FISCHELLS SALT DOME POWER GENERATION PROJECT

Environmental Assessment Registration (*Revised*)

Pursuant to the Newfoundland and Labrador *Environmental Protection Act* (Part X)

September 2026

Submitted by:

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PREAMBLE

This Environmental Assessment (EA) Registration document replaces an earlier version, which was submitted by Triple Point Resources to the Government of Newfoundland and Labrador on June 11, 2026 (*Regn #2413*) and subsequently posted on the Department of Environment, Conservation and Climate Change's website for public review and comment.

This revised EA Registration has been prepared to reflect the current status and focus of the Proponent's on-going work around possible energy markets, including potential export opportunities. It primarily includes an update to Section 2.1 (*Project Need and Purpose*) and various consequential edits elsewhere in the document. To help readers easily identify these updates and revisions, they are highlighted in grey throughout.

There have been no changes with respect to the Project's location, proposed components and activities or anticipated environmental interactions, for which the associated information and analysis (including appendices) remain applicable.

This Environmental Assessment Registration can also be viewed through an interactive, publicly accessible on-line digital platform at:
https://triplepoint-earegn.iciinnovations.com/ReportViz

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List of Acronyms and Abbreviations

2SLGBTQ+	Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer (or Questioning)
AACE	Association for the Advancement of Cost Engineering
ACAES	Adiabatic Compressed Air Energy Storage
ACCDC	Atlantic Canada Conservation Data Centre
AIS	Aquatic Invasive Species
ATV	All-terrain Vehicle
CanREA	Canadian Renewable Energy Association
CAPEX	Capital Expenditure
CBPPL	Corner Brook Pulp and Paper Limited
CCME	Canadian Council of Ministers of the Environment
CMA	Caribou Management Area
CO_2	Carbon dioxide
CO_2e	Carbon dioxide Equivalent
CORMIX	Cornell Mixing Zone Expert System
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CSA	Canadian Standards Association
CSD	Census Subdivision
CSM	Conceptual Site Model
dBA	A-weighted decibels
DFO	Fisheries and Oceans Canada
DTP	Draft Tube Baffle
EA	Environmental Assessment
ELC	Ecological Land Classification
EPCA	Electrical Power Control Act
EPP	Environmental Protection Plan
ERP	Emergency Response Plan
FEED	Front-End Engineering and Design
FFAW-Unifor	Fisheries, Food and Allied Workers Union
FSC	Food, Social and Ceremonial
FTE	Full-time Equivalent

GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GWh	Gigawatt-hour
HAZOP	Hazard and Operability
HDPE	High-Density Polyethylene
IAA	Impact Assessment Act
IAAC	Impact Assessment Agency of Canada
IDZ	Initial Dilution Zone
JVM	Jefferys Village Member
kPa/m	kilopascals per metre
kV	Kilovolt
LFA	Lobster Fishing Area
LiDAR	Light Detection and Ranging
MAOP	Maximum Allowable Operating Pressure
MOP	Minimum Operating Pressure
mtpd	metric tonnes per day
MVR	Mechanical Vapor Recompression
MW	Megawatt
NAFO	Northwest Atlantic Fisheries Organization
NL EPA	Newfoundland and Labrador Environmental Protection Act
NL ESA	Newfoundland and Labrador Endangered Species Act
NLH	Newfoundland and Labrador Hydro
NOC	National Occupational Classification
NONNA	Natural Resources Canada–Ocean Networks Canada North American Datum Adjustment
PAO	Provincial Archaeology Office
PCMP	Post-Construction Mortality Monitoring Program
PPT	Parts per thousand
PPWSA	Protected Public Water Supply Area
QFN	Qalipu First Nation
RCMP	Royal Canadian Mounted Police

RFEI	Request for Expressions of Interest
RFP	Request for Proposals
RV	Recreational Vehicle
SAR	Species at Risk
SARA	Species at Risk Act
SCADA	Supervisory Control and Data Acquisition
SOCC	Species of Conservation Concern
TCH	Trans Canada Highway
TPR	Triple Point Resources
VEC	Valued Environmental Component

1.0 INTRODUCTION

PROJECT NAME: FISCHELLS SALT DOME POWER GENERATION PROJECT

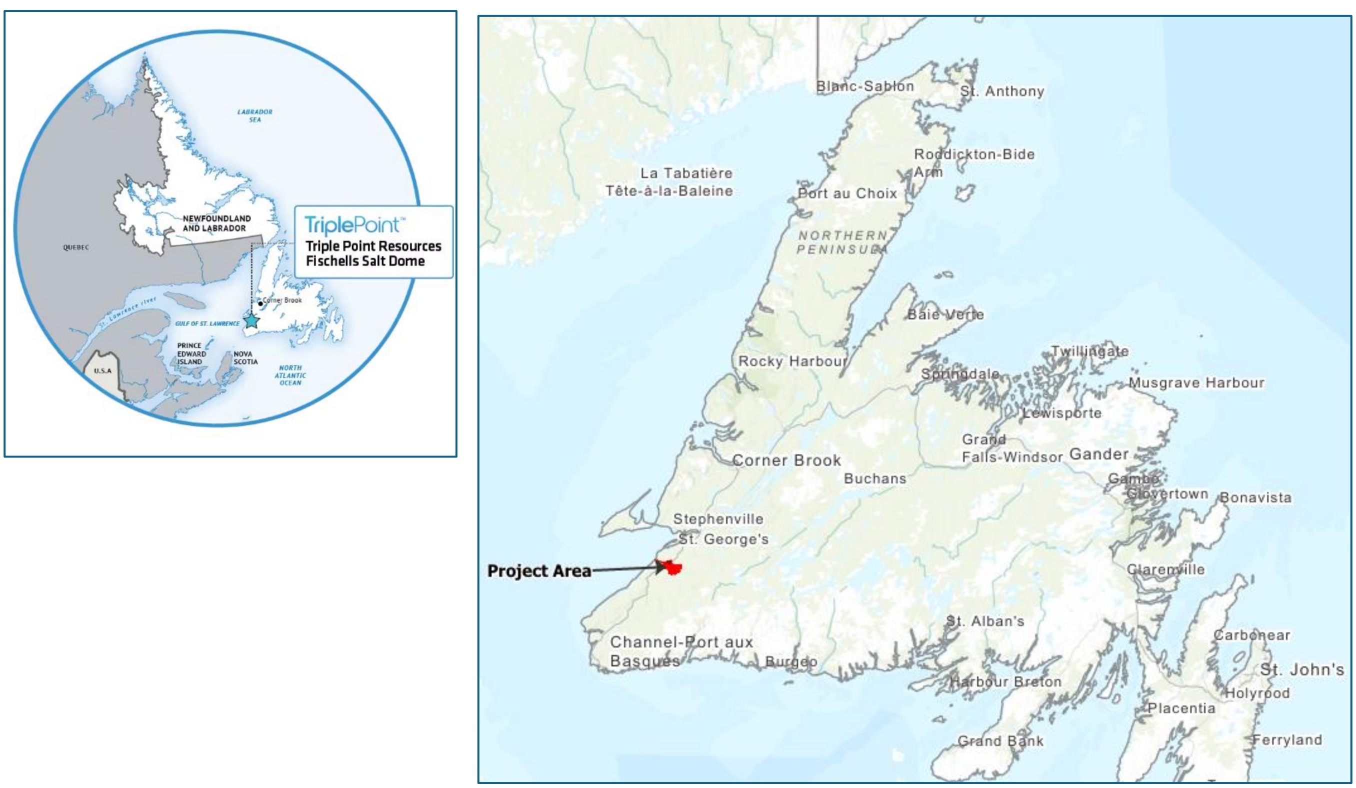
Triple Point Resources (TPR) is planning to construct and operate the Fischells Salt Dome Power Generation Project (the Project), a proposed energy storage and generation facility located in the Bay St. George area of Western Newfoundland.

1.1 Nature of the Undertaking

The Fischells Salt Dome is a large, naturally occurring underground salt formation located on the west coast of the Island of Newfoundland, immediately adjacent to the Trans-Canada Highway and under existing electricity transmission infrastructure in that region (Figure 1.1).

The Project will involve the development of one or more engineered underground salt caverns through a solution mining process. During Project operations, compressed air will be generated using available electricity and stored in the cavern(s), which can later be released to drive turbines and generate electricity during periods of high demand.

Figure 1.1: Fischells Salt Dome Power Generation Project Location

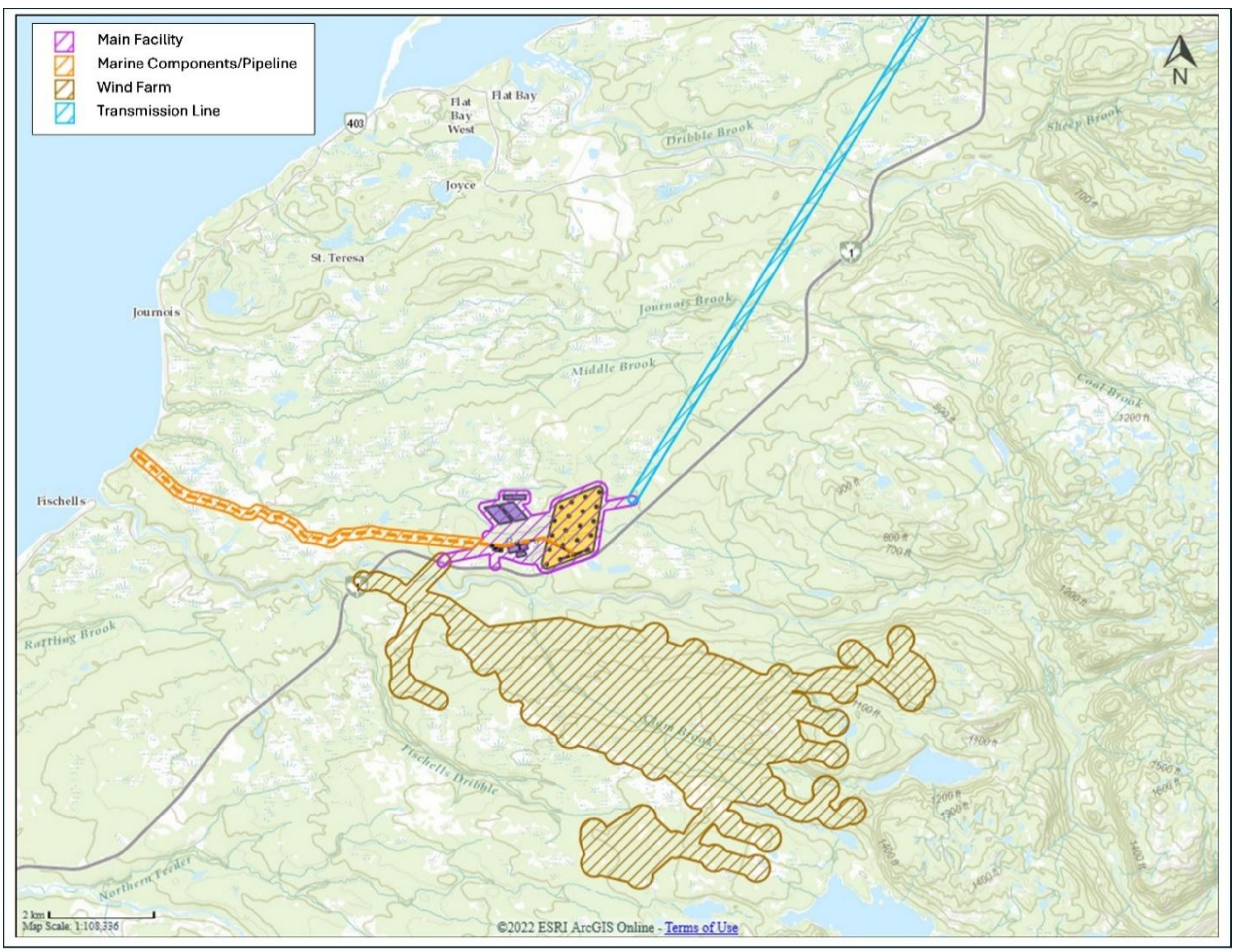


The primary components of the Project include (Figure 1.2):

- A *Main Facility*, comprising the proposed salt cavern(s)[1], salt production, adiabatic compressed air energy storage (ACAES) unit and associated infrastructure, to be located just north of the TransCanada Highway;
- *Marine Components and Pipeline(s)* located to the west of the main facility, which will be used to transport seawater from St. George's Bay for use in the solution mining process, and possibly for the disposal of saltwater;
- A *Wind Farm* and associated electrical systems, situated immediately to the southeast of the main facility on the opposite side of the highway; and
- A 230 kilovolt (kV) bidirectional *Transmission Line* that will connect the facility to the existing Bottom Brook terminal station.

These proposed (and alternative) Project components are described in further detail in Chapter 2 of this document, which also includes an overview of their planned construction and operation phases.

Figure 1.2: Main Project Features and Layout



[1] As described later, the current Project includes the development of 1-2 caverns within the salt dome

Some key characteristics and associated benefits of the Project include:

- **Well-defined and focused development footprint**: The Project will require and utilize a relatively small land base, is located away from communities and avoids environmentally sensitive areas, thereby reducing the potential for associated environmental and social issues.

- **Zero emissions technology**: The ACAES system does not require fuel to compress and store air or to generate electricity. Its operation will therefore not result in greenhouse gas (GHG) emissions, making this a truly clean energy solution.

- **Helps support renewable energy integration**: The Project will provide large-scale and long-duration energy storage capabilities, in a manner that is technically feasible, economically viable and environmentally responsible. It will facilitate the integration of intermittent renewable energy sources in order to deliver reliable, dispatchable power while also supporting grid stability and overall energy security.

- **Contributes to provincial energy sector growth and diversification**: This unique and innovative energy storage and generation facility will represent an important element of the continued growth and on-going diversification of Newfoundland and Labrador's energy sector.

- **Significant economic benefits**: The Project will involve significant private-sector capital investment, generating substantial employment and business opportunities and other socioeconomic benefits at the local, regional, and provincial levels throughout its construction and operations phases.

- **Local support and ongoing engagement**: Western Newfoundland communities, Indigenous and stakeholder groups and the general public have been engaged throughout Project planning thus far (see Chapter 4), and will continue to be informed and provide input as Project engineering and implementation proceed. The results of TPR's engagement activities to date suggest significant local interest in and support for the Project and its potential benefits.

- **Strong planning and technical foundation**: A detailed Feasibility Study and various other engineering and desk-top environmental studies have been completed to date, which have informed Project design.

1.2 Purpose of the EA Registration

The proposed Project requires registration and review under the Newfoundland and Labrador environmental assessment (EA) process, pursuant to the requirements of the provincial *Environmental Protection Act* (Part 10) and its associated *Environmental Assessment Regulations*.

This document is intended to initiate the provincial EA review for the Project, and in doing so it:

- Describes the proposed Project, including its overall purpose and rationale, location and layout, and alternatives to and within the Project. It also provides a description of its key components, planned construction and operational activities, and potential future decommissioning (if and as required) (Chapter 2);

- Provides an overview of the existing environmental setting for the Project, including relevant aspects of the biophysical and socioeconomic environments in the immediate Project area and surrounding region (Chapter 3);

- Describes TPR's previous and ongoing public, stakeholder and Indigenous engagement activities, including the main outcomes and findings of these initiatives, and where and how identified questions and concerns are addressed in this submission (Chapter 4); and

- Identifies the potential environmental effects that may be associated with the Project, as well as TPR's planned approaches for addressing these in Project planning, design and eventual implementation. This includes relevant commitments by TPR for mitigation, monitoring and other planned initiatives (Chapter 5).

This EA Registration document has been prepared and submitted by TPR, as the proponent of the Project, with the assistance of ICI Innovations Inc and other supporting environmental consultancies (see appendices).

1.3 The Proponent

TPR is a Canadian clean energy company focused on unlocking the potential of the Fischells Salt Dome for utility-scale underground energy storage and generation. The company owns strategic mineral rights and licenses in relation to the salt dome, and is advancing the planning and design of this Project to support renewable energy integration, enhance grid stability and strengthen energy security while driving sustainable economic growth in Newfoundland and Labrador and beyond.

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1.4 Environmental Assessment Processes and Requirements

The Newfoundland and Labrador *Environmental Protection Act (*NL EPA, Part 10) requires anyone who plans a project that could have a significant effect on the natural, social or economic environment (an “undertaking”) to present it for examination through the provincial EA process. The associated *Environmental Assessment Regulations* (Part 3) list those projects that require registration and review. This includes those listed in Table 1.1, some or all of which may apply to this Project. Following public and governmental review of this EA Registration, the provincial Minister of Environment, Conservation and Climate Change will determine whether the Project may proceed, subject to any terms and conditions and other applicable legislation, or whether further assessment is required – either an Environmental Preview Report (EPR) or an Environmental Impact Statement (EIS).

The Project is not subject to federal review under the Canadian *Impact Assessment Act* (IAA), as it does not include physical activities that constitute the "designated projects”that require federal impact assessment, as listed in that legislation’s *Physical Activities Regulations*. This has been confirmed by TPR through discussions with the Impact Assessment Agency of Canada (IAAC), and in subsequent written correspondence from IAAC dated January 29, 2026.

In addition to review and approval under the provincial EA process, the Project will also require a number of other subsequent permits and authorizations, a preliminary list of which is included in Appendix A.

TPR also recognizes that the development, generation, transmission, distribution and sale of electricity in Newfoundland and Labrador are governed by the province’s power policy framework, as established under the *Electrical Power Control Act*, 1994 (EPCA) and the *Public Utilities Act*. Pursuant to subsection 14.1 of the EPCA, Newfoundland and Labrador Hydro holds the exclusive right to supply, distribute and sell electrical power or energy to retailers and industrial customers on the Island Interconnected System, except where otherwise authorized by the Lieutenant-Governor in Council. Relevant Orders-in-Council permit industrial customers seeking to self-generate wind energy for their own consumption, as well as industrial customers or retailers seeking to generate wind energy for export, to apply for the Crown land interests and EA approvals necessary to support such developments. TPR understands that all aspects of the Project involving electricity generation, storage and transmission must be consistent with this legislative and policy framework. It further recognizes that moving forward with these Project components would require a future exemption pursuant to subsection 14.1(2) of the EPCA, similar to those issued for previous energy developments in the province (see https://www.assembly.nl.ca/legislation/sr/regulations). TPR will continue to work with NL Hydro and the Province to ensure that all phases of the Project are consistent with applicable legislation, regulations and provincial power policy requirements. It is also recognized that doing so may form conditions of any future EA approval.

TPR also recognizes that the Project's proposed solution mining and salt production activities are subject to the requirements of the Newfoundland and Labrador *Mineral Act* and *Mining Act*. It is understood that the eventual development of the Project will require a mining lease, an approved Development Plan, Rehabilitation and Closure Plan, and the provision of financial assurance acceptable to the Minister. TPR further recognizes that the Project must demonstrate "prudent resource management", including that the salt resource is developed and utilized in a manner that maximizes benefits to the province. It should be noted that the proposed salt production facility is at a relatively early stage of planning and design, and there is considerable flexibility in its overall capacity (brine inputs and salt production outputs), which continue to be evaluated and will be optimized based on technical, economic and environmental factors, and with a view to maximizing the value of, and associated benefits from, the utilization of this resource. These principles and considerations will continue to be incorporated into ongoing Project planning and design and will be further addressed through the preparation of the various plans, studies and regulatory submissions necessary for Project compliance with these legislative requirements.

Table 1-1: Provisions of the NL EA Regulations That Do or May Apply to the Project

28. An undertaking that will occur within 200 metres of the high water mark of a river that is a scheduled salmon river under the *Fisheries Act* (Canada)…
33 (2) An undertaking that will be engaged in the mining, beneficiating and preparing of a mineral as defined in the *Mineral Act* whether or not these operations are to be performed in conjunction with a mine or at mills that will be operated separately…
34. (1) An undertaking that will be engaged in electric power generation… including: (e) diesel electric power generating plants with a capacity of more than one megawatt *;
34 (2) An undertaking that will be engaged in the construction of new electric power transmission lines or the relocation or realignment of existing lines where a portion of a new line will be located more than 500 metres from an existing right of way.
35. (1) An undertaking that will be engaged in … the (b) construction of roads or the relocation or realignment of existing roads where a portion of the road will be more than 500 metres from an existing right of way
35 (2) An undertaking that will be engaged in the construction of a (a) trunk pipeline for the transmission of water from a source to a point of distribution; … where a portion of that pipeline will be more than 500 metres from an existing right of way.
35 (4) j The excavation of a tunnel, shaft, portal or cavern where a quantity of material more than 1000 cubic metres is to be extracted.
36. (1) An undertaking that will be engaged in (b) land clearing where the total area of land to be cleared will be more than 50 hectares.
* Temporary on-site generator for construction phase.

2.0 PROJECT DESCRIPTION

Triple Point Resources (TPR) is planning to construct and operate the Fischells Salt Dome Power Generation Project, a proposed energy storage and generation facility located in the Bay St. George area of Western Newfoundland.

The main features of the proposed development include:

- Creating one or more underground salt caverns through solution mining processes, where seawater will be pumped to the site and injected into the dome to dissolve salt and produce brine, creating large, impermeable voids deep below ground that are ideal for energy storage.

- Brine produced during cavern development will be diverted to an on-site crystallization facility to produce marketable salt. The remaining salt water will be disposed of in an environmentally acceptable manner in accordance with applicable requirements and guidelines.

- At the cavern site, an adiabatic compressed air energy storage (ACAES) system will be developed, which will utilize available electricity to compress air and pump it into the caverns for storage.

- During periods of high demand, the stored pressurized air will be released from the caverns to drive turbines and generate electricity, which will be transmitted through a new transmission line connected to the existing Bottom Brook terminal station.

The following sections provide a description of the Project, based on and reflecting its current stage of planning and design. This includes an overview of its need and purpose, location and layout, alternatives, key components, and planned construction and operations activities.

Concurrent with EA registration and review, TPR is continuing its planning and engineering work, which will include optimizing the location, layout and functioning of key Project components and activities. As with any proposed development, it is anticipated that the conceptual plan will be subject to further definition and refinement during on-going engineering design, based on technical, economic, environmental and social considerations. This would include considering the findings and outcomes of the EA review process and of TPR's on-going and planned public, Indigenous and stakeholder engagement initiatives.

Any such future optimization of and refinements to the Project design are not expected to materially change the nature and scope of the proposed development from how it is described here, or to result in any new or increased environmental effects beyond those discussed in this document.

2.1 Project Need and Purpose

In an EA context, the need for and purpose of a proposed development pertain to why the project is being proposed and the objectives it is intended to achieve.

2.1.1 Energy Supply and Services

As Canada looks to increase its electricity supply, power economic growth and move towards a net-zero future, the continued growth and diversification of the renewable energy sector will be an important priority. The effective, large-scale integration of new clean energy sources, such as wind and other renewable generation, will require innovative approaches to address the challenges associated with their inherent intermittency. This includes a need for large-scale, long-duration, technically and economically viable energy storage that can help transform intermittent renewable generation into reliable, dispatchable power and, in doing so, support renewable energy integration, grid reliability, and long-term energy supply and security. This Project can play an important role in Atlantic Canada in bridging the gap between climate change commitments and associated renewable energy objectives and the operational requirements of reliable, low-carbon energy systems to drive economic growth.

Developing Wind Generation and Energy Storage Capabilities for Regional Markets

TPR is advancing the Project as a nationally significant energy infrastructure asset with the capability to integrate with energy systems across Eastern Canada and contribute to energy supply and diversification, grid resilience and long-term system modernization. The Project's combination of wind generation and long-duration energy storage provides capabilities that extend beyond those of a conventional wind generation project. These include the ability to absorb and store energy when supply exceeds demand or available transmission capacity, reduce renewable energy curtailment, and subsequently return reliable, dispatchable power to the market when and where it is required. The storage system can also provide important grid support and reliability functions that variable wind generation alone cannot provide, including helping to balance fluctuations in supply and demand, supporting grid stability, and providing firm capacity and backup energy during periods of low renewable generation or other system constraints.

TPR is engaged in ongoing discussions with governments, utilities and other energy-sector participants throughout Atlantic Canada and beyond to determine how the Project’s significant and unique generation and storage capabilities could support regional energy supply planning and system modernization. This includes ongoing discussions with utilities and other industry participants regarding opportunities for the Project to provide reliable energy supply, storage capacity and related grid services to Eastern Canada markets, while also supporting expanded interprovincial transmission and the integration of additional renewable generation across the region. In particular, the Project’s ability to absorb, store and subsequently dispatch large quantities of energy can help address the variability and timing of current and potential renewable generation throughout the region, reduce curtailment and transmission constraints, support grid stability and provide additional capacity for regional energy supply and strategic resilience.

The Project's location also provides a particular strategic advantage in that regard. Its proximity to the Bottom Brook terminal station and thus the Maritime Link places it near existing transmission infrastructure connecting Newfoundland and Labrador with Nova Scotia and, through the broader regional transmission system, other energy markets in Eastern Canada. Subject to the necessary technical, commercial and regulatory arrangements, the Project could therefore provide reliable, dispatchable clean power to these markets. Importantly, the Project's storage capability also creates the potential for a two -way regional energy function: receiving and storing electricity when regional supply is abundant and subsequently dispatching that energy when system conditions require it. This could include, for example, storing electricity associated with future wind and other renewable energy developments in the broader Atlantic Canada region.

Discussions with Eastern Canada utilities and other industry participants regarding these potential applications are ongoing, and will continue as Project design and regional energy planning evolve. Given the scale of the Project and the potentially long lead times associated with this type of development, TPR considers it prudent to advance key regulatory processes, including EA, concurrently with these continuing technical and commercial discussions. This will allow environmental review and Project planning to progress while potential energy markets, interconnection arrangements and transmission requirements continue to be investigated.

TPR recognizes that any future interconnection with, and transmission of electricity through, existing transmission systems, including the Maritime Link, would be subject to all applicable technical, regulatory and commercial requirements. These may include applicable requirements under the *Electrical Power Control Act, 1994* and *Public Utilities Act*, approvals or authorizations of the Board of Commissioners of Public Utilities where required, system-impact and interconnection studies, transmission-service arrangements, applicable tariffs and other requirements governing access to and use of transmission infrastructure. These matters would be addressed through the appropriate regulatory and utility processes as Project planning advances and the nature of any proposed interconnection and transmission arrangements becomes more clearly defined.

The Project’s focus on the generation, storage and transmission of wind energy for export reflects TPR's ongoing discussions with potential customers, utilities and other market participants. It is also consistent with the existing Newfoundland and Labrador energy policy framework, which provides for industrial proponents to pursue wind development, including associated EA review and Crown lands processes, for their own use and/or for export. For this Project, self-use of the wind energy generated would involve its use for charging the compressed-air energy storage system and for powering TPR’s own industrial operations, while its wind generation and energy storage capacity and proposed interconnection to the Bottom Brook terminal station would also provide opportunities to supply (export) energy to regional markets via the Maritime Link.

This focus on power export does not preclude other potential future uses of the Project's generation and storage capabilities, subject to applicable legislation, policy, regulatory approvals and commercial arrangements. Rather, it reflects the present stage of Project planning and the energy-market opportunities that TPR is actively pursuing at this time.

Possible Future Domestic Energy Supply Opportunities

In mid-2025, Newfoundland and Labrador Hydro (NLH) issued a Request for Expressions of Interest (RFEI) to identify potential energy resources that could help meet growing demand on the Island Interconnected System, including up to 150 megawatts (MW) of firm capacity and up to 500 gigawatt-hours (GWh) of firm energy delivery over time. TPR responded to this RFEI in September 2025 and anticipates participating in future requests for proposals (RFPs), requests for information or other procurement processes initiated by NLH, where appropriate.

The Project's ability to generate renewable electricity, store energy at large scale and subsequently deliver firm, dispatchable power is well aligned with NLH's identified need for additional energy and capacity. In particular, NLH's 2024 Resource Adequacy Plan identifies a need for additional electricity generation and firm capacity on the Island Interconnected System beginning in the early 2030s. The Project could therefore represent a scalable, low-emission option for contributing to future domestic electricity requirements, while also supporting supply diversification, grid reliability and longer-term growth in electricity demand.

At this time, however, the specific nature, timing, requirements and outcome of any future NLH RFP process remain unknown. The current Project planning approach and focus described in the preceding section reflects the energy supply and market opportunities that are presently available and being actively pursued, while recognizing domestic supply as an additional, potential future application of the Project. TPR intends to continue engaging with NLH and to participate in future procurement processes, as appropriate, if and as these opportunities become more clearly defined. Specifically, TPR would consider supplying electricity and/or other grid services to the Island Interconnected System if the Project were eventually selected by NLH and with the appropriate commercial agreements in place, and pending the necessary legislative and policy frameworks being established by government to enable such developments.

2.1.2 Creating Value from the Salt Resource

The Project will involve the creation of one or more underground caverns within the salt dome through a solution mining process. Brine will be diverted to an on-site crystallization facility to produce marketable salt, which will provide a complementary revenue source for the Project while also generating additional employment and economic opportunities in the region.

TPR recognizes that the Project's proposed solution mining and salt production activities will be subject to, and must be compliant with, the Newfoundland and Labrador *Mineral Act* and *Mining Act*, which includes demonstrating "prudent resource management" that maximizes the benefits derived from the salt resource for the province. As discussed later in this chapter, the proposed salt production facility remains at an early stage of planning and design, based on technical, economic and environmental factors, and with a view to achieving and demonstrating compliance with this legislation through future regulatory processes and submissions under these legislation.

Unlike shallow bedded salt deposits, deep domal salt formations cannot be economically extracted using conventional underground or surface mining techniques, and therefore, solution mining is the proven and most widely used mining method for extracting these deep salt resources. As water is continually injected and cycled into the formation during the solution mining process, the brine becomes saturated and can be processed into high-grade salt products. The controlled solution mining process leaves behind engineered caverns in the dome, which are sought after globally as large-scale energy storage assets as the geological and geomechanical characteristics of salt caverns have proven highly effective for this purpose.

Although traditional salt resource recovery factors are lower for cavern field development compared to conventional bulk underground mining processes, the high quality salt generated from crystallization and granulation receives higher market value compared to traditionally mined shallow bedded salt extracted for bulk industrial and road salt purposes. Targeting a higher price point offtake agreement, TPR forecasts a profitable salt production business can be formed around the proposed solution mining process.

The scale of the salt production business ultimately pursued at Final Investment Decision will not only be determined by market pricing, but just as importantly by the maximum economic limit of the facilities needed for its production. Key constraints that will be evaluated during the Front-End Engineering & Design (FEED) stage to determine the maximum economic limit of the salt production facility include:

1) **Material Balance**: The input requirements to produce the output (salt) must be scaled such that it does not exceed the value of the output. Operational power requirements are one of the most impactful input costs that will define the optimal plant size and scale of production.

2) **Operational Efficiency and Integrity**: Theoretically the saturated brine can be cycled through the processing facility until a maximum recovery factor from the respective brine is attained, however, this is counter intuitive from a material balance, operational efficiency and overall economic perspective. The optimized cycling and recovery rates will be determined during FEED so as to maximize economic benefit while maintaining operational efficiency, integrity and safety standards.

3) **CAPEX & Surface Facilities Footprint**: Holding ponds and storage facilities are required to hold the large volume of saturated brine feedstock and produced salt. These must be right-sized to optimize output while not exceeding overall capital requirements and based on environmental considerations.

4) **Total Addressable Market**: The Project must not saturate the market for relevant salt products (industrial, chemical or retail), and so production must be scaled to match the demand opportunity.

5) **Logistics and Transportation**: Transporting the final salt product from plant to market will guide the scale and overall model of the production process and be defined during FEED.

As demonstrated globally in places where geological salt domes are present, the most common business model for their commercialization is solution mining caverns for establishing long-term (50+ year) energy storage assets. Long-term and stable revenues generated from energy storage produces a higher economic use of a salt dome formation than solution mining salt resources alone. In essence, the additive, long-term storage economics outweigh an incremental increase in salt production given the constrains noted above.

It should be noted that many solution-mined cavern operations in Alberta and Saskatchewan treat the resulting brine as a waste stream and dispose of it through Class I disposal wells, while some proposed projects in Atlantic Canada have considered direct marine discharge. In contrast, TPR views the dissolved salt as a valuable resource and is therefore pursuing opportunities to recover, process and market it. This approach reflects principles of prudent resource management by maximizing resource recovery, generating additional economic value, and enhancing the overall benefits derived from the salt resource.

Although the scope of the current Project includes solution mining 1-2 caverns, it should be noted that the solution mining infrastructure being developed can be utilized for additional cavern creation and salt production in the future. Established capital infrastructure developed for these first caverns is a considerable benefit making future cavern development and salt production more efficient and cost effective, further augmenting salt resource utilization. TPR acknowledges that any additional, future caverns and solution mining phases would also be subject to EA registration and review.

Importantly, the development of salt caverns for energy storage does not permanently sterilize the remaining salt resource within the Fischells Salt Dome. At the conclusion of cavern operations and eventual site closure, the salt dome can be re-evaluated using the economic, technological and market conditions to determine whether further solution mining activities are warranted. Future solution mining programs could be specifically designed to maximize salt extraction from remaining portions of the dome, utilizing existing geological knowledge and infrastructure developed during earlier Project phases. As a result, cavern development represents a temporary and high value-generating use of a portion of the resource rather than a permanent loss of future extraction potential. The Project therefore preserves the opportunity for future salt recovery while generating significant economic value through long-term energy storage operations.

2.1.3 Direct Environmental, Social and Economic Benefits

The Project has the potential to deliver important environmental benefits through the provision of large-scale, long-duration energy storage that supports the integration of renewable energy sources into the electricity system. The ACAES system operates without fuel combustion and associated GHGs, while enhancing grid reliability and enabling the delivery of stable, dispatchable power from intermittent renewable energy sources. By facilitating greater use of renewable energy, the Project can contribute to broader decarbonization and energy transition objectives.

It will also be a significant contributor to the local, regional, and provincial economies through the employment and business activity and other socioeconomic benefits it will create across its various phases. Its development will represent billions of dollars in capital investment for the region, as described in a later section. Project construction will occur over multiple years, and will include significant direct employment (up to 800 workers at peak) in a wide variety of occupations, followed by an estimated 70 long-term positions during Project operations. The requirement for goods and services during Project construction and operations will also provide significant local, regional and provincial business opportunities. These direct economic outcomes will be supplemented by indirect and induced benefits through, for example, spending by Project employees, contractors and suppliers. The anticipated nature, magnitude and distribution of the Project's economic benefits are described further in Sections 2.7 and 5.10 of this EA Registration.

As proponent, TPR is very encouraged by the significant and long-term environmental and socioeconomic benefits that will be realized through this Project, and is confident that any issues and considerations that may be associated with its construction and operation can be addressed through sound Project planning, design and implementation, supported by meaningful public, community and Indigenous participation throughout.

2.2 Project Location and Layout

The Fischells Salt Dome is a large, naturally occurring underground salt formation located on the west coast of the Island of Newfoundland, in the Bay St. George area approximately 30 km south of Stephenville and 10 km inland from the coastline (Figure 2.1).

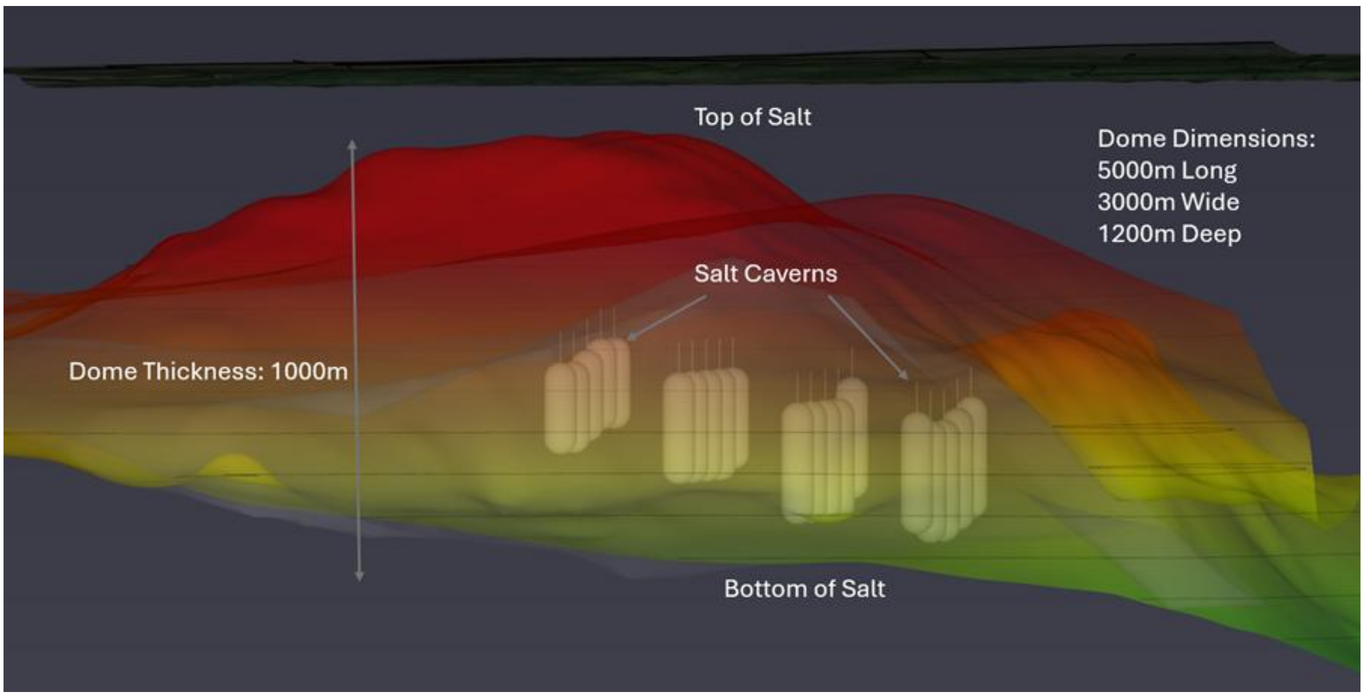
Figure 2.1: Project Location and Regional Setting

The Project site is strategically located adjacent to the Trans-Canada Highway between Flat Bay and Fischells, and falls directly under the TL 214 and Maritime Link transmission line corridor that extends through the area, near the existing terminal station at Bottom Brook.

The salt dome itself spans more than 5 km in length, 3 km in width and extends approximately 1.2 km deep (Figure 2.2). It is comprised of high-purity halite (sodium chloride) with very low permeability and porosity, making it especially suitable for creating stable underground caverns for large-scale energy storage.

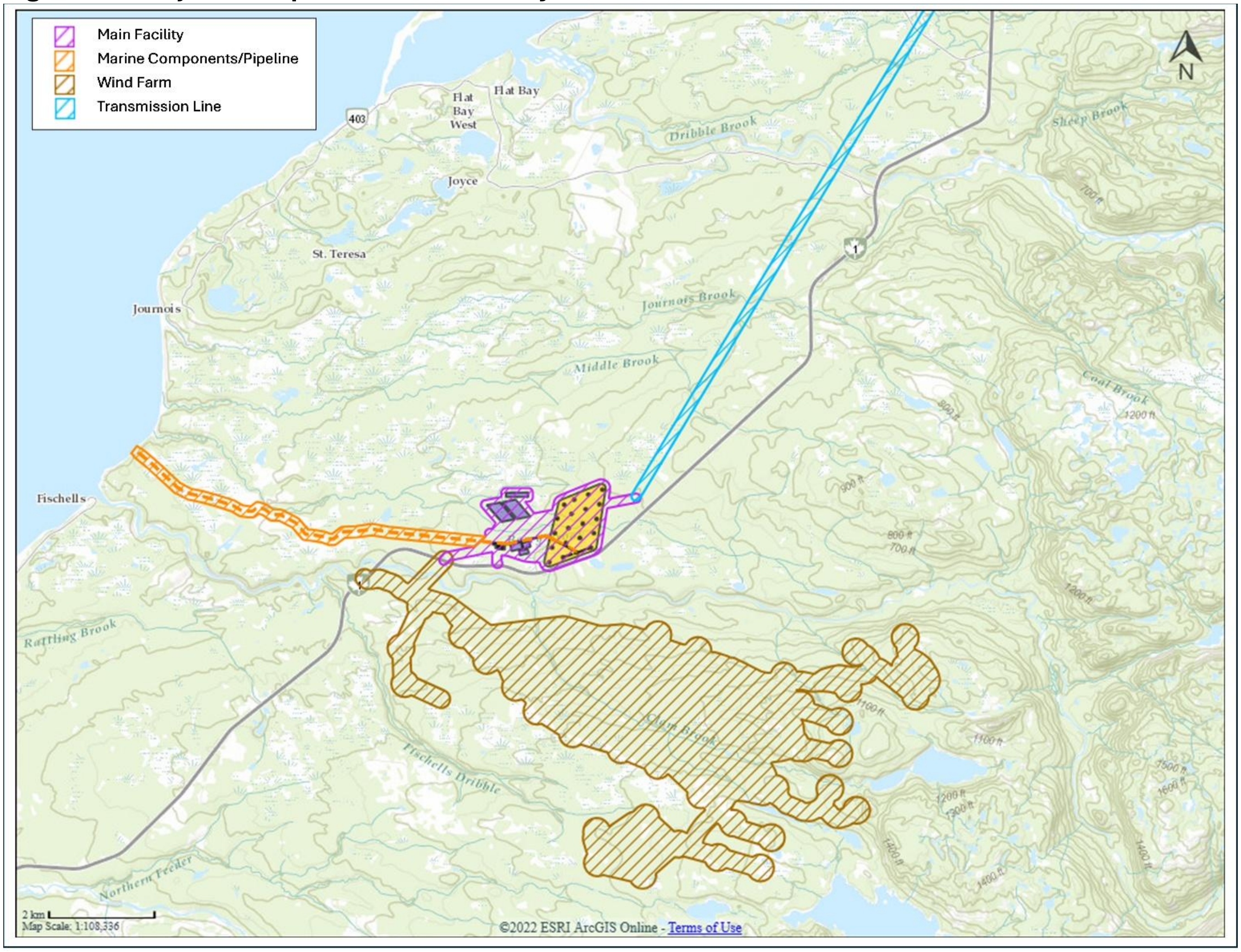
TPR currently holds the mineral rights to the Fischells Salt Dome, giving the company the legal authority to explore for and develop the underground salt resources that are central to this energy project. These rights are secured through mineral licenses covering approximately 74 km^2 which includes the salt dome itself and surrounding areas.

Figure 2.2: The Fischells Salt Dome



The primary components of the Project include those shown in Figure 2.3. These are described in further detail in the sections that follow, which includes an overview of their planned construction and operation phases.

Figure 2.3: Project Components / Overall Layout



2.3 Project Planning and Alternatives

As a planning tool, the EA process can help inform and influence project design, in order to proactively identify and address potential environmental issues and concerns. The identification, analysis and evaluation of alternative project concepts and approaches can allow environmental considerations to be incorporated into the earliest stages of development planning and design. This includes potential alternatives to a project, as well as alternative means of carrying out the project that are technically and economically feasible.

The identification and consideration of environmental issues from the earliest stages of project planning is an integral part of TPR's corporate philosophy and its approach to development design and implementation.

2.3.1 Alternatives to the Project

In the context of an EA review, "alternatives to" a project are functionally different ways of meeting its need and achieving its purpose, which for this Project are as described earlier in Section 2.1.

TPR notes that decisions regarding the evaluation and selection of electricity supply options in Atlantic Canada and elsewhere are the mandate and responsibility of other parties. With the exception of this proposed Project, no other energy generation and storage alternatives are currently within the ability and responsibility of TPR. The only alternative to TPR's planned construction and operation of the Project is, therefore, that the company decide not to proceed with the proposed development described herein.

As illustrated throughout this EA registration, the proposed Project entails a relatively straightforward, technically feasible, economically viable, and environmentally and socially responsible means of addressing the identified need for and purpose of the development. It will be planned and implemented in a manner that avoids or reduces potential adverse effects and maximizes local, regional and provincial benefits.

2.3.2 Alternative Means of Carrying out the Project

The EA process also allows for identification and evaluation of alternative development concepts and approaches, in order to incorporate environmental considerations into project design at an early stage. This EA registration therefore also considers possible alternative means of carrying out the Project that are technically and economically feasible, and the potential environmental considerations that may be associated with any such design options.

While the planned location and layout of some Project features cannot reasonably be changed - such as the siting of the proposed salt cavern(s) which is determined entirely by the location and extent of the dome itself - other components do have identifiable options and may offer a degree of flexibility in their design. For several of these, TPR has evaluated multiple design alternatives as part of its planning work to date, and will continue to do so for some as the development moves into the next stage of engineering and design optimization.

The following sections provide a discussion of various identified design concepts, and considers the potential pros and cons of each from an environmental, technical and economic perspective. This includes describing the rationale for any preferred and proposed designs that are the focus of this EA Registration, and thus for which EA approval is being sought, and well as highlighting several components for which multiple design options remain under consideration. These evaluations were completed early in Project planning – and in this EA Registration - to allow for a focused and thorough EA review of a feasible Project.

2.3.2.1 Water Supply for Solution Mining

TPR has considered both freshwater and seawater supply options for obtaining the water required to undertake the solution mining activities associated with cavern development.

At present, there is insufficient information to determine whether adequate volumes of surface water or groundwater are available at or near the Project site for this purpose. This uncertainty, along with concerns expressed by local residents around any potential effects on surface and ground water supplies, resulted in an early decision by TPR to focus on seawater as the preferred and planned source of water for this purpose. Seawater is a feasible and attractive option given its abundant and reliable supply and compatibility with the solution mining process, and given the geographic proximity of the cavern field to the ocean.

Seawater has therefore been identified as the most viable and environmentally prudent option for providing the overall volume of solution mining water required to develop the salt cavern(s), which would be brought to the Project's main facility through a purpose-built pipeline. Two options for the seawater supply have also been identified and are being evaluated, including:

1) Open ocean intake from a location in St. George's Bay, and
2) Seawater abstraction by one or more beach wells.

Of these, the beach well option is considered preferable, as it would involve considerably lower cost than the open ocean intake option by eliminating the need for several associated components (intake, offshore piping and pumping). It would also reduce the potential for damage from oceanographic and ice conditions, as well as interactions with the marine environment and other marine activities. The feasibility of this option is, however, dependent on the presence of suitable shoreline and geological conditions, and the ability to obtain the required water volumes and rates in this manner. While TPR's initial desktop evaluations suggest this may be the case, the feasibility of this option cannot be confirmed without further field investigation including test wells.

In order to be both inclusive and conservative in its approach, and while the company continues to evaluate the feasibility of the preferred beach well option through further engineering and site investigation work, both of the seawater supply options are described and considered in this EA registration.

2.3.2.2 Saltwater Disposal

During the solution mining process, up to 14,100 m^3 / day of brine will be produced over a period of 18–24 months. Once the brine extracted from the wellbore during the cavern development phase becomes sufficiently saturated with salt it will be diverted to an on-site crystallization facility to produce marketable salt.

The remaining salt water will be disposed of, with several potential approaches identified for this purpose:

1) Ocean disposal, through an underground pipeline extending from the cavern site to and into St. George's Bay, and
2) The drilling and use of one or more deep, on-site disposal wells.

Of these, ocean disposal is likely to be less costly and technically straightforward to build and operate compared to an on-site well disposal system. It would involve pumping saltwater into the ocean, with the system designed to ensure suitable mixing and dilution. TPR's engagement with local fishers and residents has, however, resulted in a decision to continue to evaluate the disposal well option to determine its overall technical and economic feasibility. This option will require field investigation work to confirm its viability, and the eventual drilling of four or more such wells and associated piping of the material from the cavern site to the disposal wells under pressure.

At this stage, both of these disposal options discussed above remain under consideration, and are therefore included and assessed in this EA registration.

2.3.2.3 Pipeline and Transmission Line Corridors

The Project will include a number of linear components, including the above described pipeline(s) for seawater intake (and possibly saltwater disposal) extending from the cavern site to St. George's Bay, as well as a new 230 kV transmission line to the existing Bottom Brook terminal station.

As linear developments with only their required start and end points defined, a range of alternative designs and routings can typically be identified for proposed pipelines and transmission lines, which can then be evaluated on the basis of technical, economic and environmental considerations and constraints.

In the early stages of Project planning, TPR identified and considered various possible study corridors for these components, which were screened and evaluated based on the following considerations and objectives:

- Following existing rights of way wherever possible, to reduce construction and maintenance costs and new disturbance as well as avoiding or reducing the creation of new access to currently remote areas;
- Attempting to avoid interactions with any known environmentally sensitive features;
- Minimizing the overall length (and thus, costs) of these linear facilities to the extent possible;
- Avoiding difficult terrain, waterbodies and other unfavourable landscape conditions, while at the same time ensuing adequate sloping of the pipelines (for gravity flow).

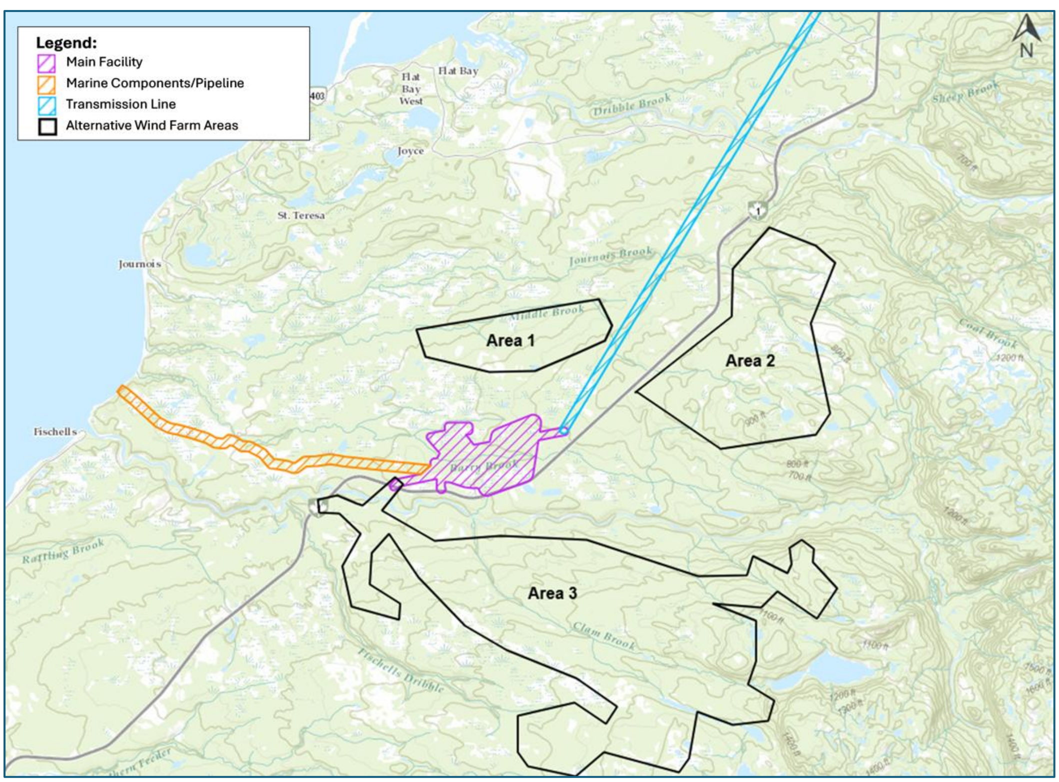
The currently proposed pipeline corridor (see earlier Figure 2.3) was selected to achieve the minimum overall distance from the Project's main facility to the ocean, with any deviations from that straight line path being to avoid waterbodies and watercourses and other landscape features. Also, and despite there being any number of potential transmission line corridors between the Project's main substation and the Bottom Brook terminal station, the preferred routing has been identified as that which follows alongside the existing transmission lines that run over the Project area. This achieves an optimal balance of minimizing the line's overall length (approximately 40 km) and cost while at the same time reducing the need for new ground disturbance and creating new land access.

The final selection of a pipeline right of way, and the detailed siting and placement of Project structures within them, will occur as part of future engineering, informed by the information, analysis and engagement outcomes stemming from the Project's EA review. As described elsewhere in this document, there is continued flexibility in the siting of any required water intake/ saltwater outfall locations along the coastline, and thus, in the final routing of the pipeline(s) themselves in order to avoid possible environmental interactions.

2.3.2.4 Wind Farm Location

The siting of the Project's planned wind farm component was likewise determined by a number of technical and environmental factors, including the required wind speeds / available wind resources, the land area necessary to support the number of turbines involved, existing topography and other relevant environmental constraints (e.g., avoiding infrastructure, wetlands and watercourses, land ownership, protected and natural areas). TPR completed an initial mapping exercise to identify suitable, candidate areas for the wind farm, which resulted in three locations being selected for further consideration (Figure 2.4): one located immediately to the north of the main facility, another situated to the northeast on the opposite side of the highway, and another to the south of the highway.

Figure 2.4: Potential (Alternative) Wind Farm Locations



Of these three options, Area 3 was eventually chosen for the wind farm location, as it provided the best overall wind resource and resulting generating capacity (240 MW) while also maximizing its distance from local communities and other environmental features (see Section 3.2.1).

Again, the detailed configuration of the wind farm and its associated components, including the siting of individual turbines and other infrastructure within this overall area, will be determined as further detailed engineering and site investigation work are completed.

2.3.2.5 Construction Workforce Accommodations

During the anticipated three years of Project construction, it is estimated that up to 800 onsite workers will be required at peak. TPR is committed to the adjacency principle, and to hiring and contracting as many local qualified persons and companies as possible. While many of these workers will therefore come from nearby communities and elsewhere in the region (within commuting distance), given the number of workers and the diversity of occupations required during this phase of the Project it is likely that a portion of the construction labour force will come from outside the region.

Several options for temporary accommodation of the non-resident construction workforce are being considered and evaluated by TPR, including:

1) Workers will be housed in existing accommodations in nearby communities and transported to and from the worksite daily;
2) TPR will establish and use a temporary, onsite construction camp.

At this stage of Project planning, it is not known exactly what proportion of the construction workforce will be comprised of local residents (who would commute to and from the worksite each day) versus those from outside the area for which Project accommodations will be required during this phase of the Project. The required nature and amount of Project related accommodations during construction will therefore depend upon various factors, including the availability, interest and qualifications of the local workforce, potential competition for local workers from other projects and activities, and the nature and outcomes of the Project's recruitment and retention initiatives. Further information and analysis are also required regarding the availability and capacity of local accommodations to house the non-resident construction workforce.

Each of these worker accommodation approaches can have both positive and negative implications, which can vary based on specific interests and objectives. On the one hand, the presence of large numbers of transient workers within small towns can create social issues, and negatively affect the availability, cost or quality of local services and infrastructure (including rental housing) for other residents. Alternatively, and if adequate and appropriate capacity exists, housing and feeding non-resident workers in nearby communities can present business opportunities and important potential economic benefits for local persons and businesses. As part of its on-going Project planning work, TPR will continue its analysis of the Project's construction accommodation requirements, including discussions with local communities and businesses around the availability and capacity of local accommodations in accordance with the Project's requirements and schedule, as well as to further understand residents' priorities and preferences in that regard.

At this stage, each of the options listed above are being brought forward for EA review, including: 1) the establishment and operation of a temporary construction camp for several hundred persons during construction 2) housing the non-resident workforce entirely in existing local accommodations, and 3) a "blended" approach, utilizing a combination of both local accommodations and a smaller camp that will accommodate a portion of the non-resident workforce.

2.4 Project Components

As described previously, the primary components of the Project (see earlier Figure 2.3) include:

1) A *Main Facility*, comprising the proposed salt cavern(s), salt production, adiabatic compressed air energy storage (ACAES) unit and other associated infrastructure, to be located just north of the TransCanada Highway;

2) *Marine Components and Pipeline(s)*, located to the west of the main facility and used to obtain and transport seawater from St. George's Bay for use in the solution mining process, and possibly the disposal of the produced saltwater;

3) A *Wind Farm* and associated electrical systems, situated immediately to the southeast of the main facility on the opposite side of the highway; and

4) A 230 kV bidirectional *Transmission Line* that will connect the facility to the existing Bottom Brook terminal station.

These components are described in further detail in the sections that follow, which in some cases includes discussing their planned construction or operation as part of that description (e.g., the solution mining process), with further details then provided later in this chapter.

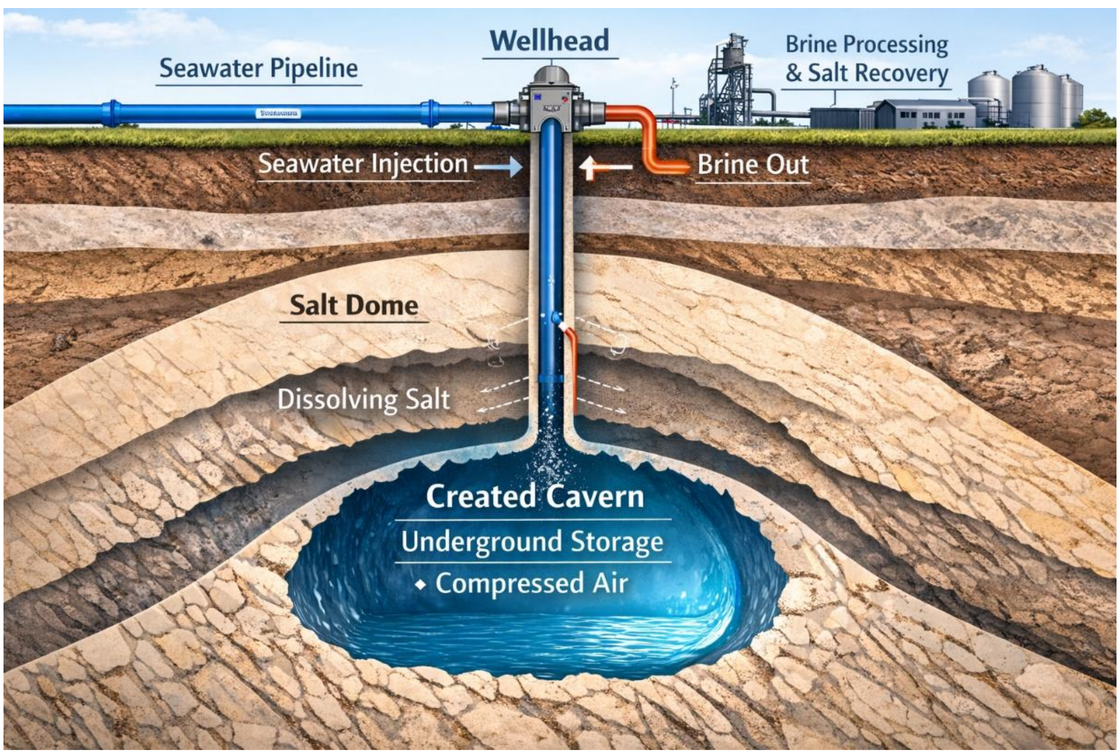
2.4.1 Overview of Solution Mining / Salt Cavern Development

Given its overall size, the Fischells Salt Dome can potentially accommodate up to 20 caverns, which may be developed progressively over time. It is important to note that the scope of the current Project – for which EA review and approval are currently being sought – comprises one or possibly two caverns only, as described below.

It is currently anticipated that one or two caverns, located on the southern end of the dome, will be subject to development to create the storage capacity required for approximately 3.5 GWh of compressed air energy equivalent for this Project. The options currently being considered therefore include developing one cavern approximately 800,000 m^3 in volume, or dual caverns each approximately 400,000 m^3 in volume. The eventual decision and configuration will depend on the final operating pressure, required grid service offerings and other characteristics of the system described below. Again, TPR recognizes that any additional, future cavern development and the associated expansion of other Project components will be subject to subsequent and separate EA review and approval requirements.

Solution mining is an effective and well-established technique used to create underground salt caverns by circulating water through a formation to selectively dissolve the salt (also known as "cavern washing") while leaving the surrounding materials intact (Figure 2.5). As the water dissolves the salt, it creates a controlled underground cavern, and the resulting brine is brought back to the surface and managed in accordance with applicable requirements and guidelines. The process allows caverns to be shaped and sized accordingly, producing stable, impermeable storage spaces that are well suited for long-term containment of compressed air. This Project will be developed and operated in compliance with relevant standards for compressed air energy storage in salt caverns.

Figure 2.5: Conceptual Illustration of a Typical Solution Mining Process



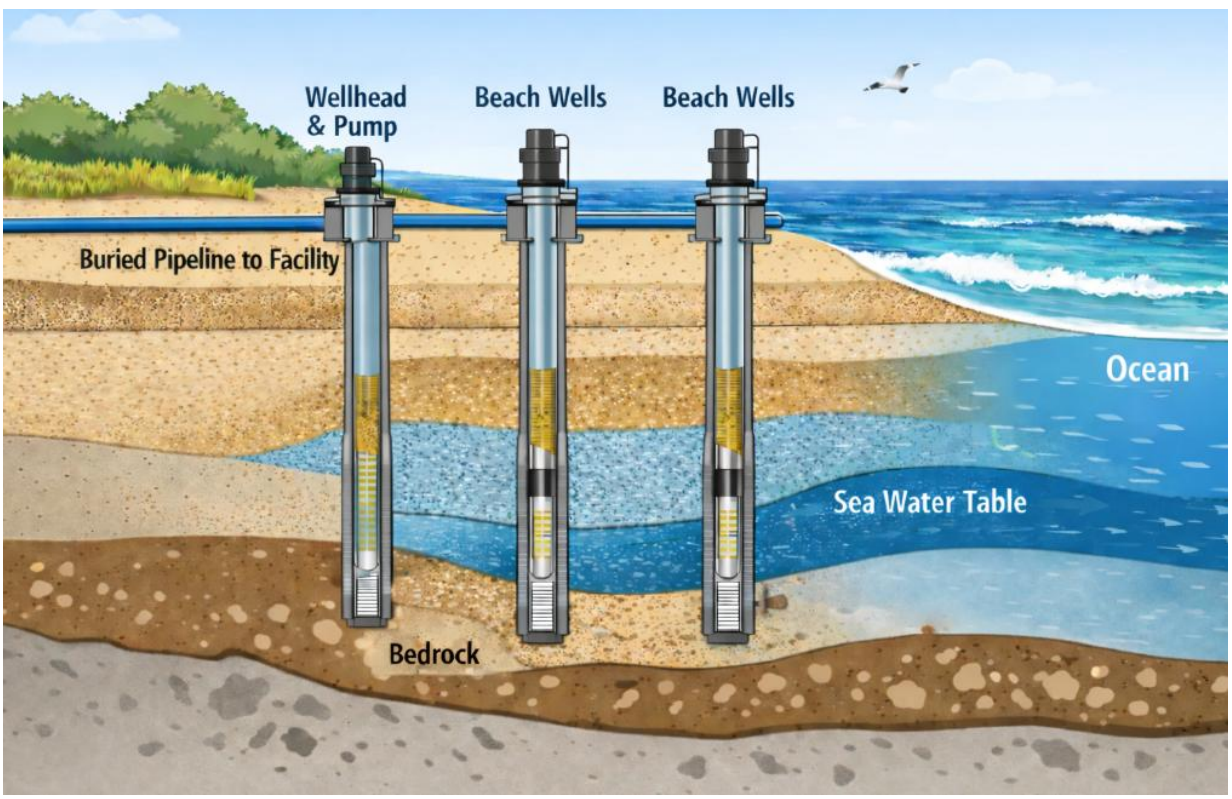
It should be noted that the term "brine" is used throughout this document to refer to the high salinity (at or near saturation) water that will be produced during the solution mining process, which will feed the planned on-site salt production facility. The final salinity of any remaining wastewater from the solution mining process that will eventually be disposed of will be subject to optimization through the detailed design and operation of the salt production facility (crystallizer), as well as treatment processes such as settling ponds and other management systems. TPR will seek to minimize the salinity levels of any such discharge, with the objective of achieving concentrations as close as practicable to ambient seawater conditions prior to any marine disposal. In this document, this material is referred to as produced "saltwater".

2.4.2 Marine Components and Pipeline

As described previously, seawater is the preferred option for supplying the up to approximately 14,500 m^3/day of solution mining water required. The Project's water supply system will be designed to deliver a continuous and controlled flow of water from the ocean to the cavern (leaching) site, which will be sourced from a location in St. George's Bay just north of Fischells. As also noted earlier, two alternatives for seawater supply are currently being considered, including the preferred option (subject to confirmation of its feasibility) of seawater abstraction by one or more beach wells, with a second option comprising an open ocean intake from a location within St. George's Bay.

If eventually chosen and developed, the beach well system would consist of several vertical or directionally drilled wells installed landward of the shoreline and screened within permeable coastal sand and gravel deposits that are hydraulically connected to the adjacent marine environment. Seawater would infiltrate naturally from the nearshore marine environment through the seabed and overlying sediments, providing a degree of natural filtration before being collected in the wells and pumped to the surface. Submersible pumps installed within each well would convey the abstracted seawater via buried pipelines to the Project's main facility for use in solution mining operations, as described further below. The number of wells required to provide the required water volumes and rates will be determined by on-site geological conditions. Ancillary components will include wellhead protection, flow monitoring and control systems and access for maintenance and testing (Figure 2.6).

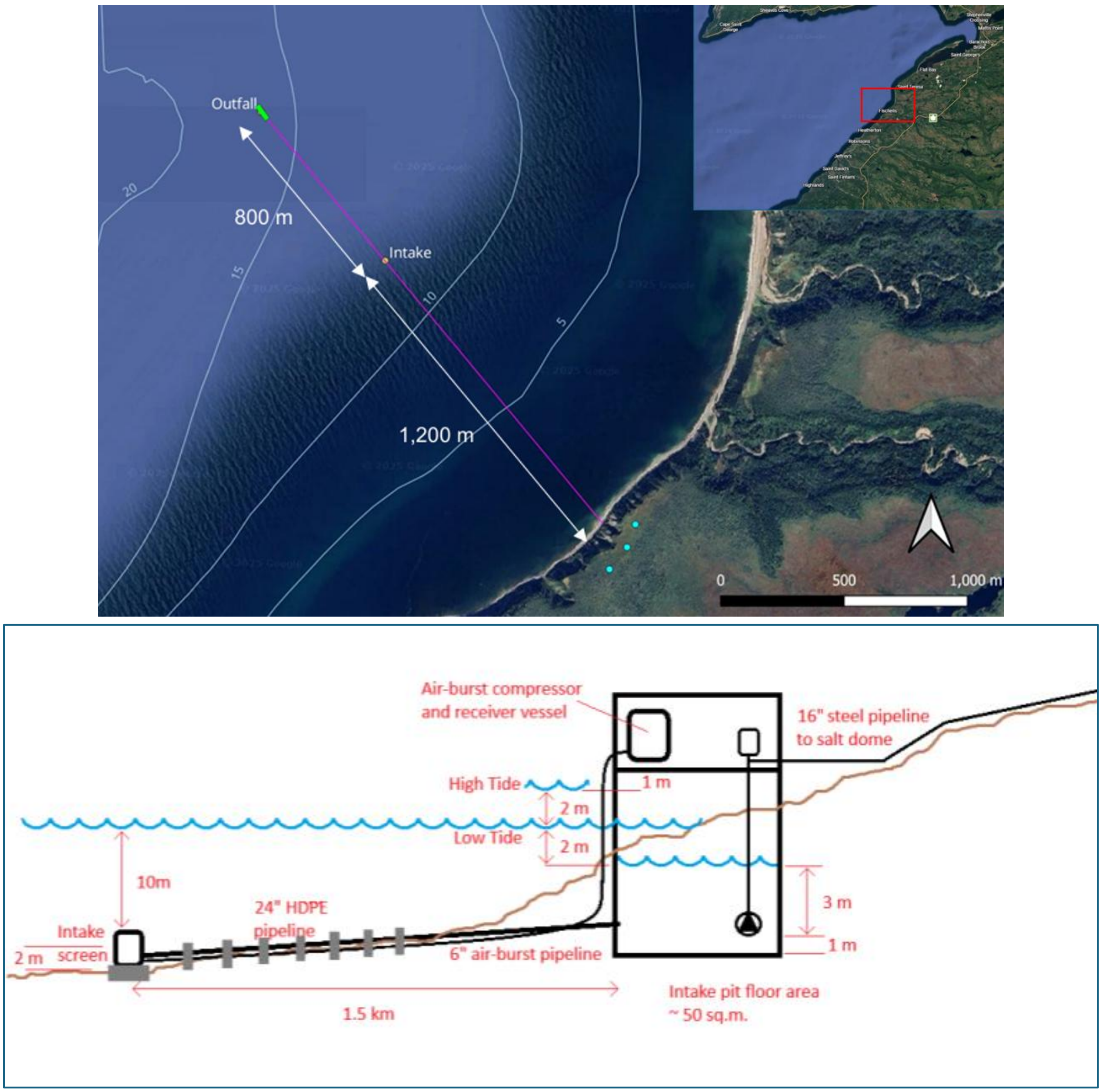
Figure 2.6: Conceptual Illustration of a Potential Beach Well System



In the event that the preferred beach well option is infeasible, a submerged water intake structure would be established approximately 1.2 to 1.5 km from shore in a water depth of about 12.3 m. The intake will be mounted about 2 m above the ocean floor on a concrete support structure, and equipped with a fish-screen and air-burst cleaning system.

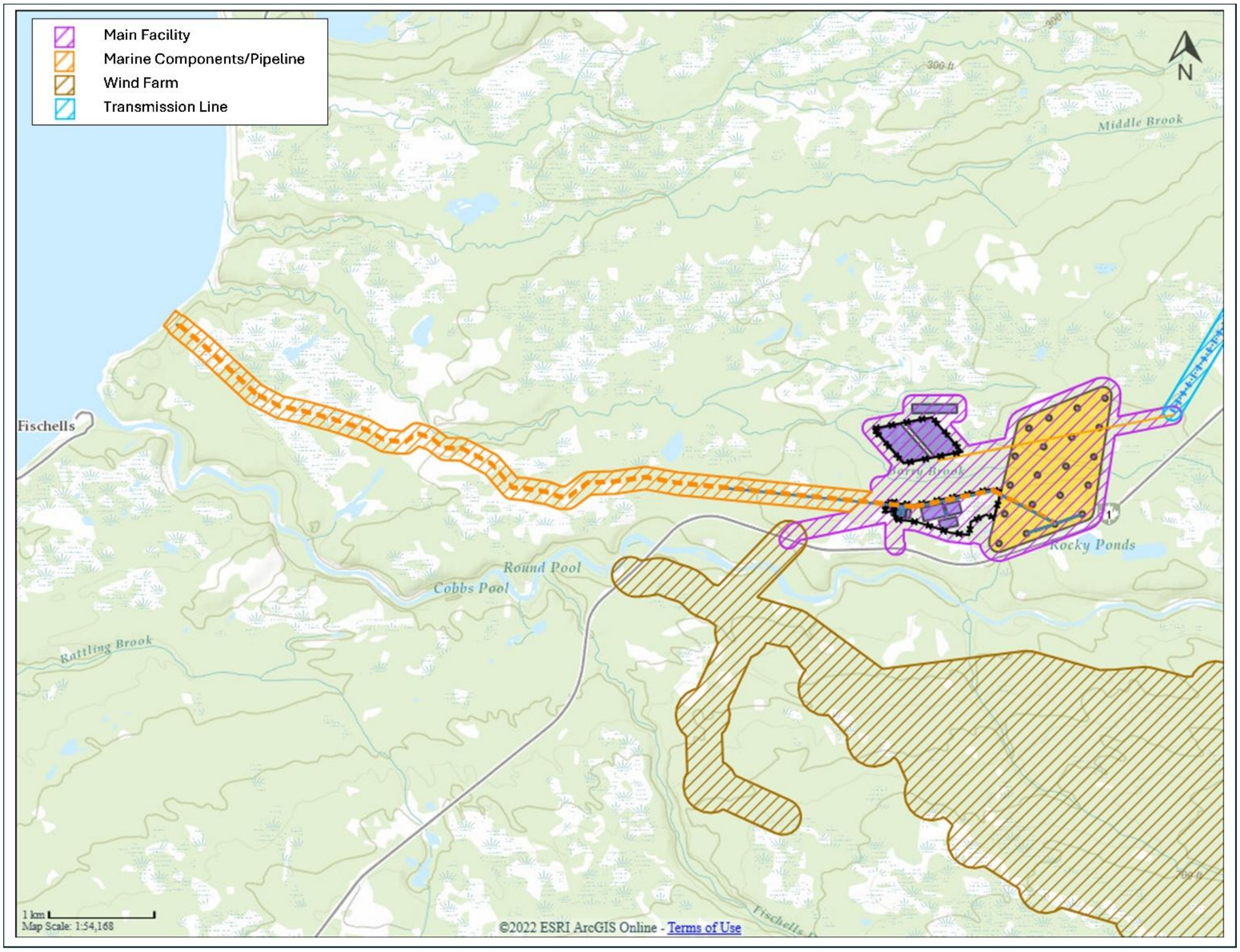
From this intake, seawater will flow by gravity to an onshore pumphouse through a 24-inch high-density polyethylene (HDPE) pipeline, which will buried for the first 500 m from shore for protection with the remainder weighed down using concrete collars. The pumphouse will be approximately 7 m by 10 m in size, and will comprise a wet well system feeding a vertical turbine pump (with one spare pump) along with the associated electrical equipment (Figure 2.7).

Figure 2.7: Potential Seawater Intake and Coastal Pumphouse



For either of these water supply options, seawater will be delivered to the salt cavern site through an approximately 10 km long, 16 inch diameter HDPE lined steel pipeline, which will be buried in an excavated trench (approximately 1.2 m wide and 1.5 m deep). The pipeline will be located within an approximately 20 m wide right-of-way that will also contain a new gravel surface access road extending from main facility to the coast (Figure 2.8), as well as the parallel saltwater disposal pipeline if that option is eventually selected (see Section 2.4.3).

Figure 2.8: Proposed Pipeline(s) from Salt Cavern Site to St. George's Bay

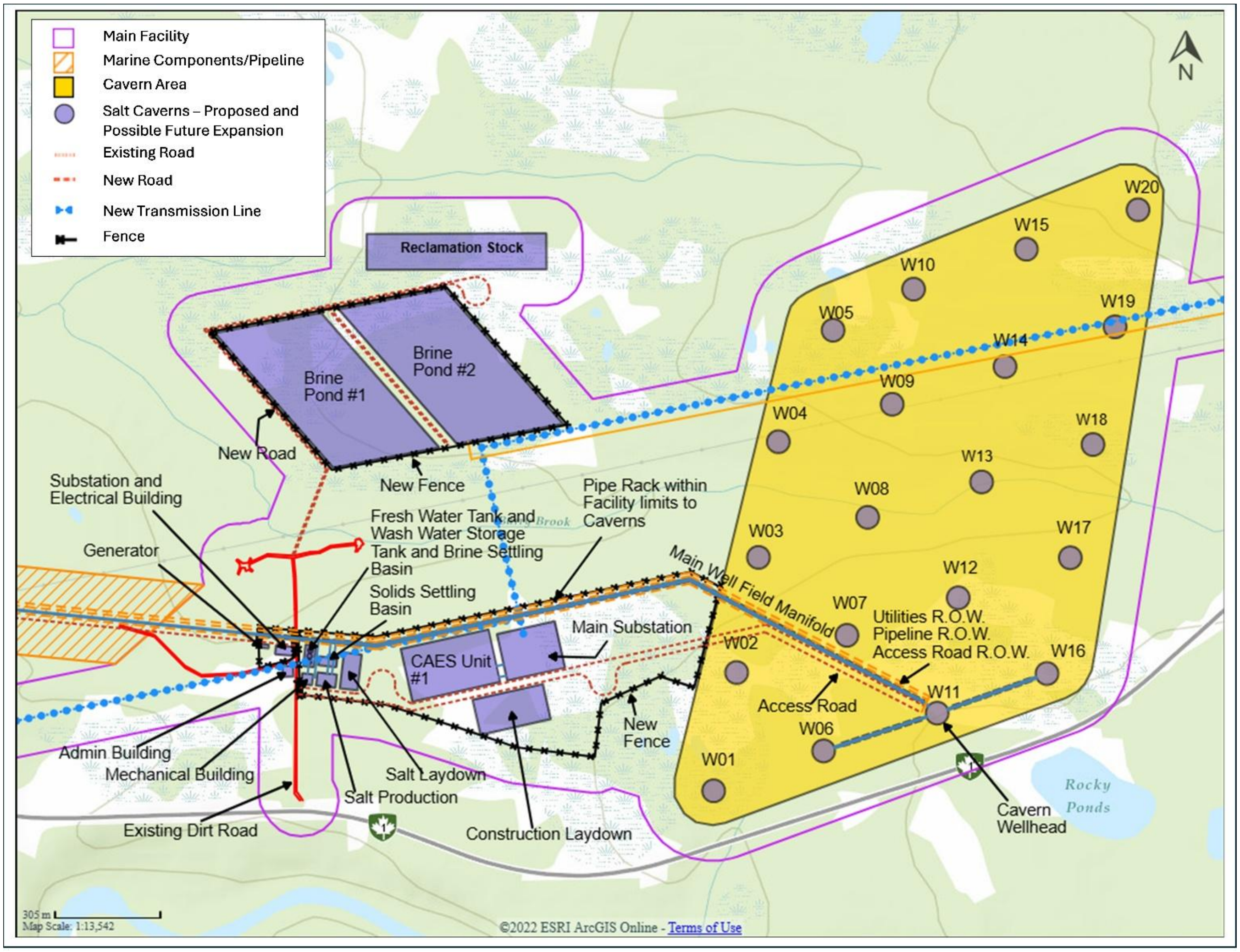


* As noted previously, the final selection of a pipeline corridor / routing will occur as part of future engineering, and there is continued flexibility to avoid any possible environmental interactions / land use conflicts.

2.4.3 Main Facility

The Project's main facility will encompass the salt cavern(s) / storage well(s) and surrounding cavern field, brine management and salt production systems, and associated infrastructure (Figure 2.9).

Figure 2.9: Main Facility: Layout and Key Components



Note: The current Project will include one or two salt caverns only, at the south end of the dome. Brine pond location and dimensions are the subject of on-going engineering / optimization work.

2.4.3.1 Salt Cavern Development

Upon reaching the cavern site, the seawater will be discharged into a 1,000 m^3 buffer tank to provide a continuous and regulated supply to the solution mining process, which will require up to approximately 14,500 m^3 of water per day. From there, three high pressure injection pumps will feed seawater into the cavern borehole and boost the pressure and flowrate to a level sufficient for leaching. The high-pressure seawater will be initially injected down the inner leaching string (direct leaching mode) with brine produced via the well annulus. After a certain period, the seawater will be injected into the well annulus and brine produced from the inner leaching string (reverse leaching mode). The reverse leaching mode is more efficient, producing brine that approaches saturation. Also, as the cavern grows, the increasing seawater residence time allows for greater saturation and leaching efficiency to increase.

The salt cavern(s) will be created over a period of 18–24 months, over which time the estimated rate of brine production will be up to approximately 14,100 m^3 / day. In the early leaching stage, the produced brine will be unsaturated and is likely to contain insoluble materials which will be removed with cyclone separators. In the later leaching stage, the brine approaches saturation and is expected to contain less solids. The effluent brine and solids will be collected in tanks developed as part of the Project's main facility.

Brine Management: Commercial Salt Production

It is currently planned that once the brine extracted from the wellbore becomes sufficiently saturated with salt it will be diverted to an on-site crystallization facility to produce marketable salt, likely in the form of high-purity industrial chemical grade salt and granulated de-icing salt products. This represents an important and complementary business and revenue generating opportunity, which can provide capital to support Project development while at the same time even further enhancing local economic benefits through job creation and associated supply chain opportunities.

This salt production facility would be comprised of an industrial scale processing plant installed at the main facility close to the wellhead or brine handling area. The proposed processing capacity of the plant is the subject of on-going design and optimization work and associated technical and economic analysis, which will in turn determine the final rate (and total duration) of salt production. Key factors that will be evaluated during FEED studies that will support the optimization of the production capacity include mass balance requirements (i.e., input power requirements), surface facilities footprint requirements, CAPEX requirements, infrastructure integrity and operational safety and efficiency. More detailed evaluation through FEED will determine the maximum economic limit of the salt production based on these factors and will ensure prudent resource management of the salt by-product.

Although the scope of the current Project includes the planned solution mine of 1-2 caverns, it should be noted that the infrastructure being developed as part of the current Project can be utilized for additional cavern creation and salt production in the future. The creation of 1-2 caverns does not prevent the remainder of the salt in the dome from being extracted. Rather, the established capital infrastructure developed for these first caverns is a considerable benefit that makes the potential future extraction of more salt far more efficient and cost effective, thus further augmenting the salt resource utilization. TPR acknowledges that any future caverns and associated solution mining activities would be subject to separate and subsequent EA registration and review.

TPR continues to work towards optimizing this aspect of the Project based on technical, economic and environmental considerations with a view to maximizing the value of, and associated benefits, from the utilization of this resource as per the requirements of the Newfoundland and Labrador *Mineral Act* and *Mining Act*.

If developed, the on-site salt crystallization facility would comprise the following key components and activities:

- *Brine reception and conditioning*: Storage tanks and piping to receive brine, with filtration and pre-treatment systems to remove insoluble particles and adjust chemistry as needed before crystallization. At this point, the raw brine is treated with soda ash, caustic soda and barium chloride to precipitate impurities, followed by press filtration.

- *Evaporation and crystallization*: A Mechanical Vapor Recompression (MVR) system uses high-efficiency evaporation technology that compresses and reuses water vapor as a heat source to concentrate brine and produce salt while minimizing energy use. The MVR units will concentrate the brine to feed multiple Draft Tube Baffle (DTB) crystallizers that will produce large, uniform, high-purity crystals for chemical-grade specifications.

- *Crystal separation and washing*: Centrifuges or classifiers separate salt crystals from the remaining liquid, followed by washing systems to improve purity and meet applicable market specifications.

- *Drying and cooling*: Salt cake (5-8% moisture) is dried to less than 0.2 % in a fluidized bed dryer. A brine scrubber recovers fines and cleans exhaust air.

- *Compaction*: Fine salt is mechanically compacted into high-density flakes and granulated.

- *Material handling and loading*: On-site conveyors, silos and/or covered storage buildings for dried salt, with load-out facilities (including dust-suppressing telescopic bellows) for trucks as applicable.

- *Residual brine management*: Systems to return non-crystallized brine to the main disposal or discharge stream, ensuring integration with the broader solution-mining brine management plan.

As the estimated rate of brine production during the solution mining process will exceed that which the crystallizer can handle, a retention system is required to store enough brine to operate the crystallizer for the planned salt production period. This will involve the construction and operation of two brine storage ponds on northwestern edge of the main facility, which will be accessed via a new gravel surface road extending from the existing access road on the Project site. Two ponds are planned, which will allow for maintenance of one while the other continues to operate. The design and dimensions of these ponds will be further refined and optimized through detailed engineering, geotechnical investigation, and operational planning as the Project advances. Both ponds will be lined and covered by a polyethylene membrane to keep precipitation out of the stored brine material. The preliminary layout / dimensions of the brine storage ponds shown in this document are meant to be very conservative - reflecting much larger storage capacities than would be needed for either of the potential salt plant production rates / durations described above.

The brine that will be collected and stored in the ponds will represent a portion of the total brine volume produced during the solution mining process, which is expected to produce waste brine of widely variable salt content over time. The retained brine must be saturated for the crystallizer to operate efficiently, as brine that is less saturated requires more energy for crystalline salt production since more water must be boiled off before the salt concentration increases to the point where crystals form and drop out of solution. To ensure the greatest level of brine saturation, most of the total volume of produced brine will be disposed of through the system described below, with the remainder being retained in the brine storage ponds as feedstock for the crystallizer.

During the solution mining process, insoluble materials are expected to be present in the recovered brine and will be removed from the process stream. The quantity and characteristics of these materials have not yet been fully defined and will be determined during the next stage of engineering and design. All solid waste generated by the Project will be managed and disposed of in accordance with applicable regulatory requirements and approved waste management procedures.

On-site Disposal Wells or Marine Outfall

A portion of the saltwater produced by the solution mining process will be disposed of, with several alternative design concepts currently under consideration.

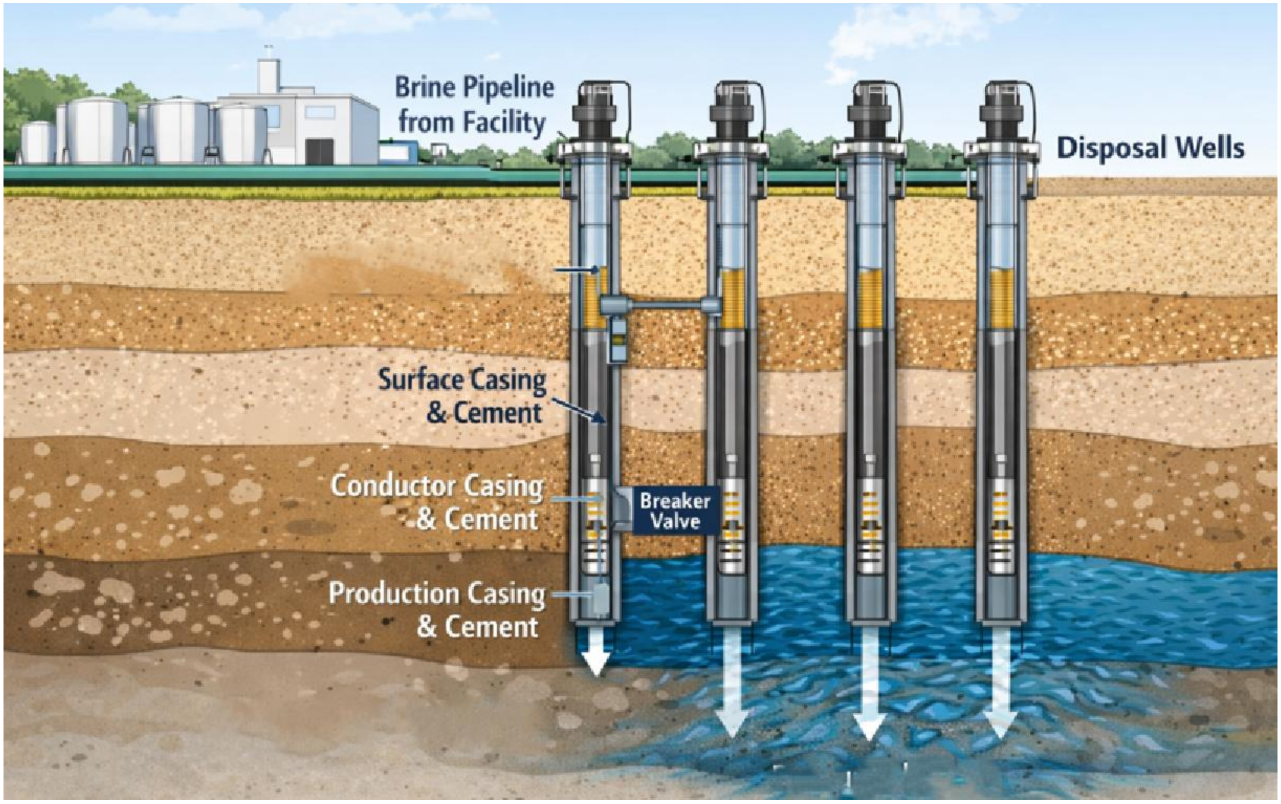
The preferred option at present – while likely more expensive and requiring additional on-site investigation to determine its feasibility - is to establish deep on-site disposal wells (Figure 2.10). This would likely involve drilling and operating four or more dedicated wells for this purpose, with the final number and well configuration dependent on site-specific geological and hydrogeological conditions and final calculated volumes.

If this option is eventually selected and implemented, each well would be drilled to a depth that reaches a suitable formation that provides sufficient thickness, porosity, permeability and lateral continuity to accept the projected injection volumes over the planned duration of the solution mining process. The target injection interval would be hydraulically isolated from overlying groundwater zones and other sensitive formations, potentially through the use of multiple casing strings and cementing programs designed in accordance with applicable regulatory standards.

Detailed subsurface investigations, including seismic data review, test drilling and injectivity testing would be conducted to confirm formation suitability, injection capacity and long-term containment characteristics.

For this option, the effluent generated during solution mining operations would be conveyed from the main facility to the disposal wells through a dedicated piping system designed to operate under elevated pressures. High-pressure pumps would deliver the material to the wellheads, where it would be injected into the approved disposal formation at controlled rates and pressures to maintain formation integrity and avoid induced fracturing beyond the permitted injection zone. Continuous monitoring of injection pressure, flow rates and well integrity would be implemented, along with periodic mechanical integrity testing, to ensure safe and compliant operation. The use of multiple disposal wells would also provide operational redundancy, distribute injection volumes to manage reservoir pressure and enhance overall system reliability throughout the solution mining process.

Figure 2.10: Conceptual Illustration of Potential On-site Disposal Wells



Alternatively, the produced saltwater will be piped to the ocean by gravity flow through a second 10 km long 16-inch diameter HDPE-lined pipeline, buried parallel to that described above for seawater intake. Upon reaching the coastline, this pipeline will remain buried for the first approximately 500 m from shore for protection, beyond which the remaining length will run along the seabed and be weighed down using concrete collars. The material will flow along the seabed through the pipeline for a distance of approximately 2 km (out to about 16 m water depth), with 10 dispersion nozzles located along the last 20 m of the pipeline (see earlier Figures 2.7 and 2.8).

The preliminary outfall diffuser design was developed using CORMIX (Cornell Mixing Zone Expert System), a widely used hydrodynamic and environmental modeling system for predicting how effluent discharges mix in natural water bodies. It has been designed to provide a discharge velocity of 8 m/s that will disperse the material into the sea with sufficient diffusion to ensure compliance with the following guidelines with respect to salinity and temperature (see Sections 5.3 and 5.4):

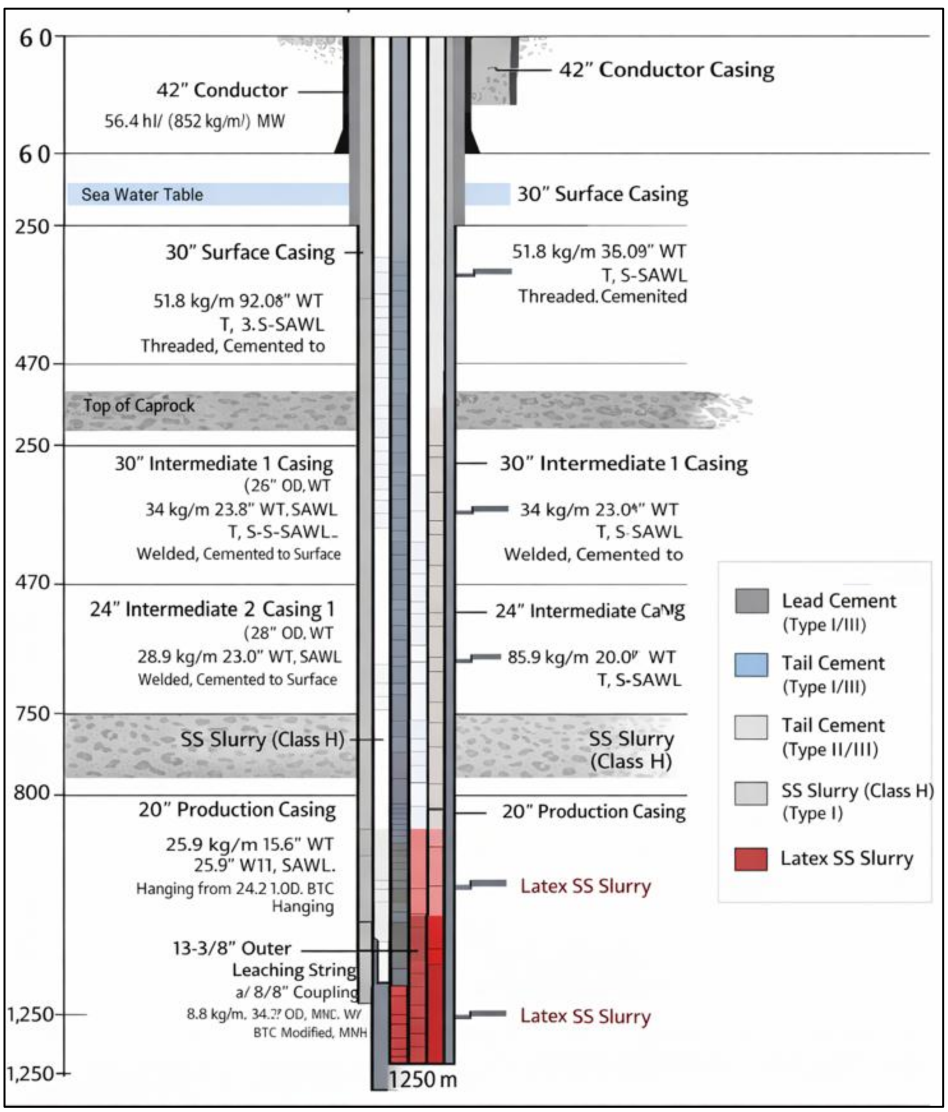
- Salinity increase of less than 10% above ambient (≤3.1 ppt)
- Temperature change of less than 0.5°C (conservative target within ±1°C guideline)

The final salinity of the saltwater to be disposed of will be subject to optimization through the detailed design and operation of the salt production facility (crystallizer), as well as treatment processes such as settling ponds and other management systems. TPR will seek to minimize the salinity levels of any saltwater discharge, with the objective of achieving concentrations as close as practicable to ambient seawater conditions prior to any marine disposal.

2.4.3.2 Storage Well

A storage well is a drilled and cased borehole that provides controlled access between the surface and the cavern, allowing fluids or gases to be injected, withdrawn and monitored while maintaining cavern integrity and wellbore sealing. A typical well is constructed using several concentric layers of casing, each of which is set at progressively deeper depths and cemented into place. This layered design provides structural strength, prevents leaks and protects surrounding rock and groundwater (Figure 2.11).

Figure 2.11: Conceptual Illustration of a Typical Storage Well



The innermost casing, known as the production casing, is in direct contact with the cavern and influences how it can be safely operated. The depth of the production casing sets the allowable operating pressure range for the cavern. A maximum pressure limit is applied to prevent fracturing of the surrounding rock, while a minimum pressure limit is maintained to prevent the salt from slowly squeezing inward and reducing the cavern's storage volume. These limits define the usable pressure range, which directly controls how much compressed air can be stored. Maintaining an appropriate pressure range helps minimize cavern size, solution-mining time and overall development cost. A minimum cavern operating pressure is generally set so that a minimum pressure gradient is maintained.

For this Project, the production casing depth will be selected to ensure a safe and practical operating pressure range for the planned compressed air energy storage. A liner made of stainless steel or fiberglass will be installed inside the production casing to carry the compressed air and protect the outer steel casing from corrosion caused by moisture and oxygen. A protective blanket of dry air or nitrogen will be maintained between the casing and liner to further reduce corrosion risk. The well design also includes leaching strings sized to allow efficient solution mining while keeping surface equipment and costs at a reasonable level. This configuration represents a balanced, proven approach that supports safe cavern development, long-term integrity and reliable operation.

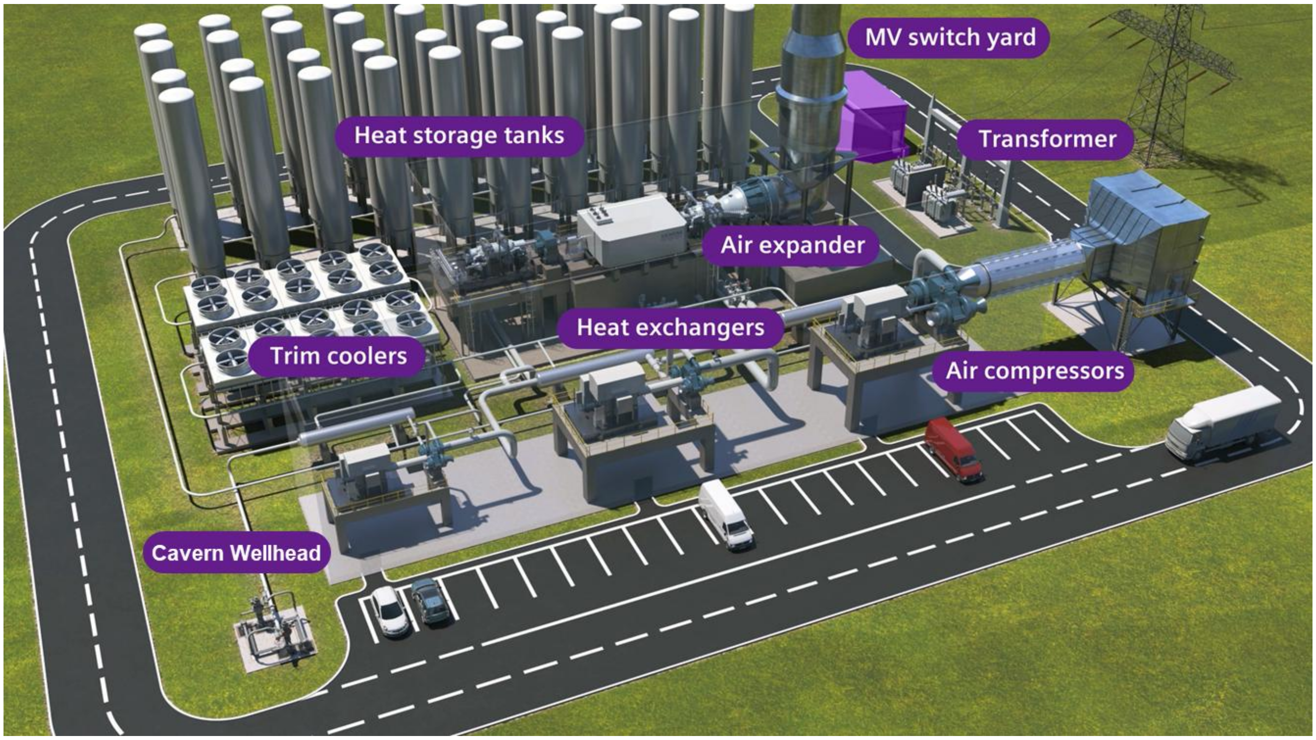
2.4.3.3 Adiabatic Compressed Air Energy Storage (ACAES)

Once cavern development is complete, it will be utilized for the operation of the ACAES system which is currently being designed to provide approximately 3.5 GWh of compressed air energy equivalent and 150 MW of firm and dispatchable capacity. The ACAES unit will be part of the Project's main facility (Figure 2.12), occupying an area approximately 150 m by 250 m in size. It will be modular and thus scalable to allow for future expansion as required.

During the compression process, ambient air will be compressed into the cavern thereby storing mechanical energy. This will utilize up to 240 MW of renewable power from the Project's wind farm.

This system will utilize an ACAES process, which captures the heat of compression within water stored at grade in insulated vessels. During the power generation process, compressed air will be slowly released from the cavern in a controlled manner, re-heated by the hot water through heat exchangers, and used to drive a turbine generator to produce up to 150 MW of electricity during periods of high power demand. The cooled water is then returned to cold water storage vessels and the cycle repeats.

Figure 2.12: Schematic of Typical ACAES System (Siemens Energy Modular ACAES Power Island)



2.4.3.4 Other Project Infrastructure / Site Services

A site building complex, located at the main facility immediately to the west of the main substation and ACAES unit, will be accessed via the existing road that extends to the Project site from the Trans Canada Highway (see earlier Figure 2.9).

In addition to containing several of the Project components described above, including the cavern wellhead(s) (approximately 10 m by 5 m) and salt production facility (54 m by 37 m), the complex will also include the following additional components (see earlier Figure 2.9):

- Office / administration building (approximately 30 m by 30 m)
- Mechanical building (50 m by 50 m)
- Freshwater storage tank, wash water storage tank and brine settling basin (30 m by 60 m)
- Solids settling basin (50 m by 25 m)
- Salt laydown area (50 m by 100 m)
- Construction laydown area (100 m by 200 m)
- Reclamation stockpile on northwest edge of Project area (100 m by 500 m)
- New onsite access roads / parking lots
- Project site fencing
- Well water supply (for drinking and utility water)

A substation and electrical control building (approximately 50 m by 25 m in size), will be placed at the main solution mining site, with a power line and fibre optic cable running alongside the seawater intake / outfall pipelines to the coastal pumphouse.

Nitrogen will be used for cavern injection purposes as a control fluid to manipulate cavern roof shape. An instrument air system will also be required (compressors and dryers, wet air and dry air receivers).

2.4.4 Wind Farm

The Project will include the development of a new, 240 MW on-land wind farm which will be the electricity source for the ACAES compression process described above. This wind farm will be located to the south of the cavern field on the opposite side of the Trans-Canada Highway (Figure 2.13), and will consist of up to 43 wind turbines each rated at 5.6 MW, specified for harsh environments, with estimated hub heights of 120 m and rotor diameters of 162 m (Figure 2.14).

Figure 2.13: Wind Farm: Layout and Key Components

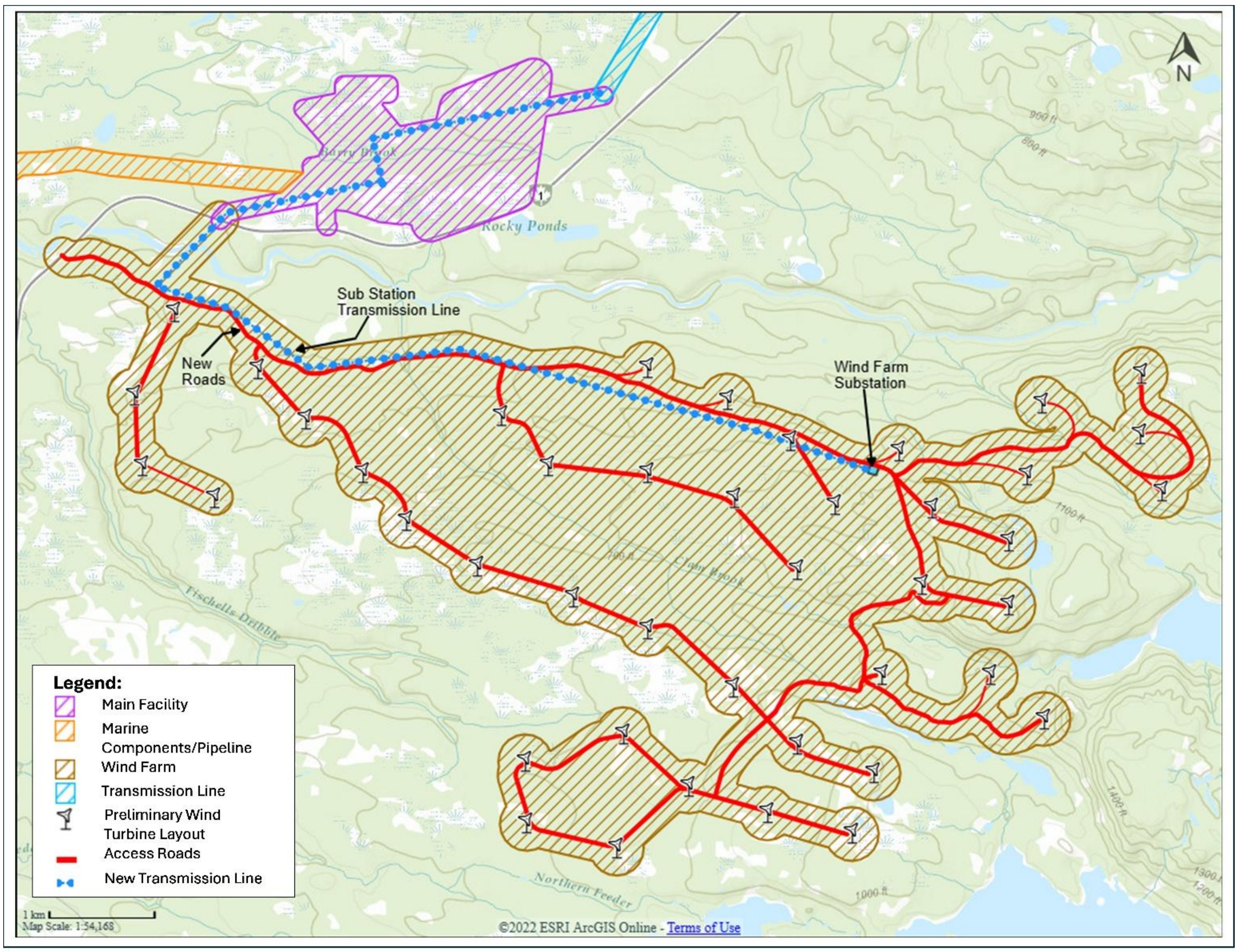


Figure 2.14: Typical Wind Turbine

The individual turbines will be arranged across the site to optimize wind capture while minimizing wake effects, with each turbine supported by a reinforced concrete foundation and accessed via a network of purpose-built access routes. The turbines will be interconnected through a medium-voltage collector system, with groups of turbines being linked in radial feeder circuits using buried insulated cables installed within shared trenches along the access roads, along with switching cabinets and protection equipment that allow individual turbines or strings to be isolated for maintenance. These collector circuits will converge at the new on-site substation (approximately 100 m by 100 m in size) located at the wind farm site roughly in the middle of the turbine array.

At the substation, the 34.5 kilovolt (kV) electricity generated by the wind turbines will be stepped up to 230 kV. A new access road will extend from Project's main facility to the wind farm substation. The electricity produced by the wind farm will be transmitted to the main Project substation via a 230 kV transmission line approximately 12 km in length (Figure 2.13).

2.4.5 Main Substation and Transmission Line

The Project's main electrical substation will be approximately 150 m by 100 m in size (including space reserved for future expansion), located at the main facility adjacent to the ACAES plant. It forms the electrical hub of the Project, and will be connected to, and combine power from, both the wind farm and the ACAES plant (which steps up from 13.8 kV to 230 kV). It will enable the bi-directional flow of electrical energy while also providing the necessary switching and protection functions so that the wind farm and ACAES plant can operate safely and reliably, both together and separately as needed.

The main substation will receive and aggregate electricity from both sources and transmit it via a new 40 km, 230 kV transmission line to the Bottom Brook Terminal Station (Figure 2.15), which is planned to be routed alongside the existing transmission lines that run directly over the Project area. The new transmission line will be comprised of guyed-V steel lattice towers or H-frame structures, with self-supporting steel lattice towers used at major turns, crossings or other locations that requiring more structural strength. Anchors will consist of 1.5 m by 3 m treated logs or metal cribs, buried approximately 2 m deep as per engineering standards.

Power will flow to the ACAES system, driving the compression process thereby storing that energy for future use. During periods of high demand, the ACAES system and/or the wind farm can supply power. The ACAES system can also provide grid resiliency services to support system reliability including voltage and frequency regulation, grid inertia and outage support.

Figure 2.15: Proposed Transmission Line to Bottom Brook Terminal Station

2.5 Construction

Following release from the EA process, and the receipt of formal corporate approval / sanction and applicable permits, Project construction would commence in early to mid 2028. Solution mining is expected to be completed within 1.5 to 2 years, with the development of the ACAES system, wind farm and other facilities completed by 2031.

A general overview of the main activities that will be associated with the construction phase of the Project is provided in the following sections, again reflecting the current stage of its planning and design. Specific construction methods will be determined by the contractors eventually retained by TPR to complete this work. The following sections therefore entail provide an initial and somewhat conceptual overview of construction approaches, which will be subject to further definition and refinement as Project planning advances. All construction activities will, however, be in full compliance with applicable environmental legislation, regulations and authorizations (EA and permitting), and undertaken in accordance with relevant guidelines and industry standard practices.

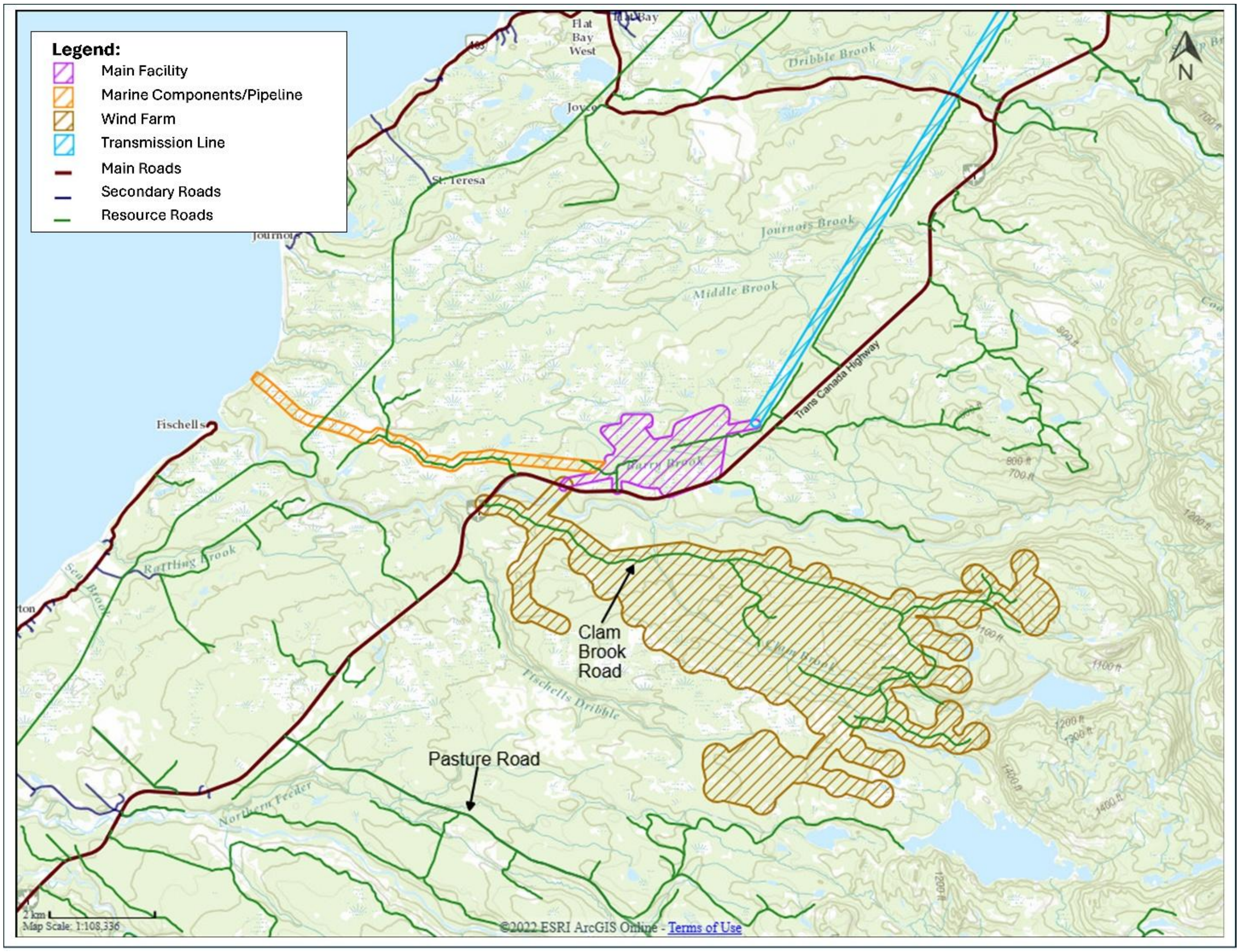
2.5.1 Site Access and Preparation

Overall access to the Project area will be provided primarily through the existing road and resource access road network in the area, including the Trans Canada Highway, which runs directly through the site (Figure 2.16).

Existing resource roads will be used to the extent practical and upgraded, widened, improved or extended as required to meet Project design, construction and operational requirements, and in accordance with applicable regulatory requirements, policies and approvals. Existing access routes to the Project site are anticipated to require upgrades to accommodate construction traffic, including oversized and overweight loads associated with wind turbine components, heavy construction equipment and ACAES infrastructure. These improvements may include road surface reinforcement, road widening, culvert replacement or upgrades, localized realignment, vegetation clearing and geometric improvements to accommodate heavy-haul vehicle turning radii and transportation safety requirements. Final road upgrade requirements will be confirmed during detailed engineering and transportation planning in accordance with applicable regulation and policies, and in consultation with applicable regulatory authorities.

The main facility will be located on the north side of the highway and can be reached via an existing access road, which will be extended westward to the cavern field and north to the planned location of the brine ponds and associated facilities. Existing resource roads and new road segments will also provide access southeast to the wind farm area and associated substation, including access to individual turbine locations. Finally, access to the coastal infrastructure will be provided through a combination of existing resource roads and new road construction, including an approximately 10 km long access corridor extending from the main facility to the coastal infrastructure area within the same right of way as the seawater intake (and potential saltwater disposal) pipeline(s) (see earlier Figure 2.3).

Figure 2.16: Existing Roads to and within the Project Area



Required equipment and materials will be transported to the site by road, with existing Western Newfoundland ports utilized as needed for the delivery and staging of larger components throughout the Project's construction phase.

New access road construction will include vegetation clearing and removal along the approved routes and the movement and placement of materials to establish the roadbed and its gravel surface. Any required water crossings and drainage culverts will be designed and installed as per applicable regulatory requirements and all associated permitting.

Site preparation will initially involve identifying and delineating all areas that require clearing and other earthworks necessary for the installation of Project infrastructure. Initial site preparation would include clearing and grubbing of vegetation within defined and approved development footprints, stripping of surficial organic materials, and grading to establish level construction pads and access routes. Vegetation clearing, stripping and excavation activities will only occur where necessary, and will be completed in accordance with standard practices and required permits and approvals. While most of the site has limited forest cover, any merchantable timber will be salvaged.

Measures will be taken to avoid or reduce potential environmental interactions during surface preparation activities, including on-site procedures for sediment and erosion control. Earthworks would be designed to achieve stable slopes, appropriate drainage gradients and separation of clean and contact water. Temporary erosion and sediment control measures would be installed prior to and during construction and maintained until permanent stabilization measures are in place. Excavated material suitable for reuse would be stockpiled and incorporated into engineered fills, road construction or site grading where required and feasible, with any additional fill requirements being sourced from existing and approved quarries. Any new quarries or borrow areas will be established and operated in compliance with relevant permits and guidelines. A reclamation stockpile will be established at the north end of the Project site near the proposed brine ponds, where organic material will be stored for use during future site rehabilitation activities. All solid waste materials generated during construction will be stored, removed and disposed of at existing facilities, in accordance with applicable regulations and approvals.

One or more construction laydown areas will be established within the Project site to receive and storage large equipment and materials required during the construction phase. This will include a planned laydown area at the main facility, adjacent to the planned site of the ACAES unit, approximately 100 m by 200 m in size. Additional laydown areas may be required and established for receiving and storing other materials and equipment throughout the course of construction.

A diesel generator package (estimated at 20 to 40 MW capacity) will be installed to power construction equipment and activities, including those associated with the solution mining process.

Construction of the accommodations camp (if required), including associated access, grading and utility servicing, will occur concurrent with the broader surface site preparation activities described above. If established, the accommodations camp will remain in place throughout the construction and commissioning phases and will consist primarily of modular temporary buildings that will be removed following completion of construction activities. Given the absence of municipal water and wastewater infrastructure within the Project area, potable water supply and wastewater servicing for the camp and associated facilities will be privately developed and operated by the Proponent. Potable water is anticipated to be supplied either through a drilled groundwater well, subject to hydrogeological investigation confirming suitable yield and water quality, or through a surface water intake from a local watercourse with appropriate treatment to meet Health Canada Guidelines for Canadian Drinking Water Quality. Sanitary wastewater will be managed either through an engineered septic system or, if warranted by workforce size and site conditions, a packaged wastewater treatment system with treated effluent discharge. Final servicing approaches, system capacities, source locations and detailed engineering designs will be confirmed during detailed design based on anticipated workforce requirements, hydrogeological and site conditions, and applicable regulatory requirements.

All drinking water and wastewater infrastructure will be designed, constructed and operated in accordance with applicable provincial legislation and guidance, including the Newfoundland and Labrador Guidelines for the Design, Construction and Operation of Water and Sewerage Systems, the *Environmental Control Water and Sewage Regulations*, and applicable health and sanitation regulations governing construction camps. All necessary permits, approvals and authorizations will be obtained prior to construction and commissioning.

2.5.2 Main Facility

Surface infrastructure would be developed using standard materials, equipment, and construction practices commonly applied to industrial developments in Newfoundland and Labrador. Construction will be carried out in a phased and coordinated manner following site preparation, with sequencing designed to support efficient logistics, environmental protection and safe working conditions. Key activities will include earthworks, foundation construction, erection of structures, installation of electrical and mechanical systems, installation of pipelines and process equipment, and commissioning.

Geotechnical investigations will be completed during the engineering phase to confirm foundation requirements and ensure that these can support anticipated loads associated with buildings, tanks, substations, stockpiles, pipe racks and process facilities. Surface infrastructure would be constructed on prepared pads incorporating grading, terracing and drainage controls to manage surface water runoff within the site. Temporary construction offices, workshops and warehousing facilities would be established as required, typically using prefabricated units or fabric-covered “sprung structure” or megadome buildings.

Permanent on-site buildings would include industrial, operational and administrative structures. These buildings will be constructed using structural steel framing with pre-painted steel cladding. Concrete foundations would generally consist of spread footings, with deep foundations or piling used in localized areas as required based on geotechnical conditions.

2.5.2.1 Cavern Storage Well

Development of a storage well begins with site preparation and drilling of a borehole using conventional rotary drilling methods. The well is drilled in stages to progressively greater depths, with each section stabilized by installing steel casing and cementing it in place before drilling continues. Cement is pumped into the annular space between the casing and the surrounding rock to provide structural support, isolate geologic formations and protect groundwater if present. This staged drilling, casing and cementing process continues until the target depth for the cavern interval is reached. Once drilling reaches the planned depth, the production casing is installed and cemented to the design depth to provide long-term structural integrity. The depth of this casing is selected to accommodate the planned operating pressure range of the cavern while ensuring safety. After cementing, the casing is pressure-tested and inspected to confirm integrity. A corrosion-resistant liner, typically constructed of stainless steel or fiberglass, is then installed inside the production casing. The annular space between the casing and liner is filled with dry air or nitrogen to limit corrosion of metal components.

Following installation of the casing and liner system, leaching strings are installed to support solution-mining activities. These strings are sized to allow efficient circulation of water and brine during cavern development while maintaining manageable surface equipment requirements. Wellheads associated with subsurface operations would be installed on prepared pads with appropriate structural support and protective measures. Wellhead installation would include placement of casing, valves, pressure control equipment, and monitoring instrumentation, as well as connection to the on-site pipeline network.

2.5.2.2 Salt Production, Brine Storage and Disposal

The salt production facility would be established on a prepared and stabilized pad, with construction including the erection of structural steel, placement of processing equipment, conveyors and material handling systems, and the eventual installation of electrical, control and instrumentation systems. A designated salt laydown area would be established next to the production facility for temporary storage and handling of salt material. This area would be established on a stabilized pad with appropriate drainage controls to manage runoff and prevent uncontrolled release of salt-affected water.

Establishment of the brine storage ponds would occur on the northwestern edge of the Project area, supported by a new gravel-surface roadway extending from the existing on-site access road. Pond construction would include excavation to the design grade, installation of subgrade preparation and smoothing layers, and construction of perimeter berms and embankments to achieve the required containment volume and structural stability. Excavated materials would be incorporated into pond and berm construction where feasible, with excess material managed in accordance with site earthworks plans. Following earthworks, each pond would be lined with an impermeable liner system, consisting of a prepared base layer and a polyethylene membrane to prevent seepage and isolate stored brine from surrounding soils and any groundwater present, with associated leak detection system. The brine ponds are planned as fully excavated below-grade structures that do not constitute barriers or diked structures, and accordingly, do not include structures that would meet the definition of a dam under the NL *Water Resources Act*. ((https://www.gov.nl.ca/eccc/waterres/damsafety/#whatisadam)

The ponds may also be fitted with a floating or fixed polyethylene cover designed to limit precipitation ingress and reduce interaction between stored brine and ambient conditions. Inlet, outlet and overflow structures would be installed and integrated with the overall site brine handling system. Upon completion of construction and integrity testing, the ponds would be commissioned in accordance with engineering specifications, with surrounding disturbed areas stabilized and integrated into the overall site drainage and water management system .

As noted previously, the preferred approach for saltwater disposal would involve the construction of four or more dedicated wells, with the final number determined through future subsurface investigations and final volume projections. Following geological review and exploratory drilling to identify a suitable receiving formation with adequate thickness, porosity, permeability and lateral continuity, each well would be drilled using conventional rotary drilling methods and completed with multiple casing strings and cementing programs to hydraulically isolate the injection interval from the overlying geologic material. Well completion would include installation of tubing, packers and wellhead assemblies rated for the required injection pressures. Once operational, saltwater generated during solution mining would be conveyed to the wells via a purpose-built, high-pressure pipeline system and injected at controlled rates to maintain formation integrity and comply with any regulatory limits. Commissioning would include injectivity and mechanical integrity testing, after which the system would operate under continuous monitoring of pressure, flow, and well performance to ensure safe, reliable, and compliant disposal.

2.5.2.3 Compressed Air Energy Storage System

Installation of the ACAES system would begin with site preparation at the main facility area. Its approximately 150 m by 250 m footprint would be cleared and graded to establish level, stable pads capable of supporting the modular equipment and associated infrastructure. Temporary construction access roads and laydown areas would be established to support delivery, staging and assembly of large components, including compressors, storage vessels and associated piping and electrical equipment. Drainage controls would be installed to manage surface water and minimize erosion during construction.

Following site preparation, foundation works would be undertaken to support modular ACAES equipment and associated infrastructure. Foundations would likely consist of spread footings or mat slabs designed to accommodate dynamic and static loads from compressors, turbines and storage vessels. Installation of piping, electrical conduits and support structures would proceed in parallel with foundation construction, allowing subsequent mechanical and electrical installations to be coordinated efficiently. Mechanical and structural installation would follow, including delivery, placement, and assembly of modular ACAES components. Large modules would be transported to the site via truck and staged in laydown areas prior to erection. Cranes and lifting equipment would be used to position components onto prepared foundations. Pipe racks, valve assemblies and interconnecting systems would be installed concurrently to link compressors, cavern interfaces and hot / cold water storage vessels.

Electrical, instrumentation and control systems would be installed following mechanical assembly. This would include connection of turbines, compressors, auxiliary systems and heat storage vessels to the Project’s electrical infrastructure. Commissioning activities would proceed after installation, including system integrity testing, operational verification and performance validation of the ACAES cycle. Upon completion of construction, temporary work areas and laydown sites would be demobilized, and disturbed areas graded and stabilized as appropriate, completing the ACAES facility construction within the modular footprint while maintaining flexibility for potential future expansion.

2.5.2.4 Electrical Substations and Other Facilities

Electrical substation construction would include site grading and foundation installation; erection of steel structures; placement of transformers, switchgear and protection equipment; and installation of grounding, control and communication systems. Substations would be designed and constructed in accordance with applicable electrical codes and safety standards.

Other required infrastructure will include the establishment of water tanks, wash water storage tanks and associated piping systems. Tanks would be installed on engineered foundations designed to support static and operational loads and would be constructed of steel or other suitable materials. Setting basins will be constructed to manage process effluents and site runoff, which will involve excavation and grading, installation of impermeable liners composed of geotextile or geomembrane materials, and construction of inlet outlet and overflow structures. Basin dimensions and depths would be designed to provide adequate residence time for settling prior to discharge or reuse. Drainage from work areas, stockpiles, and building pads would be directed to these basins through a network of on-site ditches and culverts.

On-site pipelines would be installed either below ground in trenches or above ground on pipe racks, depending on operational and design requirements. Trenched pipelines would be installed on prepared bedding materials, aligned and jointed in accordance with engineering specifications, and backfilled with suitable material. Above ground pipelines would be supported on a pipe rack system constructed on concrete foundations or piers. The pipe rack would be designed to accommodate thermal expansion, operational loads and access for maintenance and inspection.

Fencing would be installed around the active Project site to control access and ensure public safety and security, and will include access gates and signage as required.

Construction would be sequenced and carried out in a manner that allows for progressive rehabilitation. Temporary construction areas and laydown facilities not required for operations would be decommissioned following completion of construction. Disturbed areas would be regraded, stabilized, and revegetated using salvaged organic material from the reclamation stockpile.

2.5.3 Marine Components and Pipelines

The seawater supply system will include either a series of beach wells or an offshore intake structure constructed on the seabed with associated piping and a coastal pumphouse. Both options would involve the construction of an onshore and trenched pipeline extending to cavern site.

2.5.3.1 Beach Well Water Supply Option

Construction of the beach well system would begin with detailed geotechnical and hydrogeological investigations to confirm the thickness, extent, and hydraulic properties of the target coastal sand and gravel deposits. Based on these findings, well locations would be set back landward of the shoreline and prepared using temporary access pads and drilling platforms. Wells would then be developed using conventional rotary or directional drilling techniques, advancing boreholes to the designed depth within the permeable formation. Well screens and filter packs would be placed across the target interval to promote efficient inflow while limiting sediment entrainment, followed by installation of casing and sealing of the upper annulus to protect overlying soils and groundwater, followed by the installation of submersible pumps. Surface works would be completed with wellhead protection structures, instrumentation and site restoration to stabilize disturbed areas and integrate the system into the surrounding coastal environment.

2.5.3.2 Seawater Intake / Outfall Options

If one or both of these options is eventually selected, their construction would be undertaken in a phased and coordinated manner, integrating marine and on-land works, and would be scheduled to account for weather and sea state conditions typical of the region.

Surveying and site investigations would be completed, where required, to confirm final seawater intake placement, pipeline alignments, trench depths and infrastructure locations. Marine construction equipment, including barges, work vessels and lifting equipment would be mobilized to St. George's Bay, with onshore construction equipment, piping, pumps, electrical components, concrete and other materials delivered by truck and temporarily stored in designated laydown and staging areas near the shoreline. The in-water intake and/or outfall structures will be fabricated or assembled onshore and transported to the installation location by barge. The associated concrete support structures would be placed on the seabed and leveled to ensure long-term stability, which may involve remotely operated equipment depending on site conditions. The in-water pipeline components will be assembled in sections, welded either onshore or on a staging barge and installed using a controlled float-and-sink or bottom-pull method.

For approximately the first 500 m from shore, the pipeline(s) will be trenched and buried below the seabed to protect from wave action, ice scour and potential interaction with vessels or fishing gear. Nearshore trenching would be conducted using marine excavation equipment appropriate to local conditions, such as a backhoe dredge, barge-mounted excavator or amphibious excavator operating from shallow water or shore. Trench dimensions would be sufficient to accommodate the pipelines, bedding material and protective cover, with final trench depth determined by engineering design and anticipated ice conditions. Excavated seabed material would be temporarily displaced adjacent to the trench or placed in a controlled manner for subsequent backfilling. Where required, a bedding layer of suitable granular material would be placed at the base of the trench to provide uniform support.

The in-water pipeline(s) would then be placed into the trench under controlled conditions and backfilled using excavated material to fully cover the pipe and restore the seabed profile as closely as practicable to pre-construction conditions. Additional protective material, such as graded rock or engineered cover, may be installed where required. Beyond the nearshore buried portions, the offshore pipeline sections would be installed directly on the seabed and stabilized using concrete ballast collars spaced at regular intervals to maintain alignment and position while minimizing additional seabed disturbance. Post-installation inspections will be conducted to confirm burial depth, alignment and stability.

If required, the coastal pumphouse for seawater intake will be constructed at a prepared site near the shoreline, which will be subject to initial clearing, grading and construction of a gravel pad and foundations. Construction activities would include foundation placement, structural erection, installation of mechanical and electrical systems and connection of the intake pipeline. Materials and equipment would be delivered to the site and stored temporarily in adjacent laydown areas until installation.

2.5.3.3 Onland Pipeline(s)

The onland water supply pipeline (and disposal pipeline, if required) will be installed within an approximately 20 m wide right of way that would also contain the new gravel-surfaced access road between the main facility and the coast. Pipeline construction would involve clearing and grubbing within the approved route, followed by grading and installation of drainage features such as ditches and culverts to maintain natural surface water flow. Trenches would be excavated using conventional tracked excavators or trenching equipment and would generally be to an average depth of approximately 1.5 m below ground surface, subject to local soil conditions, frost considerations and engineering requirements. Excavated material suitable for reuse would be stockpiled adjacent to the trench for use during backfilling. In areas of shallow bedrock, mechanical rock excavation or some controlled blasting may be required to achieve the design burial depth. A prepared bedding layer, typically consisting of screened granular material, would be placed at the base of the trench to provide uniform support and protection.

Construction equipment and materials will be delivered by truck and temporarily stored in designated laydown and staging areas at selected locations along the pipeline route. During construction, the pipeline would be placed into the trench, aligned and welded or jointed in accordance with design specifications. Initial backfill would consist of selected fine-grained or granular material placed and compacted around the pipeline to provide support and protection. Final backfill would use excavated material from on-site, where suitable, and the trench would be compacted and graded to match surrounding contours. Additional measures, such as geotextiles, trench breakers, insulation or engineered backfill, may be installed in areas with groundwater flow, frost susceptibility or erosion potential.

Following completion of construction, these systems would also undergo pressure testing, mechanical testing and commissioning to verify system integrity and operational performance. Temporary marine and terrestrial work areas would be decommissioned following construction. Onshore disturbed areas not required for future operations would be regraded, stabilized and revegetated using appropriate seed mixes. Marine construction equipment would be removed, and nearshore trenching areas would be allowed to naturally infill or be stabilized as required.

2.5.4 Wind Farm

Construction of the on-land wind farm would likewise be carried out in a coordinated and phased manner to efficiently manage logistics, potential environmental interactions and health and safety considerations, while accommodating the climatic and terrain conditions typical of Western Newfoundland. The Project will include the fabrication and installation of approximately 43 wind turbines, associated access roads and underground electrical collector systems, an on-site substation and a transmission interconnection.

Wind farm construction would begin with mobilization of equipment, materials and personnel to the Project area. Turbine components, electrical equipment, aggregate and concrete materials, fuel and construction equipment would be transported to the region by a combination of marine and road transport. Turbine components would be delivered to a regional port facility and transported to the Project site using specialized heavy-haul vehicles along approved transportation routes. Transportation of oversized or overweight loads by highway will be conducted in accordance with provincial permitting requirements and include route assessments, advance approvals and notifications and coordination with relevant provincial and municipal authorities. Designated laydown and storage areas would be established near the Project site and at select turbine clusters to support construction. New permanent and temporary site access routes would be established to connect to the turbine and substation locations and ancillary facilities.

Foundation excavation will involve soil stripping and, where required, mechanical rock excavation or possibly some controlled blasting. Excavated material suitable for reuse would be stockpiled and reused where possible. Turbine foundations would be constructed using reinforced concrete, with formwork, reinforcement placement and concrete production and pouring conducted in accordance with engineering specifications and regulatory requirements.

Given the remote location of the Project area and the concrete volumes required for wind turbine foundations and related infrastructure, temporary mobile concrete batch plants will be established within the Project area during construction. The use of mobile batch plants is standard practice for wind energy developments in remote areas and reduces the need for long-distance transport of ready-mix concrete. Aggregate materials and water required for concrete production will be sourced locally where suitable and permitted, and batch plant locations may be relocated periodically as construction activities progress across the site. Water required for concrete production will be obtained from approved local surface water or groundwater sources within the Project area, subject to applicable authorizations under the Newfoundland and Labrador *Water Resources Act*. Final source locations, withdrawal volumes and pumping rates will be determined during detailed design. All necessary permits and approvals related to water use and withdrawal will be obtained prior to construction, and water intake locations will be selected and managed to avoid interference with fish habitat and sensitive watercourses, including Fischells Brook, consistent with applicable regulatory requirements and associated mitigation measures.

After placement, foundations would be allowed to cure for a specified period to achieve design strength before turbine erection activities begin. Crane pads and working areas would be established adjacent to each turbine foundation to support large erection cranes and other required installation equipment.

Construction of the electrical collector system would proceed in parallel with civil works where practical. Underground medium-voltage cables would be installed along access roads to connect individual turbines to the on-site substation. Cable installation would involve trenching, placement of cables, installation of protective bedding and backfill and surface restoration, and may involve directional drilling or other construction methods in certain locations. The on-site substation would be constructed on a prepared gravel pad that will support its foundations, control buildings, transformers, switchgear and associated electrical equipment.

The materials required for turbine erection, including tower sections, nacelles and blades would be transported from laydown areas to individual turbine sites using specialized transport vehicles. Erection would be carried out using large crawler or lattice boom cranes, with towers assembled in sections, followed by installation of the nacelle and rotor blades. Following mechanical completion, electrical connections would be finalized, and turbines would undergo commissioning and testing to verify operational performance and compliance with technical specifications. Commissioning activities would be coordinated with substation energization and grid connection.

2.5.5 Transmission Line

The proposed 230 kV transmission line to Bottom Brook will run immediately adjacent to existing transmission infrastructure, where available right-of-way space is expected to accommodate most or all of the new line, thereby allowing it to be sited largely within the existing corridor or requiring only minimal additional clearing.

Any required clearing (if it is necessary) will consist of cutting tree trunks parallel to and within 15 cm of the ground or lower and properly disposing of all standing trees, as well as the removal of all shrubs, debris and other materials. Any such clearing methods will include both mechanical and manual means, with most vegetation being cleared using mechanical harvesters to remove the timber but with chainsaws being used for small scale clearings (such as any required tree removal adjacent to a watercourse), as required. Brush and slash will be neatly piled along the right of way, with regular breaks in slash windrows to allow surface water flow and wildlife passage. Any merchantable timber that is not used for Project related reasons (such as crossing sites) will be salvaged, limbed and stacked. Following right of way clearing, field survey crews will physically mark (stake) the specific locations of the transmission towers and foundations.

The next phase of construction involves the distribution of tower materials to the selected and surveyed tower locations. Materials will be distributed to work areas by rubber-tired vehicles, such as flatbed trailers and boom trucks as dictated by the terrain or other environmental considerations. At each tower location, the foundations will then be assembled and installed. Tower foundation and anchor installation will require the excavation of material at each of the tower locations, and the installation of the grillage structure as required. The size of each grillage foundation and associated depth will vary with tower characteristics and soil strength. Tower foundations and anchors may also be on bedrock, which may involve some blasting and will typically require rock anchors. In order to prepare the foundations and anchors, borrow materials may be required which will be acquired from within the right of way whenever possible.

Once the foundations are in place, the tower components will be distributed to each location, after which the assembly and erection of the structures will be completed in stages. The components will be bolted together on the ground adjacent to the tower location to form the structure. Off-road equipment and cranes will then be used to attach the tower sections and to lift the tower into place, at which time it will be bolted to the foundations. As required, guy wires will be attached to the tower, anchored to the ground using drilled soil / rock anchors, and tensioned to keep the tower in place. Hardware such as insulators will then be attached to the towers in preparation for the installation of the conductor.

The next stage in transmission line construction is distribution of conductor reels to specific locations. Stringing of conductor and attaching it to the tower structures can be accomplished with tracked equipment or by helicopter if required. The conductor will be rolled onto the line using travelers, which are pullies or stringing blocks used to facilitate stringing from structure to structure, and attached by line crews. The conductor is then tensioned and sagged to ensure that the correct design tension is applied and the necessary ground clearance is maintained. A tensioner holds the wire to set the sag, and the wire is then marked, cut, equipped with hardware and installed. Once the above-described installations are completed, transmission line crews will conduct an inspection of each tower. Towers are individually climbed and inspected for any deficiencies, and these are corrected as required. Upon completion of these inspections the line will be commissioned and energized.

At the end of construction activity, final clean up and restoration of the right of way and other work sites will occur. This could include grading and back-blading of any heavily disturbed areas, removal of any temporary structures, and revegetation of any erodible or unstable soils. Any infrastructure that is not required for Project operation and maintenance will be decommissioned upon completion of construction.

2.5.6 Waste Management (All Project Phases)

Solid waste generated during construction and operations will be managed through established waste segregation, storage, transport and disposal procedures intended to minimize environmental risk and maximize diversion from landfill.

Non-hazardous wastes will be separated into categories such as general refuse, recyclable materials and construction debris, and stored in clearly labelled, covered containers within designated waste management areas. Waste collection, transport and disposal will be undertaken by licensed contractors and directed to provincially approved waste management facilities. Recycling and reuse opportunities will be prioritized wherever practical. During operation of the salt plant component, the principal solid waste stream is expected to consist of anhydrite, an inert and non-hazardous calcium sulphate mineral generated through cavern solution mining activities. These materials will be dewatered and temporarily stockpiled within a designated contained area inside the Project footprint prior to transport to an approved disposal facility. Final waste quantities, handling procedures and disposal pathways will be confirmed in a Project-specific Waste Management Plan.

Hazardous materials associated with the Project will include substances such as turbine gear oil, hydraulic fluids, transformer and dielectric oils, bearing greases, compressor lubricants, heat-transfer fluids, diesel fuel, paints, adhesives and maintenance solvents. All hazardous materials will be stored in labelled containers or tanks equipped with appropriate secondary containment and managed in accordance with applicable provincial and federal requirements, including the Newfoundland and Labrador *Environmental Protection Act*, Waste Management Regulations, Storage Tank System Regulations, Workplace Hazardous Materials Information System (WHMIS) requirements and Transportation of Dangerous Goods regulations. Hazardous materials transport, recycling and disposal will be conducted by appropriately licensed contractors. A Hazardous Materials and Waste Management Plan will be prepared prior to construction and will include procedures related to storage, handling, spill prevention and response, inspection, training and waste disposal. Project personnel handling hazardous materials or wastes will receive applicable WHMIS and Transportation of Dangerous Goods training.

Waste management considerations associated with eventual Project decommissioning (Section 2.9) will also be incorporated into Project planning. At the end of the Project life, most turbine components — including steel, copper and other metals — are expected to be recyclable or recoverable through established scrap and recycling markets. Concrete foundations will be removed to the extent required by applicable regulatory requirements and land use objectives, with concrete either crushed for beneficial reuse as fill material or directed to approved disposal facilities. Wind turbine blades removed during maintenance activities or decommissioning will be managed using best available practices and technologies available at the time, which may include original equipment manufacturer take-back programs, mechanical recycling processes or cement kiln co-processing. The Proponent will continue to monitor advances in turbine blade recycling technologies and evolving regulatory requirements throughout the life of the Project.

2.6 Operations and Maintenance

The operations phase of the Project will commence upon completion of construction and associated commissioning, and is expected to extend for a period of up to 50 years or more. The Project's main operational and maintenance activities were outlined as part of the previous descriptions of its planned components, and will generally include:

- Brine will be directed to an on-site crystallization facility, where salt will be recovered, processed and stored or shipped as a marketable product over several decades.

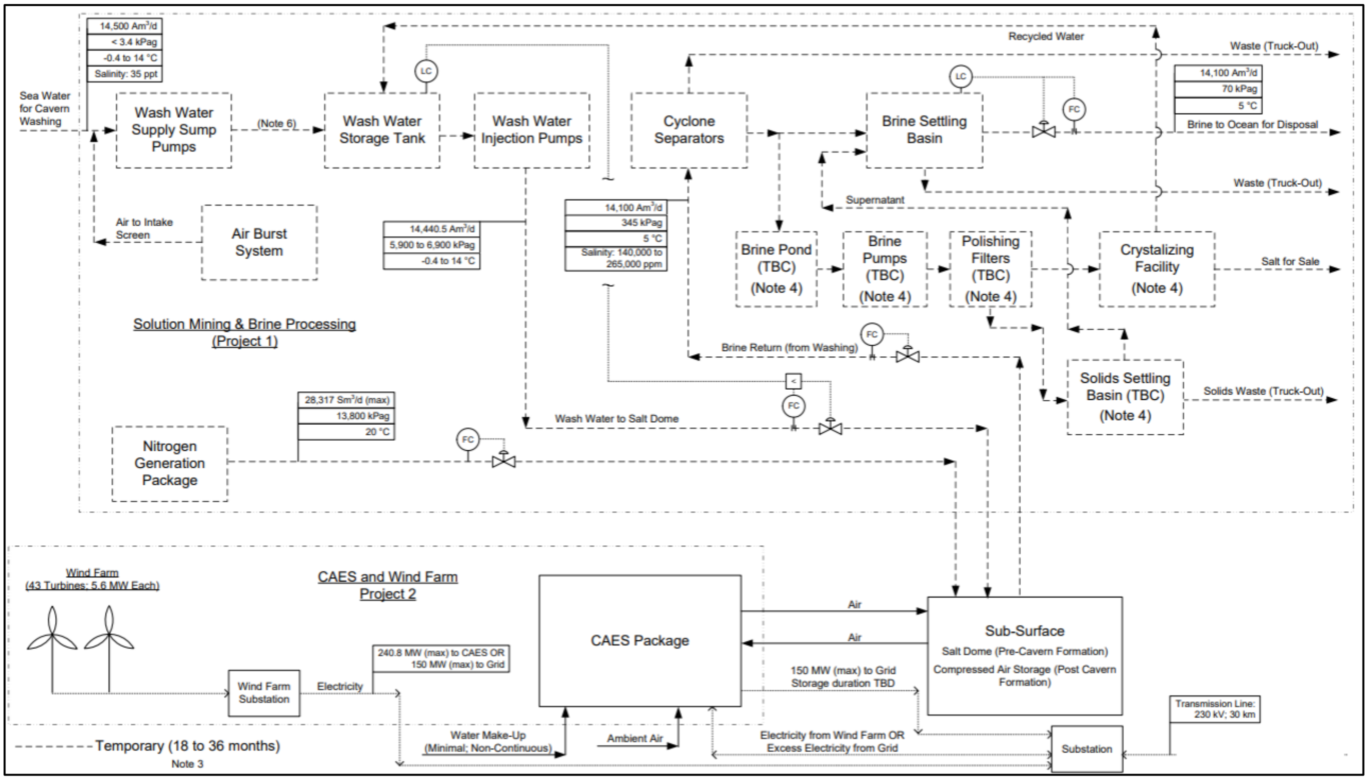
- The ACAES system will operate using electricity generated by the new wind farm. Compressed air will be injected into the underground caverns and stored at controlled pressures within defined operating limits to preserve cavern stability and storage capacity. Cavern pressure, temperature, and air quality will be continuously monitored to ensure safe, efficient, and reliable storage performance over the operational life of the Project. Heat generated during the compression process will be captured and stored in a hot-water thermal energy storage system for later reuse.

- During periods of high electricity demand, the stored compressed air will be released from the cavern(s) to drive turbines and generate dispatchable electricity. During discharge, the stored thermal energy (hot water) will be used to reheat the compressed air prior to expansion, improving system efficiency and eliminating the need for supplemental fuel use.

- The electricity generated will be transmitted through a new 230 kV transmission line to the existing Bottom Brook Terminal Station.

A schematic illustrating the main components of the Project and their operation is provided in Figure 2.17.

Figure 2.17: Project Block Flow Diagram



NOTE: The "Project 1" and "Project 2" labels in this figure refer to individual engineering design packages, and are not relevant to the EA registration. The Project scope for EA review purposes includes all of these components and activities.

2.6.1 Compressed Air Storage Cavern Stability and Facility Safety

Over the long term, salt caverns exhibit gradual and well-understood changes in shape and volume due to the natural behaviour of the surrounding salt. This response occurs slowly over decades and has been extensively characterized through global experience with solution-mined caverns used for energy storage. These characteristics are explicitly accounted for in cavern design, operating pressure limits and monitoring programs. The Project will apply established engineering practices to maintain cavern stability and containment integrity throughout its operational life, including operation within a defined pressure range and implementation of routine monitoring to confirm expected performance.

Salt behaves as a viscoelastic material, responding to in-situ stress conditions in a predictable, time-dependent manner. Importantly, salt also exhibits a self-sealing or "self-healing" capacity, whereby micro-fractures tend to anneal under pressure, maintaining low permeability and preventing long-term fluid migration. These properties are fundamental to the widespread use of salt formations for subsurface storage. The rate and extent of long-term cavern behaviour are influenced by factors including differential stress (i.e., the relationship between in-situ stress and internal cavern pressure), temperature and salt composition. Site-specific geomechanical assessment of the Fischells salt dome has confirmed the suitability of the formation for cavern development and operation within an appropriate pressure range.

Cavern design will define a Minimum Operating Pressure (MOP) and Maximum Allowable Operating Pressure (MAOP), which together establish the operating pressure envelope. Maintaining pressures above the MOP provides sufficient internal support to balance in-situ stresses and preserve cavern geometry within acceptable limits over time, while the MAOP is conservatively set (typically as a fraction of the minimum principal stress) to prevent fracture initiation and ensure caprock integrity. This approach is consi stent with Canadian Standards Association (CSA) standards (e.g., CSA Z341 series) and internationally recognized guidance, including that of the Solution Mining Research Institute (SMRI) and reflects established practice in salt cavern storage design. Cavern performance will be verified through a comprehensive monitoring and integrity management program developed during detailed engineering. Key elements will include periodic sonar surveys (typically every 3–5 years) to confirm cavern geometry and volume, continuous monitoring of pressure and temperature conditions and routine mechanical integrity testing of wells and casing systems. Additional measures may include well integrity logging and surface subsidence monitoring. Monitoring results will be used to validate design assumptions and inform adaptive management; any deviations from expected behaviour would trigger engineering review and, if necessary, adjustment of operating parameters.

ACAES systems operate using a well-established thermodynamic cycle, but without the use of fuel combustion. As described earlier, during periods of surplus electricity, air is compressed and stored within the salt cavern, while the heat generated during compression is captured and retained in a thermal energy storage system. During periods of electricity demand, the compressed air is withdrawn, reheated using the stored thermal energy and expanded through turbines to generate electricity. This cyclical process - involving regular increases and decreases in cavern pressure - is a normal and anticipated aspect of ACAES operation and is explicitly incorporated into both cavern design and surface facility engineering.

The salt caverns will function as the primary storage vessels for compressed air, operating within a defined pressure range established through geomechanical assessment and confirmed during commissioning. Pressure within each cavern will vary between a MOP and MAOP, depending on system demand and electricity availability. This type of pressure cycling is standard practice in salt cavern storage globally and has been demonstrated over decades of operation without adverse effects on cavern integrity when managed within established limits. Operational controls will monitor acceptable rates of pressure change to avoid transient thermal or mechanical stresses and these limits will be enforced through automated control system functions.

All associated surface infrastructure - including wells, piping, compressors, heat exchangers and turbines - will be designed for the full range of operating pressures and conditions, in accordance with applicable codes and standards (e.g., ASME Boiler and Pressure Vessel Code, ASME B31.3 and applicable CSA standards). Equipment will incorporate appropriate safety factors and will be subject to routine inspection, testing and maintenance over the life of the Project.

A comprehensive process safety and monitoring framework will be implemented to manage both normal operations and unlikely upset conditions. The facility will operate under continuous monitoring through a Supervisory Control and Data Acquisition (SCADA) system, with automated alarms and responses to predefined conditions. Safety systems will include automated shutdown valves, pressure relief devices and controlled depressurization (blowdown) systems that allow sections of the facility to be safely and gradually depressurized if required. These systems are designed to respond automatically to abnormal conditions and to default to a safe state in the event of power or signal loss.

Emergency depressurization, if required, would be conducted in a controlled manner through dedicated systems designed to safely release compressed air. As the stored medium is atmospheric air - non-flammable, non-toxic and chemically inert - such releases do not present risks associated with fire, explosion or hazardous emissions. As a result, the overall hazard profile of the ACAES system is primarily related to high-pressure equipment, rather than chemical hazards and is managed through established engineering design, safety systems and operating procedures.

Formal hazard identification and risk assessment processes, including Hazard and Operability (HAZOP) studies and quantitative risk assessment, will be completed during detailed engineering to confirm that all potential risks are identified and mitigated. These processes, along with the overall safety management framework, will be subject to regulatory review and will ensure that the Project is designed and operated in accordance with recognized best practices for industrial safety and reliability.

2.6.2 Geomechanical Integrity and Planned Monitoring

As described in the preceding sections, ACAES technology is based on well-established industrial equipment and operating principles commonly used throughout the energy and process industries. ACAES systems primarily consist of compressors, turbines, heat exchangers, piping systems and associated electrical and control infrastructure. Underground compressed air storage in salt caverns has been successfully implemented internationally for several decades. Existing facilities such as the Huntorf CAES Plant, which has operated since 1978, and the McIntosh CAES Plant, which has operated since 1991, demonstrate the long-term technical and geomechanical viability of compressed air storage within solution-mined salt caverns.

TPR recognizes that questions are sometimes raised regarding potential similarities between compressed air cavern storage and hydraulic fracturing; however, the two activities differ fundamentally in both design and operating principle. Hydraulic fracturing intentionally injects fluids at pressures sufficient to exceed the fracture strength of the surrounding rock in order to create new fractures and alter formation permeability. In contrast, ACAES salt cavern storage utilizes engineered underground void spaces created through controlled solution mining of salt formations. Compressed air is stored and withdrawn cyclically within these pre-existing caverns at operating pressures specifically designed to remain below the fracture pressure of the surrounding salt formation. Applicable standards, including CSA Z341 for underground hydrocarbon and compressed air storage in solution-mined salt caverns, establish conservative maximum operating pressure gradients intended to prevent fracturing of cavern walls and maintain long-term cavern stability. No new fractures are intentionally created during ACAES operation, no proppants are injected into the formation, and the storage process does not involve cumulative fluid injection into the surrounding rock mass.
Salt is widely regarded as one of the preferred geologic media for underground energy storage due to its favourable geomechanical characteristics. Salt formations are effectively impermeable to gases and liquids

and exhibit viscoelastic behaviour, meaning that minor discontinuities or stresses within the salt mass tend to self-heal or gradually close over time rather than propagate.

To support safe and stable long-term operation, TPR will implement a comprehensive geomechanical monitoring and cavern integrity program throughout cavern development and operations. This program, which will be further detailed during detailed engineering and incorporated into a Cavern Integrity Management Plan, is expected to include periodic sonar surveys of cavern geometry, continuous wellhead pressure and flow monitoring, periodic surface subsidence surveys and regular cavern integrity assessments consistent with CSA Z341 requirements and applicable regulatory expectations. Monitoring results will be reviewed against established operational and stability criteria to verify cavern performance and identify any anomalous conditions requiring corrective action.

2.7 Labour Force

TPR has completed preliminary labour force estimates for each phase of the Project. The proponent will ensure that all activities are carried out in full compliance with the *Occupational Health and Safety Act* and its regulations and all other applicable legislation and requirements.

2.7.1 Construction Workforce

The construction phase of the Project will take place over an approximately three year period, which will generate substantial direct employment and associated economic benefits. Worker shift lengths and duration/rotation arrangements will be defined at a later stage of Project planning and development, and will likely vary somewhat between occupations and employers. Details on crews, shifts and work rotations have yet to be finalized, and will be as part of future design activities.

Given the number and diversity of occupations and associated skill and experience levels that will be required during the construction phase, the workforce will be comprised of a mixture of Western Newfoundland residents and non-residents. Workers from the local area will reside at their homes and commute daily to the Project site, and non-resident workers will be housed at existing local accommodations and/or at a temporary camp located within the Project site. There will be ample parking to accommodate any local workers that wish to commute to the site each day.

Project construction will be carried out on a contractual basis, with workers hired at the discretion of the contractor(s) and according to their hiring practices and policies. Once construction is completed, the facility will be operated by TPR employees (Section 2.7.2). TPR supports employment and gender equity in its hiring and contracting practices.

Project construction will result in approximately 800 full time equivalent (FTE) positions at peak (averaging 300-400 positions at any specific time), and is expected to occur over an approximately three year period from 2028 to 2031. Table 2.1 provides a preliminary estimate of the construction workforce by National

Occupational Classification (NOC 2021), code. As illustrated, the construction workforce will include a wide and varied range of occupations. All of the positions listed in the table below will be contractors, and most if not all of these will be full-time in nature.

Table 2-1: Estimated Construction Phase Employment

National Occupational Classification (NOC 2021) Code	Estimated Total (At Peak)
00012 Senior managers - financial, communications and other business services	4
00015 Senior managers - construction, transportation, production and utilities	5
10010 Financial managers	5
10011 Human resources managers	2
10012 Purchasing managers	5
11100 Financial auditors and accountants	2
12013 Supervisors, supply chain, tracking and scheduling coordination occupations	5
12101 Human resources and recruitment officers	5
12102 Procurement and purchasing agents and officers	5
12200 Accounting technicians and bookkeepers	2
13100 Administrative officers	2
13102 Payroll administrators	2
13110 Administrative assistants	2
13201 Production and transportation logistics coordinators	5
14100 General office support workers	5
14400 Shippers and receivers	8
14401 Storekeepers and parts persons	6
14402 Production logistics workers	5
14403 Purchasing and inventory control workers	5
14405 Transportation route and crew schedulers	5
20010 Engineering managers	8
21101 Chemists	2
21102 Geoscientists and oceanographers	2
21120 Public and environmental health and safety professionals	8
21203 Land surveyors	5
21230 Computer systems developers and programmers	2
21300 Civil engineers	10
21301 Mechanical engineers	10
21310 Electrical and electronics engineers	10
2132 Manufacturing and processing engineers	10
21320 Chemical engineers	10
21321 Industrial and manufacturing engineers	10
21322 Metallurgical and materials engineers	10
21330 Mining engineers	10
21331 Geological engineers	10

National Occupational Classification (NOC 2021) Code	Estimated Total (At Peak)
22100 Chemical technologists and technicians	5
22101 Geological and mineral technologists and technicians	5
22211 Industrial designers	10
22212 Drafting technologists and technicians	5
22213 Land survey technologists and technicians	5
22233 Construction inspectors	5
22300 Civil engineering technologists and technicians	5
22301 Mechanical engineering technologists and technicians	5
22302 Industrial engineering and manufacturing technologists and technicians	5
22303 Construction estimators	5
22310 Electrical and electronics engineering technologists and technicians	5
31302 Nurse practitioners	2
42101 Firefighters	5
60030 Restaurant and food service managers	2
60031 Accommodation service managers	2
62020 Food service supervisors	2
62024 Cleaning supervisors	2
63200 Cooks	5
65201 Food counter attendants, kitchen helpers and related support occupations	8
65312 Janitors, caretakers and heavy-duty cleaners	5
70010 Construction managers	10
72014 Contractors and supervisors, other construction trades, installers, repairers and servicers	10
72021 Contractors and supervisors, heavy equipment operator crews	10
7210 Machining, metal forming, shaping and erecting trades	15
72103 Boilermakers	10
72105 Ironworkers	10
72106 Welders and related machine operators	8
72201 Industrial electricians	10
72202 Power system electricians	10
72203 Electrical power line and cable workers	25
72300 Plumbers	20
72301 Steamfitters, pipefitters and sprinkler system installers	20
72310 Carpenters	20
72400 Construction millwrights and industrial mechanics	20
72401 Heavy-duty equipment mechanics	10
72500 Crane operators	10
72501 Water well drillers	5
73100 Concrete finishers	5
73300 Transport truck drivers	8
73400 Heavy equipment operators	25

National Occupational Classification (NOC 2021) Code	Estimated Total (At Peak)
73402 Drillers and blasters - surface mining, quarrying and construction	10
75110 Construction trades helpers and labourers	40
82020 Supervisors, mining and quarrying	5
82021 Contractors and supervisors, oil and gas drilling and services	10
83101 Oil and gas well drillers, servicers, testers and related workers	15
83110 Logging machinery operators	10
84101 Oil and gas well drilling and related workers and services operators	10
85111 Oil and gas drilling, servicing and related labourers	25
85120 Logging and forestry labourers	15
92011 Supervisors, petroleum, gas and chemical processing and utilities	5
92100 Power engineers and power systems operators	15
92101 Water and waste treatment plant operators	5
93100 Central control and process operators, mineral and metal processing	12
93101 Central control and process operators, petroleum, gas and chemical processing	12
94100 Machine operators, mineral and metal processing	15
95100 Labourers in mineral and metal processing	20
95102 Labourers in chemical products processing and utilities	20

2.7.2 Operations Workforce

Once commissioned, the Project will operate 24-hours per day on a full 365-day year basis, and will be maintained by TPR employees likely on a 12-hour shift basis. The total personnel roll during operations is estimated to be approximately 70 persons as summarized in Table 2.2.

Table 2-2: Estimated Operations Phase Employment by Occupation

National Occupational Classification (NOC 2021) Code	Estimated Total
00012 Senior managers - financial, communications and other business services	2
00015 Senior managers - construction, transportation, production and utilities	2
10011 Human resources managers	1
11200 Human resources professionals	1
12010 Supervisors, general office and administrative support workers	2
12102 Procurement and purchasing agents and officers	1
14100 General office support workers	2
14400 Shippers and receivers	2
14401 Storekeepers and parts persons	1
14403 Purchasing and inventory control workers	1
21300 Civil engineers	2
21301 Mechanical engineers	2
21310 Electrical and electronics engineers	2
21321 Industrial and manufacturing engineers	2
22232 Occupational health and safety specialists	2
22302 Industrial engineering and manufacturing technologists and technicians	8

National Occupational Classification (NOC 2021) Code	Estimated Total
7201 Contractors and supervisors, technical industrial, electrical and construction trades and related workers	8
72021 Contractors and supervisors, heavy equipment operator crews	1
72201 Industrial electricians	4
72400 Construction millwrights and industrial mechanics	2
72999 Other technical trades and related occupations	4
73400 Heavy equipment operators	4
92011 Supervisors, petroleum, gas and chemical processing and utilities	2
92100 Power engineers and power systems operators	2
92101 Water and waste treatment plant operators	2
93100 Central control and process operators, mineral and metal processing	2
93101 Central control and process operators, petroleum, gas and chemical processing	2
94110 Chemical plant machine operators	2
95102 Labourers in chemical products processing and utilities	2

Estimates regarding the labour force requirements that may be associated with any eventual Project decommissioning will be developed and progressively updated as new information is available over the life of the development. This information cannot be known or provided at this time, given that these activities are in the distant future (50 or more years), and because the specific labour numbers and occupations involved will be determined by the nature and characteristics of the decommissioning activities, for which detailed plans will be developed later.

TPR is committed to ensuring full and fair opportunity for local and provincial participation in the various phases of the Project, and will establish and implement policies and procedures to ensure diversity, inclusion and equity in its employment and contracting processes. The company will also ensure that appropriate policies and measures are in place to create and maintain a work environment that is free from discrimination and harassment, and which supports women, Indigenous people, persons with disabilities, racialized minorities, and members of the 2SLGBTQ+ community.

2.8 Project Schedule

Following EA release and the subsequent receipt of other relevant approvals and permits, the completion of detailed Project engineering and the procurement of key materials and equipment, the current Project schedule would see construction activity commencing in 2028. Solution mining is expected to be completed within 1.5 to 2 years, with development of the wind farm and ACAES system completed by 2031. Once commissioned, the Project is planned to operate for a period of 50 years or more.

2.9 Potential Future Decommissioning

During the operations phase, the underground salt cavern(s), ACAES system and associated facilities and infrastructure will be carefully monitored and maintained to ensure long-term safety, integrity and environmental protection. While Project is currently being planned and designed for a minimum operational period of 50 years, there is the potential for a much longer service life - essentially in perpetuity - with appropriate planning and maintenance and depending on future demand.

Decommissioning, if and when it is required, would be a phased process informed by site-specific conditions, operational experience and evolving best practices. A detailed decommissioning plan for all or portions of the Project will be developed closer to the end of the operational life, consistent with the regulations and standards in effect at that time. That plan will address the safe and effective closure and removal of surface facilities, management of residual brine or other operational materials, sealing of the salt caverns if necessary and site restoration measures to protect the environment.

At the end of the Project life cycle, cavern and well abandonment will follow established industry and regulatory practices, consistent with applicable CSA standards and provincial requirements. The abandonment process will include controlled depressurization of the cavern, followed by backfilling with saturated brine to stabilize the remaining void and eliminate any driving force for fluid movement. Wells will be plugged and sealed using multiple engineered barriers (e.g., cement plugs) to ensure long-term zonal isolation and surface infrastructure will be removed with site restoration completed.

Once decommissioned, a brine-filled salt cavern is geologically stable and inert. Over extended timeframes, the surrounding salt will continue to respond naturally to in-situ stresses, gradually reducing the remaining void space and enhancing long-term containment. This self-sealing behaviour is well documented at decommissioned cavern storage sites and represents a key advantage of salt cavern storage from a long-term environmental and containment perspective.

A wind farm-specific decommissioning and site restoration plan will be developed. The following provides a high-level framework for that plan, consistent with current Canadian wind industry practice and evolving regulatory expectations. This framework reflects a commitment to full life-cycle management of the wind energy component, including removal of infrastructure and restoration of affected lands to compatible post-development uses. Any required decommissioning will be undertaken in accordance with applicable legislation, including any associated EA approval conditions. The Proponent will also reference applicable industry guidance, including Canadian Renewable Energy Association (CanREA) decommissioning guidelines.

It is expected that at the end of the Project life cycle, wind turbines will be dismantled using standard cranes and rigging equipment, following well-established industry practices. The dismantling sequence will typically proceed from removal of the rotor and nacelle, followed by tower sections and associated above-grade infrastructure. Existing access roads and laydown areas will be used to facilitate safe and efficient dismantling and removal. Turbine foundations will be removed to a depth of at least one metre below original grade, consistent with common Canadian and international practice for land restoration. Excavated areas will be backfilled with suitable material, regraded to match surrounding contours and revegetated. Concrete and other materials will be transported to licensed facilities for recycling or disposal, as appropriate.

Wind turbine blades, which are typically composed of composite materials, present a recognized industry challenge for recycling. The Proponent will implement best available, commercially viable recycling or diversion options at the time of decommissioning, consistent with evolving industry practices. These may include emerging technologies such as cement co-processing, thermal treatment (e.g., pyrolysis), or mechanical processing for reuse. Where full recycling is not feasible, blades will be managed in accordance with applicable provincial waste management requirements, with a commitment to minimize landfill disposal to the extent practicable. The selected approach will be documented and reported as part of the final decommissioning plan.

Access roads and electrical collector infrastructure associated with the wind energy component may be decommissioned where no longer required. Roads constructed solely for the wind facility will be removed or recontoured, with drainage patterns restored and surfaces revegetated. Roads serving ongoing uses (e.g., access to other Project components or agreed land uses) may be retained in consultation with local communities and applicable regulators. Subsurface collector cables will typically be left in place (cut and sealed at both ends), consistent with standard practice where removal would result in greater environmental disturbance.

Following removal of infrastructure, all disturbed areas not required for future activities will be restored to conditions compatible with pre-development land uses. Restoration measures will include replacement of topsoil, revegetation using appropriate local species and post-restoration monitoring to confirm successful establishment. Measures to prevent or manage invasive species will be implemented where required.

Any future decommissioning activities will be planned and carried out in full compliance with applicable regulatory requirements, incorporating lessons learned and technological advances to ensure a safe and environmentally responsible closure.

2.10 Project Costs

The estimated capital cost of the Project (all components), based on the current stage of engineering design and planning. is approximately $1.5 billion CAD – including an estimated $400 million for the main power facility (ACAES and associated infrastructure), $500 million for the salt production components, and $600 million for the wind farm – which includes all engineering, construction (labour and materials) and other components and activities. This represents an AACE (Association for the Advancement of Cost Engineering) Class 4 Estimate (+50%/-30% accuracy), which will continue to be refined as Project engi neering and design work continue to advance.

The Project is currently planned to be financed entirely through private capital, with no requirement for public funding or government financial support.

2.11 Potential Accidental Events and Malfunctions

During the construction and operation of any development project, an accident or other unplanned event is an unlikely, but unfortunately possible, outcome. Some potential accidental events or malfunctions that may be associated with this Project, and which are relevant for EA purposes, include:

- An accidental spill of fuel, brine or other substances into the environment (terrestrial, marine, aquatic), and
- An explosion or fire at the Project site, potentially extending into adjacent areas

The resulting environmental effects of any such incident would clearly depend upon its nature, magnitude, location and timing.

TPR will develop and implement a comprehensive accidental event and incident management framework for the Project, in consultation with local authorities and response teams, including detailed emergency response plans, clearly defined procedures, and trained personnel to effectively prevent, respond to, and mitigate potential incidents. The framework will be regularly tested through exercises and drills to ensure its effectiveness and ongoing readiness. Appropriate equipment and resources will be maintained on-site or readily accessible, drawing on a combination of Project-specific capacity and, where feasible, cooperation and capacity-building with local emergency services, subject to their interest and availability.

The Project will incorporate comprehensive spill prevention and containment measures across all on-site facilities and activities associated with salt production, the compressed air energy storage system, and supporting infrastructure. Site grading and drainage design will ensure that any spilled materials are directed away from local watercourses through the use of engineered berms, ditches, and surface contouring to contain and control potential releases within designated areas.

Pipelines will be designed and constructed to applicable standards and would include corrosion-resistant materials, pressure and flow monitoring, isolation valves and leak detection systems to allow rapid response to any loss of containment. Wells will be designed and constructed with multiple casing and cementing barriers to protect groundwater and prevent unintended fluid migration. Brine ponds and settling basins will be engineered with lined containment leak detection features and adequate freeboard to accommodate extreme precipitation events, with perimeter berms to prevent accidental releases. Salt laydown areas would be designed to manage runoff and prevent leaching to surrounding soils and surface waters. Spill prevention measures would also be incorporated into Project facilities, including the wind farm and other electrical infrastructure, through the use of secondary containment for fluids, controlled refuelling and maintenance areas, and site-wide spill response planning. Collectively, these measures are intended to minimize the likelihood and potential consequences of any accidental spills and to protect the surrounding natural and human environments.

In order to undertake this Project in a safe and environmentally responsible manner, various environmental protection and emergency response plans will be developed by TPR. These will be implemented, adhered to, and regularly reviewed and updated throughout the life of the Project (see Appendix B for outlines of these plans). All on-site personnel, including TPR employees, contractors and visitors, will be required to understand and adhere to the provisions of these documents.

While it is the intention of the proponent to take all reasonable measures to prevent spills from occurring, there exists the unlikely possibility that an unforeseen event may occur resulting in a spill. TPR's plans for spill response will be discussed in detail in the company's Emergency Response Plan, which is to be finalized prior to the commencement of construction.

Generally, in the unlikely event of a spill, the response strategy will be as follows:

- Immediately take steps to control the spill at, or as close to, the source as possible, with safety of personnel being the number one priority;
- Contain the spill and intercept / recover the spilled material to prevent it from flowing unabated to the environment;
- Recover as much of the spilled material as possible; and
- Remediate contaminated areas.

Any spilled material that is either contained or has seeped into the subsurface will be recovered as soon as it is safe to do so using onsite equipment. If necessary, additional equipment will be mobilized to the site. The spill response equipment at site will be similar to that utilized during previous development projects Western Newfoundland, and will include a combination of the following:

- Containment booms;
- Spill kits; and
- If required, assistance and additional equipment from a qualified and experienced spill response contractor.

Furthermore, any soil that has been contaminated in exceedance of applicable regulatory specifications will be removed for offsite treatment. Spills that meet minimum regulatory thresholds for their respective environments will be reported to the relevant agencies and follow required protocols and practices.

It is the intent of TPR to ensure all applicable measures to prevent fire. This will include normal practices, procedures and training related to fire prevention and response. A fire water protection system will be installed at the site to respond in the unlikely event of a fire. A series of fire hydrants will be installed at key areas around the site and connected to the on-site water storage tank.

2.12 Effects of the Environment on the Project

The proposed Project has been planned, and will be further designed and eventually implemented, with due consideration of the local environmental conditions in and around the Project site.

Geological characteristics, topographic features, oceanographic conditions, climate and weather (including wind) conditions (including the current and future influences of climate change), existing infrastructure, and other environmental factors (see Chapter 3) have, to varying degrees, influenced the placement and design of the Project and its associated components and activities. Weather conditions and other environmental influences may also influence the conduct and timing of some constriction and operational activities.

Climate-related design considerations, including extreme weather conditions typical of Western Newfoundland and climate change projections (https://www.gov.nl.ca/eccc/occ/climate-data/) have and will continue to be incorporated into Project design. Wind turbines will be specified for cold climate operation in accordance with applicable international standards (e.g., IEC 61400 series), which may include provisions for ice detection, automated shutdown, blade heating systems and structural design accounting for ice loading. These measures are intended to maintain safe and reliable operation during winter conditions while minimizing risks such as ice accumulation and shedding.

All surface infrastructure, including wind turbines, electrical systems and ACAES-related facilities, will be designed to meet or exceed applicable Canadian design standards (e.g., National Building Code of Canada) for extreme wind and weather events. Design parameters will incorporate appropriate return periods (e.g., 1-in-50-year or greater events) and site-specific conditions, including wind regime and turbulence characteristics, to ensure structural integrity and operational resilience under extreme conditions. The Project is located away from major water drainages and is not at risk of climate change or high water flood events. With respect to coastal processes, the primary ACAES cavern field and associated surface facilities are located approximately 10 km inland and at elevations not subject to storm surge risk. Any infrastructure located closer to the coastline, such as those associated with the water intake / salt water outfall components, will be designed with consideration of coastal flood elevations, consistent with applicable provincial and federal climate adaptation guidance. Overall, these design measures ensure that the Project is appropriately adapted to the local climate and environmental conditions and is consistent with broader objectives related to renewable energy development, system reliability and climate resilience.

No additional or specific mitigation measures are required or proposed in relation to the possible effects of the environment on the Project. The results of future, detailed design for the various proposed Project components and activities will be reflected in TPR's future (post-EA) applications for the various permits, authorizations and approvals that will be required for the Project (see Appendix A).

2.13 Environmental Permits and Approvals

In addition to approval under the provincial EA process, the Project will also require a number of other provincial, federal and municipal permits and authorizations. TPR is committed to obtaining, and complying with the conditions of, these required permits and approvals during the various phases of the Project, and will require the same of all contractors that are involved in this Project.

Some of the key environmental permits and approvals that will or may be required in relation to the Project are listed in Appendix A.

2.14 Project Documents

Apart from this EA Registration (and the various desk-top environmental studies and other documents included in it as appendices), no other EA-related documents have been produced by TPR in relation to this Project.

3.0 EXISTING ENVIRONMENT

This chapter provides an overview of the environmental setting of the Project Area and surrounding region, based on existing and available information sources. The description of the existing biophysical and socioeconomic environments that follows is purposively brief and focussed in nature, and seeks to identify those environmental components that the Project has the most potential to interact with, and especially, to highlight any associated issues that would be most relevant to EA decision-making.

More detailed descriptions for select environmental components are provided through a number of desk-top baseline studies undertaken by TPR in 2025 and 2026, which are included as appendices. These are referred to throughout the sections that follow, and provide the sources of the information summarized here unless otherwise noted.

3.1 Biophysical Environment

The existing environment description that follows addresses a variety of physical and biological components relevant to the atmospheric, terrestrial, freshwater and marine environments.

3.1.1 Atmospheric Environment

The Bay St. George area of western Newfoundland has a cool, maritime climate strongly influenced by its proximity to the Gulf of St. Lawrence. It is characterized by relatively mild winters for its latitude, cool summers and frequent precipitation throughout the year. The mean annual temperature is approximately 5 °C, with average daily temperatures ranging from approximately −6 to −7 °C in winter to about 16–17 °C in July–August, reflecting limited seasonal extremes compared with more inland locations. Annual precipitation is also relatively high, in the order of 1,300–1,350 mm (for rainfall plus snowfall equivalent), with precipitation distributed fairly evenly year-round but with slightly wetter conditions in late summer and autumn. The region is typically humid and windy, with frequent cloud cover and maritime air masses moderating temperature variability, producing relatively short, cool summers and long shoulder seasons where conditions can fluctuate rapidly between maritime and continental influences. Prevailing winds are typically westerly, shifting to easterly in spring, with average speeds of 13.7–22.7 km/h and occasional gusts exceeding 63 km/h.

Ambient air quality is generally representative of rural Newfoundland, with occasional particulate and ozone exceedances linked to long-range sources such as wildfires. Baseline noise levels are also typical of a relatively quiet rural coastal environment, dominated by natural sources (such as wind or wave action) with intermittent contributions from vehicle traffic given the Project's location directly adjacent to the Trans Canada Highway. Recent baseline studies at sites throughout the region indicated day–night average sound levels generally in the range of approximately 41–48 dBA (A-weighted decibels) with the highest values near roadways or developed areas.

For further details (including references) see:

Appendix C: Section 2.0
Appendix D: Section 6.2

3.1.2 Geology and Topography

The Project Area is located within the Carboniferous Bay St. George Sub-Basin of Western Newfoundland, a structural basin associated with the regional Cabot Fault system and formed during strike-slip tectonic activity from the Devonian through Carboniferous periods. Bedrock underlying the site consists primarily of the Mississippian-aged Jefferys Village Member of the Robinson River Formation (Codroy Group), composed of interbedded sandstones, conglomerates, siltstones, mudstones, and shales that extend to depths of approximately 320 to 530 m below ground surface. These siliciclastic strata overlie a lower evaporitic sequence dominated by massive basal halite that forms the salt dome itself. Regionally, basin development and subsequent deformation during the Alleghenian orogeny produced northeast-trending folds and faults, including nearby structural features such as the Flat Bay anticline and interpreted local faults, which influence the present geometry and distribution of sedimentary units within the sub-basin (Figure 3.1).

Surficial materials across the Project Area are dominated by glaciofluvial and fluvial deposits occurring as hummocks, terraces and plain deposits, overlain in many areas by poorly drained organic and peaty soils. A veneer of till and organic deposits underlies most of the site, with historical exploration drilling indicating an average overburden thickness of approximately 63 m. Permeable sand and gravel deposits are mapped along Fischells Brook, while the broader area includes hummocky till, lineated till, thick till and organic units along the potential pipeline corridor toward St. George's Bay. Sinkhole occurrences mapped in the broader Flat Bay area show some association with structural features and stratigraphic boundaries within the Codroy Group, particularly near anticline flanks where more karst-prone carbonate or evaporitic units may occur. However, the Jefferys Village Member itself is considered to have relatively low karst susceptibility, and recent field investigations indicate that several mapped sinkholes in the area are likely related to glacial or wetland processes rather than active karst development, with overburden thickness playing an important role in limiting surface expression of subsurface dissolution (Figure 3.2).

Physiographically, the Project Area lies within the Stephenville Lowlands, a low-lying coastal plain bounded by upland regions including the Long Range Mountains to the east and the Anguille Mountains to the south. The site is situated at approximately 125 m above sea level and slopes gently westward toward St. George's Bay, with local drainage divided between Barry Brook to the northwest and Fischells Brook to the southwest. The surrounding terrain rises rapidly in adjacent upland areas, reaching elevations of approximately 200 m within 5 km of the site and up to about 600 m in the Long Range Mountains approximately 25 km to the southeast. Surface drainage follows regional topography, with runoff from the Project Area generally flowing westward toward St. George's Bay (Figure 3.3).

For further details (including references) see:

Appendix D: Sections 2.0 and 3.0

Figure 3.1: Regional Bedrock Geology

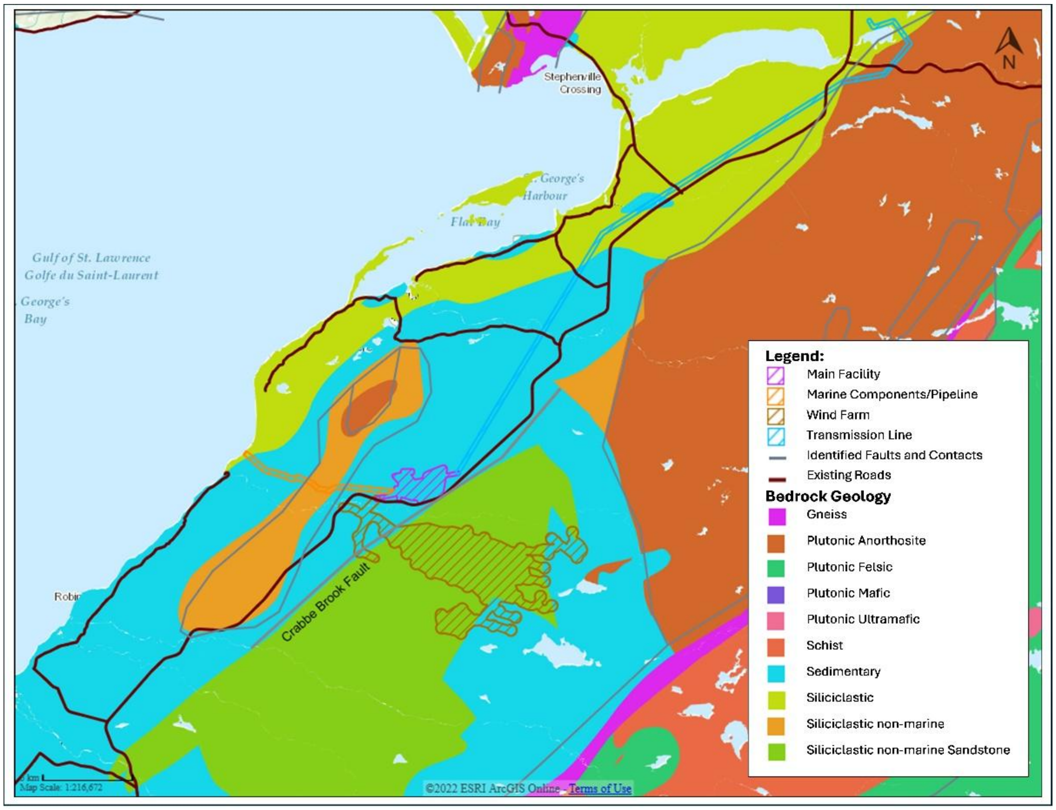


Figure 3.2: Regional Surficial Geology

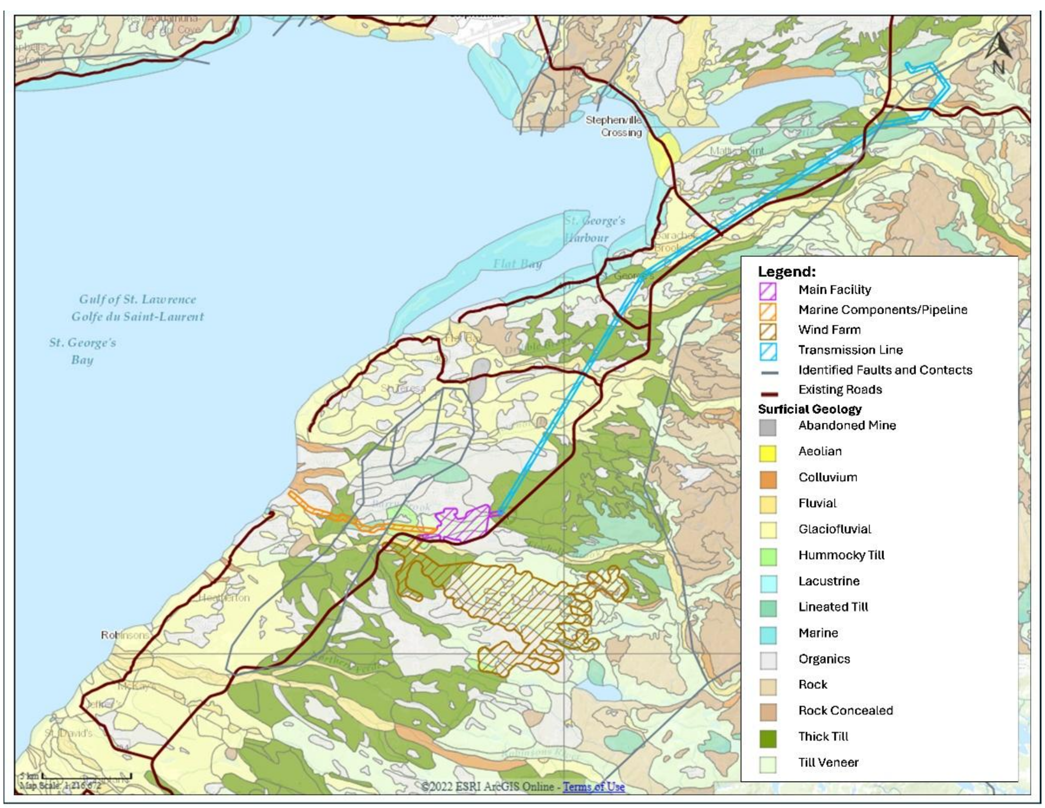
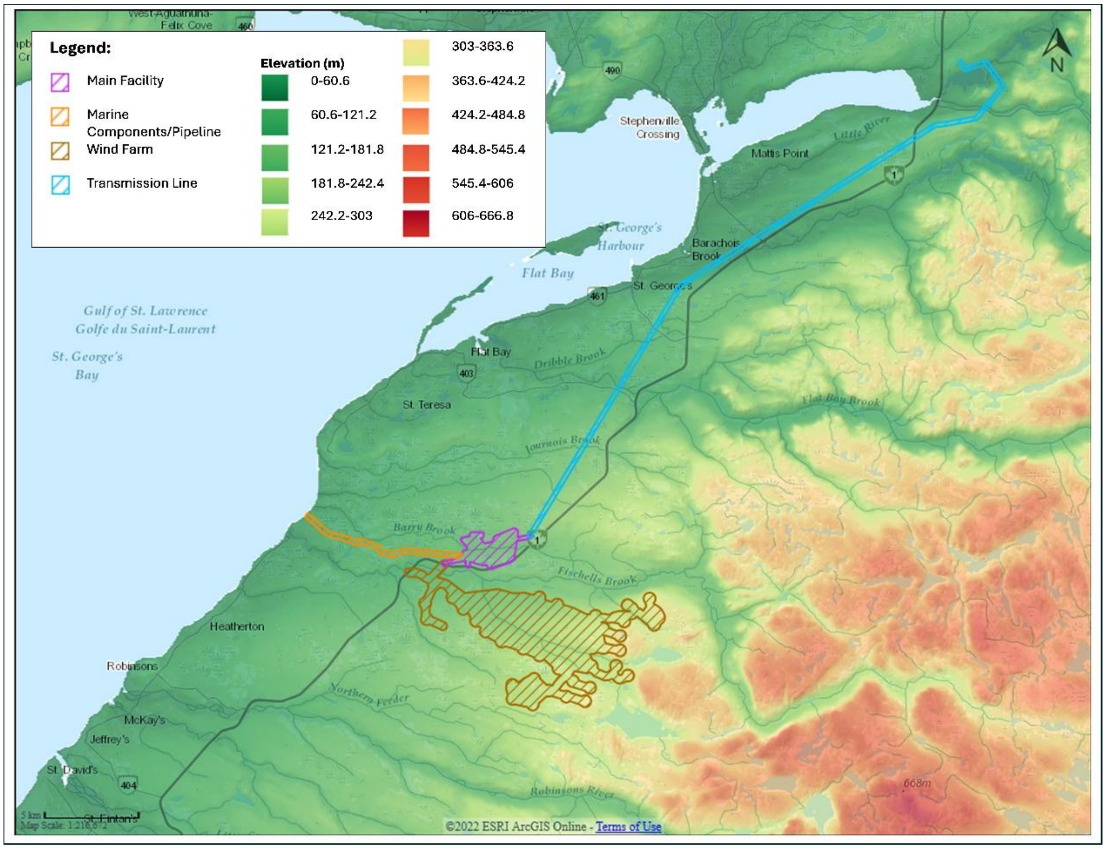


Figure 3.3: Regional Elevations



3.1.3 Groundwater

To support early Project planning and design, TPR completed a preliminary desktop analysis of groundwater conditions in and around the Project area, which provides an initial characterization of shallow hydrogeological and hydrological conditions (Appendix D).

The preliminary hydrogeological conceptual site model (CSM) groups subsurface materials into three principal hydrostratigraphic units: 1) surficial organics, till, and glaciofluvial/fluvial deposits; 2) the upper siliciclastic sedimentary bedrock sequence of the Jefferys Village Member (JVM) and Barachois Group; and 3) the underlying evaporite sequence (Woodville Formation), including halite that forms the salt dome. Surficial tills in the region are mapped as silty sand to clayey silt (Unit A) and locally sand and gravel (Unit B), with generally low to moderate permeability and variable well yields reported regionally; however, no characterization wells are located near the Project area.

The JVM bedrock sequence, extending to depths of approximately 320–530 m below ground surface, is interpreted as a fractured, primarily intergranular aquifer with low to moderate hydraulic conductivity (modelled to be in the order of 10^{-8} to 10^{-7} m/s), with groundwater movement expected to occur primarily along secondary features such as fractures or bedding planes. This bedrock sequence is consistent with regional Carboniferous sedimentary rocks that support domestic-scale water supplies elsewhere in the basin. In contrast, the underlying halite and anhydrite units associated with the salt dome itself are characterized by very low permeability (with values in the order of 10^{-12} to 10^{-8} m/s).

Groundwater beneath the Project area is inferred, based on the desktop review, to occur within an unconfined to locally semi-confined system, with shallow flow directions controlled by topography and recharge along the ridge underlying and dividing a portion of the site (Figure 3.4). Along the ridge, shallow groundwater is expected to flow northwest toward Barry Brook and southwest toward Fischells Brook. Overburden and shallow bedrock groundwater contributions to local stream baseflows reflect the hydraulic connection between overburden and bedrock groundwater and surface water features.

Groundwater levels are anticipated to be relatively shallow and seasonally variable, rising during spring melt and wetter periods and declining during late summer or extended dry conditions. Regional data indicate that groundwater within the JVM-equivalent hydrostratigraphic unit is typically calcium-bicarbonate type with generally fair to excellent quality, although elevated total dissolved solids and parameters such as iron, manganese, sulphate and arsenic have been reported elsewhere in the Bay St. George area. No site-specific groundwater quality data are currently available for the Project area, and salinity considerations are regionally relevant due to the presence of evaporite units along groundwater flow paths.

A review of available databases indicates that there are no known groundwater users, protected public water supply areas (PPWSAs), or active water use licences within the main Project Area or its immediate drainage catchments. The nearest groundwater-based PPWSAs, which serve the community of Flat Bay, are located approximately 6.5 km north of the site, while the closest public surface water supply (Dribble Brook, a backup supply for the Town of St. George's) is located approximately 15 km to the northeast and is crossed by the proposed transmission line corridor (Figure 3.5). Given the intervening topographic and hydraulic drainage divides, the Project area is not likely to be hydraulically connected to these municipal supplies.

For further details (including references) see:

Appendix D: Sections 5.0 and 7.0

Figure 3.4: Inferred Groundwater Flow Directions

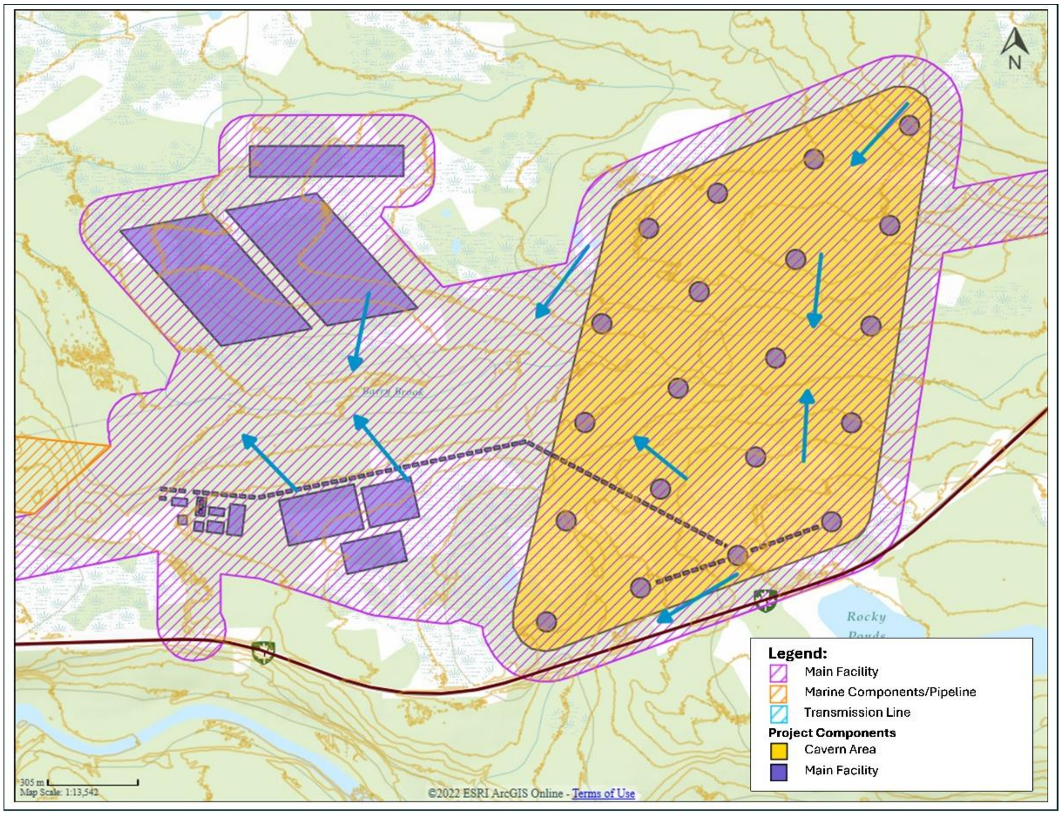
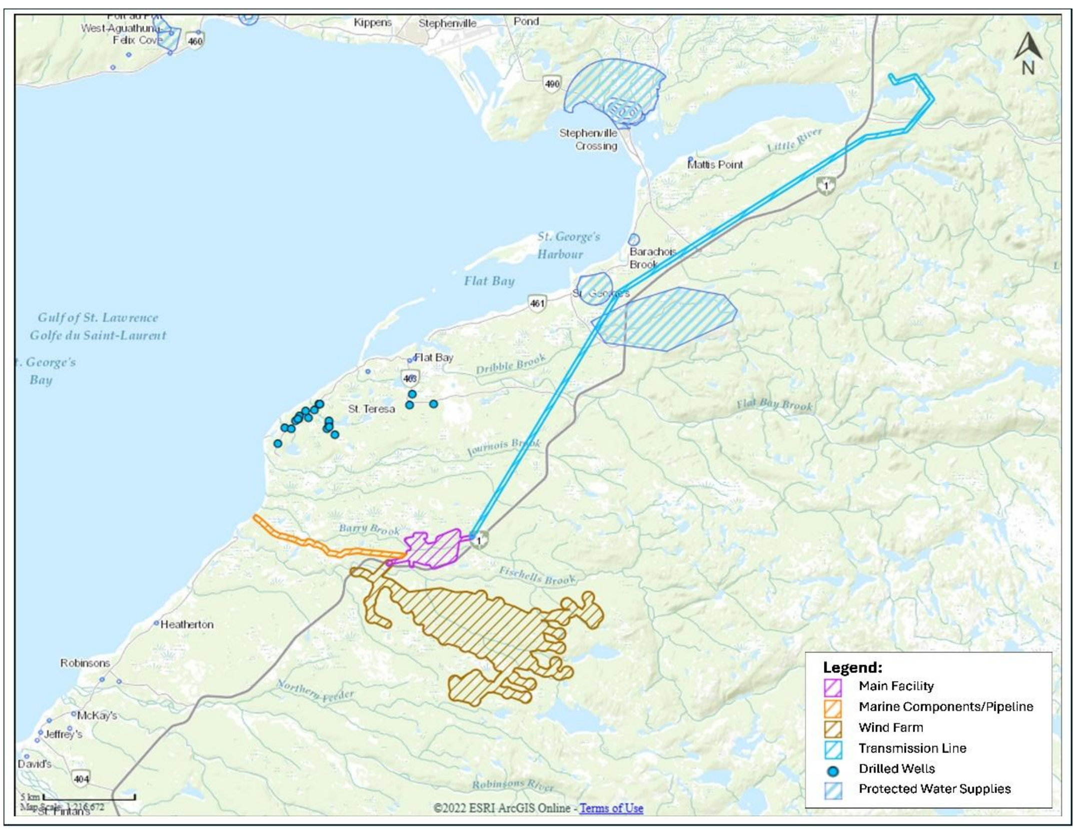


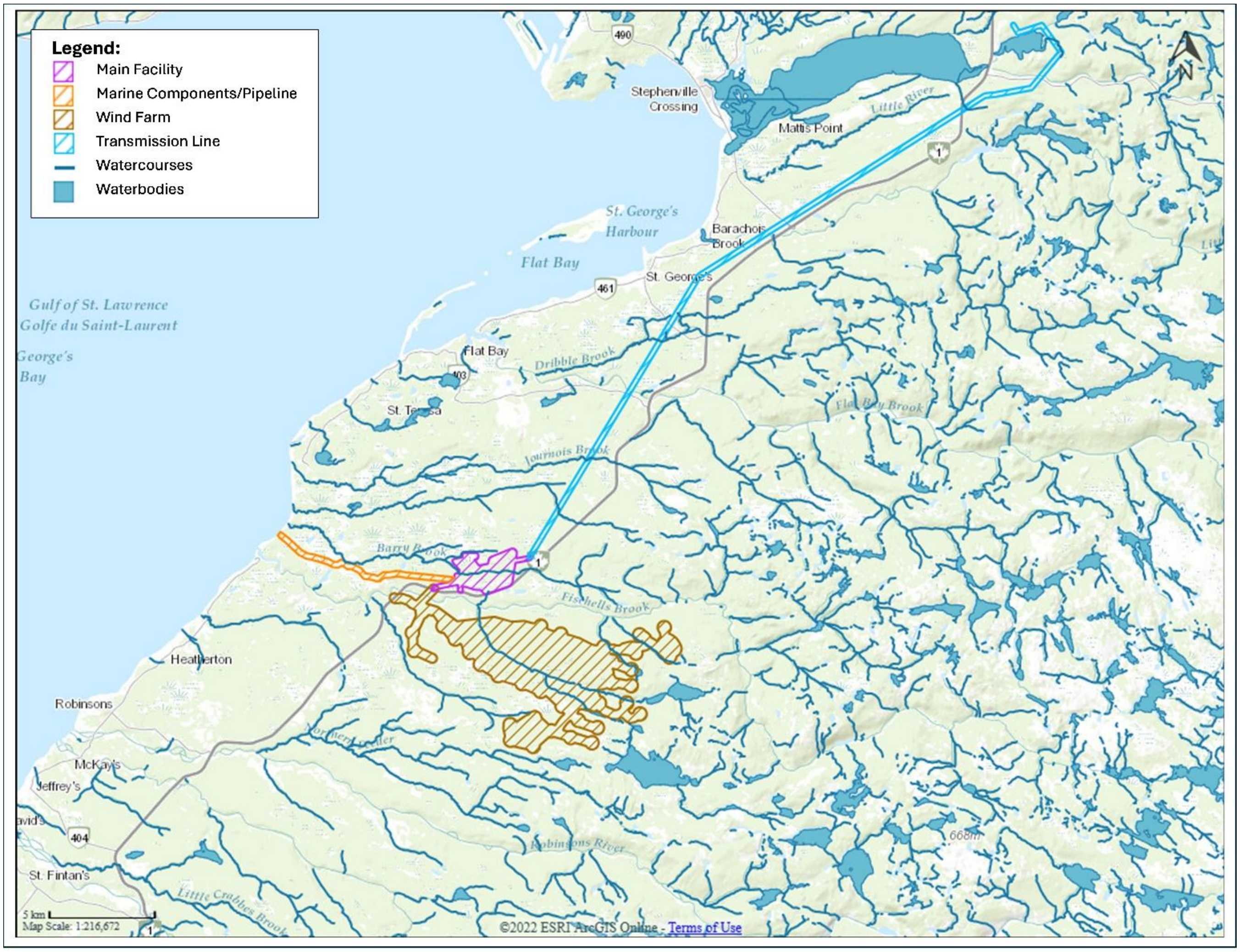
Figure 3.5: Regional Water Users



3.1.4 Surface Water

Surface water in the Project area is characterized by small- to medium-sized coastal watersheds draining westward into St. George's Bay, including the Fischells Brook and Barry Brook watersheds. Fischells Brook is the larger system, with an estimated drainage area of approximately 370.8 km^2, and is designated as a scheduled Atlantic salmon river, while Barry Brook drains a smaller watershed of approximately 30.5 km^2. Both watercourses flow generally westward into St. George's Bay. Several smaller brooks, ponds, and wetlands are also present within the Project area, forming an integrated local drainage network (Figures 3.6 and 3.7).

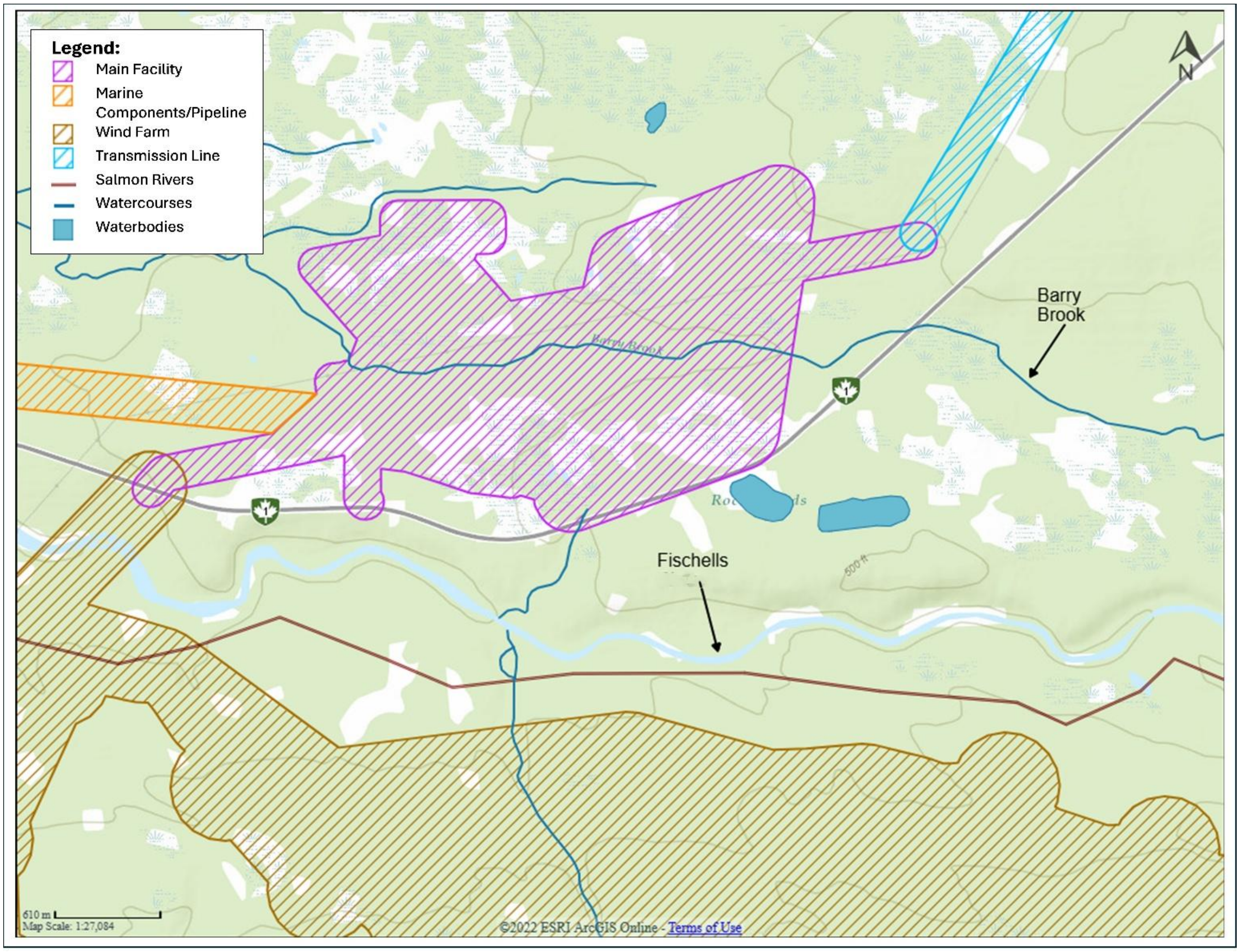
Figure 3.6: Waterbodies and Watercourses (Regional)



Both Fischells Brook and Barry Brook are ungauged systems; therefore, hydrological conditions have been characterized using regional hydrometric data and pro-rated estimates based on nearby monitored watersheds. Streamflow patterns are typical of western Newfoundland, with peak flows occurring during the spring freshet associated with snowmelt, a secondary peak in late fall, and reduced flows during late summer and winter. Surface water flow generally follows local topography, with groundwater flow inferred to occur in the same direction; however, groundwater conditions are not well defined and are expected to vary seasonally.

Tributaries within the Project area are generally narrow, often less than 2 m in width, and are frequently shaded by forest canopy. In many cases, these tributaries include natural obstructions such as falls or intermittent reaches, which may limit hydrological connectivity and access for aquatic species.

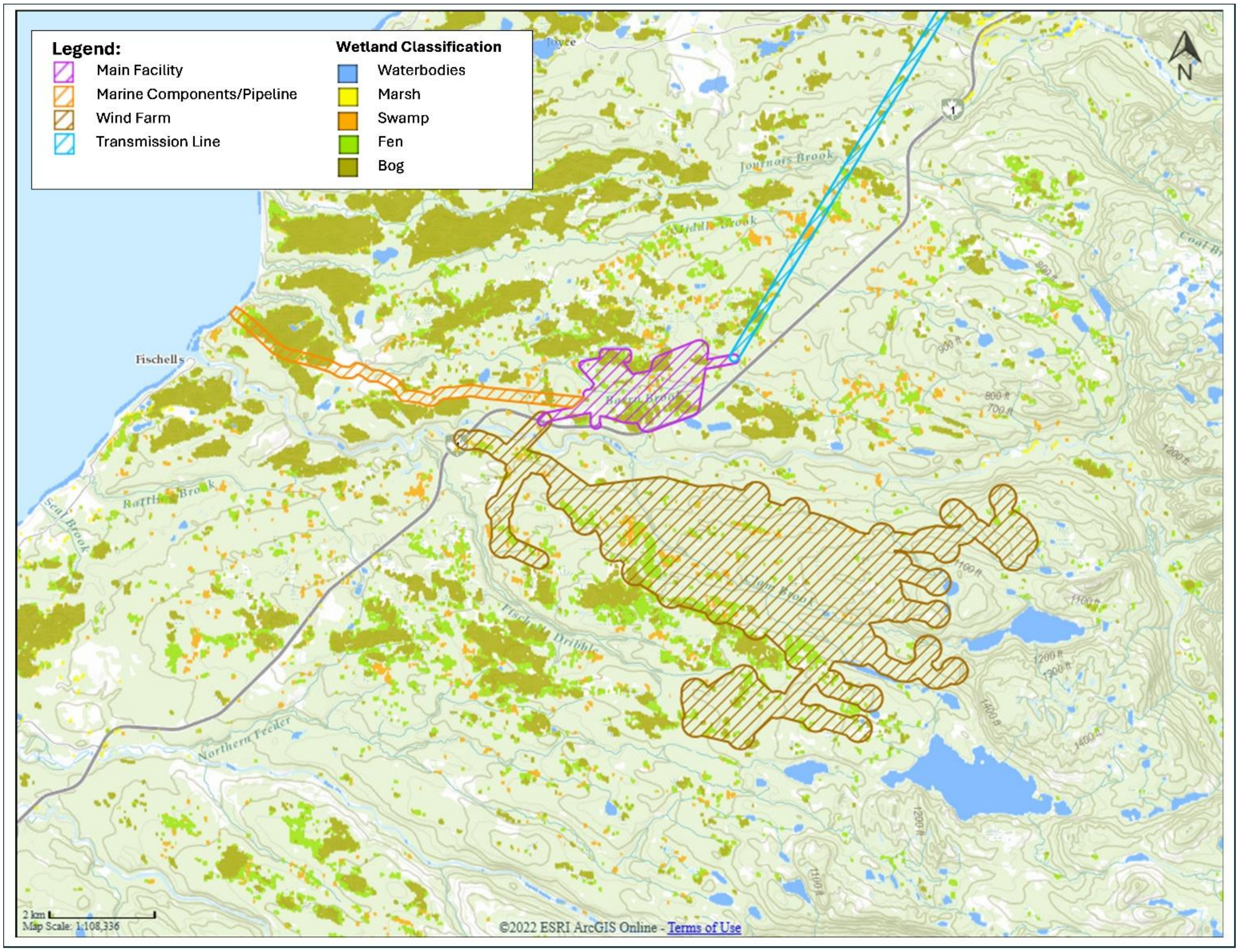
Figure 3.7: Waterbodies and Watercourses (Local)



Wetlands are a common and widely distributed feature within the Project area and surrounding region. Wetland mapping indicates the presence of bogs, fens, swamps, marshes, and open-water wetlands, which contribute to local hydrological processes, including water storage and flow regulation. Within the broader study area, wetlands represent a relatively small proportion of total land cover; however, they are dispersed throughout the landscape and are functionally important components of the local drainage system.

Within the Project area, wetlands are widely distributed and include bogs, fens, swamps, marshes, and open-water wetlands (Figure 3.8).

Figure 3.8: Wetlands



An initial hydrological characterization of the Project area was completed using regional hydrometric data and watershed-based analysis. As both Fischells Brook and Barry Brook are ungauged systems, streamflow conditions were estimated using pro-rated data from nearby monitored watersheds. Seasonal flow patterns are typical of western Newfoundland, with peak flows occurring during the spring freshet associated with snowmelt, a secondary peak in late fall, and reduced flows during late summer and winter. Surface water flow is primarily driven by precipitation and snowmelt, with flow conditions varying seasonally in response to climatic inputs. Flooding and high-flow conditions are generally associated with spring freshet events and fall rainfall periods.

For further details (including references) see:

Appendix D: Section 6.0
Appendix E: Section 4.0

3.1.5 Fish and Fish Habitat

As described above, the Project Area is located within the Fischells Brook and Barry Brook watersheds, which drain westward into Bay St. George on the west coast of Newfoundland. Fischells Brook is the larger system, with an estimated drainage area of approximately 370.8 km^2 and a mainstem length of about 48 km, while Barry Brook drains a smaller watershed of approximately 30.5 km^2. Hydrologically, both watersheds follow typical regional patterns, with peak flows occurring during the spring freshet as snow and ice melt, a secondary peak in late fall, and lower flows during mid-summer and winter. Fischells Brook includes several natural waterfalls that restrict upstream fish passage, including a major obstruction approximately 34 km upstream from the river mouth. Tributaries throughout both watersheds are generally narrow, often less than 2 m in width, and typically shaded by forest canopy, with several subject to natural obstructions that limit access for anadromous fish species.

Fish communities in the region are typical of freshwater ecosystems throughout insular Newfoundland. Species known or likely to occur include brook trout, Atlantic salmon, American eel, banded killifish, and mummichog. Brook trout are widely distributed and are expected to occur throughout freshwater habitats in both watersheds. Atlantic salmon are known to utilize Fischells Brook, which is a scheduled salmon river, and may also occur in the lower reaches of Barry Brook, where suitable habitat is more likely given the smaller watershed size and potential flow limitations in upper reaches. American eel are capable of occupying a wide range of habitats, including areas above natural barriers that may restrict other species. Banded killifish have been documented at several locations along the west coast of Newfoundland, including near Bay St. George, while mummichog are typically associated with brackish and estuarine environments and are most likely to occur near river mouths and coastal areas. American eel has been assessed as Threatened by COSEWIC (but is not currently listed under SARA) and is listed as Vulnerable under the Newfoundland and Labrador *Endangered Species Act,* banded killifish is listed as a Species of Special Concern under the federal *Species at Risk Act* and as Vulnerable under the provincial *Endangered Species Act*, and mummichog are listed under the *Endangered Species Act* as Vulnerable.

Fish habitat within the Fischells Brook system consists of a range of riverine habitat types, including riffle/run, flat or steady-flow reaches, rapids, and waterfalls, with substrates typically dominated by coarse materials such as cobble, rubble, and boulders. Some flatter reaches contain finer substrates suitable for salmonid spawning. Habitat characterization was undertaken through air photo interpretation of the mainstem channel, supported by GIS analysis and available hydrological information, which identified approximately 30 habitat reaches within the surveyed portion of the river below the primary obstruction. Habitat characterization for Barry Brook is more limited due to its smaller size and dense vegetation cover; however, available information suggests similar habitat types may be present, with the majority of suitable fish habitat likely concentrated in lower reaches of the watershed.

For further details (including references) see:

Appendix E: Section 4.0

St. George's Bay is a large embayment on the west coast of Newfoundland that opens into the Gulf of St. Lawrence and supports a diverse marine environment. The bay contains a range of ecologically significant habitats, including spawning and rearing areas, eelgrass beds, estuarine habitats, and areas supporting cold-water corals. These habitats are influenced by physical factors such as water depth, substrate composition, temperature, and salinity, and support a wide range of marine species.

The bay supports numerous commercially and culturally important species, including Atlantic cod, American lobster, snow crab, Atlantic herring, Atlantic mackerel, capelin, and halibut, as well as recreationally important species such as Atlantic salmon. Atlantic salmon is of particular cultural and economic importance and utilizes marine waters for feeding and estuarine areas during migration. Estuarine habitats within St. George's Bay also provide important habitat for species such as American eel, banded killifish, and mummichog, including several that are designated as species at risk.

For further details (including references) see:

Appendix F: Section 4.0

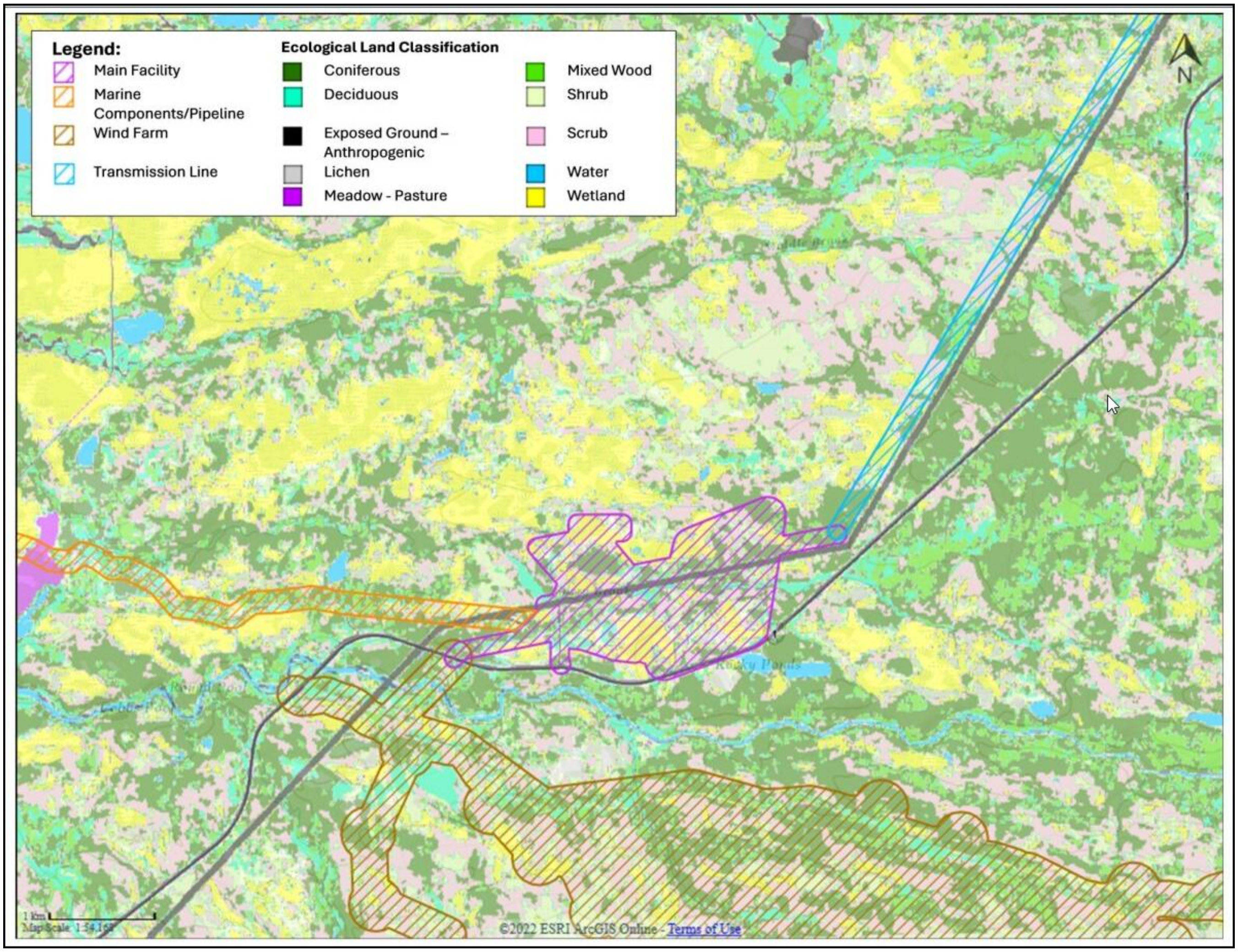
3.1.6 Vegetation

The Project Area is located within the Western Newfoundland Ecoregion, specifically the St. George's Bay Subregion, which extends along the west coast of Newfoundland. This subregion supports a varied natural landscape of forests, wetlands, and freshwater habitats. Forests in the subregion are dominated by balsam fir, typically with an understory of ferns and relatively few mosses, which distinguishes them from the more moss-dominated forests of central Newfoundland. Black spruce is common on poorly drained sites and exposed bedrock, various species of birch, maple, aspen and ash are also present. Near the coast, forests tend to be more open and stunted due to coarse, nutrient-poor soils, and fire-adapted stands are uncommon because forest fires are relatively infrequent. The subregion also includes a range of wetland and freshwater habitats, including bogs, ponds, marshes, and alder swamps, with goldenrod/alder and bracken fern/alder swamps noted as distinctive communities not found elsewhere on the Island.

A desktop Ecological Land Classification (ELC) was completed early in Project planning by SEM Limited using available imagery and other relevant background information to provide an initial understanding of local vegetation communities. The ELC used high-resolution aerial imagery and LiDAR elevation data, supplemented by European Space Agency Sentinel-2 satellite imagery (10 m resolution) to help distinguish vegetation types using visible and non-visible spectral bands. These datasets were interpreted to develop vegetation training classes and perform a supervised classification, producing a preliminary GIS layer of ground cover types across the study area.

As illustrated in Figure 3.9, the portion of the Project area covered by the ELC is comprised of wetlands, shrubs and scrub areas, as well as coniferous, deciduous and mixed forest areas.

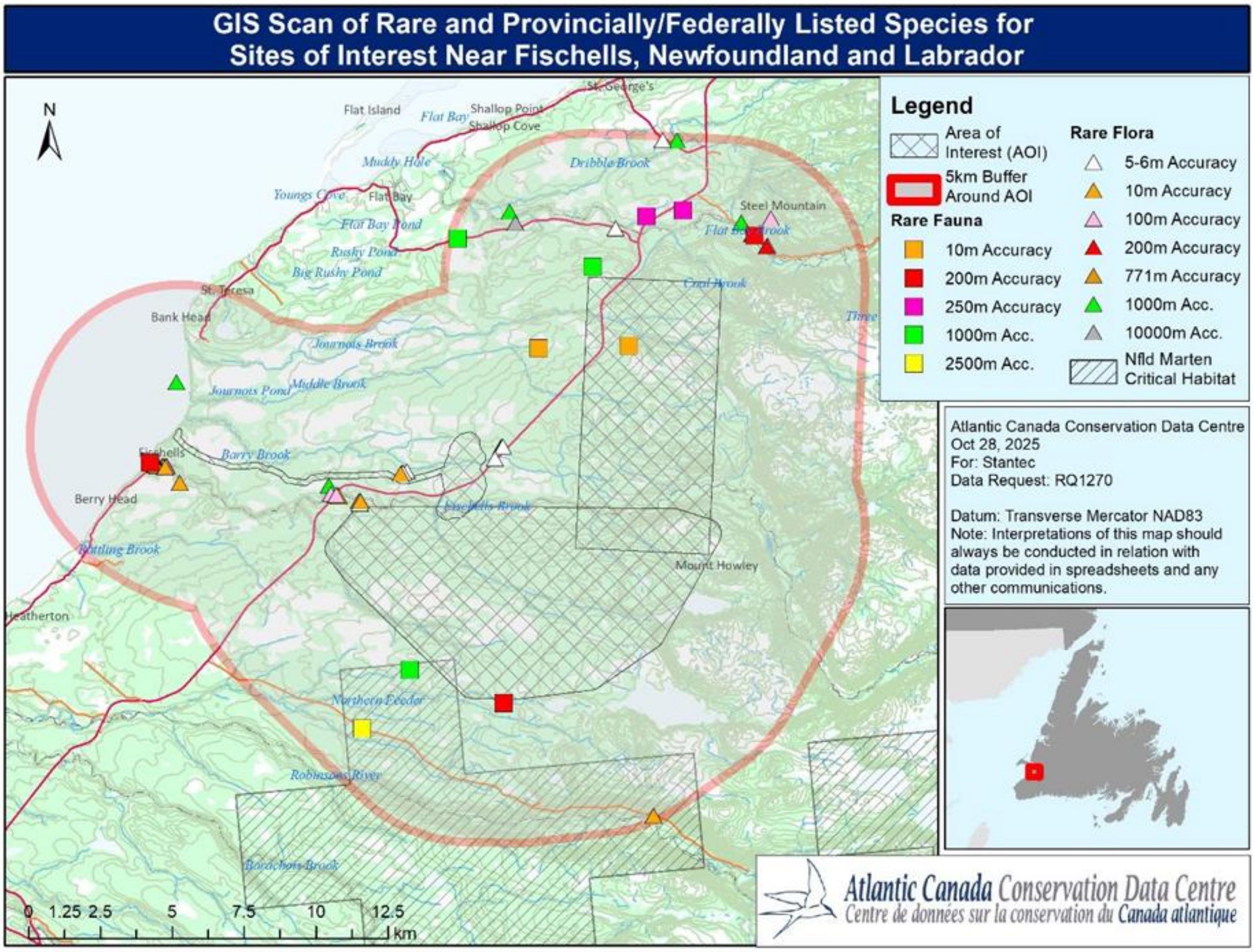
Figure 3.9: Ecological Land Classification



In this EA registration, species at risk (SAR) refers to species listed on Schedule 1 of the federal *Species at Risk Act* (SARA) as Extirpated, Endangered, Threatened, or Special Concern, and/or species listed as Extirpated, Endangered, Threatened, or Vulnerable under the Newfoundland and Labrador *Endangered Species Act (*NL ESA). Species of Conservation Concern (SOCC) includes species assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) but not yet listed under SARA, species recommended for listing by the provincial Species Status Advisory Committee, and species ranked as provincially rare by the Atlantic Canada Conservation Data Centre (AC CDC). AC CDC conservation ranks reflect provincial rarity, with S1 indicating critically imperiled, S2 imperiled, S3 vulnerable, and combined ranks such as S2S3 reflecting uncertainty within that range.

An AC CDC data request was completed to identify any records of SAR and SOCC within a 5 km radius of the Project. This search (completed in late October 2025) identified 31 records representing nine flora SOCC in the vicinity of the Project (Figure 3.10), including Cyperus-like sedge, dioecious sedge, tall scouring rush, red fescue, long-styled rush, knotted rush, woods rush, hooked crowfoot, and panicled aster. No flora SAR were identified within the Project area or the 5 km search radius based on AC CDC records. However, AC CDC expert opinion mapping indicates that boreal felt lichen may occur east of the Project, with its presence within the 5 km search area considered possible but unlikely. This species is listed as Special Concern under SARA and as Vulnerable under the NL ESA.

Figure 3.10: AC CDC GIS Scan of Rare and Provincially/Federally Listed Species near the Project Area



Broader regional information indicates that 25 flora SOCC are known to occur in the larger St. George's Bay subregion based on AC CDC data compiled for nearby projects. These include a number of provincially rare species associated with forest, wetland, and coastal habitats. Many of these species are ranked S1 or S2, indicating that they are critically imperiled or imperiled in the province, and several are associated with coastal or wetland environments, reinforcing the ecological importance of these habitat types in the region.

In summary, no flora SAR have been identified within the Project area or within 5 km based on available AC CDC data, although a number of provincially rare flora species may occur in the surrounding area.

For further details (including references) see:

Appendix C: Section 3.2

3.1.7 Wildlife

The Project is situated in the St. George's Bay subregion of western Newfoundland, an area that supports a rich diversity of wildlife due to its mix of coastal, wetland, freshwater, scrub and forested habitats. The region lies within the Atlantic Flyway, one of North America's major migratory bird corridors, which contributes to the presence of both resident and migratory species at various times throughout the year. Forested areas provide habitat for a wide range of songbirds, raptors and other landbirds, while coastal and marine environments support waterfowl, shorebirds, seabirds and colonial nesting species. The broader region also supports diverse mammal assemblages including large mammals, furbearers and a variety of smaller terrestrial and semi-aquatic species.

3.1.7.1 Birds and Bats

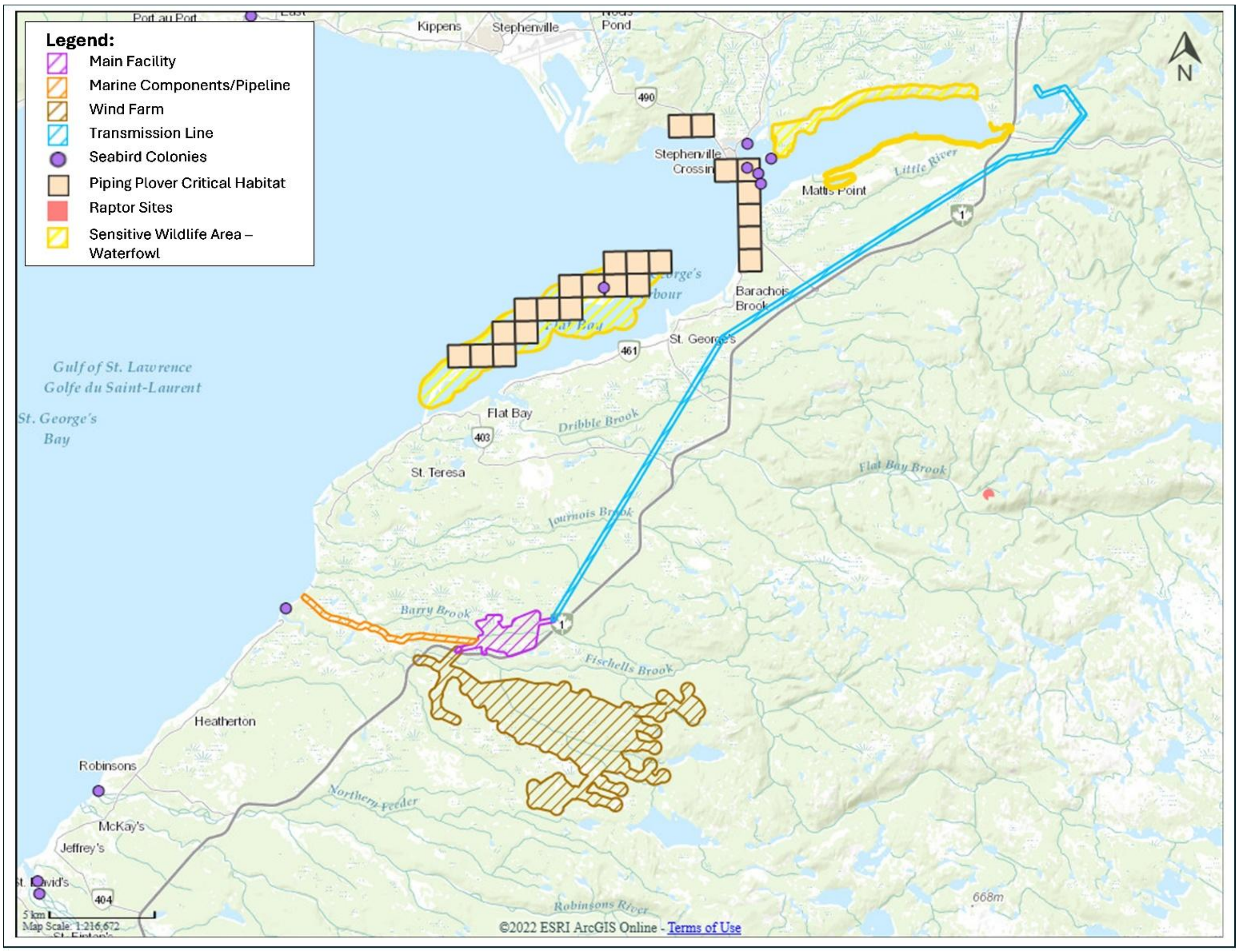
Bird species known or likely to occur in the region include a variety of forest songbirds such as warblers, flycatchers, thrushes, finches, and woodpeckers, as well as raptors, while coastal and marine habitats support waterfowl, gulls, terns, shorebirds, and seabirds. The broader region contains important seabird colony habitat, with species such as great black-backed gull, black-headed gull, ring-billed gull, American herring gull, common tern, and Arctic tern recorded.

AC CDC records identify two bird species at risk within 5 km of the Project: Canada warbler and rusty blackbird, while expert opinion mapping indicates that red crossbill and short-eared owl may also occur in the area, and ivory gull is considered possible but unlikely within nearby marine waters. Data from the Newfoundland Breeding Bird Atlas in atlas squares overlapping the Project area also document olive-sided flycatcher, rusty blackbird, and bank swallow, along with several other species of conservation concern. Additional regional records from Christmas Bird Counts in Stephenville, shorebird surveys, and eBird observations indicate the presence of other species at risk or of conservation concern in the broader Bay St. George region, including short-eared owl, Barrow's goldeneye, evening grosbeak, Leach's storm-petrel, red crossbill, ivory gull, horned grebe, harlequin duck, common nighthawk, snowy owl, peregrine falcon, barn swallow, gray-cheeked thrush and bobolink.

The proposed Project Area overlaps with Newfoundland Breeding Bird Atlas (NBBA) survey squares 21TUP75, 21TUP85, and 21TUP95 (see Appendix C), which encompass various habitat types including shrubland, conifer forest, and broadleaf forest communities, and support a diverse assemblage of passerines, shorebirds, waterfowl, raptors, and upland gamebirds. Most recorded bird species are considered relatively common and widespread within Newfoundland and Labrador (i.e., provincial S-Rank of S3 or greater). The coastal portion of the Project associated with the proposed pipeline corridor is represented primarily by NBBA square 21TUP75, which contains 495 records representing 56 bird species. Recorded species include passerines, shorebirds, waterfowl, upland gamebirds, and the Northern harrier. In 2023, 15 point count surveys were completed within shrubland and conifer forest habitats in this area, including 13 roadside and two off-road surveys. A tern colony consisting of approximately 45 individuals was also recorded near the mouth of Fischell's River in 2017 (ECCC-CWS 2023). The main facility area, including the proposed salt caverns and power infrastructure, is primarily located within NBBA square 21TUP85, which contains 225 records representing 43 bird species, while the proposed wind farm area is represented primarily by NBBA square 21TUP95, which contains 636 records representing 56 bird species. Field surveys completed in 2023 within these areas included a total of 33 point counts across shrubland and conifer forest habitats, including both roadside and off-road survey locations. Raptors recorded within these survey areas included merlin, American kestrel, great horned owl, and northern saw-whet owl (Birds Canada nd).

Several important bird habitats occur within the broader region but at some distance from the Project (Figure 3.11). Areas of critical habitat for piping plover have been identified at Flat Island and Stephenville Crossing. Flat Island is also recognized as the only known nesting location for willet in Newfoundland and Labrador. In addition, one raptor nest has been identified approximately 15 km northeast of the Project.

Figure 3.11: Avifauna



Provincial land-use datasets also identify Sensitive Wildlife Areas in the broader region, which indicate locations where rare plants or wildlife occur. These include areas near the pipeline corridor (approximately 500 m away) and farther southwest near Robinsons and Cartyville (approximately 10 km away) that support rare plant species as well as a coastal Sensitive Wildlife Area for waterfowl near Sandy Point, approximately

10 km north of the proposed pipeline, which overlaps the Sandy Point Nature Reserve. Overall, the Project does not overlap with or occur in proximity to any identified critical habitat for avifauna, sensitive wildlife areas, seabird colonies or known raptor sites (Figure 3.11).

Bats that are known to occur in western Newfoundland include five species: little brown myotis, northern myotis, hoary bat, eastern red bat and silver-haired bat. Little brown myotis and northern myotis are hibernating bats and year-round residents on the island, using cold, humid underground hibernacula such as caves and abandoned mines during winter and maternity roosts in buildings or large trees during summer. Hoary bat, eastern red bat and silver-haired bat are migratory species that occur seasonally in Newfoundland during summer and fall migration but are not known to overwinter in the province. Both little brown myotis and northern myotis are listed as Endangered under both SARA and the NL ESA, while hoary bat, eastern red bat, and silver-haired bat have also been assessed as Endangered by COSEWIC and are listed under the NL ESA.

No bat records were identified within 5 km of the Project through the AC CDC search. Although no nearby hibernacula have been identified, acoustic monitoring completed in 2022 for nearby projects demonstrated that bats are present in the broader region. Surveys near St. George's detected northern myotis, little brown myotis, and hoary bat, while monitoring in the Port au Port Peninsula and Codroy Valley detected all five species. This indicates that bat presence in the general area is possible despite the lack of records immediately adjacent to the Project.

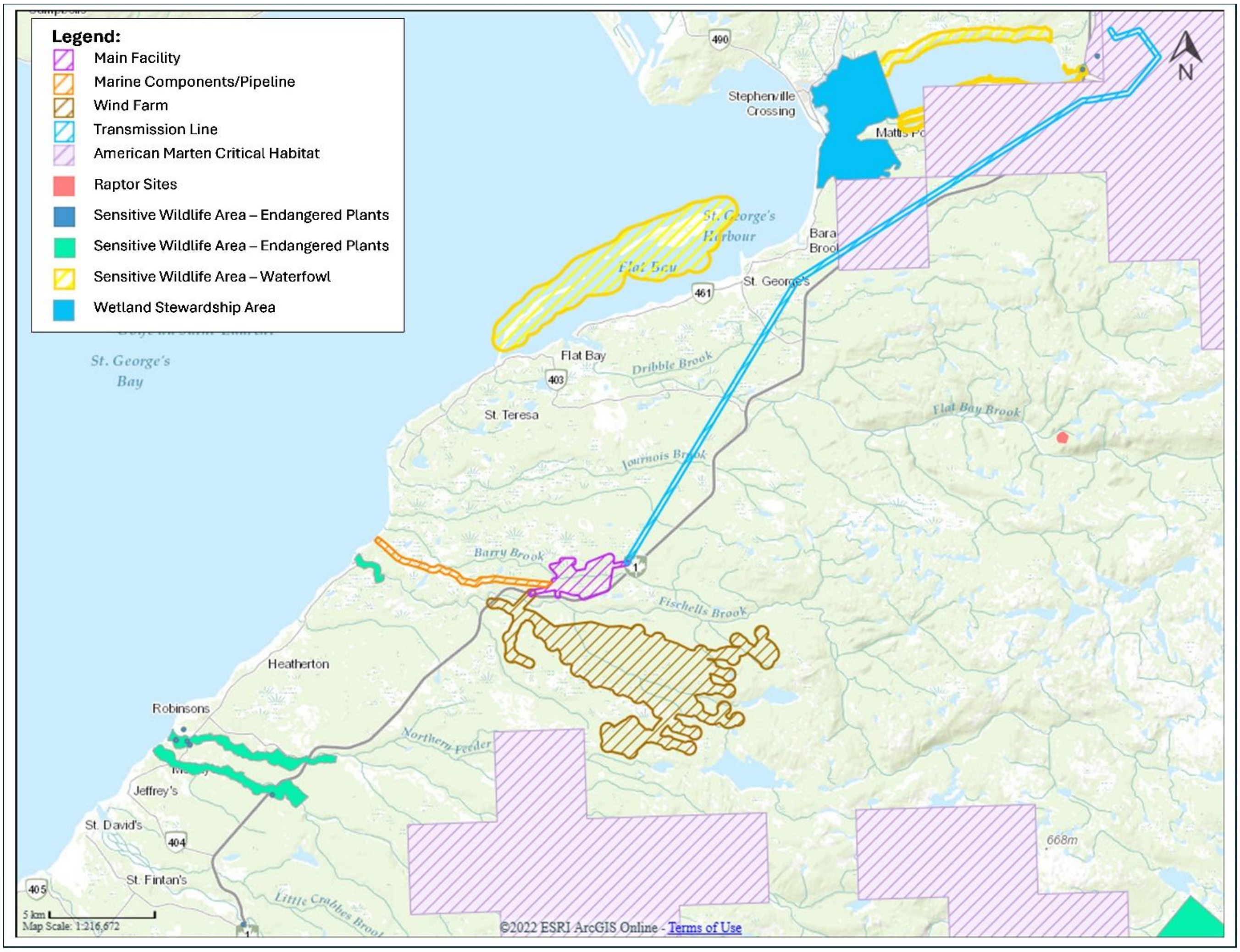
3.1.7.2 Large and Small Mammals

Furbearers and small mammals characteristic of western Newfoundland are also known or expected to occur in the region. These include beaver, river otter, muskrat, snowshoe hare, American mink, eastern chipmunk, red squirrel, short-tailed weasel and masked shrew., which reflect the mix of forested, riparian, and wetland habitats present across the St. George's Bay subregion. Larger mammals include moose, black bear, red fox and lynx, along with other wide-ranging species typical of western Newfoundland.

American marten occur throughout forested areas of western Newfoundland. The Newfoundland population of the American marten is listed as Threatened under the federal SARA and as Vulnerable under the NL ESA. , and designated critical habitat is present within the broader region. AC CDC records note four observations of American marten within 5 km of the Project, indicating that the species occurs in the overall area. American marten typically occupy mature and late-successional coniferous or mixed forests with structurally complex features such as coarse woody debris, downed logs, standing dead trees, and dense canopy cover, which provide important denning, resting and foraging habitat. The species relies heavily on forested landscapes that support abundant prey, particularly small mammals such as voles and red squirrels, and generally avoids large areas of open or heavily disturbed habitat.

While the main Project area does not overlap the designated American marten critical habitat located to the south, the proposed transmission line corridor (which will follow entirely along existing rights of way) would cross through portions of this habitat (Figure 3.12).

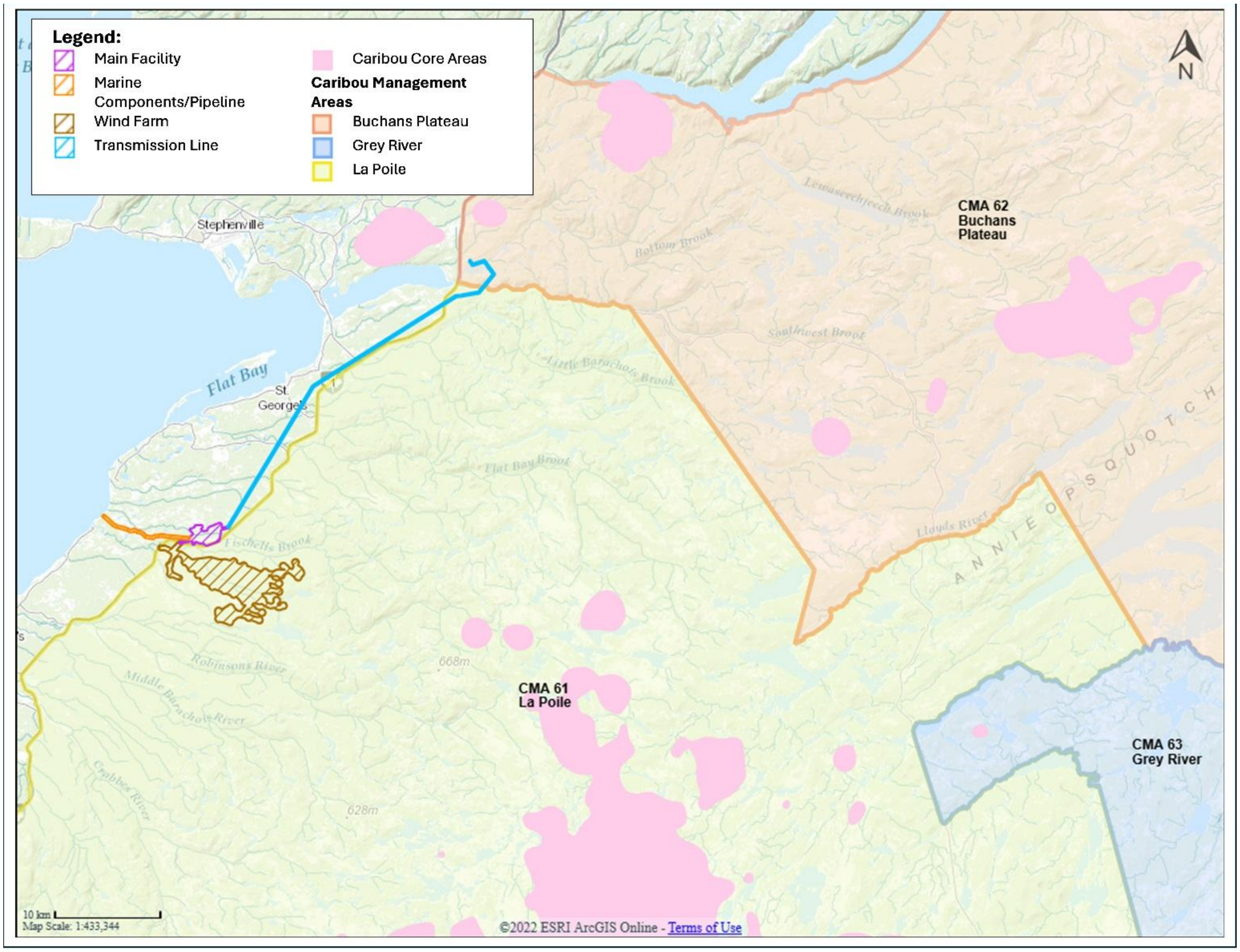
Figure 3.12: Critical Wildlife Habitat / Sensitive Wildlife Areas



Caribou occur across much of the Island of Newfoundland as a combination of native and relocated sub-populations that undertake seasonal movements associated with spring migration, calving, post-calving dispersal, rutting, fall migration and wintering. Distribution patterns vary throughout the year, with animals moving between seasonal ranges that support key life-history stages. In southwestern Newfoundland, these movements are associated with several recognized herd ranges and management areas, including the La Poile herd which occupies a large portion of the south and southwest coast of the Island. The Newfoundland caribou population is currently listed as being of Special Concern on Schedule 1 of the SARA.

The Project lies near the eastern edge of Caribou Management Area (CMA) 61, which corresponds to the range of the La Poile herd, but overlaps only a very small portion of that management area. The herd ranges broadly from Channel-Port aux Basques in the west to St. Alban's in the east and generally moves between winter ranges on the south coast and calving and summer ranges east of the Long Range Mountains. Identified Caribou Core Areas, representing zones of concentrated seasonal use such as calving and wintering habitat, are located approximately 15 km from the Project. Occasional observations of small groups of caribou have been reported in the broader Stephenville Crossing area, including several groups documented in March 2023 approximately 26 km north of the nearest Project feature, although the herd affiliation of these animals remains unconfirmed and the sightings fall outside the expected ranges of nearby herds. Consistent with this, no records of caribou were identified within 5 km of the Project in the AC CDC data, and the location of CMA boundaries, mapped core areas and available information on seasonal movements collectively indicate that caribou are unlikely to occur regularly within the Project area.

Figure 3.13: Caribou



For further details (including references) see:

Appendix C: Sections 3.3 and 3.4

3.1.7.3 Insects

Insects comprise an essential ecosystem component and perform many important functions, including as pollinators of plants, supporting nutrient cycling, and biological control of certain pest species.

The federal *Species at Risk Act* (SARA) and the Newfoundland and Labrador *Endangered Species Act* (NLESA) protect a range of species and their habitats, including insects. In Newfoundland and Labrador, four insect species (COSEWIC 2014, 2015, 2016, 2019; NLDFFA 2026) are provincially and/or federally listed:

- Gypsy cuckoo bumble bee (*Bombus bohemicus*) - listed as Endangered under both the NLESA and SARA
- Yellow-banded bumble bee (*Bombus terricola*) - listed as Vulnerable under the NLESA and as Special Concern under SARA)
- Transverse lady beetle (*Coccinella transversoguttata*) - listed as Vulnerable under the NLESA and as Special Concern under SARA
- Suckley's cuckoo bumble bee (*Bombus suckleyi*) - listed as Threatened under the NLESA and not listed under SARA

The AC CDC data request carried out as part of this EA Registration did not yield any results for insect SAR or SOCC in the Project Area.

3.1.7.4 Marine Fauna

Finally, the waters of St. George's Bay and adjacent offshore areas support a diverse assemblage of marine mammals and sea turtles, including representatives of baleen whales (mysticetes), toothed whales (odontocetes), and pinnipeds. Species known or likely to occur include several baleen whales such as blue whale, fin whale, and North Atlantic right whale, as well as a variety of toothed whales and dolphins typical of Atlantic Canadian waters, and seal species including harbour, harp, hooded, and grey seals. Leatherback sea turtles may also occur seasonally in the area, particularly in offshore waters associated with foraging.

The distribution and occurrence of these species within St. George's Bay are influenced by factors such as water depth, prey availability, and oceanographic conditions, with the outer portions of the bay and adjacent continental shelf providing particularly important habitat. Several marine mammal and sea turtle species that may occur in the area are listed under the federal *Species at Risk Act* (SARA), including blue whale, fin whale, North Atlantic right whale, and leatherback sea turtle. These species utilize the broader region for feeding, migration, and seasonal movement.

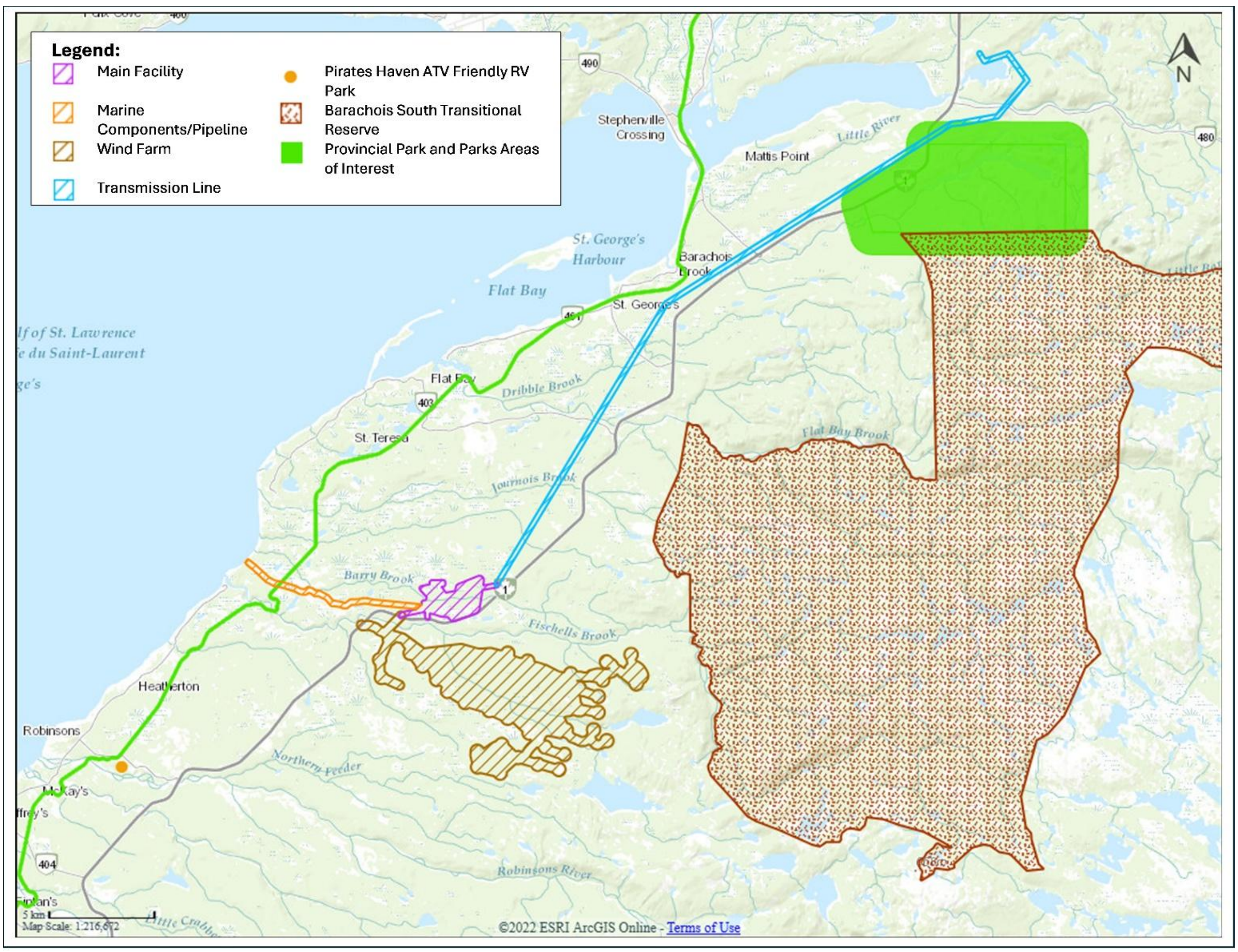
For further details (including references) see:
Appendix F: Section 4.0

3.1.8 Protected and Special Areas

Western Newfoundland contains a number of protected and special areas that have been established through various conservation and planning processes to protect important environmental features, functions and values. The Government of Newfoundland and Labrador manages more than 50 protected areas, including provincial parks, ecological reserves and wilderness reserves, under legislation such as the *Provincial Parks Act* and the *Wilderness and Ecological Reserves Act*.

The T'Railway Provincial Park is the closest such area to the Project (Figure 3.14) following the former Newfoundland Railway corridor for nearly 900 km across the Island and supporting recreational activities such as hiking and others. The Project's proposed pipeline corridor would cross this linear park near the coast. Additionally, Barachois Pond Provincial Park is located to the north of the Project. While the proposed main facility and wind farm components are located more than 30 km away, the existing transmission line corridor runs adjacent to the park boundary. The Barachois South Transitional Reserve, located approximately 2.5 km east of the proposed wind farm, represents an ecologically important transition zone between the Western Newfoundland Forest Ecoregion and the Long Range Barrens Ecoregion. Additional protected and special areas occur within the broader region, including the Sandy Point Nature Reserve, which is associated with coastal habitats and waterfowl use, and other provincially identified Sensitive Wildlife Areas.

Figure 3.14: Protected and Special Areas



Private conservation lands also occur in the region, including the Grasses Nature Reserve, located approximately 13 km from the Project, while smaller locally managed recreational properties such as Pirate's Haven ATV-Friendly RV Park near Robinsons provide recreational opportunities in the area. Together, these areas form part of a broader network of protected and special lands that contribute to ecological conservation and recreation across western Newfoundland.

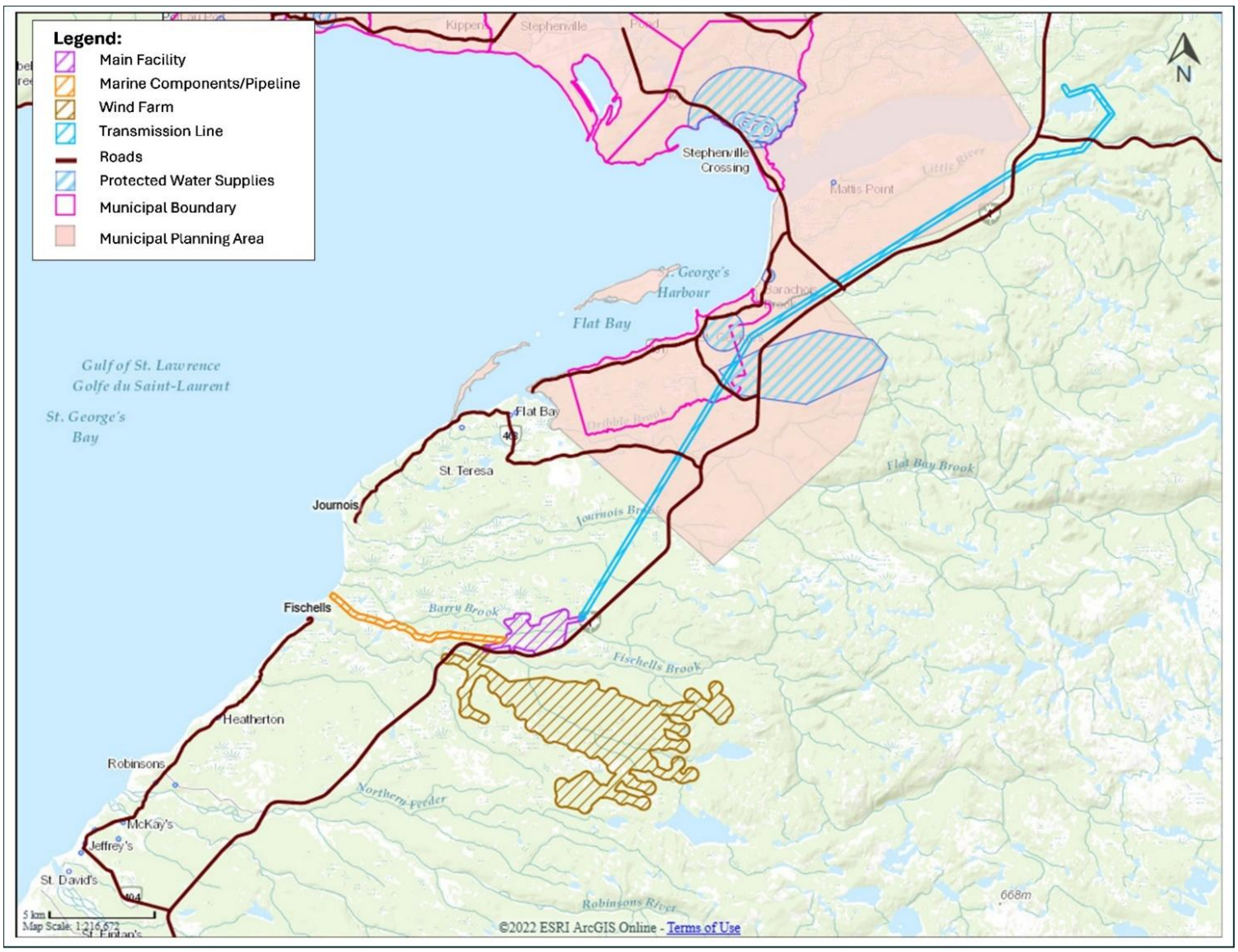
For further details (including references) see:

Appendix C: Section 4.2
Appendix F: Section 4.0

3.2 Socioeconomic Environment

The Project will be located in the St. George's Bay area of western Newfoundland, immediately adjacent to the Trans-Canada Highway between the turn off to Flat Bay Road (Route 403) and Route 404 that leads to Robinson's and which provides access northwards along to the coast to Heatherton and Fischells and south to McKay's, Jeffrey's and beyond (Figure 3.15).

Figure 3.15: Local Region / Communities



3.2.1 People and Communities

The Bay St. George region is comprised of a number of coastal and inland communities that developed historically around fishing, forestry, transportation, and more recently tourism and service industries. The communities closest to the Project area are located along the southeastern shores of the Bay St. George region (Figure 3.15).

These communities are connected by the Trans-Canada Highway and local coastal roads and form part of a network of small settlements that rely on regional services throughout the larger Bay St. George area. Additional nearby communities include the Town of St. George's, located along the southern shore of the bay, and Stephenville Crossing, situated along the lower reaches of the St. George's River. The largest population and service centre in the region is Stephenville, located on the north side of Bay St. George approximately 30-40 km from the Project area. Stephenville functions as the main commercial and service hub for the region and contains key infrastructure such as healthcare facilities, educational institutions and a range of retail and government services that support surrounding communities throughout southwestern Newfoundland.

The socioeconomic environment is described using Statistics Canada's Census Consolidated Subdivisions (CCSs), where CCS 4B encompasses the Bay St. George South communities of Cartyville, Heatherton, Highlands, Jeffrey's, Loch Leven, Maidstone, McKay's, Robinsons, St. David's, and St. Fintan's. CCS 4C includes the communities of Barachois Brook, Flat Bay, Journois, St. Teresa, and Mattis Point. The Towns of St. George's and Stephenville are also included. In 2021, the combined population of CCS 4B, CCS 4C, St. George's, and Stephenville was 9,406, representing a 3.4% decline since 2016. Over the same period, the total population of Newfoundland and Labrador increased by 1.8%. Stephenville accounted for the majority of the population of the region, representing 69.5% (6,540 people) of the total. Approximately 3,970 individuals (42.2%) identified as Indigenous - higher than the provincial average of 9.1%.

Based on the 2021–2022 Canadian Community Health Survey, about 55.7% of residents in the Western Health Region reported their health as very good or excellent, compared to 56.2% provincially, and 83.8% reported having a regular healthcare provider. Measures of mental health and well-being are also comparable, with 61.7% reporting very good or excellent mental health, 90.4% reporting life satisfaction and a relatively strong sense of community belonging (83%). Some chronic health conditions are, however, somewhat more prevalent in the region, including arthritis (31.9%), diabetes (11.4%) and high blood pressure (29.1%), compared with slightly lower provincial rates. Lifestyle indicators show similar rates of heavy alcohol consumption (23.8%) to the provincial average, while smoking rates are marginally higher in this region (15.8%) compared to the province (14.9%). In the Western Health Region, health care is provided through facilities such as Western Memorial Hospital in Corner Brook and Sir Thomas Roddick Hospital in Stephenville, supported by the Bay St. George Long Term Care Centre and several primary care clinics.

Communities in the Bay St. George region are supported by a range of local and regional infrastructure and services. Housing is comprised primarily of single-detached, owner-occupied homes. Emergency services are provided by the Royal Canadian Mounted Police (RCMP), municipal fire departments, and regional ambulance services. Municipal water, sewer and waste management systems serve larger communities, with rural residents typically relying on private wells and septic systems. The region is also served by several K–12 schools and the College of the North Atlantic Bay St. George campus in Stephenville, and the Grenfell Campus of Memorial University of Newfoundland in Corner Brook. Transportation infrastructure includes the Port of Stephenville, with air service primarily through Deer Lake Regional Airport.

For further details (including references) see:

Appendix C: Section 4.1

3.2.2 Land and Resource Use

Current land and resource use in the region includes a variety of including municipal, commercial, recreational and traditional activities.

3.2.2.1 Municipal and Commercial Use

The Project itself is not located within or close to any community, and is well outside any municipal boundaries and planning areas (Figure 3.16). The Trans-Canada Highway (TCH) itself is designated as a protected road corridor, meaning that development and new access points adjacent to the highway are controlled.

The Project area is located primarily on provincial Crown land administered by the Department of Forestry, Agriculture and Lands under the *Lands Act*. There are various types of land designations and ownership in the region, including Crown titles and applications, reserve land, cottage development areas and planning areas, and others (Figure 3.16). Crown land in the region is used for a variety of developments and activities. Commercial land use in the region surrounding the Project includes mineral exploration, quarrying, forestry, and some agricultural activity. Several mineral claims and exploration tenures occur in the broader area, although the Project does not overlap any existing mining developments or leases, surface leases, oil wells, or quarry permits in the region (Figure 3.17). The Project area lies within Forest Management District 14 (Zone 6) and overlaps forestry land tenures held by the provincial Crown and by industrial timber licensees, as well as several designated domestic wood harvesting areas. The Project area also overlaps a number of identified agricultural areas, domestic wood cutting areas, and timber limits in the region (Figure 3.18), although no registered farms are located immediately within the Project's main facility or wind farm areas.

While there are no licensed outfitters located directly within the Project area itself, several operate in the surrounding region. The closest is Moose Creek Lodge, located approximately 1.5 km from the proposed wind farm, which offers guided hunting and angling opportunities for species such as moose, woodland caribou, black bear, brook trout, and Atlantic salmon. A number of other outfitters are located between 10 and 15 km from the Project area (Figure 3.16).

3.2.2.2 Recreational and Traditional Use

A range of other recreational and traditional land and resource use activities also occur throughout the broader Bay St. George region, reflecting the importance of local access to Crown lands and natural resources. These include hunting, trapping, fishing, recreational cabin use, domestic wood cutting, boating, berry picking and general outdoor recreation. The Project area overlaps several established wildlife management areas including Moose Management Area 8 (St. George's), Black Bear Management Area 201 (Western), Caribou Management Area 61 (La Poile), and Furbearer Zones 9 and 10, as well as small game management areas for species such as ptarmigan, grouse, snowshoe hare and migratory game birds. While the broader landscape supports a range of resource use and recreational activities, available information and public engagement undertaken for the Project do not indicate that the Project site itself is a core or heavily used area for local land and resource use activities.

In summary, and as illustrated in Figures 3.16 to 3.18, the Project Area:

- Does not overlap with any municipal boundaries, planning areas or water supply areas in the region, nor are there any known groundwater users or active water use licenses.

- Does not overlap (main facility and wind farm) with any existing crown titles for land in the region. The preliminary corridor for the proposed underground seawater intake / disposal pipeline intersects with several crown titles and/or applications for same.

- Is adjacent to a designated cottage planning area located immediately to the south, and is at least 1.5 km from any existing, licensed outfitting camp in the region.

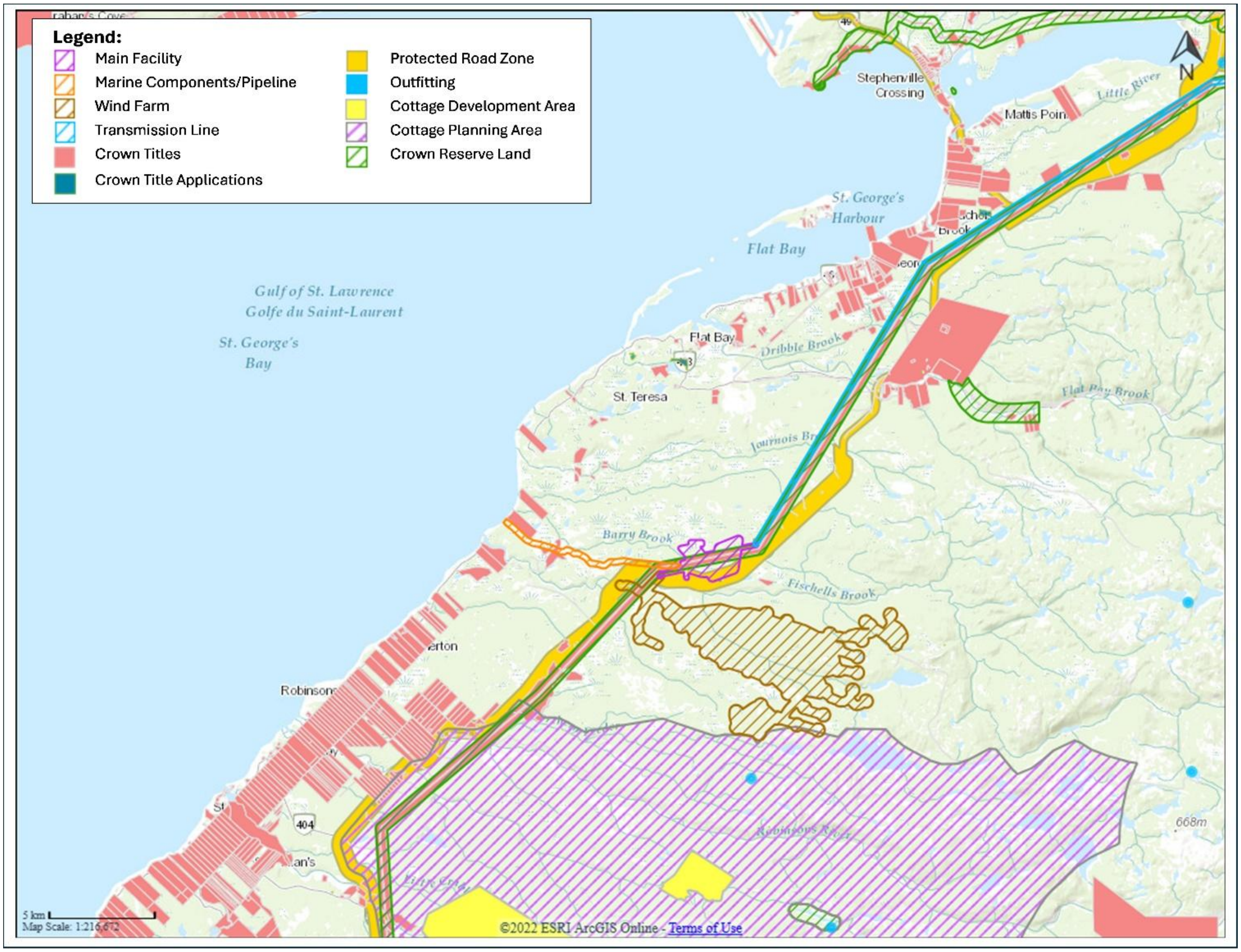
- Does not overlap any existing mining developments or leases, surface leases, oil wells, or quarry permits in the region.

- Overlaps with a number of identified agricultural areas, domestic wood cutting areas and timber limits in the region.

For further details (including references) see:

Appendix C: Section 4.2

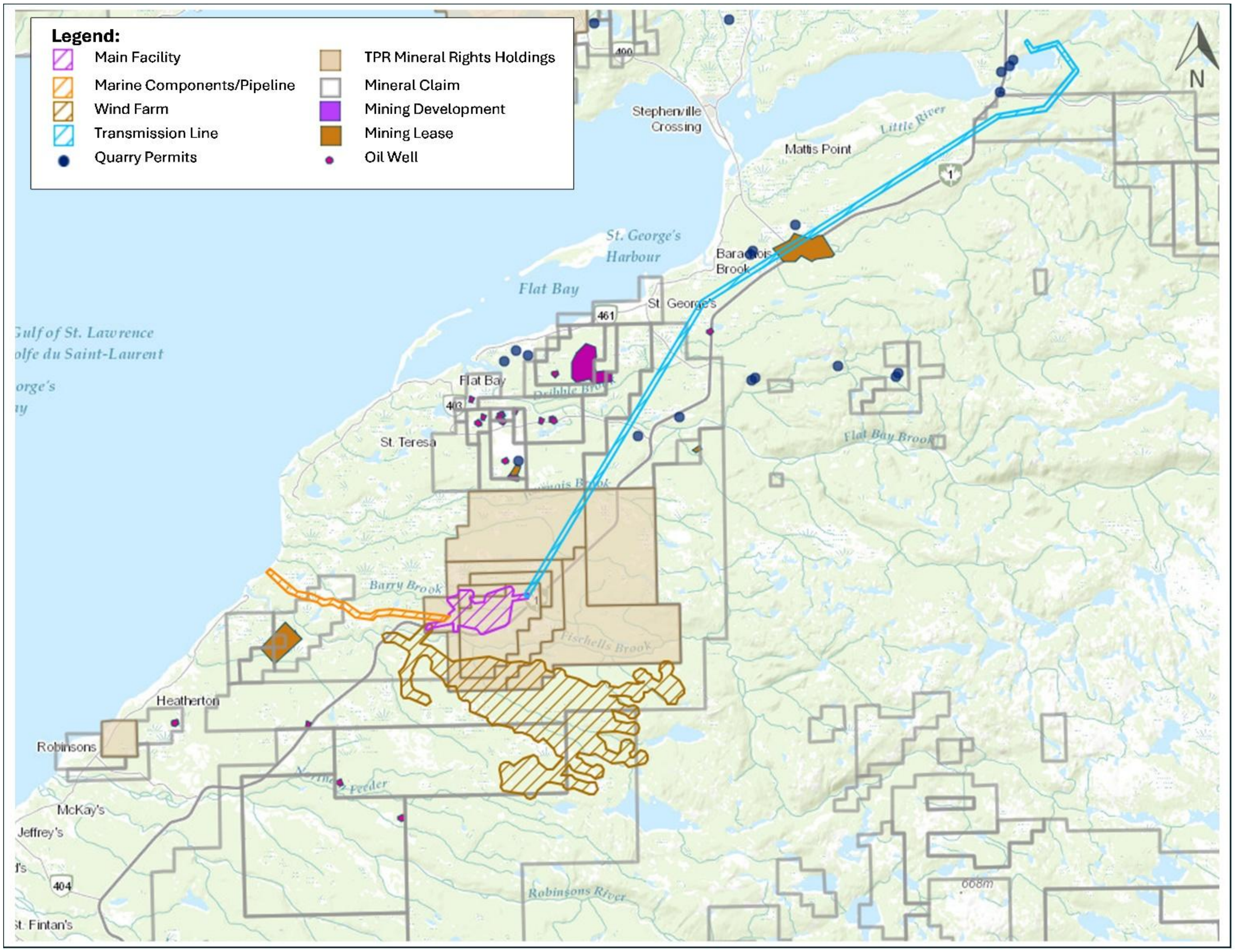
Figure 3.16: Land Use and Ownership



The Newfoundland and Labrador Geodetic Network is the provincial network of precisely surveyed horizontal and vertical control points (survey monuments, benchmarks, and continuously operating reference stations) that provides the spatial reference framework for surveying, mapping, engineering, construction and land administration activities throughout the province.

Currently, there are no identified monuments located within the boundaries of the Project Area. The closest monument (ID935001) to the proposed main facility is approximately 7 km to the north, and from the pipeline facility the closest monuments are near Berry Head (84G4157) and Journois (84G4156) each approximately 4 km away. There are no identified monuments near the proposed wind farm (NL Geodetic Network 2026).

Figure 3.17: Mining, Quarrying and Mineral Exploration

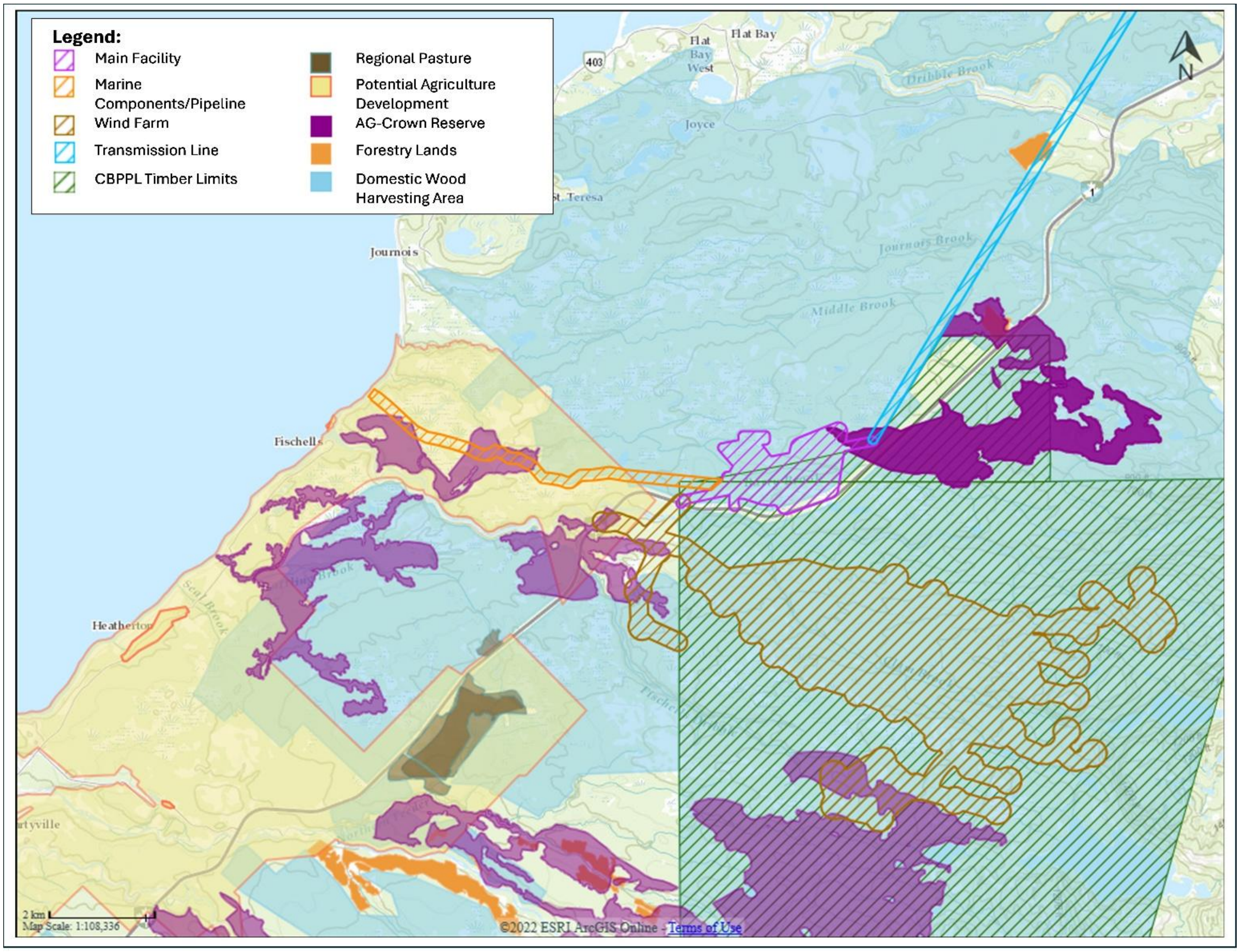


3.2.3 Historic Resources

Historic resources are works of nature or of humans that are primarily of value for their archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest, which may include archaeological, prehistoric, historic or natural sites, structures or objects. Such resources are identified and protected under the NL *Historic Resources Act* (1990) administered by the Provincial Archaeology Office (PAO) of the Newfoundland and Labrador Department of Tourism, Culture, Arts and Recreation.

There are no known historic resources located within or near the Project Area itself (PAO 2024), with the closest such site being approximately 3.5 km to the north.

Figure 3.18: Forestry and Agriculture



3.2.4 Fisheries and Other Ocean Uses

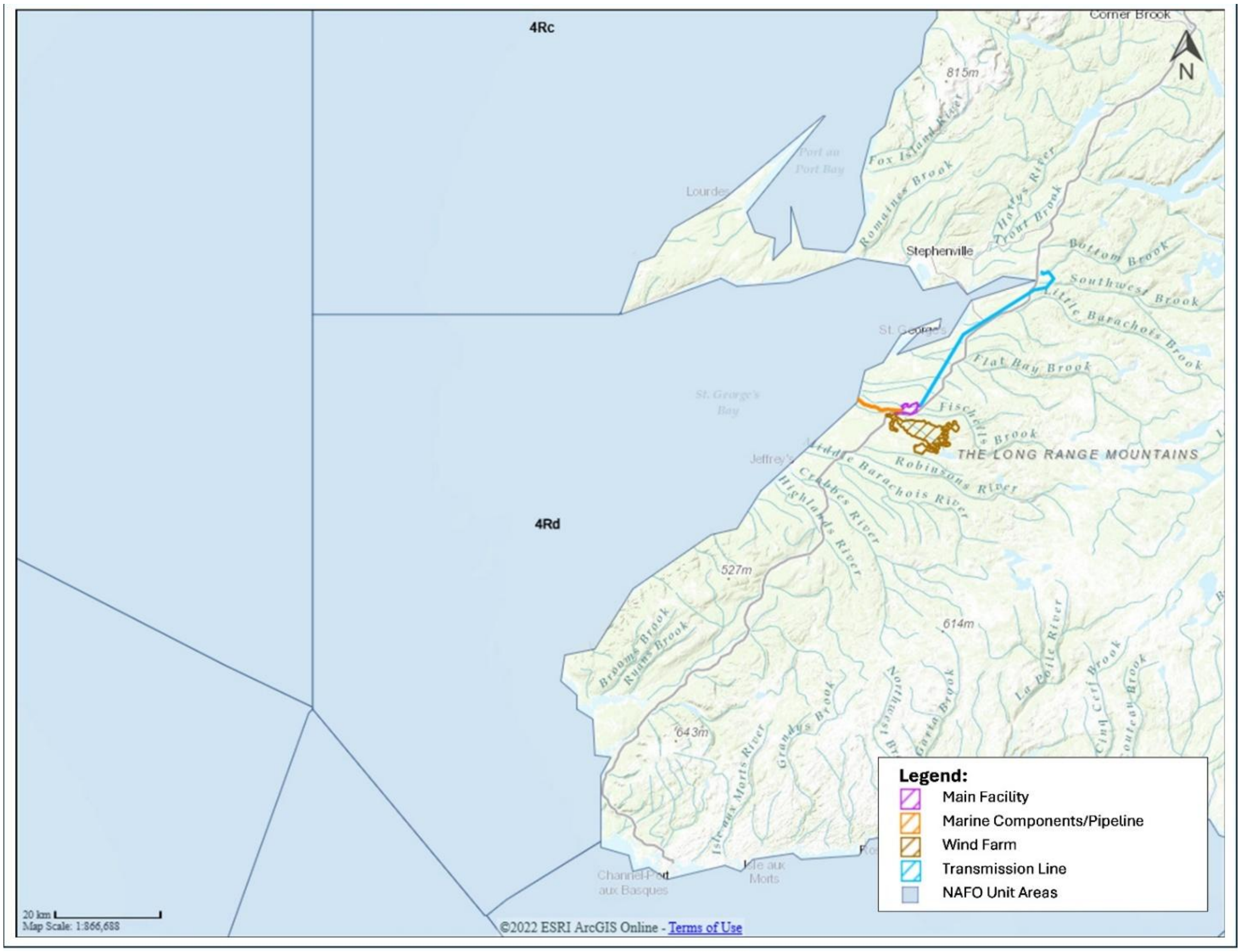
St. George's Bay supports a wide range of marine activities, including commercial, Indigenous, and recreational fisheries, aquaculture, marine transportation, tourism and recreation.

3.2.4.1 Commercial Fisheries

Fisheries are an integral component of the socioeconomic environment of Western Newfoundland and other parts of the province, including the various communities that extend along the coastline adjacent to the proposed Project location and elsewhere. The following sections provide an overview of fisheries in the Study Area, with a key focus on commercial fisheries, as well as describing any aquaculture and any known Indigenous and recreational fishing activity in or near the region.

For administrative purposes, the Northwest Atlantic is divided into a series of NAFO Divisions, Subdivisions and Unit Areas, and although fish harvesting activities and fisheries management responsibilities do extend across these areas and their boundaries, they are generally used to regulate and manage fishing activity. The marine areas along the western coastline of the Island of Newfoundland comprise NAFO Division 4R, with St. George's Bay itself comprising NAFO Unit Area 4Rd (Figure 3.19). The mapping of commercial fishing activity provided in this section is based on geospatial data provided by DFO Statistical Services for the period 2012-2021.

Figure 3.19: NAFO Unit Area 4Rd



Current commercial fisheries within St. George's Bay include those for groundfish, shellfish and pelagic species. Based on available fisheries data and TPR's engagement with local fishers and fisheries organizations (Chapter 4), the following species have been identified as being the subject of important, current fisheries in this area (Table 3.1). Of these, lobster and snow crab have been identified by local fishers as two of the main fisheries occurring in the region in terms of quantity (weight) and landed value.

Table 3-1: Commercial Fish Species Harvested in NAFO Unit Area 4Rd

Species Group	Species
Shellfish	• Snow crab • Northern shrimp

Species Group	Species
	• Scallop • Lobster
Groundfish	• Atlantic cod • Atlantic halibut • Greenland halibut • Hake • Redfish • Skate • Witch flounder
Pelagic	• Herring • Mackerel (currently under moratorium) • Capelin

St. George's Bay comprises Lobster Fishing Area (LFA) 13A, where lobsters are fished close to shore in depths ranging from 1 to 30 m, primarily with traditional wooden lobster traps. In 2023, there were approximately 21,500 commercial fish harvesters licensed to fish lobster in Newfoundland and Labrador, which included commercial communal lobster licences issued to Indigenous organizations (DFO 2021). The lobster fishing season in LFA 13A is typically eight to 10 weeks in duration, usually from mid-April to late June or early July but with the bulk of the catch typically caught in May and June.

Although information on specific lobster landing locations is not publicly disclosed by DFO, available data indicate that the fishery in LFA 13A is a very active and economically important one. In 2016, approximately 90% of lobster licences in LFA 13A were active, and lobster accounted for more than 60% of the total landed value of harvested species in the area (DFO 2021). Provincial assessments also show that lobster landings reached their highest levels in a century in 2022, with warming waters in Atlantic Canada contributing to a northward shift of lobster populations into Newfoundland and Labrador waters (DFO 2025a). Since the early 2000s, the west coast fishery has accounted for roughly half of all reported lobster landings in the province, and landings in LFAs 13A and 13B increased by about 60% between 2015 and 2022, reaching 680 t and 1,160 t respectively (Coughlan et al. 2025).

Snow crab remains one of the most important commercial fisheries in Newfoundland and Labrador, particularly following the collapse of groundfish stocks in the 1990s. The fishery in NAFO Division 4R is seasonal, occurring primarily from April to June, with most harvesting taking place between May and July using baited crab pots set in strings and marked by buoys. In the most recent fisheries management decision, DFO increased the overall quota for Division 4R by about 23%, from 736 tonnes in 2024 to 903 tonnes in 2025, indicating relatively healthy stock conditions (DFO 2025). In 2025, approximately 49 individual quotas were assigned in the Bay St. George region, and publicly available DFO geospatial data provide general insight into fishing patterns in the area between 2012 and 2021 for crab and other species (Figure 3.20 to 3.23).

A variety of fishing gear types are used to undertake commercial fishing activity in Bay St. George. Mobile gear, such as trawls and longlines, is actively moved through the water during fishing operations, while fixed gear, including traps, pots and gillnets, is set in place for a period of time before being retrieved (Figures 3.24 and 3.25)

Figure 3.20: Snow Crab Fishing Locations, 2012-2021

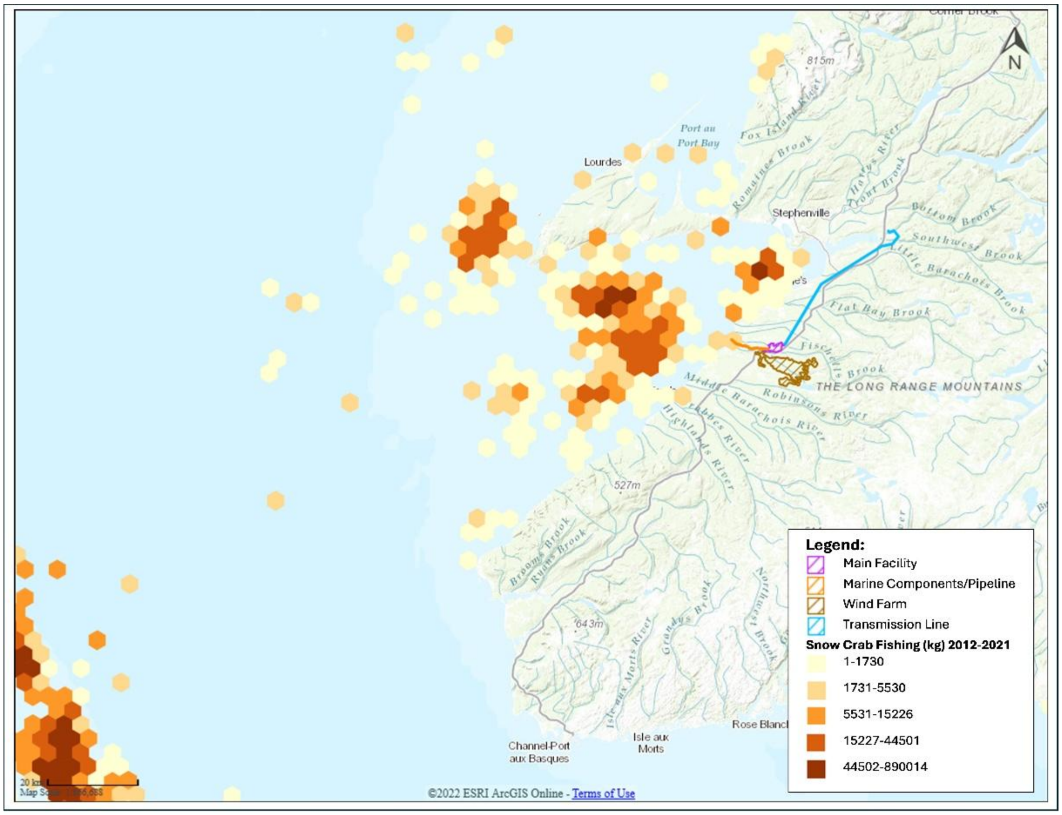


Figure 3.21: Atlantic Herring Fishing Locations, 2012-2021

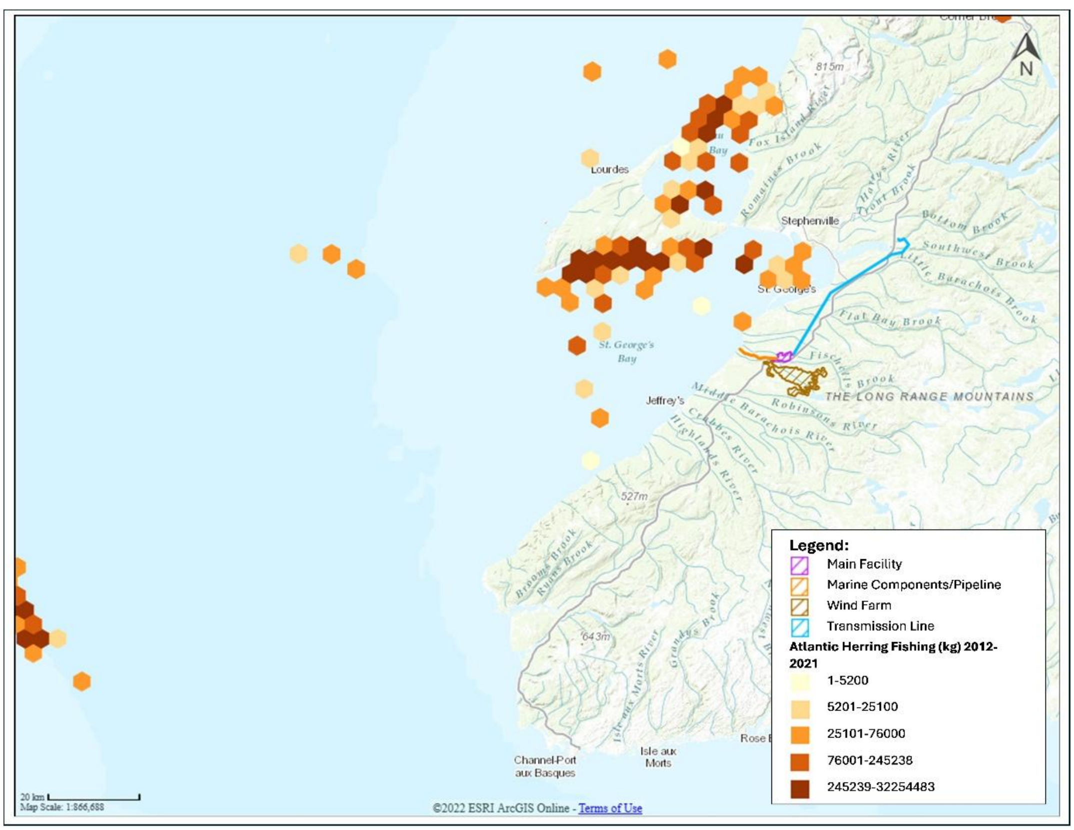


Figure 3.22: Capelin Fishing Locations, 2012-2021

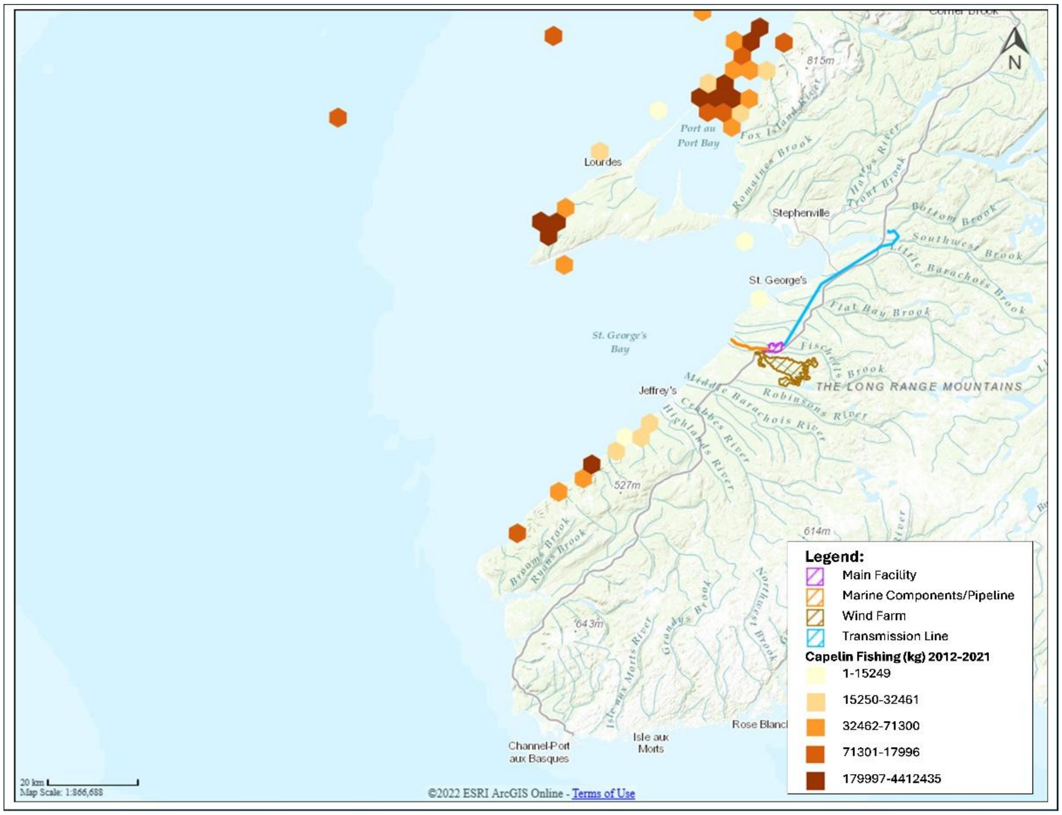


Figure 3.23: Atlantic Cod Fishing Locations, 2012-2021

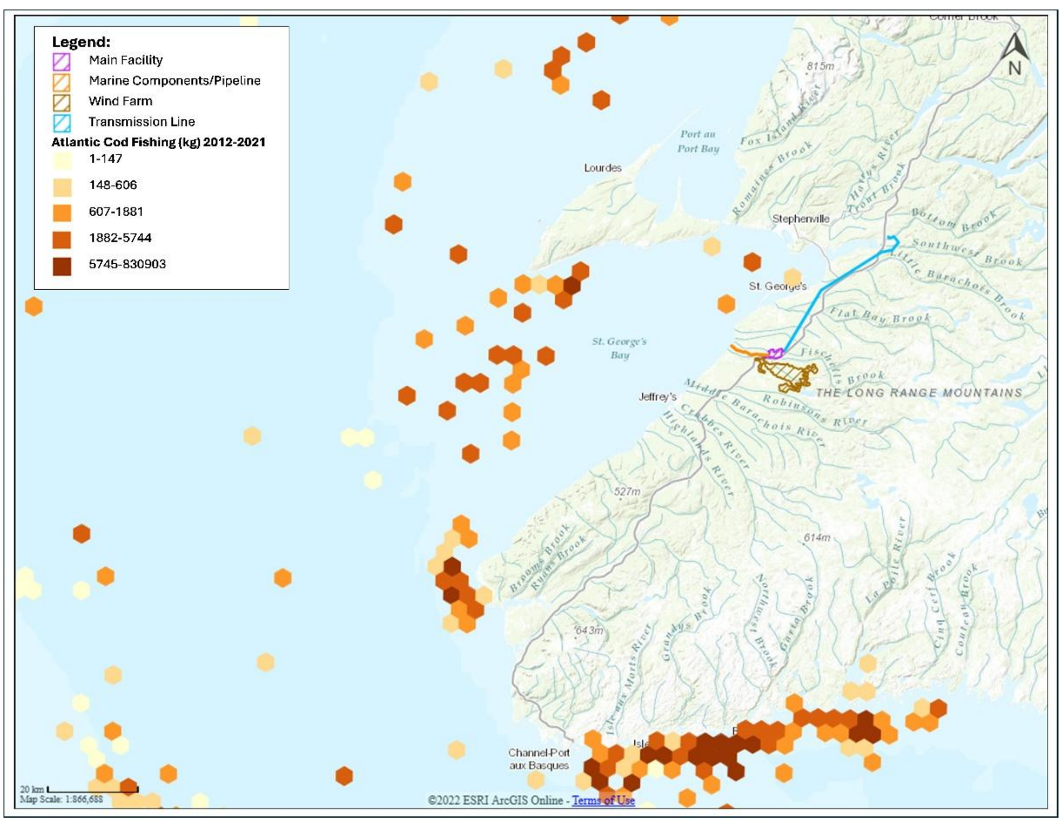


Figure 3.24: Mobile Gear Fishing Locations, 2012-2021

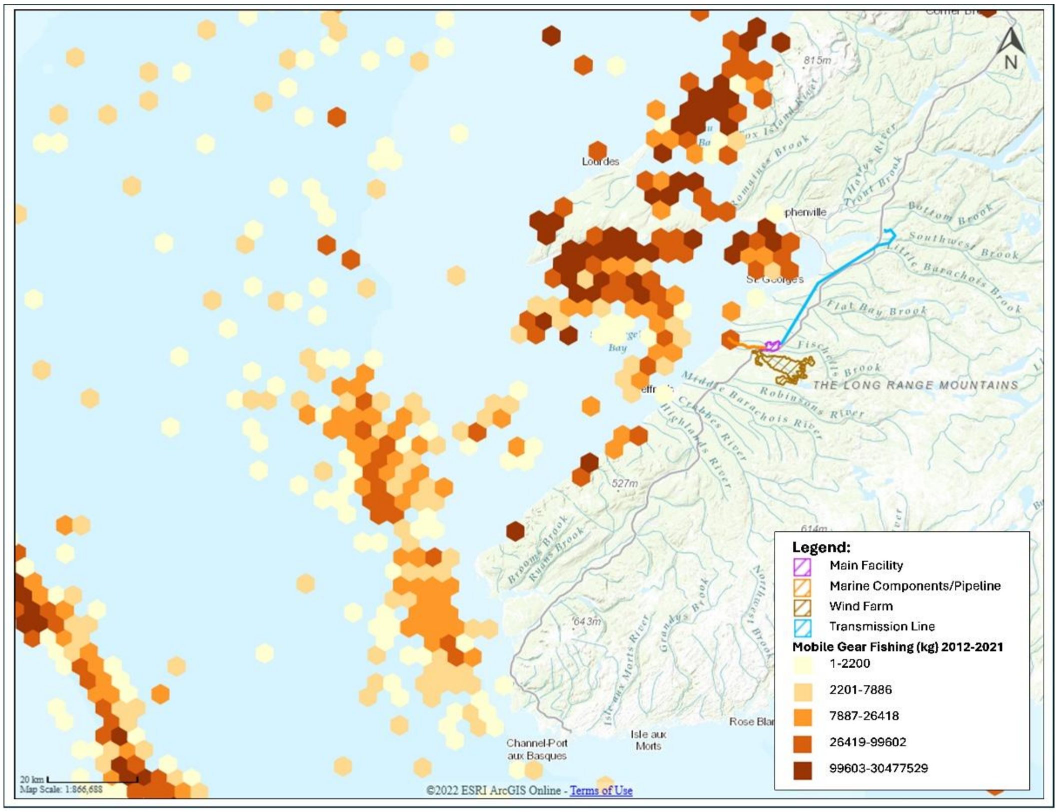
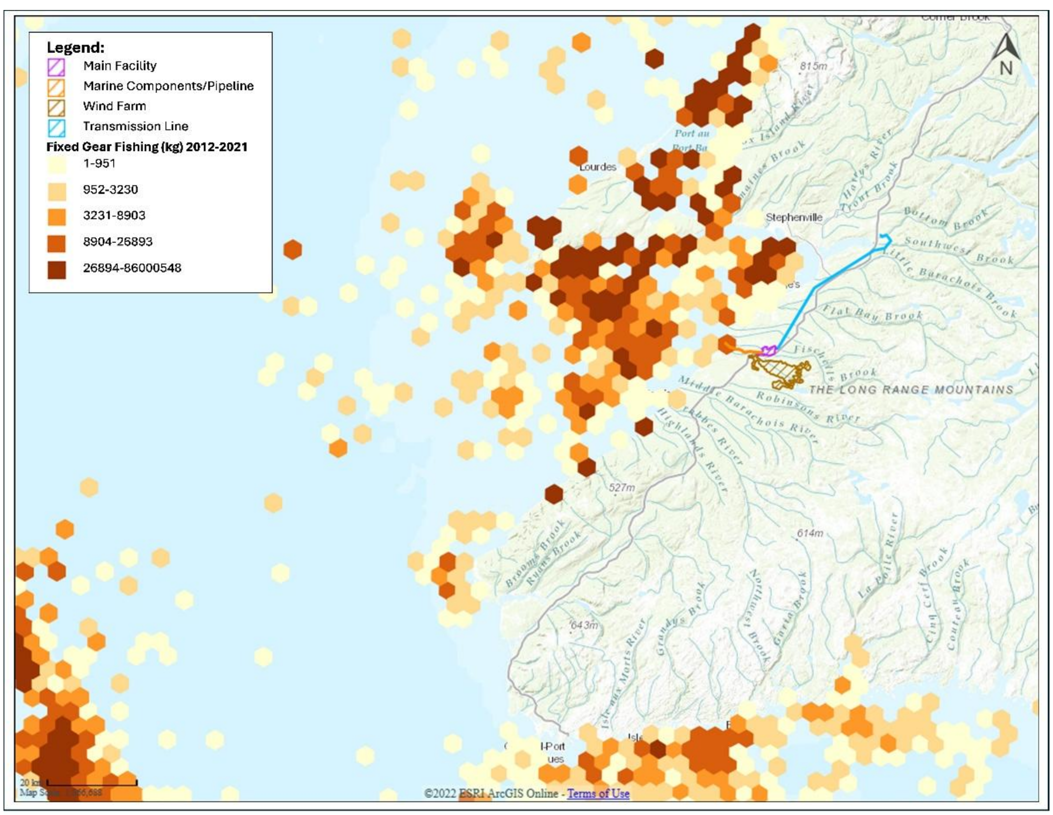


Figure 3.25: Fixed Gear Fishing Locations, 2012-2021



3.2.4.2 Indigenous Fisheries

Indigenous fisheries in the region occur primarily through commercial-communal licences and Food, Social, and Ceremonial (FSC) licences issued by the federal government. Commercial-communal licences allow Indigenous peoples to harvest and sell fish under the same management conditions as other commercial fisheries, including requirements related to seasons, gear types, and catch limits, and may be operated directly by Indigenous communities or leased to other operators on their behalf. FSC licences support subsistence harvesting for community use and do not permit the commercial sale of catch, although they may include certain conditions under the *Aboriginal Communal Fishing Licences Regulations*.

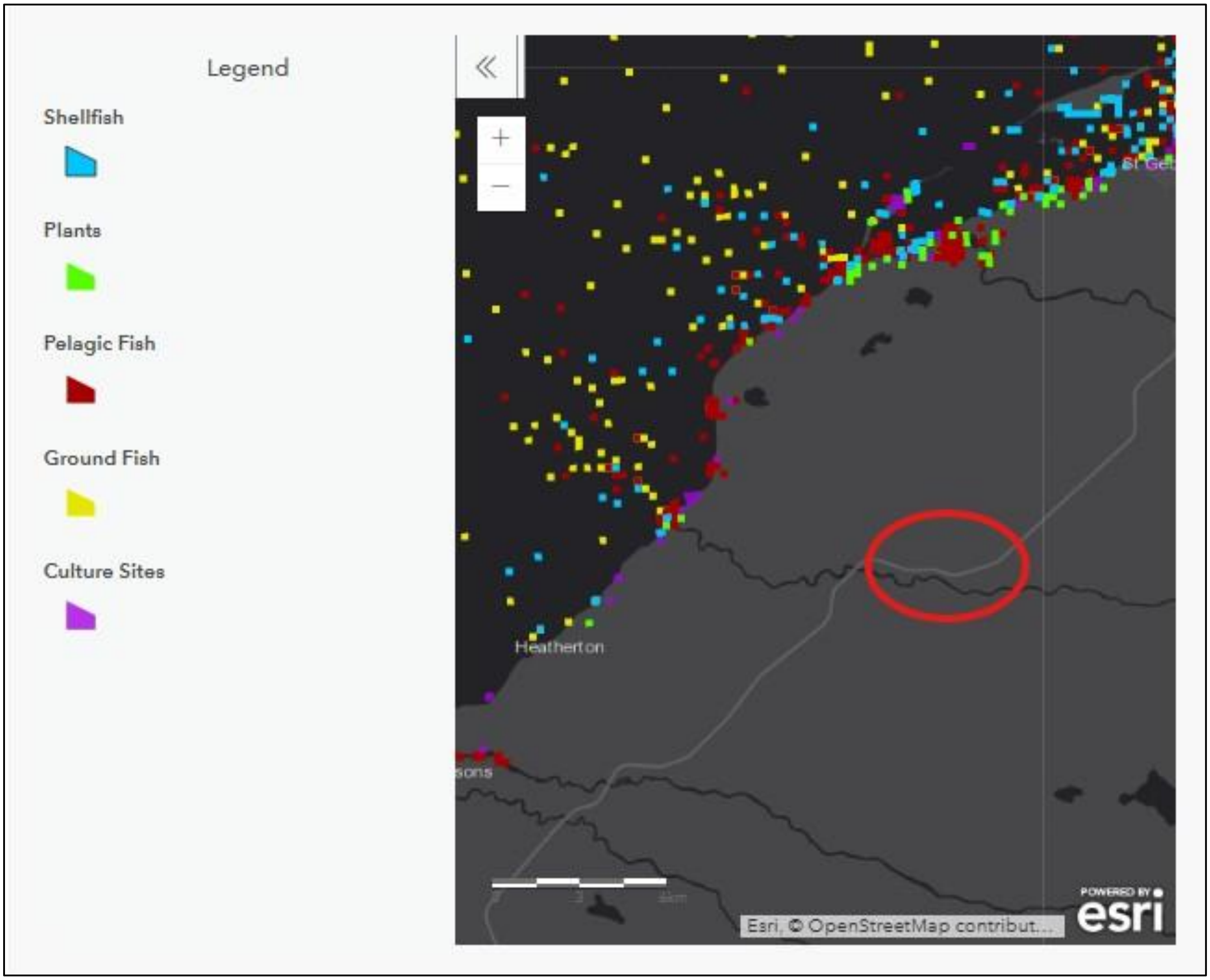
In the Bay St. George region, the primary Indigenous organization involved in fisheries is the Qalipu First Nation, which does not currently hold FSC licences for species in the area but has held or continues to hold commercial-communal fishing licences for various fisheries (Table 3.2).

Table 3-2: Commercial-Communal Licences held by the Qalipu First Nation

Species	Fisheries Management Areas / Quota Area
Groundfish	• NAFO Divisions: 3KL, 2J, 3Pn, 4RST, 2GHJ
Mackerel	• Mackerel Fishing Areas: 1-14(coastal Labrador, and eastern and western Newfoundland)
Herring	• Herring Fishing Areas: 3-8, 13, 14 (eastern and western Newfoundland)
Capelin	• Capelin Fishing Areas: 1-14 (coastal Labrador, and eastern, southern and western Newfoundland)
Shrimp	• Shrimp Fishing Area: 6 (northern Newfoundland)
Snow Crab	• Crab Fishing Areas: 3B, 4, 12, 12C, 12E and 12F (eastern and western Newfoundland)
Lobster	• Lobster Fishing Areas: 3, 13A, 13B (northeast Newfoundland, western Newfoundland)
Scallop	• Scallop Fishing Areas: 3, 4, 5, 6, 7, 8, 9 and 13; portion of Area 10 south of 47degrees North latitude; that portion of NAFO Divisions 3LNO outside the 200 mile limit
American Eel	• Area: Flat Bay West Lane to Point Bellard to Sandy Point (coastal). Flat Bay West Lane to Point Bellard to Jack Dodds Point (coastal). Sally's Island Point to Jack Dodd's Point to Freddy's Point (inland). Grand Codroy River, Eel Hole (inland). Fischells Brook, from scheduled river signs to caution boards (inland). Robinson's River, from scheduled river signs to caution boards, (inland). Robinson's River, Mica Pond (inland).
Smelt	• Area: All of Muddy Hole; Jack Dodd's Point- Flat Bay West onwards to Sandy Point (In NAFO Division 4R)
Source: Bangay et al (2021)	

The Qalipu First Nation also maintains an online Marine Atlas that provides regional-scale information on Indigenous marine harvesting activities and areas of cultural importance. The tool identifies general locations where harvesting has occurred for a number of marine resources, including shellfish, marine plants, groundfish, and pelagic species, as well as identified cultural use sites. Mapping from this atlas indicates that harvesting activity occurs within the broader St. George's Bay region (Figure 3.26).

Figure 3.26: Qalipu First Nation Marine Atlas – Fishing near Fischells River and in Bay St. George



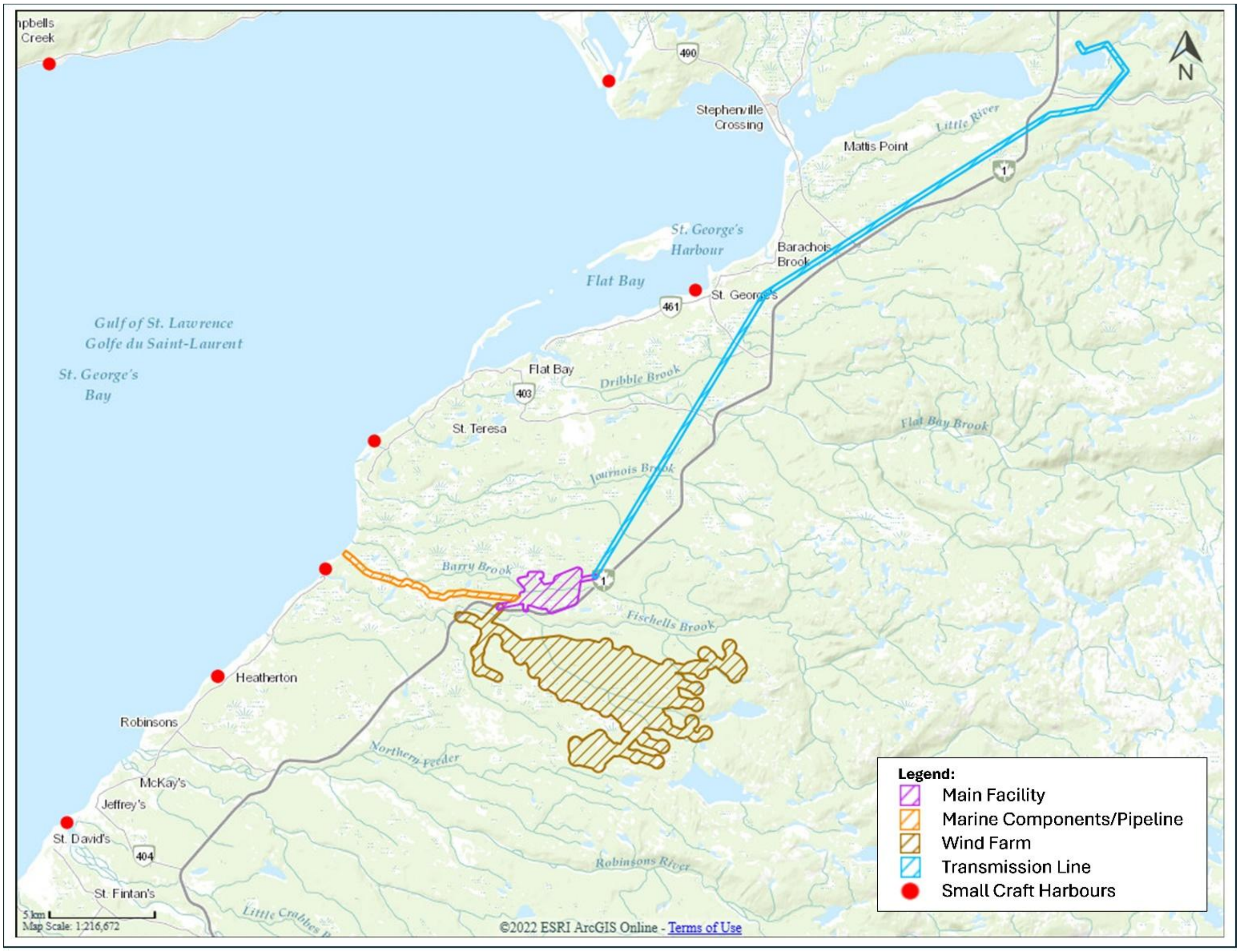
Source: QFN (nd)

Recent certification training for seal hunting, delivered in partnership with Fisheries and Oceans Canada, has resulted in an increase in certified Indigenous hunters, indicating that sealing is also an active and locally important Indigenous use of the marine environment.

3.2.4.3 Harbours

Small craft harbours are found throughout the Newfoundland and Labrador coastline and support commercial fishing, aquaculture and other commercial and recreational boating activities. These facilities are generally classified as: 1) core fishing harbours, which are critical to the fishing industry and managed by local harbour authorities; 2) non-core harbours, which support fishing and aquaculture but are not managed by harbour authorities; and 3) recreational harbours, which primarily serve recreational boating. Several small craft harbours occur along the southwest coast near the Project, including Fischells Harbour which is a core fishing harbour managed by the Harbour Authority of Bay St. George South. Additional nearby facilities include Heatherton Harbour (core harbour) to the south and Bank Head Cove (non-core harbour) to the north, with numerous other core and non-core harbours located around St. George's Bay (Figure 3.27).

Figure 3.27: Small Craft Harbours



3.2.4.4 Recreational Fishing and Hunting

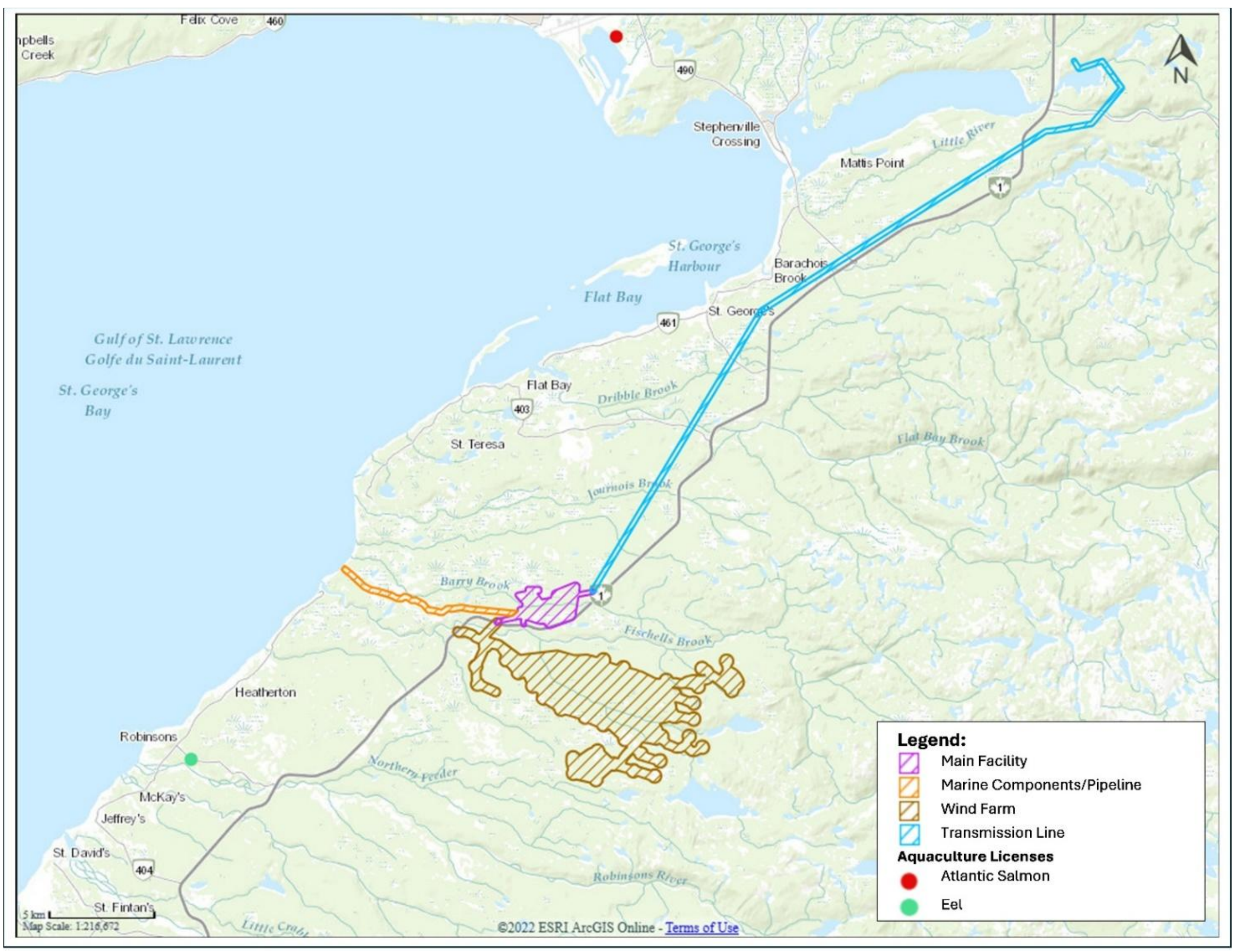
Recreational harvesting also occurs throughout the region in both marine and inland waters, including fishing for species such as trout, Arctic char, smelt, and Atlantic salmon, as well as the taking of shellfish such as scallops and mussels in coastal areas (DFO 2025b, 2025c).

One of the most important such activities is the recreational groundfish fishery, which takes place during designated periods in the summer and early fall (typically July to September) and allows residents and non-residents to harvest Atlantic cod under specific rules related to timing, gear, and catch limits (DFO 2025d). The region also supports an important recreational salmon fishery, which contributes to both local use and tourism, with several registered salmon rivers located along the southwest coast including the Fischells, Crabbs, Robinsons, Barachois, and Little Barachois rivers. Under current angling regulations, these rivers are classified as Class 2 salmon rivers, where anglers may retain one salmon per day and release up to three additional fish (DFO 2025c). In addition to fishing, residents and visitors also participate in seasonal harvesting of migratory birds, including waterfowl and murres, which has long been an important traditional and recreational activity in coastal and inland areas.

3.2.4.5 Aquaculture

Aquaculture is an important component of Newfoundland and Labrador's fishing sector and coastal economy, with the primary species being blue mussels, Atlantic salmon and steelhead trout. While aquaculture operations occur along parts of the west coast of Newfoundland, including the Port au Port Peninsula, there are no aquaculture sites located in the immediate vicinity of the Project area. The closest aquaculture facilities to the Project include an eel aquaculture operation operated by North Atlantic Aquaponics Ltd. near Jeffrey's and an Atlantic salmon smolt facility operated by Northern Harvest Smolt Ltd. in Stephenville (NLDFAA 2021). These represent the only known aquaculture operations currently operating within St. George's Bay (Figure 3.28).

Figure 3.28: Aquaculture Facilities



3.2.4.6 Other Marine Components and Activities

St. George's Bay lies adjacent to important regional shipping routes associated with the Gulf of St. Lawrence and the St. Lawrence Seaway. Most vessel traffic within the bay itself consists of commercial vessels primarily associated with operations at the Port of Stephenville and the Lower Cove Quarry on the southern portion of the Port au Port Peninsula.

Tourism is an important industry along the west coast of Newfoundland, although marine tourism activity within St. George's Bay is relatively limited at present. There are currently no harbours within St. George's Bay that regularly host cruise ships or organized marine ecotourism operations.

There are no known subsea communication or power cables within St. George's Bay including in the immediate vicinity of the Project. The closest identified subsea cable is owned by Bell Canada, with a landing point located in Codroy southwest of the bay (Subsea Cable Map 2026).

3.2.5 Economy, Employment and Business

The St. George's Bay region of western Newfoundland supports a diverse, primarily rural economy that combines traditional resource-based activities with service and tourism sectors, along with emerging industrial activities and other economic opportunities.

In 2021, In 2021, the labour force comprised 445 individuals in CCS 4B, 180 in CCS 4C, 420 in St. George's, and 2,565 in Stephenville, compared to a provincial total of 243,330. Labour force participation rates were notably lower in CCS 4B (42%), CCS 4C (32.4%), St. George's (40.2%), and Stephenville (46.7%) relative to the NL average of 56.1% (Statistics Canada 2023). Across most areas, participation rates were higher among men+ than women+; however, this pattern was reversed in CCS 4B. Employment in the region is concentrated in sales and service occupations and in education, law, social, community, and government services, along with some employment in trades and transport, health services, and business or administrative occupations.

For further details (including references) see:

Appendix C: Section 4.1.3

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4.0 ENGAGEMENT

Public, Indigenous and stakeholder engagement is an integral component of the EA process, and an important aspect of TPR's corporate philosophy and its approach to the planning and future implementation of this Project. The Newfoundland and Labrador EA process provides considerable opportunity for interested parties to receive information and ask questions, and to bring their views forward for consideration in an assessment and eventual decision-making. This includes engagement by the proponent and by government at various stages of the process.

TPR is committed to full and open engagement with all interested parties, through meaningful dialogue with people and organizations that have questions or perspectives about the Project and its potential effects. The company's engagement initiatives began in the very early stages of Project planning and have been on-going since that time, and have included a variety of approaches to ensure that all parties have the opportunity to participate. This has included numerous meetings with local communities, Indigenous and stakeholder organizations and the interested public in advance of preparing and submitting this EA Registration . The goal has been to provide accurate, timely and meaningful information and regular Project updates, allowing participants to ask questions, identify any issues and concerns, and share knowledge and perspectives about the Project, its surrounding environment and its potential effects (both positive and negative). A summary of the nature and outcomes of these engagement activities is provided in the sections that follow, along with an indication of where and how the various questions and issues raised are addressed in this EA Registration.

As described in Chapter 2, the Project remains at an early and therefore somewhat flexible stage of design, and TPR continues to evaluate options for several key components, particularly those related to seawater supply and saltwater disposal (Section 2.3.2) Ongoing engineering work is focused on assessing the technical and economic feasibility of these options, while also incorporating input from the public, including their questions, concerns and preferences. This engagement process will continue as Project planning and design move forward, and throughout the future construction and operations phases of the development.

4.1 Government Engagement

TPR recognizes that various provincial and federal government departments and agencies have responsibilities or interests related to the proposed Project and its potential environmental effects, stemming from relevant legislation, regulations, policies, and other applicable mandates and programs. To date, TPR has met at least once - and in many cases, multiple times - with the following government organizations:

Provincial

- Office of the Premier
- EA Division, Department of Environment, Conservation and Climate Change
- Climate Change Branch, Department of Environment, Conservation and Climate Change

- Department of Fisheries and Aquaculture
- Department of Government Services
- Energy Policy Section, Department of Energy and Mines
- Mines Branch, Department of Energy and Mines
- MHA Burgeo - LaPoile
- MHA Cartright - L'Anse au Clair
- MHA Conception Bay East - Bell Island
- MHA Humber - Gros Morne (Premier)
- MHA St. Georges- Stephenville East
- MHA Stephenville - Port au Port

Federal

- Atlantic Canada Opportunities Agency
- Cabinet Committee on Regulatory Efficiency
- Environment and Climate Change Canada
- Export Development Canada
- Fisheries and Oceans Canada – NL Region
- Global Affairs Canada - Canadian Trade Commissioner Service
- Impact Assessment Agency of Canada – Atlantic Region
- Innovation, Science and Economic Development Canada
- Natural Resources Canada
- MP Long Range Mountains
- MP St. John's South, Mount Pearl

TPR’s engagement with government departments and agencies has also included discussions and information sharing through various other means (such as email and telephone conversations), the results of which have also been considered and reflected in this EA Registration document.

TPR’s discussions with government to date have focussed on providing Project information and updates, discussing its potential EA requirements and other relevant approvals and regulatory considerations, including the larger legislative and policy contexts for this type of development in the province, and on the potential environmental and socioeconomic benefits of the Project for Newfoundland and Labrador.

4.2 Indigenous Engagement

TPR’s engagement program has also involved meetings and other discussions with various Indigenous organizations in Newfoundland and Labrador, including:

- Qalipu First Nation
- Flat Bay Mi’kmaq Band

- St. George's Indian Band
- Three Rivers Mi'kmaq Band
- Four Directions Development Corporation
- Four Directions Mi'kmaw Services
- Qalipu Holdings (Qalipu Development Corporation)

While the proposed Project does not overlap or interact directly with Indigenous lands, TPR recognizes that Indigenous people reside in the local communities and undertake various commercial, recreational / traditional activities throughout the region. They also have important interests related to the potential environmental and socioeconomic effects and benefits of the Project, which for the latter includes an interest in finding ways to maximize participation in and benefits from its future construction and operations phases.

In addition to those that TPR has met directly with, as listed above, other Indigenous people and organizations have been sent regular Project updates as part of the company's engagement mailing list.

4.3 Community and Stakeholder Engagement

Although the Project does not occur directly within any community and is located at some distance from any municipal boundary or planning area (Section 3.2.1), there are communities located throughout the surrounding region, as well as other industry, environmental, social and economic organizations that have an interest in the Project and its potential effects and benefits.

TPR's engagement program has included meetings and discussions with the following organizations:

Communities

- Bay St. George South Local Service District
- Flat Bay East Local Service District
- Mattis Point Local Service District
- Barachois Brook Local Service District
- Town of St. George's
- Town of Stephenville
- Town of Stephenville Crossing

Organizations

- Atlantic Canada Regional Council of Carpenters, Millwrights and Allied Workers
- Atlas Salt
- Bay St. George Chamber of Commerce
- Bay St. George South Area Development Association
- Canadian Hydrogen Association
- Canadian Nuclear Laboratories

- Canadian Standards Association Group
- CBDC Long Range Community Business Development Corporation
- College of the North Atlantic
- Corner Brook Pulp and Paper
- Econext
- Energy NL
- Energy Safety Canada
- Energy Storage Canada
- EnviroWatch NL
- Fisheries, Food and Allied Workers Union (FFAW-Unifor)
- German Chamber of Commerce
- Go Western Newfoundland
- Hydrogen Council
- Hydrogen Europe
- Hydrogène Québec
- HyStock - Gasunie
- Indian Head Solutions
- Indigenous Tourism Association of Canada
- Invest in Canada
- Marine Renewables Canada
- Memorial University of Newfoundland
- Moose Lodge / Mountain Top Outfitters
- Net Zero Atlantic
- Newfoundland and Labrador Construction Association
- Newfoundland and Labrador Organization of Women Entrepreneurs
- Newfoundland and Labrador Outfitters Association
- Pirates Haven Adventures
- ProtectNL
- Steel Mountain Hunting and Steel Mountain Glamping
- Trades NL
- Western Environment Centre
- Women in Resource Development Corporation
- World Energy GH2

TPR's discussions with local communities and stakeholder groups have focussed on providing Project information and updates, and on the potential socioeconomic benefits of the Project and how these can be maximized at the local, regional and provincial scale.

TPR also held a meeting with local fishers on March 27, 2026, to provide an overview of the Project, including its proposed and potential marine components and activities, as well as to gather information on current fisheries and other marine activities in the area, any potential issues and interactions and how these might be addressed. This meeting took place at the Day's Inn in Stephenville, and involved a morning session that included a presentation by TPR and associated discussion / question-and-answer session. FFAW-Unifor helped distribute the meeting invitation to its local members, which was also distributed through social media and posted on-line. Several fishing industry representatives attended this meeting.

In addition to those groups that TPR has met directly with, as listed above, other organizations have been sent regular Project updates as part of the company's stakeholder mailing list.

4.4 Public Engagement

TPR has utilized various means to provide timely information and regular updates on the Project, and to support meaningful communication with all interested parties. Project information has been made publicly available through a dedicated project website (*https://triplepoint.ca*), which includes up-to-date Project description information, regular updates and announcements and company contact information for submitting questions or comments. Project newsletters, press releases and social media postings have also been used as a means of providing updates on Project activities and milestones and opportunities for public input.

TPR has employed a full-time local company representative to facilitate direct, in-person engagement and ensure that community members and stakeholders have accessible channels to seek information, raise questions or concerns and provide feedback on an on-going basis.

4.4.1 Community Information / Land Use Sessions (November 2024)

TPR hosted a series of workshops in the region in late 2024 to provide an overview of the Project and to receive feedback, as well as to gather information from local residents on current land use activities within and around the proposed Project area. Information on and invitations to these workshops were posted online, distributed through social media and sent by email to approximately 60 local organizations, and posted at locations throughout the local communities (Figure 4.1). A summary of these workshops, including their locations and times and numbers of attendees, is provided in Table 4.1.

Figure 4.1: Invitations / Advertisements for 2024 Community Information / Land Use Workshops

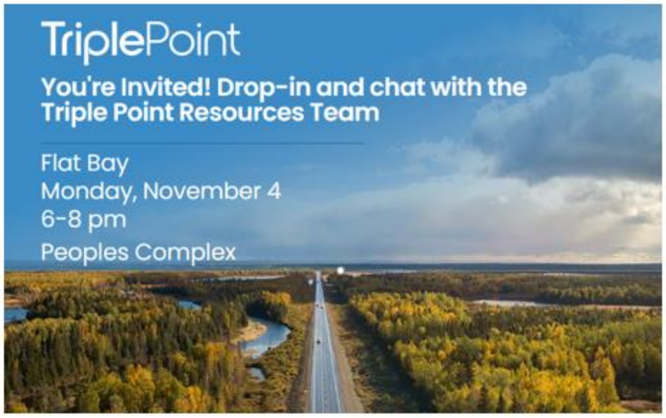


Table 4-1: Community Information / Land Use Workshops

Community	Venue	Date	Time(s)	Attendees
Flat Bay	People's Complex	November 4, 2024	6-8 pm	9
St. George's	Siki Bennett Memorial Stadium	November 5, 2024	2-4 pm	12
			6-8 pm	13
Jeffrey's / McKay's	Fire Department	November 6, 2024	2-4 pm	7
			6-8 pm	6

At each workshop, participants were greeted upon arrival and given an overview of the planned format, which includes several information stations (poster boards with Project information and mapping) with TPR representatives available discuss and answer questions. There were also large, printed maps available on tabletops that participants could view and share information on current land use activities in these areas, along with an electronic mapping system and projector through which project components and various mapping layers could be displayed for discussion and context.

The main input received during these workshops included:

Land and Resource Use

- General support for the Project and its location.
- The Project is not located in a core or primary land use area.
- There is, however, moose hunting, berry picking, fishing and ATV / snowmobile use (including trails) in the region that have to be considered, and it is important to minimize potential interference with these activities.

Economic

- Overall interest in the potential economic benefits that the Project will create, including jobs.
- This important so that people can stay in the area.
- There are local skilled workers who can, and will want to, work on this Project.
- The Project's ability to harness clean energy and supply it is a positive thing.

Environment

- Local residents want the Project to be designed and implemented correctly to reduce environmental effects.
- Need to make sure that the Project does not affect local water resources and their use.
- The planned underground activities will help ensure minimal effects on the land.
- The possible environmental effects of the wind farm will need to be considered and addressed.

Future Engagement

- Overall appreciation of TPR's early and on-going engagement with residents.
- Continued engagement is needed throughout the Project, and communities want to be involved.
- Important to ensure that people recognize that this project is different from the other salt mine project being proposed in the region.
- Residents will need more information and regular updates on the Project as it develops, to make informed decisions.

4.4.2 Public Information Sessions (March 2026)

TPR's public engagement program also included public open houses held in nearby communities in March 2026, to provide information on the Project and to identify any associated questions or concerns that local residents and other interested members of the general public may have. An overview of these public information sessions is provided in Table 4.2.

Table 4-2: Public Information Sessions

Community	Venue	Date	Time
St. George's	Parish Hall	March 24, 2026	6 - 8 pm
McKay's	Lion's Club	March 25, 2026	6 - 8 pm
Flat Bay	Peoples Complex	March 26, 2026	6 - 8 pm

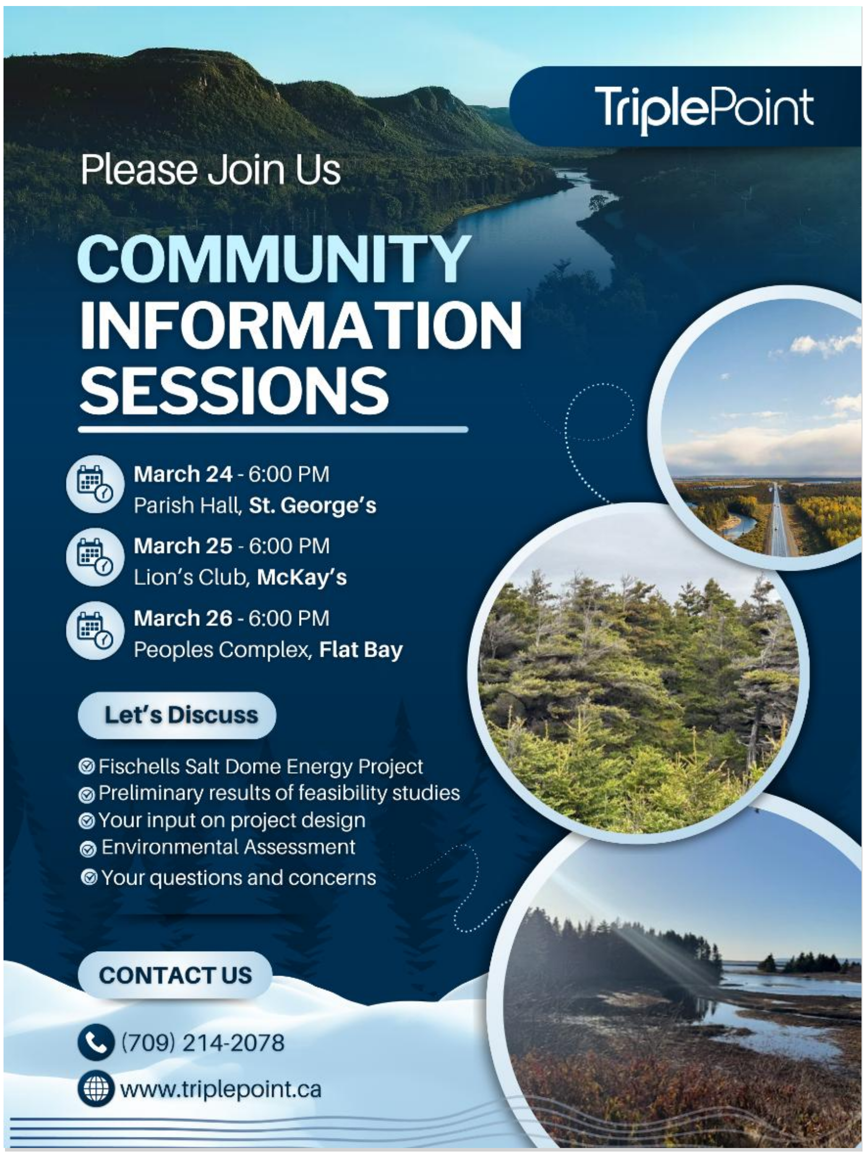
4.4.2.1 Advertisement and Format

Public notifications were issued in advance of these information sessions, which were widely distributed through local networks. This included on-line postings and distribution through social media, including a TPR press release on March 4, 2026. This information was also sent by email to overall 100 individuals and organizations through TPR's local stakeholders email distribution list at both three weeks and one week prior to the events, as well as reaching the nearly 600 current subscribers to TPR's project newsletter. Radio advertisements were also run on VOCM (seven 30-second spots per day) throughout the week leading up to the sessions, along with placement of the advertisement sign at prominent locations throughout the local communities (Figure 4.2)

If people were unable to attend the open houses, they were encouraged to contact TPR directly with any questions or input, and all public notices and advertisements included contact information to provide feedback.

The public information sessions took the form of a number of "drop in" open house sessions, held at the communities and venues summarized above. This format allowed all interested parties to come to the sessions on their own time, and to receive information, ask questions and provide input at their own pace and in whatever manner and format that they felt most comfortable. By adopting this open house format, the TPR team attempted to establish a relatively informal and relaxed environment, where participants could provide input and ask questions through one-on-one conversations, and/or in small groups as they preferred. TPR representatives were present at each session to provide information, answer questions and to record any and all questions, issues and perspectives raised.

Figure 4.2: Public Information Session Invitation / Advertisement



Upon arrival, participants were greeted by a TPR representative at a sign-in table, who provided an overview of the open house purpose and information "circuit" type format. The session included various theme-specific information stations arranged throughout the open house venue, consisting of large information panels (Figure 4.3) that included the following :

- Welcome and introduction
- Overview of Project location / layout, main components and rationale
- The Fischells salt dome
- Salt cavern development (solution mining process, seawater supply options)
- Planned salt recovery / professing facility (including brine management options)
- ACAES power plant
- Wind farm and transmission line
- Community benefits
- Environmental Assessment process
- Project schedule and next steps

The purpose of these information panels was to provide general background information, and to serve as a basis for prompting dialogue and the sharing of information and input by participants. At the public open houses, TPR personnel were clearly identified and were positioned at the stations to discuss the Project and answer questions. A handout was also provided, and before leaving participants were encouraged to complete a feedback form / exit survey.

At approximately 6:30 pm, a short presentation was given by TPR which provided an overview of the Project (Figure 4.3). Once the presentation was completed, participants were able to engage in a question-and-answer session.

A key focus of the information sessions and associated discussions was on obtaining and recording information and input related to:

- Questions, issues or concerns regarding Project and its potential environmental or socioeconomic effects;

- Knowledge regarding the existing biophysical or socioeconomic environment in or near the Project Area; and

- Suggestions for any mitigation measures or other means through which any identified issues could be addressed in future Project planning and decisions / actions.

The engagement team members continuously took notes and recorded any and all input received throughout the sessions, and also met as a group to debrief, record and compile all information and input received.

Figure 4.3: March 2026 Public Information Sessions

4.4.2.2 Attendance and Written Feedback Received

A summary of attendance at each of the March 2026 public information sessions is provided in Table 4.3.

Table 4-3: 2026 Public Information Session Participants (from sign in sheets)

Session	# of Attendees
St. George's, March 24	41
McKays, March 25	41
Flat Bay, March 26	19

In addition to verbal comments that were received and recorded by team members, 26 feedback forms were completed and returned. All 26 of these respondents indicated that they had "received sufficient and clear information about the Project" at the session they attended, including answers to their questions. Any questions or concerns about the Project and suggestions on how these could be addressed that were raised through these exit surveys are included in the table below.

4.5 Overview of Identified Questions and Issues

A number of key topics and themes were identified and noted during the above described engagement activities, including the verbal discussions with participants during the various sessions. These are summarized in Table 4.4, along with an indication of where each is addressed in this EA Registration.

Table 4-4: Summary of Questions and Considerations Raised During TPR's Engagement Program

Question / Issue Raised	Where Addressed
Environmental assessment process and timelines	Section(s) 1.4
Project Description	
TPR corporate information	Section(s) 1.3
Project location and layout / physical footprint	Section(s) 2.2
Project's energy generation capacity	Section(s) 2.4.3
Energy use for compression vs that which the facility can produce	Section(s) 2.4.3
Where / by whom the power will be used	Section(s) 2.1
Potential implications for local power availability, reliability, rates	Section(s) 2.1
Alternatives to this project (other energy supply / storage options)	Section(s) 2.3.1
Location and dimensions of salt dome	Section(s) 2.2
Cavern dimensions, drilling depth	Section(s) 2.4.1
Number of salt caverns proposed and their dimensions	Section(s) 2.4.1
Solution mining process and duration	Section(s) 2.4.1
Water volumes required for solution mining	Section(s) 2.4.1, 2.4.3
Number of beach wells, if that option is selected	Section(s) 2.3.2, 2.4.2
Plans and options for saltwater disposal	Section(s) 2.3.2, 2.4.2
Potential disposal into marine environment (outfall, location, salinity)	Section(s) 2.4.2
Whether water intake / disposal pipelines will be above ground or buried	Section(s) 2.4.2
Location and dimensions of brine storage ponds	Section(s) 2.4.3
Number of on-site deep wells for saltwater disposal, if that option is selected	Section(s) 2.3.2, 2.4.3

Question / Issue Raised	Where Addressed
Well design and protections (casings)	Section(s) 2.4.1, 2.4.3
Whether the caverns themselves will be lined	Section(s) 2.4.1, 2.4.3
Any required treatment of air before it is compressed into the cavern	Section(s) 2.4.3
Capacity and operation of the salt processing facility	Section(s) 2.4.3
Amont of brine that will go to the salt production facility vs that disposed of	Section(s) 2.4.3
Location of the proposed wind farm and any alternate areas considered	Section(s) 2.4.4
Wind turbine sizes and capacity	Section(s) 2.4.4
Vegetation clearing for wind farm	Section(s) 2.2, 2.4.4
Transmission line capacity and routing	Section(s) 2.4.5
Access roads for construction and operation	Section(s) 2.5.1
Labor force requirements for construction and operation, training	Section(s) 2.7.1
Workforce transportation and accommodations during construction	Section(s) 2.3.2
Construction timing, duration and sequencing	Section(s) 2.5, 2.8
Power source for construction	Section(s) 2.4.3
Project operational lifespan	Section(s) 2.6, 2.8
Potential for future expansion (additional salt caverns, increased generation)	Section(s) 2.4.3
Project safety systems	Section(s) 2.4, 2.11
Potential for spills / leaks	Section(s) 2.11
Project capital cost	Section(s) 2.10
Biophysical Environment	
Air emissions during construction and operation	Section(s) 5.2.2
Lights, dust and noise during Project construction	Section(s) 5.2.2
Potential to interact with groundwater and affect water quality / other users	Section(s) 3.1.3, 5.3.2
Local geology, sinkholes	Section(s) 3.1.2
Proximity of Project to local watercourses and waterbodies	Section(s) 3.1.4, 5.3.2
Alteration or removal of wetlands within the Project footprint	Section(s) 3.1.6, 5.3.2, 5.5.2
Site water management, sedimentation	Section(s) 5.3.2
Potential for caribou to occur in the Project area	Section(s) 3.1.7, 5.5.2
Potential listed or rare species (flora, fauna) and habitats to be affected	Section(s) 3.1.6, 5.5.3
Possible bird and bat injury or mortality, especially due to wind turbines	Section(s) 3.1.7, 5.5.2
Proximity to sensitive wildlife areas	Section(s) 3.1.7, 5.5.2
Proximity to protected and special areas	Section(s) 3.1.8, 5.6.2
Potential for accidental spills, including brine	Section(s) 2.11
Socioeconomic Environment	
Measures to protect public safety	Section(s) 2.11, 5.7.2
Potential for sinkholes and associated safety concerns	Section(s) 5.7.2
Public access restrictions, interference with land and resource use activities	Section(s) 5.8.2
Interference with fisheries, including restrictions due to marine pipelines	Section(s) 3.2.4, 5.9.2
Saltwater disposal, potential effects on marine fish and fish habitat	Section(s) 3.1.5, 5.4.2
Proximity to and potential interference with outfitters in the region	Section(s) 3.2.2, 5.8.2
Measures to maximize local employment and business benefits	Section(s) 2.7, 5.10.2
On-site emergency response, including fire services	Section(s) 2.11, 5.7.2
Any planned use of local services and infrastructure	Section(s) 5.7.2
Historic and heritage resources that may be present	Section(s) 3.2.3, 5.8.2
Need for continued Indigenous, stakeholder and public engagement	Section(s) 4.0, 5.7.2

5.0 ENVIRONMENTAL EFFECTS ASSESSMENT

This chapter provides an assessment and evaluation of the potential environmental effects of the Project, based on its proposed components and activities as described in Chapter 2, the description of the existing environment presented in Chapter 3, and the results of TPR's public, Indigenous and governmental engagement activities as summarized in Chapter 4. The analysis that follows includes the identification of measures to mitigate (avoid or reduce) potential adverse effects, and to create and maximize benefits resulting from the Project.

5.1 Environmental Assessment Scope and Approach

An EA requires an initial scoping exercise to define the key features of the proposed project that is being assessed, as well as to establish the spatial and temporal boundaries for the assessment and identify the environmental components and issues to be considered. The scope of an EA should be established early in the process to ensure that the analysis remains focused and meaningful.

5.1.1 Project Components and Activities

An overview of the proposed Project, including each of its planned components and activities, was provided in Chapter 2. Those which are especially relevant to the assessment of its potential environmental effects, include:

- Construction
    - Site access and preparation
    - Cavern development (solution mining)
    - Surface infrastructure (main facility)
    - Wind farm / substation
    - Marine components and pipelines
    - Transmission line / substation
    - Ancillary components (roads, buildings etc)
    - Waste management
    - Project related expenditures
    - Employment (including accommodations and transportation)
- Operations
    - Main facility (including ACAES, salt production)
    - Wind farm / substation
    - Marine components and pipelines
    - Transmission line / substation
    - Project related expenditures

    - Employment
- Decommissioning
- Potential Accidental Events
    - Spills
    - Fire or explosion

Each of these Project phases, and the various components and activities associated with each as listed above, are considered in the effects assessment and reflected in the EA structure and approach that follows.

5.1.2 Potential Environmental Issues and Interactions

Key environmental considerations that may be associated with the Project components and activities listed above include:

- Air emissions (including GHGs), dust, light, noise and vibrations associated with equipment use and other activities, and their potential to reach and adversely affect people and other components of the environment;

- Changes in surface and ground water conditions (quantity, distributions, flows) and quality, and any resulting effects on water use;

- Alternation or disturbance of terrestrial, aquatic and marine habitats due to site clearing and excavation, installation of Project infrastructure and other construction and operations activities;

- Interactions between wildlife and proposed Project components and activities, which may result in injury / mortality or associated behavioural effects;

- The generation and management of solid and liquid wastes and any associated interactions with water, vegetation, fish, wildlife or people;

- Potential spills of fuel, brine or other materials, and any resulting effects on water, vegetation and soils, fish, wildlife or people;

- Possible effects on residents' health and well-being due to Project-related activities, disturbances and emissions;

- Interference with people and their activities due to Project site access restrictions or through other disturbances;

- Possible alteration or destruction of historic resources (if they are present) as a result of clearing and excavating activity and other ground disturbance;

- Project-related demands for and use of community services and infrastructure, which may affect their availability, quality or cost for local residents; and

- The creation of Project-related employment and business opportunities, and associated economic effects at the local, regional and provincial scales.

5.1.3 Valued Environmental Components

EAs focus on components of the environment that are of particular importance, and which have the potential to be materially affected (either adversely or positively) by the proposed project under assessment. These are known as Valued Environmental Components (VECs), and may include both biophysical and socioeconomic aspects of the environment.

VEC identification occurs early in an EA, and is informed by public and Indigenous engagement (Chapter 4), past experience with similar projects and assessments, and other scoping initiatives. The VEC approach is a useful, effective and widely accepted approach for ensuring that an EA focuses on important and relevant environmental components and issues.

The following VECs were identified and are considered in this assessment:

1) Atmospheric Environment;
2) Water Resources (surface and ground water);
3) Fish and Fish Habitat (freshwater and marine, including species at risk);
4) Vegetation and Wildlife (including species at risk);
5) Protected and Special Areas;
6) People and Communities;
7) Land and Resource Use;
8) Fisheries and Other Marine Activities; and
9) Economy, Employment and Business

Further information on each of these VECs, and the rationale for their selection, is provided in Appendix H.

5.1.4 Environmental Assessment Study Areas

EA study areas (spatial and temporal boundaries) have also been established to direct and focus the effects assessment, as follows:

a) Spatial Boundaries: Two types of spatial boundaries have been identified and considered:

   Project Area, which is an area that encompasses the planned (and alternative) Project components and activities (Chapter 2) as defined at the current stage of Project planning and design.

Note that these are overall and somewhat conservative "polygons" that fully encompass the planned elements of the Project as currently defined. The actual on-the-ground "footprints" covered by each component will be determined once final siting and design work is complete - and will therefore be less than these larger, overall areas.

Study Area, which encompasses the Project Area identified above, and extends beyond it to include the possible zone of influence of any resulting emissions and other disturbances and their potential effects. For the purposes of the EA, this has been conservatively set at a radius of 15 km from the centre of the main facility / wind farm areas and a 2 km wide corridor around the proposed transmission line for the on-land environment (Figure 5.1), and as the entirety of Bay St. George for the marine environment (Figure 5.2), in order to provide an appropriate regional context.

In addition to the Project and Study Areas described above, the environmental effects assessment also considers the characteristics and larger spatial and temporal distributions of the individual VECs under consideration. This includes the nature and movement patterns of any potentially affected fish or wildlife, as well as the overall extent and distribution of human components and activities, including adjacent communities, in the region (see Chapter 3).

b) ***Temporal Boundaries***: In all cases, the EA's temporal boundaries include and fully encompass the planned timing and duration of Project phases and activities, as well as of any resulting environmental effects. In conducting the effects assessment, consideration is also given to the relevant temporal characteristics of the VECs themselves, including the known timing of their presence within the Project and Study Areas, any particularly sensitive or critical periods, likely response and recovery times to potential effects, and any known and applicable natural variability in that environmental component over time.

The Project's potential environmental effects are assessed, and their significance is evaluated, within the above described spatial and temporal boundaries.

Figure 5.1: Environmental Assessment Study Area (On land)

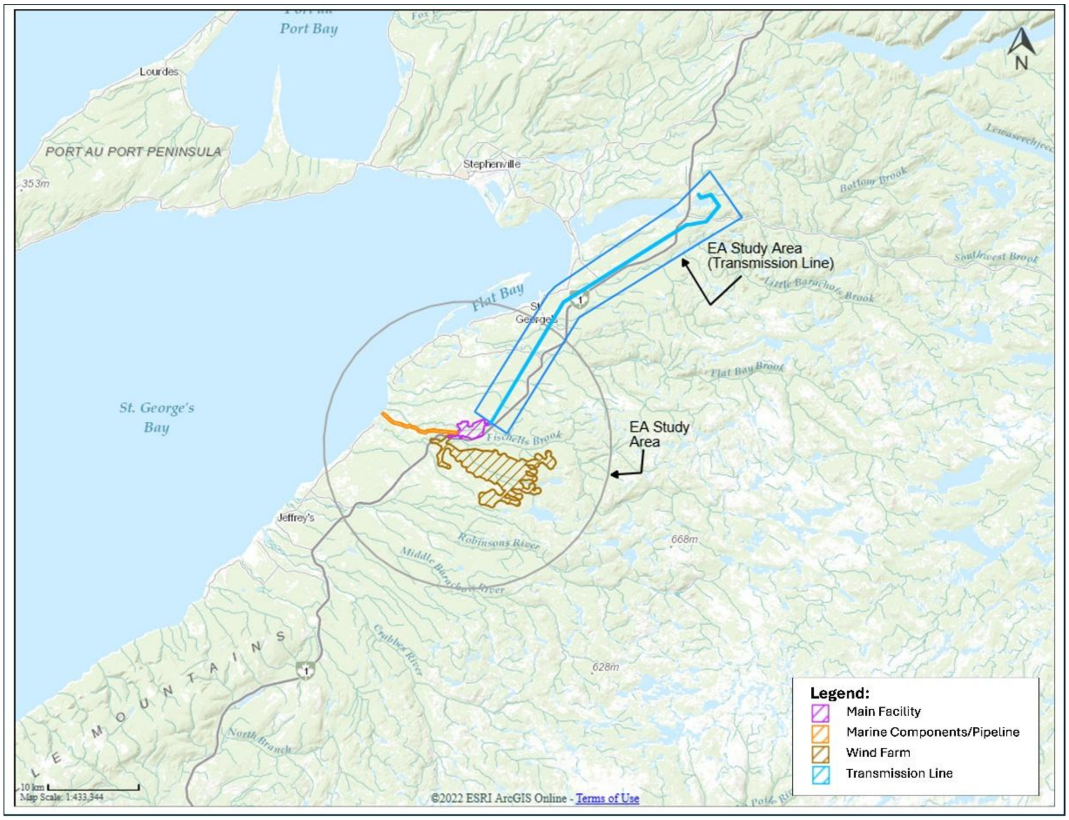
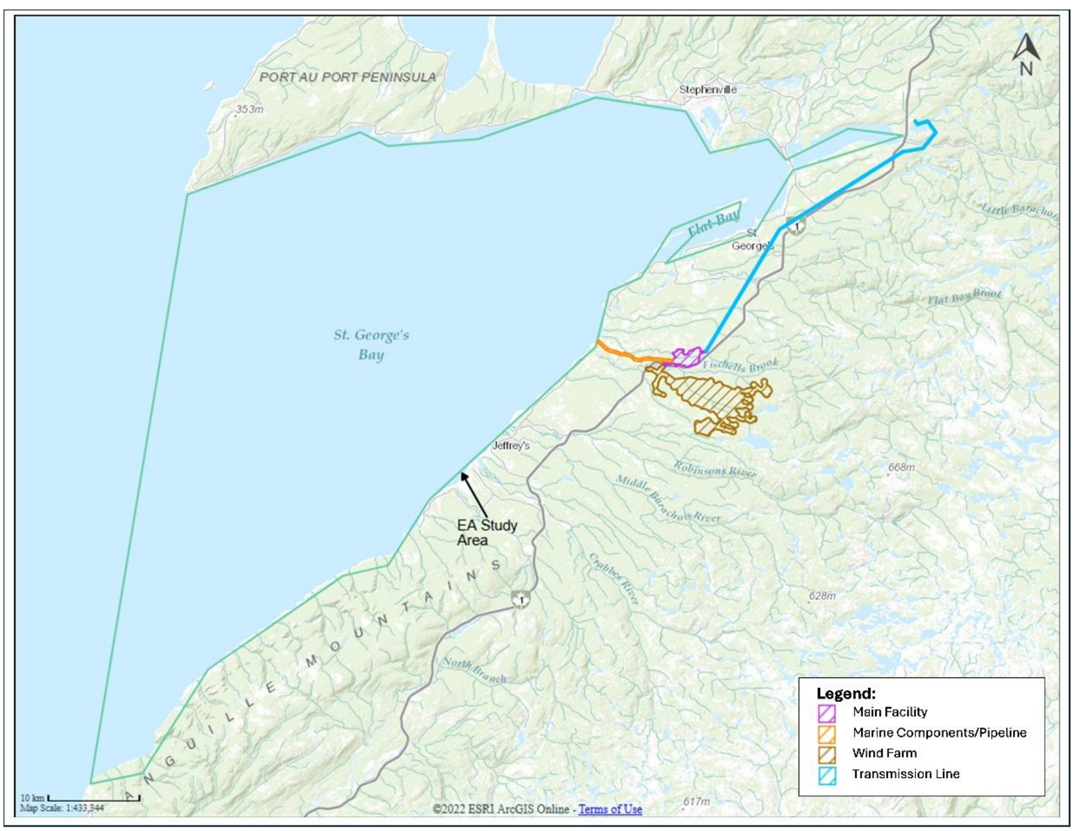


Figure 5.2: Environmental Assessment Study Area (Marine)



5.1.5 VEC-Specific Effects Assessments

The environmental effects assessment for each VEC is presented in a separate subsection of this chapter, based on the various stages outlined below:

a) **Potential Environmental Issues and Interactions**: The effects assessment for each VEC initially identifies and focuses on a number of *key indicators and parameters*, which are defined as important aspects of the VEC which, if changed as a result of the Project, may result in an adverse effect to it (and to which such changes could therefore be detected and measured). A table is used to summarize the potential interactions between each of the main Project components and activities (as listed at the beginning of this chapter) and each of these items, which is used to guide and inform the subsequent assessment and evaluation of environmental effects and the identification of mitigation.

b) **Environmental Effects Assessment*:*** This section provides an analysis (prediction) and description of the likely environmental effects of the Project on the VEC. The assessment considers the nature, degree, extent and timing of potential Project-induced change from the existing (baseline) environment as described in Chapter 3. Within this section, potential environmental effects are assessed and evaluated for both planned components and activities (by Project phase), as well as for any potential accidental events that may occur.

   Environmental planning, effects management and mitigation measures are considered in a fully integrated manner in the effects assessments that are presented in this Chapter. This includes those measures that have been "built-in" to the Project in order to proactively avoid or reduce potential environmental issues through its design (Chapter 2), as well as the other general and issue-specific environmental protection approaches identified and described in this section.

   The assessment is therefore focused upon the likely *residual effects* of the Project, which are described using a number of standard criteria or "descriptors" (see Appendix H).

   The EA also identifies and describes any proposed environmental monitoring or follow-up activities.

c) **Evaluation of Environmental Effects Significance:** Evaluating the significance of the predicted environmental effects of a project is one of the most important steps in any EA, and involves: 1) defining what a significant environmental effect is (see evaluation criteria outlined in Appendix H), and 2) based on that definition, evaluating whether a project's predicted effects are significant or not significant. Significant effects are those that will cause an adverse change in the VEC that will alter its status or integrity beyond an acceptable and sustainable level. An environmental effect that does not meet these criteria is considered not significant.

d) **Cumulative Environmental Effects:** The EA also considers any cumulative effects that may result from the Project in combination with other projects or activities that have been or will be carried out. This part of the assessment considers the overall (total) effect on the VECs as a result of the Project's predicted residual effects (as summarized above) and those of other reasonably foreseeable future projects whose effects may overlap or otherwise accumulate / interact with those of the Project.

The remainder of this chapter provides an assessment of the potential effects of the Project on the identified VECs, each of which is covered in a separate subsection that follows the overall EA structure and methodology outlined above.

5.2 Atmospheric Environment

The effects assessment for this VEC includes consideration of all Project-related atmospheric emissions including possible air contaminants, GHGs, noise, vibration and light during each phase of the proposed development.

5.2.1 Potential Environmental Issues and Interactions

The construction phase of the Project will involve the use of heavy equipment and possibly some limited blasting which will create noise, vibration and air emissions at a local scale. Once operational, all energy inputs to the Project are electrical and therefore do not involve fossil fuel combustion.

An overview of the main possible interactions between each of the Project's components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.1.

Table 5-1: Atmospheric Environment: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters				
	Air Quality	GHG Emissions	Light Levels	Noise Levels	Vibration Levels
Construction					
Site access and preparation	•	•	•	•	•
Cavern development (solution mining)	•	•	•	•	•
Surface infrastructure (main facility)	•	•	•	•	•
Wind farm / substation	•	•	•	•	•
Marine components and pipelines	•	•	•	•	•
Transmission line / substation	•	•	•	•	•
Ancillary components (roads, buildings etc)	•	•	•	•	•
Waste management					
Project related expenditures					
Employment (including accommodations and transportation)	•	•			
Operations					
Main facility (including ACAES, salt production)	•	•	•	•	•

Project Component / Activity	Key Indicators and Parameters				
	Air Quality	GHG Emissions	Light Levels	Noise Levels	Vibration Levels
Wind farm / substation	•	•	•	•	•
Marine components and pipelines	•	•	•	•	•
Transmission line / substation	•	•	•	•	•
Project related expenditures					
Employment	•	•			
Decommissioning	•	•	•	•	•
Potential Accidental Events					
Spills					
Fire or explosion	•				

5.2.2 Environmental Effects Assessment

Potential effects on the atmospheric environment that may occur during each Project phase are described in the sections that follow.

5.2.2.1 Construction

The construction of the Project will involve physical works that includes the use of heavy equipment to clear and level land and to construct or install other infrastructure and facilities, as well as the use of on-site generators, vehicles and other equipment. These will result in temporary and localized air emissions from fuel combustion, while also generating noise and vibration and introducing artificial lighting.

Air Emissions

During the construction phase, heavy equipment such as excavators, haul trucks, cranes, and loaders will be used to clear land, prepare the site and install infrastructure. Atmospheric contaminant emissions associated with diesel-powered equipment include particulate matter, nitrogen dioxide, carbon monoxide, and sulfur dioxide. To minimize such emissions, an equipment maintenance program will be implemented to ensure that all vehicles and machinery are regularly inspected, maintained in good repair, and operated in accordance with applicable regulations and guidelines. Fugitive dust generated by construction activities will be controlled as needed, primarily through the application of water or other approved dust suppression measures.

With these practices in place, any potential air emissions during construction are expected to be temporary, localized, short-term and intermittent. Overall, emissions are anticipated to be minor and well within applicable regulatory standards, posing negligible risk to local or regional air quality or surrounding receptors.

Greenhouse Gas (GHG) Emissions

GHG emissions from development projects are typically categorized as follows:

- *Scope 1 (Direct emissions):* Those that occur directly from sources owned or controlled by the proponent and its contactors. These typically include fuel combustion in on-site vehicles, equipment and generators and other process emissions.

- *Scope 2 (Indirect energy emissions):* These can be from the generation of electricity that is obtained from other facilities not owned and operated by the proponent. Although these emissions occur at the energy source, they are attributed to the developer because they relate to its demand for and use of that energy.

- *Scope 3 (Other indirect emissions):* These include other emissions that occur in the value chain of the organization, both upstream and downstream. Examples include emissions from purchased materials, transportation and distribution, waste disposal, travel, employee commuting and the use or end-of-life treatment of sold products.

During the construction phase of this Project, GHG emissions will occur primarily from the combustion of diesel or other fuels in heavy equipment engines and temporary power generators. Activities such as site clearing, excavation, material transport and installation works require the use of excavators, loaders, trucks, and other machinery, all of which will generate emissions through fuel use. Additional emissions may result from worker transportation and other activities.

The Newfoundland and Labrador *Management of Greenhouse Gas Act* and *Regulations* have two thresholds that apply to large industrial facilities in the province: one for any regulated facility that emits 15,000 to 25,000 tonnes of GHG emissions in any year; and a second for any regulated facility that emits 25,000 tonnes of GHG emissions in any year. To help determine whether a proposed project will be subject to this legislation, the Climate Change Branch of the Department of Environment, Conservation and Climate Change typically requests that proponents prepare and submit a detailed GHG inventory for each phase of the project (e.g. construction, operations, and decommissioning) on a year by year basis, including:

- Annual estimates of energy/fuel consumption by type (e.g., on-site stationary combustion, on-site electricity generation, mobile transportation, etc.) and associated annual GHG emissions by source;

- Identification and annual estimates of any non-combusted and industrial process GHG emissions at the facility; and

- Details on annual energy/fuel consumption by type and associated annual GHG emissions by source for activities outside the Project boundary such as on-road, air and marine transportation, solid waste, and significant purchased services from providers outside the Project boundary (e.g., a marine port facility).

These GHG emissions are quantified in accordance with Section 6 of the *Management of Greenhouse Gas Reporting Regulations*.

TPR suggests that while it is appropriate and beneficial to initiate EA at an early stage of Project planning and design, this also creates challenges in developing detailed and meaningful estimates of, for example, planned construction equipment and their fuel use and other details necessary to provide this type and level of GHG emissions calculations. For the purposes of this EA registration, the company has therefore prepared a preliminary and high-level estimate, as follows:

- Project construction will see approximately 500 litres of diesel fuel (vehicles, equipment and generator) per hour x 10 hours per day = 5,000 litres per day x 3 years (1095 days) = 5,475,000 litres of diesel fuel for construction phase overall.
- Based on a standard emission factor of 2.68 kgs of CO_2 per litre of diesel fuel x 5,475,000 litres = 14,673,000 kg CO_2, or 14,673 tonnes CO_2e for the overall construction phase.
- Or, 4,891 tonnes CO_2e of Scope 1 emissions per year during Project construction.

It is therefore unlikely that this Project will be subject to the NL *Management of Greenhouse Gas Act* and *Regulations*. TPR will prepare a detailed estimate of its potential construction phase GHG emissions as part of the next phase of engineering, and will submit this information to the Government of Newfoundland and Labrador if required and requested as part of subsequent regulatory / permitting requirements for the Project.

Light

Construction activities may occur 24 hours per day in certain areas, necessitating the use of artificial lighting in active work areas for both practical and safety reasons. Depending on the location and intensity of these lighting requirements, some light may extend beyond the Project site boundaries. To minimize any potential effects, lighting will be limited to planned work areas and directed downward wherever possible using shields and appropriate fixtures.

The nearest residential property is located nearly 10 km from the Project area (main facility and windfarm). Based on the publicly available information from the NL Land Use Atlas (Chapter 3), as well as engagement with local stakeholders through land use workshops and public open houses (Chapter 4), there were no identified receptors (including permanent, institutional and seasonal residences) within these portions of the proposed Project area. These distances, combined with the lighting management measures noted above, will ensure that any potential for disturbance is negligible. In addition, these lighting effects will be temporary, localized, and intermittent, occurring only at active construction locations and times.

Noise and Vibration

Construction activities will generate noise and vibrations, which also have the potential to extend beyond the immediate Project site. For the most part, the Project will involve standard construction equipment and activities that are relatively routine and not excessively noisy. However, certain activities, such as any limited blasting that may be required, could produce noise and vibration that are perceptible beyond the site boundaries. The potential effects of noise and vibration will be managed through standard mitigation measures, including equipment maintenance, operational scheduling and site-specific controls. Any required blasting will be conducted in strict accordance with the Newfoundland and Labrador *Occupational Health and Safety Act* and regulations, as well as the Department of Fisheries and Oceans (DFO) Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (Wright and Hopky 1998) and Section 3.9 of DFO's Best Management Practices for the Protection of Freshwater Fish Habitat in Newfoundland and Labrador.

Through careful planning, adherence to regulatory requirements and implementation of mitigation measures, any potential effects of construction-related noise and vibration are expected to be temporary, localized, and manageable.

5.2.2.2 Operations

Air Emissions (Including GHGs)

Project operations will include the use of light vehicles and equipment which will generate some air emissions from engines and their exhausts, as well as noise, vibrations, light and other possible disturbances. As described earlier, an equipment maintenance program will be implemented to ensure vehicles and equipment are maintained in good repair and inspected regularly, and any associated air emissions from equipment and vehicles will conform to applicable regulations and guidelines.

Any dust generated during Project operations such as occasional maintenance work, vehicle movements on unpaved areas and material (including salt) storage and handling could produce small amounts of fugitive dust. However, the majority of the facility will consist of stabilized surfaces, and vehicle traffic is expected to be limited compared to construction. Standard dust control measures, such as minimizing exposed soil, using water or other approved dust suppression techniques where required, and maintaining vegetative cover around operational areas, will be implemented to reduce airborne particulates. As a result, potential dust emissions during operations are anticipated to be minor, short-term, and intermittent, with limited potential for effects on surrounding air quality.

As noted above, once operational, all energy inputs to the Project will be electrical, eliminating the need for on-site combustion of fossil fuels. By relying entirely on electricity – sourced primarily from the on-site wind farm - the Project represents a low-carbon, renewable energy solution that significantly reduces GHG emissions compared to conventional fossil-fuel-based energy storage or industrial operations. This approach not only supports climate and clean energy objectives but also demonstrates a practical integration of intermittent renewable generation with a large-scale energy storage system, providing firm and dispatchable capacity. The use of electricity as the sole energy input ensures that operational emissions are minimal, and allows the Project to deliver tangible environmental benefits as a sustainable and innovative green energy initiative. Importantly, the Project does not and will not include the use of fuel to power the ACAES unit.

During the operations phase of this Project, any fuel use and associated GHG emissions will therefore be associated with limited vehicle and equipment (e.g., light duty trucks, tractors, mobile air compressors, generators, welders) use on-site. For the purposes of this EA registration, TPR has therefore prepared the following estimate of these potential emissions:

- Project operations will require approximately 170 litres of diesel fuel per day (vehicles and equipment), resulting in an annual consumption of 62,050 litres.
- Using a standard emission factor of 2.68 kg CO_2 per litre of diesel, this equates to 166,294 kg CO_2, or approximately 166.3 tonnes CO_2e per year during the operations phase.

It is therefore unlikely that this Project will be subject to the NL *Management of Greenhouse Gas Act* and *Regulations*. TPR will prepare a detailed estimate of its potential operations phase GHG emissions as part of the next phase of engineering, and will submit this information to the Government of Newfoundland and Labrador if required and requested as part of subsequent regulatory / permitting requirements for the Project.

Light

During Project operations, artificial lighting will be required in select areas for safety, security, and functional purposes, including facility entrances and key operational zones. Light emissions are expected to be localized and limited in intensity, with the nearest residential property again being nearly 10 km away. To minimize potential effects on nearby communities, wildlife and other aspects of the surrounding environment, all operational lighting will be carefully managed, using downward-directed, shielded fixtures and energy-efficient designs that reduce glare and light spill beyond the Project site. Night-time lighting will be restricted to areas where it is essential for safe operations, and automated controls will ensure lights are used only as needed. Given these measures, any light emissions during operations are anticipated to be minimal, temporary in nature, and unlikely to cause disturbances.

Shadow flicker can occur when rotating wind turbine blades pass between the sun and a receptor, creating a periodic variation in light intensity. For the proposed 240 MW on-land wind farm (consisting of 43 turbines with hub heights of approximately 120 m and rotor diameters of 162 m), any resulting shadow flicker would be limited to periods when the sun is at a low angle and when atmospheric conditions allow for direct sunlight. Any such effect is temporary and predictable, occurring only under specific combinations of turbine operation, sun position and receptor location, and is typically most noticeable in close proximity to the turbines themselves. This decreases rapidly with distance, and the local topography as well as the Project's distance from communities and other receptors will reduce any potential for effects. Similar assessments for other Newfoundland wind projects demonstrate that shadow flicker is intermittent and short-term in duration when best-practice siting practices are applied.

Wind farm layouts can be also designed to minimize any such effects through turbine setbacks, micro-siting and, where necessary, operational mitigation. These approaches are consistent with methodologies applied in other recent EAs in Newfoundland and Labrador, and align with commonly referenced industry guidance limiting shadow flicker exposure at residences to approximately 30 hours per year. With these design and mitigation measures, any shadow flicker effects are expected to be infrequent (if at all) with no resulting adverse effects on nearby receptors.

Noise and Vibration

During Project operations, the nature and scale of activity at the Project site will be significantly lower than that associated with construction. Routine operations will primarily involve the operation, monitoring and control of the ACAES system, wind farm and associated infrastructure, and periodic movement of vehicles and personnel. Operational activities are largely automated and conducted in a controlled manner, resulting in minimal emissions.

ACAES System and Other Industrial Facilities

Operational noise from a typical adiabatic ACAES system is generated mostly by large multi-stage air compressors, expanders/turbines, electric motors and generators, air cooling systems and associated auxiliary equipment. Compressors and cooling fans generally represent the dominant noise sources during charging operations, producing sound power levels typical of comparable industrial facilities. These components are housed within enclosed buildings and equipped with intake and discharge silencers, resulting in substantial attenuation before sound propagates beyond the facility. Noise emissions are generally characterized by steady, broadband sound, with limited impulsive or tonal characteristics.

Following enclosure attenuation and distance-related sound reduction, operational noise levels are typically comparable to other industrial energy facilities of similar scale. Indoor sound levels within equipment areas may range from approximately 85 to 100 dBA (A-weighted decibels), while sound levels immediately outside major equipment areas are typically lower. Industrial facilities are designed to meet applicable environmental noise guidelines at nearby receptors, with operational sound levels typically assessed against guideline values of approximately 55 dBA during the daytime and 45 dBA at night at the nearest receptors. Predicted sound levels at the facility boundary may be higher but decrease with distance due to attenuation and site-specific factors.

Similarly, noise generated by the operation of the salt production facility is expected to be localized and largely associated with routine operational activities, including the use of pumps, compressors, conveyors, and other mechanical equipment required for salt extraction and processing. The facility is being designed with modern, low-noise equipment within an enclosed area, and operational noise levels are expected to be consistent with typical industrial facilities of this scale and below regulatory thresholds. Where necessary, noise mitigation measures such as equipment enclosures, vibration isolation and strategic siting of mechanical components can be implemented to further reduce sound emissions.

Wind Farm

Audible noise from the proposed on-land wind farm will be generated primarily by aerodynamic interaction between the turbine blades and the air, as well as mechanical components within the nacelle such as gearboxes and generators. Modern utility-scale wind turbines of the size being proposed for this project (approximate hub heights of about 120 m and rotor diameters of 162 m) are designed with noise reduction features including optimized blade profiles, variable rotational speeds and insulated nacelle enclosures. Operational noise is typically characterized as a steady broadband "whooshing" sound that varies with wind speed and atmospheric conditions, and increases during higher wind speeds when turbine output is greatest.

Wind farm layouts and turbine setbacks are designed to comply with applicable environmental noise guidelines at nearby receptors. For turbines of this class, sound levels at the base of the turbine are typically in the range of approximately 100-105 dBA; however, sound levels decrease substantially with distance. At typical receptor setback distances, operational sound levels are generally predicted to be in the range of approximately 35-45 dBA, consistent with regulatory and/or best practice limits for wind energy developments.

5.2.2.3 Decommissioning

This phase of the Project would involve restoring the Project Area as close as reasonably possible to its pre-development condition (Chapter 2), and may include demolition and removal of site infrastructure, re-vegetation and other associated activities. Atmospheric emissions during these activities would be primarily from heavy equipment use including haul trucks, excavators and loaders. There will therefore be minor atmospheric emissions and interactions associated with these on-site activities during this phase of the Project.

5.2.2.4 Potential Accidental Events

Potential accidental events or malfunctions that may be associated with this Project and which are relevant to the effects assessment for the atmospheric environment VEC include a fire or explosion at the site, potentially extending into adjacent areas, and an accidental spill of fuels or other deleterious substance into the environment. Either of these events could potentially occur during any phase of the Project, the potential environmental effects of which would clearly depend upon the nature, magnitude, location and duration of the event.

A major fire at the Project site could temporarily affect local air quality through smoke and particulate emissions. However, given the relatively small footprint of the Project site and the limited quantities of volatile chemicals or fuels stored on site, potential emissions of GHGs and other air pollutants from a fire or accidental release are anticipated to be relatively low. Similarly, the accidental release of fuels or other substances to the atmosphere is expected to be minor and localized due to strict storage, handling, and operational controls. In the unlikely event of a fire, spill or other accidental event, TPR's comprehensive

Emergency Response Plan (ERP) will be immediately implemented, including notification protocols, containment and mitigation measures, and coordination with local emergency services and regulatory authorities. These measures are designed to ensure that potential environmental and health effects are minimized, controlled, and confined, and that operations can return to normal as quickly and safely as possible.

5.2.3 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

- All construction and operation activities will comply with relevant environmental legislation, regulations, and required permits.
- Dust suppression measures will be implemented on unpaved roads, construction areas, and stockpiles (including covering), and vehicle speeds will be controlled to minimize fugitive dust emissions.
- Noise-generating equipment, including ACAES compressors, will be enclosed or acoustically treated.
- On-site lighting will be minimized and directed downward wherever possible, using glare shields and advanced lighting technologies. Lighting will be positioned to safely illuminate work areas while reducing light spill to surrounding areas.
- Regular preventive maintenance and inspection of vehicles and heavy equipment will ensure efficient operation and reduce emissions, noise, and vibration.
- Blasting will occur infrequently during construction and will follow all applicable regulations, permits, and safety guidelines to minimize airborne and vibration effects.
- Environmental Protection Plan(s) and Emergency Response Plans will be implemented to manage air quality, noise, lighting, vibration, and other environmental risks during all Project phases.
- Progressive site rehabilitation will be conducted throughout construction and operation, with final decommissioning measures implemented to return disturbed areas to acceptable environmental conditions.

A summary of the predicted (residual) environmental effects of the Project on the atmospheric environment is provided in Table 5.2 below.

Table 5-2: Atmospheric Environment: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty
Construction							
Change in air quality	A	L	L	3	R	R	H
Change in GHG emissions	A	L	L	3	R	R	H

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty
Change in light levels	A	L	L	3	R	R	H
Change in noise levels	A	L	L	3	R	R	H
Change in vibration levels	A	L	L	3	S	R	H
Operations							
Change in air quality	A	N	L	5	R	R	H
Change in GHG emissions	A	N	L	5	R	R	H
Change in light levels	A	N	S-L	5	R	R	H
Change in noise levels	A	N-L	L	5	R	R	M
Change in vibration levels	A	N	L	5	S	R	M
Decommissioning							
Change in air quality	A	N	L	3	S	R	H
Change in GHG emissions	A	N	L	3	S	R	H
Change in light levels	N	N	L	3	S	R	H
Change in noise levels	A	N	L	3	S	R	H
Change in vibration levels	N	N-L	L	3	S	R	H
Potential Accidental Events							
Change in air quality	A	L-M	L	2	O	R	M
Change in GHG emissions	A	L	L	2	O	R	M
Change in light levels	N	-	-	-	-	-	H
Change in noise levels	N	-	-	-	-	-	H
Change in vibration levels	N	-	-	-	-	-	H

Overall, Resulting Effect(s) of Project on the VEC

- Although planned Project components and activities may result in some small, localized and short-term emissions, these will be negligible and within applicable regulations and standards.

Evaluation of Significance

- The proposed Project is not likely to result in significant adverse environmental effects on the atmospheric environment.

Nature / Direction:
A = Adverse
N = Neutral or No Effect
P = Positive

Magnitude:
N = Negligible
L = Low
M = Medium
H = High

Geographic Extent:
S = Site
L = Local
R = Regional

Duration:
1 = < 1 month
2 = 1-12 months
3 = 13-36 months
4 = 37-72 months
5 = > 72 months

Frequency:
O = Once
S = Sporadic
R = Regular
C = Continuous

Reversibility:
R = Reversible
I = Irreversible

Certainty:
L = Low
M = Moderate
H = High

5.2.4 Cumulative Environmental Effects

Any Project-related air, noise or vibration emissions are, for the most part, expected to be limited to the Project Area itself, and will decrease quickly with distance from the source. The Project will be located in a relatively remote and undeveloped area with a low level of current (and planned) industrial activity, and its emissions are therefore not likely to interact or overlap with any others in the region. With the exception of the Atlas Salt project, which is under development but located approximately 15 km away, there are no other known planned or imminent development projects in the Study Area whose potential effects may accumulate or otherwise interact with those of the Project. The Project is therefore not likely to result in significant, adverse cumulative environmental effects in combination with other projects or activities that have been or will be carried out.

5.3 Water Resources (Surface and Ground Water)

This VEC includes consideration of both surface and ground water resources, which are important and interconnected components of the environment. An overview of existing conditions for this VEC was provided in Chapter 3, including existing and available information on surface (freshwater and marine) and groundwater resources in and around the Project area. This information has been used to identify the potential for interactions between the Project and this VEC, and any resulting environmental effects and required mitigation measures.

5.3.1 Potential Environmental Issues and Interactions

The main potential interactions between the Project and water resources include possible:

- Changes in surface water quality and flows resulting from site preparation and installation works (on-land and marine), and from the management of on-site water, brine and other waste streams.

- Changes in groundwater quality and quantities arising from cavern development and other construction activities or operational processes, and resulting effects on its use; and

- Changes in water quality due to accidental spills of fuel, brine or other materials.

A summary of the potential interactions between each of the main Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.3.

Table 5-3: Water Resources: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters			
	Surface Water Quality	Surface Water Quantity	Ground Water Quality	Ground Water Quantity
Construction				
Site access and preparation	•	•		
Cavern development (solution mining)			•	•
Surface infrastructure (main facility)	•	•		
Wind farm / substation	•	•		
Marine components and pipelines	•			
Transmission line / substation	•			
Ancillary components (roads, buildings etc)	•			
Waste management	•			
Project related expenditures				
Employment (including accommodations and transportation)				
Operations				
Main facility (including ACAES, salt production)	•		•	
Wind farm / substation	•			
Marine components and pipelines	•			
Transmission line / substation	•			
Project related expenditures				
Employment				
Decommissioning	•	•	•	•
Potential Accidental Events				
Spills	•		•	
Fire or explosion	•			

5.3.2 Environmental Effects Assessment

As illustrated above, potential interactions between the Project and water resources may result from both planned components and activities (such as site preparation, cavern development and operation) and unplanned events (including accidental spills).

5.3.2.1 Construction

Surface Water (Quality and Quantity): Freshwater

The Project area is located in proximity to Fischells Brook (a scheduled salmon river) and Barry Brook, both of which flow east-west before ultimately discharging into St. Geroge's Bay. There are also several smaller watercourses, ponds and wetlands in the general area, which form part of a locally integrated drainage network flowing generally westward towards the bay (Appendix E).

Any potential effects on water quality resulting from site clearing and other construction activities are expected to be limited to possible short-term increases in suspended solids in resulting site runoff. These will be avoided or reduced through the design and implementation of sound erosion and sediment control measures, including: minimizing the area of ground disturbance and exposed soil, covering and stabilizing disturbed soils where appropriate, installing sediment control fences and ditches, and perimeter berms to prevent non-contact water from entering construction areas. Additionally, sedimentation pond(s) will be established to capture and treat runoff prior to discharge. This site water control infrastructure will be established during the earliest phases of construction.

Potential effects on water quantity during construction are expected to be minimal and primarily associated with any temporary diversion of surface water flows between local drainage areas or watersheds. Given the location and relatively small footprint of the Project, any such flow changes are anticipated to be minor, localized, temporary and effectively managed through the planned water management infrastructure.

A description of wetlands found within or near the proposed Project area was provided in Section 3.1, with further details in Appendix E. Some wetlands located within or adjacent to the Project footprint may be removed or altered during construction as a result of site clearing and placement of infrastructure. Potential effects of wetland disturbance include loss of vegetation, alteration of habitat and changes to local hydrology and temporary increases in sedimentation and turbidity in connected watercourses. Wetland alteration can also influence the capacity of the landscape to retain water, filter nutrients, and support biodiversity. To mitigate these potential effects, Project siting and design will prioritize avoidance of wetlands wherever possible. Where wetland disturbance cannot be avoided, construction approaches will maintain buffer zones around wetland boundaries, minimize the extent of clearing and employ construction best practices such as erosion and sediment control measures, temporary diversion channels, and protective barriers to limit runoff and sedimentation. All activities and associated mitigation measures will be implemented in accordance with applicable federal and provincial regulations and guidance, ensuring that residual effects on wetland functions and values are minimized. TPR recognizes the various permits required under Section 48 of the *Water Resources Act* for work within 15 m of a wetland or waterbody and will consult with the Water Resources Management Division during the detailed engineering phase of the Project and prior to construction.

Water required for construction activities may be sourced from a temporary groundwater well specifically established for Project use, in accordance with applicable regulations and required permits. Given the controlled and limited nature of this water supply, no significant effects on either water quality or quantity are anticipated.

Fuel, lubricants and other materials used on-site during construction will be handled, stored and used in accordance with industry-standard operating procedures and recognized protocols. Spill prevention, secondary containment and emergency response measures will be in place to minimize the risk of accidental spills.

Surface Water (Quality and Quantity): Marine

Construction activities associated with the Project's planned marine components have the potential to affect marine water quality in St. George's Bay through sedimentation. If the potential beach well system for water intake and/or the on-land disposal well options are selected and implemented, the requirement for in-water work will be considerably reduced.

Disturbance of the seabed during marine pipeline installation could temporarily increase suspended solids in the water column, although any localized changes in marine water quality are expected to be short-term, intermittent and confined to the immediate area of construction, with local oceanographic conditions quickly dispersing any suspended sediments. To mitigate potential effects on marine water quality, sediment and erosion control measures will be applied, which may include silt curtains and containment structures around active construction areas. Any water discharged from the site will be managed through collection and treatment systems to meet applicable regulatory standards prior to release. In addition, strict protocols will govern the storage, handling and use of fuels and other materials to prevent accidental spills, and contingency measures outlined in the Project's Emergency Response Plan will be in place to respond to any unplanned releases. Through these measures, any resulting effects to marine water quality in St. George's Bay are expected to be minimal, localized and short-term in nature.

Groundwater Quality and Quantity

A preliminary overview of groundwater in and around the Project area was provided in Section 3.1.3, based on existing and available information, with further details in Appendix D.

Construction activities that could potentially affect groundwater quality and quantity are expected to be primarily linked to the development of the salt cavern(s) and handling of brines at surface. During drilling and solution mining, there is a risk that drilling fluids, saline water or dissolved salt could migrate into surrounding groundwater-bearing formations if pathways are created or existing pathways are intercepted. Additionally, removal of salt to create the cavern can locally alter subsurface pressure conditions, which in some cases may influence groundwater flow patterns in adjacent formations. These effects are generally minimized where salt formations are thick and laterally continuous, as salt has extremely low permeability and has a ductile response to stress. . Potential risks are therefore most associated with well construction and the interface between the well casings, the cavern and overlying geologic units rather than with the salt formation itself.

Mitigation will therefore be focussed primarily on well design, with multiple layers of casing and cement grout installed within the wellbore to isolate groundwater-bearing zones from the deep-seated brackish water, salt cavern and drilling or operational fluids. Surface casing is typically set below the deepest freshwater aquifer and grouted to surface, creating a continuous seal that prevents fluid migration along the wellbore.

Additional intermediate and production casings provide redundant barriers and maintain structural integrity over the life of the facility. Pressure testing, cement grout bond logging, and ongoing monitoring programs are used to verify casing integrity and detect any potential leakage early. Together, these engineering controls, combined with regulatory requirements for well construction and abandonment, are designed to prevent interaction between the salt cavern, brine and surrounding groundwater systems and to minimize the likelihood of adverse effects.

In the event that saltwater generated during solution mining is managed using an engineered deep injection well system, the material would be injected into deep, geologically isolated formations beneath confining strata. By selecting disposal zones well below potable aquifers, employing layered casing and cement barriers in disposal wells, and conforming to regulatory requirements that protect water-bearing units, the design will ensure that injected liquid waste remains isolated from any groundwater that may be present. This approach would not only protect freshwater resources but would avoid the need for marine discharge. Such deep-well disposal practices and subsurface containment measures are typical in underground storage and solution-mining projects, where they can be developed in a technically and economically feasible manner.

With respect to handling of brines at surface, to ensure protection of water resources the engineering design of the brine ponds will include a lined containment facility intended to be physically isolated from surrounding subsurface environments. Under normal operations, no direct interaction with shallow groundwater or surface water are anticipated. TPR is committed to adhering to the Canadian Dam Association Guidelines 2007 should a dam greater than 1.0 m be required as part of the containment facility.

Additional groundwater modeling and analysis will be undertaken during the detailed engineering phase. Supporting the modeling, a comprehensive hydrogeological investigation program will be implemented for on-going Project design, including in-situ hydraulic conductivity testing of overburden and bedrock lithologies, pump testing, groundwater level monitoring, water quality sampling, and long-term observation. Data will be collected through a network of boreholes, cone penetration tests, test pits, packer tests, and strategically placed piezometers to characterize site-wide subsurface conditions, including both shallow, potable and deeper groundwater quality. The collected field data will be integrated into a three-dimensional numerical groundwater model, which can provide predictions of various scenarios to evaluate potential effects on local aquifers. This model will also allow for the design of long-term groundwater monitoring strategies (see below).

A comprehensive groundwater monitoring program will also be implemented for the duration of the Project to detect changes in quantity or quality, particularly with respect to salinity, and to ensure early identification and management of potential effects on private or public water supplies. All groundwater investigations, modeling, and monitoring programs will be developed and implemented in consultation with the provincial Water Resources Management Division and other applicable regulatory authorities. TPR acknowledges that this may include a requirement to establish a real-time water monitoring network comprised of surface water quantity, quality, climate and/or groundwater monitoring stations, in consultation and partnership with the Water Resources Management Division.

5.3.2.2 Operations

Surface Water Quality and Quantity: Freshwater

Potential effects on surface water during the operation of the Project are expected to be similar to, but far less than, those described for construction, given the limited additional ground disturbance associated with this phase of the Project. By this time, water control infrastructure - including ditches, berms, culverts and sedimentation/settling ponds - will be fully established and functional, providing effective management of site runoff. As a result, the potential for sedimentation, erosion or uncontrolled discharges to affect surface water bodies will be greatly reduced compared to construction. Any changes to water quality or quantity are anticipated to be negligible and well within applicable regulatory standards.

Fuel and other materials will continue to be handled, stored, and used appropriately. Spill prevention measures, secondary containment, and emergency response procedures will be in place to minimize the risk of accidental releases.

Groundwater Quality and Quantity

Once the salt cavern(s) is developed and in operation, it functions as a sealed, pressure-managed storage void within a competent salt formation that is inherently low-permeability. As a result, the potential for groundwater interaction is limited by both engineered barriers and the natural confining properties of the surrounding geology, thereby minimizing the likelihood of pathways that could result in adverse interactions with water resources.

A groundwater monitoring program will be implemented throughout the operational phase, encompassing both shallow and deeper groundwater systems, including observation wells and piezometers installed near the cavern, infrastructure and brine management facilities. The monitoring program will track water levels, flow directions and gradients, interactions between groundwater and surface water, and water quality, enabling the prediction and early detection of potential issues, informing mitigation measures, and supporting adaptive management as required.

Surface Water Quality and Quantity: Marine

As described previously, TPR is also assessing the option of returning the saltwater effluent to St. George's Bay via a purpose-built marine outfall. Potential environmental effects associated with such discharge include localized increases in salinity, temperature and water density, which could affect the marine environment components if not properly designed and managed. The ongoing design phase of the Project, combined with detailed modeling and adaptive engineering, allows TPR to explore alternative pipeline lengths, diffuser configurations and outfall locations to ensure rapid dilution and minimal effects. The saltwater is expected to be released in a manner that limits changes to the surrounding marine environment to highly localized, short-term, and manageable levels, consistent with regulatory thresholds.

Preliminary design work has employed CORMIX (Cornell Mixing Zone Expert System) to guide diffuser placement, pipeline configuration and discharge velocity, targeting adequate mixing to meet applicable water quality standards.

Salinity and Temperature Modelling

As part of the 2025 Feasibility Study for the Project, a structured nearfield and farfield modelling program was undertaken to design the offshore outfall and ensure full compliance with marine water quality guidelines (Appendix G). The modelling incorporated available local bathymetric, wind, wave, water level, current, and salinity datasets to develop site-specific simulations of dispersion. A two-tier approach was applied:

- CORMIX (Cornell Mixing Zone Expert System) for regulatory nearfield dilution and diffuser optimization
- Delft3D for 3D farfield transport and recirculation assessment

Publicly available Canadian Hydrographic Service (NONNA) bathymetry was supplemented with nautical chart data to develop a combined seabed surface for modelling and infrastructure siting. This dataset informed:

- Intake and outfall depth selection (12.3 m and 16 m respectively)
- Numerical model grid development
- Assessment of plume interaction with seabed and density-driven spreading

Long-term wind data (1959–2025) from the Stephenville Airport climate station were statistically analyzed, including extreme value analysis using a GEV distribution. Average wind conditions (5 m/s) and storm conditions (up to 28 m/s, 200-year return period) were used to define modelling scenarios. Wave climate data (1954–2018) from the MSC50 hindcast model were analyzed to determine extreme significant wave heights (Hs up to 7.8 m, 200-year return period). While waves were excluded from the Delft3D circulation model (conservative assumption for density-driven mixing), wave analysis informed structural depth requirements and constructability considerations. Predicted tide tables from nearby stations were combined using distance-weighted averaging to estimate tidal levels at the site. Because no site-specific current measurements exist, hydrodynamic forcing was derived from WSP's regional MIKE3 model of the Gulf of St. Lawrence. Extracted time series (2015–2019) indicated:

- Maximum currents: 0.63 m/s
- Average currents: approximately 0.07 m/s
- Predominantly alongshore flow (SW–NE orientation)

Low-current periods were deliberately selected for conservative plume simulations. Surface salinity (28–32 ppt) and temperature (4–23°C) data from DFO's IML-10 buoy were used to define representative ambient conditions (15°C, 31 ppt) for modelling. Maximum discharge salinity (260 ppt increase) and +5°C temperature were applied as conservative design inputs.

Environmental performance criteria were based on guidance from the Canadian Council of Ministers of the Environment (CCME 2025), with the goal of identifying a preliminary design that adhered to the following parameters:

- Salinity increase of less than 10% above ambient (≤3.1 ppt)
- Temperature change of less than 0.5°C (conservative target within ±1°C guideline)

Compliance with these guidelines was assessed at the edge of a 100 m Initial Dilution Zone (IDZ).

Initial dilution and plume behavior within the nearfield were simulated using CORMIX, a mixing-zone model widely used for dense effluent discharges. The key inputs included:

- Discharge: 14,500 m^3/day (0.167 m^3/s), conservatively assessed up to 2×
- Water depth: 16 m
- Current velocity: 0.07 m/s
- Ambient salinity/temperature: 31 ppt / 15°C
- Effluent salinity increase: 260 ppt
- Effluent temperature increase: +5°C

Sensitivity analyses tested diffuser length, number of ports, riser diameter, port diameter, jet velocity, and orientation. Modelling demonstrated that higher jet velocities, multiple ports, and alignment with prevailing currents improved dilution. The optimized preliminary diffuser design (20 m length, 14 vertical ports at 60°, 8.5 m/s jet velocity) achieved:

- Dilution factor ≈ 76 at 100 m
- Salinity excess ≈ 3.0 ppt (≤3.1 ppt limit)
- Temperature excess ≈ 0.1°C (≤0.5°C target)

The diffuser configuration was therefore explicitly derived from modelling results to ensure regulatory compliance at the IDZ boundary.

To evaluate plume transport beyond the nearfield and potential recirculation to the intake, a three-dimensional hydrodynamic and transport model was developed using Delft3D. Model configuration was based on:

- Curvilinear grid (100 m resolution near intake/outfall)
- 10 sigma layers (3D vertical resolution)
- Bathymetry derived from compiled site dataset
- Western water-level boundary forced using MIKE3-derived time series

- Northern/southern Neumann boundaries
- No atmospheric heat flux (conservative for temperature)
- No wave coupling (conservative for density-driven plume retention)

The nearfield CORMIX dilution output was introduced into Delft3D as distributed bottom-layer discharge sources to represent plume conditions at the end of initial mixing. Five wind scenarios were simulated:

- No wind
- Average wind (5 m/s) – West
- Average wind (5 m/s) – North
- Storm (28 m/s) – West
- Storm (28 m/s) – North

The selected modelling window represented low ambient flow to conservatively test worst-case dispersion. Recirculation was defined as salinity excess ≥0.3 ppt at the intake. Across all scenarios:

- The 0.3 ppt contour remained ~500 m from the intake
- No recirculation occurred
- Temperature effects were negligible

Results show the dense plume remains largely confined to bottom layers due to density stratification, while wind primarily affects upper-layer circulation.

In summary, the modelling showed that optimized diffuser design achieves compliance with CCME salinity and temperature objectives at the IDZ boundary, and 3D circulation modelling demonstrates no recirculation to the intake under average or extreme wind scenarios.

The design of the outfall, including pipeline length, alignment, depth, and diffuser configuration, remains the subject of ongoing engineering work. Detailed hydrodynamic and environmental modeling is planned during the next stage of engineering to optimize the outfall for maximum dilution and dispersion while minimizing potential environmental effects, in order to ensure compliance with the above noted guidelines and other legislation or regulations that are or may be applicable to this aspect of the Project (e.g., federal *Fisheries Act*, provincial *Environmental Control Water and Sewer Regulations*).

As also discussed previously, the proposed salt production facility is at a relatively early stage of planning and design, and there is considerable flexibility in its overall capacity (brine inputs and salt production outputs), which continue to be evaluated based on technical, economic and environmental factors, and with a view to maximizing the value of, and associated benefits from, the utilization of this resource. This will include optimizing the amount of salt extracted from the brine produced during solution mining, and therefore, decreasing the salinity of any salt water that is eventually disposed of.

If marine disposal is eventually planned, a marine monitoring program will be implemented for a period during initial operations to track salinity, temperature and other relevant water quality parameters in the vicinity of the outfall. This program will provide early detection of any deviations from predicted conditions, enabling prompt mitigation if necessary. The combination of controlled collection and disposal, carefully engineered discharge, ongoing design optimization and operational oversight ensures that potential effects of disposal on marine water quality and associated ecosystems in St. George's Bay will be effectively managed throughout the Project.

5.3.2.3 Decommissioning

During the decommissioning phase, some or all Project facilities will be removed, and its footprint will be rehabilitated. Any surface water quality effects during decommissioning are expected to be limited to minor, localized increases in suspended solids in runoff associated with clearing, grading, or backfilling activities. These potential effects will be mitigated through the continued use of erosion and sediment control measures, such as sediment fences, diversion ditches, check-dams and settling ponds, to prevent sedimentation of nearby watercourses, wetlands or coastal areas. Over the course of site rehabilitation, the site drainage and water balance will be restored to near predevelopment conditions, and no residual surface water quality or quantity effects are expected.

Similarly, decommissioning activities are not expected to create any new or increased effects on groundwater. The cavern(s) may be backfilled or sealed as required to prevent long-term hydraulic connectivity with surrounding groundwater systems and to minimize the potential for subsurface migration of saline water. By design, cavern development wells intended to hydraulically isolate surficial deposits and overlying bedrock aquifers using casing strings cemented to surface, such that solution mining and cavern operations occur entirely within the low-permeability halite and are not hydraulically connected to groundwater systems. The groundwater monitoring program may be maintained post-decommissioning, including monitoring wells strategically located around the cavern footprint and former brine management areas, with periodic measurements of groundwater level, salinity, and other relevant water quality parameters.

5.3.2.4 Potential Accidental Events

Potential accidental events that could affect water resources in or around the Project include spills of fuel, brine or other substances. To minimize the likelihood of such events during routine operations, TPR will implement strict procedures for the handling, storage, and use of these materials, in accordance with industry-standard operating practices and applicable federal and provincial regulations. This includes the use of secondary containment systems, secure storage tanks, and controlled transfer procedures to prevent accidental releases.

In addition to operational controls, the Project's physical design incorporates multiple features to prevent or contain spills and limit their effects on surface and groundwater. Water control infrastructure - including berms, ditches, culverts, and sedimentation/settling ponds - will capture and direct all site runoff, providing containment and treatment opportunities before discharge to the environment. Brine storage and transfer systems will be designed with leak detection, overflow containment and controlled discharge measures to minimize the potential for accidental releases. Temporary or permanent containment basins and tanks will be sized to accommodate maximum expected volumes of brine or other liquids, providing an additional layer of protection for surrounding water resources.

Should an accidental spill occur despite these preventive measures, the collected runoff and contained flows can be treated or managed on-site to mitigate potential environmental effects. Emergency response procedures, including spill response plans and equipment, will be implemented immediately, in coordination with regulatory authorities if required. The combination of robust operational practices, engineered containment features, and emergency preparedness ensures that any accidental releases of brine, fuel, or other materials will be effectively controlled.

As noted in Section 2.11, a supply of spill response equipment and materials will be maintained at the Project site in an accessible location, including absorbents and containers for collection of any contaminated ground or other debris. In the unlikely event that fuels or oils are spilled at site, they will be recovered, stored in metal containers, and transported to an approved site for disposal by a certified contractor. Personnel working on the Project will be appropriately trained and knowledgeable about these spill response procedures, and any such incidents will be reported to environmental authorities as applicable.

5.3.3 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

- All activities will comply with relevant federal and provincial environmental legislation, regulations, and required permits.
- Project planning and design will avoid watercourses, waterbodies, wetlands, and riparian areas wherever possible, maintaining natural buffers to protect aquatic habitats.
- Sediment control measures will be implemented to minimize sedimentation of surface water within and near the Project area. Site water will be directed to designed sedimentation/settling ponds, collection ditches, and associated infrastructure for monitoring and treatment prior to discharge, in compliance with regulatory requirements.
- Development of Erosion and Sediment Control Plan (ESCP) for review by applicable regulatory authorities.
- Culverts, trenching, and grading will be designed to maintain pre-existing drainage patterns wherever feasible to reduce disruption to surface water flow.
- Caverns will be sited in geologically suitable formations, designed with appropriate depth, shape, and spacing to prevent interaction with groundwater.
- All brine will be collected, stored, and transported in secure, lined containment systems with corrosion-resistant pipelines, secondary containment and leak detection to prevent accidental release.

- If deep on-site wells are established and used for saltwater disposal, these will be sited and designed in a way that avoids groundwater interaction.
- If marine disposal is planned, it will be discharged in a controlled manner and with final outfall locations and depth and diffuser design aimed at ensuring sufficient mixing in accordance with applicable guidelines.
- Implementation of waste management and fuel storage/use plans, including secondary containment and emergency procedures.
- Environmental Protection Plan(s) and Emergency Response Plans will guide construction, operation, and incident response to avoid effects on surface and groundwater.
- Disturbed areas will be progressively rehabilitated during construction and operation.
- Additional groundwater modelling and hydrogeological investigations will be conducted during on-going project engineering. This will inform a surface water and groundwater monitoring program that will be implemented during Project construction and into operation to detect and address any changes in water quantity or quality.

A summary of the predicted (residual) environmental effects of the Project on the water resources VEC is provided in Table 5.4 below.

Table 5-4: Water Resources: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty
Construction							
Change in surface water quality	A	N	S-L	3	S	R	H
Change in surface water quantity / drainage patterns	N	N	L	3	C	R	H
Change in groundwater quality	A	N	L	3	S	R	M
Change in groundwater levels (quantity)	N	N	L-R	3	S	R	M
Operations							
Change in surface water quality	A	L	S-L	5	S	R	M
Change in surface water quantity / drainage patterns	N	N	L	5	C	R	H
Change in groundwater quality	P	N	S	5	C	R	M
Change in groundwater levels (quantity)	N	N	S	5	C	R	M

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Decommissioning							
Change in surface water quality	A	N	S-L	3	S	R	H
Change in surface water quantity / drainage patterns	N	N	L	3	S	R	H
Change in groundwater quality	N	N	L	3	S	R	H
Change in groundwater levels (quantity)	N	N	L	3	S	R	H
Potential Accidental Events							
Change in surface water quality	A	N-L	S	1	S	R	M
Change in surface water quantity / drainage patterns	N	-	-	-	-	-	H
Change in groundwater quality	A	N	S	1	S	R	H
Change in groundwater levels (quantity)	N	-	-	-	-	-	H

Overall, Resulting Effect(s) of Project on the VEC	**Evaluation of Significance**
• Planned Project components and activities will have some potential to interact with and affect surface and groundwater resources in the area through surface (ground) disturbance and associated implications for water volumes and flows. • Potential accidental events (such as spills) will be prevented due to Project equipment and procedures, with appropriate response plans and procedures in place.	• The proposed Project is not likely to result in significant adverse environmental effects on water resources.

Nature / Direction:	**Magnitude:**	**Geographic Extent:**	**Duration:**	**Frequency:**
A = Adverse	N = Negligible	S = Site	1 = < 1 month	O = Once
N = Neutral or No Effect	L = Low	L = Local	2 = 1-12 months	S = Sporadic
P = Positive	M = Medium	R = Regional	3 = 13-36 months	R = Regular
	H = High		4 = 37-72 months	C = Continuous
			5 = > 72 months	
Reversibility:	**Certainty:**			
R = Reversible	L Low			
I = Irreversible	M Moderate			
	H High			

5.3.4 Cumulative Environmental Effects

Current (baseline) environmental conditions for water resources in the region (Section 3.1) reflect the effects and influences of other natural conditions and processes and past and on-going human developments and activities the area and elsewhere, in both the on-land and marine environments. The region is not one that has been subject to large scale industrial development to date, and as such, the quality of the local surface and ground water resources is generally good. As described above, the proposed Project is not expected to significantly and negatively affect water resources in the area. With the exception of the Atlas Salt mining project located approximately 15 km away, there are no other known planned or imminent development projects in the Study Area whose potential effects may accumulate or otherwise interact with those of the Project. The Project is therefore not likely to result in significant, adverse cumulative envi ronmental effects on ground or surface waters in combination with other projects or activities that have been or will be carried out.

5.4 Fish and Fish Habitat

Fish and fish habitat are important considerations in any EA of proposed developments located within or near the freshwater or marine environments, given their ecological and socioeconomic importance. This VEC includes relevant fish species (all life stages) and their habitats found within the EA Study Areas.

An overview of the existing environment for this VEC was provided in Chapter 3, based on available information on the known or likely presence of fish and their habitats in and around the Project area. This information has been used to identify and evaluate the key potential interactions of the Project with this VEC and any resulting environmental effects and required mitigation measures.

5.4.1 Potential Environmental Issues and Interactions

The key potential interactions between the Project and fish and fish habitat include:

- Project site work may alter freshwater fish habitat, either through direct interaction or as a result of sedimentation, changes in water flow or temperature or other possible emissions and changes.

- Project components and activities within or near the marine environment may also alter habitats through direct disturbance or sedimentation, as well as through the marine discharge of saltwater if that disposal option is eventually selected.

- Possible accidental spills of fuel or other materials during their planned transportation, storage and use may interact with or adversely effect the freshwater or marine environments.

An overview of the potential interactions between each of the main Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.5.

Table 5-5: Fish and Fish Habitat: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters			
	Fish Presence and Abundance	Fish Health	Fish Habitat (Availability and Quality)	Activities and Requirements (Feeding, Migration, Reproduction)
Construction				
Site access and preparation	•	•	•	•
Cavern development (solution mining)			•	
Surface infrastructure (main facility)	•	•	•	
Wind farm / substation	•	•	•	•
Marine components and pipelines	•	•	•	•
Transmission line / substation			•	
Ancillary components (roads, buildings etc)			•	
Waste management		•	•	
Project related expenditures				
Employment (including accommodations and transportation)				
Operations				
Main facility (including ACAES, salt production)		•	•	
Wind farm / substation			•	
Marine components and pipelines	•	•	•	•
Transmission line / substation			•	
Project related expenditures				
Employment				
Decommissioning	•	•	•	•
Potential Accidental Events				
Spills	•	•	•	•
Fire or explosion	•	•		

5.4.2 Environmental Effects Assessment

As illustrated above, potential interactions between the Project and fish and fish habitat may result from both planned components and activities and unplanned (accidental) events.

5.4.2.1 Construction

Freshwater Environment

The Project is located near two watercourses - Fischells Brook and Berry Brook – each of which do or may support several fish species, including Atlantic salmon, brook trout, American eel and banded killifish. Fischells Brook is a scheduled Atlantic salmon river and contains habitat suitable for multiple life stages of these species, while Berry Brook is smaller but has also been reported to support Atlantic salmon and likely similar fish communities, particularly in its lower reaches where flow conditions are more suitable.

Standard mitigation measures will be implemented throughout the construction phase of the Project to avoid or minimize potential adverse effects to freshwater fish and fish habitat. Wherever possible, a minimum 30 m naturally vegetated buffer will be maintained around freshwater aquatic habitats (i.e. waterbodies, watercourses and wetlands), and erosion protection procedures (as described in an EPP for construction) will be followed to prevent sedimentation of freshwater habitats in and surrounding the Project area. Downstream fish and fish habitat will be protected through site water control infrastructure (ditches, berms, culverts and the settling pond) which will be developed during the initial phases of construction. No blasting will occur within 300 m of any sensitive receptor, including a waterbody, and all blasting will be performed in accordance with the NL *Occupational Health and Safety Act* and Regulations, DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (Wright and Hopky 1998) and Section 3.9 of DFO's Best Management Practices for the Protection of Freshwater Fish Habitat in Newfoundland and Labrador. All on-site equipment will be maintained in good working order. Fuel and chemical use during construction will adhere to industry standard operating procedures and safety protocols.

As described earlier, a water quality monitoring program will be implemented for the duration of the construction phase, to evaluate the quality of water within and leaving the site, to help prevent any adverse effects to fish and fish habitat downstream of the Project.

Marine Environment

Planned construction activities in or near the marine environment such as the installation of the beach wells or seawater intake / outfall systems, have the potential to interact with marine fish and their habitats. These may result in temporary increases in suspended sediment or disturbance of seabed substrates, which can reduce water quality and disturb seabed habitats. Noise and vibration associated with excavation, pipeline installation or heavy equipment operation near the shoreline may also temporarily disturb fish, potentially resulting in short-term avoidance of the immediate work area during active construction. However, any in-water construction activities will occur over a relatively short period and within a limited, well-defined footprint, and any effects are therefore expected to be localized and temporary in nature. Once construction activities are complete, disturbed areas are expected to stabilize naturally, and normal habitat use by marine species is anticipated to resume.

A number of mitigation measures will be implemented to minimize potential effects on marine fish and habitat. These include scheduling in-water works outside sensitive periods for fish, such as spawning or migration seasons, where feasible, and the use of silt curtains and other sediment control measures as appropriate to limit the spread of any resulting turbidity. Construction methods and equipment will be selected to minimize underwater noise and physical disturbance, and best management practices for fuel and material handling will be implemented to prevent accidental releases into the marine environment.

The final siting of any marine piping and associated intake and outfall structures (if these options are selected) would occur as part of future engineering design and involve a structured alternatives assessment that considers multiple routing and location options. This process would incorporate available marine environmental baseline data, and information on fisheries and other marine activities to identify locations that avoid sensitive habitats, minimize interactions with commercial and recreational fisheries, and reduce construction and operational risks. Options would be comparatively evaluated on technical feasibility, constructability, cost, and environmental effects to select a solution that is technically and economically viable while representing an environmentally acceptable approach.

To minimize the risk of introducing or spreading aquatic invasive species (AIS) during the construction phase, the Project will implement applicable best management practices for vessel and equipment operations, including AIS awareness measures, routine vessel maintenance and biofouling management, appropriate precautions during vessel and gear movements, and reporting of any suspected AIS observations to DFO.

5.4.2.2 Operations

Freshwater Environment

During Project operations, the potential for interactions with freshwater fish and fish habitat are expected to be substantially less than during construction, as no new ground disturbance or in-water works will occur once infrastructure is established and functioning. Potential interactions with freshwater fish and habitat would therefore be limited to possible (but unlikely) changes in surface water quality or quantity associated with site runoff, water management infrastructure or accidental releases of fuel or other deleterious substances. With erosion and sediment control measures already established prior to the start of operations, the potential for sedimentation or alteration of fish habitat is expected to be low.

Site water will continue to be directed through established drainage and settling infrastructure prior to discharge, ensuring that water quality meets applicable regulatory requirements. Routine inspection and maintenance of drainage infrastructure will ensure that flow patterns are maintained, and that erosion or sedimentation issues are promptly identified and addressed.

Marine Environment

During Project operations, any effects on the marine environment will be associated primarily with the possible discharge of saltwater generated during cavern development and maintenance activities (if the marine disposal option is selected), as no new seabed disturbance or in-water construction activities will occur once the seawater intake, outfall pipeline and coastal pumphouse are installed.

The main potential interaction relates to localized increases in salinity in the immediate vicinity of the outfall diffuser, which could influence water density, mixing characteristics and habitat suitability for marine organisms if not properly managed through facility design and operation. These effects are expected to be spatially limited to the near-field mixing zone surrounding the discharge point, with rapid dilution occurring as the material mixes with ambient seawater (see earlier discussion and modelling results in Appendix G). Mitigation of potential operational effects on the marine environment is therefore achieved primarily through engineering design and operational controls. The outfall diffuser system is being designed to promote rapid mixing and dispersion through multiple discharge nozzles and sufficient discharge velocity, ensuring that salinity levels outside the defined mixing zone comply with applicable guidelines. Detailed hydrodynamic and dispersion modelling will continue during the detailed engineering phase to refine diffuser configuration, outfall location and operating parameters to optimize dilution and minimize the potential for environmental effects.

TPR recognizes that subsection 36(3) of the federal *Fisheries Act* prohibits the deposit of deleterious substances into waters frequented by fish, or into locations where such substances could enter fish-bearing waters, unless specifically authorized by regulation, and has engaged with both Fisheries and Oceans Canada (DFO) and Environment and Climate Change Canada (ECCC) on this matter. During these discussions, neither department identified specific regulatory approval or compliance requirements applicable to the proposed activity, nor that the activity would necessarily be prohibited under existing legislation. TPR recognizes the applicability of subsection 36(3) and the need for compliance with these requirements, and notes that this will be addressed through on-going Project design and subsequent regulatory review processes. TPR also notes that marine disposal represents only one of several alternatives currently under evaluation and has been included in the EA process to facilitate assessment and comparison of potential options. Regardless of the alternative ultimately selected, TPR will continue to work with the relevant regulatory authorities and ensure that the Project – including any and all discharges - is designed, operated and managed in a manner that complies with all applicable requirements of the *Fisheries Act* and other relevant legislation.

As also discussed previously, the proposed salt production facility is at a relatively early stage of planning and design, and there is considerable flexibility in its overall capacity (brine inputs and salt production outputs), which continue to be evaluated based on technical, economic and environmental factors, and with a view to maximizing the value of, and associated benefits from, the utilization of this resource. This will include optimizing the amount of salt extracted from the brine produced during solution mining, and therefore, decreasing the salinity of any salt water that is eventually disposed of.

Operational monitoring programs will be implemented to verify model predictions and confirm compliance, allowing for adaptive management should adjustments be required. With these measures in place, residual effects on marine water quality and marine fish and fish habitat are expected to be low and localized.

Once construction activities are complete, Project-related marine activity will be minimal, and associated underwater noise and vibration during operations are expected to be negligible and largely indistinguishable from existing background marine conditions in the area.

5.4.2.3 Decommissioning

Progressive reclamation activities will occur over the life of the Project. Decommissioning associated with the Project will take place after operations have ceased and will endeavour to rehabilitate the site to as close to its pre-development condition as practicable. This may include demolition and removal of site infrastructure, rehabilitation of disturbed areas and on-going water management within the Project area. Once any required decommissioning activities have been completed, monitoring may be undertaken to confirm that these activities have been successful and that any discharges meet compliance standards.

No additional, residual adverse effects to fish and fish habitat are therefore expected as a result of any future decommissioning activities.

5.4.2.4 Potential Accidental Events

Accidental events that could conceivably occur and affect the freshwater or marine environments include a spill of fuel or other deleterious substances. TPR's planned measures and approaches for helping prevent accidental spills during planned Project activities, such as fuel handling and use at the site, will be as described previously.

Project design will incorporate multiple features intended to prevent or contain accidental releases that could affect fish and fish habitat in both freshwater and marine environments. Water management infrastructure - including berms, collection ditches, culverts, and sedimentation/settling ponds - will be designed to capture and control site runoff, reducing the potential for sediment, contaminants or altered water quality to enter watercourses or coastal waters that support fish and fish habitat. By providing containment and treatment opportunities prior to discharge, this infrastructure reduces the risk of changes in water quality that could adversely affect fish health or habitats.

Brine storage and transfer systems will also be designed with safeguards such as leak detection, overflow containment, and controlled transfer and discharge systems to minimize the potential for accidental releases to aquatic environments. Storage tanks and containment basins will be appropriately sized to manage maximum anticipated volumes, ensuring that any unplanned release can be contained and managed on site before reaching fish-bearing waters. These design measures, combined with monitoring and operational procedures, are intended to protect aquatic habitat quality and maintain conditions suitable for fish and other aquatic organisms throughout Project operations.

As noted in Section 2.11, a supply of spill response equipment and materials will be maintained at the site in an accessible location, including absorbents and containers for collection of any contaminated ground or other debris. In the unlikely event that fuels or oils are spilled at site, they will be recovered, stored in metal containers, and transported to an approved site for disposal by a certified contractor. Personnel working on the Project will be appropriately trained and knowledgeable about these spill response procedures, and any such incidents will be reported to environmental authorities as applicable.

As also indicated in Section 2.11 a number of environmental protection and response plans will be developed by TPR in relation to the Project (Appendix B), including contingency plans related to a spill event or fire and other accidental and emergency events, each of which will be implemented and adhered to throughout the life of the Project. All on-site Project personnel, including TPR employees, contractors and others, will be required to understand and adhere to the provisions of these documents.

5.4.3 Species at Risk and Species of Conservation Concern

As described in Section 3.1.5 and Appendices E and F, available information indicates that American eel, banded killifish and mummichog may be found in the region, each of which are listed as vulnerable under the NL ESA, and banded killifish additionally classified as a species of special concern under the federal SARA. In the marine environment. several fish species potentially occurring in St. George's Bay are also listed under Schedule 1 of the federal SARA.

The main potential environmental interactions between the Project and these species are the same as those for the fish and fish habitat VEC as a whole, as discussed in the preceding sections, as are the planned mitigation measures to avoid or reduce any such adverse interactions. The Project will not likely interact with or affect identified critical habitat for any such species, and is not expected to contravene any of the requirements, provisions or prohibitions of the SARA or the NL ESA.

5.4.4 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

- All activities will comply with relevant federal and provincial environmental legislation, regulations, and required permits, including the *Fisheries Act*.
- Project planning and design will avoid watercourses, waterbodies and wetlands wherever possible, maintaining natural buffers to protect aquatic habitats.
- Any planned work near a scheduled salmon river will be scheduled outside of the salmon migration (May 1 to September 30) period, with any work in or near the tributaries or headwaters of a scheduled salmon river being scheduled outside the spawning, incubation and hatching period (October 1 to May 31).
- Site water will be directed to designed sedimentation/settling ponds, collection ditches, and associated infrastructure for treatment prior to discharge, in compliance with regulatory requirements.
- Culverts, trenching, and grading will be designed to maintain pre-existing drainage patterns wherever feasible to reduce disruption to surface and groundwater flow.

- Development of Erosion and Sediment Control Plan (ESCP) for review by applicable regulatory authorities.
- Selection of in / near water construction methods and equipment that minimize underwater noise and vibration where practicable, and limiting the duration and intensity of any such activities.
- If marine water intake and/or disposal is planned, these will be undertaken in a controlled manner and with final intake / outfall locations and depth and outfall diffuser design aimed at minimizing potential effects and adhering to applicable environmental guidelines.
- Implementation of waste management and fuel storage/use plans, including secondary containment and emergency procedures.
- Environmental Protection Plan(s) and Emergency Response Plans will guide construction, operation, and incident response to minimize effects on surface and groundwater.
- Disturbed areas will be progressively rehabilitated during construction and operation.
- A surface water and groundwater monitoring program will be implemented during Project constriction and into operation to detect any changes in water quantity or quality.

A summary of the predicted (residual) environmental effects of the Project on fish and fish habitat is provided in Table 5.6 below.

Table 5-6: Fish and Fish Habitat: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Construction							
Change in fish presence / abundance	N-A	N	L	3	O	R	M
Change in fish health	N-A	N	L	3	O	R	M
Change in fish habitat (availability / quality)	N-A	N	L	3	O	R	M
Change in fish activities and requirements	N-A	N	L	3	O	R	M
Operations							
Change in fish presence / abundance	N-A	N	L	5	R	R	M
Change in fish health	N-A	L	L	5	R	R	M
Change in fish habitat (availability / quality)	N-A	L	L	5	R	R	M
Change in fish activities and requirements	N-A	N	L	5	R	R	M
Decommissioning							
Change in fish presence / abundance	N	-	-	-	-	-	H
Change in fish health	N	-	-	-	-	-	H
Change in fish habitat (availability / quality)	N	-	-	-	-	-	H

Potential Effect	**Environmental Effect Descriptors**						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Change in fish activities and requirements	N	-	-	-	-	-	H
Potential Accidental Events							
Change in fish presence / abundance	A	L	L	5	S	R	M
Change in fish health	A	L	L	5	S	R	M
Change in fish habitat (availability / quality)	A	L	L	5	S	R	M
Change in fish activities and requirements	A	L	L	5	S	R	M
Overall, Resulting Effect(s) of Project on the VEC • Planned Project components and activities have minimal potential to interact with and affect waterbodies and watercourses in the area. The implementation of erosion and sediment control measures and other planned design measures / mitigations will further help avoid or reduce any potential adverse effects. • Potential accidental events (such as spills) will be prevented due to Project equipment and procedures, with appropriate response plans and procedures.				**Evaluation of Significance** • The proposed Project is not likely to result in significant adverse environmental effects on fish and fish habitat.			

Nature / Direction:
A = Adverse
N = Neutral or No Effect
P = Positive

Magnitude:
N = Negligible
L = Low
M = Medium
H = High

Geographic Extent:
S = Site
L = Local
R = Regional

Duration:
1 = < 1 month
2 = 1-12 months
3 = 13-36 months
4 = 37-72 months
5 = > 72 months

Frequency:
O = Once
S = Sporadic
R = Regular
C = Continuous

Reversibility:
R = Reversible
I = Irreversible

Certainty:
L Low
M Moderate
H High

5.4.5 Cumulative Environmental Effects

Current (baseline) environmental conditions for freshwater fish and fish habitat in the region (Section 3.1.5) reflect the effects and influences of other natural conditions and processes and past and on-going human developments and activities the area and elsewhere, in both the freshwater and marine environments. Although there are examples of past and current human activities within and around the Project Area and surrounding locations, the Study Area itself is not one that has been subject to large scale industrial development to date. Moreover, as described above, the proposed Project is not expected to significantly affect freshwater fish and fish habitat in the area. There are no other known planned or imminent development projects in the area whose potential effects may accumulate or otherwise interact with those of the Project. The Project is not likely to result in significant, adverse cumulative environmental effects on fish and fish habitat in combination with other projects or activities that have been or will be carried out.

5.5 Vegetation and Wildlife

Vegetation within the Project area consists of a mix of forested, shrub and wetlands, typical of Western Newfoundland, which provides habitat that is known or likely to be used by a variety of wildlife species, including large and small mammals, avifauna and other species. Use of these habitats may be permanent for some species and seasonal or transient for others, reflecting different life history stages such as breeding, nesting, feeding, migration and others.

5.5.1 Potential Environmental Issues and Interactions

The Project will involve the clearing of vegetation and other ground disturbance within the eventual Project footprint. Wildlife may be affected through the resulting loss, alteration or fragmentation of habitat, as well as through other potential interactions with relevant Project components, activities and emissions including noise, lighting and waste materials. The main potential interactions with this VEC therefore include:

- Vegetation clearing and resulting changes in the availability or quality of habitats within the Project area.
- Wildlife disturbance, displacement, injury or mortality due to Project-related noise, lighting, vehicle traffic, and the presence and operation of wind turbines and other above-ground components.
- Potential effects on vegetation and wildlife resulting from accidental events, such as fires or spills of fuel or other materials.

An overview of the potential interactions between each of the main Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.7.

Table 5-7: Vegetation and Wildlife: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters			
	Vegetation (Amount, Diversity)	Wildlife Presence and Abundance	Wildlife Health	Wildlife Habitat (Availability and Quality)
Construction				
Site access and preparation	•	•	•	•
Cavern development (solution mining)				
Surface infrastructure (main facility)	•	•	•	•
Wind farm / substation	•	•	•	•
Marine components and pipelines	•	•	•	•
Transmission line / substation	•	•	•	•
Ancillary components (roads, buildings etc)	•	•	•	•
Waste management		•	•	
Project related expenditures				

Project Component / Activity	Key Indicators and Parameters			
	Vegetation (Amount, Diversity)	Wildlife Presence and Abundance	Wildlife Health	Wildlife Habitat (Availability and Quality)
Employment (including accommodations and transportation)				
Operations				
Main facility (including ACAES, salt production)		•	•	
Wind farm / substation		•	•	
Marine components and pipelines		•	•	
Transmission line / substation		•	•	
Project related expenditures				
Employment				
Decommissioning	•	•	•	•
Potential Accidental Events				
Spills	•	•	•	•
Fire or explosion	•	•	•	•

5.5.2 Environmental Effects Assessment

As illustrated above, potential interactions between the Project and vegetation and wildlife may result from both planned components and activities and unplanned (accidental) events.

5.5.2.1 Construction

Vegetation

Project construction will require the clearing of vegetation within the eventual Project footprint to accommodate the main facility, wind farm, transmission lines and other components. While the precise siting of all such features, and thus the exact size and location of their associated footprints, will be defined during the detailed engineering phase, the regional Ecological Land Classification (ELC) mapping (Section 3.1.6) indicates the presence of wetlands, shrubs and scrub areas, as well as coniferous, deciduous and mixed forest areas.

Clearing and other ground disturbance will be confined to only those areas where it is necessary to do so, with limits of clearing marked in advance and only designated areas cleared. The total Project footprint and thus the areas required to be cleared is relatively small, and is not known to contain unique, rare or regionally significant plant species or habitat types.

Wildlife

Terrestrial / Freshwater Environments

During the construction phase of the Project, wildlife may be affected due to site clearing and the associated removal or alternation of habitats. As noted above, the existing habitat within the Project footprint is comprised of a mix of forested and wetland habitats, which is known to be (or may be) utilized by a variety of wildlife including bats, passerine birds, waterfowl, small mammals and other species. The removal of this habitat will result in the long-term displacement of any wildlife that do currently utilize the area, including its potential use for breeding, migration, foraging or other life history activities. As reflected in the regional ELC, the surrounding landscape contains similar vegetation types to those found within the Project area, and so alternate habitats are available in nearby areas. This, and the relatively small size of the Project's proposed development footprint, means that any potential effects – while long term in nature – will be localized and are not likely to have overall effects on the size or health of wildlife populations in the region.

Standard mitigations will be implemented to avoid adverse effects to wildlife as a result of clearing activities during construction. If, for example, clearing is required during the known bird breeding season in this area, TPR will implement the following mitigations:

- Monitoring for bird nests will be conducted in advance of any planned site clearing during the breeding / nesting season (April 1 - August 31), and efforts will be made to avoid trees with nests during that time.

- Non-intrusive surveys for nests will be conducted in accordance with applicable requirements and guidance.

- Should a nest of a migratory bird be found, the following steps will be taken (in accordance with guidelines outlined in the *Migratory Birds Convention Act*):

    - All activities in the nesting area will be halted until nesting is completed and the young have left the vicinity of the nest;
    - Any nest found will be protected with a buffer zone appropriate for the species and the surrounding habitat until the young have left their nest; and
    - Nests will not be marked using flagging tape or other similar material as these increase the risk of nest predation.

Raptors are protected under Newfoundland and Labrador's *Wildlife Act*. In accordance with provincial guidelines, should a nest of a raptor be found, TPR will endeavor to follow the following guidance:

- A buffer zone of 800 m is to be maintained while the nest is active;

- After the young have left their nest, a buffer zone of 200 m should be maintained; and

- If work within the appropriate buffer zone cannot be avoided, the NL Wildlife Division will be contacted for advice on how to limit disturbance of the nest.

The following mitigative measures will be implemented to further reduce the potential for interactions between Project construction activities and any wildlife that may be present in the area:

- Work areas will be kept clear of garbage, and all waste materials will be stored and disposed of properly and regularly;

- Project personnel will not hunt or harass wildlife, and pets will not be permitted on the Project site;

- Equipment and vehicles will yield the right-of-way to wildlife; and

- Any nuisance animals will be dealt with in consultation with the provincial Wildlife Division.

As described in Section 3.1.7, the Project's main facility, marine components and pipeline(s) and wind farm do not overlap with any identified sensitive wildlife areas, caribou core areas, American marten critical habitat, known seabird colonies or raptor sites.

The Project lies near the eastern edge of Caribou Management Area (CMA) 61 associated with the La Poile herd, but overlaps only a very small portion of that management area. Known core areas of concentrated seasonal use such as calving and wintering habitat are located approximately 15 km from the Project, indicating that key habitat areas occur at some distance. Although occasional observations of small groups of caribou have been reported in the broader Stephenville Crossing area, these sightings occurred about 26 km from the nearest Project feature and outside the expected ranges of nearby herds. Consistent with this, no records of caribou were identified within 5 km of the Project in AC CDC data, and available information suggests that caribou are not expected to regularly occur in the Project area (Section 3.1.7).

Indirect effects to surrounding habitats may also occur during construction, including possible changes to surface hydrology or sedimentation which could adversely alter adjacent aquatic habitats. Erosion protection and encroachment prevention procedures as described earlier will be followed to prevent indirect effects to wetlands and terrestrial habitats in and around the Project area.

As discussed in Section 5.2, Project related air emissions from equipment use and other sources will be negligible and quickly dispersed, and so will not result in health related effects to any wildlife. Increase in fugitive dust and pollutants can affect wildlife health and result in a reduction of the quality of habitat. At this time, high levels of emissions are not expected and mitigations for fugitive dust control will be implemented and detailed in the EPP including regular road watering.

Waste materials generated as a result of Project construction activities will be removed from the site and disposed of at an approved facility. Non-hazardous refuse will be stored in covered metal receptacles, and will be transported to and disposed of on a regular basis at an existing landfill site (with the approval of its owner / operator). Waste materials will be reused / recycled where possible. Any hazardous wastes will be stored in sealed, labelled containers and disposed of according to applicable regulations and TPR practices. These include procedures for the characterization / identification, storage, inspection, labelling and transportation of hazardous wastes produced at the site, as well as emergency preparedness / prevention and training. There will therefore be no adverse interaction between waste materials and the environment. As described earlier, the use, storage, handing and transportation of fuel and other chemicals will be undertaken by trained personnel using approved facilities and equipment, and in accordance with applicable regulations, guidelines and environmental protection procedures.

Coastal / Marine Environments

A particular concern regarding development activities in coastal locations is the potential attraction of night-flying birds, including their lights or other emissions, which can result in possible injury or mortality due to strikes, strandings, disorientation, and energy expenditure. The distance at which Project-related lighting will be visible (and thus, its likely zone of influence) can vary considerably based on site and time specific factors. Such disturbances appear to occur most frequently during periods of drizzle and fog, where moisture droplets in the air during conditions of drizzle and fog refract the light and increase the illuminated area, enhancing the attraction of lighting for certain birds (Wiese et al 2001; AMEC 2014).

To prevent or reduce the potential for any associated adverse effects on avifauna, the use of artificial lighting will be avoided or minimized wherever possible with consideration of safety and associated regulatory requirements. Overall, however, the presence of construction equipment at this site will be a small, highly localized and short term source of lighting in the region, the zone of influence of which would be limited to within a radius of a few hundred meters of the source. Routine checks of the Project equipment and site will be undertaken, however, and protocols for the collection and release of any birds that become stranded will be implemented, in accordance with applicable governmental guidance, requirements and permits.

Vessel interactions with marine mammals, including the potential for vessel strikes, represent a potential although unlikely effect associated with marine construction activities. While the risk is considered low given the temporary nature of construction activities and relatively limited vessel traffic associated with the Project, appropriate mitigation measures will be implemented. These will include adherence to applicable guidance and requirements established by DFO and Transport Canada for the protection of marine mammals, including North Atlantic Right Whales, such as vessel speed reductions where required, maintaining appropriate setback distances from observed marine mammals, avoiding deliberate approaches, ensuring personnel are aware of marine mammal sighting and reporting procedures, and complying with any applicable seasonal restrictions or Notices to Mariners. With these measures in place, the likelihood of vessel interactions with marine mammals is expected to be low.

5.5.2.2 Operations

Once the initial site preparation is completed, and while operations and other associated activities are being undertaken, there will be little or no additional vegetation disturbance at the Project site. In the unlikely event that any additional site clearing is required during the operations phase, the various mitigations outlined above will continue to be implemented. No additional effects to these aspects of the terrestrial or aquatic environments, and to the wildlife species that use them, are therefore anticipated.

Main Facility and Marine Components

During Project operations, while there will be on-going human presence, vehicular traffic and equipment use, and associated light and noise, the nature and scale of the Project's on surface activities, coupled with the continued implementation of the mitigation measures described above, will minimize the potential for disturbances to wildlife. Indeed, it is anticipated that any affected wildlife will have either moved out of the area during the construction phase, or will habituate to Project activities and disturbances.

Wind Farm and Transmission Lines

Operational wind turbines present a potential collision risk for birds and bats, particularly species that fly within the rotor-swept zone. Raptors, waterfowl, migratory songbirds, and nocturnal bat species are most at risk, with risk varying seasonally during migration and breeding periods. Transmission lines may also pose ongoing collision or electrocution risks for birds, particularly large raptors, if perching or flight paths intersect the structures. These effects are generally confined to the immediate vicinity of turbines and lines but are considered a key operational concern. Wind turbines also generate low-level noise and vibrations (Section 5.2), and occasional maintenance activity can create intermittent disturbance. Nocturnal wildlife, including bats and migrating birds, may be sensitive to turbine lighting, while diurnal species may avoid areas with ongoing human presence. These disturbances may cause temporary changes in habitat use, movement patterns, or activity levels but are not expected to result in large-scale or permanent displacement given the limited footprint of the Project.

To minimize operational effects on wildlife, turbines and transmission towers will be sited to avoid sensitive habitats and known migration or flight corridors where feasible. Turbine lighting will be minimized and directed downward, and routine maintenance will follow protocols that reduce wildlife disturbance. Additional mitigation and monitoring initiatives will include:

- A science-based bird and bat monitoring / mitigation plan will be developed and implemented in consultation with applicable government agencies.
- Bird and bat monitoring will take place during construction and operations to identify turbines that may pose elevated risk and inform data-driven mitigation strategies.
- A post-construction mortality monitoring program will be implemented, including systematic carcass searches at wind turbines and adaptive mitigation measures if required.
- Monitoring results will be reviewed with regulators and used to implement additional mitigation measures, such as deterrents or flight diverters, if wildlife interactions are observed.

5.5.2.3 Decommissioning

Progressive reclamation activities will occur over the life of the Project. Decommissioning activities associated with the Project will take place after operations have ceased and will endeavour to rehabilitate the site to as close to its pre-development condition as practicable. This may include demolition and removal of site infrastructure, re-vegetation of disturbed areas, and other approaches to restoring the landscape with the Project area. No additional, residual adverse effects to vegetation and wildlife are expected during and following the planned rehabilitation of the Project footprint.

5.5.2.4 Potential Accidental Events

Potential accidental events resulting from planned Project activities that could affect vegetation and wildlife include a spill of fuel or other materials or a fire. The resulting environmental effects of such an incident would clearly depend upon the nature, magnitude, location and timing of the accidental event.

A localized spill could have implications for exposed habitats and any birds or mammals that utilize it, although the likely effect on overall habitat availability and function and on the health of any wildlife populations in the area would likely be negligible. TPR's planned measures (equipment and procedures) to help prevent any such spills and to respond to one in the unlikely event of its occurrence were described previously, and are equally applicable to preventing or reducing potential effects on this VEC. These measures will be applied throughout the various phases of this Project, and further reinforced through the various permits, other authorizations and regulations and compliance standards that will be relevant to the Project.

A large scale fire originating from the Project could alter habitat availability, quality and composition across some area and extent, as well as directly affecting wildlife through direct injury or mortality, although most wildlife would have the ability to avoid or move out of areas affected which would reduce the potential for effects. Project-specific environmental and emergency response plans will be prepared and implemented for the various phases of the Project, which will include identifying and establishing measures to respond to any potential accidental events or emergency situations, such as a fire or the accidental release of fuel or other materials.

5.5.3 Species at Risk and Critical Habitats / Special Areas

As described in Section 3.1.6 and Appendix C, available information indicates that no flora species formally listed under the federal *Species at Risk Act* or the Newfoundland and Labrador *Endangered Species Act* have been recorded within 5 km of the Project area. The Atlantic Canada Conservation Data Centre identified 31 observations representing nine provincially rare plant species (species of conservation concern) in the region, several of which are ranked S1 or S2, indicating they are critically imperiled or imperiled in the province. These include several sedges, rushes, and other wetland-associated plants. Expert habitat mapping also suggests that boreal felt lichen (a federally listed species at risk) may occur east of the Project area, although its presence within the immediate vicinity is possible but unlikely. At a broader regional scale, additional rare plant species are known from the St. George's Bay subregion, particularly in wetland and coastal habitats, indicating that such species may occur in suitable habitats near the Project even if they have not been directly recorded at the site.

The available information also indicates that several wildlife species at risk and species of conservation concern may occur in the broader Project region, although confirmed records immediately near the site are limited. The Newfoundland population of American marten, listed as Threatened under both SARA and the NL *Endangered Species Act*, occurs throughout forested areas of western Newfoundland, and designated critical habitat is found in the region, suggesting potential presence in suitable nearby forest habitat. Bird communities in the region are diverse and include numerous forest, wetland, coastal, and migratory species associated with the Atlantic Flyway. Within 5 km of the Project area, confirmed species at risk records include Canada warbler and rusty blackbird, with additional such species potentially present based on regional datasets and expert mapping, including olive-sided flycatcher, bank swallow, red crossbill, short-eared owl, ivory gull and Barrow's goldeneye. Others have been recorded in nearby communities and coastal areas, including piping plover, red knot, Hudsonian godwit, and lesser yellowlegs, though not immediately adjacent to the Project. Western Newfoundland also supports five bat species, all of which are listed as endangered provincially or federally, but no bat records were identified within 5 km of the Project, although recent studies confirm their presence elsewhere in western Newfoundland. Overall, the available data indicate that several species occur in the broader region and could potentially occur in suitable habitats near the Project, while some species are known only from more distant locations.

Table 5.8 identifies critical habitats and other designated plant and wildlife areas in the region and indicates their proximity to the Project.

Table 5-8: Identified Critical Habitats and Other Important Plant / Wildlife Areas

Type	Proximity to Project
Sensitive Area - Plants	• Closest such area (at the mouth of Fischells River) is outside of but less than a kilometer from the south of the proposed pipeline(s)
American Marten Critical Habitat	• Project main facility and wind farm are over 600 m from this habitat • Proposed (and existing) transmission line crosses through one block of this habitat
Piping Plover Critical Habitat	• Project main facility and wind farm are over 10 km from this habitat
Core Caribou Area	• Over 15 km to the southeast of the proposed wind farm

The proposed transmission line will cross a portion of designated American marten critical habitat, but it will be routed within or immediately adjacent to the existing transmission line right-of-way, which substantially reduces the potential for new disturbance to this species. Using an existing linear corridor avoids the need to create additional forest fragmentation, minimizes the amount of new clearing required, and limits the Project footprint to an area that has already been altered by previous infrastructure development. The construction of the new transmission line will follow similar approaches and mitigation measures used in previous projects in Newfoundland and Labrador, including those described in the Environmental Protection

Plan for the Maritime Link. These measures include limiting vegetation clearing to the minimum width necessary for safe construction and operation, avoiding unnecessary disturbance outside the designated right-of-way, implementing appropriate timing restrictions for vegetation clearing where feasible, and restoring disturbed areas following construction. Environmental protection procedures also require that wildlife habitat disturbance be minimized through careful delineation of work areas and the retention of natural features such as ground cover and woody debris where compatible with safety and operational requirements. Together, these measures are intended to reduce incremental habitat loss, maintain connectivity across the right-of-way, and limit potential disturbance to species such as the American marten and other wildlife that utilize forest habitats in the surrounding area.

In summary, the main potential environmental interactions between the Project and these species are the same as those for the vegetation and wildlife VEC as a whole, as discussed in the preceding sections, as are the planned mitigation measures to avoid or reduce any such adverse interactions. The Project is not expected to contravene any of the requirements, provisions or prohibitions of the SARA or the NL ESA.

Prior to the commencement of Project activities, TPR will prepare and submit for review and approval by the NL Wildlife Division an Environmental Effects Monitoring Plan that addresses potential effects on species listed under the NL ESA, species of conservation concern, and other relevant wildlife species. The Plan will identify applicable mitigation and preventative measures, monitoring requirements, adaptive management procedures, and reporting commitments, and will be implemented throughout all phases of the Project.

5.5.4 Residual Environmental Effects Summary

A summary of measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

Mitigation

- Clearing limits and work areas will be clearly defined to minimize loss of vegetation, wetlands, and wildlife habitat.
- Turbines will avoid placement in topographic funnels such as valleys to reduce interactions with concentrated bird movements.
- Natural buffers will be maintained around wetlands, riparian areas, shorelines, and other sensitive habitats wherever feasible.
- Culverts, trenching, and other infrastructure will be designed to maintain natural drainage patterns and hydrological connectivity.
- Dust, effluent, and sediment control measures will be implemented to protect vegetation, wetlands, and aquatic and terrestrial habitats.
- Artificial lighting will be minimized and designed to be downward-directed and shielded to reduce disturbance to nocturnal wildlife, migratory birds, and bats.
- Vegetation clearing will avoid the primary bird nesting and breeding period where feasible.
- Pre-clearing surveys will identify active nests and establish species-appropriate buffer zones, particularly for raptors.

- Safe driving practices, speed limits, prohibitions on hunting or harassment, and proper waste management will reduce wildlife interactions and vehicle collisions.
- Construction practices will minimize conditions that could attract ground- or burrow-nesting species such as exposed banks or stockpiles.
- During bat roosting season, qualified biologists will survey trees, rock crevices, and caves within construction areas for maternity roosts and establish buffers where required.
- Any stranded birds and nuisance wildlife will be handled in accordance with government guidance and in consultation with the Newfoundland and Labrador Wildlife Division.
- Vegetation clearing for the transmission line will incorporate timing restrictions where feasible and retain natural habitat features such as ground cover and coarse woody debris to help maintain habitat conditions for American marten.
- Project personnel will report wildlife sightings or interactions involving birds, bats, or other wildlife to the Newfoundland and Labrador Wildlife Division.
- Disturbed vegetation and wildlife habitats will be progressively rehabilitated following construction activities.
- Environmental Protection Plans and Emergency Response Plans will guide project activities to minimize impacts on vegetation, wetlands, and wildlife.
- Infrastructure will be micro-sited where possible to avoid sensitive habitats and minimize disturbance to wildlife, including potential bat roosts.
- Project staff will receive training on identifying species at risk and implementing appropriate response procedures.
- Construction work will stop within 10 m of a species-at-risk observation until a qualified biologist confirms the species has vacated the disturbance area.

Monitoring

- Preparation and submission of Environmental Effects Monitoring Plan.
- A science-based bird and bat monitoring / mitigation plan will be developed and implemented in consultation with the applicable government agencies.
- Bird and bat monitoring will take place during construction and operations to identify turbines that may pose elevated risk and inform data-driven mitigation strategies.
- A post-construction mortality monitoring program will be implemented, including systematic carcass searches at wind turbines and adaptive mitigation measures if required.
- Monitoring results will be reviewed with regulators and used to implement additional mitigation measures, such as deterrents or flight diverters, if wildlife interactions are observed.

A summary of the predicted (residual) environmental effects of the Project on vegetation and wildlife is provided in Table 5.9 below.

Table 5-9: Vegetation and Wildlife: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Construction							
Change in vegetation	A	L	L	5	O	R	M
Change in wildlife presence / abundance	A	L	L	5	S	R	M
Change in wildlife health	A	L-M	L	5	O	R	M
Change in wildlife habitat (availability / quality)	A	L	L	5	S	R	M
Operations							
Change in vegetation	A	L	L	5	C	R	M
Change in wildlife presence / abundance	A	L	L	5	C	R	M
Change in wildlife health	A	L	S	5	C	R	M
Change in wildlife habitat (availability / quality)	N	N	L	5	C	R	M
Decommissioning							
Change in vegetation	N	N	L	5	O	R	M
Change in wildlife presence / abundance	N	N	L	5	O	R	M
Change in wildlife health	N	N	S	5	O	R	M
Change in wildlife habitat (availability / quality)	N	N	L	5	O	R	M
Potential Accidental Events							
Change in vegetation	A	M	L	5	S	R	M
Change in wildlife presence / abundance	A	L	S	5	S	R	M
Change in wildlife health	A	M	L	5	S	R	M

Potential Effect	**Environmental Effect Descriptors**						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Change in wildlife habitat (availability / quality)	A	M	L	5	S	R	M

Overall, Resulting Effect(s) of Project on the VEC	**Evaluation of Significance**
• Planned Project components and activities have potential to interact with and affect vegetation and wildlife through site clearing (habitat removal / alteration) and associated disturbances such as noise, lighting and wind turbine operation. • The implementation of planned mitigations will help avoid or reduce any potential adverse effects. • Potential accidental events (such as spills or fires) will be prevented due to Project equipment and procedures, with appropriate response plans and procedures in place.	• The proposed Project is not likely to result in significant adverse environmental effects on vegetation and wildlife.

Nature / Direction:
A = Adverse
N = Neutral or No Effect
P = Positive

Magnitude:
N = Negligible
L = Low
M = Medium
H = High

Geographic Extent:
S = Site
L = Local
R = Regional

Duration:
1 = < 1 month
2 = 1-12 months
3 = 13-36 months
4 = 37-72 months
5 = > 72 months

Frequency:
O = Once
S = Sporadic
R = Regular
C = Continuous

Reversibility:
R = Reversible
I = Irreversible

Certainty:
L=Low
M=Moderate
H=High

5.5.5 Cumulative Environmental Effects

The current (baseline) environmental conditions for vegetation and wildlife in the region (Section 3.1) reflect the effects and influences of other natural conditions and processes and past and on-going human developments and activities the area and elsewhere. Although there are examples of past and current human activities within and around the Project Area and surrounding locations, including various other commercial and recreational / traditional land and resources use activities, the Study Area itself is not one that has been subject to large scale industrial development to date. Moreover, as described above, the proposed Project is not expected to significantly affect vegetation and wildlife in the area. The Project is not likely to result in significant, adverse cumulative environmental effects on vegetation and wildlife in combination with other projects or activities that have been or will be carried out.

5.6 Protected and Special Areas

A number of on-land, marine and coastal areas in Western Newfoundland have been designated as protected under provincial, federal and/or other legislation and processes, or have been formally identified through relevant processes as being otherwise special or sensitive due to their ecological, historical or socio-cultural characteristics and importance.

5.6.1 Potential Environmental Issues and Interactions

Environmental interactions between development activities and any adjacent protected and sensitive areas may be both direct and indirect in nature. Conducting an activity within or near such an area may, for example, have adverse implications through the presence of equipment, personnel and activities in the area and the associated emissions and other disturbances. Any resulting decrease in the real or perceived integrity of these sites in the short or long term may, in turn, affect their ecological or socio-cultural value and (where applicable) the use and enjoyment of these areas. The effects of human activities may also indirectly affect protected and sensitive areas by affecting the environmental features or processes that are relevant to their designation, integrity or value, such as water, fish or wildlife resources and habitats.

An overview of the potential interactions between each of the Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.10.

Table 5-10: Protected and Special Areas: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters *	
	Biophysical Features and/or Processes	Human Use and/or Value
Construction		
Site access and preparation	•	•
Cavern development (solution mining)	•	•
Surface infrastructure (main facility)	•	•
Wind farm / substation	•	•
Marine components and pipelines	•	•
Transmission line / substation	•	•
Ancillary components (roads, buildings etc)	•	•
Waste management	•	•
Project related expenditures		
Employment (including accommodations and transportation)		
Operations		
Main facility (including ACAES, salt production)	•	•
Wind farm / substation	•	•
Marine components and pipelines	•	•
Transmission line / substation	•	•

Project Component / Activity	Key Indicators and Parameters *	
	Biophysical Features and/or Processes	**Human Use and/or Value**
Project related expenditures		
Employment		
Decommissioning		
Potential Accidental Events		
Spills	•	•
Fire or explosion	•	•
* Where project activities occur within or may otherwise extend to existing protected or special areas		

5.6.2 Environmental Effects Assessment

A description of relevant areas in Western Newfoundland that have been designated as protected or otherwise identified as special or sensitive was provided in Section 3.1.8. The following provides an assessment and evaluation of any potential effects of the Project on these areas, including each of the components and activities that will be associated with the Project during its various phases.

5.6.2.1 Planned Project Components and Activities (All Phases)

Table 5.11 identifies protected and other special areas in the region and indicates their distance from the Project.

Table 5-11: Protected and Special Areas and their Proximity to the Project

Type / Jurisdiction	Protected / Special Area	Proximity to the Project
Provincial Park	T'Railway Provincial Park	• 0 km, proposed pipeline(s) will cross this feature near the coast
	Barachois Pond Provincial Park	• The existing transmission line corridor runs adjacent to (outside, but within 150 m of) this park. • Project main facility and wind farm are over 30 km from this park
Provincial Wilderness / Ecological Reserve	Barachois South Transitional Reserve	• Approximately 2.5 km to the east of the proposed wind farm

As described for the various preceding VECs (and those that follow), the Project is not expected to result in significant adverse effects upon any aspect of the environment, due to the overall nature, location and extent of the various components and activities that comprise it, and given the various planning and mitigation measures that have been identified and committed to by TPR.

The proposed pipeline crossing of the T'Railway Provincial Park is not a prohibited activity, but will require approval from the Government of Newfoundland and Labrador, typically in the form of a right-of-way or occupancy permit under the *Provincial Parks Act*. This will require submission of detailed design and construction information demonstrating that the crossing can be completed safely, with restoration of the trail and minimal disruption to park operations and users.

The proposed Project will therefore not adversely affect the key ecological features, processes and integrity of any on land, coastal or marine areas, including the protected and special areas that are the subject of this VEC.

5.6.2.2 Potential Accidental Events

Potential accidental events resulting from the Project, such as a fire, a fuel spill, or a spill of other materials into the environment could, depending upon the nature, magnitude and location of the event, affect protected or sensitive areas in the region. However, as illustrated and discussed above, most of the currently identified areas are located at some distance away from the proposed Project. It is therefore considered very unlikely that, in the event of such an incident during this Project, its effects would extend into one or more of these locations.

TPR's planned measures (equipment and procedures) to help prevent any such accidental events, and to respond to one in the unlikely event of its occurrence, were described previously (Section 2.11) and will further help to prevent any adverse effects upon this VEC.

5.6.3 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

- Planned Project location and layout maintain considerable distance between planned Project components and activities and existing protected and special areas in the region.

- Implementation of other mitigation measures outlined in earlier sections (VECs) will help avoid or reduce adverse effects on key aspects of the environment, and thus, the potential for effects to extend into or otherwise adversely affect protected and special areas.

A summary of the predicted (residual) environmental effects of the Project on protected and special areas is provided in Table 5.12 below.

Table 5-12: Protected and Special Areas: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty
Construction							
Change in biophysical features and/or processes	N	-	-	-	-	-	H
Change in human use and/or value	N	-	-	-	-	-	H
Operations							
Change in biophysical features and/or processes	N	-	-	-	-	-	H
Change in human use and/or value	N	-	-	-	-	-	H
Decommissioning							
Change in biophysical features and/or processes	N	-	-	-	-	-	H
Change in human use and/or value	N	-	-	-	-	-	H
Potential Accidental Events							
Change in biophysical features and/or processes	N	-	-	-	-	-	H
Change in human use and/or value	N	-	-	-	-	-	H
Overall, Resulting Effect(s) of Project on the VEC • The Project is not anticipated to have adverse effects on this VEC.			**Evaluation of Significance** • The proposed Project is not likely to result in significant adverse environmental effects on protected and special areas.				
Nature / Direction: A = Adverse N = Neutral or No Effect P = Positive	**Magnitude**: N = Negligible L = Low M = Medium H = High	**Geographic Extent**: S = Site L = Local R = Regional		**Duration**: 1 = < 1 month 2 = 1-12 months 3 = 13-36 months 4 = 37-72 months 5 = > 72 months	**Frequency**: O = Once S = Sporadic R = Regular C = Continuous		
Reversibility: R = Reversible I = Irreversible	**Certainty:** L = Low M = Moderate H = High						

As described above, the proposed Project is not likely to result in significant adverse environmental effects on protected and special areas.

5.6.4 Cumulative Environmental Effects

As the proposed Project will not result in adverse effects upon protected or special areas, it will not result in or contribute to any cumulative environmental effects on this VEC in combination with other projects and activities that have been or will be carried out.

5.7 People and Communities

Development projects may affect people and communities in a number of ways, as a result of their associated activities, emissions and requirements, which may have both positive and negative socioeconomic effects.

5.7.1 Potential Environmental Issues and Interactions

Potential interactions between the various phases of the Project and people and communities in the Study Area may include disturbances due to Project-related noise, dust, light and other emissions, visual intrusion, the presence of workers, and Project-related demands for community services and infrastructure.

It will be important to ensure that the construction and operation of the Project does not have negative implications for human health and safety as a result of possible injuries or accidents, as well as environmental contaminants and exposure pathways that may affect human health. Project planning and its eventual implementation will place a high degree of emphasis on ensuring that it does not negatively affect social health and well-being, including residents' (real or perceived) quality of life.

Human health and well-being are influenced by, and reflected in, the physical, social, emotional and mental characteristics and conditions of individuals, families and communities, including personal wellness, quality of life, and residents' perceptions of these factors. This section includes an analysis of whether and how the health and well-being of persons who live in local communities and surrounding regions may interact with, and be affected by, the proposed Project, including consideration of: 1) physical human health; 2) social health and well-being; and 3) community services and infrastructure.

An overview of the potential interactions between each of the main Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.13.

Table 5-13: People and Communities: Potential Project-VEC Interactions

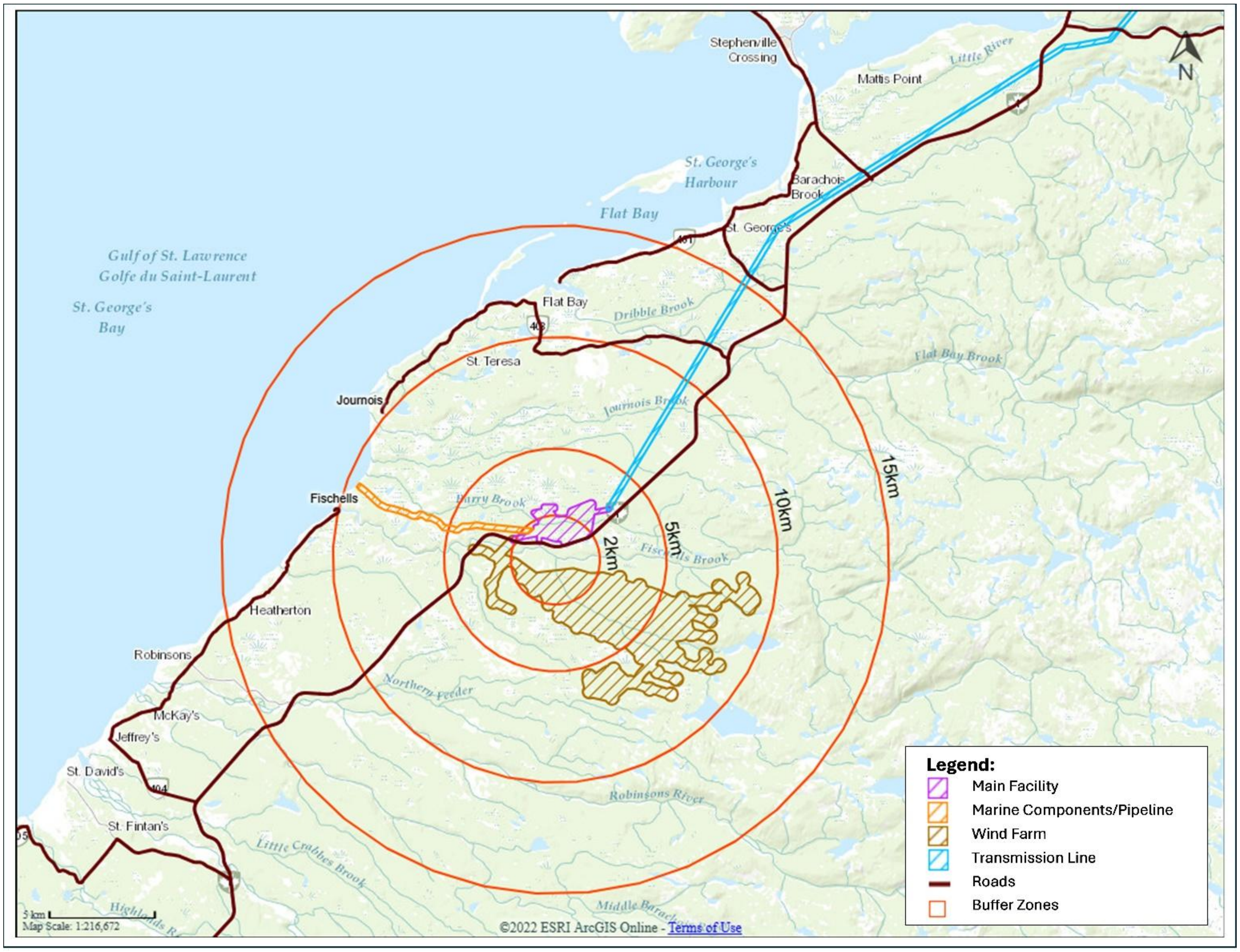
Project Component / Activity	Key Indicators and Parameters		
	Physical human health	Social health and well-being	Community services and infrastructure (availability, quality, cost)
Construction			
Site access and preparation	•	•	•
Cavern development (solution mining)	•	•	•
Surface infrastructure (main facility)	•	•	•
Wind farm / substation	•	•	•
Marine components and pipelines	•	•	•
Transmission line / substation	•	•	•
Ancillary components (roads, buildings etc)	•	•	•
Waste management	•	•	•
Project related expenditures		•	•
Employment (including accommodations and transportation)	•	•	•
Operations			
Main facility (including ACAES, salt production)	•	•	•
Wind farm / substation	•	•	•
Marine components and pipelines	•	•	•
Transmission line / substation	•	•	•
Project related expenditures	•	•	•
Employment	•	•	•
Decommissioning	•	•	•
Potential Accidental Events			
Spills	•	•	•
Fire or explosion	•	•	•

5.7.2 Environmental Effects Assessment

As illustrated above, potential interactions between the Project and people and communities may result from both planned components and activities in either of the Project's phases, as well as potential unplanned (accidental) events.

As described previously, and illustrated in Figure 5.3, the Project's main facility and wind farm components are located over 10 km from any community.

Figure 5.3: Project Proximity to Local Communities



5.7.2.1 Construction

Public health and safety considerations have been paramount in Project planning, which will continue as future design and eventual implementation work progresses.

During the construction phase of the Project, public safety will be protected through site access restrictions, including installation of security fencing around the perimeter of the site, and a gate house with 24-hour security at the entrance to the Project Area. TPR will also engage in regular communications with local communities and other authorities and organizations throughout this phase of the Project, including when mobilizing large equipment along public roadways, or when planning to undertake work near existing facilities or infrastructure. Through on-going engagement with community officials, organizations and residents, TPR will ensure that people are informed of the nature and planning timing of key Project works in order to prevent negative interactions and any associated safety concerns.

Atmospheric emissions during Project construction will include those resulting from the use (exhausts) of on-site equipment, which will be maintained in good repair and regularly inspected, as well as dust which will be controlled as necessary using water or other dust control agents. While construction will require artificial lighting in active work areas, the amount and intensity of lighting used will be minimized and directed downwards. As noted previously, the closest residential property is nearly 10 km from the Project's main facility or wind farm and based on publicly available information from the NL Land Use Atlas (Chapter 3), as well as engagement with local stakeholders through land use workshops and public open houses (Chapter 4), there were no identified receptors (including permanent, institutional and seasonal residences) within or near these portions of the proposed Project area.

An overview of planned measures to reduce and otherwise address potential blasting effects was provided in Section 5.2.3, and will help prevent the potential for associated effects on nearby residents. In addition, TPR's proposed mitigation measures, and planned further analysis and design approaches, to avoid the potential to interact with and adversely affect local surface and groundwater supplies, are as presented in Section 5.3.3. There are no known groundwater users, public water supply areas or active water use licences within the Project Area or its immediate drainage catchments (Section 3.2).

Overall, therefore, Project construction activities are not expected to have negative implications for people and their health and safety. Most Project activities and any associated disturbances will not likely be seen or heard by local residents or visitors, which limits the potential for potential nuisance effects, and there is low likelihood that any planned environmental emissions would reach, and negatively affect, human receptors. The Project is therefore not expected to have any negative implications for human health and well-being.

TPR notes sinkholes have been documented within the broader regional landscape, typically associated with soluble geological formations such as karst terrain developed in carbonate rocks (e.g., gypsum, limestone or dolostone) and other deposits. As part of its recent desk-top environmental and geotechnical work, TPR has reviewed available geological mapping and regional records of known sinkhole occurrences, which found that no mapped or documented sinkholes are located within the Project Area (main facility and windfarm locations) The proposed salt cavern storage facilities will be developed at an approximate depth of 500-600 m below ground surface, overlain by approximately 500 m of bedrock. Based on the depth of the caverns, the thickness and integrity of the overlying strata, and the absence of nearby karst features, the potential for sinkhole integration associated with Project activities is considered negligible.

Construction activity can also affect local residents through the presence of project personnel within these communities and associated social interactions. Development projects can also place demands on local services and infrastructure, thereby affecting the availability, quality or cost of these for the local population. This can include both direct, project-related requirements, such as the planned use of local transportation systems, water and sewage systems, waste disposal facilities, and others, as well as demands from construction workers and possibly their families. These requirements, and any resulting issues, can vary in nature and magnitude according to the type and level of demand, and the capacities of these services and infrastructure to accommodate additional use.

As described in Section 2.7, the Project's construction phase will involve a workforce of several hundred persons that is comprised of Western Newfoundland residents, as well as temporary construction workers drawn from other areas of Newfoundland and Labrador and elsewhere. Non-resident workers will commute to and from the region according to their roles and work rotations, and will be transported by bus from nearby airports. Several options for temporary accommodation of the non-resident construction workforce are currently being considered and evaluated:

- Workers will be housed in existing accommodations in nearby communities and transported to and from the worksite daily; and/or
- TPR will establish and use a temporary, onsite construction camp.

As discussed in Section 2.3.2, at this stage of Project planning it is not known exactly what proportion of the construction workforce will be comprised of local residents (who would commute to and from the worksite each day) vs those from outside the area for which Project accommodations will be required during this phase of the Project. Further information is also required regarding the availability and capacity of local accommodations to house the non-resident construction workforce.

TPR recognizes that each of these worker accommodation approaches can have both positive and negative environmental implications, which can themselves vary based on specific interests and objectives. On the one hand, the housing and overall presence of large numbers of transient workers within small towns can create social issues, and negatively affect the availability, cost or quality of local services and infrastructure (including rental housing) for local residents. Alternatively, and if capacity exists, housing and feeding non-resident workers in nearby communities can present business opportunities and important potential economic benefits for local individuals and businesses.

As part of its on-going Project planning and design, TPR will continue to define the Project's construction accommodation requirements for its non-resident workforce. This will include further analysis and discussions with local authorities and businesses around the availability and capacity of local accommodations in accordance with the Project's requirements and schedule, as well as to further understand the communities' priorities and preferences in that regard. Once available, this information will be used in an eventual decision by TPR around the accommodations approach that will be implemented for Project construction. At this stage, therefore, each of the options listed above are being brought forward for EA review.

In any event, the short-term nature of the construction phase will likely mean that most if not all non-resident workers will commute to the Project Area according to their work rotations rather than relocating with their families, which will prevent significant new demands on local housing and health, education, social and other services.

In terms of any direct Project-related demands for local services and infrastructure, waste generated during Project construction will be transported to, and disposed of in an approved manner at, existing waste disposal sites. TPR acknowledges that the Project has the potential to generate temporary increases in solid waste volumes during the construction phase relative to typical waste generation levels in the region. Although detailed material quantity estimates are not yet available at the current stage of Project design, construction-related waste is expected to consist primarily of inert and recyclable materials such as steel offcuts, packaging materials, concrete formwork, electrical conduit and general site debris. Consistent with standard industry practice for large infrastructure projects, the majority of these materials — particularly scrap steel and other metals — will be directed to recycling, salvage or reuse streams rather than disposal at landfill facilities. Domestic waste associated with the temporary construction workforce is also expected to increase during peak construction periods, but these increases will be temporary and limited to the construction phase. Prior to construction, TPR will engage with the regional waste management authority and relevant provincial authorities to confirm available disposal capacity and, where necessary, identify supplemental waste transport or disposal arrangements at alternative approved facilities. The results of this engagement will be incorporated into the Project's Waste Management Plan, which will be finalized prior to commencement of construction activities.

Overall, Project construction will be largely self-contained and will not require the use of other local municipal services or infrastructure. Water supply, wastewater management and other construction-related utilities will be managed through temporary, on-site systems or contractor-provided services. As a result, the Project is not expected to place additional demand on nearby municipal water or sewer systems, or other local public infrastructure during the construction phase.

5.7.2.2 Operations

Throughout the operations phase of the Project, public safety will continue to be protected in relevant parts of the Project area through site access restrictions (including a perimeter fence), signage and communication protocols. Vehicle traffic on access roads will be limited to the transportation of employees, equipment and materials to and from the work area, which will have "no access" signs posted at the beginning of the property to restrict use to authorized personnel only. A gatehouse with on-site security officers will be in place, and only personnel and vehicles involved in the Project will be allowed on the site during the 24 hour / day operations. Speed limits appropriate to this size and class of access road will also be established and adhered to. Again, TPR will coordinate, schedule and communicate the planned transportation of any large equipment and other loads in order to address potential traffic and safety concerns.

As discussed in Chapter 2, Project design has incorporated a number of important features which will serve to eliminate or minimize potential emissions or other disturbances that may have adverse implications for people and communities. Additionally, the various mitigation measures outlined previously to prevent effects on surface or ground water, the air or nearby lands (Sections 5.2, and 5.3) will also serve to prevent any implications for human health. Project operations are therefore not expected to have any negative effects in human health and safety in the local communities or elsewhere.

During operation, the ACAES facility and wind farm are not expected to cause effects on nearby people and communities through visual, audible or lighting effects, as the nearest residential properties are nearly 10 kilometres from these proposed components. The wind farm may be visible from some vantage points, but careful siting, turbine spacing and other design considerations will aim to minimize visual intrusion. Audible noise from turbine operation and mechanical equipment at the ACAES facility is expected to remain well below applicable guidelines for industrial noise (Section 5.2), and lighting will be directed downward and limited to operational or safety requirements to avoid glare or light trespass (Section 5.2). Communication and on-going engagement with nearby communities will continue during operation to provide information about Project activities and address any concerns that may arise. Overall, given the distance of the Project from residential areas and other receptors and the implementation of these operational controls, no residual effects on people and communities are expected.

The estimated operational workforce will be approximately 70 employees, comprised of TPR employees. Because of the long-term lifespan of the Project (estimated at 50 years or more), most of the workforce will reside in Western Newfoundland and drive to the Project Area for their workdays. This will likely result in some in migration of Project workers and their families to the region, although the specific proportion of the workforce that will move to the area from elsewhere cannot be known at this stage.

TPR will continue to communicate and cooperate with local municipalities and other regional service providers to keep them informed about Project planning and scheduling, which will allow them to plan appropriately for any future, Project-related population increases. Through good communication with, and planning by, the appropriate municipal and provincial authorities, there are not anticipated to be adverse effects on the availability, quality or cost of services and infrastructure in the region during the operations phase of the Project. Indeed, the taxation and other revenues that will accrue to governments as a result of the Project can be used to ensure that appropriate adjustments are made to the delivery and capacity of these services and infrastructure in the region.

TPR will maintain an ongoing program of community and stakeholder engagement throughout the construction and operations phases of the Project. This will include the implementation of a formal complaints and concerns response process to receive, document, track and respond to issues raised by community members, land users, Indigenous groups and stakeholders in a timely manner. In addition, the Proponent may establish a Community Liaison Committee (or similar forum) comprised of representatives from local communities, Indigenous organizations, regulatory agencies and other interested parties to facilitate the ongoing exchange of Project information, discuss community concerns and interests, and support continued communication regarding Project activities, environmental performance, monitoring results and mitigation measures.

5.7.2.3 Decommissioning

This phase of the Project may involve the removal of infrastructure and the rehabilitation of the Project area. No new or increased effects on people and communities are expected as a result of these activities, and therefore, significant adverse effects are not likely.

5.7.2.4 Potential Accidental Events

Potential accidental events or malfunctions such as a fire, explosion or a spill of fuel or other materials could affect people and communities in or around the Project Area and possibly beyond, either directly or indirectly through any resulting effects pathways. Although such an event could conceivably occur during either phase of the Project, they are unlikely to do so, and in any case the resulting effects of such an incident would clearly depend upon the nature, magnitude, location and timing of the event.

An accidental spill of fuels or other deleterious substances has the potential to adversely affect the quality of water, soils, vegetation, fish and wildlife or other components of the biophysical environment, as well as the health of any users and consumers of same. Similarly, a large-scale forest fire that originated within the Project Area could affect air and water quality, wildlife and other environmental components and resources, and could also potentially pose direct risks to human health and safety. Such an accidental event may also place associated demands on local safety and security services, including fire, emergency response and policing, as well as medical facilities and others. An accidental event such as a Project-related fire could also affect community infrastructure such as buildings and transportation routes.

TPR's planned measures and procedures to help prevent any such accidental events and to respond in the unlikely event of their occurrence were described previously (Section 2.11) and will help to prevent adverse effects upon the various aspects of the socioeconomic environment that are included in this VEC. TPR will continue its discussions with nearby municipalities and service providers to ensure that appropriate arrangements are in place to avail of local support in the unlikely event that they are required in an emergency situation.

5.7.3 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

- Establishment of access restrictions, safety signage and security fencing to prevent public access to the Project area for safety and operational purposes.
- Noise from ACAES and wind farm operations will be minimized through equipment selection, enclosure of high-noise sources and compliance with applicable guidelines to reduce any potential disturbance effects;
- Air emissions will be minimized using dust suppression, equipment maintenance, and use of renewable electricity for ACAES compression.
- Wind turbine siting and design will aim to reduce any visual aesthetic effects.
- Blasting will occur very infrequently during construction and will be carried out in accordance with applicable regulations and approvals.
- Coordination, scheduling and communications regarding the transportation of large equipment and other loads to address potential traffic or safety concerns.

- Continue to engage with communities, Indigenous groups and other organizations to provide Project information and updates on on-going and planned activities, as well as discussion of any issues and potential means of addressing them.
- Implementation of environmental protection and emergency response plans and personnel / equipment.
- Implementation of progressive rehabilitation measures and eventual Project decommissioning.

A summary of the predicted (residual) environmental effects of the Project on people and communities is provided in Table 5.14 below.

In addition to the avoidance or reduction of any potential adverse effects of the Project on people and communities, it is also important to highlight that, from an economic perspective, the Project will create direct, indirect and induced employment and business opportunities and other economic benefits. These will positively affect local residents and communities (Section 5.10) and in doing so, help contribute to the well-being and quality of life of people and communities in the region and beyond.

Table 5-14: People and Communities: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty
Construction							
Changes in physical human health	N-A	N	L	3	S	R	H
Changes in social health and well-being	A-P	N-L	R	3	S	R	H
Changes in community services and infrastructure (availability, quality, cost)	N-A	N-L	R	3	S	R	H
Operations							
Changes in physical human health	N-A	N	L	5	S	R	H
Changes in social health and well-being	A-P	N-L	R	5	S	R	H
Changes in community services and infrastructure (availability, quality, cost)	N-A	N-L	R	5	S	R	H
Decommissioning							
Changes in physical human health	N	-	-	-	-	-	H

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Changes in social health and well-being	N	-	-	-	-	-	H
Changes in community services and infrastructure (availability, quality, cost)	N	-	-	-	-	-	H
Potential Accidental Events							
Changes in physical human health	A	L	L	2	O	R	M
Changes in social health and well-being	A	L	R	2	O	R	M
Changes in community services and infrastructure (availability, quality, cost)	A	L	R	2	O	R	M
Overall, Resulting Effect(s) of Project on the VEC • The Project is not expected to have adverse effects upon public safety or the physical or social health and well-being of local residents and communities. • It will create positive economic benefits for the region which will contribute to residents' quality of life. • Accidental events (such as a fire or spills) will be prevented through planned Project equipment and procedures, with response plans and procedures				**Evaluation of Significance** • The proposed Project is not likely to result in significant adverse environmental effects on people and communities.			
Nature / Direction: A = Adverse N = Neutral or No Effect P = Positive **Reversibility**: R = Reversible I = Irreversible	**Magnitude**: N = Negligible L = Low M = Medium H = High **Certainty:** L Low M Moderate H High		**Geographic Extent**: S = Site L = Local R = Regional	**Duration**: 1 = < 1 month 2 = 1-12 months 3 = 13-36 months 4 = 37-72 months 5 = > 72 months		**Frequency**: O = Once S = Sporadic R = Regular C = Continuous	

5.7.4 Cumulative Environmental Effects

The proposed Project will be characterized by relatively straightforward activities, occurring within a localized area quite removed from adjacent communities and other potential receptors. As such, it will not adversely affect human safety or the health and quality of life of residents, visitors or their associated activities, infrastructure or other aspects of the socioeconomic environment. Although there are examples of past and current human developments and activities and around the Study Area and throughout the larger region, this area is not one that has been (or is currently proposed to be) subject to large scale industrial development to date, and particularly, any whose environmental effects would overlap in space and time with any that may result from this Project. The self-reported health and quality of life of the regional population is generally high (Section 3.2.1), and the Project is not likely to negatively affect this. To the contrary, the new and long-term economic activity and associated employment and business opportunities that the Project will bring to this rural area will have a positive effect on the health and well-being of these communities and their residents.

The Project is therefore not likely to result in significant, adverse cumulative environmental effects in combination with other projects that have been or will be carried out.

5.8 Land and Resource Use

The various components and activities associated with the Project may interact with, and potentially affect, nearby lands and resources and their use for commercial, recreational or traditional purposes. These interactions may, for example, occur through required restrictions on public access which may make certain locations unavailable for such purposes, or as a result of associated ground disturbance, noise, traffic, light, visual intrusions or other emissions and disturbances which may change the nature, distribution, value or quality of local land and resource use.

5.8.1 Potential Environmental Issues and Interactions

An overview of the potential interactions between each of the main Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.15

As described in Section 5.7, the Project area does not overlap with any municipal boundaries, planning areas or water supply areas in the region, and is therefore not likely to affect the current or future use of land for municipal purposes.

Table 5-15: Land and Resource Use: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters			
	Municipal land use	Commercial land and resource use	Recreational / traditional land and resource use	Historic resources (If present)
Construction				
Site access and preparation		•	•	•
Cavern development (solution mining)		•	•	•
Surface infrastructure (main facility)		•	•	•
Wind farm / substation		•	•	•
Marine components and pipelines		•	•	•

Project Component / Activity	Key Indicators and Parameters			
	Municipal land use	Commercial land and resource use	Recreational / traditional land and resource use	Historic resources (If present)
Transmission line / substation		•	•	•
Ancillary components (roads, buildings etc)		•	•	•
Waste management		•	•	•
Project related expenditures				
Employment (including accommodations and transportation)				
Operations				
Main facility (including ACAES, salt production)		•	•	•
Wind farm / substation		•	•	•
Marine components and pipelines		•	•	•
Transmission line / substation		•	•	•
Project related expenditures				
Employment				
Decommissioning		•	•	•
Potential Accidental Events				
Spills		•	•	
Fire or explosion		•	•	•

5.8.2 Environmental Effects Assessment

As illustrated above, potential interactions between Project components and activities and local land and resource use may occur through direct interference with such activities, as well as by adversely affecting the land areas and resources that are used for these purposes. They may also result from both planned components and activities during either phase of the Project, and due to possible unplanned (accidental) events.

5.8.2.1 Construction

Municipal and Commercial Land and Resource Use

As noted above, the proposed Project is located entirely outside of municipal boundaries and planning areas and is situated at a considerable distance from any nearby communities or residences.

As described and illustrated in Section 3.2.2 the Project:

- Does not overlap (main facility and wind farm) with any existing crown titles for land in the region.

- The preliminary corridor for the proposed marine pipeline intersects with crown titles and/or applications for same.

- Does not overlap any existing mining developments or leases, surface leases, oil wells, or quarry permits in the region.

- Overlaps with a number of identified agricultural areas, domestic wood cutting areas and timber limits in the region.

- Is adjacent to a designated cottage planning area located immediately to the south

Given the lack (or relatively small degree) of overlap with such areas and activities, Project development is not expected to adversely affect current or future land use for these purposes.

The Trans-Canada Highway (TCH) is a protected roadway, and any new access points or intersections with it are subject to permitting and safety requirements aimed at ensuring safe vehicle movements, maintaining highway capacity and traffic flow, and protecting road users and the general public. Any required ingress or egress from the TCH or any other provincial roadway will only occur once the necessary permits and approvals have been obtained from the Government of Newfoundland and Labrador, with any new access points designed in accordance with applicable standards and requirements. No Project components will be sited within 30 m of the TCH centerline on both sides. TPR will complete a Traffic Impact Study as required and in consultation with the NL Department of Transportation and Infrastructure. Additionally, TPR recognizes that a portion of the proposed transmission line corridor overlaps the Maritime Link Reserve, in which case agreements may be required from NSP Maritime Link Incorporated.

The potential corridor for the Project's marine pipeline(s) passes through lands subject to Crown Land Agricultural Lease No. 138608 held by New World Dairy Inc. (see Section 3.2.2.2, Figure 3.16). TPR understands that while such as lease does not necessarily prohibit other Crown-authorized developments, the lessee's interests and any potential effects on agricultural operations would require consultation and resolution through the Provincial Crown Lands process prior to development. As described earlier in Section 2.3.2.3, the final selection of a pipeline corridor and specific rights of way within them will occur as part of on-going Project engineering, informed by the information, analysis and engagement outcomes stemming from the Project's EA review. There is continued flexibility in the siting of any required water intake / saltwater outfall locations along the coastline, and thus in the final routing of the pipeline(s) themselves, in order to avoid possible environmental interactions and any land use conflicts. TPR will consult with the lease holder and provincial authorities to determine if agreement can be reached to construct the underground pipeline through this lease area. If the required agreements and approvals cannot be obtained, the pipeline corridor will be re-routed to the north to avoid this area. TPR also recognizes that portions of the Project area overlap existing agricultural properties and designated Agricultural Areas of Interest. The Proponent commits to engaging with the appropriate interests and regulatory agencies, and to incorporating appropriate siting, design and operational measures to avoid potential conflicts and to ensure that the safety, security and ongoing viability of existing and future agricultural activities are not adversely affected by the Project.

TPR also recognizes that portions of the Project area overlap with existing mineral claims in the area. It is understood that these provide claim holders with certain rights related to mineral exploration and the potential future development of subsurface mineral resources, but do not necessarily preclude other forms of land use or development from occurring within the same area, subject to applicable regulatory approvals and compatibility considerations. TPR further understands that the mineral claims currently identified within the Project area in general – and which overlap with the wind farm area in particular - are generally associated with early-stage exploration activities and that the nature and economic viability of any potential mineral resources within them remain under investigation. The Proponent will engage with relevant mineral claim holders and applicable government authorities to identify, assess and appropriately address any potential interactions, access considerations, land use compatibility issues, or overlapping interests associated with the Project and existing mineral rights. Detailed Project siting and design will seek to avoid or minimize potential conflicts with existing or reasonably foreseeable mineral exploration or development activities in these areas.

Additionally, during detailed Project siting and design, TPR will seek to avoid or minimize overlap and potential conflicts with existing quarry sites, including both active and dormant operations, as well as areas identified as containing significant aggregate resources, while maintaining compliance with applicable regulatory requirements and land-use planning considerations.

The Proponent has met with Corner Brook Pulp and Paper Limited (CBPPL) and will continue to communicate and coordinate with the company regarding any Project activities proposed within CBPPL forestry areas, and will obtain any required approvals prior to commencing such activities. The Proponent will also engage with the provincial Department of Fisheries, Forestry and Agriculture respecting timber harvesting requirements within Crown land portions of the Project area and will obtain all required commercial cutting permits, operating permits, and other authorizations prior to undertaking vegetation clearing activities, including avoiding silviculturally treated stands if possible. Where potential interference with domestic wood harvesting activities are possible, TPR will implement appropriate consultation and communication measures and plans to identify and mitigate potential effects on domestic and commercial timber harvesting activities.

A very small portion of the currently defined wind farm area, located along its northeastern edge, overlaps lands that were previously included within Crown Land reserves issued to World Energy GH2 Limited Partnership through the Province's 2023 Crown Lands Call for Bids process. On February 19, 2026, the Government of Newfoundland and Labrador announced that, due to a lack of project advancement and non-payment of applicable reserve fees, the Crown Land reserves associated with this and several other such developments would not be extended beyond February 28, 2026. TPR understands that this matter is currently subject to ongoing court proceedings and that the status of the affected lands therefore remains under consideration. The Proponent will continue to monitor the outcome of these proceedings, and should the lands ultimately revert to the Crown and become available for development, TPR will pursue any required land rights and approvals through the appropriate provincial processes. Alternatively, if the lands remain subject to existing rights or interests, TPR will consult with the affected parties and relevant government authorities to seek any necessary permissions, approvals or agreements prior to planning and undertaking

Project activities on such lands. It should be reiterated that the overall wind farm project area shown in this document is a generalized polygon and does not necessarily reflect the detailed and final siting of Project components and activities. Future, detailed Project siting and design will avoid encroachment on any lands for which the necessary rights or approvals cannot be secured.

The Project is located within a region that supports a number of commercial hunting and angling outfitters that operate licensed camps in the area. The nearest outfitter camp is located approximately 1.5 km from the proposed Project site, with other being 10-15 km away. It is recognized, however, that outfitters utilize larger surrounding areas for hunting and fishing by their clients. TPR has been in discussions with these outfitters to better understand the nature, location and timing of their guiding activities, including locations used and travel / access routes. Information gathered through these discussions is being considered in Project planning so that potential interactions can be minimized through appropriate siting of infrastructure, scheduling of construction activities and the identification and implementation of other mitigation to avoid any adverse interactions and interference.

Recreational and Traditional Land and Resource Use

Beginning with the commencement of the construction phase of the Project, public safety will be protected through Project site access restrictions (including fencing and on-site security) in active construction areas. This will result in certain areas within the Project site itself being off limits for local land and resource use pursuits for specific construction activities and durations.

A number of recreational and traditional land and resource use activities also occur throughout the overall region, including hunting, trapping, fishing, cabins, wood cutting, boating and berry-picking, and others. However, the existing and available information (Section 3.2.2) or the public engagement activities completed by TPR as part of this EA (Chapter 4) do not indicate that the Project site itself is a core area of local land and resource use activity, although the area (and the resource roads that run through it) are used to access important recreational use areas such as cabins. Given the overall size of the region, and the number of alternative locations available in which to undertake such activities, no measurable adverse effect on the nature, intensity, value or enjoyment of these activities is anticipated as a result of the Project. TPR will regularly communicate with communities and other applicable individuals and organizations to keep them informed of the nature, location and planned timing of key Project works, and to ensure that adverse interactions and any associated effects are avoided.

Portions of the proposed wind farm are located adjacent to the northern boundary of the Crabbe's River Cottage Planning Area. TPR recognizes the potential for future cottage development within this designated planning area and will consider existing and planned recreational residential land uses during detailed Project siting and design which may include appropriate setbacks, buffers and other measures to avoid or minimize potential interactions and to ensure the compatibility of the Project with existing and future cottage development opportunities.

Historic resources include sites and objects of historic and archaeological, cultural, spiritual and paleontological importance, which may be protected under the Newfoundland and Labrador *Historic Resources Act* administered by the Provincial Archaeology Office (PAO). Ownership of all archaeological objects is vested in the Crown. Construction activities and associated ground disturbance have the potential to disturb or destroy archaeological sites and other historic resources if these are present within a development project's footprint. There are no known historic resources within or near the Project area (Section 3.2.3). The proposed Project site itself is relatively small, and it is unlikely that the Project will result in the disturbance or destruction of historic resources. During Project site development, however, standard precautionary and reporting procedures will be implemented. Should an accidental discovery of historic resources occur, all work will cease in the immediate area of the discovery until authorization is given for the resumption of the work. Any archaeological materials encountered will be reported to the PAO, including information on the nature of the material discovered and the location and date of the find.

Obtaining Land Rights Necessary for the Project

Newfoundland and Labrador has implemented a variety of Crown land allocation and review processes to facilitate the orderly development of wind energy projects on Crown lands. This has included the Crown Land Nomination Process established in 2022, which was applied to several large-scale wind energy and associated hydrogen production developments and involved interdepartmental review of nominated lands to assess suitability, land-use compatibility and potential development constraints. Subsequent wind and other energy developments in the province have also been advanced through other Crown land allocation mechanisms, including the establishment of land reserves and project-specific Crown land review processes, reflecting the Province's evolving approach to managing renewable energy development opportunities. TPR recognizes that access to and use of Crown lands for the Project is subject to applicable provincial legislation, policies and administrative processes. The Proponent commits to working with the Provincial Crown Lands Division and other relevant regulatory agencies to obtain all required land rights, leases, licences, easements, permits and approvals through any applicable – whether existing or emerging - government policy, legislative or regulatory framework prior to the commencement of Project development activities.

In the event that (based on final design and siting work) it may encroach upon or require the use of privately owned lands, the Proponent will engage directly with affected landowners and obtain the necessary permissions, agreements, easements or other land access arrangements prior to any Project-related activities occurring on such lands.

In summary, the Project will require access to and use of Crown Land for its various components and activities, and TPR acknowledges that all necessary land tenure, land rights, easements, leases, licenses, permits and authorizations must be obtained prior to Project development activities proceeding. The Proponent commits to formally applying for all required Crown Land interests and approvals through the appropriate provincial regulatory processes, including applications to the Provincial Crown Lands Division for the areas required by the Project.

TPR commits to ensuring that all required land rights and access agreements are in place prior to moving forward with Project development, and recognizes that securing these rights may form a condition of any future EA approval.

5.8.2.2 Operations

The required site access restrictions and landscape disturbance associated with the Project will occur primarily during its construction, and the operation and maintenance phase will essentially represent a continuation of these in certain parts of the Project area (such as around the main facility itself), albeit over a longer time period. Given the anticipated 50+ year lifespan of the Project, it is expected that its operational components and activities will become a known, accepted and integrated element of the regional landscape, and local land and resource use patterns will adapt and adjust accordingly over the long term.

Temporary access restrictions required during construction in certain areas, such as along the pipeline corridors, will not be required once construction is complete and normal land use can therefore resume during operations. Similarly, and consistent with other proposed wind projects in Newfoundland and Labrador, the wind farm area is generally expected to remain accessible for current recreational and traditional land use activities following construction, with any operational restrictions limited to localized safety zones around certain infrastructure (such as substations). During the TPR's public information sessions, there was clear interest in whether and how the Project might result in improvements and upgrades to the local resource road network, and thus, provide an overall benefit to local land and resource use activities.

As discussed in Chapter 2 the planning of the Project to date has incorporated a number of important design features which will serve to eliminate or minimize potential emissions that may have adverse implications for land and resources in the Study Area, and thus, their availability or quality for use by residents or visitors.

To address any emerging or ongoing concerns regarding the Project's effects on land and resource use, TPR will continue to communicate regularly with communities, Indigenous groups, other organizations and the general public throughout the operational life of the Project. This will include the provision of Project information and regular updates on on-going and planned activities, as well as discussion of any issues and potential means of addressing them.

Once site preparation is completed, there will be no additional ground disturbance during operations, and therefore, little or no potential for effects to historic resources. The precautionary and reporting procedures described above will, however, continue to be in place throughout the life of the Project.

5.8.2.3 Decommissioning

Decommissioning may include the removal of infrastructure, and the filling, contouring and re-vegetation of disturbed areas. Although there will be required access restrictions at specific locations while active decommissioning and rehabilitation are in progress, these initiatives will ultimately lead to restoration of a degree of public access across parts of the Project Area which will therefore become progressively available again to land and resource users. The environmental monitoring program that will likely be part of TPR's required decommissioning plan will help to evaluate the future suitability of local lands and resources for such activities over time.

5.8.2.4 Potential Accidental Events

Potential accidental events or malfunctions could affect land and resource use either directly, by rendering areas unavailable for such pursuits, or indirectly through any resulting effects on affected water, fish and wildlife resources. A fire at the Project site spreading into adjacent areas could affect land areas and resources, making them unsuitable for certain uses and activities. Similarly, an accidental spill of fuel or other deleterious substances into adjacent waterbodies or land areas may prevent their use for certain (particularly consumptive) activities for periods of time. Although either of these accidental events could conceivably occur during either phase of the Project, they are unlikely to do so, and in any event the resulting environmental effects of such an incident would clearly depend upon the nature, magnitude, location and timing of the event.

TPR's planned measures (equipment and procedures) to help prevent any such events, and to respond to one in the unlikely event of its occurrence, were described previously and will further help to prevent adverse effects upon the various aspects of the socioeconomic environment that are included in this VEC.

5.8.3 Residual Environmental Effects Summary

Mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC include:

- Project location and layout maintain significant distance between planned Project components and activities and communities / municipal boundaries and infrastructure in the region.
- TPR will acquire and adhere to all required land approvals in accordance with applicable regulations and procedures.
- Establishment of access restrictions, signage and a security fence to prevent public access to the Project area for safety and operational purposes.
- Completion of traffic impact study, if and as required by provincial authorities.
- Development of blasting protocols, addressing timing, frequency, clearance areas / evacuation and public communications / notifications.
- Should an accidental discovery of historic resources occur, all work will cease in the immediate area of the discovery until authorization is given for the resumption of the work.
- Measures to avoid or reduce Project related emissions (air, light, noise, visual, liquid, solids) and associated effects on air and water quality, vegetation and soils, fish and wildlife as described in previous sections (VECs).
- Wind turbine siting and design will aim to reduce any visual aesthetic effects

- Implementation of environmental protection and emergency response plans and personnel / equipment.
- Implementation of progressive rehabilitation measures and eventual Project decommissioning.
- Continue to engage and communicate with communities, Indigenous groups and other organizations to provide Project information and updates on on-going and planned activities, as well as discussion of any issues and potential means of addressing them

A summary of the predicted (residual) environmental effects of the Project on land and resource use is provided in Table 5.16 below.

Table 5-16: Land and Resource Use: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty
Construction							
Change in municipal use	N	-	-	-	-	-	H
Change in commercial use	N-A	N	L	3	S	R	H
Change in recreational / traditional use	N-A	N	L	3	S	R	H
Change in historic resources	N	-	-	-	-	-	H
Operations							
Change in municipal use	N	-	-	-	-	-	H
Change in commercial use	N-A	N	L	5	S	R	H
Change in recreational / traditional use	N-A	N	L	5	C	R	H
Change in historic resources	N	-	-	-	-	-	H
Decommissioning							
Change in municipal use	N	-	-	-	-	-	H
Change in commercial use	N	-	-	-	-	-	H
Change in recreational / traditional use	N	-	-	-	-	-	H
Change in historic resources	N	-	-	-	-	-	H
Potential Accidental Events							
Change in municipal use	N	-	-	-	-	-	M

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Change in commercial use	A-N	N	R	3	O	R	M
Change in recreational / traditional use	A-N	N	R	3	O	R	M
Change in historic resources	N	-	-	-	-	-	M

Overall, Resulting Effect(s) of Project on the VEC	**Evaluation of Significance**
• Planned components and activities are not expected to have material adverse effects land and resource use in during any phase of the Project. • Potential accidental events (such as a fire or spills) and their possible effects on this VEC will be prevented through planned Project equipment and procedures, with appropriate response plans and procedures in place	• The proposed Project is not likely to result in significant adverse environmental effects on land and resource use.

Nature / Direction:	**Magnitude:**	**Geographic Extent:**	**Duration:**	**Frequency:**
A = Adverse	N = Negligible	S = Site	1 = < 1 month	O = Once
N = Neutral or No Effect	L = Low	L = Local	2 = 1-12 months	S = Sporadic
P = Positive	M = Medium	R = Regional	3 = 13-36 months	R = Regular
	H = High		4 = 37-72 months	C = Continuous
			5 = > 72 months	
Reversibility:	**Certainty:**			
R = Reversible	L = Low			
I = Irreversible	M = Moderate			
	H = High			

5.8.4 Cumulative Environmental Effects

The proposed Project will be characterized by a relatively straightforward and localized activity that will not interfere significantly with local land and resource use activities, including municipal, commercial or recreational / traditional pursuits, and it will not likely interact with historic resources. Although there are examples of past and current human activities around the Study Area, it is not one that has been (or is currently proposed to be) subject to large scale industrial development to date, and particularly, any whose on-going environmental effects would overlap in space and time with any that could result from this Project. As noted above, the Project and its various components and activities will eventually become part of the local landscape, and land and resource use patterns will adjust to its presence and other influences over time.

The Project is therefore not likely to result in significant, adverse cumulative environmental effects to this VEC in combination with other projects that have been or will be carried out.

5.9 Fisheries and Other Marine Activities

Marine fisheries are an important element of the socioeconomic environment of Western Newfoundland and other parts of the province, including the various communities within and adjacent to the Study Area. A number of other human activities also occur within the marine environment in Bay St. George, including various commercial and recreational / traditional pursuits.

5.9.1 Potential Environmental Issues and Interactions

Possible interactions between the Project and fisheries and other marine activities relate primarily to the installation and operation of the seawater intake / potential outfall structures, and include:

- Interference with fishing or other marine activities, with possible resulting decreases in the success, efficiency, enjoyment or value of these pursuits;
- Potential damage to fishing gear, vessels or other components as a result of direct interactions with Project equipment, activities or environmental discharges (planned or accidental); and
- Indirect effects on fisheries or other marine uses due to possible effects on marine environments and resources (abundance, distribution or quality – whether real or perceived), resulting from planned activities or accidental events such as spills.

An overview of the potential interactions between each of the main Project components and activities and the various key indicators and parameters that have been identified for this VEC is presented in Table 5.17.

Table 5-17: Fisheries and Other Marine Activities: Potential Project-VEC Interactions

Project Component / Activity	Key Indicators and Parameters				
	Distribution and Intensity of Marine Use / Activity	Effectiveness and Efficiency of Marine Use / Activity	Abundance, Location and Quality of Marine Resources	Quality and Value of Marine Activities (Economic)	Quality and Value of Marine Uses (Socio-cultural)
Construction					
Site access and preparation					
Cavern development (solution mining)					
Surface infrastructure (main facility)					
Wind farm / substation					
Marine components and pipelines	•	•	•	•	•
Transmission line / substation					
Ancillary components (roads, buildings etc)					
Waste management	•	•	•	•	•

Project Component / Activity	**Key Indicators and Parameters**				
	Distribution and Intensity of Marine Use / Activity	**Effectiveness and Efficiency of Marine Use / Activity**	**Abundance, Location and Quality of Marine Resources**	**Quality and Value of Marine Activities (Economic)**	**Quality and Value of Marine Uses (Socio-cultural)**
Project related expenditures					
Employment (including accommodations and transportation)					
Operations					
Main facility (including ACAES, salt production)					
Wind farm / substation					
Marine components and pipelines	•	•	•	•	•
Transmission line / substation					
Project related expenditures					
Employment					
Decommissioning	•	•	•	•	•
Potential Accidental Events					
Spills	•	•	•	•	•
Fire or explosion					

5.9.2 Environmental Effects Assessment

As discussed in Section 3.2.4, commercial fishing activity occurs within the Bay St. George region for various groundfish, shellfish and pelagic species. Lobster and snow crab are the most important fisheries in terms of landed value, but there are other important and active fisheries for species such as herring, capelin and others. There fisheries make use of a mix of fixed and mobile gear types, which may have varying potential for interactions with Project components and activities. A number of other commercial and recreational / traditional activities also occur within the marine environment in this region.

5.9.2.1 Construction

If the beach well seawater supply option and on-site deep disposal wells are ultimately selected for development, the amount of infrastructure and activity required within the marine environment would be minimal. Under this configuration, seawater would be drawn indirectly through coastal sediments and produced saltwater would be disposed of in deep subsurface formations on land, thereby avoiding the need for offshore intake or discharge structures. As a result, the potential for interactions with commercial or recreational fisheries, navigation and other marine uses would be very limited.

If they are required, construction of the seawater intake and outfall structures, in-water pipelines, and the coastal pumphouse has the potential to temporarily interfere with other marine activities in the immediate area. Vessel traffic associated with construction, including barges, workboats, and support vessels, may temporarily restrict navigation or access to fishing grounds. Construction activities may also create safety hazards for fishers and other marine users, necessitating exclusion zones or temporary closures around the active work areas. Such restrictions, although short-term, could result in minor delays or detours for commercial and recreational operations, particularly if they coincide with peak periods.

Any associated interference with marine activities or access restrictions would be highly localized and temporary, occurring only during limited construction or installation activities and lasting for a short duration. Coordination with local fishers and other marine users, early notification of planned in-water works, and adherence to applicable requirements related to fisheries, navigation and vessel safety will help minimize the potential for interference with fisheries and other marine users during the construction phase.

Planning and design of these components remain at an early stage, and there is still flexibility regarding their exact locations, lengths and depths. These details will be refined through additional engineering and environmental review as the Project advances. This process will consider local fishing activity and other marine uses, and will include continued engagement with fish harvesters and other marine stakeholders to help identify and select locations that minimize potential interactions and conflicts.

Potential effects on aquaculture operations could result from increased underwater noise and vibration, localized sedimentation, and temporary increases in marine vessel activity during construction of the Project marine components. Given that the nearest aquaculture facility is located approximately 15 km away, any such effects are considered unlikely to occur. Standard mitigation measures will nevertheless be implemented, including coordination and communication with aquaculture operators, sediment and noise control measures, spill prevention and response procedures, vessel traffic management, and adherence to applicable regulatory requirements.

5.9.2.2 Operations

If they are required, the operation of the seawater intake and/or outfall systems during the solution mining process (currently planned for 18-24 months) may impose localized restrictions on certain marine activities, particularly the use of bottom-contact fishing gear directly over or immediately adjacent to the infrastructure. These restrictions are expected to be limited to small, clearly defined areas around the intake and outfall locations and will be communicated to local fishers and marine users and added to relevant nautical charts to ensure safety and compliance. Overall, the extent of any such gear restrictions will be negligible relative to the overall fishing grounds in the Study Area, and most marine activities including surface and mid-water fishing, navigation and recreational use will remain unaffected.

The planned approaches for the design and operation of the marine outfall for saltwater disposal (if required), including measures to prevent adverse effects on marine water quality, habitats, and fish and other marine resources, are described in Sections 5.3 and 5.4.

5.9.2.3 Decommissioning

During decommissioning, the removal of any marine infrastructure such as the pipelines and associated seabed components may cause minor, short-term disturbances to the immediate marine environment, including localized increases in turbidity and temporary displacement of fish and other marine organisms. Any restrictions on fishing or other marine activities in the vicinity of these decommissioning activities will be limited in extent and duration. Over the long term, once all infrastructure is removed and any temporary disturbance has settled, the seabed and surrounding marine environment are expected to return to baseline conditions, with habitat availability and water quality effectively restored, and normal fisheries and marine activities able to resume at that location.

5.9.2.4 Potential Accidental Events

Potential accidental events within or near the marine environment include a spill of fuel or other materials, which may have adverse effects on fisheries and other marine uses, including on the species and resources that these activities depend upon. An overview of TPR's planned approaches to preventing such an event through its associated equipment and procedures, and for responding to one in the unlikely of its occurrence, were described in earlier sections of this EA Registration.

5.9.3 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC is provided below:

- Optimize marine infrastructure siting and design through ongoing engineering work, environmental review and engagement with fish harvesters and other marine users to minimize potential interactions.
- Design, construction and operation of the marine outfall (if required) in a manner that prevents adverse effects on marine water quality, fish and fish habitat and other marine resources, as listed in previous VEC sections.
- Continue to engage and communicate with communities, Indigenous groups and other organizations to provide Project information and updates on on-going and planned activities, as well as discussion of any issues and potential means of addressing them.

A summary of the predicted (residual) environmental effects of the Project on fisheries and other marine activities is provided in Table 5.18 below.

Table 5-18: Fisheries and Other Marine Activities: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Construction							
Distribution and intensity of marine use / activity	A	L	L	3	S	R	H
Effectiveness and efficiency of marine use / activity	A	L	L	3	S	R	H
Abundance, location and quality of marine resources	A	N	L	3	S	R	H
Quality and value of marine use / activity (economic)	N	-	-	-	-	-	H
Quality and value of marine use / activity (socio-cultural)	N	-	-	-	-	-	H
Operations							
Distribution and intensity of marine use / activity	A	L	L	5	S	R	H
Effectiveness and efficiency of marine use / activity	A	L	L	5	S	R	H
Abundance, location and quality of marine resources	A	N	L	5	S	R	H
Quality and value of marine use / activity (economic)	N	-	-	-	-	-	H
Quality and value of marine use / activity (socio-cultural)	N	-	-	-	-	-	H
Decommissioning							
Distribution and intensity of marine use / activity	A	L	L	3	S	R	H
Effectiveness and efficiency of marine use / activity	A	L	L	3	S	R	H

<table>
<tr><th rowspan="2">Potential Effect</th><th colspan="7">Environmental Effect Descriptors</th></tr>
<tr><th>Nature</th><th>Magnitude</th><th>Extent</th><th>Duration</th><th>Frequency</th><th>Reversibility</th><th>Certainty</th></tr>
<tr><td>Abundance, location and quality of marine resources</td><td>A</td><td>N</td><td>L</td><td>3</td><td>S</td><td>R</td><td>H</td></tr>
<tr><td>Quality and value of marine use / activity (economic)</td><td>N</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>H</td></tr>
<tr><td>Quality and value of marine use / activity (socio-cultural)</td><td>N</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>H</td></tr>
<tr><td colspan="8">Potential Accidental Events</td></tr>
<tr><td>Distribution and intensity of marine use / activity</td><td>A</td><td>L</td><td>L</td><td>5</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Effectiveness and efficiency of marine use / activity</td><td>A</td><td>L</td><td>L</td><td>5</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Abundance, location and quality of marine resources</td><td>A</td><td>L</td><td>L</td><td>5</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Quality and value of marine use / activity (economic)</td><td>A</td><td>L</td><td>L</td><td>5</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Quality and value of marine use / activity (socio-cultural)</td><td>A</td><td>L</td><td>L</td><td>5</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td colspan="4">Overall, Resulting Effect(s) of Project on the VEC
• During construction of in-water infrastructure, temporary safety or exclusion zones may be required, resulting in minor and short-term restrictions on fishing or other marine activities in the immediate work area.
• During operations, the long-term presence of pipelines and intake/outfall structures (if required) may result in small, clearly defined areas where bottom-contact fishing or other activities are restricted.
• The final siting and design of these components remain flexible and will be determined through detailed engineering in consultation with local fishers, Indigenous groups, and other marine users to minimize effects and ensure continued safe and sustainable use of surrounding marine areas.</td><td colspan="4">Evaluation of Significance
• The proposed Project is not likely to result in significant adverse environmental effects on fisheries and other marine activities.</td></tr>
</table>

Potential Effect	Environmental Effect Descriptors						
	Nature	Magnitude	Extent	Duration	Frequency	Reversibility	Certainty

Nature / Direction: A = Adverse N = Neutral or No Effect P = Positive	**Magnitude**: N = Negligible L = Low M = Medium H = High	**Geographic Extent**: S = Site L = Local R = Regional	**Duration**: 1 = < 1 month 2 = 1-12 months 3 = 13-36 months 4 = 37-72 months 5 = > 72 months	**Frequency**: O = Once S = Sporadic R = Regular C = Continuous
Reversibility: R = Reversible I = Irreversible	**Certainty**: L = Low M = Moderate H = High			

5.9.4 Cumulative Environmental Effects

The proposed Project will be characterized by a relatively straightforward and localized activity that will not interfere significantly with local marine use activities. Although there are examples of past and current human activities around the Study Area, it is not one that has been (or is currently proposed to be) subject to large scale industrial development to date, and particularly, any whose on-going environmental effects would overlap in space and time with any marine interference that could result from this Project. As noted above, the Project and its various components and activities will eventually become part of the local seascape, and fisheries and other marine use patterns will adjust to its presence and other influences over time. The Project is therefore not likely to result in significant, adverse cumulative environmental effects in combination with other projects that have been or will be carried out.

5.10 Economy, Employment and Business

The Project will make a strong contribution to local and provincial economies as a result of the capital investment, and associated employment and business activity, that will create over its various phases.

The following sections assess and evaluate the potential implications of the Project for the economy of, and associated employment and business activity in, the Study Area, larger Western Newfoundland region, and in the province of Newfoundland and Labrador as a whole. For the purposes of this assessment:

- *Economy* refers to a system consisting of the production, distribution or trade, and consumption of goods and services by individuals, businesses or other organizations within a particular geographic region;

- *Employment* refers to the activities of those persons in the labour force who are engaged in the production, distribution and servicing of those goods and services; and

- *Business* refers to the presence, characteristics and activities of the companies or other entities that are involved in organizing those production, distribution and service activities, and which employ the labour force referenced above.

5.10.1 Potential Environmental Issues and Interactions

The construction and operation of the proposed Project will provide a range of important economic benefits at the local, regional and provincial scales. This will include the creation of employment and business opportunities, and associated income, taxation and gross domestic product (GDP) benefits through direct, indirect and induced economic effects throughout the life of the Project. Conversely, new developments in rural areas, and the resulting availability of new and often relatively high paying jobs, can create problems for existing businesses and organizations through labor force competition and wage inflation.

Table 5-19: Economy, Employment and Business: Potential Project-VEC Interactions

Project Component / Activity	**Key Indicators and Parameters**			
	Change in Economy	**Change in Employment**	**Change in Business**	**Interference with Other Economic Sectors**
Construction				
Site access and preparation				
Cavern development (solution mining)				
Surface infrastructure (main facility)				
Wind farm / substation				
Marine components and pipelines				
Transmission line / substation				
Ancillary components (roads, buildings etc)				
Waste management				
Project related expenditures	•	•	•	•
Employment (including accommodations and transportation)	•	•	•	•
Operations				
Main facility (including ACAES, salt production)				
Wind farm / substation				
Marine components and pipelines				
Transmission line / substation				
Project related expenditures	•	•	•	•
Employment	•	•	•	•
Decommissioning	•	•	•	•
Potential Accidental Events				
Spills	•	•	•	•
Fire or explosion	•	•	•	•

5.10.2 Environmental Effects Assessment

5.10.2.1 Construction

The various phases of the Project will represent up to several billion dollars in capital investment for the region (Section 2.10). Project construction will occur over approximately 3 years, during which significant employment opportunities in a wide variety of occupations will be created.

As described in Section 2.7.1, the construction phase of the Project will require approximately 800 on-site workers at peak, in a variety of occupations. Most, if not all these positions, will be full-time in nature. Project construction will be carried out on a contractual basis, with workers hired at the discretion of the contractor(s) and in accordance with their own hiring practices and policies. It is therefore not known at this stage what proportion of these positions will be filled locally, as this depends on such factors as local labour availability and interest, the location and specific hiring practices of the contractor, unionization and other factors. However, it is anticipated that local hiring will be preferred wherever possible to help minimize costs, especially given the skilled and experienced workforce that is currently available in the Western Newfoundland area (Section 3.2.5 and Appendix C).

As part of its Project planning activities to date, TPR has developed a labour force estimate for the Project at the National Occupational Classification (2021) level (Section 2.7). These data will be made available to relevant agencies and organizations to help identify employment needs and opportunities, as well any key labour supply gaps so that the responsible authorities can take appropriate planning actions.

During this phase of the Project, a variety of business opportunities will also be created through Project-related requirements for equipment, materials and other goods and services. Newfoundland and Labrador businesses will have full and fair opportunity to provide supplies and services to the Project, some of the key requirements for which will include, for example, various services such as vegetation clearing, earth moving and excavation, equipment supply, materials / infrastructure supply and installation and others. The nature and magnitude of these business benefits will be a function of the degree to which local, regional and provincial companies secure contracts to provide goods and services to the Project. The awarding of contracts will be based on commercial and technical requirements, while also considering factors such as experience, creditworthiness, price, quality, service, safety and delivery. It is the responsibility of local and provincial businesses to identify and respond to the opportunities generated by the Project in an effective and timely manner.

TPR's procurement and contracting policies and procedures will provide for full and fair opportunity for participation by qualified and competitive Newfoundland and Labrador companies. The contracting and purchasing processes for the Project will include:

- Providing information and updates on upcoming Project activities and opportunities to relevant organizations;

- Obtaining and reviewing information on regional and provincial firms and their capabilities on an on-going basis, and the design and sizing of bid packages, where possible and appropriate, to fit the capabilities of local companies;

- Obtaining and reviewing information on Indigenous firms and their capabilities on an on-going basis, and the design and sizing of bid packages, where appropriate, to fit the capabilities of these companies; and

- Where required goods and services are not available locally on a competitive basis, bidders will be encouraged to involve Newfoundland and Labrador-based firms

In summary, the construction phase of the Project will provide important opportunities for Newfoundland and Labrador workers and businesses. These direct and indirect economic benefits will be supplemented by "spin-off" benefits as these incomes and revenues move through the regional, provincial and national economies.

In addition to the employment and business opportunities and associated economic benefits that are often associated with a development project, there is also the potential for local companies and organizations to be adversely affected through labour force competition, and potential wage inflation. As described in Section 3.2.5 and Appendix C, the current labour force statistics for the region indicate that there is available capacity in the local labour force.

As described in Section 5.8, Project construction is not expected to interfere with or otherwise adversely affect other commercial activities in the Study Area.

5.10.2.2 Operations

The operations phase of the Project is expected to extend for a period of at least 50 years (Section 2.8). The Project will operate 24 hours per day on a full 365-day year basis and will be operated primarily by company employees.

During Project operations, an estimated 70 long-term positions will be created in a variety of occupations (Section 2.7.2). TPR supports employment and gender equity in its hiring and contracting practices. It is anticipated that the Project will draw employees from many areas and sources, including attracting Newfoundlanders and Labradorians that are currently living and working away, but who want to come home and would choose to do so for a long-term, sustainable opportunity such as this.

In addition, the requirement for goods and services during Project operations will provide significant business opportunities in a number of areas. TPR's procurement and contracting policies and procedures during this phase of the Project will likewise provide for full and fair opportunity for participation by qualified and competitive Newfoundland and Labrador companies, in keeping with the principles and approaches described in the preceding section.

5.10.2.3 Decommissioning

Project decommissioning activities would provide employment and contractual opportunities in earth moving, landscaping, erosion control, facility demolition and removal, waste disposal, recycling and other products and services. Estimates regarding the labour force requirements that may be associated with eventual Project decommissioning will be developed and progressively updated as new information is available over the life of the Project. TPR will continue to communicate with industry and other organizations to identify and communicate such opportunities as they become defined.

5.10.2.4 Potential Accidental Events

An accidental event such as a Project-related fire, fuel or chemical spill or a vehicle/equipment accident may have negative effects on employment and business activity in the Study Area and surrounding region, depending on the nature, scale, location and timing of the incident. This is especially so if an event results in the destruction and/or closure of any businesses or other infrastructure in the region (such as transportation routes) and subsequent loss of employment and revenues. If construction or operations activities are halted, Project workers and firms supplying goods and services may also be negatively affected.

Human health and safety and environmental protection have been paramount considerations by TPR in the planning and design of the Project, and these will continue to be the main priorities during the construction and operation of the development. TPR will have comprehensive systems, plans and procedures in place for the various phases of the Project, to help prevent, and respond to as required, any such accidental event.

5.10.3 Residual Environmental Effects Summary

A summary of the mitigation measures that have been identified and proposed by TPR to avoid or reduce the potential effects of the Project on this VEC – and specifically, to create and maximize its potential benefits - is provided below:

- Implementation of hiring, procurement and human resources related policies, plans and procedures throughout the various phases of the Project.

- Continue to engage and communicate with communities, Indigenous groups and other organizations to provide Project information and updates on on-going and planned activities and associated opportunities

TPR recognizes the Province's interest in maximizing local and regional benefits arising from major resource and energy developments and, if required by the Government of Newfoundland and Labrador as a condition of EA release, will prepare and implement a Benefits Agreement and a Gender Equity, Diversity and Inclusion Plan to the satisfaction of the applicable provincial authorities prior to the commencement of Project construction.

As noted previously, TPR recognizes that the Project's proposed solution mining and salt production activities are subject to the requirements of the Newfoundland and Labrador *Mineral Act* and *Mining Act*. The Proponent understands that eventual Project development will require a mining lease, an approved Development Plan, Rehabilitation and Closure Plan, and the provision of financial assurance acceptable to the Minister. TPR further recognizes that the Project must demonstrate prudent resource management, including that the salt resource is developed and utilized in a manner that maximizes benefits to the Province, its population and economy.

It should be noted that the proposed salt production facility is at a relatively early stage of planning and design, and there is considerable flexibility in its overall capacity (brine inputs and salt production outputs), which continue to be evaluated and will be optimized based on technical, economic and environmental factors, and with a view to maximizing the value of, and associated benefits from, the utilization of this resource. Additionally, it should be emphasized that the current proposed development of 1-2 salt caverns within the salt dome does not preclude future utilization of this resource for mining and/or energy development. These principles and considerations will continue to be incorporated into ongoing Project planning and design and will be further addressed through the post-EA preparation of these various required plans, studies and regulatory submissions necessary for Project compliance with these legislative requirements.

A summary of the predicted (residual) environmental effects of the Project on this VEC is provided in **Error! Reference source not found.** 5.20 below.

Table 5-20: Economy, Employment and Business: Residual Environmental Effects Assessment Summary

Potential Effect	Environmental Effect Descriptors						
	Nature	**Magnitude**	**Extent**	**Duration**	**Frequency**	**Reversibility**	**Certainty**
Construction							
Change in economy	P	L-M	R	3	C	R	H
Change in employment	P	L-M	R	3	C	R	H
Change in business	P	L-M	R	3	C	R	H
Interference with other economic sectors	N	N	R	3	O-S	R	M
Operations							
Change in economy	P	M	R	5	C	R	H
Change in employment	P	M	R	5	C	R	H
Change in business	P	M	R	5	C	R	H
Interference with other economic sectors	N	N	R	5	O-S	R	M
Decommissioning							
Change in economy	N	N	R	4	S	R	H
Change in employment	N	N	R	4	S	R	H
Change in business	N	N	R	4	S	R	H

<table>
<tr><th rowspan="2">Potential Effect</th><th colspan="7">Environmental Effect Descriptors</th></tr>
<tr><th>Nature</th><th>Magnitude</th><th>Extent</th><th>Duration</th><th>Frequency</th><th>Reversibility</th><th>Certainty</th></tr>
<tr><td>Interference with other economic sectors</td><td>N</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>H</td></tr>
<tr><td colspan="8">Potential Accidental Events</td></tr>
<tr><td>Change in economy</td><td>A</td><td>N</td><td>L-R</td><td>2</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Change in employment</td><td>A</td><td>N</td><td>L-R</td><td>2</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Change in business</td><td>A</td><td>N</td><td>L-R</td><td>2</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td>Interference with other economic sectors</td><td>A</td><td>N</td><td>L-R</td><td>2</td><td>O</td><td>R</td><td>H</td></tr>
<tr><td colspan="4">Overall, Resulting Effect(s) of Project on the VEC
• The proposed Project will result in important, positive socioeconomic effects in Western Newfoundland and throughout the province as a whole, including significant employment and business opportunities during its various phases.
• These direct and indirect economic benefits will be supplemented by "spin-off" benefits as these incomes and revenues move through the regional, provincial and national economies.</td><td colspan="4">Evaluation of Significance
• The proposed Project is not likely to result in significant adverse environmental effects on economy, employment and business.</td></tr>
<tr><td colspan="8">Nature / Direction: A = Adverse; N = Neutral or No Effect; P = Positive
Magnitude: N = Negligible; L = Low; M = Medium; H = High
Geographic Extent: S = Site; L = Local; R = Regional
Duration: 1 = < 1 month; 2 = 1-12 months; 3 = 13-36 months; 4 = 37-72 months; 5 = > 72 months
Frequency: O = Once; S = Sporadic; R = Regular; C = Continuous
Reversibility: R = Reversible; I = Irreversible
Certainty: L = Low; M = Moderate; H = High</td></tr>
</table>

5.10.4 Cumulative Environmental Effects

The proposed Project will, throughout its various phases, result in important, positive economic effects. This will include creating significant direct employment, as well as business opportunities for local and provincial businesses in the supply of goods and services. These direct and indirect economic benefits will be supplemented by "spin-off" economic outcomes, as these incomes and revenues move throughout the regional, provincial and national economies.

Other on-going and future development projects Newfoundland and Labrador and elsewhere may have similar, positive effects on the economy and employment and business throughout the region and province. These will contribute further to the regional and provincial economies by providing important employment and business benefits for the next several decades. The direct result will be the generation of higher individual and business income levels and government revenues, increased employment and training opportunities and opportunities for business activity and growth. These cumulative outcomes will generate immediate benefits to the economy but may also lead to longer-term indirect changes. For example, a labour force with higher skills and experience levels can command better wages and positions. Similarly, project experience can help local businesses to become more competitive locally, nationally and internationally.

5.11 References

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6.0 SUMMARY AND CONCLUSION

Triple Point Resources (TPR) is proposing to construct and operate the Fischells Salt Dome Power Generation Project, an energy storage and generation facility to be located in the Bay St. George area of Western Newfoundland.

6.1 Project Components and Activities

The proposed Project will involve the development of one or more underground salt caverns through solution mining processes, which will provide large-scale energy storage capabilities. These caverns will used to store air that is compressed using electricity generated by the associated wind farm, which can later be released to drive turbines and generate electricity when demand is high.

The primary components of the proposed development include:

- A *Main Facility*, comprising the proposed salt cavern(s), salt production, adiabatic compressed air energy storage (ACAES) unit and associated infrastructure, to be located just north of the TransCanada Highway;

- *Marine Components and Pipeline(s)* located to the west of the main facility, which will be used to transport seawater from St. George's Bay for use in the solution mining process, and possibly for the eventual disposal of produced saltwater;

- A *Wind Farm* and associated electrical systems, situated immediately to the southeast of the main facility on the opposite side of the highway; and

- A 230 kV bidirectional *Transmission Line* that will connect the facility to the existing Bottom Brook terminal station.

Project planning and design are underway, and TPR continues to evaluate a range of options for several of its key components - including the systems proposed for seawater supply and saltwater disposal. Ongoing engineering work is continuing to evaluate the technical and economic feasibility of these alternatives, while also incorporating input and perspectives received through TPR's on-going public and stakeholder engagement program.

Following EA release, the subsequent receipt of other relevant authorizations and approvals, the completion of detailed Project engineering and the procurement of key materials and equipment, the current Project schedule would see construction activity commencing in 2028. Solution mining is expected to be completed within 1.5 to 2 years, with development of the wind farm and ACAES system undertaken over 3 years for planned completion by 2031. While Project is currently being planned and designed for a minimum operating period of 50 years, there is the potential for a much longer service life – essentially in perpetuity - with appropriate planning and maintenance and depending on future demand.

6.2 Environmental and Socioeconomic Benefits

By combining renewable wind generation with large-scale underground energy storage using compressed air technologies, the Project can provide reliable, dispatchable electricity to regional energy markets, support the integration of additional renewable energy, enhance the reliability and flexibility of electricity systems, and strengthen regional energy security, while creating important environmental and socioeconomic benefits.

The proposed development has a well-defined and relatively small physical footprint, and will be located away from nearby communities while also avoiding environmentally sensitive areas, thereby reducing the potential for environmental and social effects. It is based on relatively straightforward technologies and environmentally benign processes, and will not involve the use or generation of pollutants or other hazardous materials. In addition, the ACAES system will produce no direct GHG emissions, as it does not require fuel to compress and store air or to generate electricity, making it a truly clean energy solution.

The Project will also be an important and significant contributor to the local, regional and provincial economies as a result of the employment and business activity that it will create throughout its various phases. It will represent a significant capital investment in the region, and over its construction phase will create considerable employment and business opportunities. During operations, a number of new permanent positions in a variety of occupations will be created, and the requirement for goods and services during this phase of the Project will again provide significant business opportunities for local and provincial businesses. These direct and indirect economic benefits will be supplemented by “spin-off” effects as these incomes and revenues move through the regional, provincial and national economies.

Local residents, communities and organizations have expressed a strong interest in these economic opportunities, and in seeing the social and economic benefits of the Project maximized, which has led to good overall support for the Project. Creating and maximizing these benefits will involve the development and implementation of hiring, procurement and human resources policies, plans and procedures throughout the various phases of the Project, as well as on-going communication and cooperation between TPR and all applicable agencies and organizations.

6.3 Environmental Effects Management

TPR is very encouraged by the environmental, social and economic benefits that will be realized through this Project, and is confident that any environmental issues that may be associated with it can be addressed through sound Project planning, design and implementation, including the various environmental protection measures that have been identified and committed to in this EA Registration document. The Project is being designed, and will be undertaken, in a manner that avoids or reduces adverse effects, and which helps ensure that it is undertaken in a safe and environmentally responsible manner. The Project will be carried out in full compliance with applicable legislation and regulations, including the mitigation and monitoring measures identified and committed to by TPR in this EA Registration.

TPR has also committed to on-going communication with local communities, Indigenous groups, other organizations and the general public during on-going Project planning and design, and throughout its construction and operations phases, as an important means of managing any adverse effects and maximizing benefits. This will allow for continuous discussion of Project activities and discussion of any issues as they may arise, in order to cooperatively and collaboratively plan and implement any required (adaptive) management measures that may be required to address these throughout the life of the Project.

6.4 Regulatory Approval and Compliance

Following EA release, TPR and its contractors will implement the various mitigation and monitoring measures identified and committed to in this document, the implementation and effectiveness of which will be tracked in accordance with TPR's internal management systems and procedures.

TPR and its contractors will also apply for, receive, and adhere to the terms and conditions of, any permits, approvals and authorizations that are required for specific Project components and activities (Appendix A). These subsequent regulatory review processes will facilitate the provision of more detailed information on key Project components, activities and potential environmental emissions and interactions to the various applicable regulatory authorities for review and approval, as such information becomes progressively available through TPR's on-going engineering work.

TPR also recognizes that several provincial legislative and regulatory requirements will apply to the Project beyond – and subsequent to - the EA process. Under the Newfoundland and Labrador *Electrical Power Control Act*, the development and supply of electricity by entities other than NL Hydro requires authorization, including an exemption from the Lieutenant-Governor in Council pursuant to Section 14 of the Act, which TPR acknowledges will be required prior to Project development.

TPR also recognizes that the Project's proposed solution mining and salt production activities are subject to the provincial *Mineral Act* and *Mining Act*, including requirements for a mining lease, an approved Development Plan, Rehabilitation and Closure Plan, and the provision of financial assurance acceptable to the Minister. The Proponent further acknowledges the need to demonstrate prudent resource management and to maximize the benefits derived from the salt resource for the Province. It should be noted that the proposed salt production facility is at a relatively early stage of planning and design, and there is considerable flexibility in its overall capacity (brine inputs and salt production outputs), which continue to be evaluated and will be optimized based on technical, economic and environmental factors, and with a view to maximizing the value of, and associated benefits from, the utilization of this resource. Additionally, it should be emphasized that the current proposed development of 1-2 salt caverns within the salt dome does not preclude future utilization of this resource for mining and/or energy development.

These considerations will continue to inform ongoing Project planning and design and will be further addressed through the preparation of the plans, studies, applications and regulatory submissions required to obtain the necessary approvals and authorizations for Project implementation.

6.5 Conclusion

With the implementation of the various Project design approaches and mitigation measures identified and proposed throughout this EA Registration document, the Project is not likely to result in significant adverse effects to any aspect of the biophysical or socioeconomic environments, during either of its phases.