform the development of the IPD and are grateful for the ongoing opportunities to share information and support relationship-building with communities and between communities.

Atura Power acknowledges that engagement on the Project is in its early stages and not all communities have shared their comments and concerns
(see engagement detailed by Indigenous community in Section 4.1.2).

Continued engagement with communities is a priority, with the goal of deepening Atura Power's understanding of each community's key priorities and interests related to the Project. Atura Power remains committed to maintaining open dialogue and building respectful, collaborative relationships as the Project progresses.

4.2.2 Comments and Concerns Raised by Indigenous Communities on Similar, Proximate Projects

The Project site and surrounding area is a focus for development, with several other projects undergoing studies and assessments. Due to the location of these initiatives, some proponents have undertaken engagement activities with several of the same Indigenous communities Atura Power is engaging with for this Project.

Based on a review of publicly available information, priority areas for some of the Indigenous communities engaged on projects that are similar or are in the same area include:

- Cumulative effects;
- Environmental effects (e.g., animals, birds, ecosystems, water and air quality, etc.);
- Treaty Rights;
- Sacred sites and culturally-significant locations;
- Integration of Indigenous Knowledge Systems;
- Regulatory processes for consultation and the participation of Indigenous rights holders
- Project timelines;
- Economic development, procurement, and employment opportunities for Indigenous communities;
- Social environment and required supports (e.g., population growth, housing, crime, mental health and well-being); and
- Emergency management planning.

Atura Power recognizes that these priorities neither represent a complete view of community interests nor are they directly applicable to the Project, however, they are noted here to acknowledge community interests that have been shared in publicly available materials.

4.3 Plans for Future Indigenous Engagement

Atura Power is committed to building relationships with potentially affected and interested Indigenous communities and will continue to engage as directed by these communities. Atura Power will continue to provide regular Project updates and notifications to ensure the consistent flow of Project information to communities. Relevant Project notifications and milestones will continue to be provided to communities in advance of the public.

For communities that have not yet established recurring meetings with the Project team, Atura Power will continue to offer regular engagement opportunities. They are open to adapting their approach and exploring alternative formats to align with each community's preferences and engagement protocols.

Atura Power will continue to engage with Indigenous communities through:

- Project notifications;
- Outreach regarding anticipated fieldwork;
- Site visits;
- Invitations to review Project-related documentation;
- Updates to the Project webpage (e.g., Project timelines, access to Project-related documentation);
- Community meetings; and similar activities, and
- In-person meetings.

Atura Power will continue to work with communities to establish and implement capacity funding agreements. Atura Power has provided funding for community events and cultural gatherings and has participated in these events when invited by the communities. Atura Power understands that the level of interest and the degree to which each community may wish to participate in the Project varies and will remain flexible and open to adapting engagement approaches to suit community needs.

To ensure comprehensive Project records and robust information sharing, Atura Power will continue to track all engagement and communication with Indigenous communities and make these records available to Indigenous communities and the Agency, upon request.

As a primary energy supplier in Ontario, Atura Power is committed to advancing reconciliation through their inaugural Reconciliation Action Plan (RAP). As outlined in the RAP, Atura Power will seek to foster regular, not just required, collaboration and build respectful, mutually beneficial relationships with Indigenous communities based on trust, understanding, and shared priorities.

5. Regional Studies or Plans

According to the Impact Assessment Agency of Canada (IAAC), there are no regional studies being carried out under the IAA in the region where the Project is being proposed (Vypovska, pers. comm., 2025).

6. Strategic Assessments

The IAAC has identified the “Strategic Assessment of Climate Change” (revised October 2020) as a potentially relevant assessment to this Project (Vypovska, pers. comm., 2025). This study was conducted under Section 95(2) of the IAA. The intent was to provide “consistent, predictable, efficient and transparent consideration of climate change throughout the impact assessment process” (ECCC 2020). As it relates to this Project, the strategic assessment guides how proponents consider greenhouse gases (GHGs) in each phase of the impact assessment process and ensures a consistent approach to quantification of GHG emissions. See Section 23 for information on how GHG emissions were addressed for this Project based on the requirements and guidance within the strategic assessment.

Part B: Project Information

7. Purpose, Need, and Benefits of the Project

7.1 Project Purpose

The purpose of the Project is to provide approximately 500 MW of electricity to Ontario’s energy grid. The Project is proposed in response to the IESO’s most recent competitive procurement process which will secure 1,600 MW of new capacity resources to meet Ontario’s increasing electricity demands and projected shortfalls.

7.2 Project Need

Ontario’s IESO manages the provincial power system and assesses future demand to plan for the electricity needs of the province. According to the IESO’s most recent Annual Planning Outlook (IESO 2025), by 2050 electricity demand in Ontario is expected to increase by 75% – to 262 terawatt-hours (TWh) – or roughly the equivalent of adding four and a half cities the size of Toronto to the grid (MOEE 2024). This growing demand is anticipated because of economic growth, the electrification of industry and vehicles, greenhouse-related agricultural production, projected population growth, existing facility refurbishment schedules, and expiring IESO contracts (IESO 2024, 2025).

In response to Ontario’s projected electricity shortfalls, the IESO launched a series of competitive procurement programs starting in 2022 to secure the new capacity required to meet the growing needs of the province. These programs to date, when combined with upgrades to existing facilities and capacity sharing agreements with Hydro-Québec, are projected to meet Ontario’s power supply needs until 2029 (IESO 2025). To meet Ontario’s needs in 2029 and beyond, the IESO has begun another competitive procurement process referred to as the Long-Term 2 Request for Proposals (LT2 RFP) process.

The LT2 RFP process includes an “energy stream” that will secure up to 14 TWh of annual generation from new energy producing resources such as wind, solar, and bioenergy facilities, as well as a second “capacity stream” that will secure up to 1,600 MW of new resources capable of meeting demand specifically during peak system hours, such as battery energy storage, hydrogen storage, and natural gas facilities.

Atura Power is planning to respond to the LT2 RFP by bidding the Project into the capacity stream in December 2025. Atura Power is currently completing environmental and due diligence studies, advancing engineering designs, and beginning engagement with Indigenous communities and key stakeholders. If the Project is awarded a contract within the first LT2 window, Atura Power will be required to begin commercial operations at the Riverside Generating Station by 2030, otherwise commercial operations could begin at a date beyond 2030 as per any future procurement processes with IESO.

7.3 Project Benefits

The IESO’s Resource Eligibility Interim Report (IESO 2022a) first stated that without a limited amount of new natural gas-generated supply, the IESO would be reliant on emergency actions such as load curtailments or rotating blackouts in Ontario. The IESO’s Pathways to Decarbonization (IESO 2022b) further indicated that a moratorium on new natural gas-fuelled generation is not possible under the current demand forecast. Non-emitting renewable energy sources such as wind and solar power are not enough; new natural gas-fuelled generation will be required to help address increasing demands during peak periods post-2029. The IESO intends to procure a limited amount of new natural gas capacity to maintain reliability and help bridge the gap between today’s supply mix and the build-out of the province’s non-emitting renewable energy resources fleet (IESO 2023).

Ontario is transitioning to a dual peak system which will require significant year-round energy due to electric cars, the electrification of industry, and greenhouse-related agricultural production – so when heating and air conditioning usage peaks in the winter and summer seasons respectively, so will energy demand on the provincial system (IESO 2025). The phasing out of natural gas generation requires replacement technologies that can provide the continuous, year-round, and all-weather capacity that natural gas can, and currently no such technology exists.

As Ontario moves forward with the implementation of non-emitting renewable energy sources, and as other existing nuclear and hydroelectric facilities undergo refurbishment, natural gas-fuelled electricity generation will serve as a back-up source to address demands during peak periods. Therefore, natural gas generation will safeguard the reliability of the system when other technologies may not be available; it can quickly respond to sudden changes in demand when intermittent renewable energy (e.g., wind or solar) is not available or has lower outputs.
By ensuring a robust electricity grid, natural gas generation will enable reduced emissions in other sectors by providing the necessary infrastructure to electrify transportation, industry, and agriculture (IESO 2024b).

In addition to these grid-wide benefits, the Project will provide economic benefits to the local community through the reuse of an existing brownfield site and associated increased tax revenue, job creation especially during construction, and through Atura Power's monetary support of organizations and charities in the local communities in which it operates. Atura Power is currently exploring opportunities for an economic partnership with local Indigenous communities.

8. Physical Activities Regulations

The *Physical Activities Regulations* of the *Impact Assessment Act* lists the types of projects or activities that require assessment under the Act. Within the regulation, Section 30 of the physical activities schedule states:

- *The construction, operation, decommissioning and abandonment of a new fossil fuel-fired power generating facility with a production capacity of 200 MW or more.*

The Project is a proposed natural gas-fuelled power generating facility with a gross output capacity of approximately 500 MW. As the Project meets the conditions listed in the *Physical Activities Regulations*, an IPD must be provided to IAAC as the first step in the determination of whether an Impact Assessment is required. IPDs must meet the requirements of the *Information and Management of Time Limits Regulations.* This IPD has been prepared in accordance with that regulation.

The Project is not a component of a larger project that is not listed in the Project List.

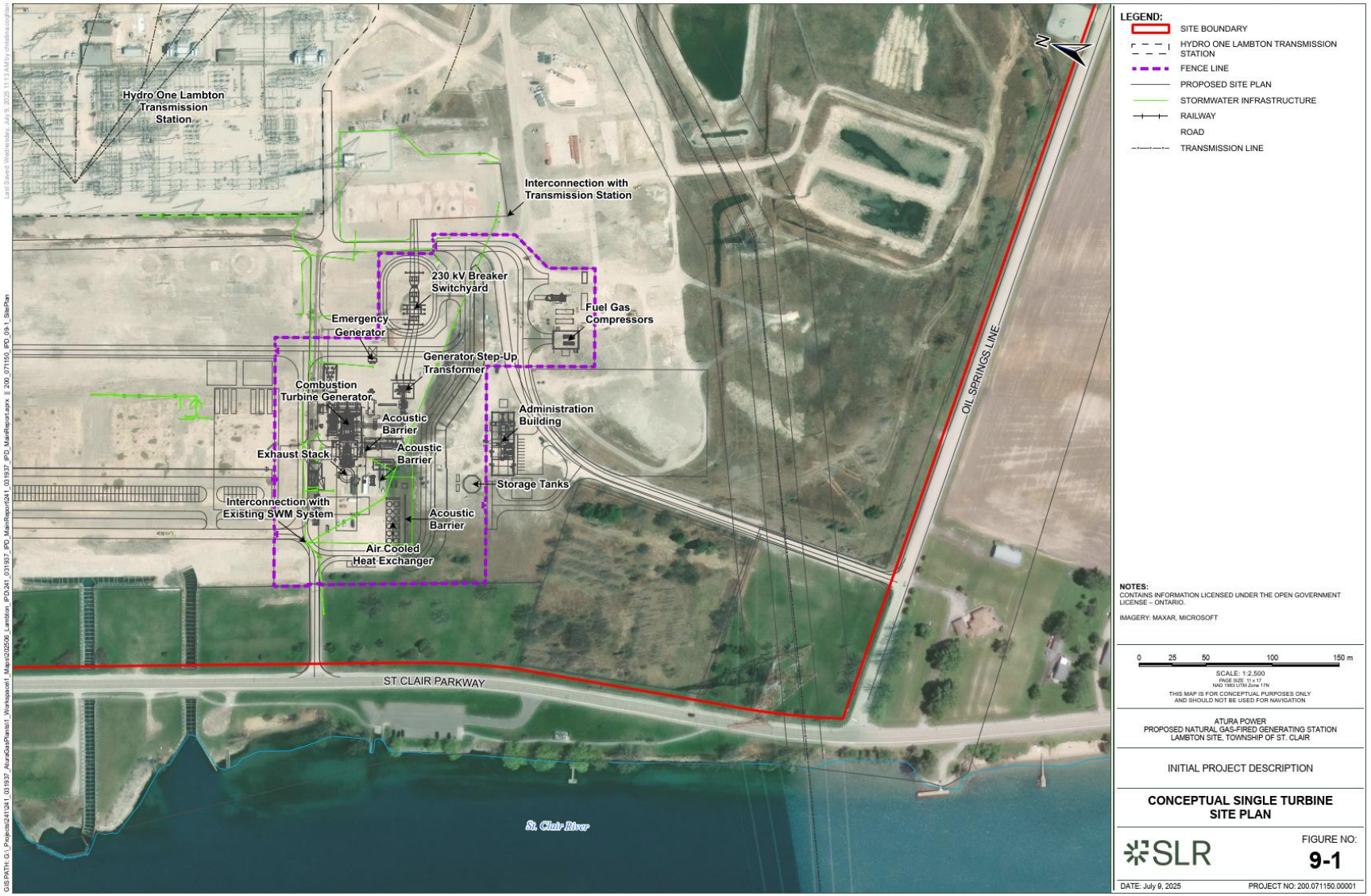
9. Project Activities Description

The project is a natural gas-fuelled simple cycle power generating station proposed on a portion of a brownfield site in St. Clair Township, County of Lambton, Ontario. The project includes one or more combustion turbine generators in simple cycle configuration with supporting equipment and systems. The project will connect to the provincial electricity grid via the adjacent 230-kilovolt (kV) Lambton Transformer Station (TS) owned by Hydro One Networks Inc. (Hydro One).

The following sections describe the key project components and activities based on currently available information and preliminary project planning. Given the early stage of the project, some design decisions are not currently available, and therefore the descriptions below include options currently under consideration. The preliminary design and layout of the project is subject to change based on additional engineering and the results of future studies, engagement activities, and approval processes.

A conceptual site plan is shown based on a single gas turbine configuration in **Figure 9-1.**

Figure 9-1: Conceptual Single Turbine Site Plan



9.1 Existing Structures and Activities

The Riverside Generating Station will be situated on a portion of the former Lambton Generating Station site. The former coal-fuelled generating station was shut down in 2013, with demolition and decommissioning of the site completed in December 2023. The site is currently vacant, with existing infrastructure limited to stormwater management features, site fencing and lighting.

The existing Lambton Generating Station Stormwater Management Plan presents the stormwater management (SWM) design for the final decommissioned OPG site including the Project area (GHD, 2021). The Project area is located within the Powerhouse and Switchyard Area of the existing SWM plan. Runoff from this area discharges directly to the St. Clair River without stormwater management controls. Runoff is collected in a series of sewer lines that daylight into several outlet channels along the bank of the St. Clair River. The Project area is collected via this local storm sewer network and outlets to southern-most outlet channel and subsequently into the St. Clair River.

The existing stormwater management system also services the adjacent Lambton TS, which is located within the OPG property boundary but owned and operated by Hydro One. The Lambton TS is currently in the process of being expanded by Hydro One as part of a separate project for Ontario regional and systemwide transmission needs. Hydro One-controlled lands are under long term lease and outside of OPG operational control, though located within the geographical boundary of the OPG property.

Ongoing activities at the project site are associated with monitoring and maintenance of the operational stormwater facilities, periodic site inspections and groundskeeping.

9.2 Project Components

The following sections describe the infrastructure and permanent structures required for operation of a single gas turbine project. While one or more gas turbines may be deployed to generate the approximate 500 MW of electricity planned for this project, the below sections are based on a single turbine configuration. The preliminary design and layout of the project is subject to change based on additional engineering and the results of future studies, engagement activities, and approval processes. A representative list of key project component dimensions and area footprints are provided in **Table 9-1**.

Table 9-1: Representative Project Component Dimensions and Area Footprints

Project Components	Key Dimensions (approximate)	Area (ha)
Combustion Turbine Generator (CTG)	35 m x 15 m	0.05
Switchyard	16 m x 18 m	0.05
Air Cooled Heat Exchanger	13.5 m x 18 m	0.04
Combustion Turbine (CT) Drain Mist Separator	2 x 3m	0.001
CT Enhanced Cooling Air Compressor	5 x 8m	0.004
CT Enhanced Cooling Air Cooler	3 x 10m	0.003
CT Cooling Air Cooler (Open Cycle Only)	7 x 12m	0.008
CT 2C Cooler	2 x 7m	0.001
CT Cooling Air Filter	2 x 3m	0.001
CT Maintenance Area	15 x 18m	0.03
Oil / Water Separator	2 x 7m	0.01
Wash Water Drains Tank	2 x 6m	0.01
Closed Cooling Water Pumps	2 x 5m (each)	0.002
Lube Oil Mist Separator	2 x 3m	0.001
CT Lube Oil Unit	5 x 14m	0.007
CT Air Inlet Filter	12 x 20	0.02
Emergency Diesel Generator	3 x 8m	0.002
Electrical Equipment Pre-Engineered Building	9 x 30m	0.03
CT Electrical Equipment Enclosure	11 x 21m	0.02
Generator Rotor Removal Area	20 x 30m	0.06
CT Fire Fighting System	4 x 8m	0.003
Generator Step-Up Transformer	6 x 10m	0.006
Continuous Emissions Monitoring System Enclosure	4 x 7m	0.003
CT Wash Water Skid	2 x 3m	0.001
CT Casing Cooling Fan	2.5 x 2.5m	0.001
Closed Cooling Water Stand Pipe	4 x 5m	0.002
CT Fuel Gas Unit	5 x 8m	0.004
CT 4S Cooler	4 x 8	0.003
CT Fuel Gas Flow Meter Space	2 x 5m	0.001
Chemical Storage Building	4 x 5m	0.002
Fuel Gas Final Filter	3m x 3m	0.001
Compressed Air Equipment	10 x 21m	0.02
Excitation Transformer	1 x 3m	0.001
Administration Building	20m x 40m	0.08
Construction Power Transformers	2 x 2.5m	0.001

Project Components	Key Dimensions (approximate)	Area (ha)
Generator Circuit Breaker	6 x 8m	0.005
Station Utility Services Transformers	3 x 4m (each)	0.004
Static Frequency Converter Transformer	4 x 4m	0.002
Aux Power Transformer	4 x 6m	0.002
Static Frequency Converter Enclosure	4 x 4m	0.002
Noise Barrier	10 x 15m	0.02
Fuel Gas Filter Separator Skid	6 x 6m	0.04
High Pressure - Pressure Regulating Skid	5 x 13m	0.007
Service Water Pumps	3 x 5m	0.002
CO_2 Supply Bottle Rack	3 x 4m	0.001
Service / Firewater Tank	14 x 14m	0.02
Firewater Pump Enclosure	2.5 x 6m	0.002
Demin Water Storage Tank	7m diameter	0.004
Demin Water Pumps	3 x 5m	0.002
Reverse Osmosis Skid	3 x 5m	0.002
Pressure Reduction Unit	2 x 2m	0.001
Fuel Gas Calorie Meter	2 x 2m	0.001
Gas Compression Equipment	3 x 9m (each)	0.03
Future Hydrogen Mixing Skid	5 x 5m	0.003
Fuel Gas Dew Point Heater	5 x 15m	0.008
CTG Stack	10m diameter	0.008
Gas Compression Cooler	4 x 15m each	0.006
Future Heat Recovery Steam Generator Area	15 x 48m	0.07
Future Steam Turbine Generator Area	48 x 92m	0.4
Hydrogen Storage Trailer	5 x 21m	0.01
Low Pressure - Pressure Regulating Skid	4 x 9m	0.004
Septic Tank	6 x 6m	0.004

9.2.1 Combustion Turbine Generator System

The primary project component is a new combustion turbine generator (CTG) that will generate approximately 500 MW of electricity. It will operate in a simple cycle configuration using natural gas as the primary fuel, and will incorporate an inlet air filtration system, evaporative cooling system, and an inlet heating system to maximize efficiency. A description of the project's electricity output capacity and the electricity generating process is provided in **Section 10**.

The specific CTG model(s) will be selected as the project progresses; however, the turbine(s) selected will include a low nitrogen oxides (NO_X) combustion system and industry-leading efficiency features, resulting in a higher reduction in carbon dioxide (CO_2) emissions and improved fuel utilisation.

Based on representative technical specifications for the gas combustion technologies under consideration the facility could generate approximately 500 MW net output with an expected natural gas consumption rate of approximately 4,100 gigajoules per hour (GJ/h) at peak load conditions.

The CTG inlet air filtration system includes filtration media and supports, as well as a filter housing structure incorporating a pulsing compressed-air cleaning system and an inlet air evaporative cooling system.

The evaporative cooling system is designed to cool the inlet air to the CTG and typically operates in warmer ambient conditions greater than or equal to 15 degrees Celsius (°C). The system operates by evaporating water over a dispersion media system, thereby reducing the effective inlet air temperature due to the latent heat of vaporization of water. This allows for the CTG unit to maintain a greater output at hotter temperatures than it would be able to maintain without the system, resulting a more effective use of the CTG.

An inlet heating system will be installed, in which warm air will be bled from the compression cycle of the CTG to reduce ice-build up which could damage the compressor blades of the CTG. The warm air will be internal to the inlet air filtration system where it will heat the cold ambient air entering the CTG before combustion.

The dedicated exhaust stack for emissions produced by the CTG unit will have diameter of 7.5 m and a height of 47 m above grade (subject to final air dispersion modelling). A Continuous Emissions Monitoring System (CEMS) will be located next to the exhaust stack, equipped with a probe installed in the stack to measure emissions characteristics, including oxygen, NO_X, and carbon monoxide (CO).

Additional features of the CTG system are expected to include:

- Fire detection and suppression systems.
- Fin/fin coolers to cool and maintain temperatures of operating equipment by pumping a mixture of water/glycol through radiator fans to discharge heat.
- Compressed air supply system including air compressors and holding tanks.
- Emergency standby diesel generator to supply power for the required safe and controlled shut down of all project equipment in the event of an outage of the 230 kV provincial electricity grid supply.
- Noise mitigation components, with equipment-specific specifications to be determined as the project progresses. Currently anticipated components include:

  - Sound walls, including one noise barrier located near the CTG, one near the air-cooled heat exchanger, and one near the 4-stage cooler;
  - Exhaust stack baffles;
  - Air inlet silencer;
  - Low noise upgrades for various pieces of auxiliary equipment (e.g. air cooled heat exchanger); and
  - Various equipment enclosures (e.g., fuel gas compressor enclosures);
- Miscellaneous electric and diesel pumps.
- Various industrial, electrical and mechanical auxiliary equipment, with miscellaneous piping, conduits, enclosures and casings.
- Protection and control equipment.

9.2.2 Electrical Infrastructure

The project will include a new 230 kV overhead transmission connection to the Hydro One Lambton TS to facilitate the interconnection with the Ontario electricity grid.

A new switchyard will be located within the project site and will contain various medium- and high-voltage components required to meet electrical code, safety, and best practice requirements. Components within the switchyard fenceline will include but are not limited to new bus-bar, electrical conductors, and other high-voltage electrical gear including switchgear, high-voltage breakers, motorized and manual switches, grounding and lightning protection cables, and high-voltage protection systems including measurement devices, metering, and communication relays.

The project includes the installation of oil-filled transformers which include: generator step-up transformer(s) that increases the generator voltage to 230 kV, auxiliary transformer(s) to supply the project equipment, static excitation transformer(s), and static frequency convertor transformer(s). All oil-filled transformers will include secondary spill containment infrastructure (see Section 9.2.4.3).

For distribution-level electrical servicing of the project site including the administration building and equipment, smaller pad-mount or equivalent transformers will further step down the voltage to industrial 600V, 3-phase power, and further for standard electrical system uses. Industrial and commercial type switching, distribution and protection equipment will be used to connect the various power uses within the project from the grid connection.

9.2.3 Natural Gas Infrastructure

Natural gas will be supplied through a new gas supply to the project site from a natural gas pipeline supplier, to be determined as the project progresses. The natural gas supply will connect with project infrastructure in the yard to be located southeast of the administration building.

To ensure consistent and high-quality fuel supply to the CTG unit, natural gas will be supplied via a gas filtration system. It is anticipated that the fuel pressure supplied to the project will at times be too low to operate the turbine. When this occurs, the natural gas will be compressed via electrically driven natural gas compressors to maintain a sufficient pressure for use in the process. A natural gas-fueled dewpoint heater will heat the incoming natural gas supply to a temperature above the condensation point.

Natural gas consumption requirements will be directly related to the facility dispatch frequency and duration. Natural gas distribution piping will be installed within the project site to connect the new metering station with applicable equipment including gas compressors and the CTG. The natural gas supply will also be used for miscellaneous commercial/industrial heaters for the administration building, including maintenance shops and warehouse.

9.2.4 Water and Wastewater Infrastructure

9.2.4.1 Fresh and Demineralized Water

Water will be sourced from the local municipal supply, known as the Lambton Area Water Supply System, owned by six municipalities including the St. Clair Township. Municipal water will be used for various operational needs including general use, evaporative cooling, fire suppression, and ancillary uses. A combined firewater/service water tank will be located on site for general site use, administration building servicing including potable water, and fire water purposes. A water distribution system including storage tanks and piping will be located throughout the site.

Process water consumption requirements will be determined as the project progresses; however, evaporative cooler process requirements are estimated as approximately 590 litres per minute at the summer maximum ambient temperature of 39.1°C.

The project will source commercially supplied demineralized water and store it within a holding tank for special purposes including CTG compressor washing and makeup to the glycol/water based cooling systems.

9.2.4.2 Stormwater

The existing stormwater management system for the OPG property currently incorporates runoff from the proposed project site (see Section 9.1). The existing infrastructure will require some modifications to accommodate project development, including realignment of the main underground stormwater discharge pipe that currently connects to the other portions of the OPG system at a manhole located downstream of the project site.

The modified SWM system for the project site will continue to collect runoff and discharge to the existing OPG Lambton site stormwater sewer system, which ultimately discharges to the St. Clair River. The system is anticipated to comprise a series of storm sewers and catch basins to convey runoff to the OPG Lambton site stormwater system. Sediment capture devices may be installed, if determined to be necessary during detailed design.

Modifications to the project site SWM infrastructure will be designed in consideration of the existing approved quality and quantity discharge criteria for the overall OPG property system. No change in quantity or quality of the existing discharge to the St. Clair River is anticipated as a result of the project. The function of the existing OPG Lambton site stormwater management system, including any stormwater quality management systems, is expected to remain unchanged and continue to meet these criteria.

Final design and configuration of the project-specific SWM system will meet local and provincial design criteria requirements and will consider the Ministry of Environment, Conservation, and Parks (MECP) and Conservation Authority guidelines. The final SWM design will be determined during the permitting process and is subject to approval by the MECP and the municipality.

9.2.4.3 Industrial Sewage

All drains within the project which have the potential to contain hydrocarbon petroleum products will be directed through underground piping to an oil/water separator (OWS). The OWS is provided to remove and retain traces of oil and oil contaminants which may inadvertently leak into the wastewater drains system. Electronic oil level controls send alarms at high oil levels so that collected waste oil can be removed from the separator by a pump truck and removed for disposal by a licensed waste management service provider. The double-walled separator is monitored with electronic leak detection systems for the interstitial space. Level switches provide control of the discharge pumps to remove oil-free water from the effluent chamber. Potentially oily water drains would be collected from the following sources:

- CEMS
- CTG Exhaust Stack
- Transformer Containments
- Miscellaneous CTG Drains
- CTG Evaporative Cooler Blowdown
- Miscellaneous Pump Skids
- Fuel Gas Compressor Skids
- Compressed Air Equipment Skids

The Generator Step-Up Transformer, Unit Auxiliary Transformer, Static Frequency Converter Transformer, Static Excitation Transformer, and lube oil will be within secondary containment structures. Each containment is a curbed concrete structure designed to store approximately 110% of the full oil volume plus rainfall generated from a 50-year, 24-hour rainfall event plus 300 millimetres (mm) of freeboard. The lube oil is within an enclosure and therefore the containment will not be designed for a rainfall event. The containment discharges stormwater through a normally closed drain valve to underground piping and ultimately to the OWS. The valve will have a post indicator and is manually opened by an operator after visual confirmation that oil sheen is not apparent in the collected water in the containment.

Process water discharge rates will be determined as the project progresses but are anticipated to be higher during the summer months when the evaporative coolers are in use, compared to the winter months where limited discharge would be anticipated. Discharge rates are also a function of the operating hours of the facility and dependent on ambient temperature and relative humidity, but peak discharge is estimated to be 227 litres per minute (60 gallons per minute).

There are currently two alternatives being evaluated for discharge from the project site of the treated water leaving the OWS:

- Alternative 1: A connection to the municipal sanitary sewer system. This option will require the construction of approximately one kilometre of new line from the project site to the tie-in point near the northwest corner of the OPG property. The new pipe would be constructed by Atura Power and is expected to be located within the road allowance along St. Clair Parkway although portions may be sited within OPG property. Pipe design and installation would be subject to Town of St. Clair approval, but Atura Power would own the pipeline and be responsible for inspection and maintenance.
- Alternative 2: If connection to the municipal sanitary sewer system is not deemed feasible, process water will be directed to an onsite discharge storage tank. The tank system would be designed as the project progresses, including sizing and containment features. The process water will be pumped from the storage tank to a truck for offsite disposal at a licensed facility.

In addition to the treated water discharge from the OWS, periodic CTG washing will be required to remove compressor fouling from inlet air particles. Turbine wash water, drains, and any potential oil leakage will be collected in the CTG wash water drains tank and removed for disposal by a licensed waste management service provider.

9.2.4.4 Domestic Sewage

Domestic waste streams resulting from floor drains located at the emergency eyewash/showers will flow via drainage piping to the OWS which will be discharged with the industrial sewage effluent as described in **Section 9.2.4.3**.

New washroom and kitchen facilities for occupants of the administrative building, maintenance shops, and warehouse will be collected and discharged to the municipal sanitary sewer system or if the connection is not deemed feasible, will be managed through use of a septic tank and licensed waste hauler.

9.2.5 Administration Building

A single administration building for operations and maintenance staff will contain offices, kitchen/lunchroom, washrooms, emergency eyewash and shower facilities, and the operations control room. The building will also incorporate a warehouse combined with maintenance shop space.

The building will be powered by the on-site 600 volt electrical distribution system using industrial and commercial type switching, distribution and protection equipment (Section 9.2.2).

Heating of the administration building will be provided by miscellaneous commercial/industrial heaters serviced by the on-site natural gas infrastructure (Section 9.2.3).

Water supply, including potable water, for the administration building will be via the municipal supply described in Section 9.2.4.1. Wastewater will be discharged to the municipal sanitary sewer system.

9.2.6 Site Access and Parking

The main site entrance for the project will be located on Oil Springs Line, repurposing an existing access to the OPG property. The main site entrance will lead to the administration building, where vehicle parking will be available for staff and visitors. Alternate site access during operations would periodically make use of the southernmost existing OPG property site access point from the St. Clair Parkway. No public road works are anticipated for the project.

9.2.7 Other Site Components

Various other ancillary components will be required for the project, including:

- *Site Security*: Security will be maintained with secured perimeter fencing and controlled physical access points. A perimeter chain link fence of between 1.8 to 2.7 m high with an approximately 0.3 to 0.5 m section of barbed wire extending from the top, similar to the existing perimeter fencing for the OPG property. Portions of the existing fencing may be retained and/or repurposed. Gates will be provided at the main entrance, with remote control activation from the control room, and a gate will be maintained at the alternate site entrance from the St. Clair Parkway.
- *Chemical Storage*: Storage components will be required on-site to manage various chemicals:
  - Compressed air is utilized for various plant maintenance purposes and for control of the unit and process safety. Air is compressed using two redundant air compressors and pressurized air is stored in air receiver tanks.
  - Hydrogen is used as a cooling medium in the generator and is brought on site in industrial process bottles and supplied to the generator.
  - Equipment cooling is provided by fin/fin coolers pumping a mixture of water/glycol through radiator fans, which reject heat to the atmosphere.
  - Carbon dioxide, nitrogen and various other compressed gases and industrial chemicals are used for processes including fire protection, measurement, cooling, and insulation.

- *Emergency Response Infrastructure*: The project will be equipped with on-site private fire protection systems (detection and suppression) for immediate emergency response. The CTG will be equipped with vendor-designed fire detection and suppression systems. The fire protection system will have interfaces to allow continued fire suppression by the responding fire department using a new fire loop from the main entrance around the perimeter of the site, fire hydrants, and the firewater reserve within a combined firewater/service water tank as well as a direct connection to the municipal water supply (see Section 9.2.4.1).
- *Site Lighting*: the existing lighting system is expected to be expanded to include roadway lighting of the fire access loop road from the main entrance around the perimeter of the site. Permanent lighting may be established throughout the site near, around, and on equipment enclosures and structures, platforms, and gratings and will be directed to the ground. Maintenance and safety lighting may be used to illuminate electrical switching equipment to verify positions but will only be switched on for temporary periods of time for that purpose. The stack will include lighting for personnel access which is normally kept off except for safety or maintenance activities. The stack may include additional aeronautical obstruction and warning lights if and as required by Transport Canada.
- *Landscaping*: The project site will be surfaced mostly with aggregate and concrete foundations, however perimeter areas and portions of the project site only used for temporary construction purposes will be landscaped. The landscaping plan will be developed as the project progresses in consideration of input from the engagement process and local requirements but is expected to consist of grassed areas with tree and/or shrub plantings.

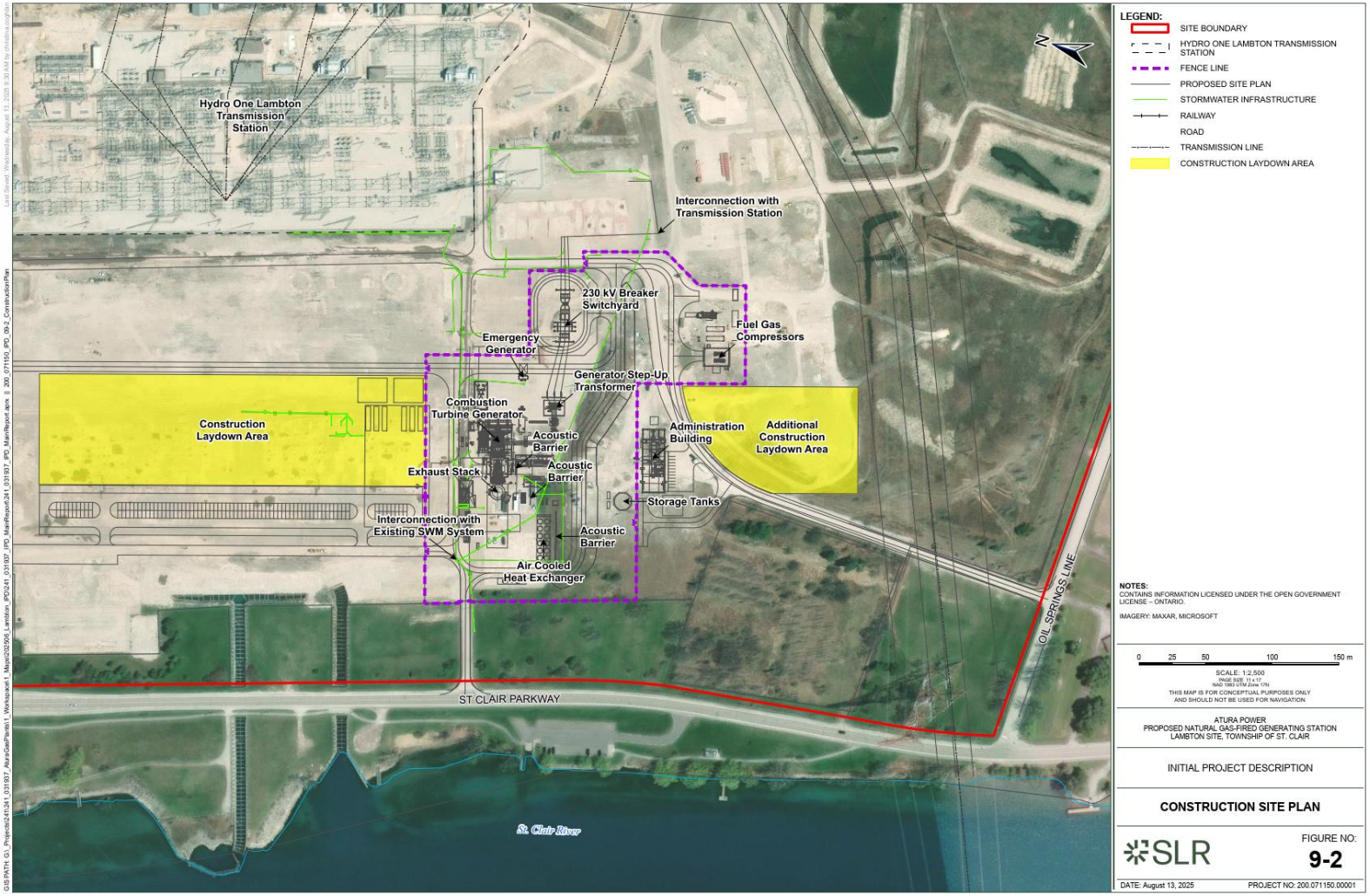
9.3 Temporary Construction Components

Temporary construction areas will be required for installation of project components, as well as standard uses such as material storage and equipment laydown, staging, construction trailers and worker facilities, and contractor parking. All temporary construction areas will be located within the OPG property and are currently anticipated to be located in areas that are currently paved and/or gravelled. Preliminary configuration of these components are shown in **Figure 9-2**.

The main construction entrance is anticipated to be the northernmost existing site access from the St. Clair Parkway, with the existing south entrance used as the primary delivery entrance.

A 2.4 hectares (ha) construction laydown area will be located north of the project site that would also include the primary location for trailers and worker facilities, and an additional 0.9 ha laydown area is proposed east of the main entrance road. A 1.1 ha contractor parking area will be located adjacent to the primary construction laydown area.

Figure 9-2: Construction Site Plan



Temporary servicing during construction may include power and internet connection from local service providers. 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.

All temporary construction areas located on the OPG property but outside of the project site boundary will be restored to preconstruction conditions or better, in consultation with OPG.

9.4 Incidental Components and Activities

This section provides a description of the activities incidental to the designated project required during construction and operation.

9.4.1 Provincial Electricity Grid Connection

The project will include a new 230 kV overhead transmission connection to the Hydro One Lambton TS, which is the point of interconnection with the Ontario electricity grid. Works will be required within the Lambton TS to facilitate the connection; these interconnection activities, including any associated permitting and approvals, are the responsibility of Hydro One and will be conducted by Hydro One staff and/or their contractors.

The Lambton TS is currently in the process of being expanded by Hydro One. Although the project is anticipated to connect to the Lambton TS, the expansion of the facility is a separate project being undertaken by Hydro One related to Ontario regional and systemwide transmission needs.

9.4.2 Natural Gas Supply

Natural gas will be supplied to the project site by a new connection to be provided by a natural gas pipeline supplier. The supplier will be determined as the project progresses, and they will be responsible for the design and regulatory approvals associated with the construction of the supply infrastructure.

The supplier will identify which mainline or lateral is the source point, and whether or not a new lateral pipeline or an existing line would be used, as well as the size of the pipeline. It is anticipated that the supplier will construct a new metering station, and the custody transfer point would be located at or near the supplier's fenceline. The project's natural gas infrastructure will connect at this location, which also represents the works under the care and control of Atura Power (see Section 9.2.3).

9.4.3 Water Supply and Wastewater Infrastructure

Water will be supplied from Lambton Area Water Supply System for various operational needs, and this municipal supply already services the OPG property. Some minor modifications may be required to the existing St. Clair Township infrastructure at the connection point to accommodate the new project connection.

If deemed feasible, a sanitary sewer connection will be installed for discharge of project wastewater. The connection is anticipated to be a new one kilometre sanitary pipeline installed within the municipal road allowance along the St. Clair Parkway, although portions may be sited within the OPG property. Pipe design would be subject to St. Clair Township approval, with installation works conducted by a St. Clair Township-approved contractor. Atura Power would own the pipeline(s) and be responsible for inspection and maintenance. It is possible that St. Clair Township would need to undertake some minor modifications of their infrastructure at the connection point.

Minor modifications to OPG SWM infrastructure may be required at the connection point to isolate the project stormwater from the OPG system for monitoring and maintenance purposes.

9.5 Project Activities

9.5.1 Pre-Construction Activities

Pre-Construction includes all activities undertaken prior to the start of construction mobilization including construction planning and scheduling, obtaining required permits and approvals, and site surveying and utility clearances, including delineation of any sensitive areas to be avoided within the Project Site.

A Construction Environmental Management Plan (CEMP) will be developed prior to construction, which will address the planning and management of various activities including, but not limited to:

- Vegetation clearing and management;
- 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 wastes, fuels, and chemicals;
- Soil handling and management, including 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.

The CEMP will also include any mitigation commitments or conditions of approval associated with permitting and approval processes and the engagement program.

9.5.2 Construction Activities

9.5.2.1 Site Mobilization

Mobilization will include the delivery and placement of the temporary trailer courtyard components within the construction laydown area. The trailer courtyard will include office and break trailers, associated wash cars, tool crib areas and subcontractor laydown spaces. Mobilization will also include the installation of safety barriers, fencing, temporary lighting, and temporary servicing (aboveground temporary power supply cables, water supply, network services, sanitation services).

Delivery of components, supplies, equipment, and materials to laydown/storage areas will also be initiated during site mobilization. Equipment is anticipated to be delivered to the site via road (St. Clair Parkway) and rail transport (existing CSX rail spurs at the OPG property). Major equipment may be delivered to the site via water delivery to major ports and offloaded to road/rail transport. Road transport to the site is anticipated to consist of both small and large commercial and industrial vehicles, consisting of major sub-assemblies, modular packaged equipment and bulk shipments of engineered fill, concrete, rebar, structural steel, cabling, and raw materials required for construction. Major equipment such as the combustion turbine, compressors, transformers, major equipment casings, castings, or pre-assembled equipment, and the exhaust stack are anticipated to be large oversize/overweight and/or dimensional loads. Large oversize, dimensional and/or overweight or dimensional shipments whether by road or rail will be coordinated appropriately with municipal, regional, and provincial authorities.

9.5.2.2 Early Works

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

- Installation of erosion and sediment control measures, with final measures to be determined based on permitting requirements;
- Installation of temporary stormwater management systems and transition to permanent stormwater management systems over the course of construction, with final design to be determined based on permitting requirements;
- Clearing of vegetation and stripping of topsoil for limited areas including the administration building including warehouse and maintenance shops, and for the gas pipeline connection and gas compressor. These areas will be restored after construction and vegetation will be re-established;
- Site grading (rough grading adjustments) to subgrade elevation. The objective of site grading will be to balance cut/fill within the site boundary and minimal if any excess soils are anticipated. Where slope stability cannot be achieved with natural grading, retaining walls will be used in areas to support finished grades and other project features;
- Preparing the site roads for use during construction;
- Resurfacing of the contractor parking lot and laydown areas, if required;

- Excavation works, with the majority expected to be shallow in nature. Deeper excavations will be required in some locations depending on the final foundation designs, and may require some dewatering;
- Installation of grounding grid, buried conduits and ducts, and buried pipes and cables; and
- Foundation installations, anticipated to include piles for major equipment and slab-on-grade or spread footings for minor foundations.

9.5.2.3 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;
- 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, and cable inspection;
- Terminate low/medium and high voltage cables;
- Installation of acoustic walls; and
- Install permanent lighting and fencing.

Conventional building methods will be used for construction of the administration building.

9.5.2.4 Post-Construction

After all major construction activities have been completed, final grade adjustments, finishing pavement of the permanent plant roads, and restoration of the areas disturbed by the construction activities will be completed. Landscaping features will be installed in applicable areas once the site has been restored and prepared for plantings.

9.5.2.5 Commissioning and Testing

Commissioning and testing will be completed according to manufacturer instructions and regulatory requirements. This includes ensuring proper fit, adjustments, initial fills, calibrations, continuity and polarization checks, and preparation for the initial start-up and operation of various equipment systems and major equipment. Once all subsystems and systems are verified as ready for operations, the CTG will be started.

The final commissioning process for the combustion turbine involves multiple startup and shutdown sequences, full-load operation for extended periods, and tuning and testing of the system. The commissioning period will confirm operational processes and procedures function as designed and will facilitate the transition of the Project from construction to operation.

9.5.3 Operation and Maintenance Activities

The project is expected to provide reliable capacity to Ontario's grid throughout the year the project will be dispatched by the IESO based on the electricity market scheduling process or as required to relieve transmission constraints or to provide contingent capacity to address reliability needs on the grid. The project may not be needed during lower electricity demand periods and therefore may be dormant for days at a time. The facility is intended to operate when electricity demands are high. A description of the electricity generation process is provided in Section 10.2.

The Project will be operated and maintained with similar care and consideration as Atura Power's other facilities and will facilitate the protection, safety and well-being of the operations staff, neighbours, public, surrounding properties, and the environment.

Primary control and monitoring of the facility will occur from a main control room located in the administration building. The control room will be continuously staffed on a 24/7 basis to monitor, control, and oversee processes involved in power generation. This includes monitoring power output and quality, fuel supply, emissions, and performance of different systems.

Operation and maintenance activities 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:

- Scheduled maintenance such as routine inspections and servicing of equipment and ancillary components;
- Unscheduled and corrective maintenance such as responding to alarms and fixing/replacing equipment;
- System and equipment upgrades to ensure optimal performance;
- Operation and monitoring of the water and wastewater infrastructure in accordance with applicable approvals; and
- Vegetation maintenance and control, as required.

Under Atura 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 including mitigation and management measures as dictated by future permits and approvals for the project. Operation phase plans and procedures include various aspects of environmental management and monitoring including but not limited to emergency management including spill prevention and response, and monitoring of emissions including air quality and effluent, as well as communications protocols and reporting requirements.

9.5.4 Decommissioning Activities

At the end of the project lifecycle, a decommissioning plan will be developed that will include applicable environmental protection standards at the time of decommissioning to ensure safe removal of project components. This includes dismantling structures, appropriately removing foundations below grade and/or abandoning in place, site grading and reclamation, and disposing of materials in accordance with regulatory standards.

Generally, the duration and extent of activities for the decommissioning process are expected to be substantially less than that required for construction of the Project. However, the general process of decommissioning will be similar to construction, requiring the use of temporary structures and facilities such as construction management trailers, laydown and staging areas, contractor parking and construction utilities. At the completion of the decommissioning phase these temporary components will be removed from the Project site.

Final site reclamation and revegetation plans will be developed in consideration of the desired end land use.

10. Project Production Capacity and Process

10.1 Maximum Production Capacity

The maximum output of a natural gas-fueled electricity generating facility is dependent on atmospheric conditions such as temperature, relative humidity, and elevation.

The Riverside Generating Station will be capable of generating an electrical output of approximately 500 MW. The specific CTG model will be selected as the project progresses.

10.2 Production Process Description

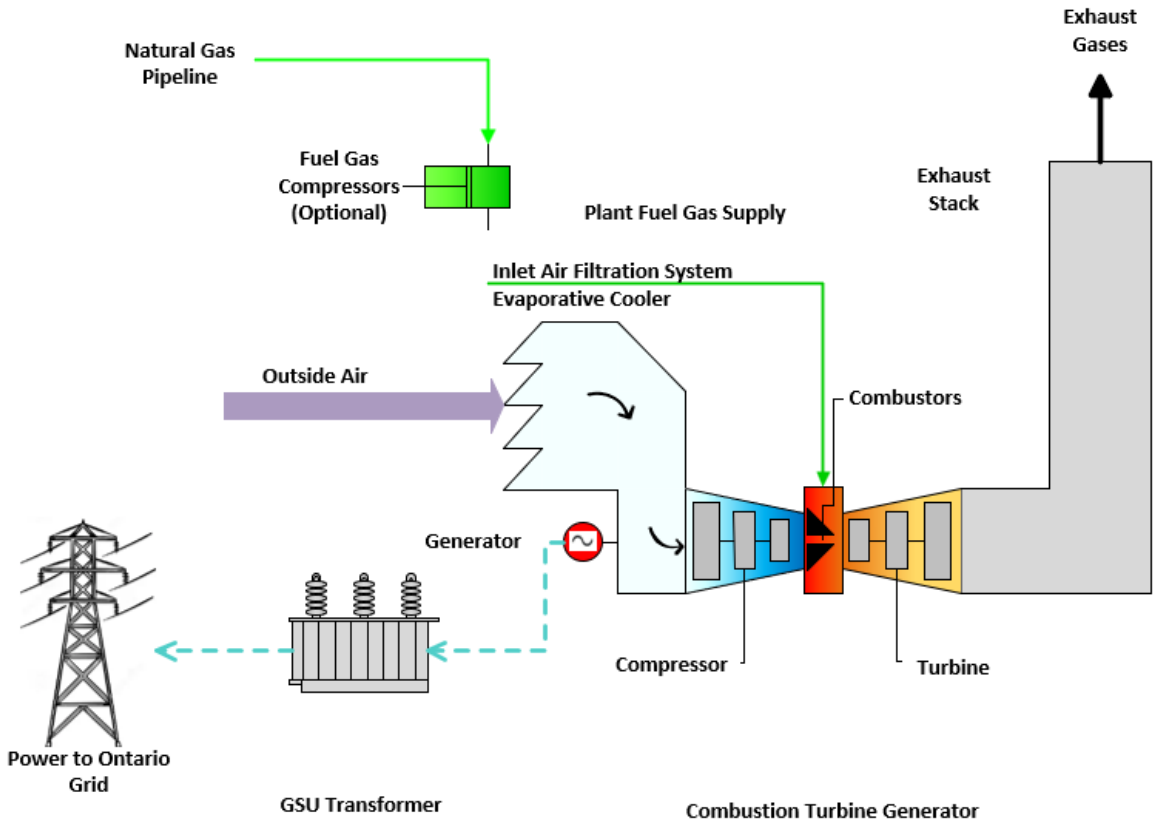
The natural gas-fuelled simple cycle power generating unit operates by compressing filtered ambient air within the compressor section of the CTG which is then supplied to the combustion section of the CTG where compressed natural gas fuel and air are mixed and ignited. The resulting high-temperature gases expand as they pass through the turbine blades, rotating the shaft and generating electricity.

Exhaust gases which are cooler and at lower pressure than the combustion section of the CTG exit the turbine section and flow into the vertical exhaust stack.

The electricity generated by the CTG is transformed to increase the voltage to 230 kV and transmitted to the interconnection point with the provincial electricity grid.

A process diagram for simple cycle electricity generation is provided in Figure 10-1.

Figure 10-1: Process Diagram



11. Anticipated Project Schedule

The Project schedule is outlined in **Table 11-1** below. As part of the IESO LT2 RFP process and contract requirements, this Project will be required to achieve commercial operations by 2030.

Section 9 provides further information regarding the proposed activities, and **Section 18** provides further information regarding the required environmental approvals and permits.

Table 11-1: Anticipated Project Schedule

Activity	Timeline	Timeline (no IA*)
Pre-construction		
IESO LT2 Contract Award	Quarter (Q)2 2026	Quarter (Q)2 2026
Impact Assessment Process	2025 – 2028	N/A
Provincial Environmental Screening Process	2026 – 2027	2026 – 2027
Environmental Approvals and Permitting	2027 – 2028	2026 – 2027

Activity	Timeline	Timeline (no IA*)
Construction		
Site Mobilization and Preparation (Early Works)	2028	2027
Building Construction, Equipment Placement and Installation	2028 – 2030	2027-2030
Commissioning and Startup	Q2 2030	Q2 2030
Site Restoration	Q2 2030	Q2 2030
Operations & Maintenance		
Commercial Operations	2030 – 2050	2030 – 2050
Decommissioning		
Decommissioning (upon contract expiry)	To be determined	
* Note: This schedule assumes that the full Federal Impact Assessment is not required.		

12. Alternatives Assessment

In response to Ontario's projected electricity shortfalls, the IESO launched a series of competitive procurement programs starting in 2022 to secure the new capacity required to meet the growing needs of the province. These programs to date, when combined with upgrades to existing facilities and capacity sharing agreements with Hydro-Québec, are projected to meet Ontario's power supply needs until 2029 (IESO 2025). To meet Ontario's needs in 2029 and beyond, the IESO has begun another competitive procurement process referred to as the Long-Term 2 Request for Proposals (LT2 RFP) process. The LT2 RFP process includes an "energy stream" that will secure up to 14 TWh of annual generation from new energy producing resources such as wind, solar, and bioenergy facilities, as well as a second "capacity stream" that will secure up to 1,600 MW of new resources capable of meeting demand specifically during peak system hours, such as battery energy storage, hydrogen storage, and natural gas facilities.

Atura Power is planning to respond to the LT2 RFP by bidding the Project into the capacity stream in December 2025. If the Project is awarded a contract within the first LT2 window, Atura Power will be required to begin commercial operations at the Riverside Generating Station by 2030, otherwise commercial operations could occur at a date beyond 2030 as per any future procurement processes with IESO.

12.1 Alternatives to the Project

The IESO's Resource Eligibility Interim Report (IESO 2022a) first stated that without a limited amount of new natural gas-generated supply, the IESO would be reliant on emergency actions such as load curtailments or rotating blackouts in Ontario. The IESO's Pathways to Decarbonization (IESO 2022b) further indicated that a moratorium on new natural gas-fuelled generation is not possible under the current demand forecast. Non-emitting renewable energy sources such as wind and solar power are not enough; new natural gas-fuelled generation will be required to help address increasing demands during peak periods post-2029.

The IESO intends to procure a limited amount of new natural gas capacity to maintain reliability and help bridge the gap between today's supply mix and the build-out of the province's non-emitting renewable energy resources fleet (IESO 2023).

Ontario is transitioning to a dual peak system which will require significant year-round energy due to electric cars, the electrification of industry, and greenhouse-related agricultural production – so when heating and air conditioning usage peaks in the winter and summer seasons respectively, so will energy demand on the provincial system (IESO 2025). The phasing out of natural gas generation requires replacement technologies that can provide the continuous, year-round, and all-weather capacity that natural gas can, and currently no such technology exists.

As Ontario moves forward with the implementation of non-emitting renewable energy sources, and as other existing nuclear and hydroelectric facilities undergo refurbishment, natural gas-fuelled electricity generation will serve as a back-up source to address demands during peak periods.

Therefore, natural gas generation will safeguard the reliability of the system when other technologies may not be available; it can quickly respond to sudden changes in demand when intermittent renewable energy (e.g., wind or solar) is not available or has lower outputs.

By ensuring a robust electricity grid, natural gas generation will enable reduced emissions in other sectors by providing the necessary infrastructure to electrify transportation, industry, and agriculture (IESO 2024b).

Therefore, there are no alternatives to the project as these have been explored and IESO has determined that at least some new natural gas-generated supply is required to ensure grid reliability.

12.2 Alternative Means of the Project

While there is no viable alternative to a natural gas generating station, as discussed above, the project site was also reviewed and confirmed to be the most appropriate location for this facility. Table 12-1 below provides justification for site selection.

Table 12-1: Project Site Selection Justification

Criteria	Justification for Selection
Property Developability	Given its historic uses, the site is considered a brownfield site and its reuse as a generating station is support by the following planning policies: Ontario's 2024 Provincial Planning Statement – Section 3.1.2 states that opportunities for adaptive reuse should be considered before developing new infrastructure. County of Lambton Official Plan (OP) – the site is designated for petrochemical uses. The OP doesn't explicitly define these types of uses but this designation also accommodates large-scale industrial uses that are unsuitable for other locations.

Criteria	Justification for Selection
	St. Clair Township OP – the site is designated as Type 3 industrial which is intended to accommodate large scale or heavy industries that have a high impact and are incompatible with residential uses. St. Clair Township Zoning By-law – the site is designated as an M3 zone. M3 uses can include electrical generation facilities.
Site Ownership	The site is currently owned by OPG. As a wholly owned subsidiary of OPG, Atura Power will have the property transferred to it as the operating entity for the facility. Therefore, no disposition of land is required, and no property owner is displaced by this project.
Existing Hydro One Transmission Station	Directly adjacent to the project site is an existing Hydro One operated transmission station that connects to the provincial grid. Therefore, no additional infrastructure is required to connect the generating station to the electricity grid.
Access to Natural Gas Supply	Existing Natural Gas supply pipelines exist near the site, reducing the need for new distribution pipelines.

Table 12-2 below, provides justification for the selection of several project component alternatives that were evaluated through the design process.

Table 12-2: Project Component Alternatives

Project Component	Alternatives	Justification for Selection
Project Technology	• Simple cycle CTG • Combined cycle CTG	Simple cycle CTGs can quickly respond to sudden changes in demand when intermittent renewable energy (e.g., wind or solar) is not available or has lower outputs. Combined cycle CTGs take longer to ramp up when electricity demands increase making this technology less ideal for the Riverside GS.
Air Inlet to CTG	• Side inlet • Top inlet	The air inlet (a noise emitting component) was relocated from the side to the top of the CTG to be further away sensitive receptors, reducing noise effects.

Project Component	Alternatives	Justification for Selection
Process Water Discharge	• Discharge to river • Store and truck offsite • Connect to municipal wastewater system	Several alternatives were considered for discharging of process water required to operate the CTG during summer months. One alternative is to discharge the process water to St. Clair River, which would involve constructing a treatment system and an outlet into the river. A second alternative is to store the process water in a discharge tank prior to trucking it offsite for disposal. The third alternative is to connect it to the municipal wastewater system, which would require construction of a pipeline of approximately 1 km in length. The alternative to discharge to St. Clair River was removed from further consideration due to the potential impacts on fish and fish habitat from construction of the outlet. Atura Power is considering the remaining two alternatives, both of which will avoid impacts to the river.

Part C: Location Information and Context

13. Project Location

The site is located approximately 16 km south of the City of Sarnia, and approximately 2 km south of an unincorporated community of Courtright, in St. Clair Township, in the County of Lambton, Province of Ontario. The approximately 97 ha site is located within the property boundary of a former coal-fuelled generating station, thereby optimizing the use of a currently unused parcel of brownfield land, with proximity to natural gas supply and existing provincial electricity grid connections. The Project is only proposing to us a portion of the former Lambton Generating Station site. Geographic coordinates of key Project components are as follows:

- Approximate centre of the property: 42°47′48.86″N -82°28′5.4″W
- Site access (entrance from Oil Springs Line): 42°47′27.63″N -82°28′8.05″W
- Preliminary stack location: 42°47′41.50″N -82°28′10.44″W
- Provincial electricity grid point of interconnection: 42°47′44.234″N -82°27′59.202″W

13.1 Site Maps

Figure 1-1 above shows the general location of the Project and **Figure 9-1** above shows the location of key Project components within the site. **Figure 15-1** shows the location of the Project in the context of nearby Indigenous groups as further described in the sub-sections below.

13.2 Site Legal Description

The property is legally described as:

> PT LT 13-19 CON FRONT MOORE PT 6 TO 57, 25R7728 T/W PT 1, 25R811 AS IN L352815; LT 12-46, B PL 29 MOORE; PT LT 5-11 PL 29 MOORE; PT PARK ST, JENKYN ST PL 29 MOORE AS IN L910132; S/T L689642, L689643, L887981 SUBJECT TO AN EASEMENT IN GROSS OVER PART 3, 25R5668 AS IN LA113826 SUBJECT TO AN EASEMENT OVER PART LOTS 13,14,15 CONCESSION FRONT, MOORE, PARTS 1 TO 10 PLAN 25R10268 IN FAVOUR OF PART LOT 26 CONCESSION 2, MOORE, PART LOT 26 PLAN 24, MOORE, PART ROAD ALLOWANCE BETWEEN LOT 26 CONCESSION 1 AND LOT 26 PLAN 24, MOORE, PARTS 1 TO 10 PLAN 25R1585 (CLOSED BY MO28032) AS IN LA169120 TOWNSHIP OF ST. CLAIR

This former Lambton Generating Station property is both designated and zoned as Industrial (Township of St. Clair 2024a, Township of St. Clair 2024b) and is currently owned by OPG. It is anticipated that the portion of the property representing the Project site will be legally severed and title transferred to Atura Power. Existing and future required legal easements will be determined during the severance process.

13.3 Proximity to Residences and Communities

The Project is located within the lower tier municipality of St. Clair Township and the upper tier municipality of the County of Lambton. St. Clair Township has a land base of approximately 619 km^2 with a population of approximately 15,000 (Statistics Canada 2023).

The community of Courtright is located approximately 2 km north of the Project site. The St. Clair River forms part of the Canada-United States international boundary, with the community of St. Clair, Michigan, located approximately 1 km northwest of the site.

While land uses surrounding the site are largely agricultural, the closest residential properties are located approximately 1 km north and 0.5 km south of the proposed facility, respectively (**Figure 1-1**).

13.4 Proximity to Indigenous Groups Land Use

The Project is located within the Sombra Township Purchase (referred to as Treaty 7 in Ontario). It was signed in September of 1796 and covers approximately 3,100 ha of southwestern Ontario (Government of Ontario, n.d.; Boileau, 2022).

The following reserve lands are located within proximity to the Project:

- Aamjiwnaang First Nation – 13 km north.
- Caldwell First Nation – 85 km south.
- Chippewas of Kettle and Stony Point – 56 km northeast.

- Chippewas of the Thames First Nation – 80 km east.
- Delaware Nation Council – 53 km southeast.
- Munsee-Delaware Nation – 80 km east.
- Oneida Nation of the Thames First Nation (Onyota'a:ka) – 80 km east.
- Walpole Island First Nation Reserve Lands (known as Walpole Island 46) – 18km south.

Traditional land use by Indigenous peoples is being discussed and confirmed through ongoing engagement with communities (see Section 4.0).

13.5 Proximity to Federal Lands

There are no federal lands within proximity to the Project. Section 13.4 describes the locations of nearby Indigenous community reserve lands, which are under federal trust. The closest non-reserve federal land is Point Pelee National Park, almost 100 km south of the Project.

14. Physical Environment

14.1 Spatial Boundaries

Two spatial boundaries of study areas were established for the project:

- Project Area (PA): defined as the boundary of the Project including all temporary and permanent areas.
- Local Study Area (LSA): defined as the area beyond the project footprint where project effects may extend.

The PA encompasses the project footprint and is the anticipated area of physical disturbance associated with the construction, operations, and decommissioning of the Project.

Generally, the LSA includes the entire property of the former Lambton Generating Station and extends one kilometer from the property boundary, however, in some cases, a larger LSA is considered. Below are descriptions of specific LSAs for the project.

- Air quality LSA: 10 km x 10 km area around the PA.
- Human Health/Socio-economic LSA: County of Lambton.

14.2 Project Environmental Setting

Southwestern Ontario, particularly the area around Sarnia, has undergone significant ecological transformation over the past several centuries. Originally part of the Carolinian forest zone, this region was once dominated by rich, biodiverse hardwood forests, wetlands, and tallgrass prairies.

The area lies within the Mixedwood Plains Ecozone, characterized by a temperate climate, fertile soils, and a high diversity of flora and fauna (Government of Ontario, n.d.-b).

These landscapes were dramatically altered following European colonization in the 18th and 19th centuries, as settlers cleared vast tracts of forest for agriculture and timber (Aleksa, 2022).

14.2.1 Topography and Physiography

The LSA is located within an area surrounded by till plains formed by glacial lakes and meltwater action. Chapman and Putnam (1984) identifies the area as being situated within bevelled till plains also known as Lambton clay plains. These plains are most prominent in lowland areas near former glacial lakebeds, particularly in Southwestern Ontario, the Niagara Peninsula, and regions surrounding the Great Lakes. These landforms have faint knoll and sag relief, that exhibits gently rolling surfaces with slight undulations and are typically less rugged than other moraines and more uniform in elevation.

The LSA's topography ranges from 175 metres above sea level (masl) to 210 masl, with the highest elevations found in the eastern portion and the lowest in the western portion, along the St. Clair River.

14.2.2 Geology and Hydrogeology

14.2.2.1 Surficial Geology

The overburden soils of the LSA were formed by the repeated advance and retreat of ice sheets during the Late Wisconsinan Glacial stage, approximately 10,000 to 23,000 years ago.
The surficial geology is predominantly associated with Rannoch Till, which was deposited during the Port Bruce Stade (14,000 to 15,500 years ago). These tills, known as Diamicton, consist of a poor clastic, highly calcareous clayey mixture of clay till, silty till and traces of sand and gravel (OGS, 2010).

Based on review of records from the Ministry of the Environment, Conservation and Parks (MECP) water well record database, the overburden of the LSA is approximately 40 to 50 meters thick. The upper portion is dominated by clay loam and silty till, which is underlain by a thin layer of sand, gravel, and clay, followed by bedrock. This stratigraphy confirms the presence of overlying Rannoch Till along with underlying glaciolacustrine sediments within the overburden (UTRCA, 2008).

Additionally, along the north-northwestern boundary of the LSA, adjacent to the St. Clair River, isolated deposits of older alluvium of Late Wisconsinan age are present. These deposits, consisting of riverine sediments such as clay, silt, sand and gravel, are likely remnants of an abandoned floodplain (OGS, 2010).

14.2.2.2 Bedrock Geology

The bedrock underlying the overburden LSA primarily consists of shale from the Port Lambton Group, which dates back to the Mississippian to Devonian period (OGS, 1991 and OGS, 2011).

The Port Lambton Group extends from the town of Mooretown in the north, down south to Courtright and Sombra, forming a narrow strip along the St. Clair River. It is predominantly characterized by grey to black shale interbedded with layers of siltstone and light-grey sandstone, with an approximate thickness of 60 m (Hewitt, 1972).

The bedrock surface topography ranges from 130 to 145 masl and slopes toward the west (Gao et al., 2006).

The Kettle Point Formation underlies the Port Lambton Group, and is composed of brown to black laminated, organic-rich shales and siltstones. This formation directly underlies the overburden to the north, south, and east where the Port Lambton Group is absent.

The contact zones between these bedrock formations and the overlying unconfined glacial sediments can act as important bedrock aquifers. The weathering and fracturing of the bedrock enhance its permeability, allowing groundwater to flow through interconnected fractures and bedding planes, making it a viable source for water supply.

14.2.3 Vegetation and Wetlands

Vegetation communities present in the PA were delineated following the protocols of the Ecological Land Classification (ELC) System for Southern Ontario (Lee et al. 1998). Aerial photographs and site visits determined the dominant species cover, community structure, level of disturbance, presence of indicator species, vascular plant species, and other notable features.

The vegetation communities delineated in the study area around the PA include Mineral Cultural Meadow (CUM1)/Meadow Marsh (MAM2), Mineral Cultural Woodland (CUW1)/ Cultural Plantation (CUP), and Cultural Hedgerow (HE). Within the PA, the site is entirely an Anthropogenic (ANT) ELC community. See Figure 14-1.

Figure 14-1: Natural Heritage Field Investigations

14.2.4 Wildlife and Wildlife Habitat

14.2.4.1 Amphibians

The PA contains several locations of amphibian breeding habitats, including wetlands, drainage ditches, and constructed ponds. Amphibian call surveys were completed over several weeks throughout spring of 2025.

Four amphibian species were heard calling during the two amphibian call surveys completed near the PA to date, including Western Chorus Frog (*Pseudacris triseriata*), Gray Treefrog (*Dryophytes versicolor*), Northern Leopard Frog (*Lithobates pipiens*), and Green Frog (*Rana clamitans*); all of which were heard calling in low numbers from flooded ditches adjacent to the PA.

14.2.4.2 Bats

A total of nine trees with suitable attributes for bat roosting (i.e., cavities, crevices, cracks, loose or exfoliating bark) were identified within the CUW1/CUP community southwest of the PA, including Poplar species (*Populus spp.*), Bur Oak (*Quercus macrocarpa*), Black Cherry (*Prunus serotina*), Apple species (*Malus spp.*), and Black Walnut (*Juglans nigra*). As the CUW1/CUP community covers an area of approximately 1.5 ha, the snag density within this community is six snags per hectare. To be considered high quality potential maternity roost habitat, snag density must be ≥ 10 snags per hectare. Based on the existing snag density this community is not considered high quality potential maternity roost habitat and is not likely to contain bat maternity roost Significant Wildlife Habitat. Bat Species at Risk (SAR) may use the habitat for day roosting.

14.2.4.3 Migratory Birds

A total of 24 species were observed during breeding bird point counts completed at the CUW1/CUP and the CUM1/MAM2 communities at the stations shown on Figure 14-2. These vegetation communities are outside of the proposed PA. Of these 24 species, 13 species were considered possibly breeding within the community, eight were considered probably breeding within the community, and two (American Robin [*Turdus migratorius*] and European Starling [*Sturnus vulgaris*]) were confirmed as breeding within the community. No migratory birds were observed within the PA as the disturbed gravel substrate within the PA only provides suitable breeding habitat for a very limited number of species, such as Killdeer (Charadrius vociferus).

One species, Chimney Swift (*Chaetura pelagica*), is unlikely to be breeding within either community. Chimney Swift is a species at risk ranked Threatened in Ontario and was observed flying over the CUW1/CUP community during the second round of breeding bird surveys in June 2025. The species breeds in anthropogenic structures with chimneys, which are not present in the PA, though it does occasionally roost in natural hollow trees.

- Eastern Meadowlark (*Sturnella magna*), another species at risk ranked Threatened in Ontario, was heard singing from the CUM1/MAM2 community south of the PA during the first round of breeding bird surveys in May 2025. The species was not heard singing from this community during the second round of breeding bird surveys in June 2025 and is anticipated not to be breeding in this habitat during the 2025 breeding season. A third round of breeding bird surveys to confirm breeding by Eastern Meadowlark was not completed as impacts to this community are not anticipated due to the proposed works.

14.2.5 Fish and Fish Habitat & Aquatic Species at Risk

No watercourses or waterbodies are located within the PA, however, surface water features do exist on the periphery of the site boundary. The St. Clair River is located approximately 50-100 m west of the PA and is known to support a diverse fish community. While detailed field studies of the St. Clair River were not completed by SLR, the general aquatic habitat adjacent to the PA appears to vary between hardened shoreline (docks, concrete walls), natural/treed, and manicured parkland. Based on a review of provincial and federal records (MNR, 2015., MNR, 2024., DFO, 2025), the fish community associated with the St. Clair River in proximity to the PA (within 1km radius) is outlined in the table below (Table 14-1). It is important to note that the species listed below are known to occur throughout the St. Clair River system and are not necessarily using the habitat adjacent to the PA for life cycle processes.

Table 14-1: St. Clair River Fish Species

Common Name	Scientific Name	SARO Status	COSEWIC Status
Rock Bass	*Ambloplites rupestris*	Not Listed	Not Listed
Bowfin	*Amia calva*	Not Listed	Not Listed
Freshwater Drum	*Aplodinotus grunniens*	Not Listed	Not Listed
White Sucker	*Catostomus commersonii*	Not Listed	Not Listed
Common Carp	*Cyprinus carpio*	Not Listed	Not Listed
Northern Pike	*Esox lucius*	Not Listed	Not Listed
Muskellunge	*Esox masquinongy*	Not Listed	Not Listed
Northern Brook Lamprey	*Ichthyomyzon fossor*	Special Concern	Special Concern
Silver Lamprey (Great Lakes - Upper St. Lawrence populations)	*Ichthyomyzon unicuspis pop. 1*	Special Concern	Special Concern
Bigmouth Buffalo	*Ictiobus cyprinellus*	Not at Risk	Not at Risk
Bluegill	*Lepomis macrochirus*	Not Listed	Not Listed
Northern Sunfish	*Lepomis peltastes*	Special Concern	Not Listed
American Brook Lamprey	*Lethenteron appendix*	Not Listed	Not Listed

Common Name	Scientific Name	SARO Status	COSEWIC Status
Smallmouth Bass	*Micropterus dolomieu*	Not Listed	Not Listed
Largemouth Bass	*Micropterus salmoides*	Not Listed	Not Listed
Spotted Sucker	*Minytrema melanops*	Special Concern	Special Concern
White Perch	*Morone americana*	Not Listed	Not Listed
Northern Madtom	*Noturus stigmosus*	Endangered	Endangered
Yellow Perch	*Perca flavescens*	Not Listed	Not Listed

In addition to the St. Clair River, additional surface water features exist along the periphery of the project boundary. This includes a drainage channel along the north project boundary limit and Bowens Creek to the southeast of the project boundary. Bowens Creek originates and collects flow from the area north of Oil Springs Line (outside of the PA) and then flows through Bowens Creek Conservation Area before draining into the St. Clair River approximately 2 km downstream. Field studies were not completed for Bowens Creek but based on online fisheries data it is known to support a variety of common fish species, such as bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*), rock bass (*Ambloplites rupestris*), rainbow smelt (*Osmerus mordax*), smallmouth bass (*Micropterus dolomieu*), white perch (*Morone americana*), and yellow perch (*Perca flavescens*) (MNR, 2015).

14.2.6 Air Quality

The following sections provide the air quality context relevant to the project. The below is a summary of the air quality baseline conditions. For additional information, the Air Quality Assessment report is appended to this report as Appendix D.

14.2.6.1 Local Meteorology and Ambient Air Quality Context

Understanding local climate, meteorological conditions and ambient air quality is important in determining any potential effects a project may have on the local environment.

The averages of temperature and precipitation collected from Sarnia (1991–2020) are illustrated in Figure 14-3. The mean annual temperature is recorded as 8.5°C. 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 and fall months with mean annual total precipitation of 871.3 mm. The chosen timeframe for the meteorological data (1991 – 2020) reflects the accessibility of official statistics from Environment and Climate Change Canada (ECCC).

For dispersion modelling purposes, the regional pre-processed meteorological data were downloaded from the MECP website and pre-processed using AERMET 22112, in compliance with O. Reg. 419/05. According to MECP guidelines, the London station (ID: 6144475) is the recommended station for the Sarnia area. The wind rose for this meteorological data set is provided in Figure 14-4 and shows that predominant winds come from west and southwest directions. The average wind speed is approximately 3.69 metres per second.

Figure 14-2: Temperature and Precipitation for 1991 to 2020 Canadian Climate Normals, Sarnia, ON

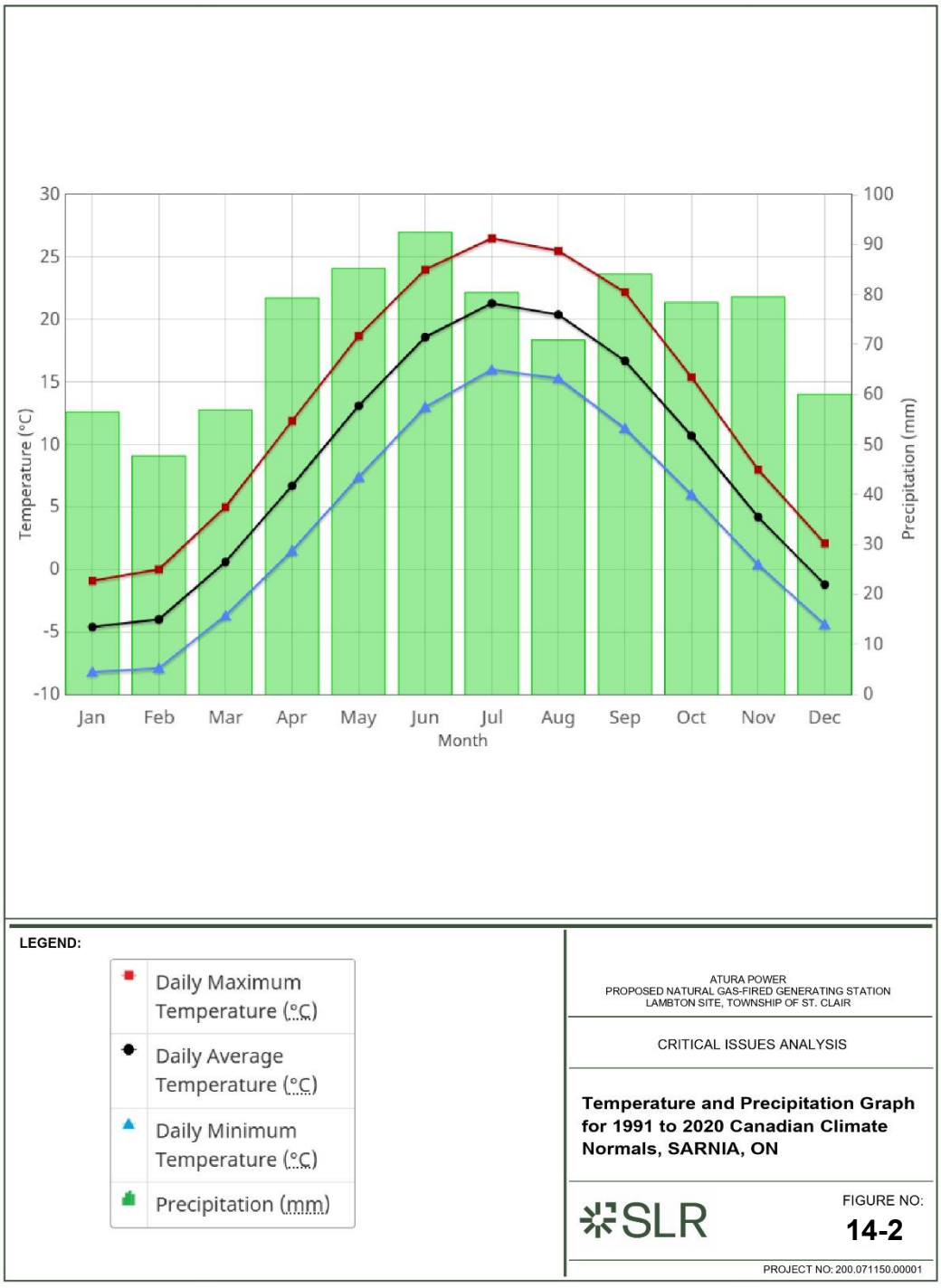
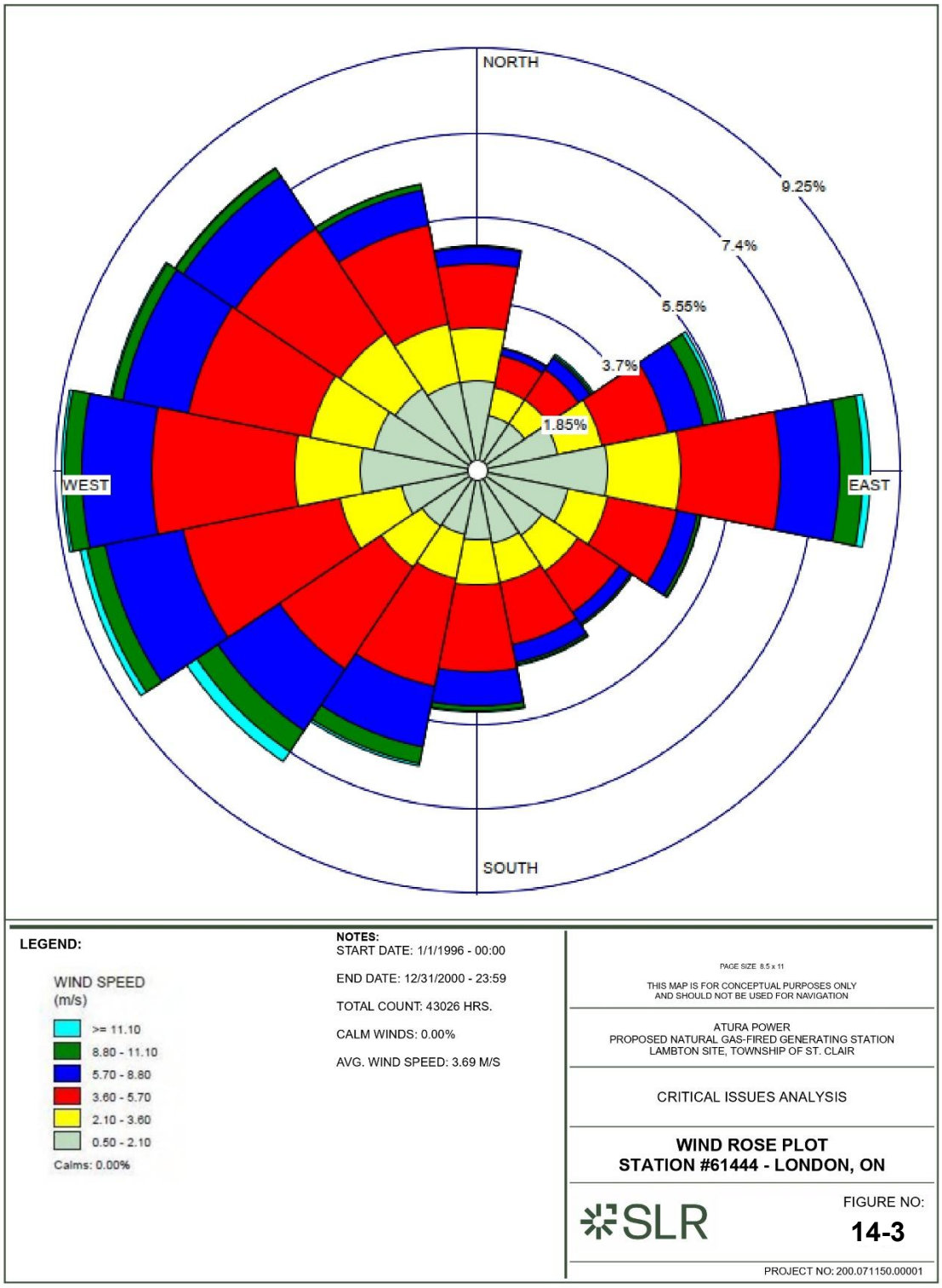


Figure 14-3: Wind Rose Plot for 1996 to 2000, London, ON



14.2.6.2 Background Concentration

Over the five-year period from 2019 to 2023, background concentrations of Fine Particulate Matter ($PM_{2.5}$), NO_x, and Nitrogen Dioxide (NO_2) were collected from the Sarnia (ID 14111) monitoring station located about 20 km from the PA. CO is not monitored at this site and, therefore, data was taken from the Windsor station which represents the closest CO monitoring facility to the Project site. The 90th percentile background concentrations were added to the model predictions from the proposed facility to compare against the relevant Provincial and Federal air quality criteria. (Table 14-2).

Table 14-2: Background Concentration from Sarnia Station (2019-2023)

Compound	Averaging Period	AAQC (µg/m^3)
Fine Particulate Matters ($PM_{2.5}$)	24-hour	14.1
	Annual	5.8
Nitrogen Oxides (NO_X)	1-hour	32.7
	24-hour	27.6
Nitrogen Dioxide (NO_2)	1-hour	27.5
	Annual	8.8
Carbon monoxide (CO)	1-hour	385.3
	8-hour	371.7

For information on the results of air quality modelling, see Section 24.

14.2.7 Noise

Sound is a dynamic, fluctuating pressure in a fluid medium such as air. Noise is defined as unwanted sound. The standard practice within the acoustical industry is to use these two terms interchangeably.

Sound levels are commonly expressed in terms of A-weighted decibels (dBA values), which account for the variation in human frequency response. Humans do not hear low frequency sound as well as that in mid or high frequencies. The A-weighting network was developed to correspond to how humans hear sounds. Unweighted measurements are designated as dBZ values. These measurements are used in investigating impacts from overpressure (blasting) or low frequency noise. Based on the noise sources associated with this project, low frequency noise impacts are not expected.

The following sections provide the noise context relevant to the project. The below is a summary of the noise baseline conditions. For information on the results of noise modelling, see Section 24. For additional information, see Appendix D for the Noise Impact Assessment Report.

14.2.7.1 Guideline Limits

Under the MECP Publication NPC-300 guidelines, PORs are defined using area classifications. The PORs are classified and described as follows:

- Class 1 Area – Urban areas: an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum."
- Class 2 Area – Suburban/Semi-rural areas: an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 areas:
  - Sound levels characteristic of Class 1 during the daytime (7:00 AM to 7:00 PM or to 11:00 PM)
  - Low evening and night background sound level defined by the natural environment and infrequent human activity starting as early as 7:00 PM.
- Class 3 Area – Rural areas: a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as a small community, agricultural area, a rural recreational area such as a cottage or a resort area, or a wilderness area.
- Class 4 Area – Infill areas: an area or specific site that would otherwise be defined as Class 1 or 2 and which:
  - Is an area intended for development with new noise sensitive land use(s) that are not yet built.
  - Is in proximity to existing, lawfully established stationary source(s).
  - Has formal confirmation from the land use planning authority for the Class 4 Area classification, which is determined during the land use planning process.
  - Areas with existing noise sensitive land use(s) cannot be classified as Class 4 areas.

Depending on the receptor area classifications above, different minimum exclusionary guideline limits apply. Baseline sound monitoring was undertaken to measure noise levels and determine the area classification surrounding the Project.

14.2.7.2 Baseline Sound Monitoring

Baseline sound level measurements were performed between February 21 and February 28, 2025. The monitoring location was selected to be representative of the baseline acoustic environment at critical Project receptors. The measurement location is expected to provide a conservative baseline as it is located further from Oil Springs Line than the critical receptor(s), thereby capturing less road traffic noise.

The objective of the measurement program was to obtain a minimum 48-hours of applicable data, in accordance with MECP procedures and requirements. Measurements were completed in accordance with the following guidelines:

- MECP Publication NPC-102 – Instrumentation.
- MECP Publication NPC-103 – Procedures.
- MECP Publication NPC-300 – Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning.

A summary of measured hourly sound level ranges and averages is provided in Table 14-3.

Table 14-3: Hourly Sound Levels Ranges and Averages Time Period

Time Period	Minimum L_{eq}(1-hr) dBA [1]	Maximum L_{eq}(1-hr) dBA [1]	Average L_{eq}(1-hr) dBA [1]
Daytime (7:00 AM to 7:00 PM)	44.5	55.7	50.2
Evening (7:00 PM to 11:00 PM)	42.1	51.4	45.7
Nighttime (11:00 PM to 7:00 AM)	40.0	52.2	43.6
Notes: [1] Arithmetic average of hourly equivalent sound levels during monitoring period in the daytime, evening and nighttime time periods			

Overall, measurements indicate the acoustic environment was representative and had sound level characteristics of a Class 1 Area during daytime hours (7:00 AM to 7:00 PM), with lower evening and nighttime sound levels dominated at times by the natural environment and infrequent human activity. This aligns with the definition of a Class 2 Area in MECP Publication NPC-300. Furthermore, the average sound levels for daytime, evening and nighttime periods are similar to the minimum exclusionary limits for a Class 2 Area.

Based on the results of the baseline sound monitoring program, and considering the noise guideline limits applicable for the nearby Greenfield Energy Centre, a Class 2 Area designation is appropriate for the noise receptors along St. Clair Parkway.

For information on the results of noise modelling, see Section 24.

14.2.8 Hydrogeology

Hydrogeological conditions at the site are influenced by the hydraulic properties of both bedrock and overburden units. Groundwater movement at the Site is generally limited as both the Rannoch Till and the underlying Port Lambton Group shale, exhibits low permeability. Insights into the surficial and bedrock aquifers at the Site have been drawn from available documentation, including Upper Thames Region Conservation Authority (2008) and the MECP water well record database.

14.2.9 Archaeological Resources

A Stage 1 & 2 Archaeological site investigation was completed for the proposed Project in June 2025. The assessment was conducted in compliance with the 2011 Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture, 2011), as used by the Ministry of Citizenship and Multiculturalism (MCM).

The assessment identified artifacts from the late 1800s; three lithic flakes, which are remnants from the manufacturing of stone tools; and one piece of Indigenous pottery.

The flakes are likely associated with the previous identified lithic scatter at the same location, though it appears to have been impacted from previous disturbance to the site.

Additional site investigations or avoidance measures are being considered to ensure the findings are addressed in line with the requirements of MCM. Both locations where artifacts were found are outside of the anticipated project footprint. Avoidance of these areas, along with archaeological monitoring during construction, should mitigate further impacts to any potential remaining artifacts. No disturbance to the sites will be allowed until MCM has provided clearance to proceed.

14.2.10 Built Heritage Resources and Cultural Heritage Landscapes

There are no known Built Heritage Resources or Cultural Heritage Landscapes within the LSA. The Project is situated on a portion of the former Lambton Generating Station which was decommissioned in 2017 and demolished between 2017 and 2022.

A Cultural Heritage Evaluation Report was carried out on the subject property in 2018. The report found that the site did not satisfy criteria from O. Reg 9/06 or O. Reg. 10/06 of the Ontario Heritage Act and therefore had no cultural heritage value or interest.

15. Human Health and Socio-Economic Context

15.1 Site History

Indigenous peoples have lived on the lands now known as Ontario for millennia. Early partnerships between Indigenous nations and settler governments were formed through treaties and alliances, based on mutual respect, rights and agreements with colonial governments. Over many centuries these relationships were eroded by colonial and paternalistic policies that were enacted into laws (Crown-Indigenous Relations and Northern Affairs Canada, 2024).

The Sombra Township Purchase (referred to as Treaty 7 in Ontario) was signed in September of 1796 and covers 3,100 ha of southwestern Ontario, including the Project site (Government of Ontario, n.d.-a; Boileau, 2022). The land was purchased by the British to offer it to Indigenous allies who fought with them during the American Revolution and still lived in the newly formed United States. The land was eventually opened to European settlers (Boileau, 2022).

During the formation of Upper Canada in 1792, nineteen counties were created throughout what is now known as southwestern Ontario. One of these counties included what is now Lambton County (Lambton County Archives, n.d.). As settlers trickled into Lambton County, oil was first discovered around the mid-1850s. Through the 1850s and 1860s, large oil reserves were discovered in the communities of Petrolia and Oil Springs. These discoveries would lead to the construction of railways to the area, attracted additional exploration of the area, and would eventually attract petrochemical and related industries to the area (Sarnia Historical Society, n.d.).

St. Clair Township and the neighbouring City of Sarnia are the location of several existing gas-fired generating stations, each with a capacity of at least 20 MW (IESO, n.d.). Both communities are hubs for petrochemical and related industries.

15.2 Social Context

15.2.1 Municipalities

The Project site is located within St. Clair Township and the County of Lambton. The County of Lambton is an upper tier municipality that includes 11 lower-tier municipalities, including St. Clair Township. The County of Lambton has a total population of 128,154 as of 2021 and an area of 2,999 km^2. St. Clair Township is the second most populous municipality in the County of Lambton. Within the County of Lambton, 6,030 people identify as Indigenous, or 4.6% of the population. Comparatively, only 2.9% of the population of Ontario identifies as Indigenous (Statistics Canada, 2023a).

According to Statistics Canada (2023a), St. Clair Township has a population of 14,659, an increase of 4.1% from 2016. St. Clair Township accounts for 11.4% of the population of the County of Lambton. St. Clair Township is 618 km^2 with a population density of 23.7 people/km^2. The median age within St. Clair Township is 44.8 years old, with 60.5% of the population being between the ages of 15 and 64 years old.

Gender distribution is nearly equal, with Men+ accounting for 50.2% of the population and Women+ for 49.8% (Statistics Canada, 2023a). Within the St. Clair Township, 515 people identify as Indigenous, or 3.3% of the population.

According to the St. Clair Township's Official Plan (2024b), most of the township's landmass is designated as agricultural land. The Project is located on land designated as Industrial Type 3. The primary objectives of the industrial land designation are to site industrial uses away from incompatible uses (such as residential), minimize environmental impacts, and to contribute to the community's acceptance of industry. Industrial Type 3 lands are intended for large scale, heavy industry uses such as petrochemical refineries, metal related manufacturing, and other uses that require volatile materials as a product of or used in processing. Industrial Type 1 and 2 uses are also permitted within Type 3 designated lands, essentially allowing any type of industrial use on Type 3 lands (St. Clair Township, 2024b).

15.2.2 First Nations and Indigenous Communities

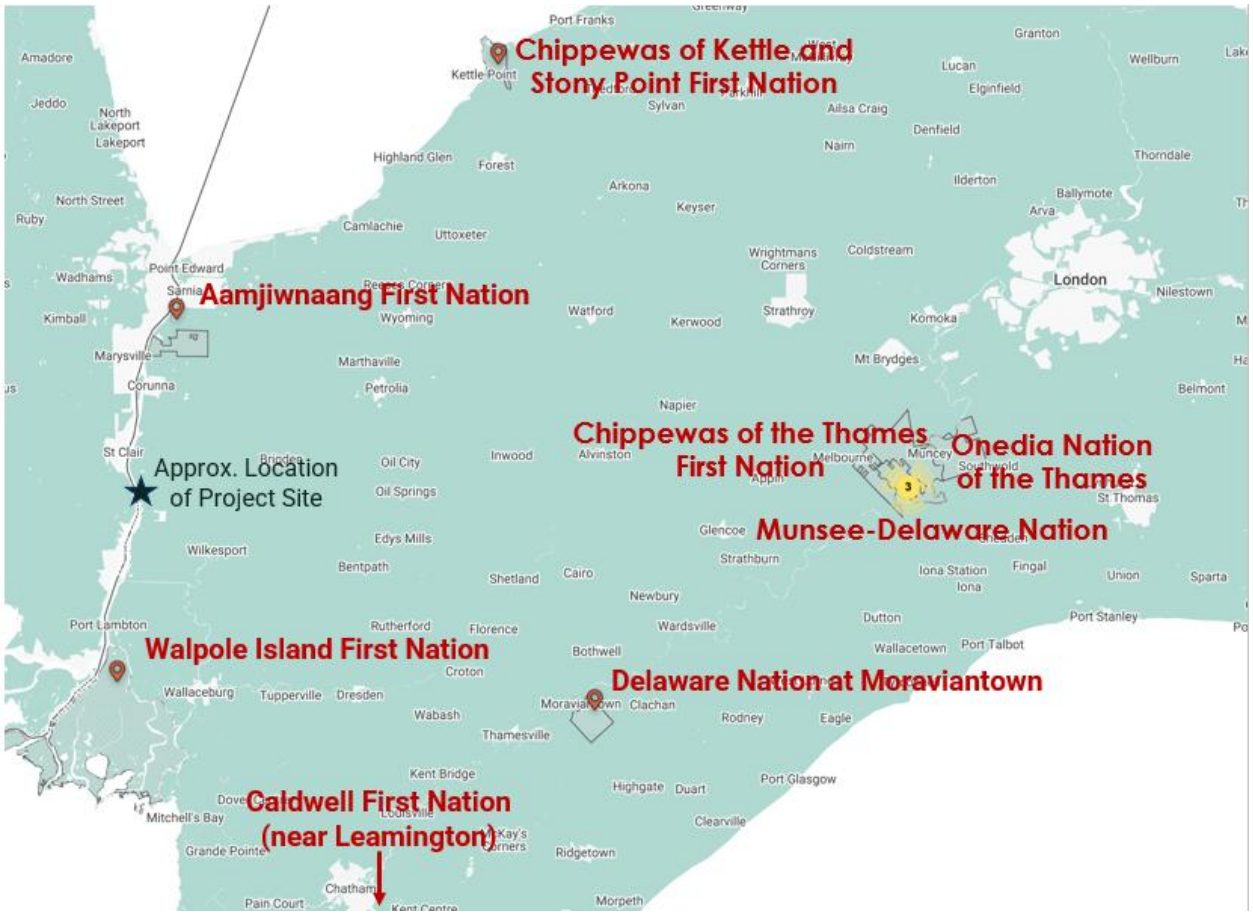
The Project site is located within proximity to eight First Nation communities:

- Aamjiwnaang First Nation;
- Caldwell First Nation;
- Chippewas of Kettle and Stony Point First Nation;
- Chippewas of the Thames First Nation;
- Delaware Nation Council;
- Métis Nation of Ontario;
- Munsee-Delaware Nation;
- Oneida Nation of the Thames First Nation (Onyota'a:ka); and
- Walpole Island First Nation.

These First Nations, along with the Métis Nation of Ontario have been contacted through the engagement process outlined in Section 4.

Current social, economic, and health aspects of First Nations and Indigenous communities are being discussed and confirmed through ongoing engagement (see Section 4.0) and Atura is committed to the process of relationship building with these communities.

Figure 15-1: Location of nearby First Nation Communities



15.3 Economic Context

Over time, industry in the area has shifted from a focus on agriculture to the petrochemical industries. The oil fields in the nearby towns of Petrolia and Oil Springs have been commercially drilled since the late 1800s, contributing to the development of the local economy (City of Sarnia, 2025).

Within Lambton County, the primary industries are health care and social assistance and retail trade (Statistics Canada, 2025). These industries employ 8.4% and 6.3% of the County's workforce, respectively (Sarnia-Lambton Economic Partnership, 2025). These industries are also the most dominant industries across the province (Statistics Canada, 2025). Other primary industries within the County include construction and manufacturing, each employing about 6% of the workforce (Sarnia-Lambton Economic Partnership, 2025).

Within St. Clair Township, health care and social services still account for the highest percentage of the workforce (8.8%); however, manufacturing and construction account for the second and third highest industries by workforce (8.6% and 7.4% respectively) (Sarnia-Lambton Economic Partnership, 2025).

15.4 Health Context

Lambton Public Health is the local health unit providing health services to the municipalities, First Nations and Indigenous Communities within the County of Lambton. Lambton Public Health offers many different services including:

- Health Clinics – immunization clinics, dental services, flu shots, sexual health clinics, tuberculosis testing, and harm reduction programs.
- Maternal & Child Health – prenatal and postpartum support, home visits, and parenting resources.
- Public Health Inspections & Investigations – inspection of businesses, restaurants, and public spaces to ensure compliance with health and safety regulations.
- Disease Prevention & Monitoring – tracking and management of outbreaks, including measles and avian influenza, and provides guidance on vaccinations.
- Community Health Education – shares health information to promote safe practices and healthy living (Lambton Public Health, n.d.).

There are two hospitals in the County of Lambton, one in Sarnia and one in Petrolia (Lambton County, 2025). The hospital in Sarnia is the closest to the Project site and is a 27 km drive. The community of Corunna, north of the Project site, has a medical clinic, dental clinic, and several paramedical services (e.g., chiropractors, physiotherapy).

The County of Lambton also operates a variety of social services that support the community's well-being. These services include:

- Housing Services – providing housing assistance, rent supplement and affordable housing, and property management services to the 830 units owned by the County.
- Homelessness Prevention – helping individuals and families find resources and housing.
- Ontario Works – providing financial assistance to those who meet the criteria.
- Children's Services – helping families find appropriate resources related to childcare needs.

Atura is committed to ongoing collaboration with First Nations and Indigenous communities to understand current health and well-being contexts. This involves identifying and verifying the availability of culturally informed health and well-being programs and services, both near and on reserves. Through continued engagement, as detailed in Section 4.0, Atura is working to further our understanding of the current health conditions of First Nations and Indigenous communities.

15.4.1 Health Concerns in the Sarnia Area

Released in 2024, the Sarnia Area Environmental Health Project (SAEHP) (MECP, 2024) report provided an overview of environmental health concerns in the Sarnia area, particularly related to industrial pollution. The project was developed in collaboration with local First Nations, health agencies, municipalities, and industry representatives. Its primary goal was to better understand the relationship between environmental exposures, particularly air pollution, and health outcomes in the region.

The SAEHP examined three main components: air exposure, environmental stressors, and safety of medicinal plants. The findings for each of these three components are summarized below.

Air Quality Risks: The presence of sulphur dioxide (SO2), fine particulate matter (PM2.5), and benzene at potentially harmful levels underscores the need for continued monitoring and mitigation efforts. These pollutants are linked to respiratory and cardiovascular issues, as well as cancer risks in the case of benzene.

Quality of Life Impacts: Environmental stressors (i.e. noise, vibration, odour, and night-time light) are not just nuisances; they have tangible effects on mental and physical health. Addressing these issues requires both regulatory action and improved communication between industry and residents.

Cultural and Environmental Health: The study highlighted the intersection of environmental health and cultural practices. Protecting traditional land use requires ensuring that local ecosystems are safe and free from contamination.

This will be discussed with the First Nation communities during ongoing engagement as it relates to the proposed project.

Part D: Federal, Provincial, Territorial, Indigenous and Municipal Involvement and Effects

16. Federal Financial Support

The Project will not require any federal financial support.

17. Use of Federal Lands

The Project will not require use of any federal lands.

18. Jurisdictional Involvement

18.1 Federal Regulatory Requirements

As discussed in **Section 8.0**, the Project is considered a "designated project" under Section 30 of the Physical Activities Regulation and is therefore subject to IAAC review under the IAA. In addition, the project is also subject to federal regulatory requirements as outlined in **Table 18-1**.

Table 18-1: Federal Regulatory Requirements

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
Fisheries and Oceans Canada		
Fisheries Act Letter of Advice or Authorization	• Protects fish and their habitats by regulating fishing activities, preventing pollution, and ensuring the sustainability of aquatic ecosystems. • Applies to any activity with the potential for harmful alteration, disruption, or destruction of fish or fish habitat.	• No works are proposed within 30 m of fish habitat; therefore, a Request for Review is not required. • HADD of fish/fish habitat will be avoided by ensuring no in-water or shoreline works and using appropriate ESC and spill prevention and response measures.
Species at Risk Act (SARA) Section 73 Permit	• Canada's *Species at Risk Act* aims to prevent wildlife species from disappearing, support the recovery of endangered and threatened species, and manage species of special concern to ensure their long-term survival. • Applies to any activity with the potential for disturbance or destruction of federally listed aquatic SAR or SAR habitat.	• Aquatic SAR and SAR habitat will be avoided by ensuring no in-water or shoreline works and using appropriate ESC and spill prevention and response measures.
Environment and Climate Change Canada		
Species at Risk Act (SARA) Permit	• Canada's *Species at Risk Act* aims to prevent wildlife species from disappearing, support the recovery of endangered and threatened species, and manage species of special concern to ensure their long-term survival. • The Act applies to any activity with the potential for disturbance or destruction of federally listed SAR or SAR habitat on federal land. • On private land, the Act applies to aquatic species (see Fisheries and Oceans Canada information above) and migratory birds that are Endangered, Threatened or Extirpated listed under Schedule 1 of the SARA (see migratory birds information below).	• The Project is not located on federal land. • No impacts to migratory birds are anticipated on private land – vegetation removals (if any) will be avoided during the breeding bird season (April 1st to August 31st) and construction contractors will be required to report potential nest activity within the work zone.

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
Migratory Birds Convention Act (MBCA) Damage or Danger Permit	• Protects migratory birds, their nests, and eggs by regulating hunting, conservation, and habitat protection. • Applies to any activity with the potential for disturbance or destruction of migratory birds, as well as nests and eggs.	• Will be managed through adhering to timing windows for vegetation clearing (September 1st to March 31st). • Need to obtain a permit is unlikely, and if required, would be based on an unplanned event associated with ground nesting species (e.g., Canada Goose nest established post-clearing).
Canadian Environmental Protection Act Environmental Emergency Regulations Compliance	• Establishes requirements for facilities handling hazardous substances to prepare and implement environmental emergency plans, ensuring swift response and mitigation in case of accidental releases. • Dependent on the storage of designated materials in quantities that meet the reporting threshold criteria as listed in the Regulations (e.g., 2,500 tonnes of diesel).	• Compliance with the Act and regulations will be maintained – no permit required. • Once it is determined what materials will be stored on-site and in what quantities, this legislation will be screened to confirm project implications. • Licenced contractors will be retained, if required.
Canada-United States Air Quality Agreement Compliance	• Agreement between Canada and the United States to address transboundary air pollution. • New air pollution source located within 100 km of the Canada/U.S. border that is expected to emit greater than 90 tonnes per year of any one of the common air pollutants: sulphur dioxide (SO2), nitrogen oxides (NOX), carbon monoxide (CO), total suspended particulates (TSP) and volatile organic compounds (VOC), where VOCs are defined as compounds containing at least one carbon atom, excluding carbon monoxide, carbon dioxide, methane and chlorofluorocarbons.	• Project will emit greater than 90 tonnes per year of nitrogen oxides.
Transport Canada		
Canadian Navigable Waters Act Approval	• Protects the public's right to travel on navigable waters by regulating projects that may obstruct navigation, ensuring environmental safeguards, and incorporating Indigenous knowledge in decision-making. • Required to construct, place, alter, rebuild, remove, or decommission a work in, on, over, under, through or across any navigable water.	• No navigable waterways on-site and no in-water work is required.

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
Transportation of Dangerous Goods Act Compliance	• Regulates the safe handling, transport, and emergency response for hazardous materials to protect public safety and the environment. • Establishes safety standards, oversight programs, and emergency response assistance plans for transporting dangerous goods by road, rail, air, and water. • Applies to all activities involving the transportation of dangerous goods (e.g., flammable liquids, solids, gases).	• No permit – maintain compliance with Act and regulations. • Assumes that licenced contractors would be retained, if required.

18.2 Provincial Regulatory Requirements

The Project will also be subject to provincial laws and regulations that apply in the Province of Ontario. These are described in **Table 18-2**.

Table 18-2: Provincial Regulatory Requirements

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
Ministry of the Environment, Conservation and Parks (MECP)		
Environmental Assessment Act Environmental Screening Process for Electricity Projects (ESP)	• The *EA Act* ensures that infrastructure projects undergo environmental evaluations to assess potential impacts before proceeding. For electricity projects, the ESP provides a streamlined assessment method, allowing proponents to identify and mitigate environmental concerns efficiently. • Establishment of a generation facility that has a name plate capacity of ≥ 5 MW and that uses natural gas as its primary power source is defined in Section 9 of O. Reg. 50/24 as requiring completion of the ESP.	• As described in the Guide to EA Requirements for Electricity Projects (February 2024), the new facility would be considered a Category B project and require ESP completion. • The full ESP (i.e., Environmental Review Report) will be completed rather than a screening.
Endangered Species Act 17(2)(c) Permit; or Registration of Notice of Activity	• Protects SAR by regulating habitat destruction, implementing recovery strategies, and balancing conservation efforts with economic considerations. • Activities that kill, harm, or harass species listed as Endangered or Threatened under the Act and/or directly destroy their habitat or damage/impact habitat function.	• Potential impacts to SAR will be avoided due to the industrial nature of the site. • Any additional, temporary construction laydown or storage areas will be within existing gravelled/paved areas.

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
Ontario Water Resources Act and *Environmental Protection Act* Environmental Activity and Sector Registry (EASR) (Water-Taking)	• The *Water Resources Act* governs permits for water withdrawals, requiring users to obtain a Permit to Take Water (PTTW) for significant extractions. • The *Environmental Protection Act* sets guidelines for preventing pollution and managing water quality impacts from industrial and municipal activities. • Water takings from a groundwater or surface water body between 50,000 L/day and 400,000 L/day.	• No permit – online registration only. • Groundwater dewatering volumes during construction can typically be managed so they do not exceed 50,000 L/day.
Environmental Protection Act Environmental Compliance Approval (ECA) (Air & Noise)	• Regulates air and noise emissions by requiring industries to obtain environmental approvals, conduct impact assessments, and implement mitigation measures to minimize pollution and disturbances. • Considers discharge of a contaminant, including air contaminants, noise, and/or vibration into the natural environment (air). • Used for activities or equipment operations with higher risk of potential environmental impact and the potential for cumulative emissions from the surrounding areas, impacting air/noise compliance levels.	• Air and noise emissions from natural gas facilities and ancillary equipment are subject to ECA. • Most temporary construction-related air and noise discharges are exempt from permitting requirements. • Guideline A-5 (Atmospheric Emissions from Stationary Combustion Turbines) addresses emission requirements for projects that emit NO_X.
Environmental Protection Act ECA (Industrial Sewage)	• Collection, transmission, treatment, and/or disposal of industrial sewage and any additional sources of wastewater created during construction or operation and maintenance, including stormwater and that which could be generated from the potential for spill containment.	• Stormwater and sanitary sewage will be discharged as a result of the Project. • A Stormwater Management Plan and Spill Response and Prevention Plan will be prepared.
Environmental Protection Act ECA (Waste)	• Certain on-site treatment of wastes or hauling of waste off-site, including excess soil.	• There will be no on-site waste disposal (landfill) activities undertaken at the site and any non-hazardous solid waste will be managed in accordance with O. Reg. 347 requirements. • If required, licensed contractors with the necessary permits in place will be retained during construction.

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
Environmental Protection Act Excess Soil Management	• Establishes rules for handling, transporting, and reusing excess soil to prevent environmental contamination and promote sustainable soil management. • The regulations require soil assessments, tracking systems, and proper documentation to ensure soil is reused safely and does not become waste.	• No permit – maintain compliance with Act and O. Reg. 406/19. • Any removal of soil from site will be handled by a MECP- approved contractor with all mandatory testing, tracking, and reporting undertaken.
Environmental Protection Act Environmental Site Assessment (ESA)	• Establishes requirements for evaluating potential contamination on properties, ensuring proper site assessment before redevelopment. • Related to assessment and remediation (cleanup) of contaminated land or groundwater. • May be requested from municipality, construction contractor, or for financing.	• No permit – may be requested for due diligence purposes (O. Reg. 153/04). • Based on precedent, financers and municipal government may require an ESA for due diligence/liability purposes. • Unlikely due to site ownership.
Ministry of Citizenship and Multiculturalism (MCM)		
Ontario Heritage Act Archaeological Assessment Report Acceptance	• Requires archaeological assessments for land development projects to identify, evaluate, and protect archaeological sites, ensuring compliance with heritage conservation regulations. • Proposed disturbance of previously undisturbed/undeveloped areas.	• Stage 1-2 Archaeological Assessment completed • The majority of the site is previously disturbed by construction of the original generating station.
Ontario Heritage Act Compliance	• Protects built heritage and cultural heritage landscapes, ensuring their conservation through regulations, heritage registers, and development controls. • Proposed disturbance of potential built heritage or cultural heritage landscape(s).	• There are no known heritage areas or sites located in proximity to the Project Site. • MCM's "Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes" checklist completed.
Ministry of Transportation (MTO)		
Highway Traffic Act Oversize / Overweight Permit	• Establishes rules for road safety, vehicle operation, and traffic enforcement, regulating driver behaviour, licensing, penalties, and vehicle standards to ensure safe and efficient transportation. • Dimensions or weight of vehicle and/or load exceed the limits set out in the Act may require permitting.	• Licenced contractors will be retained for transportation of oversize loads, if required.

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
St. Clair Region Conservation Authority (SCRCA)		
Conservation Authorities Act Permit	• Development or site alteration within SCRCA regulated limits, which include wetlands, watercourses, regional flood lines and erosion hazards plus their respective setbacks.	• Project is located outside of SCRCA regulated areas.

18.3 Municipal Regulatory Requirements

There are no regulatory requirements from the County of Lambton, however, applicable requirements from St. Clair Township are presented in **Table 18-3**.

Table 18-3: Municipal Regulatory Requirements

Legislation and Permit Name	Description / Permit Trigger	Key Comments and Assumptions
St. Clair Township		
Planning Act Site Plan Approval (SPA)	• Industrial/infrastructure projects are typically reviewed to ensure they meet the municipality's development requirements for matters such as site servicing, setbacks, parking requirements, stormwater management, etc.	• Development within areas designated as Industrial are typically subject to Site Plan Control.
Building Code Act Building Permit	• Required for any new building over 10 m^2 or structures meeting the definition of “building” as per the Ontario Building Code.	• Requirements will be addressed by engineering contractors.

Part E: Potential Effects of the Project

The Project is regulated provincially under the Ontario *Environmental Assessment Act* and is subject to Ontario Regulation (O. Reg.) 50/24, Part II.3 Projects – Designations and Exemptions, Section 9 (3) for establishment of "a generation facility that has a name plate capacity of greater than or equal to five megawatts and that uses biomass or natural gas as its primary power source". O. Reg. 50/24 requires that the Project be carried out in accordance with the Environmental Screening Process for Electricity Projects, as described in Part B of the Government of Ontario's *Guide to Environmental Assessment Requirements for Electricity Projects* (2024) (the Guide).

The Environmental Screening Process was developed by the Ministry of the Environment, Conservation and Parks (MECP) to ensure that the purpose of the *Environmental Assessment Act* is maintained in the review of specified electricity projects. In the Environmental Screening Process, the definition of "environment" is the same as that in the *Environmental Assessment Act*, which is broadly defined to include air, land and water as well as natural, cultural, social and economic components. The Guide specifies the list of screening criteria which must be applied to all projects that are subject to the Environmental Screening Process, developed by the MECP to reflect this broad definition of "environment."

A preliminary screening of potential environmental effects was undertaken using the Environmental Screening Process screening checklist to inform early project planning and design, and to support the early engagement program with Indigenous communities, agencies and the public. The results of this preliminary screening, with identification of typical and/or preliminary mitigation and management measures, is provided in Appendix E.

Given the breadth of the screening criteria required by the provincial process, components under federal jurisdiction will be considered and assessed as part of the Environmental Screening Process. The preliminary screening of environmental effects therefore also supports the identification and description of the Project's likely effects on components falling under federal jurisdiction as required for the IPD and described in the following sections.

19. Potential Effects to Fish and Fish Habitat, Aquatic Species at Risk, and Migratory Birds

19.1 Fish and Fish Habitat

There are no watercourses or waterbodies located within the Project site. The St. Clair River is the nearest known feature with fish habitat and is located approximately 100 m west of the Project site fenceline and approximately 50 m west of the site entrance off the St. Clair Parkway. No in water works are anticipated for any phase of the project, and therefore there will be no direct effects on fish or fish habitat.

Operational stormwater management will be addressed via modifications to the existing stormwater management system that outlets to the St. Clair River, as described in Section 9.2.4.3.

The existing system operates under a provincial ECA and stormwater discharged from the Project site will be required to meet the quality and quantity requirements of that approval, with the design of the system subject to review and approval by the MECP and Township.

Since the Project will meet the requirements of the existing approvals, no changes have been identified that may result in effects on fish or fish habitat. Project approvals will include the development and implementation of a detailed stormwater management plan that addresses the construction and operation phases.

Process water created during the operational phase of the project will either be directed to the municipal sanitary sewer system through construction of a new wastewater pipe or stored on site and transported to an approved facility offsite for treatment. Neither approach will have an effect on fish or fish habitat.

During construction and operation, there is the potential for spills and accidental releases of sediment to the environment. During construction and decommissioning, appropriate erosion and sediment control and water management plans will be developed and implemented in accordance with provincial and local regulatory requirements. During all phases of the Project, spill prevention and emergency response measures will be in place to prevent any deleterious substances from entering any drainage features on site with potential to outlet to the environment, including the St. Clair River.

19.2 Aquatic Species at Risk

There are no Aquatic Species at Risk located within the PA. The following Aquatic Species at Risk are known to occur in the St. Clair River, however, they are not necessarily using the habitat adjacent to the PA.

- Northern Brook Lamprey (Special Concern)
- Silver Lamprey (Special Concern)
- Northern Sunfish (Special Concern – provincially only)
- Spotted Sucker (Special Concern)
- Northern Madtom (Endangered)

As there are no anticipated effects to fish or fish habitat, there are no pathways for the Project to interact with aquatic species at risk. Therefore, effects to aquatic species at risk are not predicted.

19.3 Migratory Birds

The project is situated on a previously disturbed area of the property and no vegetation removals are anticipated to facilitate construction of the Project.

The Project Site is maintained in an anthropogenic state and is primarily paved and/or gravelled. Some migratory bird species such as Bank Swallow (*Riparia riparia*) and Killdeer (*Charadrius vociferus*) are known to use anthropogenic sites as their habitat. Incidental sightings have been noted, however, no foraging or nesting/breeding within the Project site have been documented.

The CEMP that will be implemented during construction will include avoidance, mitigation and monitoring measures to maintain compliance with the *Migratory Birds Convention Act*. This is expected to include conducting any required vegetation removals outside the active breeding bird season should such removals be required, and general contractor monitoring for any presence of nests or mating behaviours throughout the breeding bird season. A qualified avian ecologist would be engaged as needed to conduct surveys or nest checks and advise on appropriate measures to be taken in the event an active nest or indication of breeding pairs is identified (e.g., establish an appropriate buffer). Construction activities such as increased site activity, grading, grubbing, and excavation have the potential to result in sensory disturbance to local wildlife including migratory birds in proximity to the Project site. The CEMP would include standard mitigation measures and management plans for traffic, temporary dust and noise emissions, and site lighting.

During operation, new buildings and infrastructure will be present on a site that has been vacant since demolition of the Lambton Generating Station in 2022. The new buildings and above-grade infrastructure will change the nature of the Project site area that may increase the risk of bird strikes. Mitigation measures during the design phase, in particular lighting and landscaping design, can be implemented to reduce the risk of bird strikes.

Given the disturbed nature of the Project site, it is expected that the implementation of industry standard mitigation measures will prevent or reduce the magnitude of changes to the existing environment that will in turn reduce risk of impacts to migratory birds.

20. Potential Environmental Changes on Federal Lands or Lands Outside of Ontario

As noted in Section 13.6, the closest non-reserve federal land is Point Pelee National Park, almost 100 km south of the Project. Section 13.4 describes the locations of nearby Indigenous community reserve lands, which are under federal trust.

Preliminary air and noise emission studies have been completed (see Section 24, Appendix C and D) and mitigation measures have been incorporated into the Project design to reduce the potential for adverse effects. Air and noise emissions will meet provincial regulatory limits set by MECP and therefore are not expected to have an effect on federal lands.

Regarding effects outside of Canada, airsheds are not bound by jurisdictional borders and, therefore, depending on factors such as meteorological conditions, compounds in the air originating in one jurisdiction can disperse to another jurisdiction. This process can be referred to as the transboundary effect.

According to the 2018 *Air Quality in Ontario* report, transboundary pollutants are largely influenced by the prevailing winds, particularly during the May to September smog season. These southwesterly prevailing winds result in the transport of pollutants from the United States (U.S.) into Ontario. In southern Ontario in particular, transboundary fine particulate matter coming from the United States, contributes up to 80% of the annual concentrations.

The transboundary dispersion of air quality compounds between the U.S. and Canada can have an effect on the background air quality levels in Southern Ontario and subsequently at the Project site.

The Canada-United States Air Quality Agreement, signed in 1991, addresses these transboundary effects (GOC 1991). Both countries agreed to reduce emissions of SO_2 and NO_X, the primary precursors to acid rain. The Ozone Annex was added to the agreement in December 2000 to address transboundary air pollution leading to high ambient levels of ground-level ozone, a major component of smog. The Annex commits both countries to reduce their emissions of nitrogen oxides and volatile organic compounds, the precursor pollutants to ground-level ozone.

Significant progress has been made in reducing emissions of these pollutants. Between 2000 and 2020, emissions of nitrogen dioxide in Canada and the U.S. decreased by 65% and 72%, respectively, in the transboundary ozone area. This area includes central and southern Ontario, southern Québec, 18 U.S. states, and the U.S. District of Columbia. These reductions have been achieved through regulations and non-regulatory programs designed to meet emission reduction commitments in the Ozone Annex.

Under Article V of the agreement, Canada is obligated to notify the U.S., with the use of the Transboundary Notification Form, of any new air pollution source located within 100 km of the Canada-U.S. border that is expected to emit greater than 90 tonnes per year of any one of the common air pollutants; sulphur dioxide, nitrogen oxides, carbon monoxide, total suspended particulates, and volatile organic compounds.

The maximum annual NO_x emissions are estimated to be greater than 90 tonnes per year, which would put emissions for the facility above the threshold for notification under the Air Quality Agreement. If the project proceeds, Atura Power will provide the appropriate notification for Environment and Climate Change Canada.

The Project is not anticipated to have any significant environmental transboundary effects and will have no effects on federal lands.

21. Potential Effects to Indigenous Peoples Resulting from Changes to the Environment

This information presented in this section and the following section is based on ongoing studies being completed by Atura Power and information available to public and is in the process of being reviewed and informed by Indigenous Communities. As documented in Section 4, Atura Power has been meeting with Indigenous Communities as part of early engagement on the Project.

Atura Power is committed to ongoing and continued engagement with Indigenous Communities throughout the lifecycle of the project. The engagement process will help identify effects on Indigenous Communities and how to mitigate them.

Current Use of Lands and Resources for Traditional Purposes

The Project is located on private land that is currently owned by OPG and used for electricity generation since the 1960s. Access to the property is controlled and restricted as the site is fully fenced and gated. Surrounding the Project site, most of the land is privately owned and used for residential or agricultural purposes. To the south of Oil Springs Road, the County of Lambton has protected an area known as the Bowen's Creek Habitat Management Area. The property is managed by the St. Clair Conservation Authority but is not part of the lands that it permits for hunting and trapping (St. Clair Conservation Authority, 2023).

There are no watercourses or waterbodies located within the Project site. No in-water work is anticipated for any phase of the project. Additionally, stormwater during operation will be directed to the existing stormwater management system for the site, with the design of the system subject to review and approval by the MECP and St. Clair Township. See Section 19 for additional information on fish and fish habitat.

Due to the industrial nature and small size of the Project site, and the lack of native vegetation and wildlife habitat, the Project is not anticipated to result in adverse effects on wildlife or their habitat. For more information on wildlife effects, see Appendix E.

Traditional land use by Indigenous peoples is being discussed and confirmed through ongoing engagement with communities (see Section 4.0). During early discussions with Atura Power regarding the development of the IPD and preliminary findings in July 2025, Indigenous communities noted they are eager to understand potential effects to land, water, air, etc. from a holistic perspective. They shared a collective desire to consider and understand potential cumulative effects from the perspective of 'the spirit of the land' to Anishinaabe people.

Physical & Cultural Heritage & Any Structure, Site or Thing of Significance

Archaeological investigations and analysis are currently ongoing, and fieldwork has resulted in archaeological finds on the property as well as identification of known archaeological sites.

The assessment identified artifacts from the late 1800s; three lithic flakes, which are remnants from the manufacturing of stone tools; and one piece of Indigenous pottery. The flakes are likely associated with the previous identified lithic scatter at the same location, though it appears to have been impacted from previous disturbance to the site. These artifacts are outside the Project footprint but are close enough to potentially be disturbed by construction activity.

Further assessments or avoidance measures are under consideration to address or mitigate effects to these resources. Indigenous community monitors were present during archaeological fieldwork and will be provided reports to review and comment. Indigenous community monitors will be invited to participate in any future archaeological studies should they be necessary.

Atura Power is committed to ongoing and continued engagement with Indigenous Communities throughout the lifecycle of the project. The ongoing engagement process will help Atura Power continue to identify effects and how to mitigate them.

22. Potential Effects to Indigenous Peoples Resulting from Changes to Health, Social or Economic Conditions

22.1 Health Conditions

As discussed in Section 15.4.1, the SAEHP (MECP, 2024) studied three areas of concern related to emission concentrations in the Sarnia area that the report considered relevant to the health of Indigenous Peoples. The implications of this project on those three concerns are: (1) air quality risks; (2) quality of life impacts; and (3) cultural and environmental health.

22.1.1 Air Quality Risks

Air quality modelling results indicate that under all assessed scenarios and worst-case meteorological conditions, predicted concentrations of NO_x, CO, and $PM_{2.5}$ at nearby residential sensitive receptors remain well below applicable air quality criteria. For additional information on Air Quality modelling and analysis, see Appendix C.

22.1.2 Quality of Life Impacts

The Project's operational sound levels are predicted to meet applicable guidelines at the identified receptors during all periods of the day. The highest predicted sound levels are 44 dBA, below the stricter nighttime sound level limit of 45 dBA. Potential construction noise associated with the Project can be controlled through the implementation of best practices and practical mitigation measures. Similarly, dust will only occur during construction and can be mitigated via best management practices. For additional information on noise modelling results, see Appendix D.

22.1.3 Cultural and Environmental Health

Air and noise emissions from the Project are not expected to adversely affect traditional uses that may be practiced within the area as the land surrounding the site is mostly privately owned. As there are no project components in the St. Clair River and no anticipated effects to water quality, fish or fish habitat resulting from the project.

Atura is committed to engaging with First Nations and other Indigenous communities to better understand the Project's potential effects on these areas of concern.

Effects to Indigenous peoples resulting in changes to health conditions are being discussed and confirmed through ongoing engagement with communities (see Section 4.0). Should any effects be identified, mitigation measures will also be discussed with the communities.

22.2 Social Conditions

The Project is located on private land that is currently owned by OPG and that has been used for electricity generation since the 1960s. Access to the property is restricted and the site is fully fenced, gated, and cannot be accessed. Therefore, the Project is not anticipated to change Indigenous Peoples' ability to exercise their Aboriginal and Treaty Rights in the PA.

Effects to Indigenous peoples resulting from changes to social conditions are being discussed and confirmed through ongoing engagement with communities (see Section 4.0). Should any effects be identified, mitigation measures will also be discussed with the communities.

22.3 Economic Conditions

The Project may provide economic benefits through the reuse of an existing brownfield site and associated increased tax revenue, job creation especially during construction, and through Atura Power's monetary support of organizations and charities in the local communities in which it operates.

Atura Power is currently exploring opportunities for economic partnerships with local Indigenous communities. One of Atura Power's guiding principles to collaborating and engaging with Indigenous communities is "seeking new and mutually beneficial Indigenous partnerships built on collaboration and good governance" (Atura Power, n.d.).

Effects to Indigenous peoples resulting from changes to economic conditions are being discussed and confirmed through ongoing engagement with communities (see Section 4.0). Should any effects be identified, mitigation measures will also be discussed with the communities.

23. Greenhouse Gas Emission Assessment

The objective of the GHG Assessment is to quantify the initial estimated GHG emissions in carbon dioxide equivalent units (CO_2e) per year associated with the Project. The assessment evaluated the Project for compliance with applicable federal and provincial regulatory limits.

The assessment has been completed in accordance with methods documented in the Strategic Assessment of Climate Change (GOC, 2020) and associated technical guides.

23.1 Context

IESO has identified a significant need for new power supply in the province (IESO 2025). At the system level, the IESO is projecting a generation capacity deficit starting in 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;

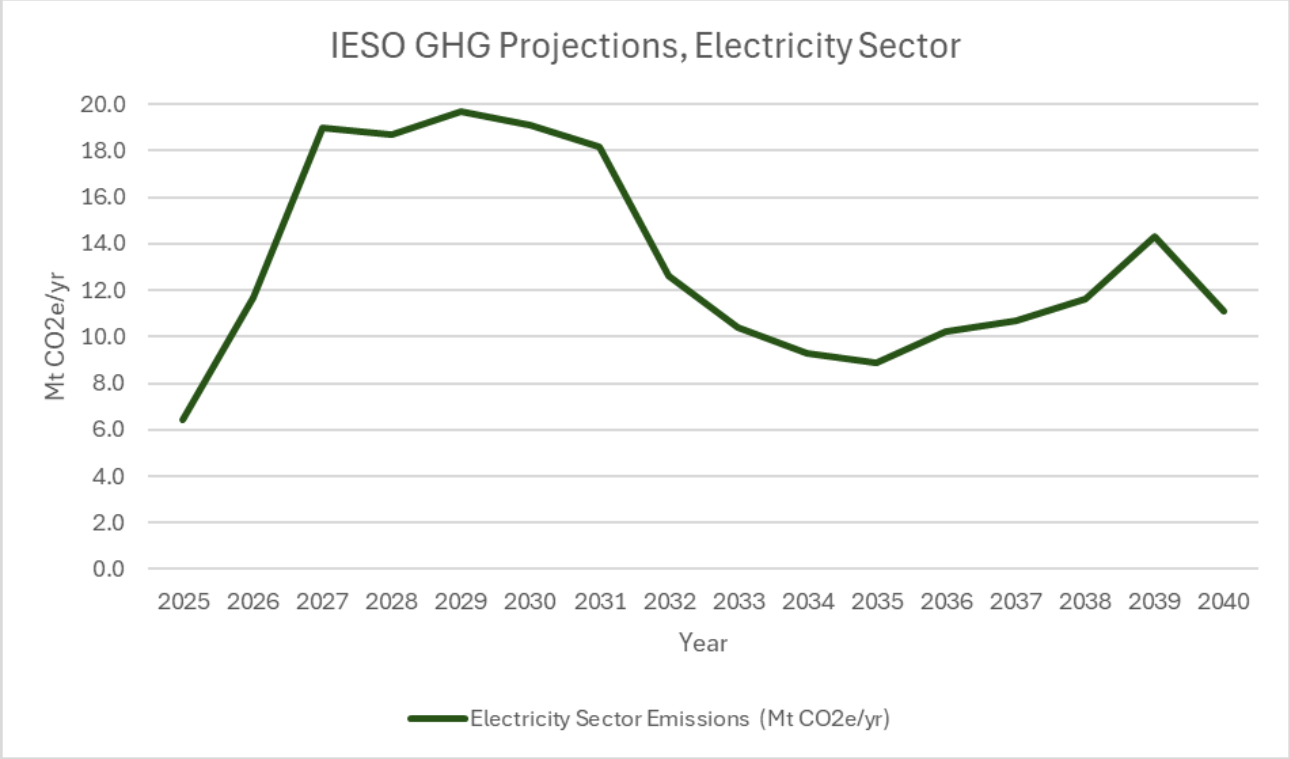
2. Refurbishment of the Pickering Nuclear Generating Station and refurbishment schedules at the Bruce and Darlington nuclear facilities; and
3. Expiring IESO contracts (IESO 2025).

Overall, the use of natural gas for electricity purposes from 2025 through 2040 is projected to increase GHG emissions from the electricity generation sector (Figure 23-1). An increase in electricity sector emissions does not necessarily translate to an increase in economy wide provincial GHG emissions as there are decreases associated with the implementation of future electrification initiatives. 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 2025).

As a result of these initiatives, the overall GHG emissions for the Province are projected to decrease with increased electricity usage.

Figure 23-1: Greenhouse Gas Emissions for the Ontario Electricity Sector 2025 - 2040 (IESO 2025)



23.1.1 Federal Regulations

Substances released from Canadian emission sources that have the potential to impact air quality are regulated under the *Canadian Environmental Protection Act*, 1999 (CEPA). Section 46 of the CEPA requires operators of facilities that emit ≥10,000 tonnes of GHGs (expressed as CO_2e) per year to report their emissions to Environment and Climate Change Canada (ECCC). The federal GHG Reporting Program collects information on GHG emissions annually from facilities across Canada to inform decision makers on Canada's overall emission levels.

The federal government has established *Regulations Limiting Carbon Dioxide Emissions from Natural Gas-fired Generation of Electricity* (SOR/2018-261; GOC 2018). Under these regulations, natural gas-fired electricity generation units have emission intensity compliance limits. The prescribed emission intensities are expressed in tonnes of CO_2 per gigawatt-hour (GWh) of electricity produced.

The federal Clean Electricity Regulations (CER) were developed and released in December 2024. The CER has statutory authority under CEPA and aim to transition the Canadian electricity sector to net-zero as an enabler for broader decarbonization of the economy. The CER limits carbon emissions produced by electricity generated using fossil fuel and ultimately eliminate emitting sources of supply connected to public electricity grids in Canada.

During the transition to net zero by 2050, natural gas-fired electricity generation projects are able to support the transition in the short term by meeting the electricity demand as a result of population growth in urban areas as renewable energy projects are developed.

23.1.2 Provincial Regulations

O. Reg. 390/18 – Greenhouse Gas Emissions: Quantification, Reporting and Verification has statutory authority under Ontario's Environmental Protection Act, 1990. Ontario facilities that emit >10,000 tonnes of CO_2e per year are subject to the GHG emission reporting requirements of the regulation.

As of January 2022, industrial facilities in Ontario that emit >50,000 tonnes of CO_2e per year are a designated "Industry" in Schedule 2 of the Regulation. These industrial facilities are subject to the requirements of O. Reg. 241/19 – Emissions Performance Standards, with statutory authority under the Ontario Environmental Protection Act, 1990.

The Emissions Performance Standards Program is intended to determine GHG emissions limits as defined in Schedule 2 of O. Reg. 241/19, that the facilities must meet annually. The standards become stricter every year and require emitters to either reduce their emissions or pay for exceeding the limits. Facilities that emit between 10,000 and 50,000 tonnes of CO_2e per year may opt into the program.

If the facility operates and exceeds the 10,000 tonnes of CO_2e per year threshold identified in Ontario's EPA and the CEPA, the facility is required to report emissions. Additionally, since the Riverside Generating Station would be an electricity generation facility, it is a designated facility under Schedule 2 under O.Reg. 241/19 under the EPA and is required to report GHG emissions under the Provincial requirements, including the Emissions Performance Standards Program.

The Province of Ontario's Guideline A-5 Atmospheric Emissions from Stationary Combustion Turbines (2021) is a policy document intended to control emissions of NO_X. The Guideline sets emission limits for stationary combustion turbines, such as a natural gas generating facility. As per the Guideline, facilities that do not provide baseload capacity to the electricity grid are those that operate less than 1,500 hours per year.

23.2 Methods

The methods used to quantify GHG emissions (CO_2e) for the Project include O.Reg. 390/18 - Greenhouse Gas Emissions - Quantification, Reporting and Verification (MECP, 2024); and Canada's Greenhouse Gas Quantification Requirements (ECCC, 2023). These quantification methodologies used for the Project align with the GHG Protocol developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WRI 2015) and ISO-14064-1 and 14064-2.

Sources to include in the initial GHG estimate are based on the requirements of SACC (2020), which states that net GHG emissions must be estimated using the following:

$$Net\ GHG = Direct\ GHG\ Emission + Acquired\ GHG\ Emissions - CO2\ Captured\ \&\ Store - Avoided\ Domestic\ GHG\ Emissions - Offset\ Credits$$

The initial estimate for this Project only includes direct emissions as no other components have been identified at this time.

23.2.1 Assessment Boundaries

The GHG assessment quantified direct emissions of GHG from the Project, using the methods described above. The assessment of GHG emissions considered the Project's direct GHG emissions from sources that are owned or controlled by Atura Power and within the Riverside Generating Station Property for the operational phase of the Project.

For the purpose of the assessment, direct emissions are referenced to as Scope 1 (direct) emissions (WRI 2015). Direct GHG Scope 1 emissions were selected as the appropriate comparative within the context of the projected Ontario GHG emissions for the Electricity Sector, and regulatory reporting requirements.

Scope 2 (indirect) have not been included as acquired energy (electricity) has not been identified as a possible emission source.

Scope 3 (value chain) emissions have not been included in this assessment as they are not required under Provincial or Federal reportable GHG emissions regulations and are not required under SACC net GHG emissions definition. No carbon sinks have been identified as being modified/affected in relation to this Project. No GHG removals have been identified for this assessment.

All GHG emissions originate from the Project, therefore, the spatial boundary for GHG quantification aligns with the extents of the property (Figure 1-1). To assess the net GHG emissions, the Ontario electricity sector GHG emissions were used to compare against the Project GHG (CO_2e) emissions.

23.2.2 Selected Parameters

A 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).

The GHG assessment considered all GHGs tracked through the Canadian National Inventory Report (NIR 2025), including:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)
- Sulphur hexafluoride (SF_6)
- Nitrogen trifluoride (NF_3)

CO_2, CH_4, and N_2O were parameters selected for inclusion in this assessment. The remaining gases listed above have been excluded as they will not be emitted during operation of the Project.

Final reported emissions were converted into CO_2e by multiplying each GHG by their global warming potentials (GWP) from the 2023 provincial and federal reporting guidance (ECCC 2023; MECP 2024). The GWP for each GHG used in this assessment are summarized in Table 23-1.

Table 23-1: Global Warming Potential Multiplier Used

GHG	GWP	GHG
CO2	1	CO2
CH4	28	CH4
N2O	265	N2O

23.2.3 Emission Sources

A single natural gas-fired turbine generator operating in simple cycle mode is the major significant source of GHG emissions associated with the proposed Riverside Generating Station. However minor sources including the dewpoint heater (natural gas), emergency generator and fire pump (both diesel) have been included in the calculation for completeness of the initial GHG estimate. The Project does have Heating, Ventilation, and Air Conditioning (HVAC) systems; however, these sources are not directly related to the process, are intermittent, and not significant in terms of GHG emissions. As such, these sources have been excluded from the assessment. The GHG emissions assessment considered the Riverside's direct GHG emissions from sources that are owned or controlled by Atura Power and within the property. No carbon sinks have been identified as being modified/affected in relation to this Project which fall under Atura Power's control. As per the GHG Protocol, direct emissions are also commonly referenced as Scope 1 emissions (WRI, 2015). No GHG removals have been identified for this assessment.

23.2.4 GHG Emissions Data Sources and Calculations

Estimates of GHG emissions resulting from the Project (when in operation) were prepared based on information provided by Atura Power and calculated based on the number and type of equipment, fuel consumption, and gas composition.

23.2.5 Assumptions and Limitations

Assumptions for the projected GHG emissions from the Project include:

- Calculations for the gas-fired turbine generator are based on 1,500 operating hours per year.
- Calculations of natural gas combustion were conservatively based on the Lower Heating Value (LHV) of approximately 35.07 megajoules per cubic meter (MJ/m^3) instead of the Higher Heating Value (HHV) of approximately 38.9 MJ/m^3.
- The emissions from the turbine are based on the running at 100% load for all 1,500 hours assumed and operating during wintertime conditions.

The emissions from the emergency generator and fire pump are conservatively based on 500 hours per year to represent maintenance testing and emergency usage.

23.3 Results

23.3.1 Project Net GHG Emissions

As the number of operating hours will vary year to year depending on IESO needs, the initial GHG estimates are based on a maximum number of operating hours of 1,500 per year as per the Province of Ontario's Guideline A-5. Using these conservative assumptions, the estimated annual GHG emissions would be a maximum of 345,000 tonnes of CO_2e, from the turbine, dewpoint heater, emergency generator and firepump.

However, it is expected that the facility will operate several times below the maximum emissions levels noted above, consistent with other facilities within the province that operate less frequently[1].

For information on GHG emissions during the construction and decommissioning phases, see Section 24.1 and 24.3.

23.3.2 Uncertainty

The primary uncertainty in this assessment relates to the estimated GHG emissions based on the IESO projections. The GHG emissions estimated for this assessment are based on 1,500 operating hours; however, future demands are dependent on local and regional constraints of the provincial electricity grid. These constraints may include, but are not limited to, changes in electricity sources, climate changes, and population changes. Future demand is forecasted based on IESO's understanding of the potential needs for electricity, therefore, the actual needs are unknown. As such the initial GHG estimates are based on maximum allowed operating timeframes.

24. Waste and Emissions

24.1 Construction Phase

The Project will generate typical construction emissions, discharges, and wastes throughout the construction phase. A list of the types of wastes and emissions that are likely to be generated in the air (atmospheric emissions), in or on water (liquid discharges), and in or on land (solid wastes) are identified in Table 24-1.

Table 24-1: Types of Wastes and Emissions likely to be Generated during the Construction Phase

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
Atmospheric Emissions	Air emissions	• Engine exhaust from machinery and equipment • Construction traffic	• The CEMP will outline industry standard best management practices to be implemented.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.1)

[1] *The York Energy Centre generated approximately 24,000 tonnes of CO2e in 2023. Over the past five years, the York Energy Centre has been dispatched by the IESO an average of 146 hours annually, with an average run time of just under 3 hours per dispatch request (SLR Consulting (Canada) Ltd. 2024).*

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
	GHG	• Combustion of diesel fuel in machinery and equipment • Construction traffic	• The CEMP will outline industry standard best management practices to be implemented.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.2)
	Fugitive dust	• Civil earthworks • Loading, unloading, and transfer of materials • Wind erosion of storage stockpiles	• The CEMP will outline industry standard best management practices to be implemented.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.3)
	Noise	• Machinery and equipment operation • Delivery and movement of components and materials • Construction traffic	• The CEMP will outline industry standard best management practices to be implemented.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.4)
	Light	• Temporary site illumination for safety purposes	• The CEMP will outline industry standard best management practices to be implemented.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criteria 4.6, 6.1, 7.2)
Liquid Discharges	Stormwater runoff	• Stormwater runoff from work areas.	• The temporary SWM system will be designed to include collection and containment, treatment, discharge of runoff from the project site • The SWM Plan, including temporary works, is subject to review and approval by the MECP and Municipality. • The CEMP will outline permit requirements, and industry standard best management practices to be implemented.	Section 9.5.2.2 – Early Works Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 1.1)

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
	Dewatering	• Excavation dewatering, if required, will generate discharge of groundwater and/or runoff • Quantities of discharge are anticipated to be less than 50,000 L/day	• If pumping more than 50,000 L/day and discharge includes groundwater, an Environmental Activity and Sector Registry will be completed as per O. Reg. 63/16. • The CEMP will include a dewatering management plan that specifies treatment and discharge protocols and includes industry standard best management practices to be implemented.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 1.2)
	Domestic Sewage	• Sanitary services will be provided by portable toilets and wash stations	• A licensed contractor will be retained to provide sanitary servicing, including removal and disposal at an approved off-site facility.	Section 9.3 – Temporary Construction Components
Solid Wastes	Domestic solid waste and hazardous waste	• Typical construction waste, such as packing materials, office wastes, scrap lumber, excess concrete, metals, cables, glass, cardboard containers, and other miscellaneous debris. • Hazardous materials that may require disposal are expected to be limited to fuels and lubricants that will be on-site for use in equipment.	• A licensed waste contractor(s) will be retained for the hauling of waste to the appropriate facility in accordance with all applicable regulatory requirements.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 9.1)

24.2 Operation and Maintenance Phase

The Project will generate discharges and wastes throughout the operations and maintenance phase. The key emissions of interest from the operation of a natural gas-fuelled power generation facility are greenhouse gas emissions (previously discussed in Section 23), air emissions (Section 24.2.1), and noise emissions (Section 24.2.2).

A list of all types of operational wastes and emissions that are likely to be generated in the air (atmospheric emissions), in or on water (liquid discharges), and in or on land (solid wastes) are presented in Section 24.2.3.

24.2.1 Air Emissions

The proposed emission sources for the Project include the gas turbine stack, dewpoint heater, emergency fire pump, and emergency diesel genset. Emissions from the gas turbine stack with the dewpoint heater were assessed under two worst-case scenarios for the gas turbine:

- Case 1: assumes the minimum ambient temperature of -35 °C, operating at 100% or full load (see Appendix C, Table 2-4 for modelled emission source parameters).
- Case 2: assumes the winter average ambient temperature of -1.2 °C, also operating at 100% or full load (see Appendix C, Table 2-5 for modelled emission source parameters).

For each case, four operating scenarios were evaluated: startup, normal operation, shutdown, and emergency as follows:

- Startup and Shutdown: Only the gas turbine stack emissions were considered.
- Normal Operation: Emissions from both the gas turbine stack and the dewpoint heater were included.
- Emergency Scenario: Emissions from the emergency fire pump and emergency diesel genset were assessed as to be operating simultaneously, more specifically, tested at the same time.
- Startup, normal, and shutdown operation scenario durations were considered as 23.0, 28.1, and 8.9 minutes, respectively.

Pollutants considered include NO_X and CO for all four operating scenarios, and $PM_{2.5}$ for the normal operation scenario, only.

The generators that are proposed for the site are anticipated to meet the conditions of the Environmental Protection Act, under the Environmental Compliance Approvals - Exemptions from Section 9 of the Act, Ontario Regulation 524/98, allowing these units to be to be exempted from the compliance testing for the pending update to the ECA for the site. However, as a matter of completeness, an assessment has been completed as part of the environmental impact assessment to evaluate the emergency generators when being tested. In order to complete this assessment, the “Emergency Generator Checklist – Supplement to Application for Approval, EPA s.9” technical guidance was considered for guidance.

For natural gas combustion, it is assumed that the emission rates of PM_{10} from the stack (as provided by Atura) are equivalent to those of $PM_{2.5}$. In the $PM_{2.5}$ dispersion modeling, air quality objectives were evaluated based on 24-hour and annual average concentrations which were derived from extended normal operating conditions.

The source parameters for each emission source, including the gas turbine stack, dewpoint heater, emergency fire pump, and emergency diesel genset, under startup, normal, and shutdown scenarios are summarized in Appendix C.

24.2.1.1 Normal Operating Conditions

All predicted concentrations of NO_x and CO outside the Project fenceline (Figure 9-1) meet their respective O. Reg. 419/05 requirements.

The maximum total predicted NOx concentrations for both case 1 and 2 for the 1-hour and 24-hour averages were 27.6 micrograms per cubic metre (µg/m³) at grid receptors, and 15.9 µg/m³ at sensitive receptors. All of these values are below 11% of the O. Reg. 419/05 objectives and show no exceedances at any point.

The maximum total predicted CO concentrations for both case 1 and 2 for the 1/2-hour averages were 33.5 µg/m³ at grid receptors, and 4.7 µg/m³ at sensitive receptors. All of these values are below 1% of the O. Reg. 419/05 objectives and show no exceedances at any point.

24.2.1.2 Startup and Shutdown Conditions

All predicted concentrations of NO_x and CO outside the Project fenceline (Figure 9-1) meet their respective Provincial Ambient Air Quality Criteria (AAQC).

The maximum total predicted 1-hour NO_x concentrations for startup and shutdown scenarios for both case 1 and 2 were 135.8 µg/m³ at grid receptors, and 83.2 µg/m³ at sensitive receptors. All of these values are below 34% of the AAQC objectives and show no exceedances at any point.

The maximum total predicted 1/2-hour CO concentrations for startup and shutdown scenarios for both case 1 and 2 were 2977.3 µg/m³ at grid receptors, and 1821.3 µg/m³ at sensitive receptors. All of these values are below 50% of the O. Reg. 419/05 objectives and show no exceedances at any point.

24.2.1.3 Emergency Conditions

The maximum predicted concentrations of 1-hour NO_X predicted for the emergency scenario including the testing of both the emergency fire pump and the emergency generator simultaneously, was 102.1 µg/m³ at sensitive receptors or 26% of the 400 µg/m³ standard.

24.2.1.4 Cumulative Impacts

In addition to meeting the applicable provincial regulatory compliance limits that will be required for MECP approval, a combined effects analysis was conducted to consider the existing ambient air quality conditions in the local region. Predicted results from dispersion modelling were added with the local, historical, ambient air quality data and are presented in Appendix C. The criteria used to evaluate the results of the dispersion modelling in the context of the regional air quality regime were the AAQC and Federal Canadian Ambient Air Quality Standards (CAAQS).

Normal Operating Conditions

All predicted concentrations of NO_x, CO, and $PM_{2.5}$ meet the respective AAQC and CAAQS at all selected sensitive receptors.

The maximum total predicted NOx concentrations for both case 1 and 2 for the 1-hour and 24-hour averages was 48.6 µg/m³ at sensitive receptors. All of these values are below 15% of the AAQC objectives and show no exceedances.

For the normal operation scenario, the NO2 results were compared to the CAAQS. The maximum total predicted NO2 concentrations for both case 1 and 2 for the 1-hour and annual averages were 35.3 µg/m³ and 8.9 µg/m³ at sensitive receptors. All of these values are below 45% of the CAAQS objectives and show no exceedances.

The maximum total predicted CO concentrations for both case 1 and 2 for the 1-hour and 8-hour averages were 389.2 µg/m³ and 373.1 µg/m³ at sensitive receptors. All of these values are below 3% of the AAQC objectives and show no exceedances at any point within the domain.

The maximum total predicted PM2.5 concentrations, including background concentrations, for both case 1 and 2 for the 24-hour and annual averages were 14.2 µg/m³ at sensitive receptors. Predicted concentrations of PM2.5 are dominated by the existing background concentrations, with the proposed facility contributing less than 1% of the maximum concentration. All of these values are approximately below 67% of the AAQC and CAAQS objectives and shows no exceedances.

24.2.2 Noise Emissions

24.2.2.1 Noise Source Summary

Sources considered in the assessment of predictable worst-case operational noise, associated with the key equipment components, are summarized in Table 24-2. Table 24-2 also presents the modelled overall sound power level of the sources.

Table 24-2: Noise Source Summary Table

Noise Source	Modelled Total Sound Power Level (dBA)
Operational Noise	
4 Stage Cooler	106
Air Cooled Heat Exchanger	104
Auxiliary Transformer	90
Cooling Water Pump	98
2 Stage Cooling Tower	100
Demineralized Water Pump	98
Dew Point Heater	97
Dew Point Stack	98
Enhanced Cooling Air Compressor	102

Noise Source	Modelled Total Sound Power Level (dBA)
Enhanced Cooling Air Cooler	101
Fuel Gas Compressor Cooler	92
Fuel Gas Compressors Enclosure	93
Fuel Gas Valve	98
Generator	109
Generator Step-Up Transformer	96
Gas Turbine Auxiliary Package	103
Gas Turbine Casing Cooling Fan 1	96
Gas Turbine Casing Cooling Fan 2	96
Gas Turbine Enclosure	115
Gas Turbine Enclosure Air Discharge 1	105
Gas Turbine Enclosure Air Discharge 2	105
Gas Turbine Enclosure Air Inlet 1	104
Gas Turbine Enclosure Air Inlet 2	104
Gas Turbine Exhaust Stack	107
Gas Turbine Inlet and Filter Housing	105
Gas Turbine Cooling Air Cooler	104
GT Inlet Downstream Ducts/Elbows	114
Lube Oil Mist Separator	105
Transition to GT Exhaust Stack	114
Emergency Sources	
Emergency Generator	100
Diesel Fire Water Pump	105

A combination of manufacturers' data, engineering calculations, and equipment specifications was used to establish source sound levels for noise sources associated with Project operations. For the emergency generator, a specific of 75 dBA at 7 m was considered, and for the diesel fire pump, historical data for a similar source was considered.

As part of the preliminary Project design, some sources outlined in Table 24-2 include inherent acoustical mitigation, including (but not limited to) the following:

- Selection of "low noise" equipment option upgrades from the manufacturer for sources such as the Gas Turbine Air Inlet Filter Housing (and immediate downstream ducting components), Gas Turbine Exhaust Stack (and associated components), Gas Turbine Auxiliary Package, Gas Turbine Cooling Air Cooler, Enhanced Cooling Air Cooler, Enhanced Cooling Air Compressor, Dew Point Heater, Fuel Gas Compressor Cooler, and Air Cooled Heat Exchanger.
- Implementation of silencers (for the Gas Turbine Air Inlet) and baffles (for the Gas Turbine Exhaust Stack).

- Placing some equipment in sound enclosures, such as the Fuel Gas Compressors and the base of the Gas Turbine Exhaust Stack.

Furthermore, the Project design includes acoustic barriers. The acoustic barriers and their design details will be finalized as the design progresses but are described as follows:

- PT Acoustic Barrier – approximately 50 m long, 18.3 m high, absorptive on north (source) side.
- Air Cooled Heat Exchanger Barrier – approximately 40 m long, 11 m high, absorptive on north (source) side.
- Cooler Barrier – approximately 11 m long, 5.5 m high, absorptive on north (source) side.

All of the mitigation measures considered in the assessment are considered feasible from an economic, administrative and technical perspective. Specific mitigation options and measures will be confirmed during the detailed design phase of the Project.

24.2.2.2 Modelling Methods

The base model of the turbine package (containing sources/facilities geometries and sound levels) was prepared by the facility design team (or similar) and provided to SLR. This model was reviewed in detail by SLR in concert with the design team.

Sound levels from stationary sources were modelled using Cadna/A, a software implementation of the ISO-9613-2 (2024) environmental noise propagation algorithms. Cadna/A and its implementation of ISO-9613 is the preferred acoustic model of the MECP, and it considers sound propagation of octave band centre frequencies ranging from 31.5 Hz to 8,000 Hz.

Noise sources summarized in Table 24-2 were modelled as a combination of point sources, area sources, and vertical area sources, depending on their geometry. They were modelled assuming continuous operation during any daytime, evening or nighttime one-hour period, for comparison with applicable hourly guideline limits. Emergency sources were assumed to be operated (tested) simultaneously for a one-hour period during daytime hours only.

Potential upset conditions associated with the Project, such as facility start-up, shut-down and/or bypass operations, were not evaluated in the noise assessment.

- The following additional parameters were considered in the modelling, which are consistent with providing a conservative (predictable worst-case) assessment of sound levels:
- Temperature: 10°C;
- Relative Humidity: 70%;
- Ground Absorption G: G = 0.7 as the default global parameter, with localized areas of intervening reflective ground (G = 0.2) within the Project site. Water bodies were considered fully reflective (G = 0.0).

- Reflection: Two (2) orders of reflection were applied;
- Wall Absorption Coefficients: Set to 0.21 or 0.37 (21%/37% of energy is absorbed, 79%/63% reflected);
- Terrain: 1 m topographical contours were considered.

Sound levels were predicted at all receptors identified, at worst-case discrete locations. Sound level contours were calculated using Cadna/A for receptor heights of 1.5 m (representative of a 1-storey dwelling plane of window point of reception (POR) and outdoor PORs (OPORS)) and 4.5 m (representative of a 2-storey dwelling plane of window POR), which generally describe the PORs surrounding the Project. One vacant lot POR (VPOR) was also considered.

24.2.2.3 Noise Impact Assessment Results

Operational Noise

Predicted operational sound levels from the Project are summarized in 24-3.

The Project operational sound levels are predicted to meet applicable Class 2/Class 3 guidelines at the identified receptors during all periods of the day. The highest predicted sound levels are 44 dBA, compared to the 45 dBA nighttime sound level limit.

Table 24-3: Predicted Project Sound Levels at Surrounding Points of Reception – Operational Noise

POR ID	Predicted Sound Level (L_{eq}(1-hr), dBA)	Applicable Sound Level Limit (L_{eq}(1-hr), dBA)			Predicted Compliance with Applicable Limit (Y / N)		
		Day	Eve	Night	Day	Eve	Night
Plane of Window PORs							
POR001	44	50	50	45	Y	Y	Y
POR002	42	50	50	45	Y	Y	Y
POR003	41	50	50	45	Y	Y	Y
POR004	41	50	50	45	Y	Y	Y
POR005	43	50	50	45	Y	Y	Y
POR006	44	50	50	45	Y	Y	Y
POR007	44	50	50	45	Y	Y	Y
POR008	44	50	50	45	Y	Y	Y
POR009	44	50	50	45	Y	Y	Y
POR010	33	45	40	40	Y	Y	Y
VPOR001	36	45	40	40	Y	Y	Y
Outdoor PORs							
OPOR001	44	50	45	n/a[1]	Y	Y	n/a[1]
OPOR002	43	50	45	n/a[1]	Y	Y	n/a[1]

POR ID	Predicted Sound Level (L_{eq}(1-hr), dBA)	Applicable Sound Level Limit (L_{eq}(1-hr), dBA)			Predicted Compliance with Applicable Limit (Y / N)		
		Day	Eve	Night	Day	Eve	Night
OPOR003	42	50	45	n/a[1]	Y	Y	n/a[1]
OPOR004	41	50	45	n/a[1]	Y	Y	n/a[1]
OPOR005	44	50	45	n/a[1]	Y	Y	n/a[1]
OPOR006	44	50	45	n/a[1]	Y	Y	n/a[1]
OPOR007	43	50	45	n/a[1]	Y	Y	n/a[1]
OPOR008	43	50	45	n/a[1]	Y	Y	n/a[1]
OPOR009	41	50	45	n/a[1]	Y	Y	n/a[1]
OPOR010	33	45	40	n/a[1]	Y	Y	n/a[1]
Notes: [1] Sound level limits do not apply to outdoor PORs during nighttime hours.							

24.2.2.4 Emergency Equipment Testing

Predicted sound levels from routine testing of emergency equipment (emergency generator and diesel fire water pump) are summarized in Table 24-4. The predicted sound levels meet applicable Class 2/Class 3 guideline limits at all PORs.

Table 24-4: Predicted Project Sound Levels at Surrounding Points of Reception – Emergency Equipment Testing

POR ID	Predicted Sound Level (L_{eq}(1-hr), dBA)	Applicable Sound Level Limit (L_{eq}(1-hr), dBA), Daytime	Predicted Compliance with Applicable Limit (Y / N)
Plane of Window PORs			
POR001	38	55	Y
POR002	33	55	Y
POR003	33	55	Y
POR004	34	55	Y
POR005	32	55	Y
POR006	33	55	Y
POR007	32	55	Y
POR008	32	55	Y
POR009	32	55	Y
POR010	25	50	Y
VPOR001	27	50	Y
Outdoor PORs			
OPOR001	38	55	Y
OPOR002	36	55	Y
OPOR003	36	55	Y
OPOR004	35	55	Y
OPOR005	32	55	Y
OPOR006	32	55	Y
OPOR007	31	55	Y
OPOR008	31	55	Y

POR ID	Predicted Sound Level (L_{eq}(1-hr), dBA)	Applicable Sound Level Limit (L_{eq}(1-hr), dBA), Daytime	Predicted Compliance with Applicable Limit (Y / N)
OPOR009	30	55	Y
OPOR010	25	50	Y

The significant sources of noise associated with the Project were modelled based on a combination of manufacturers' data, engineering calculations, and equipment specifications. Sound levels from Project operations are predicted to meet applicable Class 2 and Class 3 minimum exclusionary limits at all surrounding PORs/OPORs/VPORs with appropriate Project design, equipment specifications, and inclusion of mitigation measures

24.2.3 Other Wastes and Emissions

Operational wastes and emissions that are likely to be generated in the air (atmospheric emissions), in or on water (liquid discharges), and in or on land (solid wastes) are presented in Table 24-5.

Table 24-5: Types of Wastes and Emissions likely to be Generated during the Operation and Maintenance Phase

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
Atmospheric Emissions	Air emissions	• CTG system operation	• Emissions during Project operations are predicted to meet the applicable air quality limits. A detailed air quality assessment will be undertaken, and is subject to review and approval by the MECP as part of the ECA process. • Site operational activities will adhere to site-specific operational standards and procedures.	Section 24.2.1 – Air Emissions Appendix C – AQ Appendix Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.1)
	GHG	• CTG system operation	• A detailed GHG assessment will be undertaken, and any required reporting will be completed during operations. • Site operational activities will adhere to site-specific	Section 23 – Estimate of Greenhouse Gas Emissions Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.2)

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
			operational standards and procedures.	
	Noise	• CTG system operation • Transformer and auxiliary equipment operation • Emergency Equipment (generator & diesel fire water pump)	• Emissions during Project operations are predicted to meet the applicable noise limits. A detailed noise assessment will be undertaken, and is subject to review and approval by the MECP as part of the ECA process. • Site operational activities will adhere to site-specific operational standards and procedures.	Section 24.2.2– Noise Emissions Appendix D – Noise Appendix Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 3.4)
	Light	• General site illumination • Maintenance and safety lighting • Stack lighting for personnel access • Additional stack aeronautical obstruction and warning lights if and as required by Transport Canada.	• Project lighting will be installed in conformance with applicable requirements, including safety requirements, and mitigation will be implemented where possible, including use of full cut off (night sky friendly) fixtures. • It is anticipated that an outdoor lighting photometric plan will be developed as part of detailed design and would be subject to review and approval by the municipality during the Site Plan Approval process.	Section 9.2.7 – Other Site Components Appendix E – Preliminary Screening of Potential Environmental Effects (Criteria 4.6, 6.1, 7.2)
Liquid Discharges	Stormwater runoff	• Stormwater runoff from the Project site	• Minor modifications to the existing SWM system. Final design will maintain the existing connection, with no change in discharge criteria or location. • The SWM Plan is subject to review and	Section 9.2.4.2 – Stormwater Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 1.1)

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
			approval by the MECP and Municipality.	
	Industrial Sewage	• Treated process water discharged from the oil/water separator (OWS), collected from all drains within the project that have potential to contain hydrocarbon petroleum products	• Discharge to the municipal sanitary sewer system through installation of a new pipeline connection, or • Collection and storage in the onsite discharge storage tank; removed for disposal by a licensed waste management service provider.	Section 9.2.4.3 – Industrial Sewage
		• Turbine wash water, drains and any potential oil leakage from the OWS	• Collection and storage in the CTG wash water drains tank; removed for disposal by a licensed waste management service provider.	Section 9.2.4.3 – Industrial Sewage
	Domestic Sewage	• Washroom and kitchen facilities for occupants of administration building, maintenance shops and warehouse.	• Discharge to the municipal sanitary sewer system through installation of a new pipeline connection, or • Collection and storage in a septic tank; removed for disposal by a licensed waste management service provider.	Section 9.2.4.4 – Domestic Sewage
Solid Wastes	Domestic solid waste and hazardous waste	• Domestic waste administration building and worker activities including typical office wastes and recyclables (e.g., paper, glass, cardboard containers). • Industrial garbage from maintenance activities including scrap lumber, excess concrete, metals, cables, and other miscellaneous debris.	• A licensed waste management service provider will be retained for the hauling of waste to the appropriate facility in accordance with all applicable regulatory requirements.	Appendix E – Preliminary Screening of Potential Environmental Effects (Criterion 9.1)

Category	Type	Source Description	Preliminary Management Approach	Additional Info Section Reference
		• Hazardous materials that may require disposal are primarily limited to fuels and lubricants that will be on-site for use in equipment.		

24.3 Decommissioning Phase

Generally, wastes and emissions during the decommissioning process are expected to be substantially less than that required for construction of the Project. However, the decommissioning plan developed at the end of the project lifecycle will include a waste management plan for refurbishment, recycling, or disposal of materials and components in accordance with regulatory standards at the time.

Part F: Summary

25. Summary

A plain-language summary of the information presented in parts A to E has been prepared in English and in French. The summary is available on the IAAC project registry.

26. References

Aleksa, M. (2022). Afforestation in southwestern Ontario: A historical and ecological analysis [Master's thesis, Lakehead University]. Lakehead University Knowledge Commons. https://knowledgecommons.lakeheadu.ca/jspui/bitstream/2453/4940/1/AleksaM2022b-1a.pdf

Boileau, J. (2022). Sombra Township Treaty (No.7). The Canadian Encyclopedia. Retrieved May 6, 2025, from https://www.thecanadianencyclopedia.ca/en/article/sombra-township-treaty-no-7

Chapman, L.J., & Putnam, D.F. (1984). The Physiography of Southern Ontario; Ontario Geological Survey, Special Volume 2, 270p. Accompanied by Map P.2715 (coloured), scale 1:600,000.

City of Sarnia. (2025). History of Sarnia. Retrieved May 20, 2025, from https://www.sarnia.ca/living-here/history-of-sarnia/.

Crown-Indigenous Relations and Northern Affairs Canada. (2024) About treaties. Government of Canada. https://www.rcaanc-cirnac.gc.ca/eng/1100100028574/1529354437231

Environment and Climate Change Canada (ECCC). (2023). Canada's greenhouse gas quantification requirements. https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/facility-reporting/reporting/quantification-requirements.html

ECCC. (2020). Strategic Assessment of Climate Change. Environment and Climate Change Canada. October 6, 2020.

Fisheries and Oceans Canada. (2025, February 3). Aquatic species at risk map. Government of Canada. Retrieved August 14, 2025, from https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

Gao, C., Shirota, J., Kelly, R.I., Brunton, F.R., & van Haaften, S. (2006). Bedrock topography and overburden thickness mapping, southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 207.

Government of Canada (GOC). 1991. Agreement between the Government of Canada and the Government of the United States of America on Air Quality. https://www.canada.ca/en/environment-climate-change/services/air-pollution/issues/transboundary/canada-united-states-air-quality-agreement.html.

GOC. (1999). Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33). https://laws-lois.justice.gc.ca/eng/acts/c-15.31/

GOC. (2020). Strategic assessment of climate change. https://www.strategicassessmentclimatechange.ca/.

Government of Ontario. (n.d.-a). Map of Ontario treaties and reserves. Ontario.ca. https://www.ontario.ca/page/map-ontario-treaties-and-reserves

Government of Ontario. (n.d.-b). The ecosystems of Ontario – Part 1: Ecozones and ecoregions. https://www.ontario.ca/page/ecosystems-ontario-part-1-ecozones-and-ecoregions

Hewitt, D.F. (1972). Paleozoic geology of southern Ontario. Ontario Division of Mines, Geological Report 105.

Independent Electricity System Operator (IESO). (n.d.). Ontario energy map. https://www.ieso.ca/localContent/ontarioenergymap/index.html

IESO. (2025). Annual Planning Outlook, Ontario's electricity system needs: 2026-2050. Independent Electricity System Operator. April 2025.

IESO. (2024). Annual Planning Outlook, Ontario's electricity system needs: 2025-2050. Independent Electricity System Operator. March 2024.

IESO. (2023). Evaluating Procurement Options for Supply Adequacy: A Resource Adequacy Update to the Minister of Energy. Independent Electricity System Operator. December 11, 2023.

IESO. (2022a). Resource Eligibility Interim Report. Independent Electricity System Operator. October 7, 2022.

IESO. (2022b). Pathways to Decarbonization: A report to the Minister of Energy to evaluate a moratorium on new natural gas generation in Ontario and to develop a pathway to zero emissions in the electricity sector. Independent Electricity System Operator. December 15, 2022.

IESO. (2021). Six things to know about the IESO's study on phasing out gas-fired generation by 2030. IESO. https://www.ieso.ca/Powering-Tomorrow/2021/Six-things-to-know-about-the-IESOs-study-on-phasing-out-gas-fired-generation-by-2030

Intergovernmental Panel on Climate Change. (2021). Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (V. Masson-Delmotte, P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, et al., Eds.). Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/

Lambton County. (2025). Health services. https://www.lambtononline.ca/en/resident-services/health-services.aspx

Lambton County Archives. (n.d.). From forest to field: Early years. Lambton County Museums. Retrieved June 6, 2025, from https://www.lambtonmuseums.ca/en/lambton-county-archives/from-forest-to-field-early-years.aspx

Lambton Public Health. (2025). About us. https://lambtonpublichealth.ca/about/

Ministry of Energy and Electrification (MOEE). (2024). "Ontario Expands Largest Competitive Energy Procurement in Province's History". News Release. Ministry of Energy and Electrification. December 11, 2024.

Ministry of the Environment, Conservation and Parks (MECP). (2018). O. Reg. 390/18: Greenhouse gas emissions: Quantification, reporting and verification. https://www.ontario.ca/laws/regulation/r18390

MECP. (2019). O. Reg. 241/19: Greenhouse gas emissions performance standards. https://www.ontario.ca/laws/regulation/r19241

MECP. (2024). Guideline for quantification, reporting and verification of greenhouse gas emissions – March 2024. https://www.ontario.ca/page/report-greenhouse-gas-ghg-emissions

MECP. (2021). Guideline A-5: Atmospheric emissions from stationary combustion turbines. Government of Ontario. https://www.ontario.ca/page/guideline-5-atmospheric-emissions-stationary-combustion-turbines

MECP. (2024). Sarnia Area Environmental Health Project (SAEHP): Community report. Clean Air Sarnia and Area. https://www.cleanairsarniaandarea.com/resources/documents/saehp/SAEHP-Community-Report.pdf

Ontario Geological Survey (OGS) (1991). Bedrock geology of Ontario, southern sheet; Ontario Geological Survey, Map 2544, scale 1:1,000,000.

OGS (2010). Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.

OGS (2011). 1:250,000 scale bedrock geology of Ontario (Miscellaneous Release—Data 126, Revision 1). Ontario Ministry of Energy, Northern Development and Mines.

Ontario Ministry of Natural Resources and Forestry. (2015) Fish ON Line [Mobile fishing tool]. Ontario Data Catalogue. Retrieved August 14, 2025, from https://www.ontario.ca/fishonline

Ontario Ministry of Natural Resources and Forestry. (2024, November 20). Make a natural heritage area map [Web application]. Government of Ontario. Retrieved August 14, 2025, from https://www.ontario.ca/page/make-natural-heritage-area-map

Sarnia Historical Society. (n.d.). History of the chemical industry in Lambton County. https://sarniahistoricalsociety.com/story/history-of-the-chemical-industry-in-lambton-county/

Sarnia-Lambton Economic Partnership. (2025). Lambton County data and reports. https://www.sarnialambton.on.ca/data-and-reports/lambton-county

SLR Consulting (Canada) Ltd. (2024). Environmental review report: York Energy Centre Upgrades Project (Report No. 241.030524.00026). Capital Power Corporation. https://www.capitalpower.com/wp-content/uploads/2024/07/Capital-Power-York-Energy-Centre-Upgrades-project-environmental-review-report-main-report-2024.pdf

Statistics Canada. (2021). Gender and gender diversity reference guide, Census of Population, 2021. https://www12.statcan.gc.ca/census-recensement/2021/ref/gender-genre-eng.cfm

Statistics Canada. 2023a. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 6, 2025).

Statistics Canada. 2023b. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 20, 2025).

Statistics Canada. (2025). Table 98-10-0592-01: Class of worker by industry groups, labour force status, age and gender: Canada, provinces and territories and census divisions. Retrieved May 20, 2025, from https://doi.org/10.25318/9810059201-eng

St. Clair Region Conservation Authority. (2023, June). Hunting map and property descriptions [PDF]. https://www.scrca.on.ca/wp-content/uploads/2023/06/Hunting-Map-and-Property-Descriptions.pdf

St. Clair Township. (2024a). Comprehensive zoning by-law (By-law 17 of 2003, Office Consolidation January 2024). County of Lambton Planning and Development Department. https://www.stclairtownship.ca/wp-content/uploads/St.-Clair-Zoning-By-law-4.pdf

St. Clair Township. (2024b). St. Clair Official Plan. Lambton County Planning & Development Department. https://www.stclairtownship.ca/wp-content/uploads/St-Clair-Official-Plan-November-18-2024.pdf

Upper Thames River Conservation Authority (UTRCA). (2008). Thames-Sydenham and Region Watershed Characterization Report: Volume 1. www.sourcewaterprotection.on.ca.

Vypovska, A. 2025. Impact Assessment Agency of Canada. E-mail correspondence. April 30, 2025.

World Resources Institute. (2015). The greenhouse gas protocol: A corporate accounting and reporting standard (Revised ed.). https://ghgprotocol.org/sites/default/files/standards/ghg_project_accounting.pdf

Appendix A

Municipal Engagement Records

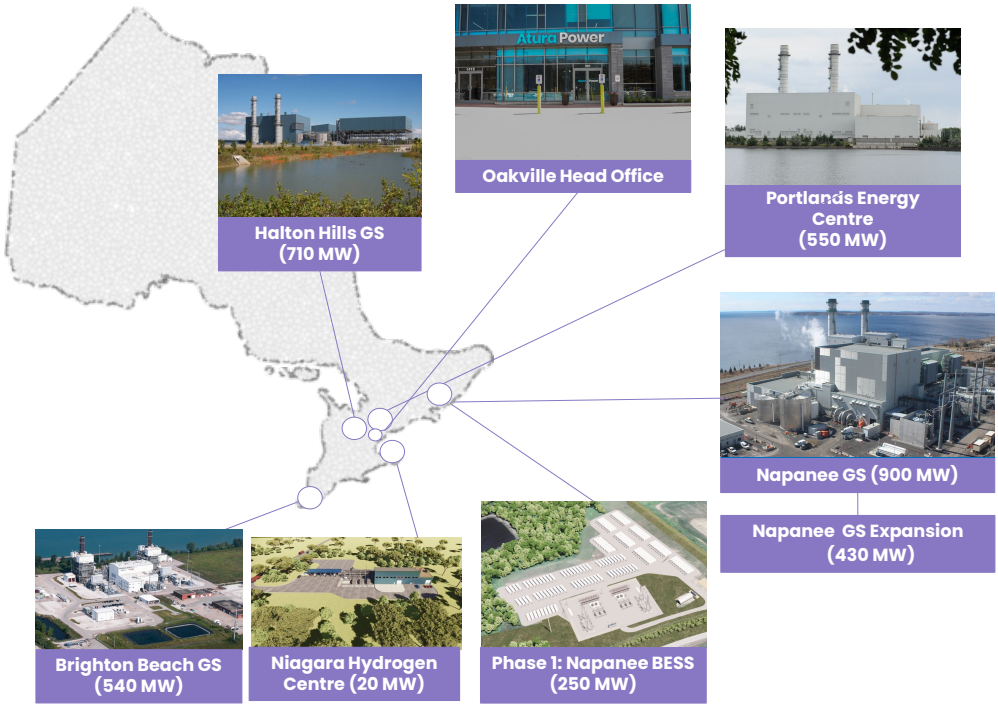
Atura Power


Atura Power
Lambton Site Redevelopment: Exploring New Gas
St. Clair Township Council
May 20, 2025

Who We Are

Atura Power plays a key role in Ontario's electricity system by generating safe and reliable electricity.

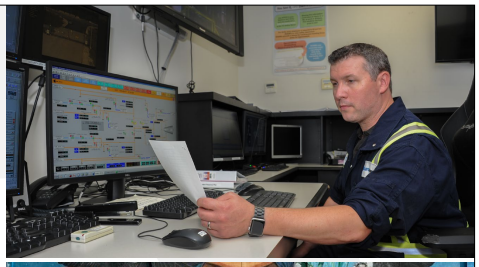
- A subsidiary of Ontario Power Generation
- Operates the largest fleet of combined-cycle gas turbine generating stations
- Strategic investments in new gas and new, non-emitting energy technologies including battery energy storage and hydrogen



2

Who We Are

- **2,700+ MW** of electricity generation capacity
- **200+ employees** across four stations and head office
- **Ontario-first spending** supporting local economies
- **Revenues** re-invested in Ontario (~$400M/year)
- **Property taxes** paid to local municipalities
- **Committed to** Indigenous engagement and collaboration
- **Support community** organizations and charities (~$200K/year)



3

Electricity Demand on the Rise

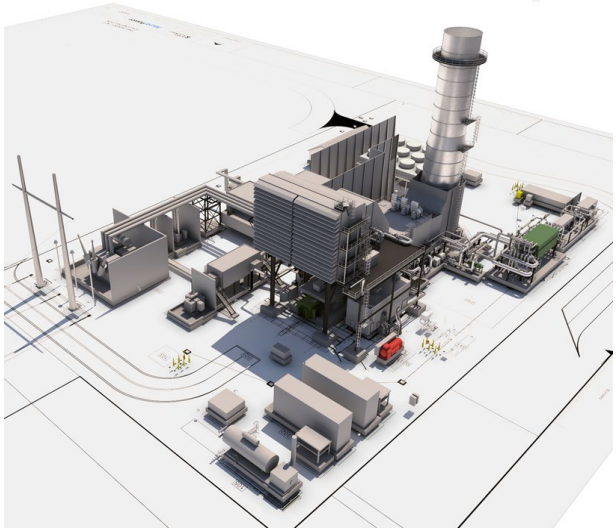
- Ontario's electricity demand to increase 75% by 2050
- Atura Power exploring new natural gas generating station ('Riverside GS') under IESO Long-Term 2 Procurement initiative
- Natural gas generation is critical to the provincial mix:
  - Supports grid reliability
  - Offers a reliable source of power
  - Enables more renewables longer term
  - Quickly adjusts to changing demand
  - Produces electricity when needed
- Municipal Support Resolution (MSR): A requirement of IESO procurements to ensure community support before proceeding

The ~1,200 acre Lambton site is zoned for generation and presents opportunity for new generation development.

4

Proposed Project: Riverside Generating Station

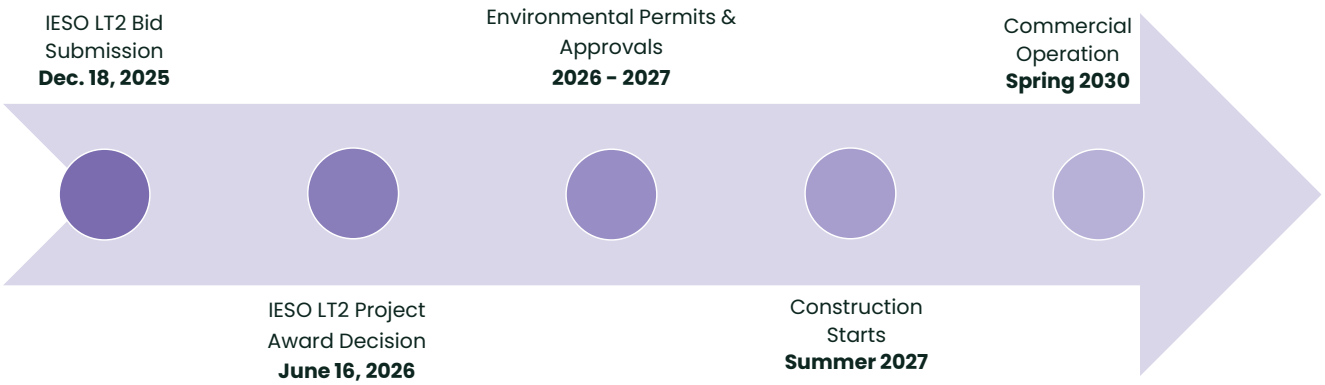
- Targeting up to 500 MW of generating capacity
- 20-year contract offered by IESO
- Advantages include:
  - ✓ Access to high voltage transmission
  - ✓ Access to reliable & low-cost natural gas
  - ✓ Access to railway and deepwater dock
  - ✓ Potential to co-locate other technologies on-site, longer term
  - ✓ Reduced environmental impacts due to brownfield site condition
  - ✓ Strong local workforce and capabilities



Conceptual design of a ~500 MW simple cycle gas turbine facility

5

Proposed Timeline



Community and Indigenous engagement will continue throughout the entirety of the LT2 process and beyond.

6

Atura Power

Early Field & Technical Work

Initial ecological field studies

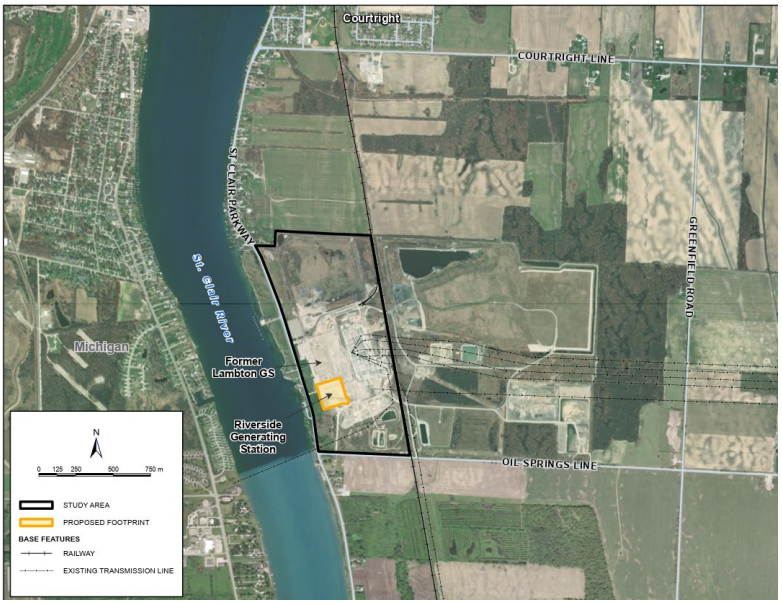
- Baseline data collection through Spring and Summer 2025

Archaeology / cultural heritage

- Completing archaeological assessment and cultural heritage screening in spring 2025

Preliminary engineering

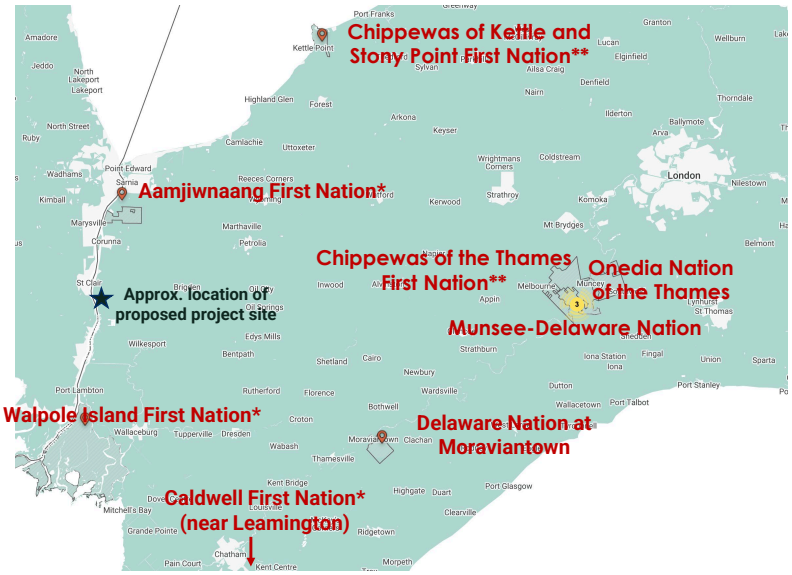
- Working with municipality to understand site plan considerations (traffic, water, waste, etc.)
- Tie-in connection to Hydro One switching station



Indigenous Relations

Committed to ongoing engagement with Indigenous communities:

- Aamjiwnaang First Nation
- Walpole Island First Nation
- Caldwell First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Delaware Nation Council
- Métis Nation of Ontario
- Munsee-Delaware Nation
- Oneida Nation of the Thames



Near-Term Engagement Activities

Milestone	Timing	Details
Council motion tabled to explore Lambton redevelopment	March 17	Motion passed unanimously
Project webpage launched *www.aturapower.com/riverside*	May 16	Publicly available information, updates and resources
Council presentation #1	May 20	• Share early information • Get to know project team • Understand community priorities
Public information session *St. Clair Parkway Golf Course - Cedar Lounge*	Thursday, June 19 3 – 7 p.m.	
Council presentation #2	TBD	
MSR issued	September	IESO LT2 requirement
IESO LT2 bid submission	Dec. 18, 2025	
IESO LT2 project award decision	June 16, 2026	
If a contract is awarded, public and Indigenous engagement will continue throughout the LT2 process and beyond.		

Contact Us

Chris Penny
Sr. Manager, Business Development, New Gas
(905) 749-6441
Christopher.penny@aturapower.com

Risa MacDonald
Sr. Manager, Stakeholder Relations – Corporate Affairs
(905) 843-7680
Risa.macdonald@aturapower.com

Appendix B

Public Engagement Records

Atura Power

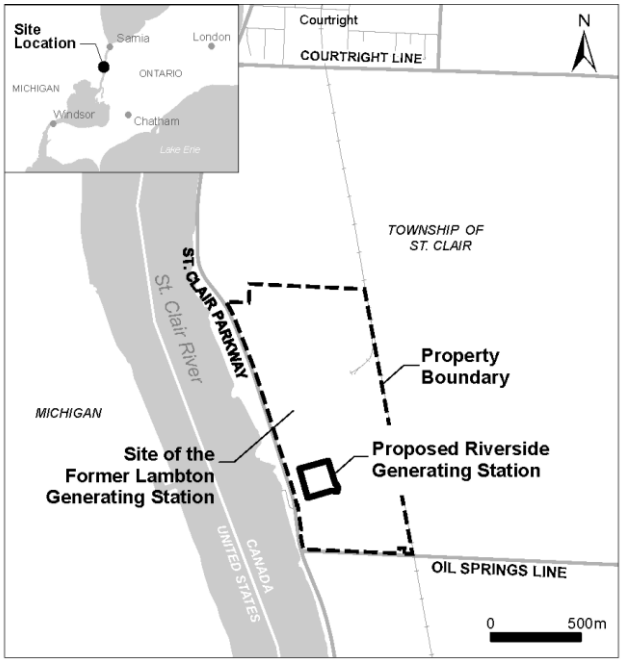
Invitation to a Public Meeting

Riverside Generating Station

Atura Power

To prepare for future electricity demands and support a reliable grid for Ontarians, the Independent Electricity System Operator (IESO) has initiated a Long-Term Request for Proposals (LT2 RFP) to secure new electricity resources that could be in service into the 2030s and beyond.

Atura Power, a subsidiary of Ontario Power Generation (OPG), intends to submit a proposal as part of the LT2 RFP to develop a new natural gas-fueled generating facility in Lambton County, Ont. The site for the proposed Riverside Generating Station is located on the lands of the former OPG-owned and operated Lambton Generating Station along the St. Clair Parkway, between Courtright Line and Oil Springs Line in St. Clair Township.



Project Description

The proposed Riverside Generating Station will be able to supply Ontario's grid with up to 500 megawatts (MW) of electricity using efficient gas turbine technology. The proposed Riverside Generating Station will help address Ontario's growing demand for electricity and provide a reliable source of power when it is needed most.

Upcoming Public Meeting

We invite you to attend a public meeting to learn more about this proposed project. If you are unable to participate, meeting materials will be posted on the project webpage following the meeting.

Public Meeting Details

Date:	Thursday, June 19, 2025
Location:	St. Clair Parkway Golf Course, Cedar Lounge 132 Moore Line, Mooretown, Ont. N0N 1M0
Time:	3:00 to 7:00 p.m. EDT
Project Webpage:	www.aturapower.com/riverside

Project Contact

For project questions or accommodation needs, please email the project team at riverside@aturapower.com

Comments and information regarding this project are being collected in accordance with the *Freedom of Information and Protection of Privacy Act*.

$3.7M campaign for VPP elevators starts

Heather Wright
The Independent

Petrolia has launched a $3.7 million to build two new elevators and nine accessible washrooms onto the back of Victoria Hall.

In December 2023, council gave the greenlight to a project which will see two elevators build onto the back of the heritage building. Originally, the project was expected to cost $3.5 million.

The town has been looking at solutions for accessiblity since 2017. With a $5,000 grant from Heritage Canada, the design came together with the towers built outside the original shell of the building but not visible from Greenfield Street.

Laurissa Ellsworth, director of marketting, arts and communications, says Heritage Canada has given the greenlight to the project.

"We cannot build the tower, if you will, or the elevator enclosure any higher than the existing roof line. We do have permission, however, to fill in those back corners of the the Queen Anne revival design of the building," she said.

"If you looked at it from a bird's eye view, the building's effectively a rectangle with all four corners cut out. That is a significant feature of that Queen Anne Revival style of facility. As long as we don't go higher than the roof line, you can't see it from the front, they're okay with it."

Ellsworth says the renovations are important for both patrons entering Victoria Hall and the performers.

"One (elevator is for) patron dignity and safety, the second one is employee safety and an artist's ability to perform on our stage," she said.

"Right now, I can get you to the apron of the stage in front of it, but I can't get you up on the stage no matter what I do, unless I pick you up physically and carry you up the stairs.

"If we create a personnel and freight elevator at the back instead of the (scissor) lift, it actually would bring them up to the theater level, where we have a fully accessible washroom... and further, to what we consider the third floor back stage, that would provide them the opportunity to engage with the other artists in the show. So, they would not be isolated in their own little dressing room."

The renovations will also right an injustice to those who are not able to access the third level.

"If we had a stage manager, a lighting technician, a sound technician, a follow spot operator that was in a wheelchair. I can't hire them right now. And that's awful."

The lack of accessibilty is also a problem for patrons. Some people can't climb the stairs to the balcony.

"I have no modification that I can currently make to the balcony, for a patron."

The fundraising campaign, called "Reaching New Heights" was introduced to patrons of the VPP at the beginning of the season. The plans for elevators and new washrooms were greeted with cheers.

Ellsworth said there have been some donations to the project already but the town won't be relying solely on donations from patrons and citizens.

"I'm currently applying with the federal government. They have a cultural spaces program, and for years they did capital beyond without question, but they've changed, so now it's specific capital on a one off kind of basis," she said.

"I'm currently going through that sort of interview process with them to see if the project meets the requirements, and if it does, it's up to 75 cent dollars for a project. That would be a really good boost for us, and I think it would be would be nice to see that sort of heritage or federal component step forward to say 'this is so important for people to be able to access the arts,'" said Ellsworth.

Staff also plans to speak with surrounding communities about donations to the project and large donations of $50,000 and $100,000 will have naming rights to washrooms and elevators.

The project, she added, will not move ahead until the entire $3.7 million cost of the project has been raised.

Oil Springs taxpayers facing two per cent increase

Blake Ellis
The Independent

After a recalculation of the budget, Oil Springs is in much better shape.

Instead of the six percent increase the municipality was facing at is May 6 meeting, it now has a two percent increase.

Oil Springs council had a special meeting on May 20 to further examine the budget. The recalculation involved including the $89,000 HST rebate, which had not been inserted in the budget. The taxes on new homes built in the community had also not been calculated in the budget. Just over $21,000 was also taken out of the municipality's reserves to be spent within the budget.

Council decided to look at further paving on Oil Springs Line and is estimating to spend another $50,000 on paving. Quotes will be obtained and brought to its June meeting for consideration.

Council will consider to completing road repairs on Oil Springs Line from Gypsy Flats Road to the village limits estimated at $119,000, as well as sidewalk replacement on Oil Springs Line from Gypsy Flats Road to Duryee Street. The sidewalk replacement will depend on whether the municipality is awarded a grant.

Concrete work will be completed on Richmond Street for $13,200 to place an inverted swell, as well as $80,000 to replace guardrails on the Gypsy Flats Road Bridge.

The budget is expected to be passed at council's next meeting in June.

Rabies clinic draws huge crowds in Enniskillen

Blake Ellis
The Independent

A rabies vaccination clinic held in the Enniskillen Township garage had a total of 139 animals vaccinated, which almost overwhelmed those putting on the event.

Enniskillen Township's Administrator-Clerk Duncan McTavish told council at its meeting on May 20, that when he went to open the township garage for the clinic, he found number of pets which were to be vaccinated were almost too many for the veterinarian and the one other staff. He stayed to help those fill out paperwork, which needed to be completed before the shot could be given.

Normally every year, the Sarnia Humane Society holds a rabies vaccination clinic, but it had not this time. So instead people came to clinics in Enniskillen and Oil Springs.

The two-hour event was extended another hour so the 110 dogs and 29 cats could be vaccinated. Lambton Public Health works with its community partners every spring to put on the low cost rabies vaccination clinics.

A vaccination only costs $30 and no appointment is needed.

mpaign for VPP elevators starts

with it."

Ellsworth says the renovations are important for both patrons entering Victoria Hall and the performers.

"One (elevator is for) patron dignity and safety, the second one is employee safety and an artist's ability to perform on our stage," she said.

"Right now, I can get you to the apron of the stage in front of it, but I can't get you up on the stage no matter what I do, unless I pick you up physically and carry you up the stairs.

"If we create a personnel and freight elevator at the back instead of the (scissor) lift, it actually would bring them up to the theater level, where we have a fully accessible washroom... and further, to what we consider the third floor back stage, that would provide them the opportunity to engage with the other artists in the show. So, they would not be isolated in their own little dressing room."

The renovations will also right an injustice to those who are not able to access the third level.

"If we had a stage manager, lighting technician, a sound technician, a follow spot operator that was in a wheelchair. I can't hire them right now. And it's awful."

The lack of accessibilty is also a problem for patrons. Some people can't climb the stairs to the balcony.

"I have no modification that I currently make to the theatre, for a patron."

The fundraising campaign, called "Reaching New Heights" was introduced to patrons of the VPP at the beginning of the season. The plans for elevators and new washrooms were greeted with cheers.

Ellsworth said there have been some donations to the project already but the town won't be relying solely on donations from patrons and citizens.

"I'm currently applying with the federal government. They have a cultural spaces program, and for years they did capital beyond without question, but they've changed, so now it's specific capital on a one off kind of basis," she said.

"I'm currently going through that sort of interview process with them to see if the project meets the requirements, and if it does, it's up to 75 cent dollars for a project. That would be a really good boost for us, and I think it would be would be nice to see that sort of heritage or federal component step forward to say 'this is so important for people to be able to access the arts,'" said Ellsworth.

Staff also plans to speak with surrounding communities about donations to the project and large donations of $50,000 and $100,000 will have naming rights to washrooms and elevators.

The project, she added, will not move ahead until the entire $3.7 million cost of the project has been raised.

facing two per cent increase

on Oil Springs Line and is estimating to spend another $50,000 on paving. Quotes will be obtained and brought to its June meeting for consideration.

Council will consider to completing road repairs on Oil Springs Line from Gypsy Flats Road to the village limits estimated at $119,000, as well as sidewalk replacement on Oil Springs Line from Gypsy Flats Road to Duryee Street. The sidewalk replacement will depend on whether the municipality is awarded a grant.

Concrete work will be completed on Richmond Street for $13,200 to place an inverted swell, as well as $80,000 to replace guardrails on the Gypsy Flats Road Bridge.

The budget is expected to be passed at council's next meeting in June.

ge crowds in Enniskillen

which needed to be completed before the shot could be given.

Normally every year, the Sarnia Humane Society holds a rabies vaccination clinic, but it had not this time. So instead people came to clinics in Enniskillen and Oil Springs.

The two-hour event was extended another hour so the 110 dogs and 29 cats could be vaccinated. Lambton Public Health works with its community partners every spring to put on the low cost rabies vaccination clinics.

A vaccination only costs $30 and no appointment is needed.

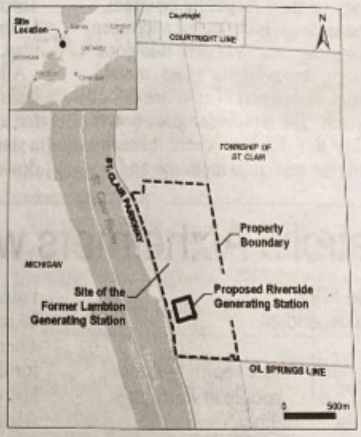
Invitation to a Public Meeting

Riverside Generating Station

Atura Power

To prepare for future electricity demands and support a reliable grid for Ontarians, the Independent Electricity System Operator (IESO) has initiated a Long-Term Request for Proposals (LT2 RFP) to secure new electricity resources that could be in service into the 2030s and beyond.

Atura Power, a subsidiary of Ontario Power Generation (OPG), intends to submit a proposal as part of the LT2 RFP to develop a new natural gas-fueled generating facility in Lambton County, Ont. The site for the proposed Riverside Generating Station is located on the lands of the former OPG-owned and operated Lambton Generating Station along the St. Clair Parkway, between Courtright Line and Oil Springs Line in St. Clair Township.



Project Description

The proposed Riverside Generating Station will be able to supply Ontario's grid with up to 500 megawatts (MW) of electricity using efficient gas turbine technology. The proposed Riverside Generating Station will help address Ontario's growing demand for electricity and provide a reliable source of power when it is needed most.

Upcoming Public Meeting

We invite you to attend a public meeting to learn more about this proposed project. If you are unable to participate, meeting materials will be posted on the project webpage following the meeting.

Public Meeting Details	**Date:**	Thursday, June 19, 2025
	Location:	St. Clair Parkway Golf Course, Cedar Lounge 132 Moore Line, Mooretown, Ont. N0N 1M0
	Time:	3 - 7 p.m. EDT
	Project Webpage:	www.aturapower.com/riverside

Project Contacts

For project questions or accommodation needs, please email the project team at riverside@aturapower.com

Comments and information regarding this proposed project are being collected in accordance with the Freedom of Information and Protection of Privacy Act.

Over 20

The Independent

Brooke-Alvinston r
dents will get a chan
hear about what is lik
one of the largest ho
developments in the
munity in decades.

June 19, Lambton
planners will hold a
on a new subdivisio
ing on Nauvoo Roa
Railroad Street whi
have 244 housing u

The notice of the
ing shows some of
has to be rezoned t
the units. The subd

OPP as

The Independent

There are calls t
trian crosswalk in
Central School in

Lambton OPP a
Township to take
after a complaint

Helga Beniot s
OPP after watchi
ing through the
two women and
"Instead of stop
pedestrians cros
right through,"
complaint. "Eve

One

The Independe

Another acci
London Line.

Friday, just b
the corner for
transport to h
threatening in

SUMM

The W
up to
Seen
opera

Council offers praise, $100K in study cash for rec complex plan

TYLER KULA

Along with $100,000, Sarnia council had high praise for an indoor-outdoor recreation complex proposal Monday.

"There's not a bad thing about any of this," said Coun. Anne Marie Gillis of the planned domes, sports fields, courts, walking trails, playgrounds, gathering spaces and gardens on 11 hectares (27 acres) off Michigan Avenue.

"The community has been asking for this for years, so thank you," said Coun. Chrissy McRoberts, before council unanimously approved the funding for various requisite studies – environmental, traffic, and others – to see if the project is viable.

The money establishes a private-public partnership between the city and a quartet of sports groups – Bluewater Cycling Organization, Sarnia Lambton Pickleball Club, Sarnia Tennis Club and Sarnia FC (Football Club) – that have been working on the proposal, said Bluewater Cycling's Kenn MacAlpine.

The groups already have raised $120,000 for studies, and hired a company to start environmental assessment work, he said.

They plan to form a non-profit or charity to build and run the facility, said Kendel Ross, also with Bluewater Cycling.

Going this route will cost much less than building a multi-use recreation facility the city endorsed in 2022, but remains unfunded, she said. At the time, cost of building that project was estimated at $26 million to $34 million.

"We could save over 75 per cent of that by collaborating," Ross said.

Key is a pending provincial grant – word is expected by September, MacAlpine said – that would cover half the cost of the tentatively named Bluewater Active Connected Community Centre.

Sarnia Coun. Anne Marie Gillis speaks to members of the Sarnia-Lambton Golden K Kiwanis Club in Sarnia April 16 about the Sarnia Area Environmental Health Project. *TYLER KULA*

"The plan is to run a competition in our area and see if we can come up with a better name," he said.

The groups also have been working with Ontario's Environment, Conservation and Parks Ministry, and the project has won endorsements from community groups and MPP Bob Bailey (PC-Sarnia-Lambton), Ross said.

If grant funding materializes and studies turn out favourably, the groups would ask the city for 25 per cent of building costs "and an agreement to assist in the procurement of the remainder of the land," she said, noting the groups have four hectares (10 acres) so far.

They have a conditional deal that includes city approval to buy the rest, MacAlpine said.

A community capital campaign, planned to cover the final 25 per cent of costs, would start after the project wins city approval and funding, he said.

So far, so good, he added: "The committee was very impressed with how council received the concept."

An estimated 6,500 users from various community groups have expressed interest in using the space, expected to generate more than $1 million a year in economic impact from tourism when operational, Ross said.

This project also activates "dormant land" – a former landfill site abutting the Howard Watson Nature Trail – for the "best possible use for the community," she said.

There'd be user fees, potentially subsidized, but not for things like the walking trail or gardens, she said, noting the groups would continue collaborating with the city, and the project could help with population growth, resident retention, and community health.

"All too often, we're hearing about road trips to London and everywhere else for these facilities we don't have here," said Coun. George Vandenberg. "You've done a fantastic job."

Gillis said the project reminds her of other city public-private partnerships with service clubs for community projects.

"It's covering everything that I could possibly think of," she said.

tkula@postmedia.com

Wyoming teen scooping up a career in business

PAUL MORDEN

Clare Robinson has turned out to be part of the attraction at an ice cream parlour that opened Victoria Day weekend on Wyoming's main street.

The 17-year-old is the boss and owner of the Utterly Ridiculous Ice Cream Emporium on Broadway Street.

"I don't know how people have been learning that she's 17, but they come in and they tell her, 'This is why we come from Sarnia,' or 'This is why we come from Dresden,' " said Erin Robinson, Clare's mother.

During the long weekend, about 1,400 customers came through the door and a few ice cream flavours were sold out by Saturday, Erin Robinson said.

Clare credits her faith for the courage to take her savings from part-time jobs, and a loan from her family, to rent the storefront, paint, decorate and set up the shop.

"I felt God leading me to step outside of my comfort zone," she said.

After two years attending Lambton Central Collegiate in nearby Petrolia, the Wyoming resident is now homeschooling to finish high school.

"I just felt I wanted more experience," said Robinson, who worked part-time for two years at Foodland next door to her shop, and rented the storefront from the owner of the grocery store, Charlie Visscher.

"To have a young person, at her age, run it is just amazing," Visscher said while stopping in at the ice cream shop this week for a milkshake after work.

Along with her experience at the grocery store, Robinson ran a campground tuck shop last summer and was looking for a new challenge when she began speaking with Visscher earlier in the year about his empty space next to Foodland.

"He's been such a wonderful mentor," Robinson said.

Robinson decided to sell ice cream because, "who doesn't like a good ice cream?"

She and her family got the business up and running in about seven weeks.

"It's been just a blast, so far," she said.

Along with ice cream supplied by a Canadian company, Shaw's, the shop serves, milkshakes, slushies, "amazing" sundaes, including a "Sunday pie" which is vanilla ice cream and warm fruit filling topped with pie crust, Robinson said.

"We'll have occasional banana split days, whenever we can get in good bananas," she said.

"The support I've been getting from not only Wyoming, but Petrolia, Sarnia, Alvinston, and Thedford as well, has been amazing."

One of the benefits of ice cream is its ability to help people connect, Robinson said.

"I've had people come out in the rain and cold, and they'll meet their friends here," she said.

"I'll look out and even though there's a line and a wait, they're all chatting and just having a good time."

The shop is open in the afternoon and evenings every day but Wednesday and Robinson has started with two employees, along with help from family.

"She's a goer" with "the right combo of the social skills, the maturity, the decision-making," Robinson's mother said. "Ever since she's been little, she just knows what she wants."

Erin also credits Matt, Clare's father, as the "big idea man behind pulling it all together."

Clare is the youngest of three siblings. "All of the kids are amazing," Erin said.

"I never felt overwhelmed," Clare said about getting ready to open. "I just knew this was meant to happen."

She said her dad came up with the name while they were brainstorming.

"I said, 'That is it," Robinson said. "I had no question in my mind; this place is going to be utterly ridiculous."

pmorden@postmedia.com

COUNCIL NOTEBOOK

Chamber emergency plan needs work, politico says

TYLER KULA

An emergency plan for council chambers needs more work, Sarnia Coun. Anne Marie Gillis says.

"I don't think we're quite there," she said during Monday's council meeting, arguing to add an exit on the chambers' east wall, if doing so won't "break the bank."

There's no easy escape from the southeastern corner of chambers, she said, drawing agreement from Coun. Adam Kilner.

Council voted 8-1 to approve the emergency plan as presented, including confidential escape routes and safe zones and a capacity cap.

Staff will report back on the possibility of an eastern-wall emergency exit, Mayor Mike Bradley said.

Coun. Brian White said he'd favour having a security guard, but recognized that's not something council has opted for.

Coun. Bill Dennis was the lone dissenter.

"I agree with the emergency plan," he said by video link, but argued one should have been crafted sooner, recalling tumult at city hall nearly a decade ago.

"What took so long to implement an emergency safety protocol when we clearly needed one in 2017?" he asked.

"We could literally make a list of a million things for hindsight being 20/20 to say, 'We should have, we should have,' " said Coun. Chrissy McRoberts. "We're here now. We're doing it now."

Monday was council's first in-person meeting in more than a year, after a third-party workplace harassment probe found Dennis's conduct toward city staff breached city workplace harassment and discrimination provisions, and applicable legislation, city officials have said.

Council recently upheld a decision to bar Dennis from city hall without council's permission.

White called for the emergency plan in October 2023, amid safety concerns White relayed after an outburst from Dennis derailed a meeting and prompted an early adjournment.

ZONING BYLAW SUGGESTIONS DEFERRED

A city zoning bylaw review will consider adjustments to make it easier to create triplexes and additional dwelling units in Sarnia.

Curtis Robichaud, in a delegation to council, suggested tweaking existing zoning bylaw to incentivize people to take on projects and create more affordable housing stock.

He also suggested limiting frontage requirements to make it easier for "starter home" construction, removing lot size requirements in established neighbourhoods to make infill easier, repealing parking minimums for buildings near transit, and making some approvals processes faster.

He supplied information from the non-profit Strong Towns to help explain the proposals.

Council voted for staff to report back on potential pilot projects on some of those ideas, and incorporate the suggestions into a comprehensive zoning bylaw review expected to come to council for consideration this fall.

Expect a public meeting to deal with those proposed changes, Bradley said.

WELLINGTON, GLADWISH CONTRACTS AWARDED

Council has awarded contracts worth $2-million for Wellington Street sewer separation work and $2.1-million for a Gladwish Drive extension project.

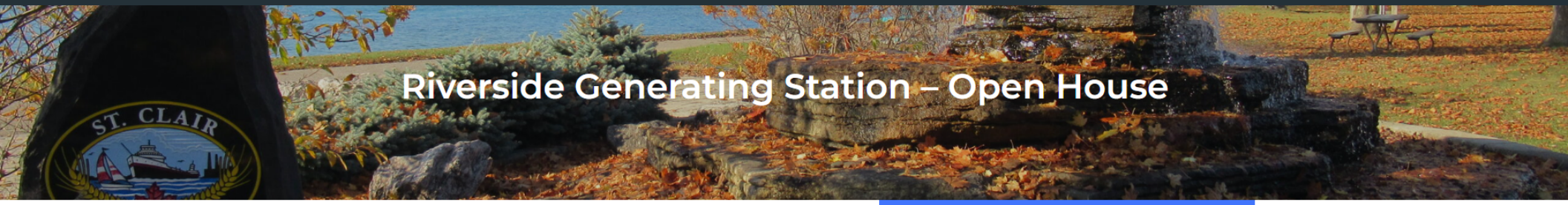
Birnam Excavating won the Wellington Street contract that also continues a raised bike lane downtown near Christina and Front streets, creates bump outs near intersections and raises the intersections slightly to slow traffic, Jackson said.

Updated crosswalks honouring veterans at Christina and Wellington streets will look similar to ones there now, but likely also include a soldier silhouette, Jackson said, noting designs are being finalized in consultation with Royal Canadian Legion officials.

Van Bree Infrastructure won the Gladwish Drive contract, connecting the road and sewers in the city's south across a 640-metre gap.

stclairtownship.ca/riverside-generating-station-open-house/

COUNCIL | RESIDENTS | HERITAGE ST CLAIR | RECREATION | DEPARTMENTS | JOBS | ALERTS | CONTACT



Atura Power | Power Generation

Join us at a public meeting for the proposed

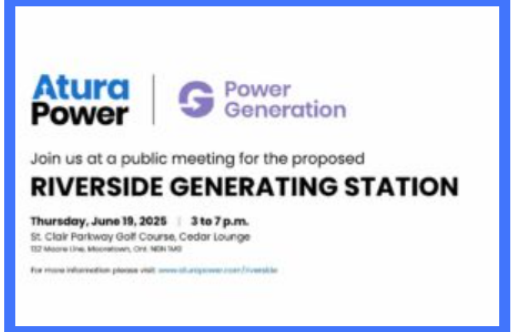
RIVERSIDE GENERATING STATION

Thursday, June 19, 2025 | 3 to 7 p.m.
St. Clair Parkway Golf Course, Cedar Lounge
132 Moore Line, Mooretown, Ont. N0N 1M0

For more information please visit: www.aturapower.com/riverside

Search...

News



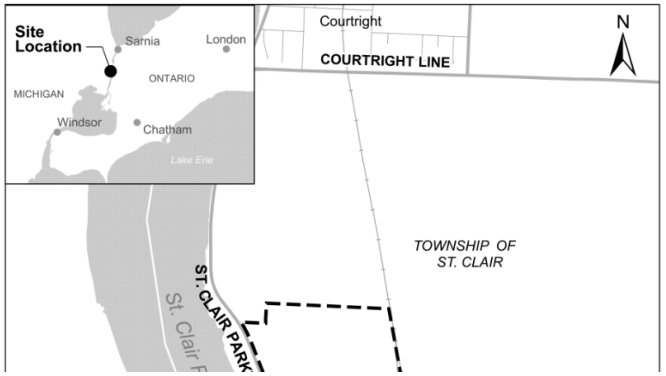
Riverside Generating Station – Open House
June 10, 2025

Read More »

Riverside Generating Station

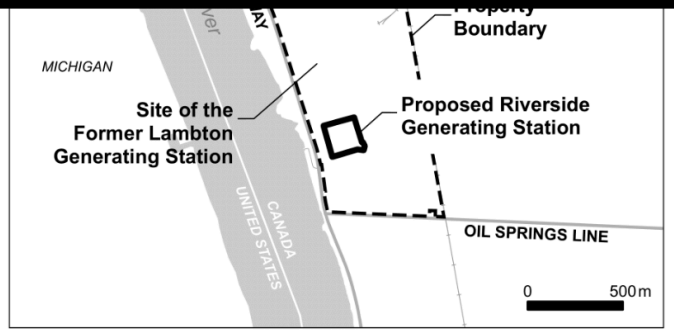
Project Overview

Atura Power, a subsidiary of Ontario Power Generation (OPG), is proposing to construct the Riverside Generating Station, a new natural gas-fueled electricity generating station in Lambton County, Ont. The site for the proposed Riverside Generating Station is located on the lands of the former OPG-owned and operated Lambton Generating Station along the St. Clair Parkway, between Courtright Line and Oil Springs Line



in St. Clair Township. Once constructed, the proposed Riverside Generating Station will be able to generate up to 500 megawatts (MW) of reliable electricity to Ontario's grid.

Learn more about gas-fueled electricity generation and the important role it plays in Ontario's electricity system at Atura Power.



Responding to Ontario's growing electricity demand

Ontario is entering an accelerated pace of electricity demand growth primarily driven by industrial growth, energy-intensive data centres, and increasing population and electrification.

According to the latest annual forecast from the Independent Electricity System Operator (IESO), electricity demand in Ontario is anticipated to grow 75 per cent by 2050.

To prepare for future electricity demands and support a reliable grid for Ontarians, the IESO has initiated a Long-Term 2 Request for Proposals (LT2 RFP) to secure new electricity resources that could be in service into the 2030s and beyond.

The proposed Riverside Generating Station will increase Ontario's supply of reliable power, producing electricity when it is needed most. The (up to) 500 MW simple cycle gas turbine facility will help stabilize a growing grid while enabling more renewable investments longer term.

Project Details

Project Name:	Riverside Generating Station Project
Proponent:	Portlands Energy Centre L.P. (doing business as Atura Power)
Location:	St. Clair Township, Ont.
Generating Technology:	Natural Gas-Fueled Electricity Generating Station
Maximum Potential Contract Capacity:	Up to 500 MW

Maximum Potential Contract Capacity:	Up to 500 MW

Committed to Engagement

Atura Power is committed to engaging with Indigenous communities, municipalities, the public, regulatory agencies, as well as other interested stakeholders throughout the LT2 process and beyond.

We invite you to attend a public meeting to learn more about the proposed Riverside Generating Station project.

Riverside Generating Station Public Meeting	
Date:	Thursday, June 19, 2025
Time:	3 – 7 p.m. EDT
Location:	St. Clair Parkway Golf Course, Cedar Lounge 132 Moore Line, Mooretown, Ont. N0N 1M0

	132 Moore Line, Mooretown, Ont. N0N 1M0

Please access the **Contact Us** form if you have any questions or accommodation needs. Meeting materials will be available on this webpage following the meeting.

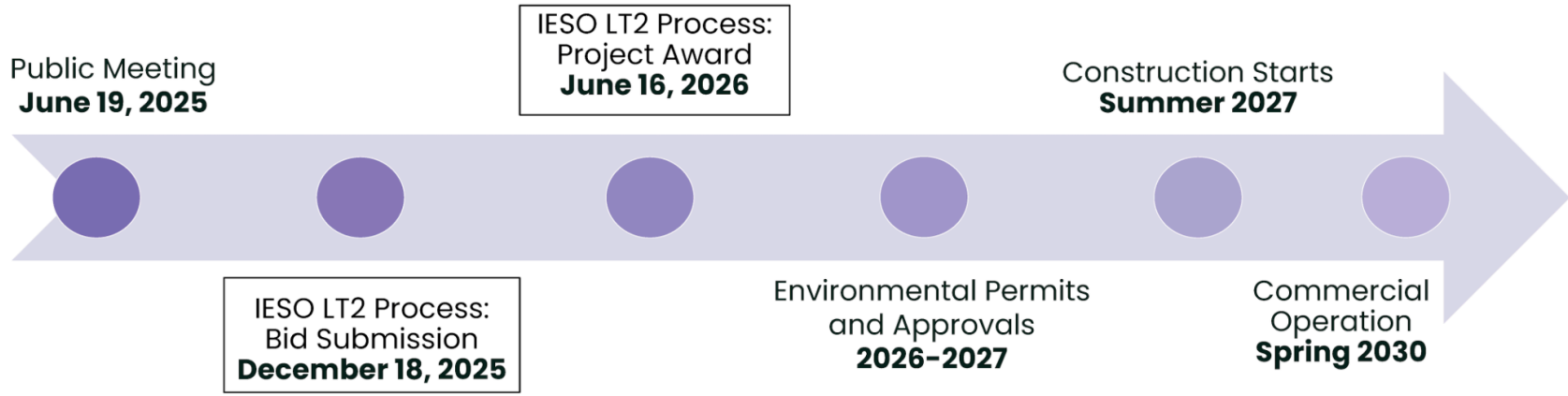
Understanding the Process

Atura Power is proposing Riverside Generating Station through the **IESO LT2 procurement process**. Proposals for projects in the 'capacity' stream are due to the IESO in December 2025.

If awarded an LT2 contract by the IESO, Atura Power will complete an environmental assessment and obtain the necessary permits and approvals prior to construction. Engagement with Indigenous communities, local community members and other interested parties will continue through each phase of the project and beyond.

Timeline

Atura Power's preliminary timeline for the proposed project is as follows:



Community and Indigenous engagement will continue throughout the entirety of the LT2 process and beyond.

Dates set by the IESO LT2 Process are outlined.

Project Documents

Project documents will be posted as they become available. Please let us know if you require an alternate format for any documents posted through the **Contact Us** form below.

an alternate format for any documents posted through the **Contact Us** form below.

- **Invitation to Public Meeting – June 19, 2025**
- **Public Meeting Presentation Boards - June 19, 2025**

Comments and information regarding this project are being collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments received will become part of the project record.

Contact us

First Name *

Last Name *

aturapower.com/our-projects/natural-gas/riverside-generating-station/

Atura Power | About us | What we do | Our projects | Our communities | Newsroom | Careers

Topic *

Electricity Generation Projects

Upgrade and Expansion Project Topics *

Riverside GS

Email *

Enter Your Message Here *

I accept the privacy policy

Recaptcha v2

I'm not a robot reCAPTCHA Privacy - Terms

Submit

Atura Power

Riverside Generating Station

Public Meeting

Land Acknowledgement

Atura Power respectfully acknowledges that the proposed Riverside Generating Station will be located on the traditional territory of the Anishinaabeg peoples, including the Ojibwe, Odawa, and Potawatomi Nations, who form the Three Fires Confederacy.

This land is part of the territory covered by Treaty 29 and is home to the Aamjiwnaang First Nation and near the Bkejwanong Territory of the Walpole Island First Nation. These Nations continue to uphold their responsibilities as caretakers of the land and waters, as they have for generations.

We honour their enduring presence, knowledge systems, and cultural resilience. As we live and work on these lands, we are reminded of our shared responsibility to act as respectful stewards, to listen to Indigenous voices, and to uphold our responsibilities with humility, care, and accountability.

Atura Power is committed to building respectful, meaningful, and mutually beneficial relationships with Indigenous Peoples and communities across Ontario — in the spirit of peace, friendship, and trust.

Welcome

Purpose of public meeting:

- Learn about the proposed Riverside Generating Station
- Meet the project team
- Share your thoughts and ask questions

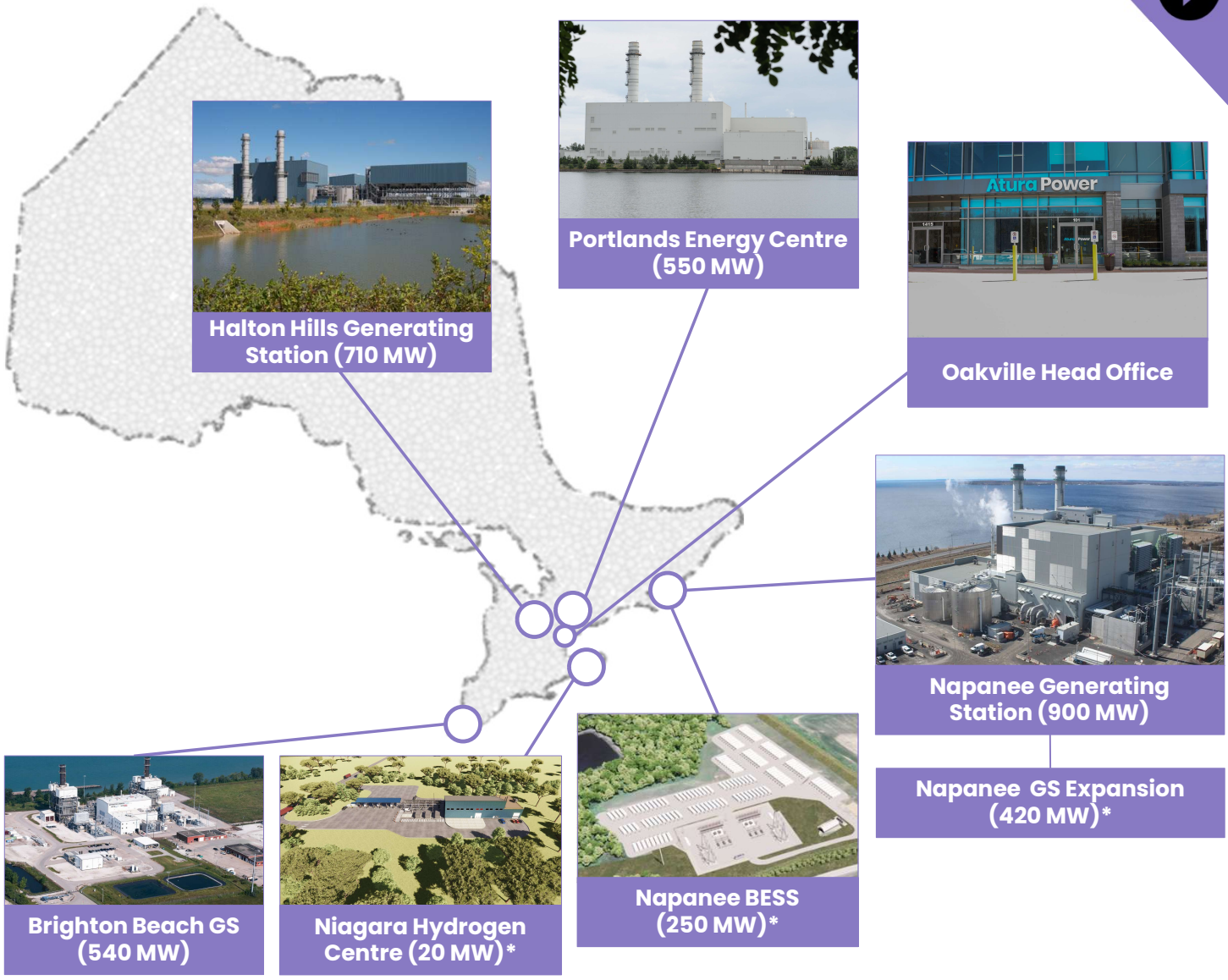
***Pictured**: Aerial view of the site.*

Atura Power

Who We Are

Atura Power plays a key role in Ontario's electricity system by generating safe and reliable electricity.

- A subsidiary of Ontario Power Generation
- Operates the largest fleet of combined-cycle gas turbine generating stations
- Investing in gas expansion and new, non-emitting energy technologies including battery energy storage and hydrogen



* Projects under construction or development.

Atura Power

Project Need

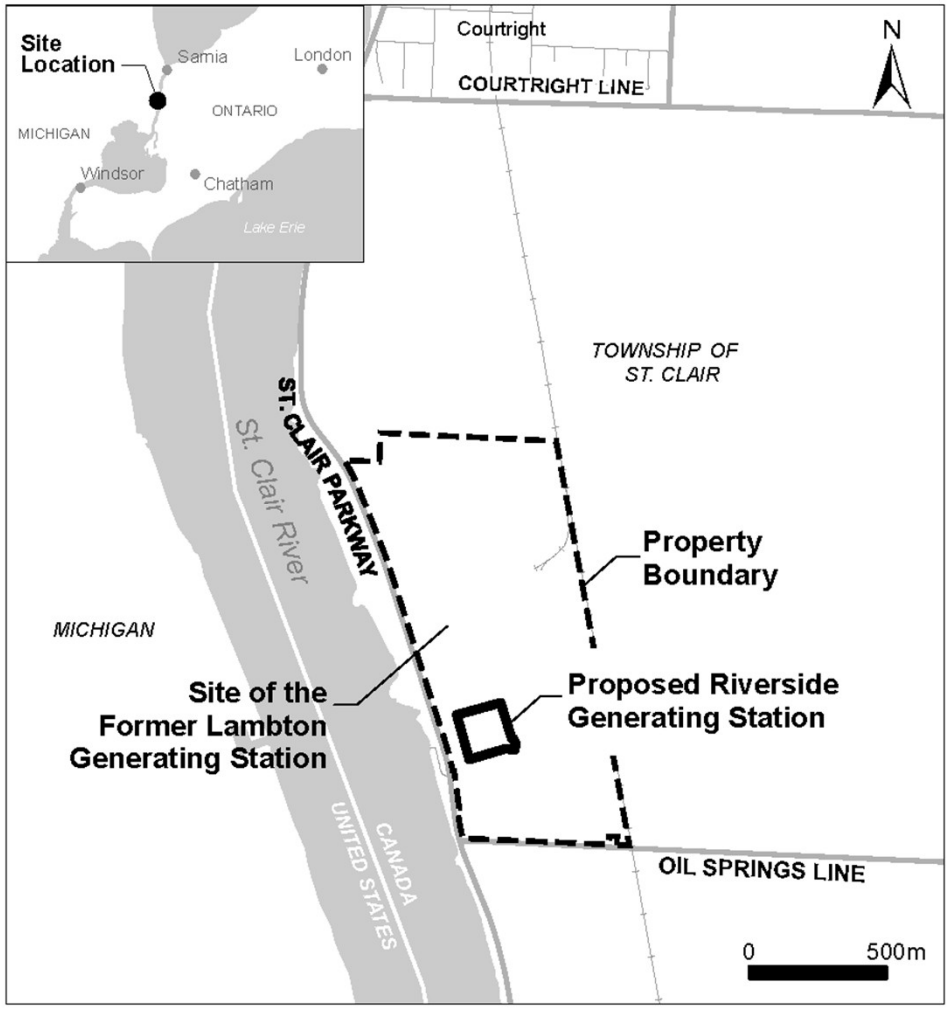
According to Ontario's Independent Electricity System Operator (IESO), Ontario's demand for electricity is forecast to increase 75% by 2050.

Ontario is increasing its capacity for energy sources – including natural gas systems – to meet this growing electricity demand.

Natural gas provides reliability on the hottest and coldest days of the year and when other resources are unavailable.[1]

Once constructed, the Riverside Generating Station will help address Ontario's growing demand for electricity and provide a reliable source of power when it is needed most.

[1] Source: *Ontario's Affordable Energy Future: The Pressing Case for More Power* (Government of Ontario).



***Pictured**: Location of proposed Riverside Generating Station.*

Atura Power

IESO Long-Term 2 Procurement

- Atura Power is proposing the Riverside Generating Station through the Independent Electricity System Operator (IESO) Long-Term 2 (LT2) procurement process
- Securing new electricity resources, like the Riverside Generating Station, will ensure availability of reliable electricity while complementing other sources of power

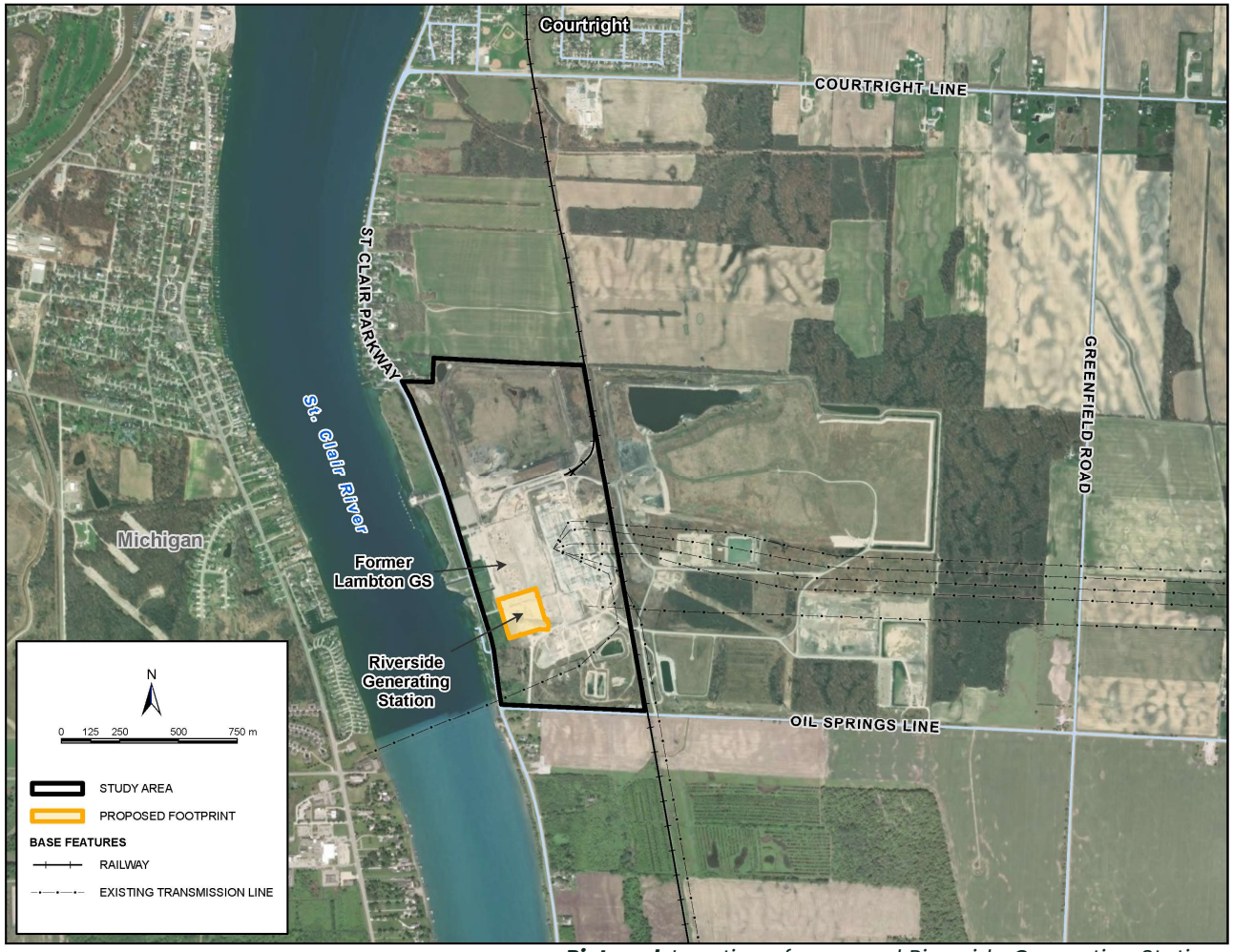
ieso
Connecting Today.
Powering Tomorrow.

- The IESO is requesting proposals for 20-year contracts
- Atura Power is actively engaging the public and Indigenous communities as part of the LT2 process. This will continue through all stages of the proposed project and beyond

Atura Power

Project Description

- The Riverside Generating Station will provide up to 500 MW of generating capacity
- Located in St. Clair Township, in the County of Lambton
- Located on the site of the former Lambton Generating Station
- The project site is zoned for industrial use
- Pending a contract and required approvals, construction is to start in 2027, with commercial operation to begin in 2030

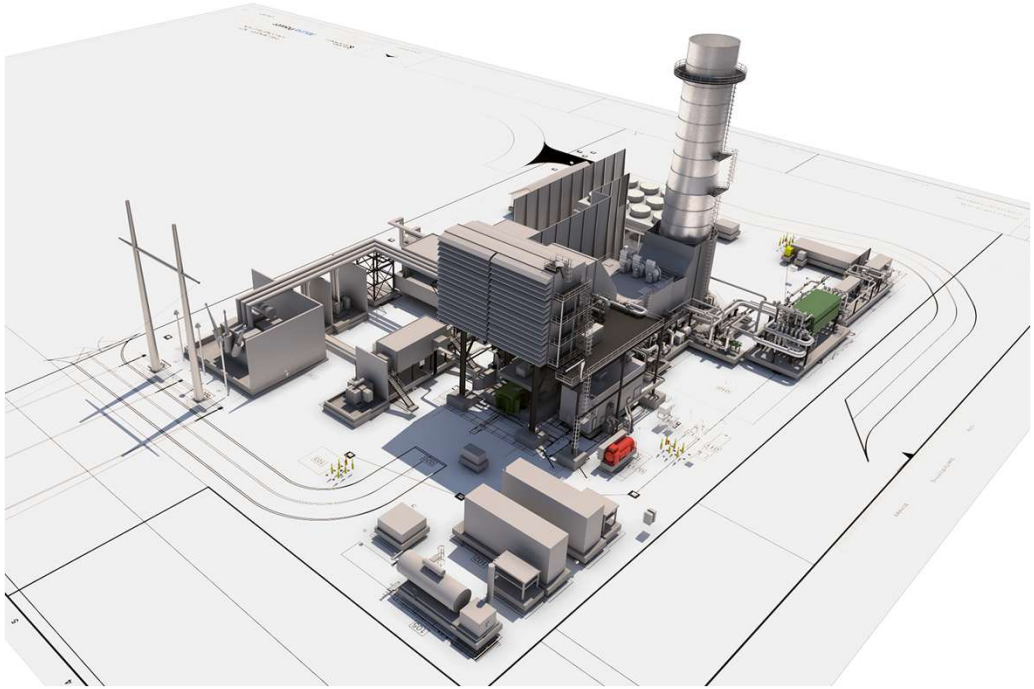


***Pictured**: Location of proposed Riverside Generating Station.*

Atura Power

Project Technology

- Highly efficient gas turbine technology
- Targeting up to 500 MW of electricity generation
- Repowering Lambton provides unique advantages, including:
  - ✓ Access to high voltage transmission
  - ✓ Access to reliable natural gas
  - ✓ Access to both dock and rail
  - ✓ Significantly reduced environmental impacts due to brownfield site condition
  - ✓ Strong local workforce and capabilities



Pictured: *Conceptual design of a ~500 MW simple cycle gas turbine facility.*

Atura Power

Early Field and Technical Work

Archaeology / Cultural Heritage

- Completing archaeological assessment and cultural heritage screening through spring and summer 2025

Initial Ecological Field Studies

- Baseline data collection through spring and summer 2025

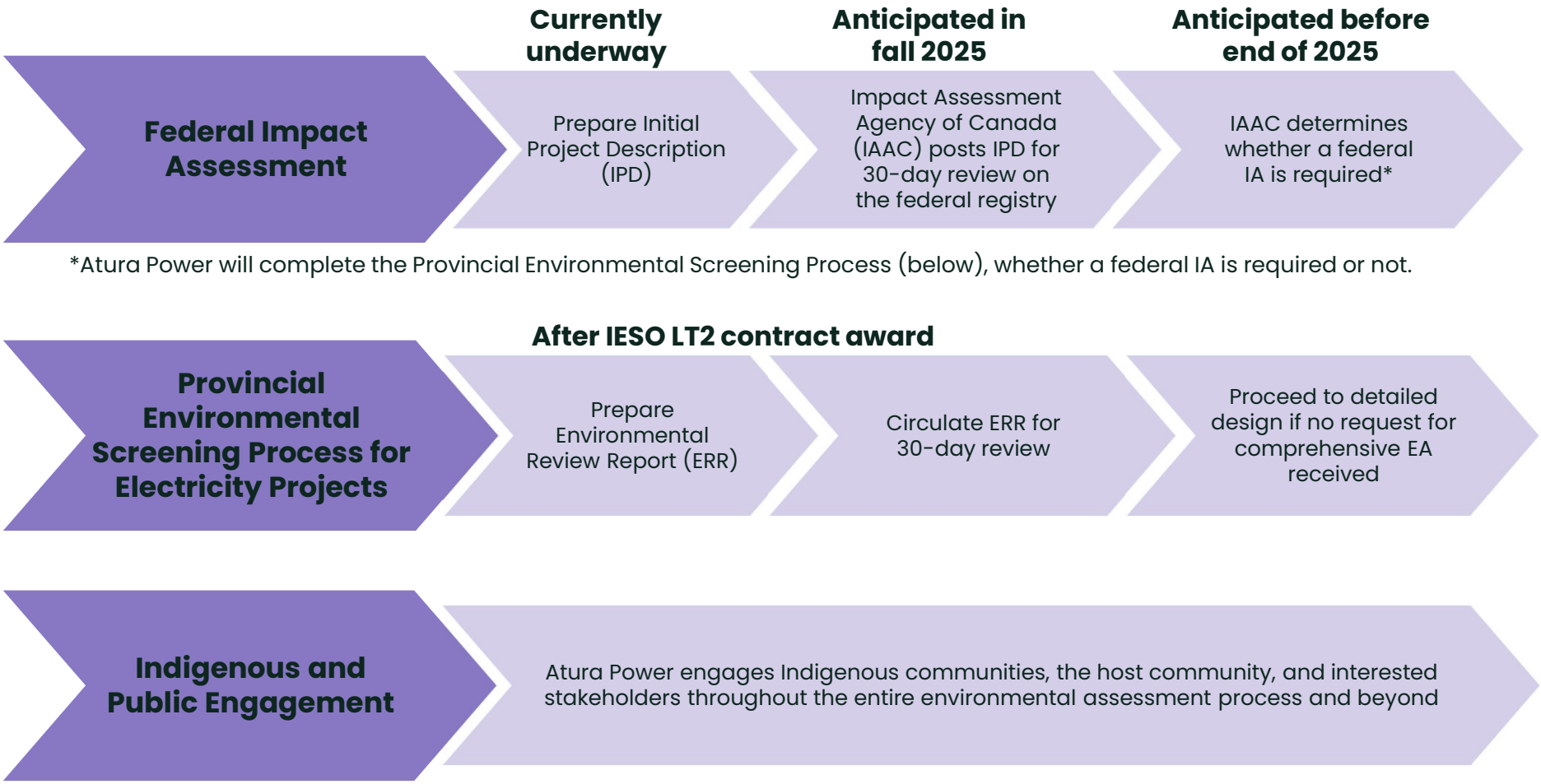
Preliminary Engineering

- Working with municipality to understand site plan considerations (traffic, water, waste, etc.)
- Tie-in connection to Hydro One transmission station

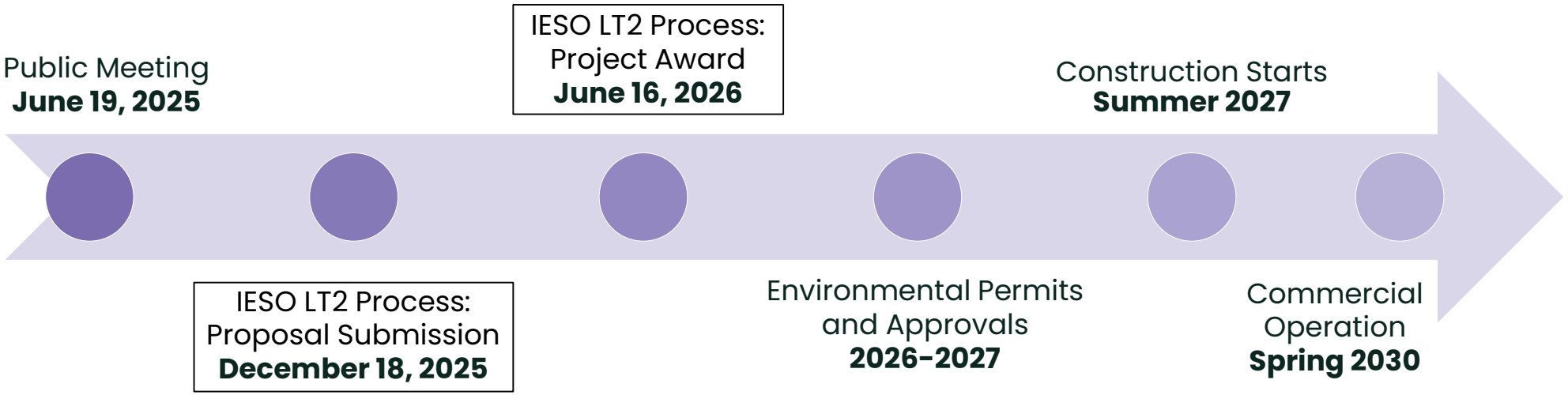
Atura Power

Environmental Assessment and Approvals

Potential environmental assessment and approvals processes:



Proposed Timeline



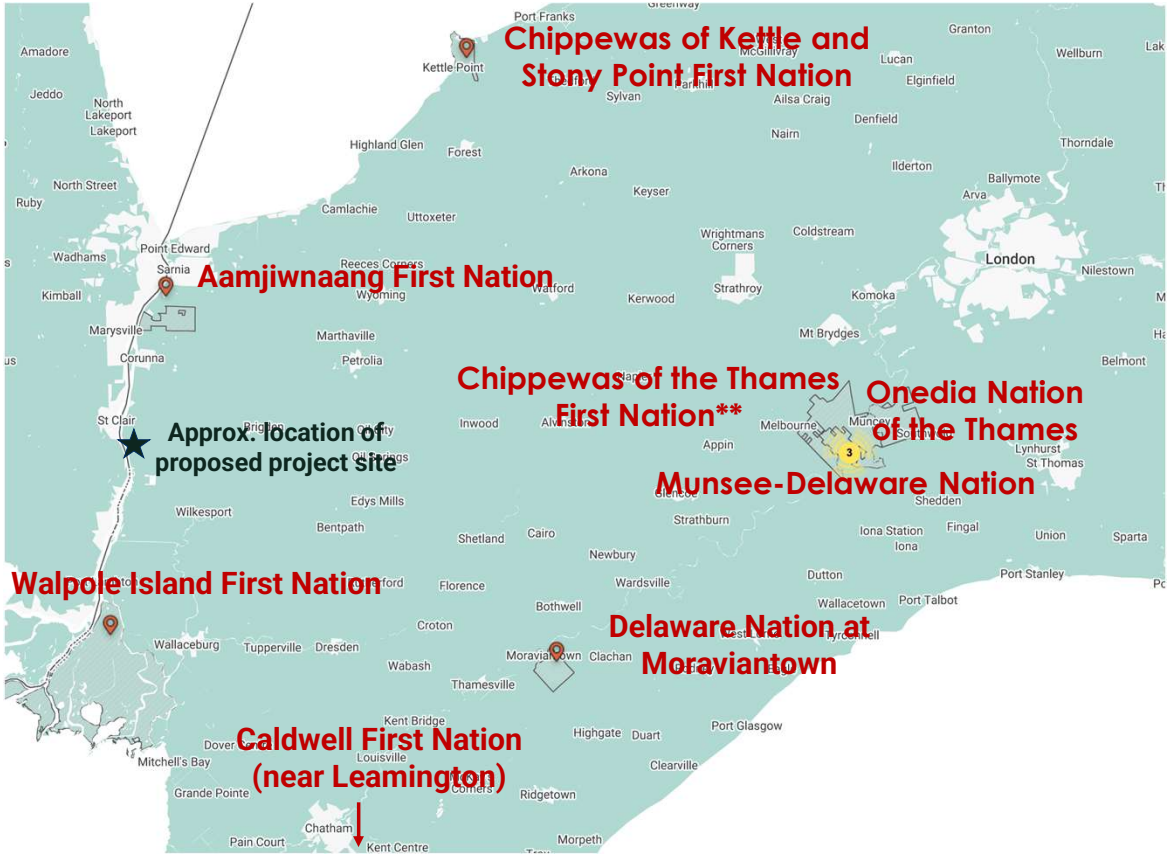
Community and Indigenous engagement will continue throughout the entirety of the LT2 process and beyond.

Atura Power

Indigenous Relations

Committed to ongoing engagement with Indigenous communities:

- Aamjiwnaang First Nation
- Walpole Island First Nation
- Caldwell First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Delaware Nation Council
- Métis Nation of Ontario
- Munsee-Delaware Nation
- Oneida Nation of the Thames



Atura Power

Thank You for Attending

We value your feedback. If you have any comments or questions, please complete a comment form or speak to a member of the project team.

You can also reach us by email or visit the project webpage for more information.

riverside@aturapower.com

www.aturapower.com/riverside

Appendix C

Air Quality Assessment Report

Atura Power

Air Quality Assessment

Atura LT2 Permitting Natural Gas

Atura Power

Prepared by:

SLR Consulting (Canada) Ltd.

100 Stone Road West, Suite 201, Guelph, ON N1G 5L3

SLR Project No.: 200.071150.00001

July 17, 2025

Revision: 0

Revision Record

Revision	Date	Prepared By	Checked By	Authorized By
0	July 17, 2025	Ahmad Kia	Shawn Roberts	Shawn Roberts

Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Atura Power (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

Table of Contents

Tables in Text

Figures in Text

Acronyms and Abbreviations

Abbreviation	Definition
AAQC	Ontario's Ambient Air Quality Criteria
ADMGO	Air Dispersion Modelling Guideline for Ontario
ASL	Above Sea Level
AERMET	Meteorological Pre-Processor for AERMOD
BPIP	Building Profile Input Program
CAAQS	Canadian Ambient Air Quality Standards
CO	Carbon Monoxide
CTG	Combustion Turbine Generator
EA	Environmental Assessment
MECP	Ministry of the Environment, Conservation and Parks (Ontario)
NED	US National Elevation Dataset Data
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
PAH	Polycyclic Aromatic Hydrocarbon
O. Reg. 419/05	Ontario Regulation 419/05: Air Pollution
$PM_{2.5}$	Fine Particulate Matter (particles with aerodynamic diameter ≤ 2.5 µm)
PM_{10}	Fine Particulate Matter (particles with aerodynamic diameter ≤ 10 µm)
ppm	Parts per Million
SO_2	Sulphur Dioxide
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound
µg/m³	Micrograms per Cubic Meter

Executive Summary

SLR Consulting (Canada) Ltd. was retained by Atura Power to conduct an air quality assessment for the proposed Riverside Generating Station, a new 500 MW natural gas-fired facility to be developed at the site of the former Lambton Generating Station in St. Clair Township, Ontario. The purpose of this study is to evaluate potential air quality impacts from the project and ensure compliance with applicable regulatory standards including the Province of Ontario's Ontario Regulation 419/05. A combined effects assessment was also completed to evaluate potential cumulative effects using the Provincial Ambient Air Quality Criteria (AAQC), and the Federal Canadian Ambient Air Quality Standards (CAAQS).

The assessment employed AERMOD (version 22112) dispersion modelling in accordance with the Ontario Ministry of the Environment, Conservation and Parks (MECP) Air Dispersion Modelling Guideline (ADMGO). Model inputs included emissions from key project components; combustion turbine, dewpoint heater, fire pump, and diesel genset under normal, startup, shutdown, and a scenario in which the emergency fire pump and genset are regularly tested.

Modelling results demonstrate that under all assessed scenarios and worst-case meteorological conditions, predicted concentrations of nitrogen oxides (NO_X), carbon monoxide (CO), and fine particulate matter ($PM_{2.5}$) at both grid and sensitive receptors remain well below applicable air quality criteria. The findings were consistent across both low-temperature (Case 1) and typical winter (Case 2) scenarios. A similar result was found for the emergency fire pump and genset are tested.

Based on this analysis, the proposed Riverside Generating Station is not expected to cause adverse effects on local air quality. The facility's emissions, as modelled, comply with all applicable regulatory air quality criteria and support the project's advancement through the environmental permitting process.

1.0 Introduction

1.1 Project Overview

SLR Consulting (Canada) Ltd. (SLR) was retained by Atura Power (Atura) to conduct an air quality assessment of the proposed development of a new natural gas-fired generating station at the former Lambton Generating Station site (the Site) in the Township of St. Clair, Ontario (the Project - Figure 1-1). The site is located approximately 16 kilometres (km) south of Sarnia in St. Clair Township, County of Lambton.

The proposed Riverside Generating Station is planned to be developed on the site of the former Lambton Generating Station, formerly a coal-fuelled generating station. The original facility was shut down in 2013 and subsequently demolished. The Project is planned to have a gross output capacity of approximately 500 megawatts (MW) of electricity to be fed into Ontario's electricity grid. The generating station is proposed to include a natural gas-fuelled, simple cycle combustion turbine along with required support systems.

1.2 Objective

An air quality assessment typically relies on a comparison of modelled concentrations to regulatory thresholds (standards/objectives/criteria). The regulatory thresholds are designed by the local, provincial, or federal authority to be conservative and protective of human health, vegetation, and prevent an adverse effect. The standards, objectives and guidelines considered in this assessment include the thresholds documented in the Air Contaminants Benchmarks (ACB) List under Ontario provincial O. Reg. 419/05, the Ontario Ambient Air Quality Criteria (AAQC), and the Canadian Ambient Air Quality Standards (CAAQS). The fine particulate matter ($PM_{2.5}$), NO_X and CO air quality objectives are summarized in Table 1-1.

Volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and to a lesser extent, metals, can be detected in the exhaust stream as a result of the combustion process. Due to the low emissions of these compounds from natural gas combustion, VOCs, PAH, and metals have not been included in this air quality assessment.

Based on experience with similar natural gas facility projects in Ontario, sulphur dioxide (SO_2) concentrations have consistently remained well below the applicable regulatory limits. Given this consistent compliance and the low emission potential associated with such facilities, SO_2 was not included in this initial assessment.

Table 1-1: Selected Air Quality Criteria – Provincial and Federal

Compound	Averaging Period	O. Reg. 419/05 (µg/m³)	AAQC (µg/m³)	CAAQS (µg/m³)
Fine Particulate Matters ($PM_{2.5}$)	24-hour	-	27	27
	Annual	-	8.8	8.8
Nitrogen Oxides (NO_X)	1-hour	400	400	78.9 (42 ppb)
	24-hour	200	200	-
	Annual	-	-	22.5 (12 ppb)
Carbon monoxide (CO)	1/2 hour	6,000	-	-
	1-hour	-	36,200	-
	8-hour	-	15,700	-

Figure 1-1: Project Location and Boundaries

2.0 Regulatory Framework

The following sections provides an overview of provincial and federal regulatory frameworks relevant to the Air Quality Assessment.

2.1 Ontario Regulation 419/05

The Project is considered an emitter subject to Ontario Regulation (O. Reg.) 419/05 – Air Pollution – Local Air Quality, with statutory authority under the Province of Ontario *Environmental Protection Act* (EPA).

2.1.1 Air Contaminant Benchmark List

The air contaminant benchmark list is intended for use primarily by an emitter who is required to prepare an Emission Summary and Dispersion Modelling (ESDM) report under O. Reg. 419/05. The applicable criteria from the benchmark list were used to compare to the Project specific dispersion modelling results to determine the Project's compliance with O. Reg 419/05.

2.1.2 Ambient Air Quality Criteria

Ambient Air Quality Criteria (AAQC) are set by the MECP, within the air contaminant benchmark list. They are provincially based, non-regulatory, ambient air quality values developed to protect against potentially adverse effects on human health and/or the environment. AAQCs are used to assess air quality from all emission sources and are most commonly used in environmental assessments.

2.1.3 Guideline A-5 Requirements

Guideline A-5, under O. Reg. 419/05, specifies emission limits for stationary combustion sources, including limits for natural gas fired turbines. For a natural gas fired turbine facility, these limits are calculated based on the power rating on the turbine as well as heat recovery units, where applicable. This assessment would be completed as part of a future application for Provincial approval. The equipment selected is anticipated to meet the conditions of the A-5 Guideline, and therefore, has not been included in this assessment.

2.2 Canadian Ambient Air Quality Standards

The Canadian Ambient Air Quality Standards (CAAQS) are federally based, non-regulatory, ambient air quality values. These standards are 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 the country. 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.

For the purposes of this report, predicted ground level concentrations (GLC) at a point of interest beyond the fenceline of the Project and at selected sensitive receptors were compared to identified provincial and federal regulatory frameworks and standards, where applicable.

3.0 Existing Environmental Conditions

The following sections provide the regional and local meteorology and air quality context relevant to the Project. Regional and local historical climate data were sourced from the Government of Canada Past Weather and Climate Canadian Climate Normals Data set (1990-2020).

3.1 Regional Climate

The Project is located in the Township of St. Clair, within Lambton County in southwestern Ontario. This region lies along the southern shores of Lake Huron and the St. Clair River, directly bordering the United States. The Township of St. Clair is part of the broader Sarnia-Lambton area, which includes the City of Sarnia as its largest urban centre. The area is characterized by a mix of industrial, agricultural, and residential land uses.

3.2 Local Meteorology and Ambient Air Quality Context

Understanding local climate, meteorological conditions and ambient air quality is important in determining any potential effects a project may have on the local environment.

The averages of temperature and precipitation collected from Sarnia (1991–2020) are illustrated in Figure 3-1. The mean annual temperature is recorded as 8.5°C. 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 and fall months with mean annual total precipitation of 871.3 mm. The chosen timeframe for the meteorological data (1991 – 2020) reflects the accessibility of official statistics from ECCC.

For dispersion modelling purposes, the regional pre-processed meteorological data were downloaded from the MECP website and pre-processed using AERMET 22112, in compliance with O. Reg. 419/05. According to MECP guidelines, the London station (ID: 6144475) is the recommended station for the Sarnia area. The wind rose for this meteorological data set is provided in Figure 3-2 and shows that predominant winds come from west and southwest directions. The average wind speed is approximately 3.69 m/s.

Figure 3-1: Temperature and Precipitation for 1991 to 2020 Canadian Climate Normals, Sarnia, ON

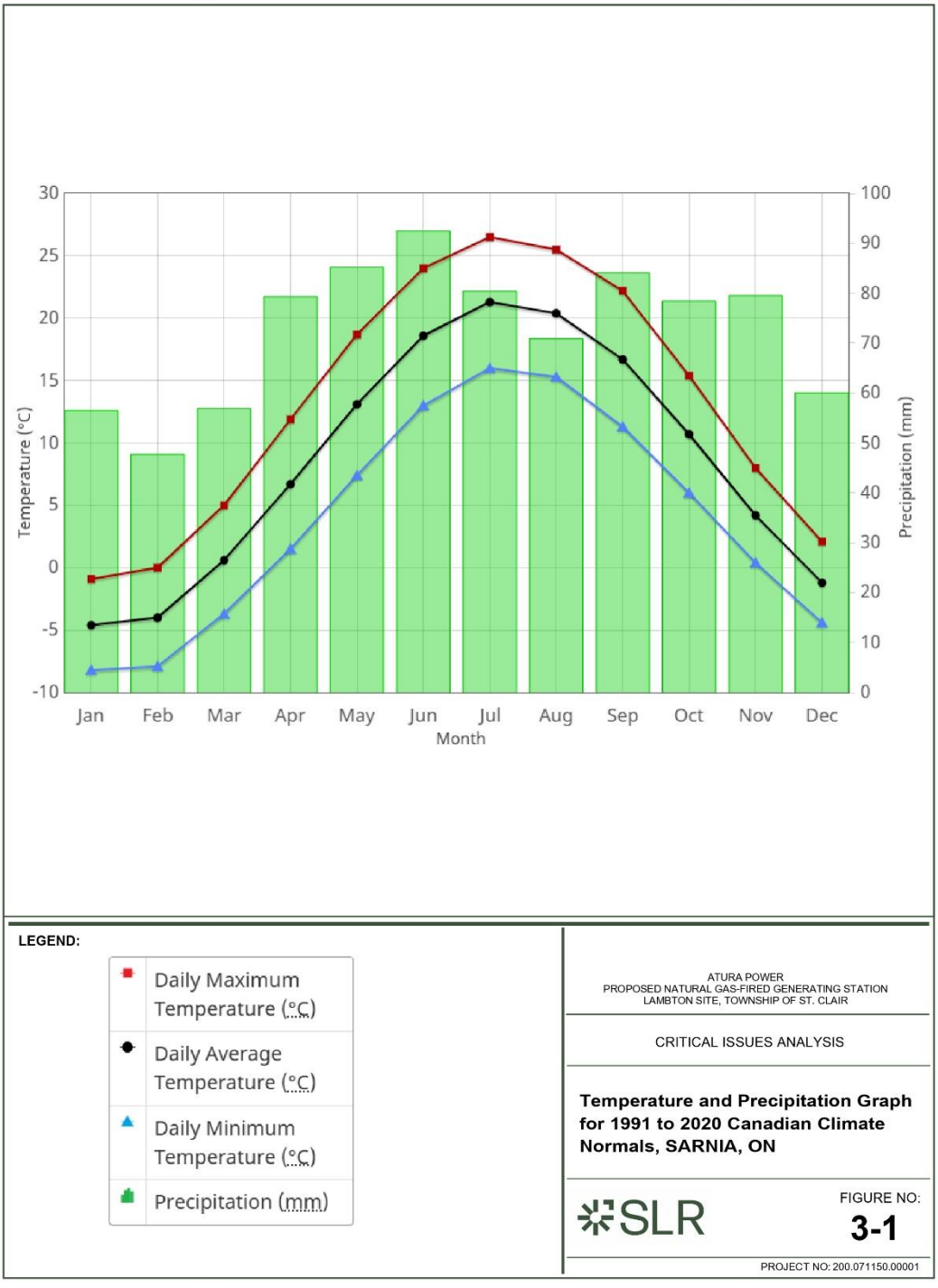
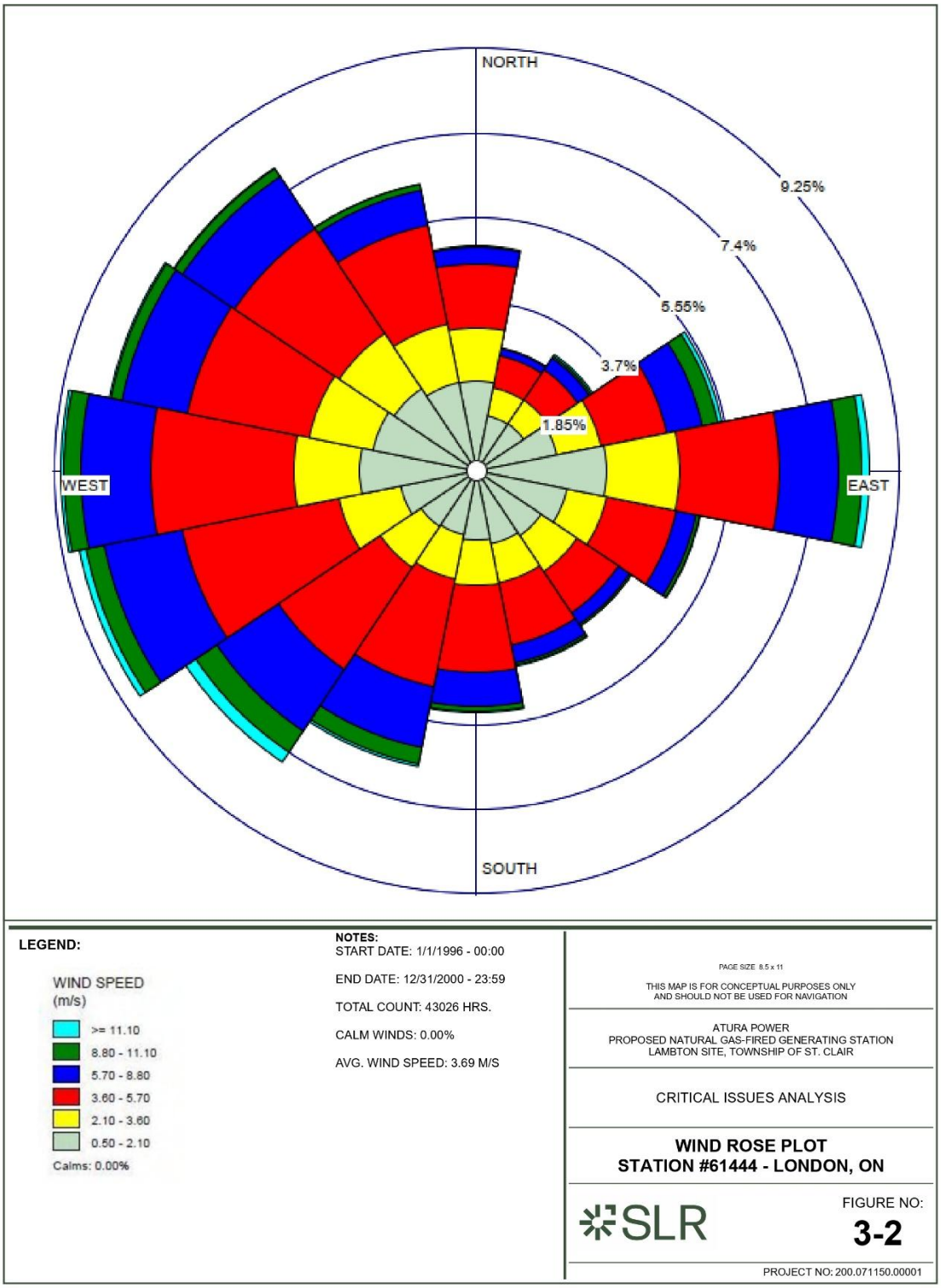


Figure 3-2: Wind Rose Plot for 1996 to 2000, London, ON



3.3 Ambient (Background) Air Quality

Over the five-year period from 2019 to 2023, background concentrations of $PM_{2.5}$, NO_X, and NO_2 were collected from the Sarnia (ID 14111) monitoring station located about 20 km from the Project location CO is not monitored at this site and, therefore, data were taken from the Windsor station which represents the closest CO monitoring facility to the Project site. The 90th percentile background concentrations were added to the model predictions from the proposed facility to compare against the relevant Provincial and Federal air quality criteria.

Table 3-1: Background Concentration from Sarnia Station (2019-2023)

Compound	Averaging Period	90th Percentile Ambient Concentration (µg/m^3)
Fine Particulate Matters ($PM_{2.5}$)	24-hour	14.1
	Annual	5.8
Nitrogen Oxides (NO_X)	1-hour	32.7
	24-hour	27.6
Nitrogen Dioxide (NO_2)	1-hour	27.5
	Annual	8.8
Carbon monoxide (CO)	1-hour	385.3
	8-hour	371.7

4.0 Dispersion Modelling Methodology

Air dispersion modelling was completed according to the MECP Guideline A-11 entitled "*Air Dispersion Modelling Guideline for Ontario, version 3.0, February 2017*" (ADMGO), as appropriate. Dispersion modelling was completed using the AERMOD dispersion model (version 22112) and regional meteorological data pre-processed with AERMET 22112 provided by the MECP.

As the modelling domain covers part of Canada and part of the United States, the terrain data were obtained from the US National Elevation Dataset Data (NED) Model Data.

The air quality assessment spatial boundary used a 10km X 10km receptor grid for conducting the dispersion modelling. The dispersion modelling grid selected was based on the requirements described in Guideline A-11: Air Dispersion Modelling Guideline for Ontario (ADMGO 2017).

A receptor grid was placed over the Project following the ADMGO (2017) methods. Receptors were selected based on guidance provided in Section 7.1 of the ADMGO, which is in accordance with s.14 of O. Reg. 419/05. Specifically, the nested receptor grid used for modelling centered on the Project turbine stack and used the following spacing which provides for more receptors spread over a larger area compared to the guidance documentation:

- (a) 20 metres or less, in an area that is bounded by a rectangle, where every point on the boundary of the rectangle is at least 200 metres from every source of contaminant;
- (b) 50 metres or less, in an area that surrounds the area described in clause (a) and that is bounded by a rectangle, where every point on the rectangle is at least 300 metres from the area described in clause (a);

- (c) 100 metres or less, in an area that surrounds the area described in clause (b) and that is bounded by a rectangle, where every point on the rectangle is at least 800 metres from the area described in clause (a);
- (d) 200 metres or less, in an area that surrounds the area described in clause (c) and that is bounded by a rectangle, where every point on the rectangle is at least 1,800 metres from the area described in clause (a);
- (e) 500 metres or less, in an area that surrounds the area described in clause (d) and that is bounded by a rectangle, where every point on the rectangle is at least 4,800 metres from the area described in clause (a);
- (f) 1,000 metres or less, in the area that surrounds the area described in clause (e).

Additionally, receptors were placed every 10 m along the property line. Eleven sensitive receptors were identified (for both air quality and noise assessments) and were placed as discrete receptors in the model as detailed in Table 4-1.

Table 4-1: Sensitive Receptor Details

Discrete Receptor	Receptor ID	UTM Co-ordinates	
		(m Easting)	(m Northing)
2010 St. Clair Parkway - 1.5 storey Dwelling	POR001	379855	4738592
2020 St. Clair Parkway - 1 storey Dwelling	POR002	379838	4738520
2024 St. Clair Parkway - 1 storey Dwelling	POR003	379859	4738488
2028 St. Clair Parkway - 1 storey Dwelling	POR004	379879	4738455
1800 St. Clair Parkway - 2 storey Dwelling	POR005	379374	4740053
1799 St. Clair Parkway - 3 storey Dwelling	POR006	379245	4740050
1798 St. Clair Parkway - 2 storey Dwelling	POR007	379350	4740093
1796 St. Clair Parkway - 2 storey Dwelling	POR008	379293	4740111
1793 St. Clair Parkway - 2 storey Dwelling	POR009	379190	4740099
288 Oil Springs Line - 1 storey Dwelling	POR010	382115	4738587
Vacant Lot - Oil Springs Line (Zone A1)	VPOR001	382118	4738502

Three buildings (Table 4-2) within the site layout were included in the model and the plume downwash effects were assessed. The Building Profile Input Program (BPIP) was used to assess how the plume rise was impacted by building downwash.

Table 4-2: Building Coordinates and Details

Building	Building ID	SW Corner UTM Co-ordinates		X-Length	Y-Length	Height
		(m Easting)	(m Northing)	(m)	(m)	(m)
Admin Office	BLD-1	379782	4738990	50	18	3
Building 2	BLD-2	379797	4739034	20.5	9.2	3
Building 3	BLD-3	379846	4739057	8.3	24.3	3

4.1 Emission Source Parameters and Methodology

The proposed emission sources for the Project include the gas turbine stack, dewpoint heater, emergency fire pump, and emergency diesel genset. Emissions from the gas turbine stack with the dewpoint heater were assessed under two worst-case scenarios for the gas turbine:

- Case 1: assumes the minimum ambient temperature of -35 °C, operating at 100% or full load (Table 4-3).
- Case 2: assumes the winter average ambient temperature of -1.2 °C, also operating at 100% or full load (Table 4-4).

For each case, four operating scenarios were evaluated: startup, normal operation, shutdown, and emergency as follows:

- Startup and Shutdown: Only the gas turbine stack emissions were considered.
- Normal Operation: Emissions from both the gas turbine stack and the dewpoint heater were included.
- Emergency Scenario: Emissions from the emergency fire pump and emergency diesel genset were assessed as to be operating simultaneously, more specifically, tested at the same time.
- Startup, normal, and shutdown operation scenario durations were considered as 23.0, 28.1, and 8.9 minutes, respectively.

Pollutants considered include NO_X and CO for all four operating scenarios, and $PM_{2.5}$ for the normal operation scenario, only.

The generators that are proposed for the site are anticipated to meet the conditions of the Environmental Protection Act, under the Environmental Compliance Approvals - Exemptions from Section 9 of the Act, Ontario Regulation 524/98, allowing these units to be to be exempted from the compliance testing for the pending update to the ECA for the site. However, as a matter of completeness, an assessment has been completed to evaluate the emergency generators when being tested. In order to complete this assessment, the “Emergency Generator Checklist – Supplement to Application for Approval, EPA s.9” technical guidance was considered for guidance.

For natural gas combustion, it is assumed that the emission rates of PM_{10} from the stack (as provided by Atura) are equivalent to those of $PM_{2.5.}$ In the $PM_{2.5}$ dispersion modeling, air quality objectives were evaluated based on 24-hour and annual average concentrations which were derived from extended normal operating conditions.

The source parameters for each emission source, including the gas turbine stack, dewpoint heater, emergency fire pump, and emergency diesel genset, under startup, normal, and shutdown scenarios are summarized in Table 4-3 to Table 4-7.

Table 4-3: Modelled Emission Source Parameters – Gas Turbine Stack – Case 1

Scenario	Stack Location UTM 17T		Elevation (m ASL[1])	Stack Orientation	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Flow Rate (m^3/s)	Emission Rate		
	Easting (m)	Northing (m)								PM_{10} (g/s)	NO_X (g/s)	CO (g/s)
Start-up	379819.4	4739071.1	178.7	Vertical	47.1	7.5	7.2	704.9	314.2	-	47.3	852.6
Shutdown	379819.4	4739071.1	178.7	Vertical	47.1	7.5	20.1	883.8	877.8	-	48.3	610.1
Normal	379819.4	4739071.1	178.7	Vertical	47.1	7.5	47.5	905.2	2080.0	2.1	47.8	11.6

Note:
1. ASL – Above Sea Level

Table 4-4: Modelled Emission Source Parameters – Gas Turbine Stack – Case 2

Scenario	Stack Location UTM 17T		Elevation (m ASL[1])	Stack Orientation	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Flow Rate (m^3/s)	Emission Rate		
	Easting (m)	Northing (m)								PM_{10} (g/s)	NO_X (g/s)	CO (g/s)
Start-up	379819.4	4739071.1	178.7	Vertical	47.1	7.5	7.5	705.6	326.8	-	48.7	879.0
Shutdown	379819.4	4739071.1	178.7	Vertical	47.1	7.5	47.2	884.7	913.3	-	49.7	629.1
Normal	379819.4	4739071.1	178.7	Vertical	47.1	7.5	49.4	906.2	2164.0	2.1	49.3	12.0

Note:
1. ASL – Above Sea Level

Table 4-5: Modelled Emission Source Parameters – Dewpoint Heater

Scenario	Stack Location UTM 17T		Elevation (m ASL[1])	Stack Orientation	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Flow Rate (m^3/s)	Emission Rate		
	Easting (m)	Northing (m)								PM_{10} (g/s)	NO_X (g/s)	CO (g/s)
Normal	379996.5	4738956.4	182.6	Vertical	6.1	0.9	4.3	449.8	2.8	0.01	0.07	0.07

Note:
1. ASL – Above Sea Level

Table 4-6: Modelled Emission Source Parameters – Emergency Fire Pump

Scenario	Stack Location UTM 17T		Elevation (m ASL[1])	Stack Orientation	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Flow Rate (m^3/s)	Emission Rate
	Easting (m)	Northing (m)								NO_X (g/s)
Emergency	379841.6	4738990.7	182.8	Vertical	6.1	0.2	48.3	723.2	0.9	0.29

Note:
1. ASL – Above Sea Level

Table 4-7: Modelled Emission Source Parameters – Emergency Diesel Genset

Scenario	Stack Location UTM 17T		Elevation (m ASL[1])	Stack Orientation	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Flow Rate (m^3/s)	Emission Rate
	Easting (m)	Northing (m)								NO_X (g/s)
Emergency	379907.3	4739077.8	179.1	Vertical	3.3	0.4	46.4	703.5	4.7	5.76

Note:
1. ASL – Above Sea Level

5.0 Dispersion Modelling Results

5.1 Project Impacts

The dispersion modelling results of NOx and CO at receptor grids and sensitive receptors for case 1 and 2 are presented in Table 5-1 to Table 5-5. Results are compared against the MECP O. Reg. 419/05 limits, as only the MECP emission limit is required for compliance purposes.

5.1.1 Normal Operating Conditions

All predicted concentrations of NO_x and CO outside the Project fenceline (Figure 1-1) meet their respective O. Reg. 419/05.

The maximum total predicted NO_x concentrations for both case 1 and 2 for the 1-hour and 24-hour averages were 27.6 µg/m³ at grid receptors, and 15.9 µg/m³ at sensitive receptors. All of these values are approximately below 11% of the O. Reg. 419/05 objectives and show no exceedances at any point within the domain.

The maximum total predicted CO concentrations for both case 1 and 2 for the 1/2-hour averages were 33.5 µg/m³ at grid receptors, and 4.7 µg/m³ at sensitive receptors. All of these values are approximately below 1% of the O. Reg. 419/05 objectives and show no exceedances at any point within the domain.

5.1.2 Startup and Shutdown Conditions

All predicted concentrations of NO_x and CO outside the Project fenceline (Figure 1-1) meet their respective AAQC.

The maximum total predicted 1-hour NO_x concentrations for startup and shutdown scenarios for both case 1 and 2 were 135.8 µg/m³ at grid receptors, and 83.2 µg/m³ at sensitive receptors. All of these values are approximately below 34% of the AAQC objectives and show no exceedances at any point within the domain.

The maximum total predicted 1/2-hour CO concentrations for startup and shutdown scenarios for both case 1 and 2 were 2977.3 µg/m³ at grid receptors, and 1821.3 µg/m³ at sensitive receptors. All of these values are approximately below 50% of the O. Reg. 419/05 objectives and show no exceedances at any point within the domain.

5.1.3 Emergency Condition

The maximum predicted concentrations of 1-hour NO_X predicted for the emergency scenario including the testing of both the emergency fire pump and the emergency generator simultaneously, was 102.1 µg/m³ at sensitive receptors or 26% of the 400 µg/m³ standard.

Table 5-1: Maximum Predicted Concentration (µg/m^3) at Receptor Grids – Project Impacts – Case 1

Compound	Scenario	Averaging Period	Maximum Predicted Concentration	O. Reg. 419/05 Limit (µg/m^3)	Predicted to O. Reg. 419/05 (%)
NO_X	**Startup**	1-hour	135.1	400	33.8
	Shutdown	1-hour	58.5	400	14.6
	Normal	1-hour	27.6	400	6.9
		24-hour	20.6	200	10.3
CO	**Startup**	½ hour	2955.8	6000	49.3
	Shutdown	½ hour	894.7	6000	14.9
	Normal	½ hour	33.5	6000	0.6

Table 5-2: Maximum Predicted Concentration (µg/m^3) at Sensitive Receptors – Project Impacts – Case 1

Compound	Scenario	Averaging Period	Maximum Predicted Concentration	O. Reg. 419/05 Limit (µg/m^3)	Predicted to O. Reg. 419/05 (%)	Location
NO_X	**Startup**	1-hour	83.2	400	20.8	POR001
	Shutdown	1-hour	24.5	400	6.1	POR005
	Normal	1-hour	15.8	400	4.0	POR006
		24-hour	2.0	200	1.0	POR008
CO	**Startup**	½ hour	1821.3	6000	30.4	POR001
	Shutdown	½ hour	376.3	6000	6.3	POR005
	Normal	½ hour	4.7	6000	0.1	POR006

Table 5-3: Maximum Predicted Concentration (µg/m^3) at Receptor Grids – Project Impacts – Case 2

Compound	Scenario	Averaging Period	Maximum Predicted Concentration	O. Reg. 419/05 Limit (µg/m^3)	Predicted to O. Reg. 419/05 (%)
NO_X	**Startup**	1-hour	135.8	400	34.0
	Shutdown	1-hour	57.5	400	14.4
	Normal	1-hour	27.6	400	6.9
		24-hour	20.6	200	10.3
CO	**Startup**	½ hour	2977.3	6000	49.6
	Shutdown	½ hour	884.3	6000	14.7
	Normal	½ hour	33.5	6000	0.6

Table 5-4: Maximum Predicted Concentration (µg/m^3) at Sensitive Receptors – Project Impacts – Case 2

Compound	Scenario	Averaging Period	Maximum Predicted Concentration	O. Reg. 419/05 Limit (µg/m^3)	Predicted to O. Reg. 419/05 (%)	Location
NO_X	**Startup**	1-hour	82.3	400	20.6	POR001
	Shutdown	1-hour	24.9	400	6.2	POR005
	Normal	1-hour	15.9	400	4.0	POR006
		24-hour	1.9	200	1.0	POR008
CO	**Startup**	½ hour	1804.1	6000	30.1	POR001
	Shutdown	½ hour	382.5	6000	6.4	POR005
	Normal	½ hour	4.7	6000	0.1	POR006

Table 5-5: Maximum Predicted Concentration (µg/m^3) at Sensitive Receptors – Project Impacts – Emergency (Fire Pump and Emergency Genset)

Compound	Averaging Period	Maximum Predicted Concentration	O. Reg. 419/05 Limit (µg/m^3)	Predicted to O. Reg. 419/05 (%)	Location
NO_X	1-hour	102.1	400	25.5	POR001

5.2 Cumulative Impacts

In addition to meeting the applicable provincial regulatory compliance limits that will be required for MECP approval, a combined effects analysis was conducted to consider the existing ambient air quality conditions in the local region. Predicted results from dispersion modelling were added with the local, historical, ambient air quality data and are presented in Table 5-6 to Table 5-9. 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).

5.2.1 Normal Operating Conditions

All predicted concentrations of NO_x, CO, and $PM_{2.5}$ meet the respective AAQC and CAAQS at all selected sensitive receptors.

The maximum total predicted NO_x concentrations for both case 1 and 2 for the 1-hour and 24-hour averages was 48.6 µg/m³ at sensitive receptors. All of these values are approximately below 15% of the AAQC objectives and show no exceedances.

For the normal operation scenario, the NO_2 results were compared to the Canadian Ambient Air Quality Standards (CAAQS). The maximum total predicted NO_2 concentrations for both case 1 and 2 for the 1-hour and annual averages were 35.3 µg/m³ and 8.9 µg/m³ at sensitive receptors. All of these values are approximately below 45% of the CAAQS objectives and show no exceedances.

The maximum total predicted CO concentrations for both case 1 and 2 for the 1-hour and 8-hour averages were 389.2 µg/m³ and 373.1 µg/m³ at sensitive receptors. All of these values are approximately below 3% of the AAQC objectives and show no exceedances at any point within the domain.

The maximum total predicted $PM_{2.5}$ concentrations, including background concentrations, for both case 1 and 2 for the 24-hour and annual averages were 14.2 µg/m³ at sensitive receptors. Predicted concentrations of $PM_{2.5}$ are dominated by the existing background concentrations, with the proposed facility contributing less than 1% of the maximum concentration. All of these values are approximately below 67% of the AAQC and CAAQS objectives and shows no exceedances.

Table 5-6: Maximum Predicted Concentration (µg/m3) at Sensitive Receptors – Cumulative Impacts – Case 1

Compound	Scenario	Averaging Period	Maximum Predicted Concentration	Background Concentration	Total Concentration	AAQC	Predicted to AAQC (%)	Location
NO_X	**Normal**	1-hour	15.8	32.7	48.5	400	12.1	POR006
		24-hour	2.0	27.6	29.6	200	14.8	POR008
CO	**Normal**	1-hour	3.8	385.3	389.1	36200	1.1	POR006
		8-hour	1.4	371.7	373.1	15700	2.4	POR001
$PM_{2.5}$	**Normal**	24-hour	0.1	14.1	14.2	27	52.7	POR001
		Annual	0.0	5.8	5.8	8.8	66.0	POR001

Table 5-7: Maximum Predicted Concentration (µg/m^3) at Sensitive Receptors – Cumulative Impacts – Case 2

Compound	Scenario	Averaging Period	Maximum Predicted Concentration	Background Concentration	Total Concentration	AAQC	Predicted to AAQC (%)	Location
NO_X	**Normal**	1-hour	15.9	32.7	48.6	400	12.1	POR006
		24-hour	1.9	27.6	29.5	200	14.8	POR008
CO	**Normal**	1-hour	3.9	385.3	389.2	36200	1.1	POR006
		8-hour	1.4	371.7	373.1	15700	2.4	POR001
$PM_{2.5}$	**Normal**	24-hour	0.1	14.1	14.2	27	52.7	POR001
		Annual	0.0	5.8	5.8	8.8	66.0	POR001

Table 5-8: Maximum Predicted NO_2 Concentration (µg/m^3) at Sensitive Receptors CAAQS – Normal Operation – Cumulative Impacts – Case 1

Compound	Averaging Period	Maximum Predicted Concentration	Background Concentration	Total Concentration	CAAQS	Predicted to CAAQS (%)	Location
NO_2	1-hour	7.8	27.5	35.3	78.9	44.7	POR006
	Annual	0.1	8.8	8.9	22.5	39.6	POR001

Table 5-9: Maximum Predicted NO_2 Concentration (µg/m^3) at Sensitive Receptors CAAQS – Normal Operation – Cumulative Impacts – Case 2

Compound	Averaging Period	Maximum Predicted Concentration	Background Concentration	Total Concentration	CAAQS	Predicted to CAAQS (%)	Location
NO_2	1-hour	7.7	27.5	35.2	78.9	44.7	POR006
	Annual	0.1	8.8	8.9	22.5	39.6	POR001

6.0 Air Emissions Summary

Air dispersion modelling using AERMOD version 22112 was conducted to assess potential air quality impacts from the proposed natural gas-fired generating station at the Project Site. The modelling evaluated emissions of nitrogen oxides (NO_X), carbon monoxide (CO), and fine particulate matter ($PM_{2.5}$) under multiple operating scenarios, including normal, startup, shutdown, and emergency conditions. Two worst case operating cases for the gas turbine were assessed, corresponding to gas turbine emissions with the dew point heater;

- Case 1: assumes the minimum ambient temperature of -35 °C, operating at 100% or full load (Table 2 4), and
- Case 2: assumes the winter average ambient temperature of -1.2 °C, also operating at 100% or full load (Table 2 5).

6.1 Project Impacts:

Dispersion modelling was conducted for NOx and CO under normal, startup/shutdown, and emergency scenarios. Under all operating conditions, the predicted concentrations of NO_X and CO outside the Project fenceline were well below the applicable O. Reg. 419/05 limits and AAQC criteria at all receptor locations. For normal operations, NO_X and CO concentrations were less than 11% and 1% of O. Reg. 419/05 limits, respectively. During startup/shutdown, NO_X remained below 34% and CO below 50% of applicable limits. Emergency scenarios also showed compliance with NO_X concentrations remaining below 26% of regulatory limit at selected sensitive receptors. These results confirm that the proposed facility, in isolation, will not result in exceedances or adverse air quality impacts.

6.2 Cumulative Impacts:

The combined effects analysis incorporated background ambient concentrations with modelled results to assess regional air quality impacts. For normal operating condition, cumulative concentrations of NO_X, CO, and $PM_{2.5}$ remained below their respective AAQC and CAAQS criteria. Notably, NO_2 concentrations remained below 45% of the CAAQS, while CO levels were below 3% of AAQC values. $PM_{2.5}$ concentrations, driven primarily by background levels, remained below 67% of applicable standards, with the Project contributing less than 1%. These cumulative results indicate that the Project, when considered alongside existing background air quality, will not lead to exceedances of ambient air quality standards.

7.0 Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Atura Power (Atura) (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

8.0 Closure

Should you have questions on the above summary report, please contact the undersigned.

Regards,

SLR Consulting (Canada) Ltd.

<original signed by>

<original signed by>

Ahmad Kia, Ph.D., P.Eng., PMP, LEED GA
Senior Air Quality Engineer
ahmad.kia@slrconsulting.com

Shawn Roberts, M.A.Sc., EP
GHG & Air Quality Senior Specialist
seroberts@slrconsulting.com

9.0 References

MECP. 2016. Ontario's Ambient Air Quality Criteria (AAQC). Available online: https://www.ontario.ca/page/ontarios-ambient-air-quality-criteria. Ministry of the Environment, Conservation and Parks. Last accessed: September 2023.

Canadian Council of Ministers of the Environment (CCME). 2021 Canadian Ambient Air Quality Standards. Available online: https://ccme.ca/en/air-quality-report. Last accessed: May 2024.

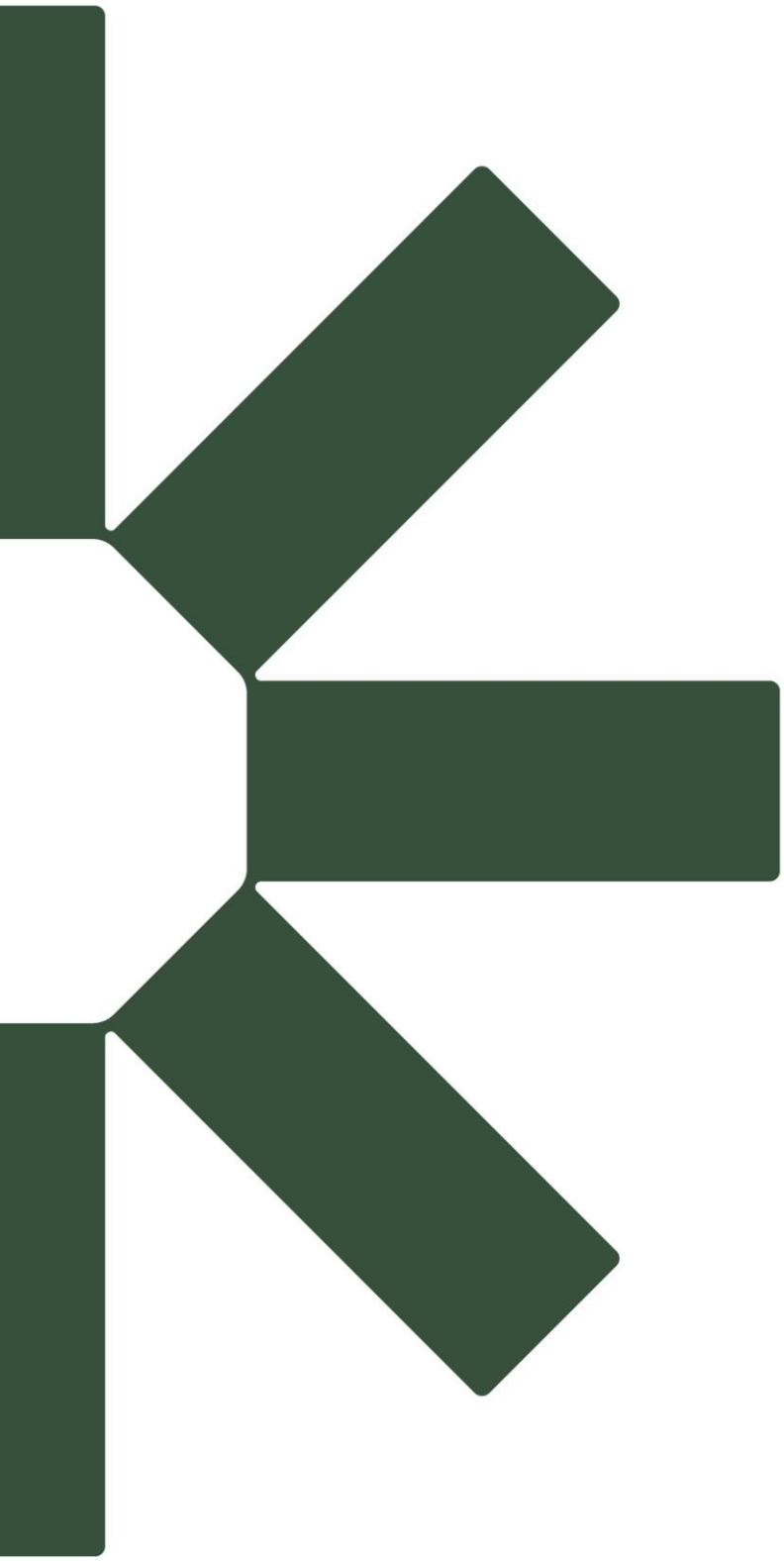
MECP. 2016. [Guideline A-5] Atmospheric Emissions from Stationary Combustion Turbines. Available online: https://www.ontario.ca/page/guideline-5-atmospheric-emissions-stationary-combustion-turbines. Ministry of the Environment, Conservation and Parks. Last accessed: March 2021.

MECP. 2017. [Guideline A-11] Air Dispersion Modelling Guideline for Ontario. Available online: https://files.ontario.ca/admgo-id50_aoda_v2b.pdf. Ministry of the Environment, Conservation and Parks. Last accessed: March 2024.

MECP. 2017. [Guideline A-11] Air Dispersion Modelling Guideline for Ontario. Available online: https://files.ontario.ca/admgo-id50_aoda_v2b.pdf. Ministry of the Environment, Conservation and Parks. Last accessed: March 2024.

MECP. 2023. O. Reg. 419/05: AIR POLLUTION - LOCAL AIR QUALITY. Available online: https://www.ontario.ca/laws/regulation/050419. Ministry of the Environment, Conservation and Parks. Last accessed: June 2023.

MECP. 2010. Emergency Generator Checklist Supplement To Application For Approval EPA s.9. Ministry of the Environment, Conservation and Parks. Last accessed: November 2010.



Making Sustainability Happen

Appendix D

Noise Assessment Report

Atura Power

Noise Impact Assessment

Riverside Generating Station

Atura Power

200-1415 Joshuas Creek Drive
Oakville, ON L6H 7G4

Prepared by:

SLR Consulting (Canada) Ltd.

100 Stone Road West, Suite 201, Guelph, ON N1G 5L3

SLR Project No.: 200.071150.00001

July 11, 2025

Revision: 0

Revision Record

Revision	Date	Prepared By	Checked By	Authorized By
0	July 11, 2025	Keni Mallinen	Arthur Küpper	Marc Rose

Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Atura Power (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

Executive Summary

SLR Consulting (Canada) Ltd. was retained by Atura Power (Atura) to conduct a preliminary noise impact assessment for the proposed Riverside Generating Station, a new approximately 500 MW natural gas-fired facility to be developed at the site of the former Lambton Generating Station in St. Clair Township, Ontario. The purpose of this assessment was to model potential noise impacts from the Project to evaluate compliance with applicable guidelines outlined in Ministry of Environment, Conservation and Parks (MECP) Publication NPC-300.

The significant sources of noise associated with the Facility are those associated with the simple cycle gas turbine package, auxiliary equipment, and emergency equipment (generator and diesel fire pump). Sound levels from the stationary source(s) under assessment were modelled using CadnaA, a software implementation of the ISO-9613-2 (2024) environmental noise propagation algorithms. A combination of manufacturers' data, engineering calculations, and equipment specifications was used to establish source sound levels.

Points of reception (PORs) surrounding the Project were identified through a review of zoning maps, recent available aerial imagery, and during a site visit conducted in February 2025. Ten (10) PORs representing planes of windows of noise sensitive spaces, and associated outdoor PORs, were identified. One vacant lot POR (VPOR) was also considered. These are representative of the most exposed noise sensitive locations to the Project in all directions. The acoustic environment surrounding the Facility and containing the nearest noise sensitive land uses is described as Class 2 along St. Clair Parkway, and Class 3 further to the east near Greenfield Road and Oil Springs Line.

Sound levels from the Project operations are predicted to meet applicable Class 2 and Class 3 minimum exclusionary limits at all surrounding PORs/OPORs/VPORs with appropriate Project design, equipment specifications, and inclusion of mitigation measures as outlined in this report.

Potential construction noise associated with the Project can be controlled through the implementation of best practices and practical mitigation measures.

Based on this analysis, the proposed Riverside Generating Station is not expected to cause adverse effects with respect to noise.

Table of Contents

Tables in Text

Appended Figures

Appendices

Acronyms and Abbreviations

Atura	Atura Power
CofA	Certificate of Approval
dBA	A-weighted decibels
ECA	Environmental Compliance Approval
Hz	Hertz
IAA	*Impact Assessment Act*
IESO	Independent Electricity System Operator
IPD	Initial Project Description
km	kilometre
L_{eq}	Energy Equivalent Sound Level
LT2 RFP	Long-Term Request for Proposals
M	metre
MECP	Ministry of the Environment, Conservation and Parks
NGSE	Napanee Generating Station Expansion
NIA	Noise Impact Assessment
OPOR	Outdoor Point of Reception
POR	Point of Reception
RGS	Riverside Generating Station
SLR	SLR Consulting (Canada) Ltd.
VPOR	Vacant Lot Point of Reception

1.0 Introduction

1.1 Project Description

SLR Consulting (Canada) Ltd. (SLR) was retained by Atura Power (Atura) to complete an Initial Project Description (IPD) for the potential development of a new approximately 500 MW natural gas-fired generating station at the former Lambton Generating Station site (the Site) in the Township of St. Clair, Ontario (the Project) at 1886 St. Clair Parkway. The proposed Project is herein referred to as the Riverside Generating Station (RGS), and its location is shown in Figure 1.

SLR understands that Atura is bidding the Project into the Ontario Independent Electricity System Operator's (IESO's) Long-Term Request for Proposals (LT2 RFP) process. The construction of a new natural gas-fired generating station with a production capacity of 200 megawatts (MW) or more is included in Section 30 of the federal Impact Assessment Act (IAA) Physical Activities Regulations (Project List).

1.2 Assessment Objectives

This Noise Impact Assessment (NIA) has been prepared in support of the IPD for the Project. The purpose of this NIA is to evaluate potential adverse effects from noise due to the Project, by assessing compliance with applicable guidelines prescribed by the Ontario Ministry of Environment, Conservation and Parks (MECP).

1.3 Sound Overview and Context

Sound is a dynamic, fluctuating pressure in a fluid medium such as air. Noise is defined as unwanted sound. The standard practice within the acoustical industry is to use these two terms interchangeably.

Sound levels are commonly expressed in terms of A-weighted decibels (dBA values), which account for the variation in human frequency response. Humans do not hear low frequency sound as well as that in mid or high frequencies. The A-weighting network was developed to correspond to how humans hear sounds. Unweighted measurements are designated as dBZ values. These measurements are used in investigating impacts from overpressure (blasting) or low frequency noise. Based on the noise sources associated with this project, low frequency noise impacts are not expected.

Table 1 presents a comparison of "typical" sound levels that humans may encounter, and the general human perception of those levels. Sound levels from 25 to 60 dBA are in the faint to moderate range. Most of the outdoor acoustic environment, even within the busiest city cores, will lie within this range. Sound levels from 65 to 85 dBA (or higher) are perceived as being loud. This range includes commercial and industrial spaces with sound sources that dominate the acoustic environment.

At this time, the best available research indicates that long-term human responses to noise are best evaluated using energy equivalent sound exposure levels (L_{eq} values), in A-Weighted decibels (L_{eq} values in dBA)[1] including adjustments to account for particularly annoying characteristics of the sounds being analysed. The ability of the L_{eq} metric to account for the three factors of level, duration and frequency of events makes it a robust predictor of human response to noise. It is for this reason that the vast majority of noise standards are based on L_{eq} values.

Table 1: Descriptions for Ranges of Sound Levels

Sound Levels		Sound Source Description
Human Perception	**Sound Level in dBA**	
Deafening	125	Sonic booms and proximity to aircraft engines
	120	Threshold of Feeling/Pain
	115	Maximum level, hard rock band concert
	110	Accelerating Motorcycle at a few feet away
Very Loud	105	Loud auto horn at 3 m away
	100	Dance club/maximum human vocal output at 1 m distance
	95	Jack hammer at 15 m distance
	90	Indoors in a noisy factory
Loud	85	Heavy truck pass-by at 15 m distance
	80	School cafeteria/noisy bar; vacuum cleaner at 1.5 m
	75	Near edge of major highway
	70	Inside automobile at 60 km/h
	65	Normal human speech (unraised voice) at 1 m distance
Moderate	60	Typical background noise levels in a large department store
	55	General objective for outdoor sound levels; typical urban sound level (24h)
	50	Typical suburban/semi-rural sound level (24h)
	45	Typical rural levels (24h); typical noise levels in an office due to HVAC

[1] ISO 1996:2003(E), Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures.

Sound Levels		Sound Source Description
Human Perception	**Sound Level in dBA**	
Faint	40	Typical background noise levels in a library
	35	
	30	Broadcast studio
	25	Average whisper
Very Faint	20	Deep woods on a very calm day
	15	
	10	
	5	Human breathing
	0	Quietest sound that can be heard by humans

2.0 Environmental Noise Guidelines

2.1 MECP Publication NPC-300

The guidelines considered in this NIA are prescribed in Part B of the MECP document, Environmental Noise Guideline – Stationary and Transportation Sources – Approval and *Planning (NPC-300)*, published August 2013.[2] The NPC-300 guideline sets out sound level limits for two main types of stationary noise sources:

- Non-impulsive, “continuous” (steady) noise sources such as ventilation fans, mechanical equipment, and vehicles while moving within the property boundary of an industry. Continuous noise is measured using 1-hour average sound exposures (L_{eq}(1-hr) values), in A-weighted decibels (dBA). This describes the type of noise expected to be generated by the Project; and
- Impulsive noise, which is a “banging” type noise characterized by rapid rise time and decay. Impulsive noise is measured using a logarithmic mean (average) level (L_{LM}) of the impulses in a one-hour period, in dBAI.

The applicable sound level limits at a point of reception (POR) are the higher of:

- The existing ambient sound level due to road (and in some cases, rail) traffic; or
- The exclusion limits set out in the guideline.

Furthermore, the guideline document requires an assessment at, and provides separate guideline limits for:

- Façade PORs, such as the planes of windows (on outdoor façades) which interface with noise sensitive spaces such as living rooms, dens, eat-in kitchens, dining rooms and bedrooms (including windows to noise-sensitive commercial and institutional spaces); and

[2] https://www.ontario.ca/page/environmental-noise-guideline-stationary-and-transportation-sources-approval-and-planning

- Outdoor PORs (e.g., back yards, communal outdoor amenity areas for multi-tenant condominium buildings, etc.).

PORs, area classifications, and guideline limits are discussed further in the following subsections.

2.2 Noise Sensitive Land Uses

In the context of noise impact assessment for the Project, a POR (also referred to as a receptor) is the location at a noise sensitive land use or noise sensitive zoned lot where noise from the Project is received. There are three general classes of land uses which may contain PORs that must be assessed with respect to the Project:

- **Residential Land Uses.** Residential PORs are noise sensitive dwellings and comprise the largest number of PORs within and near the Project. Assessment locations for residential PORs depend in part on the height (number of storeys) of a dwelling. The assessment locations are:
    - Plane of window – a location in the centre of any window on a noise sensitive space of a dwelling. The location should be a minimum of 1.5 m above ground for a first storey window, a minimum of 4.5 m above ground for a second storey window, and a minimum of 7.5 m above ground for a third storey window.
    - Outdoor POR – a location 1.5 m above grade within 30 m of a dwelling facade, typically in backyards, front yards, terraces or patios.
- **Noise Sensitive Zoned Lots.** Where a building permit or site plan approval has been issued on lands that are considered noise sensitive, a receptor must be sited following prescribed siting guidance for residential, institutional, and/or campsite/campground receptors described above. Furthermore, if a property is zoned to permit a noise sensitive land use but currently has an existing land use that is not a noise sensitive land use, it should also be technically considered. In SLR's experience, this may not be strictly enforced if the existing land use is well established and is not reasonably expected to change.

  For noise sensitive zoned lots where a building permit or site plan approval has not been issued, a POR representing the lot must be assessed, provided the lot is accessible. If the area of the accessible vacant lot is smaller than 1 hectare (ha), the receptor location should be approximately at the centre of the vacant lot, 4.5 m above grade, having regard to existing zoning by-law(s), typical building patterns in the area, and appropriate/likely future use of the vacant lot. If the vacant lot is larger than 1 ha in area, the area for noise impact assessment should be limited to a 1 ha square (or rectangular shape, if justified), and the receptor should be sited following the same guidance above.
- **Institutional/Commercial Land Uses.** Institutional uses that are considered noise sensitive may include educational facilities, childcare centres, hospitals, health care facilities, shelters for emergency housing, community centres, places of worship, nursing homes, and detention centres. Commercial uses include buildings used for commercial purposes that include one or more habitable rooms used as sleeping facilities, such as hotels and motels. No institutional/commercial land uses were identified within 1,000 m of the Project.

2.3 Guideline Limits

Under MECP Publication NPC-300 guidelines, PORs are defined using area classifications. The POR areas are classified and described as follows:

- Class 1 Area – “Urban areas”: an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum".
- Class 2 Area – “Suburban/Semi-rural areas”: an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 areas:
    - Sound levels characteristic of Class 1 during the daytime (0700h to 1900h or to 2300h); and
    - Low evening and night background sound level defined by the natural environment and infrequent human activity starting as early as 1900h.
- Class 3 Area – “Rural areas”: a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as a small community, agricultural area, a rural recreational area such as a cottage or a resort area, or a wilderness area.
- Class 4 Area – “Infill areas”: an area or specific site that would otherwise be defined as Class 1 or 2 and which:
    - Is an area intended for development with new noise sensitive land use(s) that are not yet built;
    - Is in proximity to existing, lawfully established stationary source(s); and
    - Has formal confirmation from the land use planning authority for the Class 4 area classification, which is determined during the land use planning process.
    - Areas with existing noise sensitive land use(s) cannot be classified as Class 4 areas.

Depending on the POR area classifications above, different minimum exclusionary guideline limits apply. Table 2 summarizes the minimum exclusionary limits from NPC-300 for continuous (non-impulsive) noise sources such as those associated with the Project.

The applicable limits at a POR are the higher of:

- The existing ambient sound level due to traffic (measured or modelled in accordance with MECP guidelines); or
- The exclusion limits set out in the guideline and Table 2.

Sound level limits for assessing noise produced by emergency equipment operating in non-emergency situations (such as routine monthly testing or maintenance of a generator) are 5 dB greater than limits otherwise applicable to stationary sources. Additionally, emergency equipment operating in non-emergency situations is to be assessed independently of all other stationary noise sources.

Table 2: NPC-300 Exclusion Limits for Continuous (Non-Impulsive) Noise (L_{eq} (1-hr), dBA)

Time of Date	Class 1 Area		Class 2 Area		Class 3 Area		Class 4 Area	
	Plane of Window	Outdoor POR	Plane of Window	Outdoor POR	Plane of Window	Outdoor POR	Plane of Window	Outdoor POR
Daytime (0700h-1900h)	50	50	50	50	45	45	60	55
Evening (1900h-2300h)	50	50	50	45	40	40	60	55
Nighttime (2300h-0700h)	45	n/a[1]	45	n/a[1]	40	n/a[1]	55	n/a[1]
Notes: [1] Sound level limits do not apply to outdoor PORs during nighttime hours.								

3.0 Points of Reception

3.1 Critical Points of Reception for the Project

Critical PORs are those expected to be closest and/or most exposed to the Project. They will dictate the Project compliance status, as predicted sound levels will be highest when compared to applicable sound level limits at the critical PORs. By meeting applicable limits at the critical PORs, it is expected that limits will also be met at all other surrounding noise sensitive locations.

The critical PORs were identified through a review of recent desktop aerial imagery and visually confirmed during a site visit to the Project Site area by SLR staff in February 2025. Desktop review included a review of potential surrounding vacant lots. The Township of St. Clair Zoning By-Law 17 of 2003 (Office Consolidation January 2024) was reviewed to identify potential vacant lot PORs, and one critical vacant lot POR was considered in the assessment.

The critical PORs considered in this NIA are identified in Table 3 and shown relative to the Project in Figure 1.

Table 3: Surrounding Point of Reception Summary Table

POR ID	POR Description	UTM Coordinates (NAD 83, Zone 17)		Area Classification per NPC-300
		UTM E (m)	UTM N (m)	
Plane of Window PORs				
POR001	2010 St. Clair Parkway - 1.5 storey Dwelling	379855	4738592	Class 2
POR002	2020 St. Clair Parkway - 1 storey Dwelling	379838	4738520	Class 2
POR003	2024 St. Clair Parkway - 1 storey Dwelling	379859	4738488	Class 2
POR004	2028 St. Clair Parkway - 1 storey Dwelling	379879	4738455	Class 2
POR005	1800 St. Clair Parkway - 2 storey Dwelling	379374	4740053	Class 2

POR ID	POR Description	UTM Coordinates (NAD 83, Zone 17)		Area Classification per NPC-300
		UTM E (m)	UTM N (m)	
POR006	1799 St. Clair Parkway - 3 storey Dwelling	379245	4740050	Class 2
POR007	1798 St. Clair Parkway - 2 storey Dwelling	379350	4740093	Class 2
POR008	1796 St. Clair Parkway - 2 storey Dwelling	379293	4740111	Class 2
POR009	1793 St. Clair Parkway - 2 storey Dwelling	379190	4740099	Class 2
POR010	288 Oil Springs Line - 1 storey Dwelling	382115	4738587	Class 3
VPOR001	Vacant Lot - Oil Springs Line (Zone A1)	381708	4738620	Class 3
Outdoor PORs				
OPOR001	2010 St. Clair Parkway - Outdoor Yard	379854	4738622	Class 2
OPOR002	2020 St. Clair Parkway - Outdoor Yard	379823	4738549	Class 2
OPOR003	2024 St. Clair Parkway - Outdoor Yard	379887	4738509	Class 2
OPOR004	2028 St. Clair Parkway - Outdoor Yard	379910	4738461	Class 2
OPOR005	1800 St. Clair Parkway - Outdoor Yard	379379	4740039	Class 2
OPOR006	1799 St. Clair Parkway - Outdoor Yard	379270	4740020	Class 2
OPOR007	1798 St. Clair Parkway - Outdoor Yard	379381	4740090	Class 2
OPOR008	1796 St. Clair Parkway - Outdoor Yard	379294	4740107	Class 2
OPOR009	1793 St. Clair Parkway - Outdoor Yard	379215	4740082	Class 2
OPOR010	288 Oil Springs Line - Outdoor Yard	382107	4738587	Class 3
Notes: [1] Sound level limits do not apply to outdoor points of reception during nighttime hours.				

3.2 Baseline Sound Level Measurements

Baseline sound level measurements were performed in the Project area between February 21 and February 28, 2025. The measurement location is shown in Figure 2. The monitoring location was selected to be representative of the baseline acoustic environment at critical Project PORs with respect to setback distance (approximately 75 m) and exposure to St. Clair Parkway.

The objective of the measurement program was to obtain a minimum 48-hours of applicable data, in accordance with MECP procedures and requirements. More than 48 hours of data were collected, representing both weekend and weekday conditions. Measurements were conducted following standard industry practices, using a Svantek SV 977D monitoring system (a Type 1 sound level meter (SLM)) capable of recording several sound metrics including energy equivalent sound levels (L_{eq} values), which are the focus of assessment. A meteorological data collection station was also deployed to measure wind speed, wind direction, precipitation, relative humidity, and temperature. These metrics aid in documenting weather conditions and validating sound level measurements. Collected sound measurement data were subject to a standard exclusion analysis, which resulted in flagging and removal of extraneous data from the data set (e.g., measurements during adverse weather conditions including periods of precipitation and high wind speeds).

A summary of hourly sound level ranges and averages collected during the measurement program is provided in Table 4.

Table 4: Summary of Measured Hourly Sound Level Data

Time Period	Minimum L_{eq}(1-hr) dBA	Maximum L_{eq}(1-hr) dBA	Average L_{eq}(1-hr) dBA [1]
Daytime (0700h to 1900h)	44.5	55.7	50.2
Evening (1900h to 2300h)	42.1	51.4	45.7
Nighttime (2300h to 0700h)	40.0	52.2	43.6

Notes:
[1] Arithmetic average of hourly equivalent sound levels during monitoring period in the daytime, evening and nighttime time periods.

Overall, measurements indicate the acoustic environment at the measurement location was representative and had sound level characteristics of a Class 1 Area during daytime hours (7:00 AM to 7:00 PM), with lower evening and nighttime sound levels dominated at times by the natural environment and infrequent human activity. This aligns with the definition of a Class 2 Area in MECP Publication NPC-300. Furthermore, the average sound levels presented in Table 2 for daytime, evening and nighttime periods are similar to the minimum exclusionary limits for a Class 2 Area (summarized in Table 2).

3.3 Receptor Area Classifications and Applicable Limits

The areas surrounding the Project contain PORs that fall into the following categories:

- Class 2 – suburban/semi-rural areas; and
- Class 3 – rural areas.

The proposed POR area classifications per NPC-300 in Table 3 are based on a review of surrounding area aerial imagery by SLR staff, the proximity of receptors to St. Clair Parkway, a review of current/previous MECP approvals in the area, and results of the baseline monitoring program described in Section 3.2, representing the nearest critical receptors to the Project.

The Certificate of Approval (CofA) previously issued for the Greenfield Energy Centre (CofA Number 6500-6JGK9R), a power generation facility located at 140 Bickford Line (southeast of the Project), indicates that facility was required to meet applicable limits in MECP Publication NPC-205. NPC-205 is a precursor to NPC-300, which prescribed limits for Class 1 and Class 2 areas. Most critical receptors to the Project are in a similar area as those for the Greenfield Energy Centre. The baseline sound monitoring measurements collected in February 2025 further indicated the acoustic environment of the Project Site area was representative and had sound level characteristics of a Class 1 area during daytime hours (7:00 AM to 7:00 PM), with lower evening and nighttime sound levels dominated at times by the natural environment and infrequent human activity. These observations align with the definition of a Class 2 Area in MECP Publication NPC-300, which was the designation adopted for most critical Project receptors, as outlined in Table 3.

POR010/OPOR010 and VPOR001 are located further from St. Clair Parkway and are therefore considered Class 3 (rural).

For all PORs, the minimum exclusionary limits for Class 2 and Class 3 (where applicable) areas have been adopted in this assessment.

4.0 Operational Noise Modelling

4.1 Noise Source Summary

The proposed RGS currently contemplates a simple cycle gas turbine generator package and associated equipment. A layout of the proposed RGS indicating key equipment components is shown in Figure 3. The layout illustrated in Figure 3 is expected to undergo changes as the Project design progresses.

Sources considered in the assessment of predictable worst-case operational noise, associated with the key equipment components shown in Figure 3, are summarized in Table 5. Table 5 also presents the modelled overall sound power level of the sources. Octave band sound power level data for sources are included in Appendix A.

Table 5: Noise Source Summary Table

Noise Source	Modelled Total Sound Power Level (dBA)
Operational Noise	
4 Stage Cooler	106
Air Cooled Heat Exchanger	104
Auxiliary Transformer	90
Cooling Water Pump	98
2 Stage Cooling Tower	100
Demineralized Water Pump	98
Dew Point Heater	97
Dew Point Stack	98
Enhanced Cooling Air Compressor	102
Enhanced Cooling Air Cooler	101
Fuel Gas Compressor Cooler	92
Fuel Gas Compressors Enclosure	93
Fuel Gas Valve	98
Generator	109
Generator Step-Up Transformer	96
Gas Turbine Auxiliary Package	103
Gas Turbine Casing Cooling Fan 1	96
Gas Turbine Casing Cooling Fan 2	96
Gas Turbine Enclosure	115
Gas Turbine Enclosure Air Discharge 1	105

Noise Source	Modelled Total Sound Power Level (dBA)
Gas Turbine Enclosure Air Discharge 2	105
Gas Turbine Enclosure Air Inlet 1	104
Gas Turbine Enclosure Air Inlet 2	104
Gas Turbine Exhaust Stack	107
Gas Turbine Inlet and Filter Housing	105
Gas Turbine TCA (Turbine Cooling Air) Cooler	104
GT Inlet Downstream Ducts/Elbows	114
Lube Oil Mist Separator	105
Transition to GT Exhaust Stack	114
Emergency Sources	
Emergency Generator	100
Diesel Fire Water Pump	105

A combination of manufacturers' data, engineering calculations, and equipment specifications was used to establish source sound levels for noise sources associated with Project operations. For the emergency generator, a specification of 75 dBA at 7 m was considered, and for the diesel fire pump, historical data for a similar source were used.

As part of the preliminary Project design, some sources outlined in Table 4 include inherent acoustical mitigation, including (but not limited to) the following:

- Selection of "low noise" equipment option upgrades from the manufacturer for sources such as the Gas Turbine Air Inlet Filter Housing (and immediate downstream ducting components), Gas Turbine Exhaust Stack (and associated components), Gas Turbine Auxiliary Package, Gas Turbine TCA Cooler, Enhanced Cooling Air Cooler, Enhanced Cooling Air Compressor, Dew Point Heater, Fuel Gas Compressor Cooler, and Air Cooled Heat Exchanger.
- Implementation of silencers (for the Gas Turbine Air Inlet) and baffles (for the Gas Turbine Exhaust Stack).
- Placing some equipment in sound enclosures, such as the Fuel Gas Compressors and the base of the Gas Turbine Exhaust Stack.

Furthermore, the Project design includes acoustic barriers, which are shown on Figure 3. The current acoustic barriers and their design details are described as follows:

- PT Acoustic Barrier – approximately 50 m long, 18.3 m high, absorptive on north (source) side.
- Air Cooled Heat Exchanger Barrier – approximately 40 m long, 11 m high, absorptive on north (source) side.
- Cooler Barrier – approximately 11 m long, 5.5 m high, absorptive on north (source) side.

All of the mitigation measures considered in the assessment are considered feasible from an economic, administrative and technical perspective. Specific mitigation options and measures will be confirmed during the detailed design phase of the Project.

4.2 Modelling Methods

The base model of the turbine package (containing sources/facilities geometries and sound levels) was prepared by the facility design team (or similar) and provided to SLR. This model was reviewed in detail by SLR in concert with the design team.

Sound levels from stationary sources were modelled using Cadna/A, a software implementation of the ISO-9613-2 (2024) environmental noise propagation algorithms. Cadna/A and its implementation of ISO-9613 is the preferred acoustic model of the MECP, and it considers sound propagation of octave band centre frequencies ranging from 31.5 Hz to 8,000 Hz.

Noise sources summarized in Table 4 were modelled as a combination of point sources, area sources, and vertical area sources, depending on their geometry. They were modelled assuming continuous operation during any daytime, evening or nighttime one-hour period, for comparison with applicable hourly guideline limits. Emergency sources were assumed to be operated (tested) simultaneously for a one-hour period during daytime hours only.

Potential upset conditions associated with the Project, such as facility start-up, shut-down and/or bypass operations, were not evaluated in the NIA.

The following additional parameters were considered in the modelling, which are consistent with providing a conservative (predictable worst-case) assessment of sound levels:

- Temperature: 10°C;
- Relative Humidity: 70%;
- Ground Absorption G: G = 0.7 as the default global parameter, with localized areas of intervening reflective ground (G = 0.2) within the Project site. Water bodies were considered fully reflective (G = 0.0).
- Reflection: Two (2) orders of reflection were applied;
- Wall Absorption Coefficients: Set to 0.21 or 0.37 (21%/37% of energy is absorbed, 79%/63% reflected);
- Terrain: 1 m topographical contours were considered.

Sound levels were predicted at all receptors identified in Table 3, at worst-case discrete locations. Sound level contours were calculated using Cadna/A for receptor heights of 1.5 m (representative of a 1-storey dwelling plane of window POR and outdoor PORs) and 4.5 m (representative of a 2-storey dwelling plane of window POR), which generally describe the PORs surrounding the Project.

4.3 Noise Impact Assessment Results

4.3.1 Operational Noise

Predicted operational sound levels from the RGS are summarized in Table 6 and illustrated in Figure 4 (1.5 m receptor height noise contours) and Figure 5 (4.5 m receptor height noise contours).

The Project operational sound levels are predicted to meet applicable Class 2/Class 3 guidelines at the identified receptors during all periods of the day. The highest predicted sound levels are 44 dBA, compared to the 45 dBA nighttime sound level limit.

Table 6: Predicted Project Sound Levels at Surrounding Points of Reception – Operational Noise

POR ID	Predicted Sound Level (L_{eq}(1-hr), dBA)	Applicable Sound Level Limit (L_{eq}(1-hr), dBA)			Predicted Compliance with Applicable Limit (Y / N)		
		Day	Eve	Night	Day	Eve	Night
Plane of Window PORs							
POR001	44.3	50	50	45	Y	Y	Y
POR002	42.2	50	50	45	Y	Y	Y
POR003	41.3	50	50	45	Y	Y	Y
POR004	41.2	50	50	45	Y	Y	Y
POR005	43.4	50	50	45	Y	Y	Y
POR006	44.4	50	50	45	Y	Y	Y
POR007	44.1	50	50	45	Y	Y	Y
POR008	43.8	50	50	45	Y	Y	Y
POR009	43.5	50	50	45	Y	Y	Y
POR010	33.2	45	40	40	Y	Y	Y
VPOR001	35.9	45	40	40	Y	Y	Y
Outdoor PORs							
OPOR001	44.3	50	45	n/a[1]	Y	Y	n/a[1]
OPOR002	43.2	50	45	n/a[1]	Y	Y	n/a[1]
OPOR003	42.1	50	45	n/a[1]	Y	Y	n/a[1]
OPOR004	41.3	50	45	n/a[1]	Y	Y	n/a[1]
OPOR005	43.5	50	45	n/a[1]	Y	Y	n/a[1]
OPOR006	43.5	50	45	n/a[1]	Y	Y	n/a[1]
OPOR007	43.1	50	45	n/a[1]	Y	Y	n/a[1]
OPOR008	42.8	50	45	n/a[1]	Y	Y	n/a[1]
OPOR009	41.0	50	45	n/a[1]	Y	Y	n/a[1]
OPOR010	33.3	45	40	n/a[1]	Y	Y	n/a[1]

Notes:
[1] Sound level limits do not apply to outdoor PORs during nighttime hours.

4.3.2 Emergency Equipment Testing

Predicted sound levels from routine testing of emergency equipment (emergency generator and diesel fire water pump) at RGS are summarized in Table 7. The predicted sound levels meet applicable Class 2/Class 3 guideline limits at all PORs.

Table 7: Predicted Project Sound Levels at Surrounding Points of Reception – Emergency Equipment Testing

POR ID	Predicted Sound Level (L_{eq}(1-hr), dBA)	Applicable Sound Level Limit (L_{eq}(1-hr), dBA), Daytime	Predicted Compliance with Applicable Limit (Y / N)
Plane of Window PORs			
POR001	38.0	55	Y
POR002	32.8	55	Y
POR003	33.0	55	Y
POR004	34.1	55	Y
POR005	31.9	55	Y
POR006	32.7	55	Y
POR007	32.4	55	Y
POR008	32.0	55	Y
POR009	31.7	55	Y
POR010	24.5	50	Y
VPOR001	27.4	50	Y
Outdoor PORs			
OPOR001	37.8	55	Y
OPOR002	35.8	55	Y
OPOR003	35.5	55	Y
OPOR004	34.7	55	Y
OPOR005	32.0	55	Y
OPOR006	31.7	55	Y
OPOR007	31.4	55	Y
OPOR008	31.1	55	Y
OPOR009	30.3	55	Y
OPOR010	24.6	50	Y

5.0 Construction Noise

Construction of the Project has the potential to generate noise at surrounding noise sensitive land uses. Although specific details regarding Project construction are not yet available, activities are generally expected to include site preparation/clearing, excavation, placement and pouring of concrete, component assembly and erection, and commissioning.

This section outlines considerations for construction noise, including guidelines, typical equipment sound sources/sound levels, and commonly used mitigation measures/best practices.

5.1 Construction Noise Guidelines

MECP Publication NPC-300 indicates that 'temporary construction activities' are not considered as stationary sources that are subject to the limits previously outlined in Table 2.

Table 8 outlines other noise guidelines that can be considered for the assessment of construction noise from the Project. The guidelines are discussed in the following subsections.

Table 8: Construction Noise Guideline Summary

Applicable Guideline	Noise Metrics Considered
Health Canada Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise	L_D, L_N, L_{DN}
MECP Publication NPC-115 – Construction Equipment	L_{max} at 15 m
MECP Publication NPC-118 – Motorized Conveyances	L_{max} at 15 m
Municipal Noise By-Laws	Time, Place (typical)

5.1.1 Health Canada Noise Guidelines

Health Canada considers two separate scenarios for evaluating construction noise, based on predicted day (L_D), night (L_N) and day-night L_{DN} sound levels.

Health Canada suggests that for construction activities longer than 1 year in duration, mitigation be implemented when noise levels result in greater than 6.5% increase in Percent Highly Annoyed (%HA). Percent Highly Annoyed (%HA) is an aggregate measure of community annoyance, based on noise levels received, the types of noise, and other aggregating factors. The calculated %HA provides information on how an average community responds to a noise level. These annoyance responses are not applicable to a particular individual or group but represent an average community.

The Health Canada guidelines use the dose-response relationship between noise levels and annoyance, as per ISO 1996-1:2003, based on measured and/or predicted L_{DN} (day-night sound level) values, in dBA. The %HA value for the existing background ambient sound levels (i.e., the "no-build" situation) is calculated, as is the %HA for cumulative sound level with the Project in operation (the "build" scenario). Mitigation measures should be investigated if construction noise levels are predicted to result in a 6.5% or greater increase in %HA.

The Project construction phase is likely to be considered long-term construction (more than 1 year in duration). Once Project construction details and information are available, an assessment of potential construction noise and the %HA can be completed. Several best practices and mitigation measures are also available to control construction noise, as outlined in subsequent report sections (see Section 5.3).

5.1.2 MECP Publication NPC-115 and NPC-118 Construction Equipment Noise Emission Limits

MECP stipulates limits on noise emissions from individual items of construction equipment, rather than for overall construction noise. In the presence of persistent noise complaints, noise emission standards for the various types of construction equipment used can be checked to determine whether they meet the specified limits contained in MECP Publication NPC-115 – Construction Equipment, and MECP Publication NPC-118 – Motorized Conveyances.

Table 9 summarizes maximum noise emission levels for typical construction equipment as specified in MECP Publication NPC-115 and NPC-118.

Table 9: MECP Publication NPC-115 and NPC-118 Maximum Noise Emission Levels for Typical Construction Equipment

Type of Unit	Maximum Sound Level [1] (dBA)	Distance (m)	Power Rating (kW)
Excavation Equipment [2]	83	15	< 75
	85	15	> 75
Pneumatic Equipment [3]	85	7	-
Portable Compressors	76	7	-
Diesel Powered Trucks	95	15	-

Notes:

[1] Maximum permissible sound levels presented here are for equipment manufactured after Jan. 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.

5.1.3 Municipal Noise By-Laws

Construction noise prohibitions are commonly included in municipal noise by-laws. These prohibitions are typically prescribed as prohibitions by time and/or place (for example, if there are designated quiet zones within the municipality).

The Corporation of the Township of St. Clair By-Law Number 44 of 2014 (regulating and prohibiting noise or noises likely to disturb inhabitants) states that no person shall […] by mechanical or other means, cause or permit a noise within the municipality likely to disturb inhabitants, having regard to the time, intensity and frequency of said noise. There are no specific restrictions identified with respect to time or place.

During daytime construction, it is expected that by meeting Health Canada, NPC-115 and NPC-118 guidelines for construction noise, the requirements of the Corporation of the Township of St. Clair By-Law Number 44 of 2014 can be met.

5.2 Construction Equipment Sources and Sound Levels

Noise from construction equipment will depend on several factors including the type of construction equipment used, the number and rating of equipment, equipment usage intensity, and distance from operating equipment to noise sensitive land uses.

Commonly used construction equipment and estimated sound power levels/usage factors (as published in United States Federal Highway Administration (FHWA) FHWA Road Construction Noise Model Version 1.0 (RCNM 1.0) and the United States Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual) are provided for reference in Table 10. Usage factors provide an estimate of the percentage of time during a construction noise operation that a piece of equipment is operating at full power.

Table 10: Typical Construction Equipment Sound Levels and Usage Factors

Construction Equipment	Estimated Equipment Sound Power Level (dBA)	Usage Factor (%)
Boom Truck	105	40
Chain Saw	121 [1]	20
Concrete Mixer Truck	111	40
Concrete Pump Truck	113	20
Concrete Saw	127 [1]	20
Compactor	115	20
Crane, Mobile	113	16
Dozer	114	40
Drill Rig (Auger Type)	109	20
Dump Truck	108	40
Excavator	113	40
Flat Bed Truck	106	40
Front-End Loader	111	40
Generator/Light Plant	113	50
Jackhammer	121	20
Pneumatic Tools	117	50
Roller	112	20
Skid Steer	111	40
Vacuum Excavator (Hydrovac Truck)	117	40

Notes:
[1] A +5 dB penalty due to tonal sound quality is considered applicable.

The sound power level data and usage factors in Table 10 are estimates only, based on published data. Individual equipment sound power levels and usage factors can vary depending on equipment age, manufacturer, rating/size, and other factors.

Once the Project footprint/design are confirmed and construction details available, the information in Table 10 can be used to inform an assessment of construction noise in accordance with Health Canada recommendations, to determine potential levels of construction noise mitigation that are required (if any).

5.3 Construction Noise – Best Practices and Mitigation

In general, consideration should be given to use of construction equipment that generates the lowest amount of noise, where practical. Alternative construction equipment with lower noise emissions should be used over other equipment, if possible.

Other best management practices to be considered during the Project construction phase include the following:

- Coordinating construction activities so that the most impactful activities do not occur simultaneously.
- Maintaining and inspecting all construction equipment on a regular basis. This includes, where applicable, maintaining exhaust systems and mufflers used to mitigate noise.
- Implementing no idling policies for vehicles and construction equipment that is not in active use.
- Avoiding unnecessary revving of engines and use of air brakes.
- Minimizing noise from truck loading, unloading and hauling operations, including prohibition of tailgate and loader bucket slamming at all times.
- Avoiding nighttime construction activities.
- Notifying surrounding noise sensitive land use owners in advance of significant noise-generating activities.

Other specific noise mitigation measures to be employed will depend on the particular construction activity, and can include (but may not be limited to) the following:

- Use of temporary acoustic fencing/hoarding or other physical barriers;
- Use of sound-insulating housings or enclosures for equipment such as compressors, pumps, motors, drill rigs, generators or hydrovac trucks.
- Use of efficient intake and exhaust silencers for on-site equipment.
- Installation of sound-dampening lining material on hoppers and/or storage bins to limit impact noise.
- Minimization of vehicle/equipment reversing operations, thereby limiting the need for use of back-up alarms/ beepers.
- Conversion of tonal equipment/back-up warning beepers to broad-band back-up beepers.

6.0 Conclusions

This NIA was prepared to evaluate potential noise impacts from the proposed Riverside Generating Station, and to assess compliance with applicable guidelines prescribed by MECP Publication NPC-300.

The significant sources of noise associated with the Project were modelled based on a combination of manufacturers' data, engineering calculations, and equipment specifications. Sound levels from Project operations are predicted to meet applicable Class 2 and Class 3 minimum exclusionary limits at all surrounding PORs/OPORs/VPORs with appropriate Project design, equipment specifications, and inclusion of mitigation measures as outlined in this report.

Potential construction noise associated with the Project can be controlled through the implementation of best practices and practical mitigation measures.

The Project is not predicted to cause adverse effects with respect to noise.

7.0 Closure

Regards,

SLR Consulting (Canada) Ltd.

<original signed by>

Keni Mallinen, M.A.Sc., P.Eng
Senior Acoustics Engineer

<original signed by>

Arthur Kupper, P.Eng.
Principal Acoustics Engineer

8.0 References

Health Canada. 2023. Guidance for Evaluating Human Health Effects in Impact Assessment: Noise.

International Organization for Standardization, (ISO). 2024. ISO 9613-2 (2024). Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors.

Ontario Ministry of the Environment, Conservation & Parks (MECP). Publication NPC-115: Construction Equipment.

Ontario Ministry of the Environment, Conservation & Parks (MECP). Publication NPC-118: Motorized Conveyances.

Ontario Ministry of the Environment, Conservation & Parks (MECP). 2013. Publication NPC-300: Environmental Noise Guideline: Stationery and Transportation Sources – Approval and Planning.

United States Department of Transportation, Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123.

United States Federal Highway Administration. 2006. Road Construction Noise Model (FHWA RCNM) Version 1.0.

Figures

Noise Impact Assessment

Riverside Generating Station

Atura Power

SLR Project No.: 200.071150.00001

July 11, 2025

N

LEGEND:

- SITE BOUNDARY
- POINT OF RECEPTION
- OUTDOOR POINT OF RECEPTION
- FENCE LINE
- RAILWAY
- ROAD
- TRANSMISSION LINE
- WATERCOURSE (PERMANENT)

NOTES:

CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

IMAGERY: MAXAR, MICROSOFT, MAXAR

0 125 250 500 750 m

SCALE: 1:12,500
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

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

ATURA POWER
PROPOSED NATURAL GAS-FIRED GENERATING STATION
LAMBTON SITE, TOWNSHIP OF ST. CLAIR

NOISE IMPACT ASSESSMENT

PROJECT LOCATION AND SURROUNDING POINTS OF RECEPTION

SLR

FIGURE NO:
1

DATE: July 11, 2025

PROJECT NO: 200.071150.00001

LEGEND:

- SITE BOUNDARY
- BASELINE SOUND MONITORING LOCATION

CRITICAL RECEPTORS

- POINT OF RECEPTION
- OUTDOOR POINT OF RECEPTION
- FENCE LINE
- RAILWAY
- ROAD
- TRANSMISSION LINE

NOTES:
CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

IMAGERY: MAXAR, MICROSOFT

0 12.5 25 50 75 m

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

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

ATURA POWER
PROPOSED NATURAL GAS-FIRED GENERATING STATION
LAMBTON SITE, TOWNSHIP OF ST. CLAIR

NOISE IMPACT ASSESSMENT

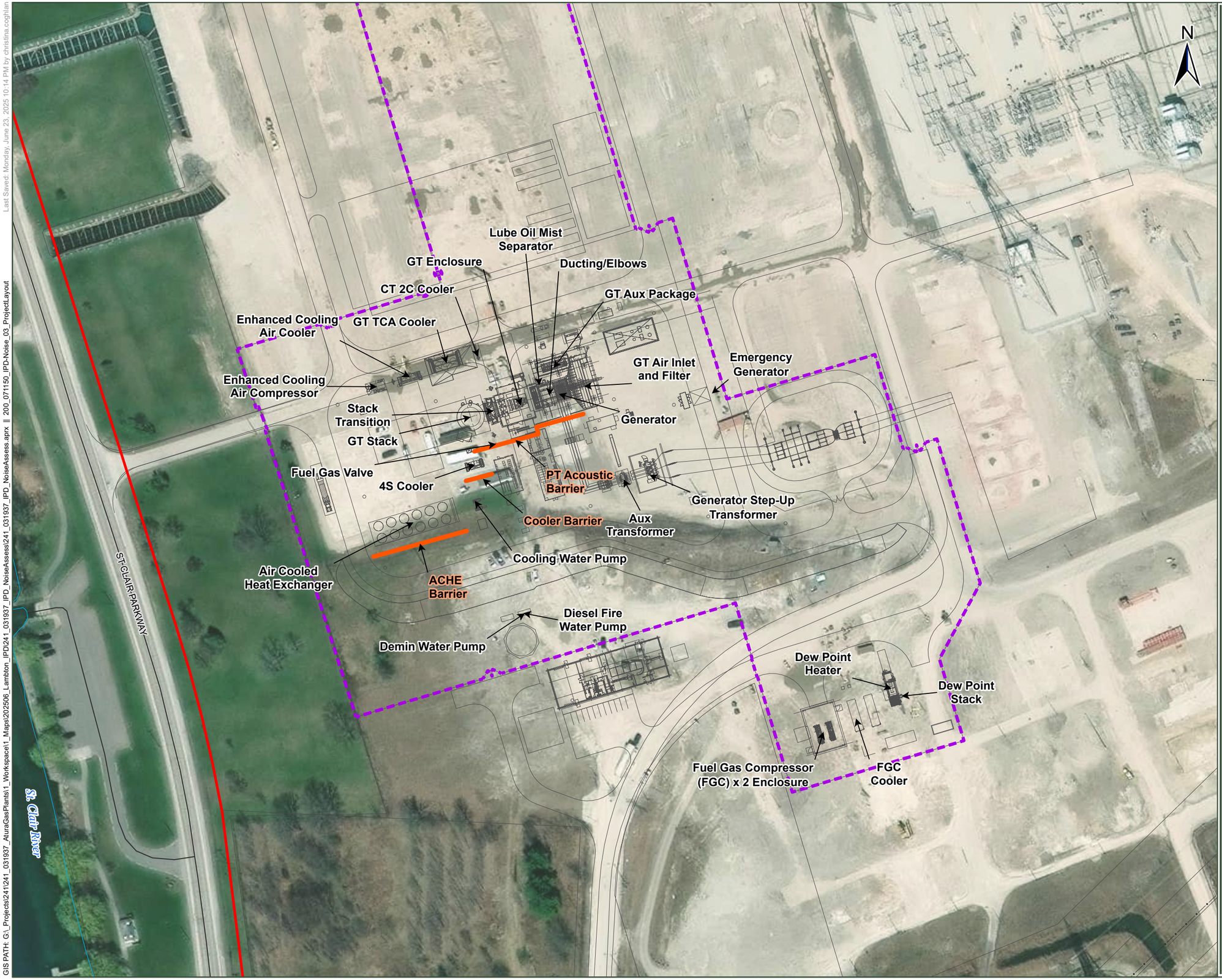
BASELINE SOUND MONITORING LOCATION

SLR

FIGURE NO:
2

DATE: June 23, 2025

PROJECT NO: 200.071150.00001



LEGEND:

- SITE BOUNDARY
- PROPOSED SITE PLAN
- FENCE LINE
- ACOUSTIC BARRIER
- RAILWAY
- ROAD
- TRANSMISSION LINE

NOTES:
CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

IMAGERY: MAXAR, MICROSOFT

0 12.5 25 50 75 m

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

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

ATURA POWER
PROPOSED NATURAL GAS-FIRED GENERATING STATION
LAMBTON SITE, TOWNSHIP OF ST. CLAIR

NOISE IMPACT ASSESSMENT

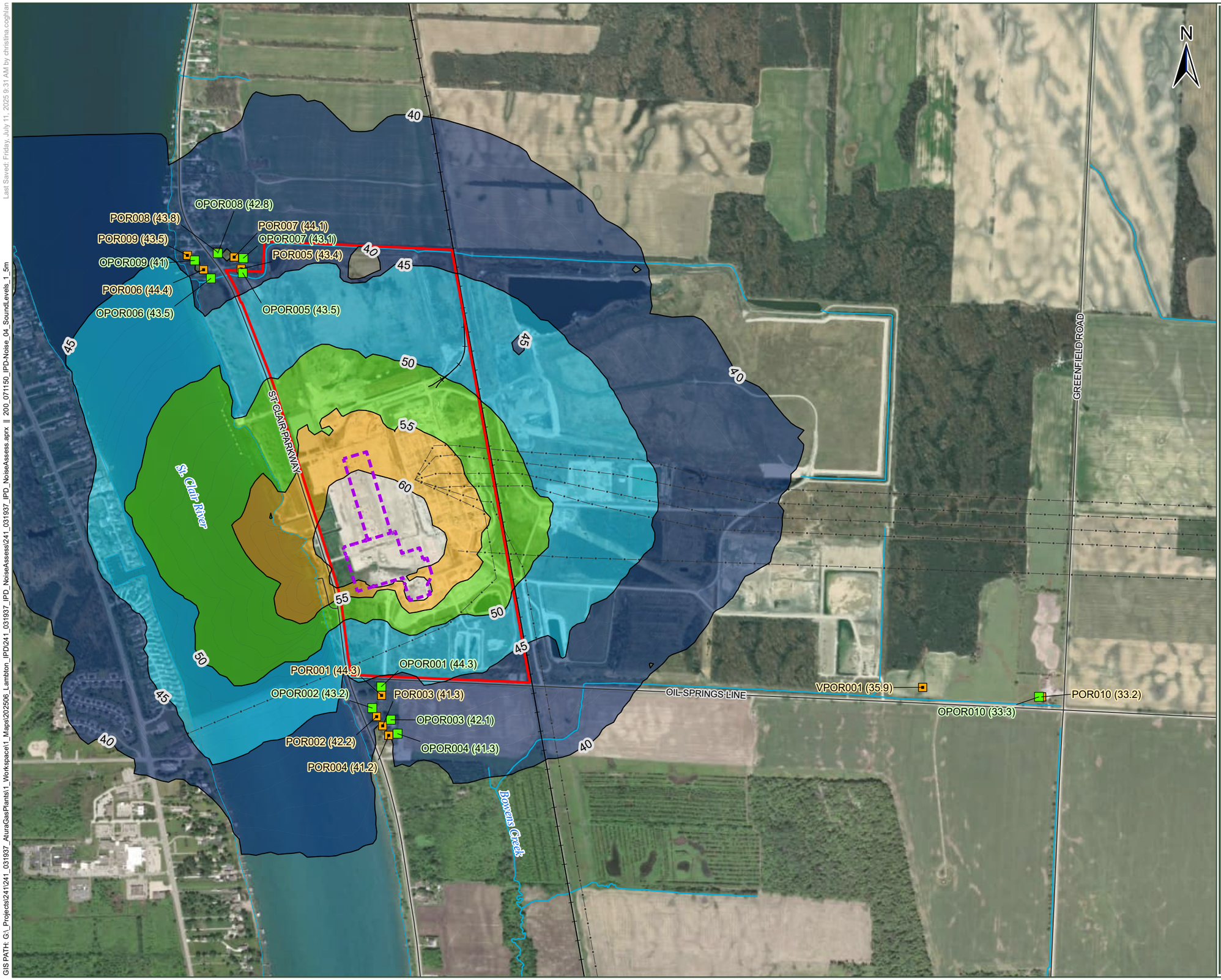
PROPOSED PROJECT LAYOUT AND NOISE SOURCES

SLR

FIGURE NO:
3

DATE: June 23, 2025

PROJECT NO: 200.071150.00001



LEGEND:

- SITE BOUNDARY
- POINT OF RECEPTION
- OUTDOOR POINT OF RECEPTION
- FENCE LINE
- SOUND LEVEL CONTOUR (DBA)
- RAILWAY
- ROAD
- TRANSMISSION LINE
- WATERCOURSE (PERMANENT)

SOUND LEVEL (DBA)

- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60

NOTES:
CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

IMAGERY: MAXAR

0 125 250 500 750 m

SCALE: 1:12,500
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

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

ATURA POWER
PROPOSED NATURAL GAS-FIRED GENERATING STATION
LAMBTON SITE, TOWNSHIP OF ST. CLAIR

NOISE IMPACT ASSESSMENT

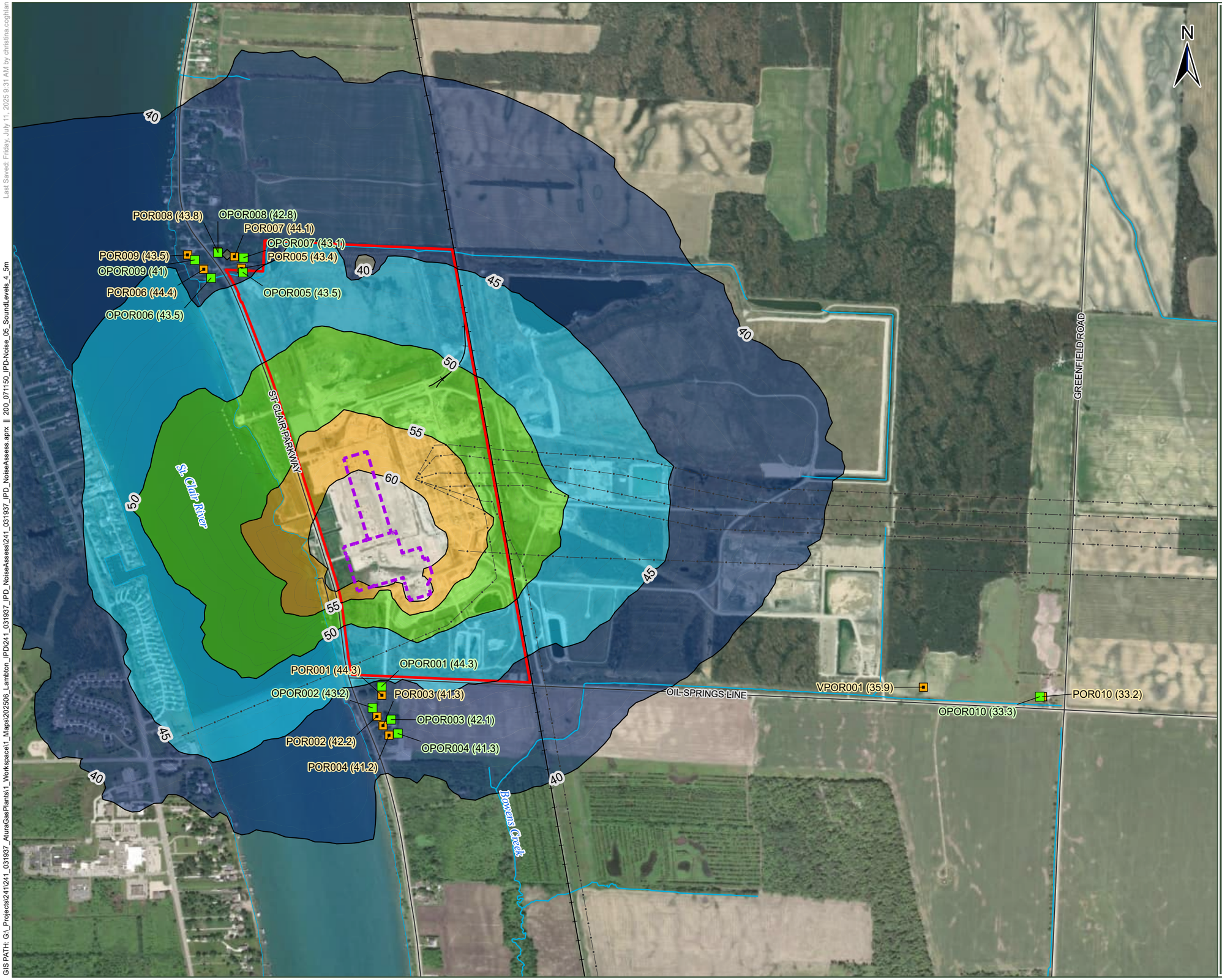
PREDICTED SOUND LEVELS, 1.5M RECEPTOR HEIGHT SOUND LEVEL CONTOURS

SLR

FIGURE NO:
4

DATE: July 11, 2025

PROJECT NO: 200.071150.00001



LEGEND:

- SITE BOUNDARY
- POINT OF RECEPTION
- OUTDOOR POINT OF RECEPTION
- FENCE LINE
- SOUND LEVEL CONTOUR (DBA)
- RAILWAY
- ROAD
- TRANSMISSION LINE
- WATERCOURSE (PERMANENT)

SOUND LEVEL (DBA)

- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60

NOTES:
CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE – ONTARIO.

IMAGERY: MAXAR

0 125 250 500 750 m

SCALE: 1:12,500
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N
THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

ATURA POWER
PROPOSED NATURAL GAS-FIRED GENERATING STATION
LAMBTON SITE, TOWNSHIP OF ST. CLAIR

NOISE IMPACT ASSESSMENT

PREDICTED SOUND LEVELS, 4.5M RECEPTOR HEIGHT SOUND LEVEL CONTOURS

SLR

FIGURE NO:
5

DATE: July 11, 2025

PROJECT NO: 200.071150.00001

Appendix A Source Sound Level Data

Noise Impact Assessment

Riverside Generating Station

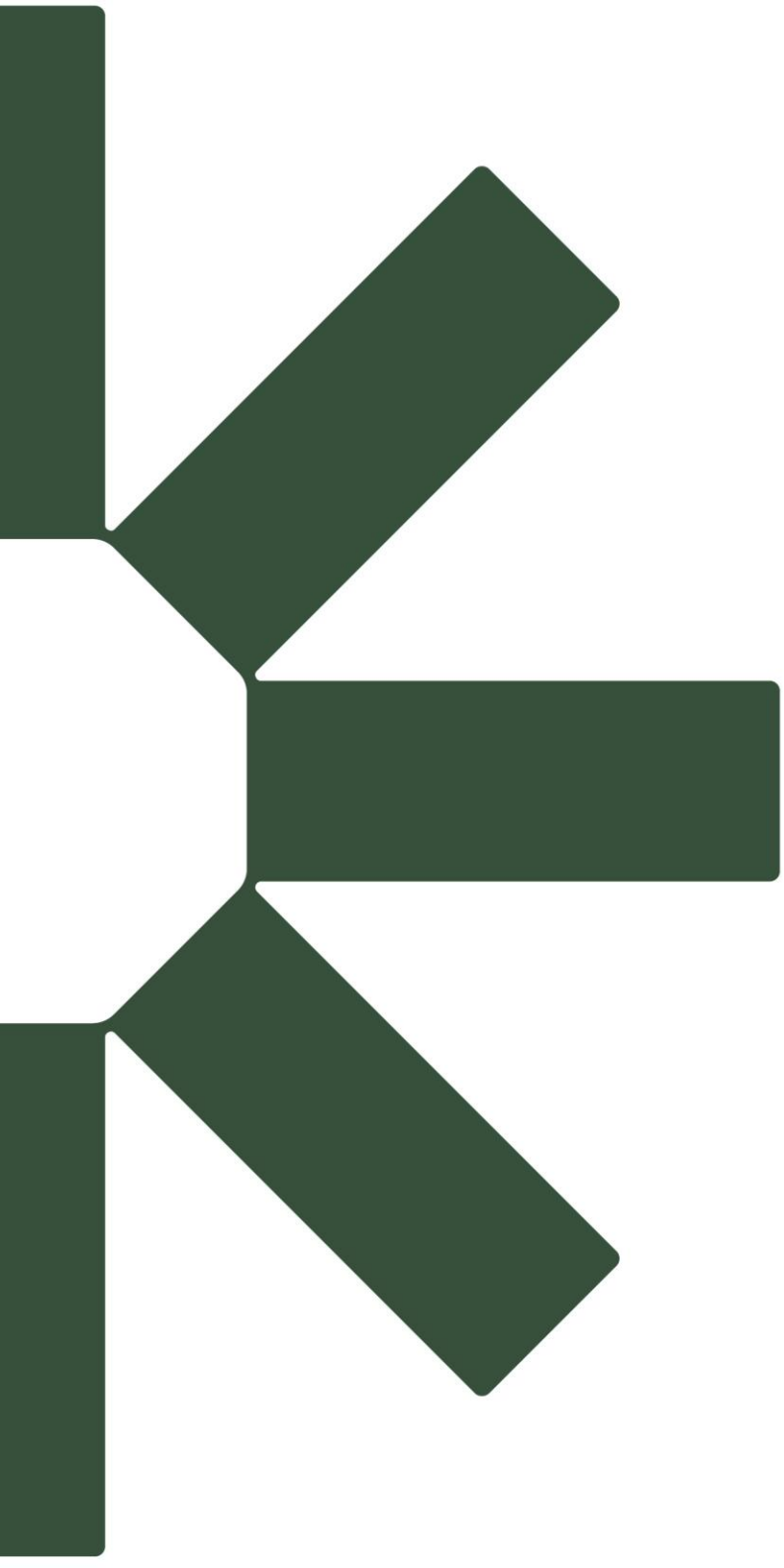
Atura Power

SLR Project No.: 200.071150.00001

July 11, 2025

Table A1: Source Sound Power Level Data

Noise Source	Sound Power Level PWL (dBA)										
	31.5	63	125	250	500	1000	2000	4000	8000	A	lin
4 Stage Cooler	69.6	79.8	86.9	91.4	90.8	93.0	100.2	104.0	87.9	106.2	112.6
Air Cooled Heat Exchanger	69.6	83.8	92.9	97.4	97.8	99.0	94.2	88.0	79.9	104.0	115.1
Auxiliary Transformer	46.9	66.1	78.2	80.7	86.1	83.3	79.5	74.3	65.2	89.7	98.4
Cooling Water Pump	47.6	61.8	72.9	82.4	87.8	94.0	92.2	88.0	79.9	97.5	99.4
2 Stage Cooling Tower	63.6	73.8	80.9	85.4	84.8	87.0	94.2	98.0	81.9	100.2	106.6
Demineralized Water Pump	47.6	61.8	72.9	82.4	87.8	94.0	92.2	88.0	79.9	97.5	99.4
Dew Point Heater	61.2	74.4	83.5	89.0	91.4	91.6	89.8	86.6	81.5	97.3	106.4
Dew Point Stack	64.7	73.9	90.0	93.5	90.9	90.1	85.3	75.1	65.0	97.7	109.9
Enhanced Cooling Air Compressor	60.6	73.8	88.9	97.4	97.8	94.0	78.2	72.0	63.9	101.7	110.3
Enhanced Cooling Air Cooler	64.6	74.8	81.9	86.4	85.8	88.0	95.2	99.0	82.9	101.2	107.6
Fuel Gas Compressor Cooler	53.6	69.8	79.9	84.4	86.8	86.0	84.2	81.0	70.9	92.2	101.4
Fuel Gas Compressors Enclosure	54.4	56.1	72.3	75.8	78.1	84.8	90.0	85.5	75.3	92.6	97.0
Fuel Gas Valve	51.4	56.6	59.7	62.2	76.6	84.8	92.0	93.8	91.7	97.6	98.3
Generator	76.6	82.8	108.9	87.4	91.8	97.0	86.2	85.0	70.9	109.3	125.6
Generator Step-Up Transformer	11.4	37.6	72.4	79.0	87.8	92.2	91.2	84.5	78.1	96.0	97.4
Gas Turbine Auxiliary Package	67.6	72.8	87.9	95.4	96.8	99.0	94.2	84.0	69.9	103.0	111.1
Gas Turbine Casing Cooling Fan 1	57.5	73.7	83.8	88.3	90.7	89.9	88.1	84.9	74.8	96.1	105.3
Gas Turbine Casing Cooling Fan 2	57.5	73.7	83.8	88.3	90.7	89.9	88.1	84.9	74.8	96.1	105.3
Gas Turbine Enclosure	85.6	93.8	100.9	101.4	103.8	112.0	109.2	107.0	94.9	115.4	127.1
Gas Turbine Enclosure Air Discharge 1	71.6	85.8	89.9	95.4	99.8	100.0	99.2	87.0	78.9	105.2	115.9
Gas Turbine Enclosure Air Discharge 2	71.6	85.8	89.9	95.4	99.8	100.0	99.2	87.0	78.9	105.2	115.9
Gas Turbine Enclosure Air Inlet 1	64.6	80.8	93.9	96.4	97.8	98.0	96.2	95.0	80.9	104.3	113.6
Gas Turbine Enclosure Air Inlet 2	64.6	80.8	93.9	96.4	97.8	98.0	96.2	95.0	80.9	104.3	113.6
Gas Turbine Exhaust Stack	50.7	72.9	78.4	79.5	83.8	92.0	100.7	105.2	92.9	106.9	107.2
Gas Turbine Inlet and Filter Housing	95.9	98.9	96.9	84.5	79.9	93.2	86.7	98.0	94.9	104.6	135.8
Gas Turbine TCA (Turbine Cooling Air) Cooler	71.6	84.8	93.9	96.4	98.8	99.0	92.2	88.0	81.9	104.0	116.1
GT Inlet Downstream Ducts/Elbows	86.2	93.2	90.5	88.0	85.4	109.2	106.6	109.3	100.7	113.6	126.8
Lube Oil Mist Separator	69.6	75.8	83.9	87.4	97.8	102.0	98.2	92.0	82.9	104.9	111.6
Transition to GT Exhaust Stack	89.8	102.9	106.4	100.6	96.9	100.5	106.2	111.1	89.4	114.2	132.7
Diesel Fire Water Pump	-	94.5	99.6	94.1	95.5	95.7	98.9	94.7	85.6	105.2	122.0
Emergency Generator	-	79.7	88.7	89.7	91.7	92.7	94.7	91.7	83.7	99.9	109.3



Making Sustainability Happen

Appendix E

Environmental Screening Process for Electricity Projects

Atura Power

Appendix E Preliminary Screening of Potential Environmental Effects

Initial Project Description

Proposed Riverside Generating Station Project

Atura Power

SLR Project No.: 200.071150.00001

June 2025

Preliminary Screening of Potential Environmental Effects

The Initial Project Description prepared for this project addresses effects related to areas of federal jurisdiction, as per the IAAC's Guide to Preparing an Initial Project Description and a Detailed Project Description. This appendix addresses effects that are outside of areas of federal jurisdiction.

The Project is regulated provincially under the Ontario *Environmental Assessment Act* and is subject to Ontario Regulation (O. Reg.) 50/24, Part II.3 Projects – Designations and Exemptions, Section 9 (3) for establishment of "a generation facility that has a name plate capacity of greater than or equal to five megawatts and that uses biomass or natural gas as its primary power source". O. Reg. 50/24 requires that the Project be carried out in accordance with the Environmental Screening Process for Electricity Projects, as described in Part B of the Government of Ontario's *Guide to Environmental Assessment Requirements for Electricity Projects* (2024) (the Guide).

The Environmental Screening Process (ESP) was developed by the Ministry of the Environment, Conservation and Parks (MECP) to ensure that the purpose of the *Environmental Assessment Act* is addressed in the review of specified electricity projects. In the Environmental Screening Process, the definition of "environment" is the same as that in the *Ontario Environmental Assessment Act*, which is broadly defined to include air, land and water as well as natural, cultural, social and economic components. The Guide specifies the list of screening criteria which must be applied to all projects that are subject to the Environmental Screening Process, developed by the MECP to reflect this broad definition of "environment." Given the breadth of the screening criteria required by the provincial process, components under federal jurisdiction will be considered and assessed as part of the Environmental Screening Process.

A preliminary screening of potential environmental effects was undertaken to inform early project planning and design, and to support the early engagement program with Indigenous communities, agencies, and the public. The Environmental Screening Process screening checklist was used as a framework to identify the anticipated interactions between potential sources of change resulting from the Project, and environmental components applicable to both provincial and federal jurisdictions.

The provincial screening framework focuses on potential environmental effects prior to the application of mitigation measures, as shown in Table A-1 to A-9. If a response to a question is "Yes", the potential for an interaction between the Project and an environmental component has been identified, with potential for negative environmental effects in the absence of mitigation measures. In such a scenario, preliminary mitigation measures are included in the table.

For the purposes of the preliminary screening, potential effects associated with the decommissioning phase of the Project are expected to be similar or less than those for construction, and therefore decommissioning activities are generally considered to be addressed through consideration of construction phase.

Potential interactions and effects will be further evaluated as the Project proceeds through the design and planning phase, as additional information is received from technical studies and the outcome of engagement with Indigenous communities, agencies, municipal staff and elected officials, and the public. During the ESP, the outcome of the final screening will inform the scope of the environmental components that will undergo a detailed assessment. The assessment will describe environmental effects, identify mitigation or impact management measures to prevent or reduce the effects, and assess the significance of any remaining net effects.

Each criterion is based on a question which is prefaced with the phrase: Will the Project:

Table E-1: Surface and Ground Water

Criterion	Yes	No	Preliminary Description of Potential Project-Environment Interaction	Preliminary Mitigation Measures and/or Future Additional Studies
1.1 have negative effects on surface water quality, quantities or flow?	✓		No surface water features are located within or adjacent to the Project site. The nearest surface water feature is the St. Clair River, located approximately 100 m from the Project site boundary. The Project stormwater management infrastructure will be limited to modifications to an existing operating system that currently discharges to the St. Clair River. Improper soil and water management during construction could result in offsite migration that may interact with nearby surface water features.	• The existing system operates under a provincial Environmental Compliance Approval and stormwater discharged from the Project site will be required to meet the quality and quantity requirements of that approval, with the design of the Project system subject to review and approval by the MECP and Township. • Project approvals will include the development and implementation of a detailed stormwater management plan that addresses the construction and operation phases. • During construction and decommissioning, appropriate erosion and sediment control and water management plans will be developed and implemented in accordance with provincial and local regulatory requirements. Measures will also be included in the CEMP, such as: o Installation of erosion and sediment control measures prior to any ground disturbing activities, with final design to be determined based on permitting requirements; o Installation of temporary stormwater management systems, with final design to be determined based on permitting requirements; o Design and installation of retaining walls or similar in areas where slope stability cannot be achieved with natural grading. o Stockpiled and/or excess soil will be covered, controlled, or shipped off-site as appropriate.

Criterion	Yes	No	Preliminary Description of Potential Project-Environment Interaction	Preliminary Mitigation Measures and/or Future Additional Studies
1.2 have negative effects on ground water quality, quantity or movement?	✓		Localized excavations and the installation of foundations will be required during construction. Due to a thick layer of till throughout the site, minimal groundwater interactions are anticipated, however some excavation activities have the potential to be undertaken at depths that will interact with groundwater, and therefore some construction dewatering may be required. Dewatering activities, if not properly managed, have the potential to affect groundwater flow and quantity. There is a total of 38 water well records identified with 1 km of the Site, with only 2 identified to be used for potable water supply and 14 with no use identified. These wells obtain potable water from deeper aquifers that will not be affected by shallow construction works.	• Further groundwater studies to identify potential effects. • In the event dewatering is required, the Construction Environmental Management Plan (CEMP) will include groundwater management measures such as: ○ The handling, transfer, testing, monitoring, and disposal of groundwater will be in accordance with applicable regulatory requirements, 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. ○ Pumped water will be evaluated to confirm water quantity and quality, and will either be discharged to the SWM system or stored and trucked for offsite disposal at a licensed facility.
1.3 cause significant sedimentation, soil erosion or shoreline or riverbank erosion on or off-site?		✓	The Project Site is not located in proximity to unstable lands subject to erosion. Ground disturbance during earthworks has the potential to result in limited soil migration within the Project site, although no interaction is anticipated that could result in significant sedimentation or soil erosion.	• Potential interactions and effects will be evaluated in more detail during the Project planning and approvals process. Although no interaction is currently anticipated for this criterion, appropriate measures will be identified and implemented if deemed necessary as a result of future additional studies.

Criterion	Yes	No	Preliminary Description of Potential Project-Environment Interaction	Preliminary Mitigation Measures and/or Future Additional Studies
1.4 cause potential negative effects on surface or ground water from accidental spills or releases to the environment?	✓		Although not anticipated, there is the potential for accidental spills or releases to the environment in the event of human error and/or equipment malfunctions during all phases of the Project.	• During all phases of the Project, spill prevention and emergency response measures will be in place.

Table E-2: Land

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
2.1 have negative effects on residential, commercial or institutional land uses within 500 metres of the site?	✓		The Project will not displace, impair, conflict or interfere with any commercial or institutional land uses. As the proposed project is to be constructed on an existing historically disturbed site, and contained within the site, no other land uses will be displaced or impaired as a result of the Project. Nuisance effects (air quality, noise, dust, odour, visual aesthetics) that may have negative effects on land uses are discussed below.	• Potential interactions and effects will be evaluated in more detail during the Project planning and approvals process. Although no interaction is currently anticipated for this criterion, appropriate measures will be identified and implemented if deemed necessary as a result of future additional studies.
2.2 be inconsistent with the Provincial Planning Statement (PPS), provincial land use or resource management plans?		✓	The Project is consistent with the Provincial Planning Statement, 2024. No other Provincial Plans are applicable to the Project.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
2.3 be inconsistent with municipal land use policies, plans and zoning bylaws?		✓	The Project site is designated as Type 3 Industrial in the Township of St. Clair Official Plan. The Project Site is also zoned as 'Industrial Type 3' within the Township Zoning By-law 17. The Project is consistent with, and conforms to, the Township of St. Clair Official Plan policies and Zoning By-law 17 regulations. The Project is subject to approval by the Township of St. Clair and the Project must therefore be planned in a manner that conforms with municipal plans, policies, and bylaws.	Atura Power will engage with the municipality throughout the Project planning phase to align the final Project design with municipal requirements.
2.4 use hazard lands or unstable lands subject to erosion?		✓	The Project Site is not located in proximity to any identified hazard lands or unstable lands subject to erosion.	Potential interactions and effects will be evaluated in more detail during the Project planning and approvals process. Although no interaction is currently anticipated for this criterion, appropriate measures will be identified and implemented if deemed necessary as a result of future additional studies.
2.5 have potential negative effects related to the remediation of contaminated land?	✓		There are areas of known contamination within the Project site given its historical use as a coal-fired generating station. Given the historical and current industrial use of the Project Site and adjacent lands, there is also potential for encountering undocumented contamination during civil earthwork activities.	• Additional studies and analysis will be undertaken to confirm areas of potential environmental concern as the Project progresses. The CEMP will include a soil management plan and any excess and/or potentially contaminated soils will follow all characterization and/or testing protocols and disposal requirements as per O. Reg. 406/19: Onsite and Excess Soil Management, MECP's guideline "Management of Excess Soil – a Guide for Best Management Practices" and O. Reg. 153/04, Records of Site Condition, as applicable.

Table E-3: Air and Noise

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
3.1 have negative effects on air quality due to emissions of nitrogen dioxide, sulphur dioxide, suspended particulates, or other pollutants?	✓		The Project will result in emissions during construction and operation that have the potential to negatively affect air quality. Air quality modelling evaluated emissions of nitrogen oxides (NOX), carbon monoxide (CO), and fine particulate matter (PM2.5) under multiple operating scenarios. Under all operating conditions, the predicted concentrations of NOX and CO were below the applicable criteria. PM2.5 concentrations, driven primarily by background levels, remained below 67% of applicable standards. Air quality modelling indicated that the Project, when considered alongside existing background air quality, will not lead to exceedances of ambient air quality standards.	• The CEMP will include standard mitigation measures to manage emissions related to stationary and mobile equipment during construction (e.g., reduce idling, maintain equipment). • Mitigation for air quality during operations has been included in the Project design, as the gas turbine selected for the Project is considered lower emission technology. • Emissions during Project operations are predicted to be below provincial air quality limits. A detailed air quality assessment will be undertaken, and is subject to review and approval by the MECP as part of the ECA process. • Site operational activities will adhere to site-specific operational standards and procedures and no further mitigation measures are anticipated.
3.2 cause negative effects from the emission of greenhouse gases (CO2, methane)?	✓		The operating Project has the potential to cause negative effects from Greenhouse Gas (GHG) emissions. Using conservative assumptions (See Section 23 of the IPD), the estimated annual GHG emissions would be approximately 344,240 tonnes of CO2e. This estimate would equate to a 5% increase in provincial electricity generation GHG emissions and 0.2% of the overall 2023 provincial GHG totals. However, increases in emissions for the electricity sector due to increased demand are anticipated so the project is anticipated to be approximately 1.7% of 2027 GHG emissions from the electricity sector.	• The Project is anticipated to operate a maximum of 1,500 hours annually, thereby limiting the amount of GHG emissions. • 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. • As a result of electrification of industry, transportation and agriculture, the overall GHG emissions for the province are projected to decrease with increased electricity usage.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
3.3 cause negative effects from the emission of dust or odour?	✓		During construction, localized earthworks and general construction activity have potential to result in dust emissions. Project operation will not result in dust emissions. The Project is not anticipated to emit odours during any phase.	• The CEMP will include standard mitigation measures for dust emissions during construction (e.g., on-site watering, and limiting the speed of vehicles travelling on unpaved surfaces, soil stockpile management).
3.4 cause negative effects from the emission of noise?	✓		Construction and operation of the Project will generate noise. Sound levels from the Project operations are predicted to meet applicable minimum exclusionary limits nearby receptors with appropriate Project design, equipment specifications, and inclusion of mitigation measures. Potential construction noise associated with the Project can be controlled through the implementation of best practices and practical mitigation measures.	• The CEMP will include industry standard mitigation measures for noise emissions during construction. • Mitigation of noise during operations will be included in the Project design, and is currently anticipated to include measures such as acoustic barriers, exhaust stack baffles, air inlet silencer, low noise equipment options for the gas turbine and ancillary equipment, and/or various equipment enclosures. • Noise emissions during Project operations are predicted to meet the applicable MECP guideline limits. A detailed noise impact assessment will be undertaken, based on final facility design. It will be subject to review and approval by the MECP as part of the Environmental Compliance Approval (ECA) application process.

Table E-4: Natural Environment

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
4.1 cause negative effects on rare, threatened or endangered species of flora or fauna or their habitat?		✓	Site reconnaissance was undertaken to identify potential Species at Risk (SAR) and SAR habitat within and near the Project Site. Species at Risk are defined as Endangered and Threatened under Ontario's Endangered Species Act and Canada's *Species at Risk Act*. The Project Site contains no natural habitat, therefore the only SAR with the potential to occur are those known to occupy anthropogenically disturbed or successional habitats (e.g., Chimney Swift [*Chaetura pelagica*], Barn Swallow [*Hirundo rustica*], snakes, and bat species). There are a limited number of existing structures within the Project Site, therefore species that have the potential to use structure as their habitats are not anticipated to be affected by the Project. The Project Site was determined to have very limited potential for SAR bats, consisting of a few ornamental trees that may provide marginal habitat for day roosting. These trees are not anticipated to be removed, so there will be no effect to this habitat. Targeted visual encounter or artificial cover object surveys for snakes were not completed, however, no snakes were incidentally observed during field reconnaissance.	• Ontario has recently passed legislation that changes the provincial SAR regulatory framework. Changes resulting from this legislation are still in progress and the implications to this project are currently unknown. • Additional field studies and analysis will be undertaken as the Project progresses, and Atura Power will comply with applicable regulatory requirements in effect at the time of Project implementation.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
4.2 cause negative effects on protected natural areas such as ANSIs, Environmentally Sensitive Areas or other significant natural areas?		✓	The LSA does not contain ANSIs or Environmentally Sensitive Areas.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.
4.3 cause negative effects on wetlands?	✓		There are no wetlands located within the Project site. Some areas classified as shallow marsh are located within the OPG property, including two small areas to the south and west of the Project site boundary.	The CEMP will include standard mitigation measures that will reduce the potential for construction-related effects to these features (e.g., ESC measures).
4.4 have negative effects on wildlife habitat, populations, corridors or movement?		✓	Due to the industrial nature and small size of the Project site, and the lack of native vegetation and wildlife habitat, the Project is not anticipated to result in adverse effects on wildlife or their habitat. The Project will be within a site that is already fully fenced and gated, which would continue to exclude some species of wildlife.	Potential interactions and effects will be evaluated in more detail during the Project planning and approvals process. Although no interaction is currently anticipated for this criterion, appropriate measures will be identified and implemented if deemed necessary as a result of future additional studies.
4.5 have negative effects on fish or their habitat, spawning, movement or environmental conditions e.g., water temperature, turbidity, etc.)?		✓	There are no watercourses or waterbodies located within the Project site. The St. Clair River is the nearest known feature with fish habitat and is located approximately 100 m west of the Project site fenceline and approximately 50 m west of the site entrance off the St. Clair Parkway. No in-water works are anticipated for any phase of the project. In addition, the Project is not anticipated to change the quality, quantity, or temperature of stormwater outflow to the St. Clair River. Therefore, no direct effects on fish or fish habitat are anticipated.	Potential interactions and effects will be evaluated in more detail during the Project planning and approvals process. Although no interaction is currently anticipated for this criterion, appropriate measures will be identified and implemented if deemed necessary as a result of future additional studies.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
4.6 have negative effects on migratory birds, including effects on their habitat or staging areas?	✓		Some migratory bird species are known to use anthropogenic sites (e.g., gravel parking areas, landscaped areas) as their habitat, and therefore the Project has potential to affect these species, if present during construction. Construction activities such as increased site activity, herbaceous vegetation removal, grading, grubbing, and excavation have the potential to result in sensory disturbance to local wildlife including migratory birds in proximity to the Project site. During operation, new buildings and infrastructure will be present on a site that has been vacant since demolition of the Lambton GS in 2022. The new buildings and above-grade infrastructure will change the nature of the Project site area that may increase the risk of bird strikes.	The CEMP will include avoidance, mitigation and monitoring measures to maintain compliance with the *Migratory Birds Convention Act* such as: • Conducting any required vegetation removals outside the active breeding bird season should such removals be required • General contractor monitoring for any presence of nests or mating behaviours throughout the breeding bird season. • Engaging a qualified avian ecologist as needed to conduct surveys or nest checks and advise on appropriate measures to be taken in the event an active nest or indication of breeding pairs is identified. • Standard mitigation measures and management plans for traffic, temporary dust and noise emissions, and site lighting. • Mitigation measures during the design phase, in particular lighting and landscaping design, to reduce the risk of bird strikes.
4.7 have negative effects on locally important or valued ecosystems or vegetation?		✓	No locally important or valued ecosystems or vegetation have been identified and therefore will not be affected by the Project.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.

Table E-5: Resources

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
5.1 result in inefficient (below 40%) use of a non-renewable resource (efficiency is defined as the ratio of output energy to input energy, where output energy includes electricity produced plus useful heat captured)?	✓		The Project is being proposed to provide dependable generation capacity at peak times when Ontario's other generation sources are not capable of meeting demand and is being designed to use the most efficient technology available for a simple cycle operation. In this way the Project will optimize use of non-renewable resources (natural gas) and only operate as necessary (as determined by the IESO).	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.
5.2 have negative effects on the use of Canada Land Inventory Class 1-3, specialty crop or locally significant agricultural lands?		✓	The Project is located on a site previously operated as a generating station. These resources are not present within the Project site and therefore no potential effects are anticipated.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.
5.3 have negative effects on existing agricultural production?		✓		
5.4 have negative effects on the availability of mineral, aggregate or petroleum resources?		✓		
5.5 have negative effects on the availability of forest resources?		✓		
5.6 have negative effects on game and fishery resources, including negative effects caused by creating access to previously inaccessible areas?		✓		

Table E-6: Socio-economics

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
6.1 have negative effects on neighbourhood, or community character?	✓		The Project site was used for power generation in the recent past. The Project does not represent a new, unique or unfamiliar land use that might negatively affect the neighbourhood or community character.	• Mitigation for effects on the nearby residents and land users during operations will be included in the design as the Project progresses, including lighting and landscaping designs.
6.2 have negative effects on local businesses, institutions, or public facilities?		✓	There are no institutions or public facilities within 500 m of the Project Site. No negative effects on local businesses, institutions or public facilities are anticipated.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.
6.3 have negative effects on recreation, cottaging or tourism?	✓		There is the potential for the Project to affect people's use and enjoyment of a recreational park, on scenic drives along the St. Clair Parkway, or along the Great Lakes Waterfront Trail near the Project site from increased noise, dust, and traffic during construction. The Project may result in effects on the use and enjoyment by recreational users.	• The CEMP will include standard mitigation measures to manage typical construction-related nuisance effects on nearby residents and land users (e.g., air quality and dust, noise, and traffic). • Mitigation for effects on recreational users during operations will be included in the design as the Project progresses, including lighting and landscaping designs.
6.4 have negative effects related to increases in the demands on community services and infrastructure?	✓		The small and temporary construction workforce will not measurably increase the local population that could increase the demands on community services and infrastructure. New water supply and sanitary sewage connections from municipal infrastructure are proposed for the Project. The Project Site is located within an Intake Protection Zone (IPZ-3). No effects on source water protection features are anticipated, and the Project is subject to review by the local source water protection agency.	• Atura Power will engage with the municipality throughout the planning phase, including confirmation of detailed design requirements related to interconnection with municipal servicing, and the Project will be subject to Township approval.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
6.5 have negative effects on the economic base of a municipality or community?		✓	The proposed project will not negatively affect the economic base of a municipality or community. There will be a benefit to the community through increased economic activity during construction and increased tax revenues during operations.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.
6.6 have negative effects on local employment and labour supply?		✓	No negative effects on local employment and labour supply are anticipated. During construction and operation, the Project would employ workers in numbers that are not anticipated to measurably affect local employment levels of labour supply.	No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.
6.7 have negative effects related to traffic?	✓		The Project will increase traffic within the community during construction, particularly along St. Clair Parkway. There are no anticipated effects during operation as the Project staffing and vehicular traffic will be limited.	• The CEMP will include standard traffic mitigation measures for construction traffic, and detailed plans will be developed prior to construction to manage worker traffic and deliveries. • Atura Power will engage with the municipality throughout the planning phase, including confirmation of any requirements related to traffic, and the Project will be subject to Township approval.
6.8 cause public concerns related to public health and safety?	✓		Atura Power recognises that there has been increased Indigenous community and public interest on other similar projects and as such, acknowledges the potential for the public to have questions and concerns related to health and safety.	The project will meet all applicable regulatory standards and requirements, and Atura Power is committed to responding to all Project-related questions and concerns from the public through a comprehensive engagement program throughout the Project planning phase.

Table E-7: Heritage and Culture

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
7.1 have negative effects on heritage buildings, structures or sites, archaeological resources, or cultural heritage landscapes?	✓		**Built Heritage Resources/Cultural Heritage Landscape** There are no known built heritage resources or cultural heritage landscape features located in proximity to the Project Site. A Cultural Heritage Evaluation Report was carried out on the subject property in 2018. The report found that the site did not satisfy criteria from O. Reg 9/06 or O. Reg. 10/06 of the Ontario Heritage Act and therefore had no cultural heritage value or interest. **Archaeological Resources** A Stage 1 & 2 Archaeological Assessment was completed for the proposed Project. The assessment identified artifacts from the late 1800s; three lithic flakes, which are remnants from the manufacturing of stone tools; and one piece of Indigenous pottery. The flakes are likely associated with the previous identified lithic scatter at the same location, though it appears to have been impacted from previous disturbance to the site. These artifacts are outside the Project footprint but are close enough to potentially be disturbed by construction activity.	**Built Heritage Resources/Cultural Heritage Landscape** No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process. **Archaeological Resources** Additional site investigations or avoidance measures are being considered to ensure the findings are addressed in line with the requirements of MCM. No disturbance to the sites will be allowed until MCM has provided clearance to proceed.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
7.2 have negative effects on scenic or aesthetically pleasing landscapes or views?	✓		The Project Site is located adjacent to St. Clair Parkway and St. Clair River; both used for recreational purposes. Although the Project is located on a site previously used for power generation and some existing landscaping will shield view of the proposed facility, new buildings and infrastructure will be present on a site that has been vacant since demolition of the Lambton GS in 2022. Landscapes and views may be impacted by the presence of project components such as buildings and exhaust stacks.	• The proposed facility is compatible with historic and current uses of the site, including existing electricity transmission infrastructure. Mitigation for effects on the viewshed during operations will be considered in the detailed design of the Project, including the design for building treatments, lighting, and landscaping.

Table E-8: Indigenous

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
8.1 cause negative effects on First Nations or other Indigenous communities?	TBC		Effects to Indigenous peoples resulting from the Project will be discussed and confirmed through technical studies as appropriate and ongoing engagement with communities.	Should any effects be identified, mitigation measures will also be discussed with the communities.

Table E-9: Other

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
9.1 result in the creation of waste materials requiring disposal?	✓		During Project construction, waste materials will be generated through equipment and materials packaging and general construction wastes. Maintenance activities during the operations phase will also generate waste.	Dispose of all waste will be in accordance with applicable permits and regulations.

Criterion	Yes	No	Additional Information	Mitigation Measures/Additional Studies
9.2 cause any other negative environmental effects not covered by the criteria outlined above?	✓		**Climate Change Considerations:** Consideration of GHG emissions is included in Table E-3.	Consideration of GHG emissions is included in Table E-3. No future studies or additional analysis for this criterion is currently anticipated, however this screening will be re-verified during the Project planning and approvals process.

Atura Power