WAASIGAN
TRANSMISSION LINE

FINAL ENVIRONMENTAL ASSESSMENT

Section 7.2 Community Well-Being and Infrastructure

November 2023

Acknowledgements

We wish to acknowledge that the Waasigan Transmission Line Project is located within lands that represent the traditional territories and homelands of the Robinson-Superior Treaty (1850) and Treaty #3 (1873) First Nations, and traverse the Red Sky Métis Independent Nation, Northwestern Ontario Métis Community and Northern Lake Superior Métis Community.

Hydro One also wishes to acknowledge Indigenous artist, Storm Angeconeb, for developing the covering page and wildlife designs throughout the Final Environmental Assessment. Storm is a highly recognized visual artist from Lac Seul First Nation in Treaty #3 and currently resides in Red Lake. Many of her works include animals and birds as representations of herself or those close to her. The artist's description of the covering page is presented below.

Hydro One Environmental Study Art:

What stands out in this art piece is the symbolic representation of solar rays as "Bringing Power"; we can see the environment represented through the wildlife and Ojibwe floral visuals. This artwork is an excellent representation of Hope, Life, and Opportunity, visually portrayed through the Black Bear and her two cubs. The colour theme of this artwork comes from the Waasigan Transmission Line Project brand identity.

Artist: Storm Angeconeb

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Appendices

APPENDIX 7.2-A
Indigenous Community Profiles

7.2 Community Well-Being and Infrastructure

Ezhi-gizhewaadiziyang

This section describes and summarizes the community well-being studies undertaken for the Waasigan Transmission Line Project (the Project) and presents an assessment of the effects of the Project on community well-being.

The assessment follows the general approach and concepts described in Section 5.0.

7.2.1 Input from Engagement

Comments pertaining to community well-being and infrastructure that were raised by Indigenous communities, government officials and agencies, interested persons and organizations and community members during engagement, and how they are addressed in the environmental assessment (EA) are listed in Table 7.2-1. Comments and responses are provided in Section 4.0 – Engagement Summary. In addition, the Draft EA Report was provided to Indigenous communities, government officials and agencies, and interested persons and organizations for review and comment on May 17, 2023. A high-level summary of the key themes from the comments on the Draft EA Report and related engagement meetings are included in Table 7.2-1. The detailed responses to these comments are included in Appendix 4.0-A.

Table 7.2-1: Summary of Comment Themes Raised During Engagement

Comment Theme	How Addressed in the Environmental Assessment	Indigenous Community or Stakeholder
Question on the differences between landscape and aesthetics, economy and land use, and population and settlement assessment components. Suggested to have a stand-alone component to evaluate social impacts.	These components fall under a broader category for the socio-economic environment. Several types of socio-economic impacts are assessed in the EA in accordance with the criteria and indicators set out in the approved Amended Terms of Reference. See Section 7.1 (Land and Resources Use), Section 7.2 (Community Well-Being and Infrastructure), and Section 7.3 (Economy).	NWOMC and Region 2
Request for use of current population data and data specific to MNO Northwestern Ontario Métis Community (NWOMC) and Region 2.	Where available, additional information on First Nation and Métis communities in the form of community profiles are attached and referenced in this section (Appendix 7.2-A).	NWOMC and Region 2

Comment Theme	How Addressed in the Environmental Assessment	Indigenous Community or Stakeholder
Question on what consideration has been given to potential social problems the workforce might bring with them (e.g., substance abuse).	Workforce concerns and potential for social problems, such as substance abuse, were noted as a concern for consideration in the EA. Potential socio-economic effects that may result from Project activities have been considered and assessed, and are reported in Section 3.0 and Section 7.2 (Community Well-Being and Infrastructure) of the EA.	Migisi Sahgaigan
Concern about increased energy bills as a result of the Project.	Electricity rates are set by the Ontario Energy Board (OEB) for the province and are not within the control of the proponent. They are not addressed as an effect of the Project in the EA; however, concerns about energy costs can be raised with the OEB. In addition, the Project requires a Section 92 approval from the OEB that ensures the costs of the Project are thoroughly reviewed and that the Project is in the best interests of the ratepayers.	Mitaanjigamiing First Nation
Question if people will be trained and prepared by 2024, when construction starts.	Having people trained prior to construction in 2024 is the goal recognizing that additional on-the-job training will also occur throughout Project execution.	Wabigoon Lake Ojibway Nation
The importance of preventing the release of pollutants, such as oil and gas spills, and especially glyphosate and alternative chemicals that will compromise the ecosystem and human health.	Prevention of accidental spills, including identifying appropriate mitigation measures, are considered in various parts of the EA including, but not limited to Sections 6.1 through Section 6.9 (biophysical criteria).	Grand Council Treaty #3 NWOMC and Region 2 Gwayakocchigewin Limited Partnership

Comment Theme	How Addressed in the Environmental Assessment	Indigenous Community or Stakeholder
Concern with locating the transmission line near human habitat and concerns related to electric and magnetic fields (EMF) and human health.	Socio-economic criteria for population and demographics, and quality of life and quality of land user experience, were included for the effects assessment in the Section 7.1 (Land and Resources Use) of the EA to determine the potential effects from the Project. Additional information related to EMF is provided in Section 3.4.2.4.	Grand Council Treaty #3 NWOMC and Region 2 Gwayakocchigewin Limited Partnership Members of the public
Request for more information on potential effects to vulnerable populations, such as the role resource camps may play in exacerbating violence towards Indigenous women, girls, and gender diverse peoples.	The assessment in Section 7.2.7 has been expanded to include further discussion of potential effects to vulnerable populations through gender-based analysis+ methods and additional mitigation measures.	Gwayakocchigewin Limited Partnership
Consideration of positive and negative socio-economic and cultural considerations during the EA including, access to social services, medical care, housing, reliable energy, clean water and nutritious foods, economic development and training opportunities, and potential for increased drug trafficking.	Socio-economic criteria have been considered to determine the potential effects from the Project and mitigation measures have been identified to lessen or eliminate those effects. Both positive and negative effects from the Project are assessed in the EA. The socio-economic and cultural environmental setting is presented and assessed in Section 7.1 (Land and Resources Use), Section 7.2 (Community Well-Being), Section 7.3 (Economy), Section 7.4 (Aesthetics), Section 7.5 (Archaeological Resources), Section 7.6 (Built Heritage Resources, Section	Gwayakocchigewin Limited Partnership Grand Council Treaty #3

Comment Theme	How Addressed in the Environmental Assessment	Indigenous Community or Stakeholder
	7.7 (First Nations Rights) and Section 7.8 (Métis Rights).	
Concerns regarding potential impacts to public safety (i.e., safety standards during the construction and operation phases, safety in the workplace, and community safety).	Potential effects to public safety are assessed and appropriate mitigation measures are identified in this EA section.	Members of the public
Concerns regarding creation of new access to private property.	Hydro One will consider installing fencing along private properties in order to address concerns surrounding trespassing and increased access as a result of the Project.	Members of the public
Concerns regarding the decline in mental health related to the proximity of the Project to individual property owners.	Potential effects to quality of life related to noise and air quality changes that may result in nuisance effects are assessed and appropriate mitigation measures are identified in this EA section. Additionally, potential effects to visual aesthetics are assessed in Section 7.4 (Aesthetics).	Members of the public
Concerns related to the well-being of families and overall community values.	Potential effects to quality of life and community well-being are assessed and appropriate mitigation measures are identified in this EA section.	Members of the public

EMF- Electric and magnetic fields

7.2.2 Information Sources

Information for the community well-being baseline was obtained from the following secondary sources:

- Statistics Canada Community Census Profiles and National Household Surveys (2016, and 2021);

- Aboriginal Population data from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC);
- Municipal, provincial, and First Nation government and non-government websites;
- Statistical reports and government documents;
- Local service provider websites (i.e., emergency, police, transit and utility services);
- Provincial and regional economic development reports;
- Engagement with Indigenous communities and stakeholders;
- Regional tourism authorities; and
- Results from noise and air quality impact assessments.

Statistical information for the study areas for community well-being (Section 7.2.5) was obtained from the data sources listed above. Data from the 2021, 2016 and 2011 censuses (where available at the time of writing), and the 2016 National Household Survey, were analyzed to illustrate regional and local economic and social trends.

Statistical information was also obtained through municipal operational budget reporting for local communities, as well as through CIRNAC's First Nation Profiles tool for Indigenous communities. Some communities are not equally represented throughout data tables where baseline data for small communities was suppressed by Statistics Canada due to either lack of data reliability or for confidentiality reasons, or where there was limited information available on regional and local economic social trends (i.e., for First Nations communities with small populations and for the Métis Nation of Ontario). Where available, additional information on First Nation and Métis communities in the form of community profiles are attached in Appendix 7.2-A.

For the purposes of the EA, sufficient information was deemed to be available from the references listed above to assess the potential effects of the Project on community well-being.

7.2.3 Criteria and Indicators

The criteria and indicators selected for the assessment of Project effects on community well-being, and the rationale for their selection, are provided in Table 7.2-2.

Table 7.2-2: Community Well-Being Criteria and Indicators

Criteria	Rationale	Indicators	Measurement of Potential Effects

Population and Demographics	• Avoid or minimize adverse effects to populated areas.	• Change to population and demographics considering:
		  ◦ Population and demographics of the settlements in the Population and Demographics LSA area;
		  ◦ Size, location, and duration of anticipated workforce; and
		  ◦ Location and availability of accommodation for the workforce.
			• Quantitative assessment of the change in population and demographics in the Population and Demographics local study area.

Quality of Life	• Indigenous Knowledge (IK) and Indigenous community feedback regarding concerns with changes to quality of life;
	• Enhance planning by identifying potential opportunities for local populations; and
	• Avoid or minimize adverse effects to populated areas, dwellings and sensitive points of reception (e.g., residents or recreational users).
		• Change to quality of life considering:
		  ◦ Proximity to settlements and built-up areas within the quality-of-life local study area;
		  ◦ Location of nearby points of reception to the Project footprint;
		  ◦ Nature of anticipated nuisance-related concerns (e.g., noise and vibration [Section 6.9], traffic, access [Section 7.1]) from activities in the Project footprint;
		  ◦ Potential negative interactions at Project camps (e.g., human trafficking, substance abuse and domestic violence); and
		  ◦ Risks to public safety.
			• Qualitative assessment of nuisance effects resulting from changes in noise and air quality.
			• Qualitative assessment of change in public safety.
			• Qualitative assessment of potential negative interactions at camps.

Transportation and Energy Infrastructure	• Commitment to avoid or minimize adverse effects to existing infrastructure (e.g., roads) and facilities; and
	• Commitment to maximize benefits of providing new energy infrastructure.
		• Change in transportation and energy infrastructure considering:
		  ◦ Proximity to transmission lines, pipelines and other utilities in the Transportation and Energy Infrastructure local study area;
		  ◦ Proximity to roads, highways, rail lines and airports in the Transportation and Energy Infrastructure local study area;
		  ◦ Distance and condition of existing access roads available for use (Section 3.0 and Section 7.1); and
		  ◦ Capacity of local infrastructure
			• Qualitative assessment of changes in demand for transportation and energy infrastructure.
			• Qualitative change in transportation and energy infrastructure capacity.

Criteria	Rationale	Indicators	Measurement of Potential Effects

Community Services and Facilities	• Commitment to enhance positive effects by identifying existing services potentially available for the Project; and
	• Commitment to avoid or minimize adverse effects to access and operations of community services and facilities.
		• Change to community services and facilities considering:
		  ◦ Proximity to active, inactive (closed), and proposed (new) waste management facilities in the Community Services and Facilities local study area;
		  ◦ Proximity to healthcare facilities in the Transportation and Energy Infrastructure local study area (e.g., hospitals, clinics, etc.);
		  ◦ Proximity to educational facilities in the Transportation and Energy Infrastructure local study area (e.g., schools, colleges, universities, etc.);
		  ◦ Proximity to community-based recreational facilities in the Transportation and Energy Infrastructure local study area (e.g., community centres, libraries, etc.);
		  ◦ Proximity to places of worship in the Transportation and Energy Infrastructure local study area; and
		  ◦ Capacity of the community services identified in the Transportation and Energy Infrastructure local study area.
			• Qualitative assessment of changes in demand community services and facilities.
			• Qualitative change in capacity of community services and facilities.

IK = Indigenous Knowledge; LSA = Local Study Area

7.2.4 Assessment Boundaries

7.2.4.1 Temporal Boundaries

The Project is planned to occur in three stages:

- **Construction stage**: The period from the start of construction to the start of operation (in-service date).
- **Operation and maintenance stage**: The period from the start of operation and maintenance activities through to the end of the Project life.
- **Retirement stage**: The period from the end of the Project life and start of retirement activities through to the end of final reclamation of the Project.

As described in Section 5.3.2, the Project will be operated for an indefinite period and the timing of retirement, or decommissioning, is not known at this time as it is anticipated that maintenance to reinforce or rebuild portions of the Project may occur over its lifetime to maintain its longevity. Further, potential effects and mitigation measures to be identified during the EA for the construction of the Project will likely equally apply to the potential removal of the Project at a future point in time, should it ever be required. Therefore, the construction scenario assessed as part of the EA is considered bounding and potential effects and mitigation measures for retirement are not identified separately in this EA.

The community well-being assessment considers effects that could occur during the construction stage for the community well-being criteria. As no operation and maintenance stage activities are anticipated to affect the local population, services and facilities, transportation and energy infrastructure, the assessment does not consider Project effects during operation and maintenance stage on these criteria. Effects to quality of life are considered for both the construction and operations stages. These periods are sufficient to capture the effects of the Project on community well-being.

7.2.4.2 Spatial Boundaries

The spatial boundaries for the community well-being assessment are defined by criterion-specific Local Study Areas (LSAs). The criterion-specific LSAs were established to encompass the area within which the Project is expected to interact with, and potentially have direct and indirect effects on, each criterion. The following factors were used to identify LSAs for each community well-being criterion:

- Nature and characteristics of the community well-being environmental criterion;
- Expected potential effects and the spatial extent of potential Project effects;
- Provincial, regional, and local government administrative boundaries; and

- Indigenous communities engaged on the Project whose Indigenous rights and/or treaty rights may be affected by the Project.

The LSAs for the majority of the community well-being criteria are population-based and include communities in proximity to the Project and communities that could potentially experience positive or negative effects to well-being as a result of the Project.

The identification of potentially affected LSA communities was based on the main population centres and communities with the greatest community services (e.g., schools and hospitals) and their distance to key Project features as described in Table 7.2-3 below. Distance to key Project components was measured by determining the distance from the key Project component to the nearest municipal/district border.

Unorganized/unincorporated settlements and/or townships are reflected at the greater district-level and include the District of Thunder Bay, the District of Kenora, and the District of Rainy River and are described below:

- District of Thunder Bay: Finmark, East Gorham (which consists of the townships of Fowler, Gorham, Jacques, and Lappe), Kabaigon, Kaministiquia, Kashabowie, Mabella, North McIntyre, Shabaqua, Shabaqua Corners, Shebandowan, Sistonens Corners, Sunshine, Toimela, and Upsala.
- District of Kenora: Borups Corners, Butler, Dinorwic, Dyment, Greater Oxdrift (which consists of the townships of Aubrey, Britton, Brownbridge, Eton, Rugby, Van Horne, Wainwright, and Zealand), Two Mile Corner, and Wabigoon.
- District of Rainy River: Kawene and Sapawe.

Indigenous communities are identified where they have the potential to provide support to the Project through community infrastructure (e.g., emergency services, healthcare) or where there is the potential for their population to be affected. These LSAs represent the greatest extent that potential effects to community well-being may reasonably be experienced; as such, no Regional Study Area was identified for the community well-being criteria.

The spatial boundaries for the community well-being criteria are summarized in Table 7.2-4. Criterion-specific figures (Figure 7.2-1 to Figure 7.2-) are provided to depict each criterion-specific study areas on a map.

Table 7.2-3: Distance to Key Project Components (kilometres) and Area of Intersect (hectares)

Study Area Community	Mackenzie TS	Lakehead TS	Dryden TS	Mackenzie TS Circuit Separation (D26A)	Camp L13	Camp L15	Camp L16	Camp L17	Camp L18	Camp L20	Camp L22	Camp L23	amp L24	Camp L25	Camp L26
Thunder Bay Metropolitan Area[a]	203	20	355	205	186	270	193	269	271	298	298	274	298	294	294
Town of Atikokan	2	208	208	2	32	153	29	154	154	85	85	157	85	136	136
City of Dryden	203	354	5	203	226	87	224	88	88	175	175	91	175	63	63
District of Kenora[b]	231	287	0	231	112	0	107	0	0	0	0	0	0	0	0
District of Thunder Bay[c]	136	0	161	136	25	70	30	69	70	174	172	69	175	139	139
District of Rainy River[d]	0	288	265	0	0	92	0	93	92	122	119	93	121	68	68
Red Sky Métis Independent Nation[e]	203	19	359	208	180	264	187	263	265	292	292	292	292	288	288
Métis Nation of Ontario - Thunder Bay Metis Council[e]	204	19	359	208	178	262	185	261	262	290	292	268	292	288	288
Métis Nation of Ontario – Atikokan Metis Council[e]	2	208	208	1	32	153	29	154	153	84	84	157	84	135	135
Métis Nation of Ontario – Northwest Métis Council[e]	202	353	136	2	233	94	230	95	95	182	182	98	182	70	70
Couchiching First Nation	160	360	202	161	180	228	177	229	229	165	165	232	165	211	211
Migisi Sahgaigan (Eagle Lake First Nation)	219	370	20	220	249	110	247	111	111	198	198	114	198	86	86
Fort William First Nation	212	36	364	213	182	266	189	265	267	294	294	270	294	290	290
Lac des Mille Lacs First Nation	170	156	243	171	103	153	155	152	154	283	283	157	260	177	177

Study Area Community	Mackenzie TS	Lakehead TS	Dryden TS	Mackenzie TS Circuit Separation (D26A)	Camp L13	Camp L15	Camp L16	Camp L17	Camp L18	Camp L20	Camp L22	Camp L23	amp L24	Camp L25	Camp L26
Lac La Croix First Nation	117	317	279	120	142	223	139	224	224	154	154	227	154	205	205
Lac Seul First Nation	271	409	90	272	300	160	297	161	161	249	249	164	249	137	137
Mitaanjigamiing First Nation	202	402	244	202	226	275	223	275	275	211	211	278	211	257	257
Nigigoonsiminikaaning First Nation	107	307	173	107	168	174	165	175	175	152	152	178	152	157	157
Ojibway Nation of Saugeen	293	374	213	293	325	143	320	142	144	209	211	143	210	167	167
Seine River First Nation	69	269	204	70	93	175	124	158	158	111	111	179	111	140	140
Wabigoon Lake Ojibway Nation	199	350	11	200	216	77	213	78	78	138	138	81	138	53	53

a) Statistics Canada considers defines the Thunder Bay Census Metropolitan Area as the City of Thunder Bay, Municipality of Oliver Paipoonge, Municipality of Neebing, and the Townships of Shuniah, Conmee, O'Connor, and Gillies.

b) The District of Kenora includes unincorporated/unorganized rural settlement areas and townships such as Borpus Corners, Butler, Dinorwic, Dyment, Greater Oxdrift (which consists of the townships of Aubrey, Britton, Brownbridge, Eton, Rugby, Van Horne, Wainwright, and Zealand), Two Mile Corner, and Wabigoon.

c) The District of Thunder Bay includes unincorporated/unorganized rural settlement areas and townships such as Finmark, East Gorham (which consists of the townships of Gorham, Jacques, and Lappe), Kabaigon, Kaministiquia, Kashabowie, Mabella, North McIntyre, Shabaqua, Shabaqua Corners, Shebandowan, Sistonens Corners, Sunshine, Toimela, Upsala.

d) The District of Rainy River includes unincorporated/unorganized rural settlement areas and townships such as Kawene and Sapawe.

e) As Métis Nations and Councils do not have geographic communities, their office locations have been used for this table for reference. As the District of Thunder Bay and District of Kenora encompasses the Project, they have not been included in this table.

TS = Transformer Station.

Table 7.2-4: Community Well-Being Spatial Boundaries

Criteria	Spatial Boundaries	Area (ha)	Description	Rationale

All Criteria in the Table	Project Footprint	5,125 ha	• The Project footprint includes:
			  ◦ Typical 46 m wide transmission right-of-way (ROW);
			  ◦ Widened ROW for the separation of circuits F25A and D26A for 1 km;
			  ◦ Modification of the Lakehead Transformer Station (TS), Mackenzie TS, and Dryden TS;
			  ◦ Access roads (existing roads and new);
			  ◦ Temporary supportive infrastructure associated with construction including fly yards, construction/stringing pads, laydown areas, construction camps, and helicopter pads; and aggregate pits.
				• Area in which Project construction, operation, maintenance and retirement activities will occur.

Population and Demographics	Local Study Area	256,868 ha	• Thunder Bay Metropolitan Area[a] • City of Dryden • Town of Atikokan • District of Kenora[b] • District of Thunder Bay[c] • District of Rainy River[d] • Indigenous Communities including[e]:	• Indigenous and non-Indigenous communities within commuting distance of the Project and construction segments and of a size to accommodate some temporary accommodation supply. • Potential effects to population are anticipated to be local in extent (i.e., not outside of the LSA) and would not have cumulative effects outside of this area.

Criteria	Spatial Boundaries	Area (ha)	Description	Rationale
			• Couchiching First Nation; • Migisi Sahgaigan(Eagle Lake First Nation); • Fort William First Nation; • Mitaanjigamiing First Nation; • Nigigoonsiminikaaning First Nation; • Ojibway Nation of Saugeen; • Lac des Mille Lacs First Nation; • Lac La Croix First Nation; • Lac Seul First Nation; • Seine River First Nation; • Wabigoon Lake Ojibway Nation; • MNO Atikokan Métis Council; • MNO Northwest Métis Council; • MNO Thunder Bay Métis Council; and • Red Sky Métis Independent Nation.	

Quality of Life	Local Study Area	397,104.5ha	• Same as the air quality and noise local study areas:
			  • Air quality LSA - Includes the Project footprint and a 2 km buffer on the transmission line ROW, 1.5 km buffer on the TS footprints and a 500 m buffer on access roads, supporting structures and aggregate pits.
			  • Noise LSA - Includes a 1.5 km buffer around the Project footprint boundary.
				• Largest extent in which potential nuisance and public safety effects are expected.
				• Potential negative effects due to the Project are foreseen to be only local in extent (i.e., are not expected to occur outside of the LSA) and are not anticipated to have cumulative effects with projects or activities outside of this area.

Criteria	Spatial Boundaries	Area (ha)	Description	Rationale
Transportation and Energy Infrastructure	Local Study Area	397,104.5 ha	• Transportation and Energy Infrastructure local study area – highways, regional roads and local roads that are anticipated to be used during the construction, operation, maintenance, and retirement of the Project. • Local and regional airports that will be utilized for good and services to support the Project construction. • Other Existing Infrastructure located within a 500 m buffer from the ROW of line and new access roads and railways.	• Largest extent in which effects to transportation and energy infrastructure are expected. • Potential negative effects due to the Project are foreseen to be only local in extent (i.e., are not expected to occur outside of the LSA) and are not anticipated to have cumulative effects with projects or activities outside of this area.

Community Services and Facilities	Local Study Area	58,617,440 ha[f]	• Thunder Bay Metropolitan Area[a]
			• City of Dryden
			• Town of Atikokan
			• District of Kenora[b]
			• District of Thunder Bay[c]
			• District of Rainy River[d]
			• Indigenous Communities including[e]:
			  ◦ Couchiching First Nation;
			  ◦ Migisi Sahgaigan;
			  ◦ Fort William First Nation;
			  ◦ Mitaanjigamiing First Nation;
			  ◦ Nigigoonsiminikaaning First Nation;
			  ◦ Ojibway Nation of Saugeen;
			  ◦ Lac des Mille Lacs First Nation;
			  ◦ Lac La Croix First Nation;
			  ◦ Lac Seul First Nation;
			  ◦ Seine River First Nation;
			  ◦ Wabigoon Lake Ojibway Nation;
			  ◦ MNO Atikokan Métis Council;
				• The Indigenous and non-Indigenous communities from which the Project may source water, waste or emergency services for the Project (based on their service capacity and proximity to the Project).
				• Districts with responsibility for service management and delivery of emergency health services and transportation infrastructure potentially affected by the Project.
				• Potential negative effects due to the Project are foreseen to be only local in extent (i.e., are not expected to occur outside of the LSA) and are not anticipated to have cumulative effects with projects or activities outside of this area.

Criteria	Spatial Boundaries	Area (ha)	Description	Rationale
			• MNO Northwest Métis Council; • MNO Thunder Bay Métis Council; and • Red Sky Métis Independent Nation.	

ha = hectare; km = kilometre; kV = kilovolt; LSA = Local Study Area; m = metre; MNO = Métis Nation of Ontario; ROW = right-of-way; TS = Transformer Station.

a) Statistics Canada defines the Thunder Bay Census Metropolitan Area as the City of Thunder Bay, Municipality of Oliver Paipoonge, Municipality of Neebing, and the Townships of Shuniah, Conmee, O'Connor, and Gillies. These settlement areas are considered within the assessment and spatial boundaries for the Thunder Bay Metropolitan Area as residents of smaller municipalities and townships surrounding the City of Thunder Bay are likely to utilize similar/most of the same amenities and/or services.

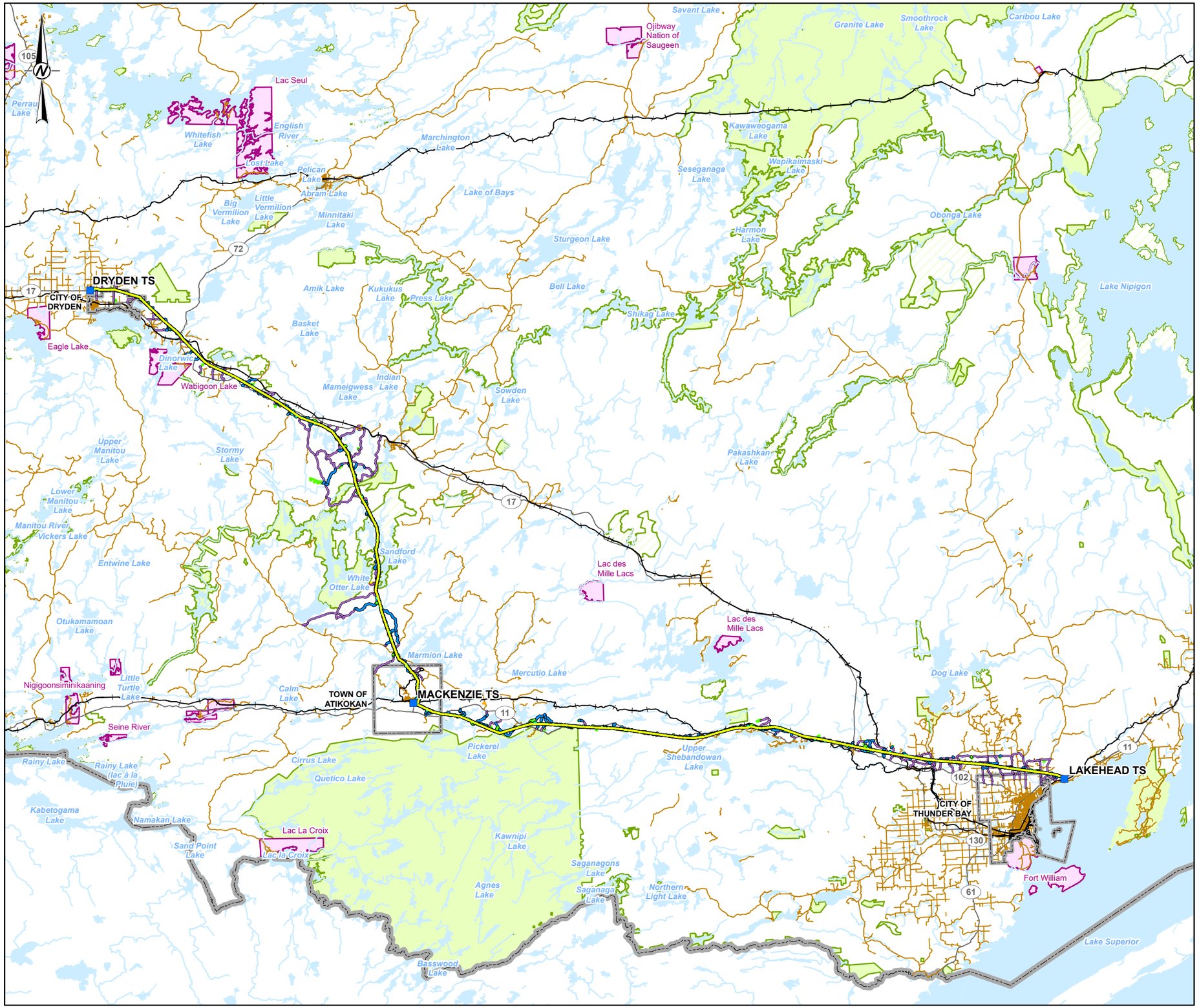
b) The District of Kenora includes the City of Dryden and unincorporated/unorganized rural settlement areas and townships such as Borpus Corners, Butler, Dinorwic, Dyment, Greater Oxdrift (which consists of the townships of Aubrey, Britton, Brownbridge, Eton, Rugby, Van Horne, Wainwright, and Zealand), Two Mile Corner, and Wabigoon.

c) The District of Thunder Bay includes the Thunder Bay Metropolitan Area and unincorporated/unorganized rural settlement areas and townships such as Finmark, East Gorham (which consists of the townships of Gorham, Jacques, and Lappe), Kabaigon, Kaministiquia, Kashabowie, Mabella, North McIntyre, Shabaqua, Shabaqua Corners, Shebandowan, Sistonens Corners, Sunshine, Toimela, Upsala.

d) The District of Rainy River includes the Town of Atikokan and unincorporated/unorganized rural settlement areas and townships such as Kawene and Sapawe.

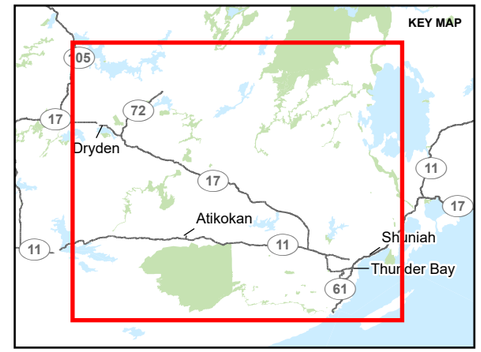
e) The Project study areas overlap lands which fall under the Robinson-Superior Treaty and Treaty #3.

f) The value provided takes into consideration the area inclusive of the Thunder Bay Metropolitan Area, the City of Dryden and the Town of Atikokan. However, it can be assumed that additional community services and/or facilities may be utilized at the greater regional level (e.g., District of Thunder Bay, District of Kenora) dependent on if the distance to those services/facilities are feasible.



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- WATERCOURSE
- INTERNATIONAL BORDER
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- D26A / F25A CIRCUIT SEPARATION
- AGGREGATE SITE
- FLY YARD
- CAMP / LAYDOWN
- CONSTRUCTION CAMP (NO LONGER TO BE USED)
- FLY YARD / CAMP / LAYDOWN
- FIRST NATIONS RESERVE
- MUNICIPAL BOUNDARY
- PROVINCIAL PARK
- CONSERVATION RESERVE
- WATERBODY



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PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
LOCAL STUDY AREA – POPULATION AND DEMOGRAPHICS

CONSULTANT

YYYY-MM-DD	2023-10-30
DESIGNED	SJ
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0037	1	7.2-1

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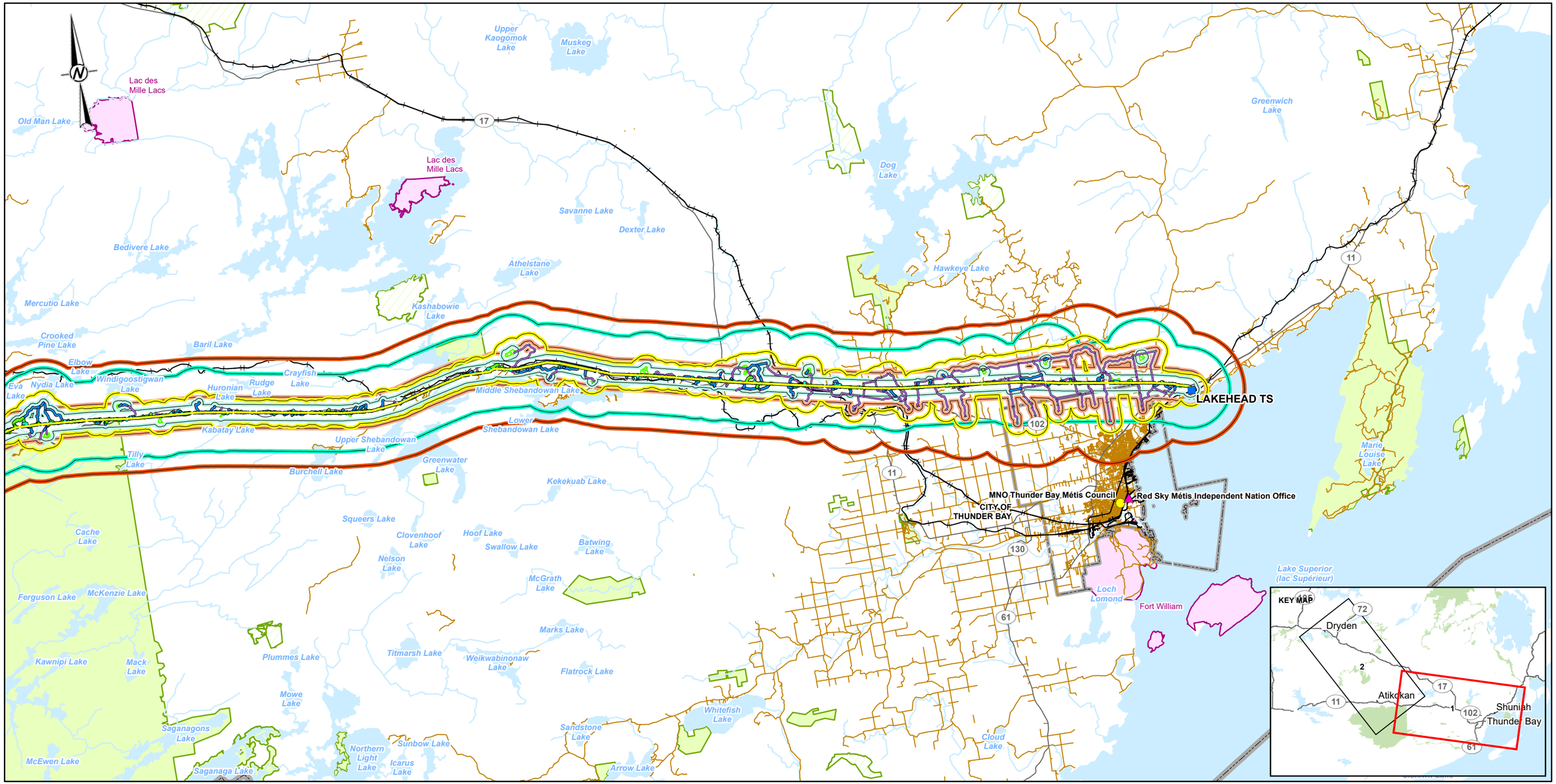

LEGEND

- 230 KV TRANSFORMER STATION (TS)
- MNO COUNCIL OFFICE
- RED SKY MÉTIS INDEPENDENT NATION OFFICE
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- WATERCOURSE
- INTERNATIONAL BORDER
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- AGGREGATE SITE
- FLY YARD
- LOCAL STUDY AREA - NOISE & VIBRATION
- LOCAL STUDY AREA - VISUAL
- REGIONAL STUDY AREA - VISUAL
- LOCAL STUDY AREA - AIR QUALITY
- REGIONAL STUDY AREA - AIR QUALITY
- FIRST NATIONS RESERVE
- MUNICIPAL BOUNDARY
- PROVINCIAL PARK
- CONSERVATION RESERVE
- WATERBODY

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PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT
wsp

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DESIGNED	SJ
PREPARED	DB
REVIEWED	HK
APPROVED	CS

TITLE
LOCAL STUDY AREA – QUALITY OF LIFE

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0037	1	7.2-2-1

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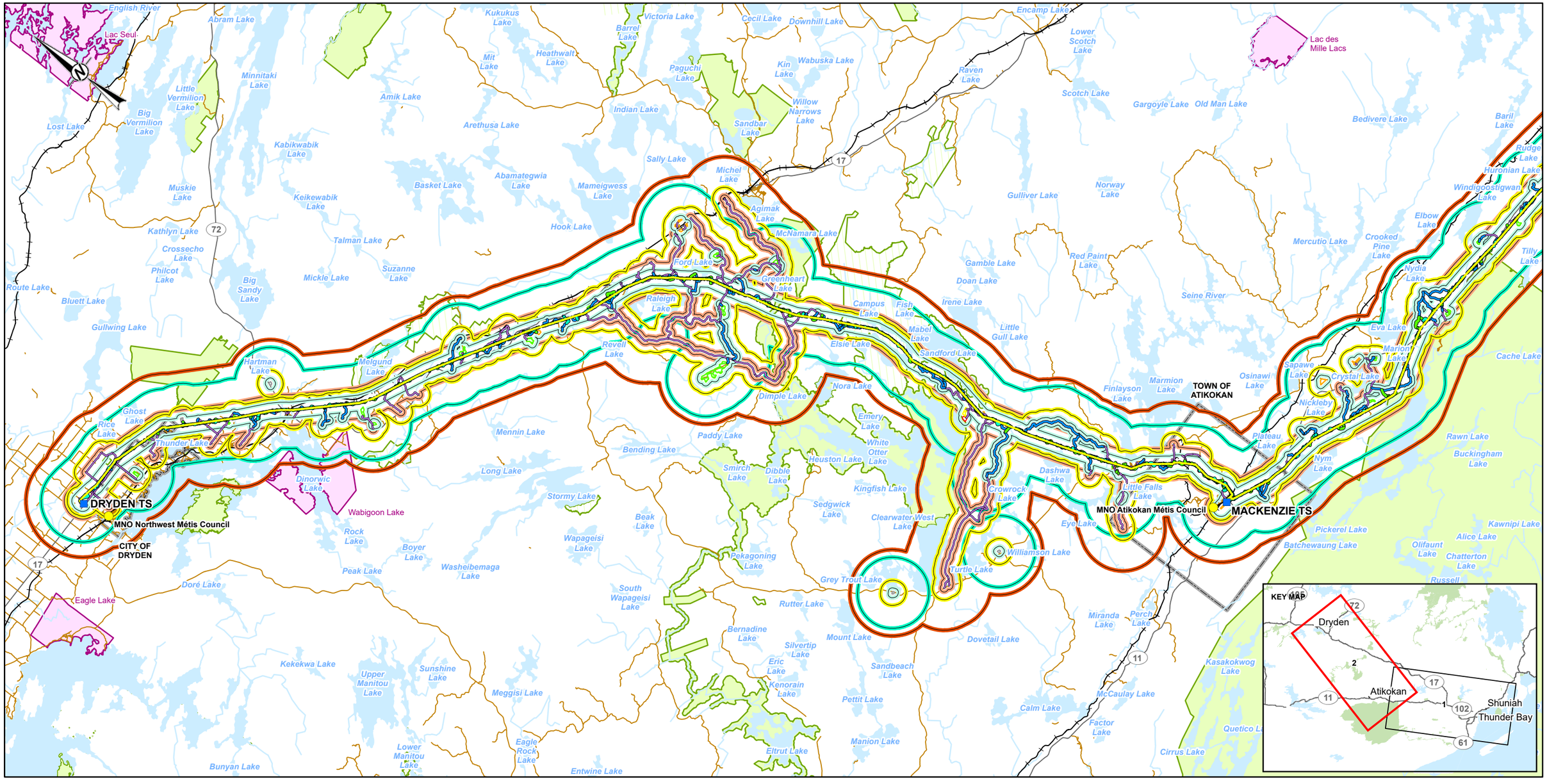

LEGEND

- 230 KV TRANSFORMER STATION (TS)
- MNO COUNCIL OFFICE
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- WATERCOURSE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- D26A / F25A CIRCUIT SEPARATION
- AGGREGATE SITE
- FLY YARD
- CAMP / LAYDOWN
- CONSTRUCTION CAMP (NO LONGER TO BE USED)
- FLY YARD / CAMP / LAYDOWN
- LOCAL STUDY AREA - NOISE & VIBRATION
- LOCAL STUDY AREA - VISUAL
- REGIONAL STUDY AREA - VISUAL
- LOCAL STUDY AREA - AIR QUALITY
- REGIONAL STUDY AREA - AIR QUALITY
- FIRST NATIONS RESERVE
- MUNICIPAL BOUNDARY
- PROVINCIAL PARK
- CONSERVATION RESERVE
- WATERBODY

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PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT
wsp

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PREPARED	DB
REVIEWED	HK
APPROVED	CS

TITLE
LOCAL STUDY AREA – QUALITY OF LIFE

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0037	1	7.2-2-2

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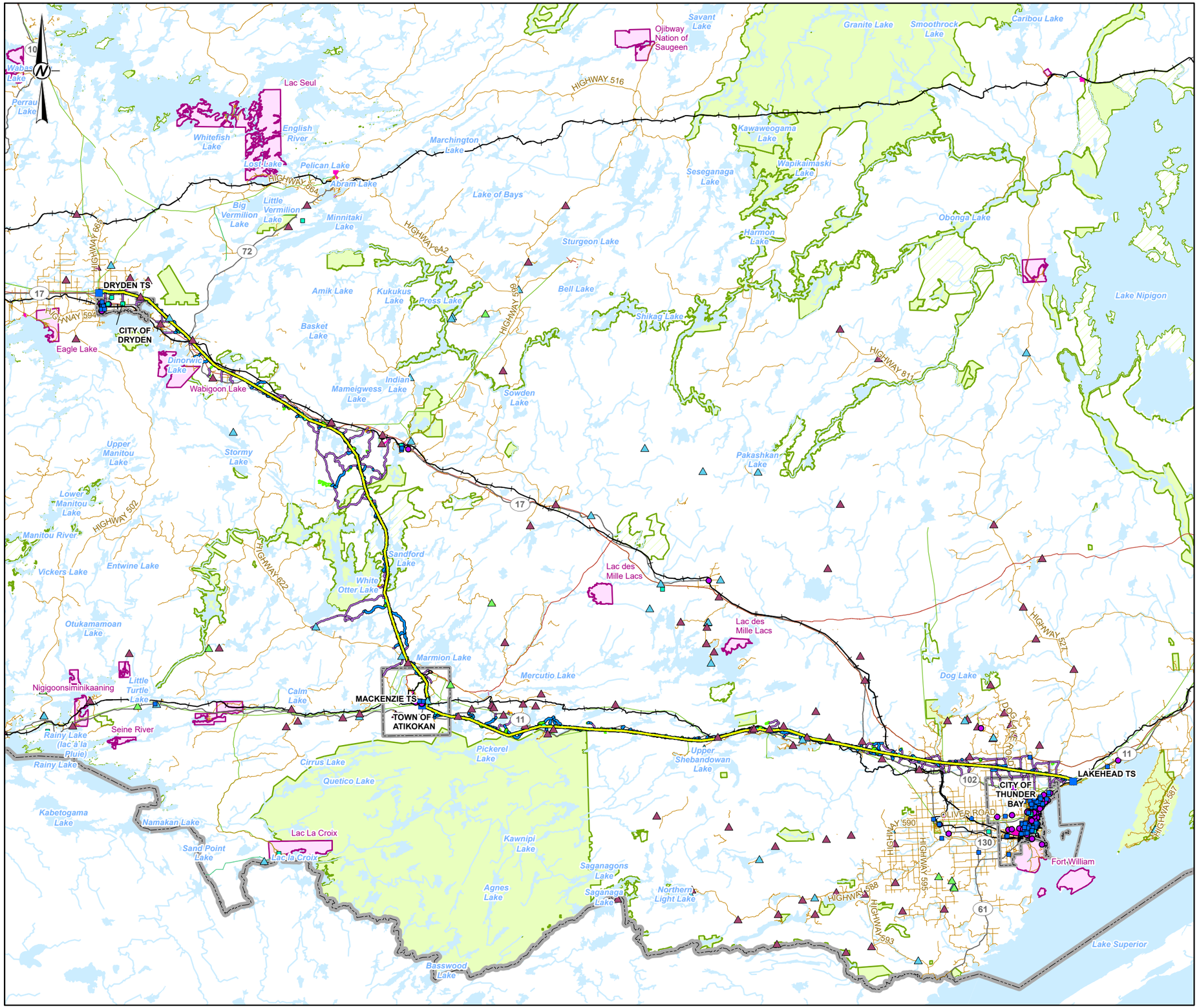
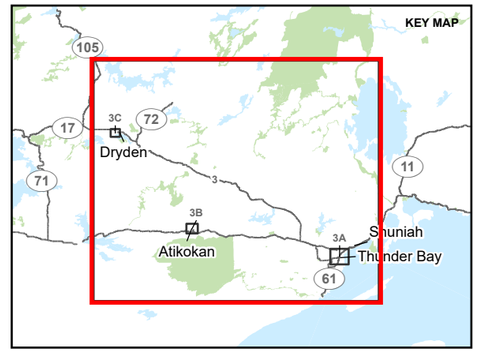


LEGEND

- 230 KV TRANSFORMER STATION (TS)
- MOH SERVICE LOCATION
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- COMMUNICATION LINE
- HYDRO LINE
- NATURAL GAS PIPELINE
- WATER PIPELINE
- SUBMERGED NATURAL GAS PIPELINE
- UNKNOWN PIPELINE
- UNKNOWN TRANSMISSION LINE
- SUBMERGED HYDRO LINE
- SUBMERGED COMMUNICATION LINE
- WATERCOURSE
- INTERNATIONAL BORDER
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- D26A / F25A CIRCUIT SEPARATION
- AGGREGATE SITE
- FLY YARD
- CAMP / LAYDOWN
- CONSTRUCTION CAMP (NO LONGER TO BE USED)
- FLY YARD / CAMP / LAYDOWN
- MUNICIPAL BOUNDARY
- AIRPORT
- FIRST NATIONS RESERVE
- PROVINCIAL PARK
- CONSERVATION RESERVE
- WATERBODY



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PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
LOCAL STUDY AREA – TRANSPORTATION AND ENERGY INFRASTRUCTURE

CONSULTANT

wsp

YYYY-MM-DD	2023-10-30
DESIGNED	SJ
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
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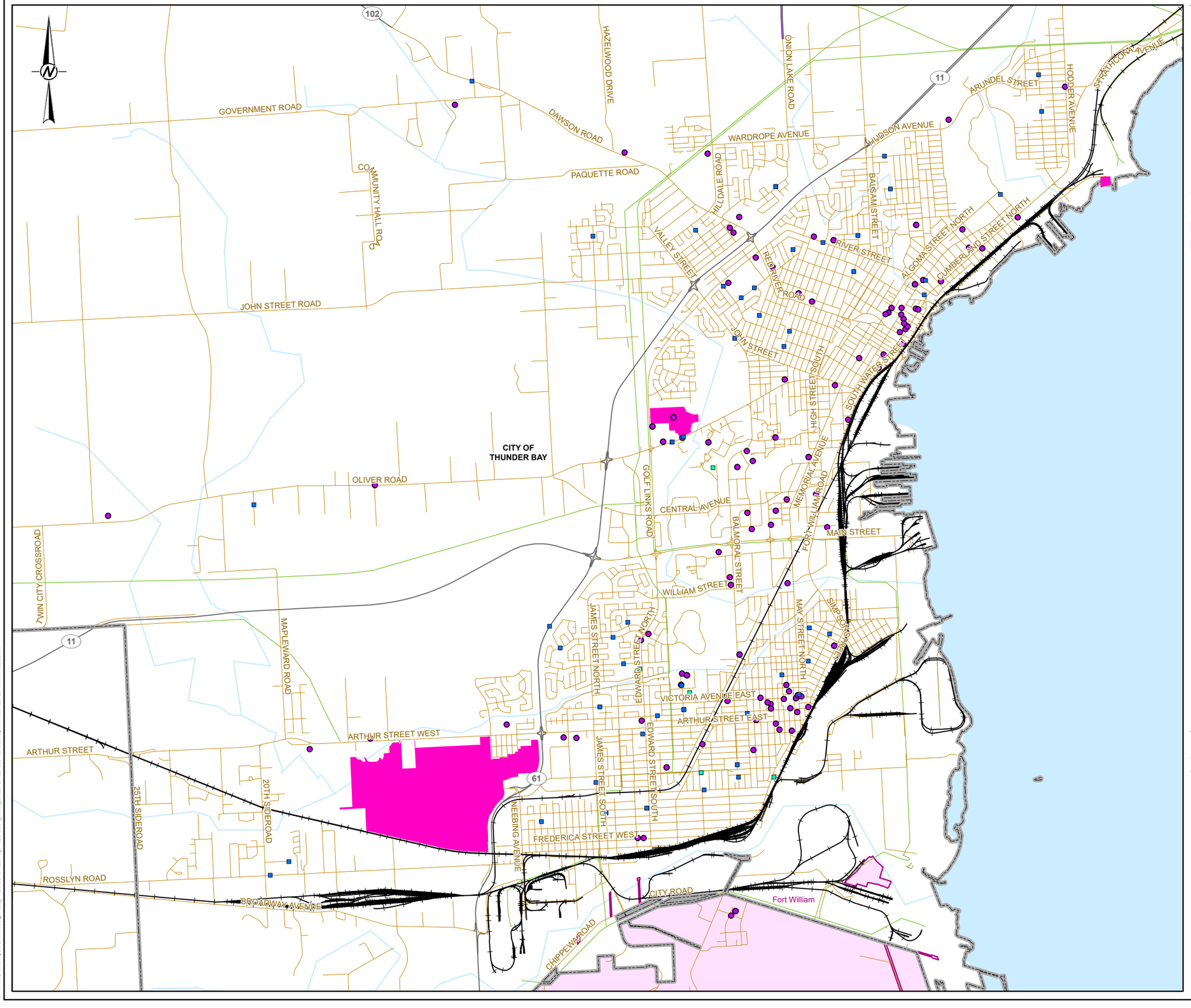
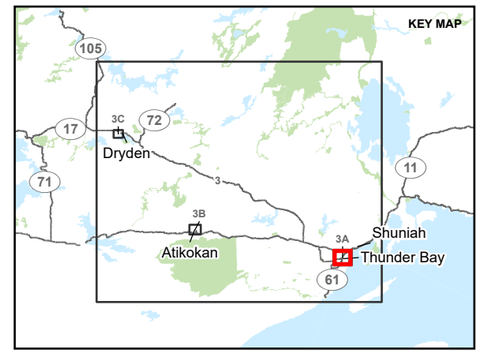


LEGEND

- MOH SERVICE LOCATION
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- HYDRO LINE
- WATER PIPELINE
- UNKNOWN PIPELINE
- WATERCOURSE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- MUNICIPAL BOUNDARY
- AIRPORT
- FIRST NATIONS RESERVE
- WATERBODY



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PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
LOCAL STUDY AREA – TRANSPORTATION AND ENERGY INFRASTRUCTURE

CONSULTANT

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PROJECT NO.	CONTROL	REV.	FIGURE
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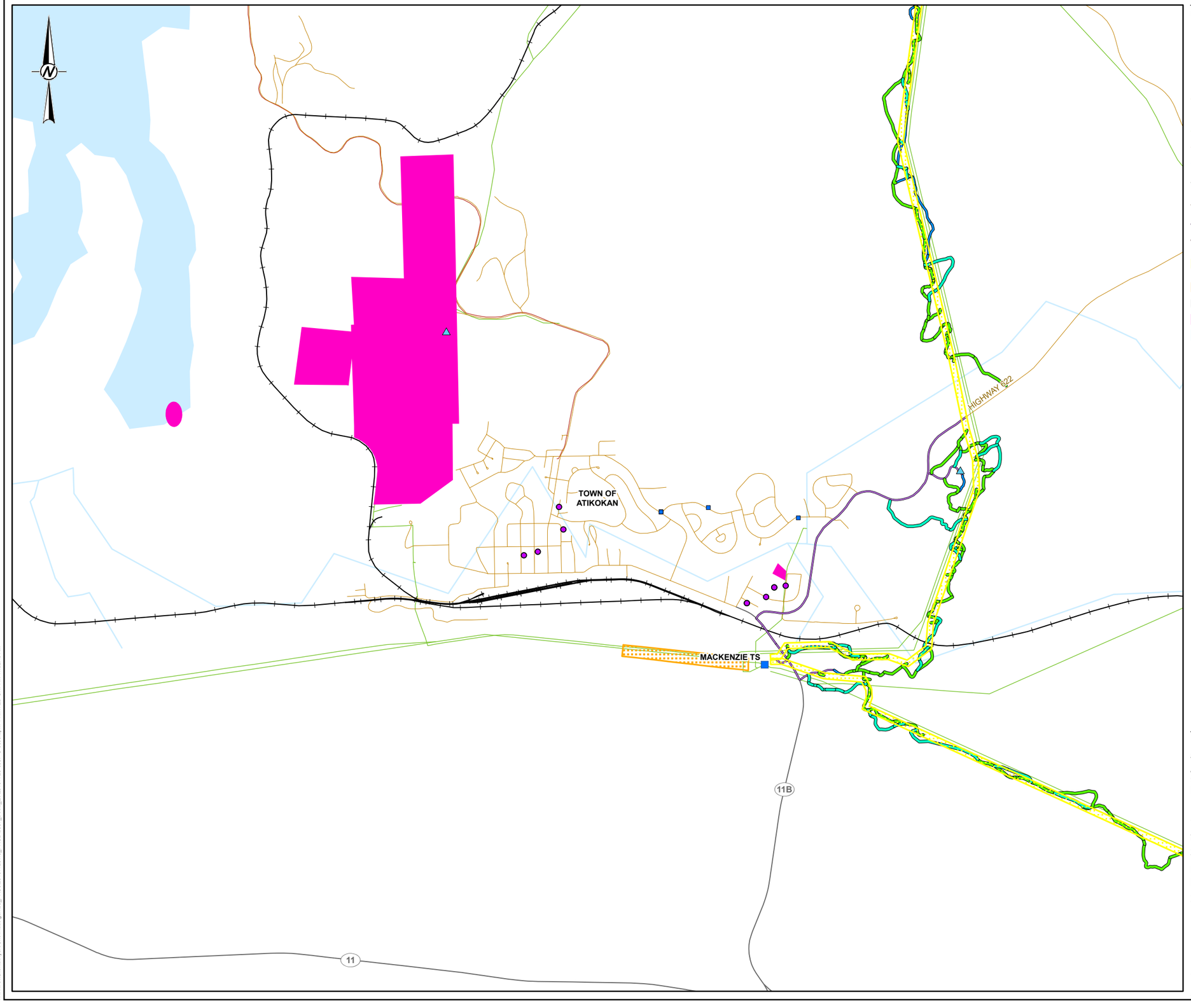
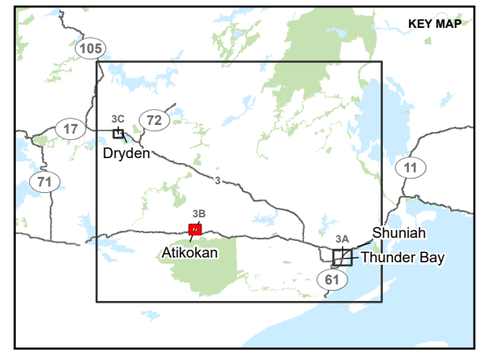


LEGEND

- 230 KV TRANSFORMER STATION (TS)
- MOH SERVICE LOCATION
- PUBLIC SCHOOL
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- HYDRO LINE
- NATURAL GAS PIPELINE
- WATERCOURSE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
- D26A / F25A CIRCUIT SEPARATION
- MUNICIPAL BOUNDARY
- AIRPORT
- WATERBODY



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TITLE
LOCAL STUDY AREA – TRANSPORTATION AND ENERGY INFRASTRUCTURE

CONSULTANT

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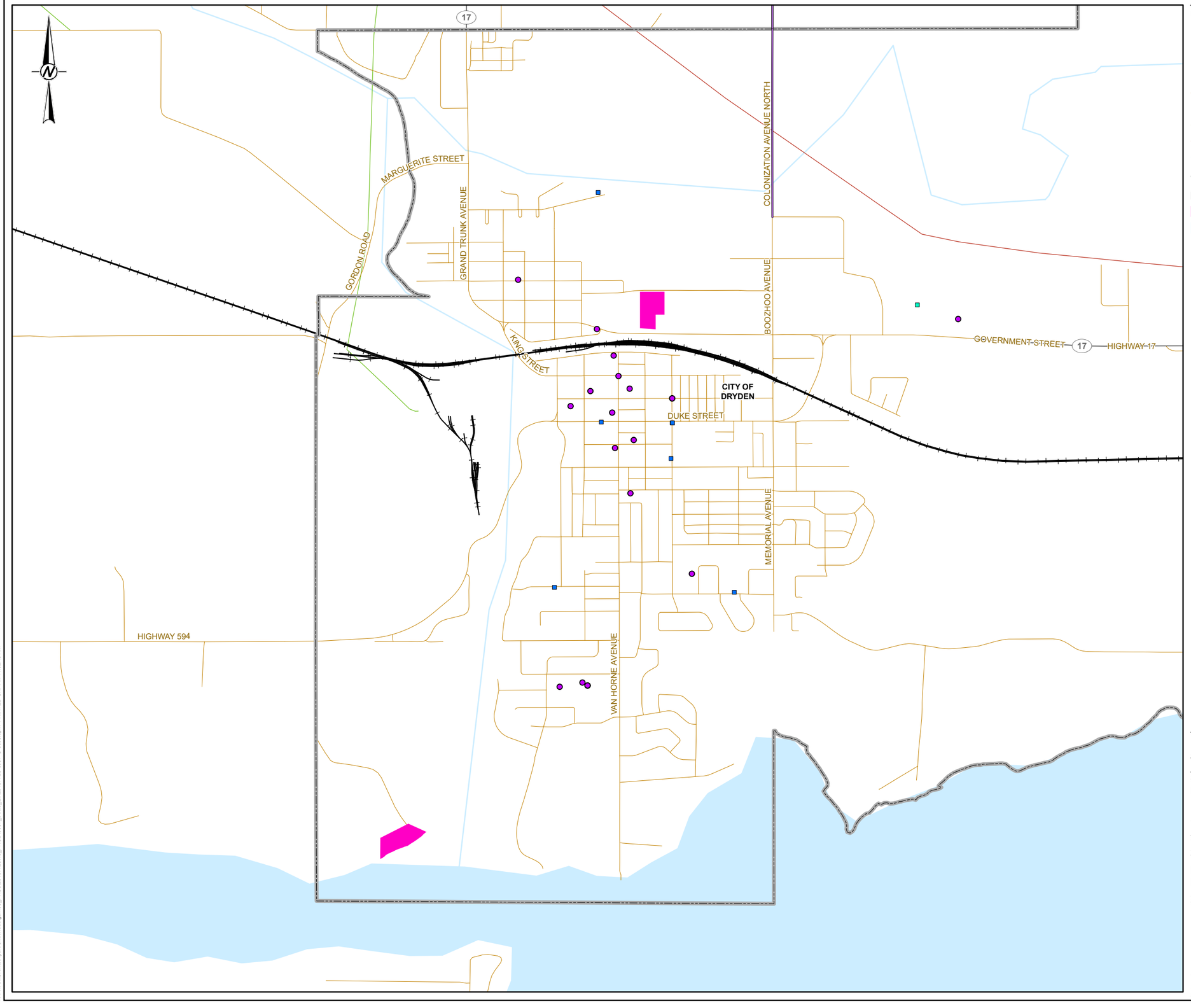
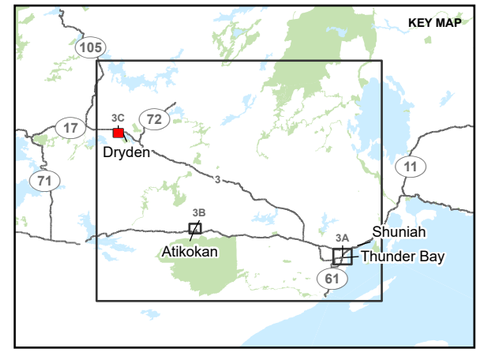


LEGEND

- MOH SERVICE LOCATION
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- HYDRO LINE
- NATURAL GAS PIPELINE
- WATERCOURSE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- MUNICIPAL BOUNDARY
- AIRPORT
- WATERBODY



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TITLE
LOCAL STUDY AREA – TRANSPORTATION AND ENERGY INFRASTRUCTURE

CONSULTANT

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20137728	0037	1	7.2-3C

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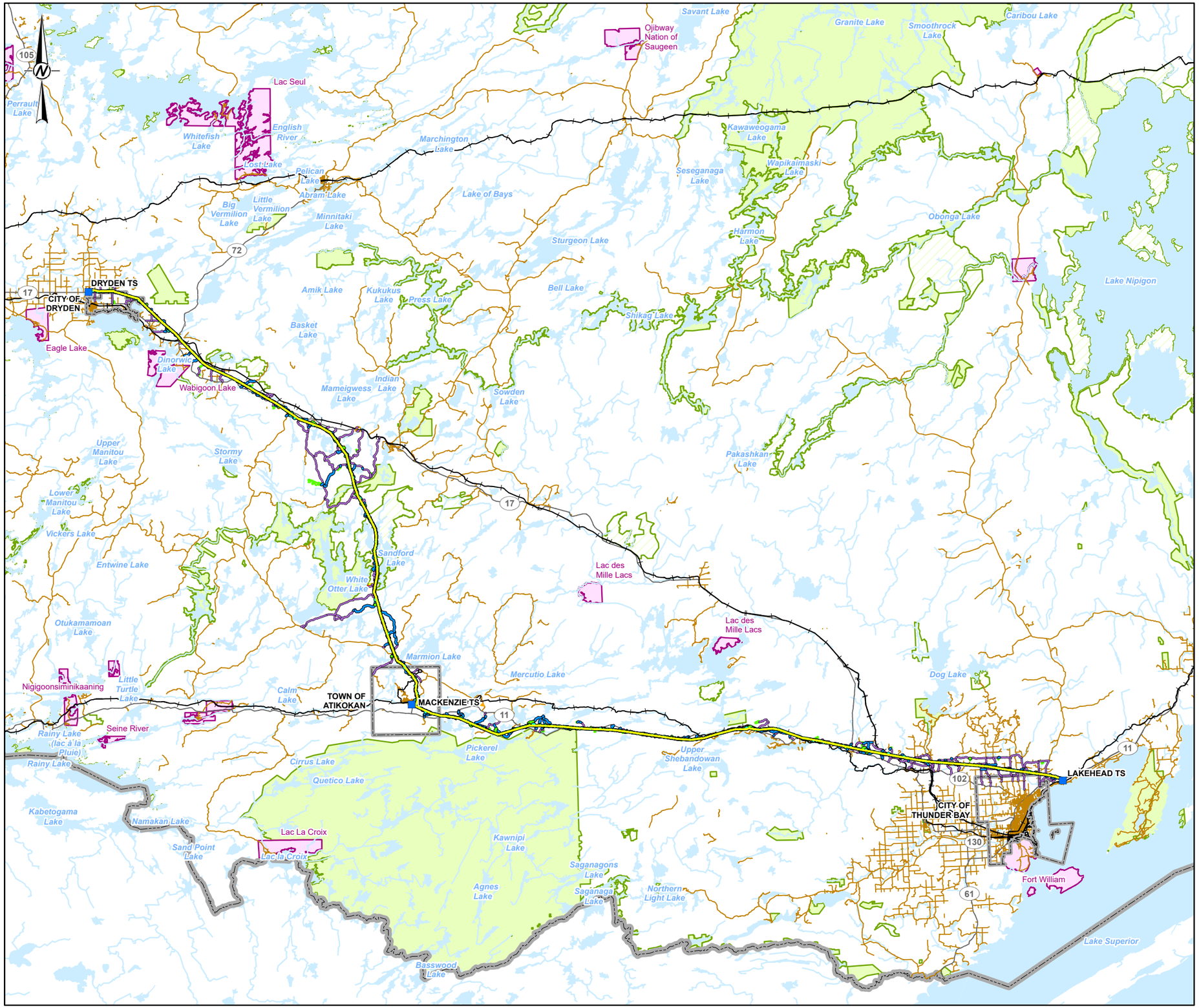

LEGEND

- 230 KV TRANSFORMER STATION (TS)
- RAILWAY
- LOCAL ROAD
- SECONDARY HIGHWAY
- WATERCOURSE
- INTERNATIONAL BORDER
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- NEW ACCESS ROAD - PREFERRED
- NEW ACCESS ROAD - ALTERNATE
- PREFERRED ROUTE TRANSMISSION LINE RIGHT-OF-WAY
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- FLY YARD
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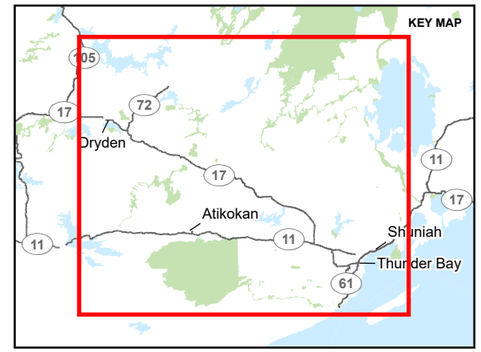
- FIRST NATIONS RESERVE
- MUNICIPAL BOUNDARY
- PROVINCIAL PARK
- CONSERVATION RESERVE
- WATERBODY



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WAASIGAN TRANSMISSION LINE

TITLE
LOCAL STUDY AREA – COMMUNITY SERVICES AND FACILITIES

CONSULTANT

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PROJECT NO.	CONTROL	REV.	FIGURE
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7.2.5 Description of the Existing Environment

This section provides a summary of the existing environment for the community well-being criteria, based on desktop review of secondary information sources.

7.2.5.1 Population and Demographics

7.2.5.1.1 Population in Municipalities and Districts

Population information is presented for the Thunder Bay Metropolitan Area, City of Dryden, and Town of Atikokan within the Population and Demographics LSA. Additional information is provided for contextual purposes for the District of Thunder Bay, District of Kenora and Province of Ontario.

Between 2011 and 2021, the District of Thunder Bay experienced a small population increase, growing from 146,057 to 146,862 (0.6%). The Thunder Bay Metropolitan Area also experienced a similar increase growing from 121,596 to 123,258 (1.4%). The population in the District of Kenora and the Province of Ontario increased at comparatively higher rates, with the population in the District of Kenora growing from 57,607 to 66,000 (14.6%) and in Ontario from 12,851,821 to 14,223,942 (10.7%) (Statistics Canada 2011a to Statistics Canada 2011f; Statistics Canada 2021a to Statistics Canada 2021f). The population increase in the District of Kenora is projected to continue to increase in the next three decades due to a combination of high birthrates in the Indigenous population in the district, as well as initiatives to attract newcomers to the region due to the district's currently aging population (Northern Policy Institute 2019).

Decreasing population trends were found for the City of Dryden and the Town of Atikokan. For the City of Dryden, the population decreased from 7,617 to 7,388 (-3.0%) and for the Town of Atikokan, the population decreased from 2,787 to 2,642 (-5.2%) (Statistics Canada 2011a to Statistics Canada 2011f; Statistics Canada 2021a to Statistics Canada 2021f).

As shown in Table 7.2-5:, in 2021 the median age in the Thunder Bay Metropolitan Area was 44.4 years, in the City of Dryden it was 48 years and in the Town of Atikokan it was 51.6 years. The three LSA communities have a higher median age compared to the province as a whole, which is 41.6 years. The Thunder Bay Metropolitan Area had the lowest increase in median age, at 1.83% between 2011 and 2021. Over the same period, the City of Dryden and Town of Atikokan experienced the highest increased of median age in the Population and Demographics LSA, at 6.7% and 6.4% respectively. The District of Thunder Bay experienced an increase of 2.3% in median age, which was similar to the overall rate of 3.0% for the Province of Ontario (Statistics Canada 2011a to Statistics Canada 2011f; Statistics Canada 2021a to Statistics Canada 2021f).

The District of Kenora was the only community in the Population and Demographics LSA that experienced a decrease in median age (-2.6%) (Statistics Canada 2011a to Statistics Canada 2011f; Statistics Canada 2021a to Statistics Canada 2021f). This decrease in median age can

be attributed to the District of Kenora having a larger Indigenous population (48.5% of the total population) in comparison to other communities in the Population and Demographics LSA and Indigenous populations having a higher fertility rate, as well as increased participation in the census from 2011 to 2016 (Northern Policy Institute 2019).

Information on the population of municipalities and districts in the Population and Demographics LSA is provided in Table 7.2-5:.

Table 7.2-5: Municipal and District Population Data for the Population and Demographics Local Study Area, 2011 to 2021

Community	Thunder Bay Metropolitan Area	City of Dryden	Town of Atikokan	District of Kenora	District of Thunder Bay	Province of Ontario
Population in 2021	123,258	7,388	2,642	66,000	146,862	14,223,942
Population in 2016	121,621	7,749	2,753	65,533	146,048	13,448,494
Population in 2011	121,596	7,617	2,787	57,607	146,057	12,851,821
Population Change from 2011 to 2021 (%)	**1.4%**	**-3.0%**	**-5.2%**	**14.6%**	**0.6%**	**10.7%**
Median Age in 2021	44.4	48.0	51.6	37.6	44.8	41.6
Median Age in 2016	44.8	46.2	50.3	36.5	45	41.3
Median Age in 2011	43.6	45	48.5	38.6	43.8	40.4
Change in Median Age from 2011 to 2021 (%)	**1.83%**	**6.7%**	**6.4%**	**-2.6%**	**2.3%**	**3.0%**

Source: (Statistics Canada 2011a; Statistics Canada 2011b; Statistics Canada 2011c; Statistics Canada 2011d; Statistics Canada 2011e; Statistics Canada 2011f; Statistics Canada 2016a; Statistics Canada 2016b; Statistics Canada 2016c; Statistics Canada 2016d; Statistics Canada 2021a; Statistics Canada 2021b; Statistics Canada 2021c; Statistics Canada 2021d; Statistics Canada 2021e; Statistics Canada 2021f).

% = percent.

7.2.5.1.2 Population in Indigenous Communities

Population information is presented for the Indigenous communities located within the Population and Demographics LSA including Couchiching First Nation, Migisi Sahgaigan (Eagle Lake First Nation), Fort William First Nation, Mitaanjigamiing First Nation, Nigigoonsiminikaaning First Nation, Ojibway Nation of Saugeen, Lac des Mille Lacs First Nation, Lac La Croix First Nation, Lac Seul First Nation, Seine River First Nation, and Wabigoon Lake Ojibway Nation. Between 2011 and 2021, four Indigenous communities experienced population increases including Migisi Sahgaigan (Eagle Lake First Nation) (13.2%), Fort William First Nation (12.1%), Mitaanjigamiing First Nation (34.4%), and Lac Seul First Nation (17.2%). Mitaanjigamiing First Nation experienced the largest population increase during this time period (34.4%), where population increased from 93 individuals to 125 individuals. The Indigenous population for the Province of Ontario also increased during the same period of time by 34.9% (Statistics Canada 2011g to Statistics Canada 2011r; Statistics Canada 2016e to Statistics Canada 2016o; Statistics Canada 2021g to Statistics Canada 2021q).

During the same time period (2011 to 2021), six Indigenous communities experienced population decreases including Couchiching First Nation (-20.5%), Nigigoonsiminikaaning First Nation (-0.6%), Ojibway Nation of Saugeen (-12%), Lac La Croix First Nation (-38.5%), Seine River First Nation (-0.4%), and Wabigoon Lake Ojibway Nation (-4.9%). Lac La Croix First Nation experienced the largest population decrease during this time (-38.5%), where population decreased from 192 individuals to 118 individuals (Statistics Canada 2011g to Statistics Canada 2011r; Statistics Canada 2016e to Statistics Canada 2016o; Statistics Canada 2021g to Statistics Canada 2021q).

Population data for Lac des Mille Lacs First Nation was not available as the area was suppressed by Statistics Canada for data quality or confidentiality reasons or the area was comprised of or contained incompletely enumerated Indian reserves or Indian settlements.

The median age for Indigenous communities including Mitaanjigamiing First Nation (26.8 years), Nigigoonsiminikaaning First Nation (29.4 years), and Lac Seul First Nation (25.6 years), and Ojibway Nation of Saugeen (30.4 years) is lower than the median age for the Indigenous population in the Province of Ontario (33.2 years), while Couchiching First Nation (36.0 years), Migisi Sahgaigan (Eagle Lake First Nation) (32.8 years), Fort William First Nation (37.6 years), Lac La Croix First Nation (35.6 years), Seine River First Nation (33.6 years), and Wabigoon Lake Ojibway Nation (42.2 years) are higher. (Statistics Canada 2011g to Statistics Canada 2011r; Statistics Canada 2016e to Statistics Canada 2016o; Statistics Canada 2021g to Statistics Canada 2021q).

Between 2011 and 2021 eight Indigenous communities experienced an increase in median age including Couchiching First Nation (30.4%), Fort William First Nation (8.1%), Mitaanjigamiing First Nation (24.7%), Nigigoonsiminikaaning First Nation (28.4%), Ojibway Nation of Saugeen (38.2%), Lac La Croix First Nation (10.2%), Seine River First Nation (34.9%), and Wabigoon Lake Ojibway Nation (21.6%). During the same period of time, the median age for the Indigenous population in the Province of Ontario increased by 6.4 (Statistics Canada 2011g to Statistics Canada 2011r; Statistics Canada 2016e to Statistics Canada 2016o; Statistics Canada 2021g to Statistics Canada 2021q).

Information on the population of Indigenous communities in the Population and Demographics LSA is provided in Table 7.2-6.

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Table 7.2-6: Indigenous Population Data for the Population and Demographics Local Study Area, 2011 to 2021

Community	Couchiching First Nation	Migisi Sahgaigan (Eagle Lake First Nation)	Fort William First Nation	Mitaanjigamiing First Nation	Nigigoonsiminikaaning First Nation	Ojibway Nation of Saugeen	Lac des Mille Lacs First Nation	Lac La Croix First Nation	Lac Seul First Nation	Seine River First Nation	Wabigoon Lake Ojibway Nation	Province of Ontario (Indigenous)
Population in 2011	796	227	860	93	159	100	N/A	192	872	271	184	301,425
Population in 2016	810	224	981	115	157	90	N/A	177	974	263	168	374,395
Population in 2021	633	257	964	125	158	88	N/A	118	1,022	270	175	406,585
Population Change from 2011 to 2021 (%)	**-20.5**	**13.2**	**12.1**	**34.4**	**-0.6**	**-12**	**N/A**	**-38.5**	**17.2**	**-0.4**	**-4.9**	**34.9**
Median Age in 2011	27.6	33.4	34.8	21.5	22.9	22	N/A	32.3	25.8	24.9	34.7	31.2
Median Age in 2016	29.9	37.5	35.4	22.2	27.2	25	N/A	26.6	26.5	20.1	39.2	31.4
Median Age in 2021	36.0	32.8	37.6	26.8	29.4	30.4	N/A	35.6	25.6	33.6	42.2	33.2
Change in Median Age from 2011 to 2021 (%)	**30.4**	**-1.8**	**8.1**	**24.7**	**28.4**	**38.2**	**N/A**	**10.2**	**-0.78**	**34.9**	**21.6**	**6.4**

Source: (Statistics Canada 2011g; Statistics Canada 2011h; Statistics Canada 2011i; Statistics Canada 2011j; Statistics Canada 2011k; Statistics Canada 2011l; Statistics Canada 2011m; Statistics Canada 2011n; Statistics Canada 2011o; Statistics Canada 2011p; Statistics Canada 2011q; Statistics Canada 2016e; Statistics Canada 2016f; Statistics Canada 2016g Statistics Canada 2016h; Statistics Canada 2016i Statistics Canada 2016j; Statistics Canada 2016k; Statistics Canada 2016l; Statistics Canada 2016m; Statistics Canada 2016n; Statistics Canada 2016o; Statistics Canada 2021g; Statistics Canada 2021h; Statistics Canada 2021i; Statistics Canada 2021j; Statistics Canada 2021k; Statistics Canada 2021l; Statistics Canada 2021m; Statistics Canada 2021n; Statistics Canada 2021o; Statistics Canada 2021p; Statistics Canada 2021q).

a) Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

b) Métis Nations and Councils in Table 7.2-8 do not have geographic communities surveyed by Statistics Canada. Indigenous population counts presented by Statistics Canada include First Nations, Inuit, and Métis. Therefore, Indigenous community populations presented above include these populations, along with the population self-identifying as being of other origins.

c) Some Indigenous population data is not available for specific communities. Possible reasons include that the area does not meet the threshold population of 250 individuals who identity as Indigenous, or data for that community or area may have been suppressed for data quality or confidentiality reasons. In some cases, the community or area may be comprised of or contain incompletely enumerated reserves or settlements.

% = percent; N/A = not available.

Lac Seul First Nation, Couchiching First Nation and Fort William First Nation are the largest Indigenous communities included in current Project engagement. Lac Seul First Nation has 3,704 registered members, Couchiching First Nation has 2,891 and Fort William First Nation has 2,793 (CIRNAC 2022a). Table 7.2-7 details the population of the Indigenous communities in the Population and Demographics LSA and provides information regarding the total number of individuals registered to each community. The table also provides details regarding the on-reserve and off-reserve population, as well as the number of individuals which reside on reserve lands other than the one they are registered with or other federal lands (i.e., Crown lands).

Table 7.2-8 identifies the Indigenous population profiles for Indigenous communities within the Population and Demographics LSA in 2016, based on the Statistics Canada 2016 Census Profile. Métis Nations do not have geographical communities surveyed by CIRNAC or Statistics Canada; thus, do not appear separately in the geographic community data provided. Data provided by Statistics Canada indicates that the Thunder Bay Metropolitan Area has the greatest number of individuals who identify as Métis (3,700 individuals) within the Population and Demographics LSA in comparison to those who identify as First Nations (12,815 individuals), or Inuit (20 individuals).

Table 7.2-7: Membership for Indigenous Communities in the Population and Demographics Local Study Area, 2022

Community	On Reserve	Off Reserve	On Other Reserve	Other[(a)]	Total Membership
Couchiching First Nation	714	2,126	48	3	2,891
Migisi Sahgaigan (Eagle Lake First Nation)	367	277	12	0	656
Fort William First Nation	1,001	1,767	21	4	2,793
Mitaanjigamiing First Nation	132	63	4	0	199
Nigigoonsiminikaaning First Nation	179	244	4	0	427
Ojibway Nation of Saugeen	82	142	5	15	244
Lac des Mille Lacs First Nation	6	627	1	1	635
Lac La Croix First Nation	313	169	9	0	491
Lac Seul First Nation	937	2,711	33	23	3,704
Seine River First Nation	360	440	9	1	810

Community	On Reserve	Off Reserve	On Other Reserve	Other[a]	Total Membership
Wabigoon Lake Ojibway Nation	188	792	3	2	985

Source: (CIRNAC 2022a; CIRNAC 2022b; CIRNAC 2022c; CIRNAC 2022d; CIRNAC 2022e; CIRNAC 2022f; CIRNAC 2022g; CIRNAC 2022h; CIRNAC 2022i; CIRNAC 2022j; CIRNAC 2022k; CIRNAC 2022l).

a) Other = Other federal lands (i.e., Crown land).

Note: Membership population data provided includes the number of individuals who reside on-reserve, off-reserve, or other federal lands.

Table 7.2-8: Population and Demographics Profile for Indigenous Communities in the Local Study Area, 2016

Community or Region	First Nations	Inuit	Métis
Thunder Bay Metropolitan Area	12,815	25	3,705
City of Dryden	735	15	640
Town of Atikokan	255	0	210
District of Kenora	27,815	30	4,075
District of Thunder Bay	18,115	25	4,690
Couchiching First Nation	580	0	0
Migisi Sahgaigan	250	0	0
Fort William First Nation	810	0	20
Mitaanjigamiing First Nation	125	0	0
Nigigoonsiminikaaning First Nation	145	0	0
Ojibway Nation of Saugeen	85	0	0
Lac des Mille Lacs First Nation	n/a	n/a	n/a
Lac La Croix First Nation	120	0	0
Lac Seul First Nation	990	0	0
Seine River First Nation	255	0	0
Wabigoon Lake Ojibway Nation	160	0	0
Province of Ontario	**63,255**	**95**	**13,350**

N/A = Not available.

Source: (CIRNAC 2022a; CIRNAC 2022b; CIRNAC 2022c; CIRNAC 2022d; CIRNAC 2022e; CIRNAC 2022f; CIRNAC 2022g; CIRNAC 2022h; CIRNAC 2022i; CIRNAC 2022j; CIRNAC 2022k; CIRNAC 2022l; Statistics Canada 2021a; Statistics Canada 2021b; Statistics Canada 2021c; Statistics Canada 2021d; Statistics Canada 2021e; Statistics Canada 2021f).

Notes: Data was obtained from Statistics Canada. Some of the numbers are rounded for presentation purposes; therefore, it may appear that the totals do not equal the sum of the individual values. Data presented for Indigenous communities includes on-reserve populations, while data presented for local municipalities, districts and the Province of Ontario includes individuals residing within the associated city, town, and/or district as defined by Statistics Canada.

7.2.5.1.3 Temporary Accommodations

While it is anticipated that Project personnel will be housed in temporary camps during the construction stage of the Project, there may be a need for staff to utilize hotel accommodations in nearby communities should there be overflow. The Thunder Bay Metropolitan Area and the City of Dryden have more availability in terms of short-term accommodation opportunities in comparison to other communities located within the Population and Demographics LSA. In the Thunder Bay Metropolitan Area and the City of Dryden, hotels such as Best Western, Holiday Inn, Super 8 and Travelodge are present, in addition to a number of smaller motels, inns, RV parks and outfitters. Outfitters and lodges are also found throughout the Population and Demographics LSA, with the majority being accessible by Highway 17, Highway 11, and/or Highway 622. Private short-term rentals may also be accessible through third-party providers such as VRBO and AirBnB. Temporary accommodations located in Indigenous communities have the potential to be utilized based on consultation with interested Indigenous communities.

7.2.5.2 Quality of Life

Quality of life is a composite criterion that considers factors that influence real or perceived quality of life by human receptors. This section provides the baseline situation of the sensitive human receptors in the Quality of Life LSA and a summary of air quality and ambient noise in the Quality of Life LSA.

This section identifies human receptors (i.e., sensitive receptors) that could be potentially exposed to physical hazards from construction activities and/or changes in noise and air quality from the Project, and associated nuisance effects. Potential Project changes to air quality and noise levels, which were assessed in Sections 6.7 and 6.9 respectively, have been carried forward into this section for consideration.

Other potential influences on quality of life are also assessed in other sections of this EA. Specifically, potential effects to land-based human receptors (such as persons engaged in outdoor recreation and tourism, hunting, trapping, guided outfitting, and Indigenous traditional land and resource users) are described in the Land and Resource Use assessment (Section 7.1), the First Nations Rights, Interests and Use of Land and Resources assessment (Section 7.7), and the Métis Rights, Interests and Use of Land and Resources (Section 7.8).

7.2.5.2.1 Sensitive Human Receptors

The baseline conditions for the quality of life assessment is based on sensitive human receptor mapping within the Quality of Life LSA. For the quality of life criterion, a sensitive human receptor is defined as an individual or population group (such as residents, children, elderly and the sick or infirmed) that might be spending prolonged periods of time within the Quality of Life LSA, and potentially experience nuisance effects from changes in the noise and air quality from the Project. These include permanent residents within the Quality of Life LSA, and people utilizing the following public facilities within the Quality of Life LSA:

- Hospitals and health care facilities;
- Schools;
- Childcare facilities;
- Seniors centres and care facilities; and
- Community facilities including churches, recreational centres, cultural centres, community centres.

Workers were not identified as sensitive human receptors for the assessment as potential effects of changes to the air quality and noise on workers is protected through compliance with appropriate workplace practices following requirements defined in the *Ontario Occupational Health and Safety Act* and other applicable regulatory instruments.

Geospatial data from the Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO), CanVec, and Ontario Ministry of Health was used to identify and map sensitive human receptor sites for the identified receptor categories. Based on that publicly available information, the sensitive receptors were identified within the Quality of Life LSA and mapped.

The distance from and number of existing structures and land uses considered as potential points of reception (PORs) is described in Table 7.2-4. The locations of these receptors in relation to the Project and the Quality of Life LSA is shown on Figure 7.2-.

Table 7.2-9: Identified Receptors and Distance from the Project Footprint

Distances (m)	Number of Potential Receptors
In Project footprint[(a)]	15
Project footprint to 50 m	689
50 m to 100m	542
100 to 200 m	527
200 to 300 m	399
300 to 400 m	329
400 to 500 m	334
500 to 1,000 m	2,155
1,000 to 1,500 m (Edge of Quality of Life LSA)	3,005
Total	**7,995**

LSA = Local Study Area; m = metre.

a) The Project footprint as defined in Table 7.2-4.

7.2.5.2.2 Quality of Life – Noise and Vibration

Section 6.9.6 of the noise assessment characterized existing noise levels at potential points of reception (PORs) for the Project footprint, applying the Health Canada Noise Guidance. These are summarized in Table 7.2-10 below. For more detail on the Health Canada Noise Guidelines, please refer to Section 6.9.4 of the noise assessment.

Table 7.2-10: Estimated Existing Noise Levels - Health Canada Noise Guidance

Community Type	Population Density (Number of People/km^2)	Estimated Existing Noise Level, Ldn (dBA)[(a)]
Quiet rural Dwelling units more than 500 m from heavily travelled roads and/or rail lines and not subject to frequent aircraft flyovers.	28	≤ 45
Quiet suburban residential Remote from large cities, industrial activity and trucking.	249	48-52
Normal suburban residential Not located near industrial activity.	791	53-57
Urban residential Not immediately adjacent to heavily travelled roads and industrial areas.	2,493	58-62
Noisy urban residential Near relatively busy roads or industrial areas.	7,913	63-67
Very noisy urban residential	24,925	68-72

dB = decibels; dBA = A-weighted decibels; km2 = square kilometre; m = metre; ≤ = less than or equal to.

a) "Ldn" is a noise descriptor that accounts for the cumulative noise effects from a 24-hour exposure to day-night sound levels with the nighttime period (2200 to 0700 hours) including a +10-dB penalty. It accounts for all sound level fluctuations (i.e., total acoustic energy) during the 24-hour period.

The expected existing noise levels in the Quality of Life LSA were characterized using the Health Canada Noise Guidance, NP-300, and other site-specific documentation detailed in Section 6.9.4. Due to the remote nature of many of the potential PORs within the Quality of Life LSA, with the exception of those located within larger communities (e.g., Thunder Bay Metropolitan Area, City of Dryden and Town of Atikokan), the Health Canada Noise Guidance was applied for the characterization of existing noise levels. The use of the estimated noise levels for a quiet rural area in accordance with the Health Canada Noise Guidance resulted in the lowest estimation of the existing noise levels, specifically 35 dBA during the nighttime period. It is expected the potential PORs within larger communities are exposed to noise from existing industry and human activities in Thunder Bay Metropolitan Area and the City of Dryden, which also have population densities greater than that presented in Table 7.2-10 for quiet rural areas. Therefore, existing noise levels of a Class 2 receptor from NPC-300 are considered

appropriate as an estimation for the PORs near the transformer stations. NP-300 guidelines for exclusionary one-hour sound level limits are also detailed in Section 6.9.4.

A summary of estimated existing environment for noise during the daytime and nighttime periods is presented in Table 7.2-11.

Table 7.2-11: Summary of Existing Noise Levels

Descriptor	Existing Daytime (07:00-19:00) Noise Level (Leq,day)	Existing Evening (19:00-23:00) Noise Level (Leq,evening)	Existing Nighttime (23:00-07:00) Noise Level (Leq,night)
Potential PORs within larger communities[a]	50	45[b]	45
Potential PORs in rural areas[c]	45	45	35

Leq = Equivalent noise level; POR = Point of Reception; ROW = Right-of-Way.

a) Applied NPC-300.

b) For a conservative assessment the lower of the plane of window and outdoor sound level limits was considered for the evening period.

c) Applied Health Canada Guidance.

7.2.5.2.3 Quality of Life – Air

Table 7.2-12 provides a summary of air quality monitoring data available from each of the stations identified within the air quality assessment for 2015 to 2019. At the time of this assessment, complete data was available up until 2020; however, 2020 data sets were not used due the impacts of the COVID-19 pandemic on many air quality emission sources including industry and transportation. Overall, the monitoring data indicate that background air quality surrounding the Project is below the relevant provincial and federal ambient air quality guidelines, criteria and standards. Section 6.7 further describes and summarizes the baseline studies undertaken for the Project and presents an assessment of the effects of the Project on air quality.

Table 7.2-12: Air Quality Background Concentrations

Indicator Compound	Averaging Period	Background Concentration (µg/m³)	Project Criteria (µg/m³)	% of Project Criteria
SPM	24-Hour	48	120	40%
SPM	Annual	18	60	30%
PM_{10}	24-Hour	24	50	48%
$PM_{2.5}$	24-Hour	14	27	53%
$PM_{2.5}$	Annual	5	8.8	61%
NO_2	1-Hour	52	79	65%
NO_2	24-Hour	24	200	12%

Indicator Compound	Averaging Period	Background Concentration (µg/m³)	Project Criteria (µg/m³)	% of Project Criteria
NO_2	Annual	13	22.5	59%
SO_2	10-minute	11	175	6%
SO_2	1-Hour	2.6	106	6%
SO_2	Annual	0.8	10.6	25%
CO	1-Hour	572.7	35,000	2%
CO	8-hour	687.4	15,000	5%
O_3	1-Hour	84	165	51%
O_3	8-Hour	110	117.8	94%

µg/m³ = microgram per cubic metre; CO = carbon monoxide; O_3 = ozone; PM_{10} = particles nominally smaller than 10 µm in diameter; $PM_{2.5}$ = particles nominally smaller than 2.5 µm in diameter; NO_2 = nitrogen dioxide; SO_2 = sulphur dioxide; SPM = Suspended Particulate Matter <44 µm; % = percent.

Notes: 1-hour, 8-hour and 24-hour values are based on the 90th percentile, while annual values are averaged over the five annual values available in the period. The 24-hour $PM_{2.5}$ is calculated according to the requirements of the standard, which uses the three-year rolling average of the 98th percentile of the 24-hour observations.

Data are taken from the Thunder Bay Station, where data are measured. Where data are not measured, data were taken from the Winnipeg Station.

SPM and PM_{10} concentrations are derived from $PM_{2.5}$ monitored data.

7.2.5.2.4 Quality of Life – Public Safety and Social Challenges

7.2.5.2.4.1 Police Services

Ontario Provincial Police

The Ontario Provincial Police (OPP) provides policing services within the District of Thunder Bay and District of Kenora with detachments in many of the Quality of Life LSA communities. Detachments include two offices including headquarters for the northwest region in Thunder Bay and detachments in Shabaqua, Atikokan, Fort Frances, Ignace and Dryden (OPP 2022). The Dryden detachment of the OPP has a primary detachment in Dryden with satellite stations in Ignace and Machin. The OPP station in Ignace also provides support and supervision to two officers in the Ojibway Nation of Saugeen. The Dryden detachment has 20 uniformed police officers, 3 civilian personnel and 2 special constables (Statistics Canada 2022).

Thunder Bay Police Service

The Thunder Bay Police Service (TBPS) provides policing services within the Thunder Bay Metropolitan Area. The TPBS has one office, which acts as headquarters for police services within the Thunder Bay Metropolitan Area and operates different branches including a court services branch, criminal investigations branch, executive services branch, support and financial services branch, traffic unit and uniform patrol branch.

Treaty Three Police

The Treaty Three Police (TTP) provide policing services to Migisi Sahgaigan (Eagle Lake First Nation), Nigigoonsiminikaaning First Nation, Lac La Croix First Nation, Seine River First Nation and Wabigoon Lake Ojibway Nation. There are no local detachments in Nigigoonsiminikaaning First Nation, Lac La Croix First Nation, Seine River First Nation or Wabigoon Lake Ojibway Nation, so officers are dispatched from Migisi Sahgaigan (Eagle Lake First Nation), Fort Frances and Whitefish Bay to these communities if needed (Treaty Three Police 2022).

Anishinabek Police Service (APS)

The Anishinabek Police Service (APS) provides policing services to communities that are part of the Anishinabek Nation, which includes the community of Fort William First Nation. One detachment operates in Fort William First Nation and staffs the northern region Inspector, one full-time court administrator, one sergeant and four constables (Anishinabek Police Service 2022a).

Table 7.2-13 summarizes the police services in the Quality of Life LSA. Migisi Sahgaigan (Eagle Lake First Nation), Fort William First Nation and Wabigoon Lake Ojibway Nation are displayed within the table due to close proximity to the Project.

Table 7.2-13: Police Services in the Community Services and Facilities Local Study Area

Community	Police Force	Number of In-Community Stations
Thunder Bay Metropolitan Area	TBPS	One Station (Headquarters)
City of Dryden	OPP	One Detachment
Town of Atikokan	OPP	One Detachment
District of Kenora	OPP	One Detachment
District of Thunder Bay	OPP	Two Detachments
Migisi Sahgaigan (Eagle Lake First Nation)	TTP	One Detachment
Fort William First Nation	APS	One Detachment
Lac des Mille Lacs First Nation	n/a	n/a
Wabigoon Lake Ojibway Nation	TTP	No Detachment (Dispatched from another location)

Source: (OPP 2022; Treaty Three Police 2022; Anishinabek Police Services 2022b; 211 Ontario North 2022a; 211 Ontario North 2022 b; 211 Ontario North 2022c; 211 Ontario North 2022 d; 211 Ontario North 2022e).

APS = Anishinabek Police Services, n/a = not available; OPP = Ontario Provincial Police, TBPS = Thunder Bay Police Service, TTP = Treaty Three Police.

7.2.5.2.4.2 Fire Services and Emergency Medical Services

Community Fire Services

Fire services are available in the Quality of Life LSA through both paid and volunteer fire departments including the Thunder Bay Fire Rescue (which services both the Thunder Bay Metropolitan Area and Fort William First Nation), the Shuniah Fire Department, Oliver Paipoonge Fire and Emergency Services; the Dryden Fire Service, Town of Atikokan Volunteer Fire Department, the Kenora Fire and Emergency Services Department, the East Gorham Fire Protection Team, Kaministiquia Fire Rescue, the Lappe Fire Protection Team, the Shebandowan Fire Protection Team, the Township of Conmee Fire Department, the Township of O'Connor Fire Department, and the Township of Upsala Fire Department (City of Thunder Bay 2020; Dryden Fire Service 2019; Fire Wiki n.d.; Town of Atikokan 2022a; City of Kenora 2022). Fire service providers by community are summarized in Table 7.2-14. Quantitative data provided in Table 7.2-14 are approximate and based on information available at the time of reporting. Migisi Sahgaigan (Eagle Lake First Nation), Fort William First Nation and Wabigoon Lake Ojibway Nation are displayed within the table due to close proximity to the Project. Fire services available in other Indigenous communities located within the Quality of Life LSA are expected to include services provided in-community or the nearest local municipality (or a combination of both), particularly where service agreements are in place with the nearest municipality (Federation of Canadian Municipalities 2011).

Table 7.2-14: Fire Services in the Community Services and Facilities Local Study Area

Indigenous and Non-Indigenous Communities	Fire Service Provider	In-Community Fire Stations	Number of Fire Staff	Fire Apparatus	Distance from closest station to Project ROW
Thunder Bay Metropolitan Area	Thunder Bay Fire Rescue Shuniah Fire Department	11 (8 in the City of Thunder Bay, 3 in the Municipality of Shuniah)	City of Thunder Bay • One Fire Chief; • Two Deputy Chiefs; and • 148 Fire fighters Municipality of Shuniah • One Fire Chief; • Two captains; • Four acting captains • One training officer; and • 21 firefighters.	City of Thunder Bay • Eight pumper vehicles; • One foam truck; • Two search and rescue units; • One hazardous materials unit; and • One tanker. Municipality of Shuniah • Three pumpers; • One rescue truck; • Two tankers; and • One fire prevention van.	City of Thunder Bay • 330 Vickers St. North: 16.9 km • 501 Churchill Drive: 17.4 km • 2065 20th Sideroad: 21.8 km • 1321 Brown Street: 19.4 km • 60 Water St. South: 10.7 km • 300 Hodder Ave.: 6.3 km • 20 Junot Ave: 9.6 km • 3000 Government Road: 8.5 km Municipality of Shuniah • 1700 Lakeshore Drive: 13.1 km • 114 Road 5 South: 40.3 km • 201 Lakeshore Drive: 3.3 km
Municipality of Oliver Paipoonge	Oliver Paipoonge Fire and Emergency Services	6	• Approximately ~50 staff/volunteers.	• Six pumper vehicles; • Nine rescue vehicles; and • Three tankers.	• 24 Rupert Street, Kakabeka Falls: 23.9 km • 63 Rubin Drive, Murillo: 19.0 km • 14 Kuusisto Road, Intola: 7.9 km • 44 Highway 588, Stanley: 29.0 km • 3436 Rosslyn Road, Rosslyn: 25.3 km

Indigenous and Non-Indigenous Communities	Fire Service Provider	In-Community Fire Stations	Number of Fire Staff	Fire Apparatus	Distance from closest station to Project ROW
					• 552 Candy Mountain Drive, Slate River: 31.7 km
City of Dryden	Dryden Fire Service	2	• One Fire Chief; • One Deputy Chief; • One Fire Prevention Officer; • 40 Volunteer Fire fighters	• Two pumper vehicles; • One ladder truck; • Two equipment units; • One rescue truck; • One utility truck; • One command vehicle; and • One tanker	• 189 Memorial Avenue: 5.1 km • 14378 Highway 17 East: 3.9 km
Town of Atikokan	Town of Atikokan Volunteer Fire Department	1	• One Fire Chief; • 20 Volunteer Fire fighters	• Three pumper vehicles; and • 1 rescue vehicle.	• 101 Goodwin Street: 2.9 km
District of Kenora	Kenora Fire and Emergency Services	3	• One Fire Chief; • 12 Fire Fighters • 40 Volunteer Fire fighters	• Eight pumper vehicles; • One rescue truck; and • One ladder truck.	• 100 Fourteenth Street: 135.4 km • 214 Eighth Street: 139.3 km • 2866 Highway 17 East: 124.6 km
District of Thunder Bay	East Gorham Fire Protection Team Kaministiquia Fire Rescue Lappe Fire Protection Team	9 (including two in East Gorham, one in Kaministiquia, two in Lappe, one in Shebandowan, one in the Township of Conmee, one in the Township of O'Connor,	East Gorham • Unknown number of volunteers. Kaministiquia • Unknown number of volunteers. Lappe • Unknown number of volunteers.	East Gorham • One pumper vehicle; and • One rescue vehicle. Kaministiquia • One mini-pumper vehicle; • One pumper vehicle; • One utility vehicle;	East Gorham • 396 North Branch Road: 5.0 km • 5 Kam Current Road: 4.2 km Kaministiquia • 16 Silver Falls Road: 3.0 km Lappe • 2042 Kam Current Road: 3.6 km

Indigenous and Non-Indigenous Communities	Fire Service Provider	In-Community Fire Stations	Number of Fire Staff	Fire Apparatus	Distance from closest station to Project ROW
	Shebandowan Fire Protection Team Township of Conmee Fire Department Township of O'Connor Fire Department Township of Upsala Fire Department Also See: Thunder Bay Metropolitan Area	and one in the Township of Upsala) Also See: Thunder Bay Metropolitan Area	Shebandowan • Unknown number of volunteers. Township of Conmee • Unknown number of volunteers. Township of O'Connor • Unknown number of volunteers. Township of Upsala • Unknown number of volunteers. Also See: Thunder Bay Metropolitan Area	• One tanker; and • One rescue vehicle. Lappe • Two pumper vehicles; • Two rescue vehicles; and • Two tankers. Shebandowan • One pumper vehicle; and • One rescue vehicle. Township of Conmee: • One pumper vehicle; • Two utility vehicles; and • One rescue vehicle. Township of O'Connor • One pumper vehicle; • One rescue vehicle; • One tanker; and • One utility vehicle Township of Upsala • One taker;	• 13384 Gilbridge Road: 10.3 km Shebandowan • Shebandowan Road (48°37'33.85"N, 90° 4'10.37"W): 0.8 km Township of Conmee • 5750 Highway11/17: 14.1 km Township of O'Connor • 325 Highway 595: 31.3 km Township of Upsala • 9 North Road: 63.5 km Also See: Thunder Bay Metropolitan Area

Indigenous and Non-Indigenous Communities	Fire Service Provider	In-Community Fire Stations	Number of Fire Staff	Fire Apparatus	Distance from closest station to Project ROW
				• One mini-pumper vehicle; • One pumper vehicle; • One rescue vehicle; and • One utility truck. Also See: Thunder Bay Metropolitan Area	
Migisi Sahgaigan (Eagle Lake First Nation)	City of Dryden, Oxdrift Volunteer Fire Department Wabigoon Lake Volunteer Fire Department	n/a	n/a	n/a	n/a
Fort William First Nation	Fort William First Nation Fire Department (Thunder Bay Metropolitan Area)	1	n/a	• One pumper vehicle; and • One tanker	• 100 Anemki Drive: 23.5 km
Lac des Mille Lacs First Nation	n/a	n/a	n/a	n/a	n/a

Indigenous and Non-Indigenous Communities	Fire Service Provider	In-Community Fire Stations	Number of Fire Staff	Fire Apparatus	Distance from closest station to Project ROW
Wabigoon Lake Ojibway Nation	Wabigoon Lake Ojibway Nation Volunteer Fire Department	1	Volunteer Firefighters	• One pumper	• Address n/a: 4.2 km

km = kilometre; n/a = not available.

Sources: (City of Thunder Bay 2020; Dryden Fire Service 2019; Fire Wiki n.d.; Town of Atikokan 2022a; City of Kenora 2022; CBC News 2018; Shuniah Fire Department, 2018).

Forest Fire Services

The MNRF Aviation, Forest Fire and Emergency Services is responsible for responding to forest fires. A Forest Fire Management Centre is located in Dryden, with local Fires Management Headquarters located in Dryden, Sioux Lookout and Fort Frances. Additional Forward Attack Bases, which are set up during periods of escalated or anticipated fire activity, are also located at Vedette Lake, Ignace (MNRF 2022).

Emergency Medical Services (EMS)

EMS is available in the Quality of Life LSA through paid EMS services and may be supported by volunteer fire departments (described above). EMS providers within the Quality of Life LSA include Superior North EMS, Northwest EMS, and the District of Rainy River Services Board EMS Services. Superior North EMS services communities located within the District of Thunder Bay, Northwest EMS services communities located within the District of Kenora, and the District of Rainy River Services Board services communities located within the District of Rainy River (District of Rainy River Services Board, 2023; Kenora District Services Board, 2023; North Superior EMS, 2023). Communities serviced by the described EMS providers include small/rural communities, as well as Indigenous communities located within the Quality of Life LSA described in Table 7.2-4. EMS services are summarized below in Table 7.2-15 at the district level. Quantitative data provided in Table 7.2-15 are approximate and based on information available at the time of reporting.

Additional details related to community healthcare services are described within Section 7.2.5.5.1. Section 7.2.5.5.1 describes community healthcare services and facilities located within the Thunder Bay Metropolitan Area, the City of Dryden, Town of Atikokan, the District of Thunder Bay, the District of Kenora, and Indigenous communities located within the Quality of Life LSA.

Table 7.2-15: EMS Services in the Community Services and Facilities Local Study Area

EMS Provider	Service Location	In-Community EMS Stations	Number of EMS Staff	Distance from closest station to Project ROW
Superior North EMS	City and District of Thunder Bay Communities	19	<u>City of Thunder Bay</u> • 17 full-time advanced care paramedics; • 40 part-time care paramedics; and • 26 primary care paramedics. <u>District of Thunder Bay</u> • On average at least ~4 full-time primary care paramedics; and • On average at least ~2 part-time primary care paramedics.	<u>City of Thunder Bay</u> • 105 Junot Avenue South, City of Thunder Bay, ON: 9.9 km • 181 Beck Street, City of Thunder Bay, ON: 9.9 km • 330 North Vickers Street, City of Thunder Bay, ON: 16.5 km • 501 Churchill Drive West, City of Thunder Bay, ON: 17.4 km • 1321 Brown Street, City of Thunder Bay, ON: 19.4 km <u>District of Thunder Bay</u> • 65 Queen Street, Armstrong, ON: 233.8 km • 133 Main Street, Beardmore, ON: 174.6 km • 11 Marian Street, Kakabeka Falls, ON: 24.0 km • 815 Main Street, Geraldton, ON: 257.4 km • 121 Skinner Avenue, Longlac, ON: 287.0 km • 1 Paramedic Lane, Manitouwadge, ON: 369.6 km • 26 Peninsula Road, Marathon, ON: 281.5 km • 204-b Thorton Street, Nakina, ON: 322.4 km • 125 Hogan Road, Nipigon, ON: 94.5 km • 4 Taylor Avenue, Red Rock, ON: 92.3 km • Highway 17 – 52 Kingsway, Schreiber, ON: 186.1 km • 1700A Lakeshore Drive, Shuniah, ON: 13.0 km • 20A Cartier Drive, Terrace Bay, ON: 199.0 km • 20 North Road, Upsala, ON: 63.5 km

EMS Provider	Service Location	In-Community EMS Stations	Number of EMS Staff	Distance from closest station to Project ROW
Northwest EMS	District of Kenora Communities	9	• At least ~3 full-time primary care paramedics and ~1 part-time primary care paramedics for smaller communities. Nestor Falls and Sioux Narrows alternate schedules to provide 24 hour coverage (specific to that area). • Larger communities such as Kenora (22 full-time, 7 part-time) and the City of Dryden (11 full-time and 3 part-time) have a larger numbers of full-time and part-time staff.	• 51 Memorial Avenue South, Dryden, ON: 4.3 km • 46 Balsam Street, Ear Falls, ON: 108.7 km • 301 Rand Street, Ignace, ON: 20.3 km • 80 Fourteenth Street North, Kenora, ON: 135.4 km • 2378 Highway 17 East, Suite B, Kenora, ON: 127.0 km • 7 Airport Road, Wabigoon, ON: 209.6 km • 20 Patricia Avenue, Pickle Lake, ON: 316.0 km • 51D Highway 105, Red Lake, ON: 178.4 km • 3 Meno-Ya-Win Way, Sioux Lookout, ON: 68.3 km • 10 Fickas Road, Highway 71 South, Sioux Narrows, ON: 170.3 km
District of Rainy River Services Board	District of Rainy River Communities	4	• On average, ~8 full-time primary care paramedics, service the four described EMS stations, with the exception of the Fort Frances who has 10 full-time staff.	• 114 Dorothy Street, Atikokan, ON: 0.7 km • 32 Florence Street, Emo, ON: 182.4 km • 801 Scott Street, Fort Frances ON: 147.2 km • 708 Atwood Avenue, Rainy River, ON: 237.7 km

~ approximately; EMS = Emergency Medical Services; km = kilometre; ON = Ontario

Source: (District of Rainy River Services Board, 2023; Kenora District Services Board, 2023; North Superior EMS, 2023).

7.2.5.2.4.3 Social Challenges

Information on social challenges in LSA communities is based on secondary sources only and is presented here in order to provide background information on current social challenges and issues in the wider area found through literature reviews.

Homelessness, Addiction, and Mental Health

Municipalities in northern Ontario face higher rates of homelessness, addiction, and mental health crises in comparison to the provincial average. A report published by the Northern Ontario Policy Institute in 2020 indicated that the number of opioid-related emergency-department visits, opioid-related deaths, and the number of people in northern Ontario struggling with addiction has almost doubled between 2016 to 2020. The homeless population in Thunder Bay (2.6 per 1,000 individuals) in 2021 was larger than municipalities including Ottawa (1.3 per 1,000 individuals), Hamilton (1.7 per 1,000 individuals), and Waterloo (1.8 per 1,000 individuals). (Northern Ontario Policy Institute 2022).

A report published by the Northern Ontario Policy Institute in 2020 provided information on annual opioid-related emergency department visits and opioid-related deaths by public health units including the Northwest Health Unit (NWHU) and the Thunder Bay District Health Unit (TBDHU) from 2016 to 2020. During this time, the number of recorded annual opioid-related emergency department visits and opioid-related deaths (per 100,000 people) more than doubled. For example, the number of annual opioid-related emergency visits for the NWHU increased from 40 visits in 2016 to 146 visits in 2020 and from 50 visits in 2016 to 106 visits in 2020 for the TBDHU. For opioid-related deaths, the NWHU increased from 5 deaths in 2016 to 21 deaths in 2020, while the numbers for the TBDHU increased from 9 deaths in 2016 to 41 deaths in 2020 (Northern Policy Institute 2020).These rate of opioid-related deaths have continued to increase for both the NWHU and the TBDHU. In 2022, opioid-related death rates in 2022 for the TBDHU area were over three times higher than the provincial average, with 51 deaths per 100,000 people in comparison to the Ontario provincial average of 16 deaths per 100,000 people. In 2022, the City of Thunder Bay had the highest rate of opioid-related deaths in Ontario (TBDHU 2023). Opioid-related deaths for the NWHU were also over three times higher than the provincial average in 2022, with 56 deaths per 100,000 people (NWHU 2023).

The same report found that mental health issues are not necessarily restricted to homeless individuals or individuals struggling with addiction. In general, a lower percentage of northern Ontarians report that they perceive their mental health as “Very Good, or Excellent” in comparison to southern Ontarians (and the provincial average). The NWHU reported that 47% of individuals perceive their mental health as “Very Good, or Excellent”, while TBDHU reported 53% in comparison to the Ontario provincial average of 60% (Northern Ontario Policy Institute 2022).

Indigenous and non-Indigenous communities in northern Ontario face challenges in addressing mental health crises due to economic barriers, geographic isolation, cultural and language barriers, as well as intergenerational and current trauma due to discrimination and historic

treatment, such as residential schools. Suicide is the leading cause of death due to injury in northern Ontario and the percentage of potential years of life lost due to suicide are approximately 300% greater in comparison to the province of Ontario (50% greater for men and 80% greater for women). Suicide rates for Indigenous youth are also much higher than the Canadian population by approximately 5-7% (Health Quality Ontario 2018).

There are also gaps and limitations related to the availability, funding, and access to mental health services, community and/or culturally sensitive housing, service hubs (i.e., out of the cold emergency shelters, extended care facilities), and mobile crisis intervention teams (Northern Ontario Policy Institute 2020). This presents a specific concern for Indigenous people living in northern Ontario municipalities. Recent studies indicate that the urban Indigenous population in Kenora and Thunder Bay is considerably larger than what the official census has documented, leading to potential funding disparities at the provincial level. A study conducted by Well Living House, an Indigenous health research center based in Toronto, suggests that the Indigenous population in Kenora may be anywhere from two to four times higher than the 3,595 individuals reported in the 2016 census data (McConkey et al. 2022). Similarly, the same researchers examined data from Thunder Bay in 2021 and estimated that the Indigenous population there falls between 23,080 and 42,641 people (McConkey et al. 2022). In contrast, Statistics Canada data states that the Indigenous population within Thunder Bay's municipal boundaries during the 2021 census stood at 15,055 individuals (Statistics Canada 2021a). When considering nearby Fort William First Nation and other surrounding communities, this number increases to 16,935. This results in several financial and social issues for underrepresented Indigenous populations due to provincial funding formulas being calculated relative to population (Government of Ontario 2022). Higher population projections would trigger a substantial increase in need for strained services such as social housing and homelessness, transit, and programs under the Ontario Municipal Partnership Fund.

Human Trafficking

Human trafficking and sexual exploitation are the fastest-growing crimes in Canada. Indigenous people only make up 4% of the population in Canada, they constitute up to 50% of trafficking victims (Northern Ontario Business 2022a). Indigenous women and girls also face higher risks and are 12 times more likely to go missing than any other demographic in Canada (Kenora Online 2019).

The rate of human trafficking in Ontario is higher in comparison to the rest of Canada. Up to two-thirds of reported human trafficking cases in the country take place in Ontario (CBC 2021). Individuals who are involved with human trafficking utilize Highway 11 and Highway 17 to move victims from Sudbury and Thunder Bay through the rest of northern Ontario and Winnipeg. Although incentive/profit (at the cost of trafficking), within the region is not as high in comparison to larger population centres such as Vancouver, Calgary, and Toronto, traffickers take advantage of the low population density and relative remoteness of these highways in order to avoid detection by law enforcement (Canadian Centre to End Human Trafficking 2021).

According to the National Inquiry on Missing and Murdered Indigenous Women and Girls (MMIWG), one of the main difficulties in enforcing laws against human trafficking is its mobility, as there are often jurisdictional challenges that arise over crimes which occur in different jurisdictions when victims are frequently transported between different cities and/or provinces. The MMIWG inquiry identifies factors which contribute to patterns in trafficking which include industrial operations/developments where a largely male, transient workforce travels for short periods of time for work. Human trafficking is often underreported due to a number of reasons including but not limited to cultural stigma, lack of trust in the justice system, and often fear for personal safety (MMIWG 2019).

7.2.5.3 Transportation and Energy Infrastructure – Transportation Routes

7.2.5.3.1 Overview of the Existing Road Network

Highways, municipal roads and forestry roads will be used to support the Project according to the access plan prepared by the construction contractor. In some cases, inactive roads will require improvements including clearing of ROW vegetation, grading, re-installation of watercourse crossings or approach widening. New access roads will be temporary and primarily confined to the transmission line ROW. Reclamation of temporary roads after construction activities will be completed unless otherwise required by Hydro One for ongoing operation and maintenance of the facilities.

7.2.5.3.1.1 Highways

The main road networks that will be potentially used and affected by the Project are depicted on Figure 7.2-. These include sections of Highway 17, Highway 11, Highway 11B, Highway 622, Highway 72, Highway 102, Highway 527, Highway 601, Highway 603, Highway 622, Highway 655, and Highway 802. The highway locations are detailed further below.

The Trans-Canada Highway is the primary corridor that connects eastern Ontario to Manitoba. Highway 11/17 provides connection to the Thunder Bay Metropolitan Area and extends west to Shabaqua Corners where the two highways split.

Highway 102 connects Red River Road in Thunder Bay to Sistonens Corners. At Sistonens Corners, Highway 102 merges with Highway 11/17. At the Shabaqua Corners junction, Highway 11 runs west to Atikokan through Shebandowan and Kashabowie, and Highway 17 extends northward toward Upsala, English River, Ignace and the City of Dryden. Wabigoon Lake Ojibway Nation and Migisi Sahgaigan are also located in close proximity to Highway 17 via access roads east and west of Dryden, respectively.

In the Town of Atikokan, Highway 11B connects with Highway 622 and provides connection northward to Highway 17 and the City of Dryden. The City of Dryden is located approximately 70 km west of where Highway 622 intersects with Highway 17.

Highway 72, Highway 601, and Highway 655 are located near the City of Dryden and run northward beginning at Highway 17. Highway 72 begins at Dinorwic. Highway 601 runs west of

Dryden Regional Airport, and Highway 655 begins at Two Mile Corner and runs north to Richen where the nearest Via Rail station is located.

Highway 527 is located northeast of the Thunder Bay Metropolitan Area and provides connection northward to Gull Bay and Armstrong via Highway 17.

Highway 603 is located east of the City of Dryden and Dinorwic and provides connection northward to Dymet via Highway 17 at Borups Corners. Highway 802 is a small highway that connects Highway 17 to Kashabowie and Kashabowie Lake Lodge.

The Transportation and Energy Infrastructure LSA includes 11 First Nations and four Métis communities. Migisi Sahgaigan (Eagle Lake First Nation) and Wabigoon Lake Ojibway Nation have reserve lands that are located closest to the Project footprint by road, 16 km and 9 km away, respectively. The Métis Nation of Ontario and Red Sky Métis Independent Nation also have offices located within the Transportation and Energy Infrastructure LSA. A description of the location of these First Nation and Métis communities and distance to the Project footprint via road is presented in Table 7.2-16 and is displayed on Figure 7.2-. As Métis Nations and Councils do not have geographic communities or reserve lands, office locations were used instead.

Table 7.2-16: Location and Access to Indigenous Communities in the Transportation and Energy Infrastructure Local Study Areas

Community and Band No.	Location of Reserve Lands	Distance to Project Components
Couchiching First Nation	• Couchiching 16A is northeast of Fort Frances and is located 5 km from Fort Frances by road.	160 km
Migisi Sahgaigan (Eagle Lake First Nation)	• Eagle Lake 27 is southwest of Dryden and is located 16.7 km from Dryden by road.	20 km
Fort William First Nation	• Fort William First Nation is south of Thunder Bay and is located 7.3 km from Thunder Bay by road.	36 km
Mitaanjigamiing First Nation	• Rainy Lake 18C is north of Fort Frances and is located 51 km from Fort Frances by road.	202 km
Nigigoonsiminikaaning First Nation	• Rainy Lake 26A is northeast of Fort Frances and is located 46.5 km from Fort Frances by road.	107 km
Ojibway Nation of Saugeen	• Ojibway Nation of Saugeen is northeast of Sioux Lookout and Dryden. The community is located 114 km from Sioux Lookout and 209 km from Dryden by road.	142 km

Community and Band No.	Location of Reserve Lands	Distance to Project Components
Lac des Mille Lacs First Nation	• Lac des Mille Lacs 22A1 is northeast of Atikokan and southeast of Dryden. The community is located 131 km from Atikokan and 211 km from Dryden by road.	103 km
Lac La Croix First Nation	• Neguaguon Lake 25D is southwest of Atikokan and southeast of Fort Frances. The community is located 119 km from Atikokan and 183 km from Fort Frances by road.	117 km
Lac Seul First Nation	• Lac Seul 28 is northwest of Sioux Lookout and northeast of Dryden. The community is located 72 km from Sioux Lookout and 86.8 km from Dryden by road.	137 km
Seine River First Nation	• Seine River First Nation is located west of Atikokan and is located 71 km from Atikokan by road.	69 km
Wabigoon Lake Ojibway Nation	• Wabigoon Lake 27 is southeast of Dryden and is located 64.7 km from Dryden by road.	11 km
Métis Nation of Ontario (MNO) – Atikokan Métis Council	• The MNO Atikokan Métis Council office is located within the Town of Atikokan and is accessible via Highway 11 and Highway 622.	19 km
Métis Nation of Ontario – Northwest Métis Council	• The MNO Northwest Métis Council office is located within the Town of Dryden and is accessible via Highway 17 and Highway and Highway 594.	19 km
Métis Nation of Ontario – Thunder Bay Métis Council	• The MNO Thunder Bay Métis Council office is located in the City of Thunder Bay and is accessible via Highway 17.	1 km
Red Sky Métis Independent Nation	• The Red Sky Métis Independent Nation office is located in the City of Thunder Bay and is accessible via Highway 17.	2 km

km = kilometre; MNO = Métis Nation of Ontario.

Source: (Google Earth, 2020; CIRNAC; 2022a).

Notes: As Métis Nations and Councils do not have geographic communities, their office locations have been used for this table for reference.

7.2.5.3.1.2 Traffic Volumes

Annual Average Daily Traffic (AADT) is the average 24-hour, two-way traffic count for the period of January 1 to December 31 on an identified section of road. The AADT for 2019 is available for the major highways in the Transportation and Energy Infrastructure local study area, including:

- Highway 11/Highway 11B from Thunder Bay to Atikokan;
- Highway 17 from Thunder Bay to Dryden;
- Highway 72 from Highway 17 at Dinorwic to Sioux Lookout;
- Highway 102 from the Thunder Bay Metropolitan Area to Sistonens Corners;
- Highway 527 from Thunder Bay to Armstrong;
- Highway 601 from Highway 17 into Dryden;
- Highway 622 from Atikokan to Dryden; and
- Highway 665 from Two Mile Corner to Richan.

AADT was not specifically isolated for the full corridor length for Highway 603 and Highway 802 given the fact that intersections with larger highway corridors (i.e., Highway 11 and Highway 17) were already captured.

Given the remote location of the Project, and the smaller urban populations within the Transportation and Energy Infrastructure LSA, AADT on the identified stretches of highway is low compared to sections near larger urban centers. Traffic volumes are highest around Thunder Bay, with an AADT of 21,500 from Oliver Road (East and West) – Thunder Bay to Highway 61 (South) / Harbour Expressway (East) and an AADT of 17,500 from Thunder Bay – Superior North to Thunder Bay – Atikokan to Oliver Road (East and West) – Thunder Bay (Table 7.2-17). These relatively higher traffic volumes are likely a result of the community's role as a service hub for the region, including the presence of the Thunder Bay Regional Health Sciences Centre, hotels, schools, industry and tourism activities. Traffic volumes around the City of Dryden are similarly higher when compared to more rural areas (though by lesser amounts), again explicable by the presence of a larger population and amenities such as the Sioux Lookout Meno Ya Win Health Centre and other healthcare, food and retail services and tourism, and other amenities. Traffic volumes are substantially lower on Highway 72, Highway 527, Highway 601, Highway 622 and Highway 665.The AADT counts for highways in the Transportation and Energy Infrastructure local study area in 2019 are shown in Table 7.2-17.

Table 7.2-17: Annual Average Daily Traffic Counts in the Transportation and Energy Infrastructure Local Study Area, 2019

Highway Corridor	Location From	Location To	Distance (km)	AADT
Highway 11 (Thunder Bay to Atikokan)	Lakeshore Drive East	Mackenzie Station Rd / Lakeshore Drive (West)	8.3	5,900
Highway 11 (Thunder Bay to Atikokan)	Mackenzie Station Rd / Lakeshore Drive (West)	Highway 527 West / Spruce River Road (East)	14.8	6,050
Highway 11 (Thunder Bay to Atikokan)	Highway 527 West / Spruce River Road (East)	Highway 11B/17B – Hodder Avenue (East / Copenhagen Road	3.8	6,400
Highway 11 (Thunder Bay to Atikokan)	Highway 11B/17B – Hodder Avenue (East / Copenhagen Road	Balsam Avenue	4.1	7,250
Highway 11 (Thunder Bay to Atikokan)	Balsam Avenue	Highway 102 (West) / Red River Road (East) – Thunder Bay	2.3	11,700
Highway 11 (Thunder Bay to Atikokan)	Highway 102 (West) / Red River Road (East) – Thunder Bay	Thunder Bay – Superior North to Thunder Bay – Atikokan	1.2	15,300
Highway 11 (Thunder Bay to Atikokan)	Thunder Bay – Superior North to Thunder Bay – Atikokan	Oliver Road (East and West) – Thunder Bay	3.2	17,500
Highway 11 (Thunder Bay to Atikokan)	Oliver Road (East and West) – Thunder Bay	Highway 61 (South) / Harbour Expressway (East)	1.6	21,500
Highway 11 (Thunder Bay to Atikokan)	Highway 61 (South) / Harbour Expressway (East)	Mapleward Road	5.3	6,850
Highway 11 (Thunder Bay to Atikokan)	Mapleward Road	Twin City Crossroad	4.6	3,400
Highway 11 (Thunder Bay to Atikokan)	Twin City Crossroad	Highway 130 (South) – Vibert Road (North)	2.3	3,100
Highway 11 (Thunder Bay to Atikokan)	Highway 130 (South) – Vibert Road (North)	Highway 588 (South)	9.4	7,200
Highway 11 (Thunder Bay to Atikokan)	Highway 588 (South)	Oliver Road (North) – To Murillo	4.3	4,700

Highway Corridor	Location From	Location To	Distance (km)	AADT
Highway 11 (Thunder Bay to Atikokan)	Oliver Road (North) – To Murillo	Highway 590 (South)	2.0	4,850
Highway 11 (Thunder Bay to Atikokan)	Highway 590 (South)	Highway 102 (North) – Sistonen's Corner	15.2	2,500
Highway 11 (Thunder Bay to Atikokan)	Highway 102 (North) – Sistonen's Corner	Highway 17 – Shabaqua	21.0	3,900
Highway 11 (Thunder Bay to Atikokan)	Highway 17 – Shabaqua	Highway 586 (South)	20.8	1,100
Highway 11 (Thunder Bay to Atikokan)	Highway 586 (South)	Boyes Road (South)	21.8	870
Highway 11 (Thunder Bay to Atikokan)	Boyes Road (South)	Highway 633 – Kawene Road (Nouth) – to Quetico Centre	64.1	800
Highway 11 (Thunder Bay to Atikokan)	Highway 633 – Kawene Road (North) – to Quetico Centre	Highway 623 – Sapawe Road (North)	7.0	800
Highway 11 (Thunder Bay to Atikokan)	Highway 623 – Sapawe Road (North)	Highway 11B – To Atikokan (North)	21.5	840
Highway 11B (Thunder Bay to Atikokan)	Highway 11	Highway 622 – Atikokan	3.2	1,250
Highway 11B (Thunder Bay to Atikokan)	Highway 622 – Atikokan	Zuke Street – Atikokan to Highway END	3.2	3,300
Highway 17 (Thunder Bay to Dryden)	Highway 11 East Junction – Nipigon (Overlap Highway 11)	Highway 11 West Junction (South)	178.6	n/a
Highway 17 (Thunder Bay to Dryden)	Highway 11 West Junction (South)	Raith Road East Junction (North) – Goldie Township (Highway 7071)	24.9	2,850
Highway 17 (Thunder Bay to Dryden)	Raith Road East Junction (North) – Goldie Township (Highway 7071)	Gonyou Road (South) to Lupasko Road (North)	48.6	2,900
Highway 17 (Thunder Bay to Dryden)	Gonyou Road (South) – Lupasko Road (North)	Community Hall Road (North) – Upsala Township	3.0	2,200

Highway Corridor	Location From	Location To	Distance (km)	AADT
Highway 17 (Thunder Bay to Dryden)	Community Hall Road (North) – Upsala Township	Graham Road (North) – GLFP Road (South) Stedman Township	14.2	2,200
Highway 17 (Thunder Bay to Dryden)	Graham Road (North) – GLFP Road (South) Stedman Township	Snowden Lake Road (North) – GLFP Camp #418 Road (South)	45.3	2,400
Highway 17 (Thunder Bay to Dryden)	Snowden Lake Road (North) – GLFP Camp #418 Road (South)	Highway 599 (North)	41.7	2,850
Highway 17 (Thunder Bay to Dryden)	Highway 599 (North)	West Beach Drive (South) – Ignace Township	4.3	2,700
Highway 17 (Thunder Bay to Dryden)	West Beach Drive (South) – Ignace Township	Highway 622 – Bending Lake Road (South)	30.9	2,250
Highway 17 (Thunder Bay to Dryden)	Highway 622 – Bending Lake Road (South)	Highway 603 (West) – Sandy Point Road – Borups Corners (South)	22.6	3,000
Highway 17 (Thunder Bay to Dryden)	Highway 603 (West) – Sandy Point Road – Borups Corners (South)	Highway 72 (North)	21.0	2,350
Highway 17 (Thunder Bay to Dryden)	Highway 72 (North)	Thunder Lake Road	19.1	4,000
Highway 17 (Thunder Bay to Dryden)	Thunder Lake Road	Highway 601 (South) East Junction – Rice Lake Loop	3.7	6,200
Highway 17 (Thunder Bay to Dryden)	Highway 601 (South) East Junction – Rice Lake Loop	Dryden East – Township Boundary	3.3	7,000
Highway 17 (Thunder Bay to Dryden)	Dryden East – Township Boundary	Dryden West – Township Boundary	4.7	n/a
Highway 17 (Thunder Bay to Dryden)	Dryden East – Township Boundary	Highway 655 – Richan Road (North)	1.5	7,100
Highway 72 (Dinorwic to Sioux Lookout)	Highway 17	Highway 644 (West) – Patricia Corners	60.5	1,100
Highway 72 (Dinorwic to Sioux Lookout)	Highway 644 (West) – Patricia Corners	Ariano Bypass (East) – First Avenue (North)	6.7	3,350

Highway Corridor	Location From	Location To	Distance (km)	AADT
Highway 72 (Dinorwic to Sioux Lookout)	Ariano Bypass (East) – First Avenue (North)	Highway 642 (East) – Highway 516 (North) – End of Highway	1.3	5,650
Highway 72 (Dinorwic to Sioux Lookout)	Highway 642 (East) – Highway 516 (North) – End of Highway	End of Highway 72	n/a	n/a
Highway 527 (Thunder Bay to Armstrong)	Highway 11/17	Pulp Load Check Area South (West)	6.7	1,150
Highway 527 (Thunder Bay to Armstrong)	Pulp Load Check Area South (W)	Dorion Road (East) – Dorion Cut Off Road (East)	28.6	1,000
Highway 527 (Thunder Bay to Armstrong)	Dorion Road (East) – Dorion Cut Off Road (East)	Lac Des Iles Mine Road (West)	48.5	390
Highway 527 (Thunder Bay to Armstrong)	Lac Des Iles Mine Road (West)	Tertiary Road 811 (West)	19.0	470
Highway 527 (Thunder Bay to Armstrong)	Tertiary Road 811 (West)	Hurkett Road (East)	32.1	170
Highway 527 (Thunder Bay to Armstrong)	Hurkett Road (East)	Obonga Lake Road / Wabakimi Wilderness Lodge (West)	59.5	220
Highway 527 (Thunder Bay to Armstrong)	Obonga Lake Road / Wabakimi Wilderness Lodge (West)	1st Avenue – Armstrong – Highway END	30.6	n/a
Highway 527 (Thunder Bay to Armstrong)	1st Avenue – Armstrong – Highway END	End of Highway 527	n/a	n/a
Highway 601 (Dryden Airport)	Highway 17 West Junction – Dryden	City of Dryden North	1.6	n/a
Highway 601 (Dryden Airport)	City of Dryden North	Pronger Lake Road (East)	13.5	870
Highway 601 (Dryden Airport)	Pronger Lake Road (East)	Dryden Airport Entrance (North) (Highway Turns South)	6.7	140
Highway 601 (Dryden Airport)	Dryden Airport Entrance (North) (Highway Turns South)	Highway 17 East Junction (East and West) – Highway END	5.0	1,200
Highway 601 (Dryden Airport)	Highway 17 East Junction (East and West) – Highway END	End of Highway 601	n/a	n/a

Highway Corridor	Location From	Location To	Distance (km)	AADT
Highway 622 (Atikokan to Dryden)	Highway 11B – Atikokan	Rawn Reservoir Road – Hardy Darm Road	2.1	530
Highway 622 (Atikokan to Dryden)	Rawn Reservoir Road – Hardy Darm Road	Foothills Timber Road Old 7177 – Ski Area (West)	6.5	510
Highway 622 (Atikokan to Dryden)	Foothills Timber Road Old 7177 – Ski Area (West)	Hydro Generating Station Entrance (West)	6.5	300
Highway 622 (Atikokan to Dryden)	Hydro Generating Station Entrance (West)	Manion Road (West)	66.9	170
Highway 622 (Atikokan to Dryden)	Manion Road (West)	Highway 17 – Highway End	48.3	100
Highway 622 (Atikokan to Dryden)	Highway 17 – Highway End	End of Highway 622	n/a	n/a
Highway 665 (Dryden, Two Mile Corner to Richan)	Highway 17	Wainwright – Britton Township Boundary	8.5	740
Highway 665 (Dryden, Two Mile Corner to Richan)	Wainwright – Britton Township Boundary	Richan – Canadian National Station – Highway END	12.7	160
Highway 665 (Dryden, Two Mile Corner to Richan)	Richan – Canadian National Station – Highway END	End of Highway 665	n/a	n/a

AADT = average annual daily traffic; km = kilometre; n/a = not available.

Source: (MTO 2019b).

Note: Traffic volume information is not available from the Ontario Ministry of Transportation for roads which are not provincially maintained.

7.2.5.3.1.3 Vehicle Collisions

Traffic collision data are available for the larger communities in the Transportation and Energy Infrastructure LSA and summarized in Table 7.2-18, Table 7.2-19, and Table 7.2-20.

Thunder Bay Region (District of Thunder Bay and Thunder Bay Metropolitan Area)
The most recent data for motor vehicle collisions in the Thunder Bay Region which was available from MTO was from 2019. Data for the Thunder Bay Region included information on the Municipality of Greenstone, Manitouwadge Township, the Town of Marathon, the Municipality of Neebing, the Township of Nipigon, the Municipality of Oliver Paipoonge, the Municipality of Shuniah, the Township of Terrace Bay and the City of Thunder Bay. For the purpose of this assessment, data from the Municipality of Oliver Paipoonge, the Municipality of Shuniah and the City of Thunder Bay was assessed as the "Thunder Bay Metropolitan Area" and the remaining settlements not part of the LSA were assessed under "Other Areas" (MTO 2019a).

In 2019, there were 154,989 motor vehicle registrants registered within the Thunder Bay Region (data for the number of motor vehicle registrants per settlement were not available). In the same year, there were 1,993 motor vehicle collisions which occurred in the Thunder Bay Metropolitan Area, which represents 1.3% of the total motor vehicle registrants in the Thunder Bay Region. Of the 1,933 collisions which occurred in the Thunder Bay Metropolitan Area, three were fatal (<0.1% of registrants), 272 (0.2% of registrants) resulted in personal injury, and 1,718 (1.1% of registrants) resulted in property damage. Fatal collisions killed three people (<0.1% of registrants), while those resulting in personal injury affected 367 (0.2% of registrants) (MTO 2019a).

Kenora Region (District of Kenora and City of Dryden)
The most recent data for motor vehicle collisions in the Kenora Region which was available from MTO was from 2019. Data for the Kenora Region included information on the City of Dryden, the City of Kenora, the Municipality of Red Lake, and the Municipality of Sioux Lookout. For the purpose of this assessment, data from the City of Dryden was assessed and the remaining settlements not part of the LSA were assessed under "Other Areas" (MTO 2019a).

In 2019, there were 61,193 motor vehicle registrants within the Kenora Region (data for the number of motor vehicle registrants per settlement were not available). In the same year, there were 102 motor vehicle collisions which occurred in the City of Dryden, which represents 0.2% of the total motor vehicle registrants in the Kenora Region. Of the 102 collisions which occurred in the City of Dryden, none were fatal (0% of registrants), four (<0.1% of registrants) resulted in personal injury, and 98 (0.2% of registrants) resulted in property damage. Fatal collisions were zero (0% of registrants) and did not kill any registrants in 2019, while four (<0.1% of registrants) resulted in personal injury (MTO 2019a).

Rainy River Region (Town of Atikokan)

The most recent data for motor vehicle collisions in the Rainy River Region which was available from MTO was from 2019. Data for the Rainy River Region included information on the Town of Atikokan and the Town of Fort Frances. For the purpose of this assessment, data from the Town of Atikokan was assessed and the remaining settlements not part of the LSA were assessed under “Other Areas” (MTO 2019a).

In 2019, there were 26,180 motor vehicle registrants registered within the Rainy River Region (data for the number of motor vehicle registrants per settlement were not available). In the same year, there were 13 motor vehicle collisions which occurred in the Town of Atikokan, which represents <0.1% of the total motor vehicle registrants in the Rainy River Region. Of the 13 collisions which occurred in the Town of Atikokan, none were fatal (0% of registrants), two (<0.1% of registrants) resulted in personal injury, and 11 (<0.1% of registrants) resulted in property damage. Fatal collisions were zero (0% of registrants) and did not kill any registrants in 2019, while two (<0.1% of registrants) resulted in personal injury (MTO 2019a).

Table 7.2-18: Traffic Collision Data for the Thunder Bay Region, 2019

Place of Collision	Total Collisions	Collisions Resulting in Fatality	Collisions Resulting in Personal Injury	Collisions Resulting in Property Damage	Persons Killed by Collisions	Persons Injured by Collisions
Thunder Bay Metropolitan Area[a]	1,993	3	272	1,718	3	367
Provincial Highways	1,583	11	182	1,390	13	244
Other Areas[b]	181	1	15	165	1	23
Thunder Bay Region Total	3,757	15	469	3,273	17	634

Source: (MTO 2019a).

a) Traffic collision data for the Thunder Bay Metropolitan Area includes data for the Municipality of Oliver Paipoonge, the Municipality of Shuniah and the City of Thunder Bay.

b) "Other Areas" include Municipality of Greenstone, the Township of Manitouwadge, the Town of Marathon, the Municipality of Neebing, the Township of Nipigon, the Township of Terrace Bay and smaller settlements located along highways in this region.

Note: The total number of motor vehicle registrants provided by MTO for the Thunder Bay Region includes registrants from surrounding municipalities including the Municipality of Greenstone, the Township of Manitouwadge, the Town of Marathon, the Municipality of Neebing, the Township of Nipigon, the Municipality of Oliver Paipoonge, the Municipality of Shuniah, the Township of Terrace Bay and the City of Thunder Bay; however, for the purpose of this assessment, traffic collision data was only examined for LSA communities (i.e., Oliver Paipoonge, the Municipality of Shuniah and the City of Thunder Bay). The total number of vehicle registrants provided for the Thunder Bay Region was 151,767 in 2019.

Table 7.2-19: Traffic Collision Data for the Kenora Region, 2019

Place of Collision	Total Collisions	Collisions Resulting in Fatality	Collisions Resulting in Personal Injury	Collisions Resulting in Property Damage	Persons Killed by Collisions	Persons Injured by Collisions
City of Dryden	102	0	4	98	0	4
Provincial Highway	396	2	35	359	2	52
Other Areas[(a)]	325	2	21	302	2	34
Kenora Region Total	823	4	60	759	4	90

Source: (MTO 2019a).

"Other Areas" include the City of Kenora, the Municipality of Red Lake, the Municipality of Sioux Lookout and smaller settlements located along highways in this region.

Note: The total number of motor vehicle registrants provided by the MTO for the Kenora Region includes registrants from surrounding municipalities including the City of Dryden, the City of Kenora, the Municipality of Red Lake, and the Municipality of Sioux Lookout; however, for the purpose of this assessment, traffic collision data was only examined for LSA communities (i.e., the City of Dryden). The total number of vehicle registrants provided for the Kenora Region was 61,193 in 2019.

Table 7.2-20: Traffic Collision Data for the Rainy River Region, 2019

Place of Collision	Total Collisions	Collisions Resulting in Fatality	Collisions Resulting in Personal Injury	Collisions Resulting in Property Damage	Persons Killed by Collisions	Persons Injured by Collisions
Town of Atikokan	13	0	2	11	0	2
Provincial Highway	213	0	15	198	0	16
Other Areas[(a)]	148	0	11	137	0	16
Rainy River Total	374	0	28	346	0	34

Source: (MTO 2019a).

"Other Areas" include the Town of Fort Frances and smaller settlements located along highways in this region.

Note: The total number of motor vehicle registrants provided by the MTO for the Rainy River Region includes registrants from surrounding municipalities including the Town of Atikokan and the Town of Fort Frances; however, for the purpose of this assessment, traffic collision data was only examined for LSA communities (i.e., the Town of Atikokan). The total number of vehicle registrants for the Rainy River Region was 26,180 in 2019.

At the time of reporting, more recent data was not available; however, a media article published by TBNewsWatch, based on data obtained from OPP, noted an increase in fatalities from collisions on northwestern Ontario highways and across the Province of Ontario as a whole. The article noted that in 2021, 13 people were killed in highway accidents in the northwest region which was a 117% increase from 2020 (six fatalities). Fatalities increased in 2021 compared to 2020, even though the number of collisions were comparatively similar (2,293 and 2,290 respectively) (TBNews Watch 2022). In 2021 and 2020, the percentage of all collisions that involved tractor-trailers (i.e., a transport vehicle consisting of a semi-tractor and attached trailer) increased noticeably, approximately 18.6% in 2020 and 21.3% in 2021 which followed a general trend for recent years. A second article published by Northern Ontario business also based on data obtained from OPP noted similar increases for 2022 at the provincial level. The article notes that collisions with transport trucks have increased up to 40% in comparison to 2021 and account for approximately 22% of OPP-investigated fatal roadway collisions; however, at-fault drivers involved in the incidents involved both passenger vehicles and transport truck drivers in these instances (Northern Ontario Business 2022b).

7.2.5.3.1.4 Local Roads

Three formal organizations service local roads in unincorporated Northern Ontario: Statute Labour Boards (SLBs), Special Maintenance Agreements (50-50 Agreements), and Local Roads Boards (LRBs). SLBs allow residents to perform physical labour on roads in lieu of paying local property taxes. SLBs cover approximately 96 km of roads in northern Ontario, while 50-50 Agreements cover approximately 500 km; however, LRBs play the largest role and cover approximately 4,000 km of roads (Northern Policy Institute 2021).

There are 37 local road areas (LRAs) located within the District of Thunder Bay, 39 LRAs located within the District of Kenora, and 16 LRAs located within the District of Rainy River (MTO 2022). LRAs include:

- District of Thunder Bay: Armstrong, Beaver Bay, Crescent Point, Dawson Road-Goldie, Devon, Fire Hill, Forbes, Fowler, Gorham, Hardwick, Hicks Lake, Inwood, Jacques, Kabaigon Bay, Lybster, Lyon, Mabella, Marks, Mountain Bay, Munro Point, Northern Light Lake, Obonga Lake, Pine Ridge, Polly Lake, Portage Bay, Rossemere Bay, Rossport, Savant Lake, Shebandowan Village, Sibley, Stirling, Strange, Sunny Slopes, Sunset Lake, Upsala, Ware, and Whitesand Lake.
- District of Kenora: Aubrey, Bigstone Bay, Blindfold Lake, Britton, Ena Lake, Eton, Ghost Lake, Gordon Lake, Inglis Lake, Ingolf, Kendall Inlet, Kenricia, Laclu, McCallum Point, McConnell Lake, Mcintosh, Mckenzie Portage, Melgund, Minaki, Mutrie, Pellatt No. 2, Pickerel Lake, Red Pine Ridge, Redditt, Rowell, Rugby, Rush Bay – Woodchuck Bay, Sherwood Lake, Southworth, Spruce Lake, Storm Bay, Tannis Lake, Van Horne, Wabigoon and Redvers West, Wabigoon Southeast, Wainwright, War Eagle, Zealand No. 1, and Zealand No. 3.

- District of Rainy River: Bear Passage, Clearwater Lake, Dance, Kingsford, Marion Lake, Mine Centre, Miscampbell, Nelles, Nickel Lake Shores, Pearson Landing, Perch Lake, Pratt, Reef Point, South Watten, Spohn, and Sutherland.

Of the above, 15 are located within the Project footprint including Wainwright (47.3 ha), Portage Bay (9.0 ha), Zealand No. 1 (95.8 ha), Marion Lake (21.2 ha), Southworth (94.5 ha), Zealand No. 3 (46.4 ha), Melgund (96.7 ha), Dawson Road-Goldie (272.4 ha), Mabella (<0.1 ha), Shebandowan Village (<0.1 ha), Forbes (72.5 ha), Gorham (254.7 ha), Kabaigon Bay (5.2 ha), Pine Ridge (1.7 ha), and Ware (222.8 ha).

The majority of LRAs intersect rural or unincorporated areas; however, the following LRAs intersect larger settlement areas:

- City of Dryden: Van Horne, Wainwright, Zealand No. 1, and Zealand No. 3;
- City of Thunder Bay: Gorham and Ware;
- Municipality of Shuniah: Gorham and Silby;
- Couchiching First Nation: Miscampbell;
- Migisi Sahgaigan (Eagle Lake First Nation): Aubrey;
- Nigigoonsiminikaaning First Nation: Pearson Landing; and
- Wabigoon Lake Ojibway Nation: Southworth and Zealand No. 1.

LRBs are volunteer bodies tasked by the MTO to determine the work to be performed on local roads in the local roads area and enter into contracts for the performance of such work (not including capital-intensive projects or projects deemed to be in the interest of the travelling public [100 per cent by the Province of Ontario]). For work which does not fall into the above categories, LRBs are responsible for levying one-third of all funds to service roads in need of repair, while the rest of covered by the MTO (Northern Policy Institute 2021).

Annually, LRB representatives and MTO officials decide on the work to be completed and calculate estimated costs. Property owners in the LRB pay their share via property taxes to the provincial land tax office of the Ministry of Finance. In the Province of Ontario, LRAs are regulated under the *Local Roads Boards Act,* R.S.O. 1990, c. L.27 (Government of Ontario 2009; Northern Policy Institute 2021).

Additionally, transportation LSA includes a variety of local roads which are a mixture of privately owned roads, municipal roads and roads owned and maintained by forestry companies. The current condition of privately owned and forestry roads can vary. Forestry companies also actively decommission their roads once they are no longer needed and in accordance with their forest management plans.

7.2.5.3.2 Air, Rail, and Marine Transportation

Air Transportation

The Thunder Bay International Airport acts as the regional air transportation centre in northwestern Ontario, hosting the only international airport in the Transportation and Energy Infrastructure local study area. Flights from the Thunder Bay Metropolitan Area provide service to major Canadian centres, international destinations, regional centres and remote fly-in communities which rely heavily on air transportation given a lack of year-round connectivity to the provincial highway system.

The Thunder Bay International Airport is serviced by airlines including passenger services such as Air Canada, Bearskin Airlines, Flair Airlines, Northstar Air, Porter Airlines, Sunwing, Wasaya Airways, and WestJet. Cargo and patient airlines include, but are not limited to, Air Bravo, Calm Air, Chrono Aviation, ORNGE and Thunder Air. The Thunder Bay International Airport also hosts a number of smaller air services that provide charter flight services to a variety of destinations in the region. Passenger volume at the Thunder Bay International Airport decreased greatly in 2020 due travel restrictions associated with the COVID-19 pandemic. Passenger volume decreased from 832,570 passengers in 2019 to 292,865 passengers in 2020. Passenger volume at the Thunder Bay International Airport is expected to continue to increase as travel restrictions remain lifted. In 2021, passenger volume increased from 292,865 in 2020 to 316,025 in 2021 – with projections for 2025 remaining closer to 600,000 (Thunder Bay International Airport 2021).

There is also a helipad that operates at the City of Thunder Bay Health Sciences Centre, a Thunder Bay Seaplane Base that is located on Lake Superior, and the Eldorado Aerodome located in Shuniah, west of Highway 587 and Sleeping Giant Provincial Park (Our Airports 2022).

As well, there are several small airports, seaplane bases, and airstrips in the Transportation and Energy Infrastructure LSA. These include the following:

- The City of Dryden operates the Dryden Regional Airport and Dryden Seaplane Base on Wabigoon Lake. The airport is serviced by Bearskin Airlines, which provides private charter flight services (City of Dryden 2022a; Our Airports 2022).
- The Town of Atikokan operates the Atikokan Municipal Airport and Atikokan Seaplane Base on Steep Rock Lake. The municipal airport does not provide scheduled air services and only chartered and/or personal flights are available. There is a helipad that operates at the Atikokan General Hospital (Town of Atikokan 2022b; Our Airports 2022).
- Kashabowie/Upper Shebandowan Lake Seaplane Base is located between Atikokan and Thunder Bay (Our Airports 2022).

Although located in Manitoba, the Winnipeg Airport also acts as a regional transportation centre for northwestern Ontario due to close proximity to the District of Kenora and availability of

connecting flights to Thunder Bay Metropolitan Area. The Winnipeg Airport operates 24-hours a day, 365 days a year to provide services for Manitoba and northwestern Ontario and is serviced by passenger services such as Air Canada, Bearskin Airlines, Calm Air, Delta Airlines, Flair Airlines, Swoop, Sunwing, and WestJet. Cargo services include carriers such as CargoJet, DHL, FedEx, Morningstar, UPS, SkyLink, Sunwest Aviation, Antonov Airlines, Lynden Air Cargo, Korean Air Cargo, and Sky Lease Cargo.

Through the COVID-19 pandemic, the Winnipeg Airport remained open and passenger volume did not vary as greatly from 2020 to 2021 in comparison to the Thunder Bay International Airport. The Winnipeg Airport saw 1.3 million passengers in 2020 and 1.2 million passengers in 2021 (Winnipeg Airport 2020; Winnipeg Airport 2021).

Rail Transportation

Canadian Pacific Railway (CPR), Via Rail and the Canadian National Railway (CNR) operate in the several small airports, seaplane bases, and airstrips in the Transportation and Energy Infrastructure LSA. Routings and connections include the following:

- There are no VIA Rail services located in Thunder Bay, Dryden or the Town of Atikokan. The closest station is located in Richan, approximately 20 km north of Dryden along Highway 665. In Richan, Via Rail provides passenger service between Sioux Lookout and other locations in Ontario to the east, as well as into Manitoba (Winnipeg) to the west (Via Rail 2022).
- The CNR runs westward in close proximity to Highway 11 and provides freight service between Thunder Bay, Fort Frances and Winnipeg. The CNR rail line also provides connection to the United States through Fort Frances into International Falls (CNR 2022).
- The CPR runs northwest in close proximity to Highway 17 and provides freight service between Thunder Bay, Dryden, Kenora and Winnipeg. The CPR rail line runs parallel to Highway 17, and enters the Project area west of Ignace, as the line passes through Dinorwic, and continues into Wabigoon, Dryden and Eagle River (CNR 2022)

Marine Transportation

The Port of Thunder Bay is the Western Canadian terminus of the St. Lawrence Seaway System and is located on the northwestern shores of Lake Superior at the mouth of the Kaministiquia River at the City of Thunder Bay. The Port of Thunder Bay is one of the busiest ports in Canada and is one of the largest storage and shipment depots for grains (i.e., wheat, durum, canola, coarse grains oilseeds, feed grains, peas and other pulse crops) in the world. The Port of Thunder Bay has the largest grain storage capacity in North America and the fastest grain turnaround time of all western Canadian ports. Bulk assets imported and exported at the Port of Thunder Bay include coal, potash, urea, construction aggregates and road salt. General cargo includes forest products and infrastructure-related cargo (i.e., energy and dimensional

cargo destined for western Canadian construction sites, wind farms, mines, and the oilsands) (Port of Thunder Bay, 2023).

Facilities at the Port include eight grain elevators, three dry bulk terminals, two liquid bulk terminals, one general cargo terminal, and one shipyard with a drydock. The Port of Thunder Bay is a full-service port which operates 24/7 from season open (mid-March) to season close (January). Port services include Two Class 1 railways (CN and CP Rail), highway transport, tug operations, stevedoring, inspection and testing, ship repair and drydocking, cargo fabrication, crane rental and operation, ship agents, and diving services (Port of Thunder Bay, 2023).

In 2022, 395 vessels entered the Port of Thunder Bay and 8,195,104 total tonnes of products and/or materials passed through the port, of which approximately 6,234,114 tonnes were grain, 505,725 tonnes were coal, 1,204,876 tonnes were potash, 196,789 tonnes were dry bulk, 5,577 tonnes were liquid bulk, and 47,993 tonnes were general cargo (Port of Thunder Bay, 2023).

The Port of Thunder Bay provides live, up-to-date information regarding marine traffic for vessels stationed and travelling in and out of the Port online via. The Port of Thunder Bay website (Port of Thunder Bay, 2023).

7.2.5.4 Transportation and Energy Infrastructure – Utilities

Hydro One is one of the main providers of electricity which services Indigenous and non-Indigenous communities located within the Transportation and Energy Infrastructure local study area. Additionally, Synergy North Corporation and Atikokan Hydro Inc. provide services to the Thunder Bay Metropolitan Area and the Town of Atikokan respectively. The main natural gas provider within the Transportation and Energy Infrastructure local study area is Enbridge Gas and various telecommunication providers are available including but not limited to Bell, Rogers, Shaw, Tbaytel, Teksavy, Telus, and Virgin.

An assessment was conducted to calculate the number of times the Project footprint intersected utility infrastructure which is detailed below:

- Number of times utility lines are intersected by the Project: 50 times; and
- Number of times natural gas pipelines are intersected by the Project: 5 times.

The route selection for the transmission line ROW was completed in such a way to avoid disrupting existing utilities as much as possible. Section 7.2.7.3.2 provides additional detail regarding potential effects, mitigation measures, and net effects related to changes in demand for energy infrastructure and capacity. Table 7.2-21 lists electricity providers in the Transportation and Energy Infrastructure LSA as of 2023.

Table 7.2-21: Utility Providers in the Transportation and Energy Infrastructure Local Study Area

Community	Electricity Service Providers	Gas Service Provider	Telecommunications Service Provider

Thunder Bay Metropolitan Area	• Hydro One
	• Synergy North Corporation
		• Enbridge	• Various internet, cable, and cellular providers including, but not limited to:
			  • Bell;
			  • Rogers;
			  • Shaw;
			  • Tbaytel;
			  • TekSavy
			  • Telus; and
			  • Virgin.

City of Dryden	• Hydro One	• Enbridge	• Various internet, cable, and cellular providers including, but not limited to:
			  • Bell;
			  • Rogers;
			  • Shaw;
			  • Tbaytel;
			  • TekSavy
			  • Telus; and
			  • Virgin.

Town of Atikokan	• Atikokan Hydro Inc.
	• Hydro One
		• Enbridge	• Various internet, cable, and cellular providers including, but not limited to:
			  • Bell;
			  • Rogers;
			  • Shaw;
			  • Tbaytel;
			  • TekSavy
			  • Telus; and
			  • Virgin.

Source: (City of Dryden 2017; City of Thunder Bay 2022a; Hydro One 2020; Atikokan Hydro Inc 2022).

7.2.5.5 Community Services and Facilities – Non-Emergency, Emergency, and Social Services

7.2.5.5.1 Healthcare Services

A variety of healthcare services are available throughout the Community Services and Facilities LSA communities including hospitals, clinics, long-term and elder care facilities, family doctors and specialized care providers (e.g., dentists, mental health professionals, optometrists), as well as local and chain-operated pharmacies (e.g., IDA, Pharmasave, Rexall, Shoppers Drug Mart). Healthcare services are available for individuals residing within Indigenous and non-Indigenous communities located throughout the Community Services and Facilities LSA and include the Thunder Bay Metropolitan Area, City of Dryden, Town of Atikokan, as well as the greater District of Thunder Bay and District of Kenora.

Thunder Bay Metropolitan Area

The Thunder Bay Metropolitan Area operates the largest healthcare centre in northwestern Ontario. The Thunder Bay Regional Health Sciences Centre provides 375 beds and serves over 250,000 residents residing in the District of Thunder Bay and northwestern Ontario. The Thunder Bay Regional Health Sciences Centre is one of the largest employers in Thunder Bay and has approximately 2,800 staff, 500 volunteers and 100 patient family advisors with an operating budget of more than $300 million (Thunder Bay Regional Health Sciences Centre 2022a). The Centre is part of a larger healthcare network and serves the people of the Northwest Local Health Integration Network, which includes five sub-regions. The sub-regions include the following local health hubs:

- The District of Kenora Sub-Region includes three local health hubs: Dryden, Kenora and Red Lake;
- The District of Rainy River Sub-Region includes four local health hubs: Rainy River, Emo, Fort Frances, and Atikokan;
- The District of Thunder Bay Sub-Region includes five local health hubs: Greenstone, Manitouwadge, Marathon, Nipigon, and Terrace Bay;
- The Thunder Bay Metropolitan Area Sub-Region includes one local health-hub: Thunder Bay Metropolitan Area; and
- The Northern Sub-Region includes one local health-hub: Sioux Lookout (Thunder Bay Regional Health Sciences Centre 2022b).

Healthcare facilities and services available in the Thunder Bay Metropolitan Area include a variety of hospitals and clinics providing a wide range of services including, but not limited to, primary care physicians, clinic and hospital care, midwifery, mental health, addictions treatment, chiropractors, dentists, optometrists, and various other specialized medical professionals. There are over 16 types of pharmacies, several of which have multiple retail locations located within

the Thunder Bay Metropolitan Area and the rest of the Community Services and Facilities LSA including Rexall, Shoppers Drug Mart, IDA, Pharmasave and other local establishments. Additional healthcare services within the Thunder Bay Metropolitan Area also includes home health care and wellness centres, as well as elder support care. Indigenous health care resources/supports are also available within the Thunder Bay Metropolitan Area and include (but are not limited to) the Anishnawbe Mushkiki – Aboriginal Health Access Centre, the Matawa Health Cooperative - Satellite Clinic, the Ontario Native Women's Association, and the Dilico Anishinabek Family Care (Walk-In Clinic) – Anemki Location (Northwest Healthline 2023).

Information from the Ministry of Health and Long-Term Care (MOHLTC) was available for the Thunder Bay Metropolitan Area regarding Emergency Medical Service (EMS) response times. In 2021, the Thunder Bay Metropolitan Area EMS met or exceeded its response time targets for two Canadian Triage and Acuity Scale levels (CTAS 1 and SCA, as defined below), information on targets for CTAS 2, CTAS 3, CTAS 4, and CTAS 5 were not available for the Thunder Bay Metropolitan Area (MOHLTC 2022). The level of care required as described by the Canadian Triage and Acuity Scale is described below:

- SCA – Sudden Cardiac Arrest: Patient needs to be seen by physician immediately;
- CTAS 1 – Resuscitation: Patient needs to be seen by physician immediately;
- CTAS 2 – Emergent: Patient needs to be seen by physician in 15 minutes;
- CTAS 3 – Urgent: Patient needs to be seen by physician in 30 minutes;
- CTAS 4 – Less-urgent: Patient needs to be seen by physician in 60 minutes; and
- CTAS 5 – Non-urgent: Patient needs to be seen by physician in 120 minutes.

City of Dryden

The Dryden Regional Health Centre is a 41-bed acute care hospital providing ambulatory, diagnostic, and outpatient services to the region. The Dryden hospital provides full surgical services on a 24-hour basis and has more than 300 staff including physicians, nurses, and volunteers (Dryden Regional Health Care Centre 2022). The most recently published annual report (2018-2019) notes that there were 15,723 emergency room visits, 272,114 laboratory tests, 11,495 physiotherapy attendance days, 9,432 x-rays, 6,797 CT scans and 4,428 surgical day clinic visits (Dryden Regional Health Care Centres n.d.).

Healthcare facilities and services available in Dryden include primary care physicians, clinic and hospital care, midwifery, mental health, addictions treatment, chiropractors, dentists, optometrists, and various other specialized medical professionals. There are seven pharmacies located within the City of Dryden including IDA, Shoppers Drug Mart, Pharmasave, and Walmart Pharmacy. Additional healthcare services within the City of Dryden also include home health care, wellness, and Indigenous health care centres, as well as elder support care.

Indigenous health care resources/supports also available within the City of Dryden and include (but are not limited to) the Paawidigong First Nations Forum Inc, the Dryden Native Friendship Centre, and the Métis Nation of Ontario – Northwest Métis Council Community Support Services (Northwest Healthline 2023). Information from the Ontario Ministry of Health and Long-Term Care was not available for the City of Dryden regarding EMS response times.

Town of Atikokan

The Atikokan General Hospital is a 41-bed facility providing emergency, acute care, long-term care and a range of out-patient services. Health care services are provided by the Atikokan General Hospital to the residents of Atikokan and surrounding area. The hospital has approximately 120 employees and serves approximately 6,000 outpatients on a yearly basis. Physicians at this hospital provide 24-hour on-call coverage to the emergency department as well as medical direction and care for the patients and residents of the acute and long-term care beds. The hospital also administers and operates services such as mental health and addictions programs (Atikokan General Hospital, n.d.).

Healthcare facilities and services available in Atikokan include primary care physicians, clinic and hospital care, midwifery, mental health, addictions treatment, chiropractors, dentists, optometrists, and various other specialized medical professionals. There is one pharmacy (Rexall) in the Town of Atikokan. Information about additional healthcare services within the Town of Atikokan was not readily available.

Indigenous health care resources/supports are available within the Town of Atikokan and include the Atikokan Native Friendship Centre and the Atikokan Family Health Team (Northwest Healthline, 2023).

District of Thunder Bay

The TBDHU provides health programs and services to approximately 146,000 people across a geographic area of 235,531 square kilometre (km^2). Its main office is located in the Thunder Bay Metropolitan Area, with smaller offices operating in Red Rock, Terrace Bay, Geraldton, Marathon and Manitouwadge. The TBDHU provides a variety of services including family and child health, food safety courses, immunization and travel clinics, sexual health clinics, nutrition programs, and public health inspections (TBDHU 2022).

Additionally, NorWest Community Health Centres operates as a community-based organization offering primary health care and health promotion programs in areas within the District of Thunder Bay. The health centre also provides walk-in clinic/telemedicine services, as well as a primary care team comprised of physicians, nurse PR actioners, nurses, footcare nurses, and therapists. Outreach programs (i.e., Shelter House, Limbrick, and Assef Court) are also provided through the centre and the centre operates a mobile health unit servicing communities in the district as well as a diabetes mobile unit. The NorWest Community Health Centre has offices within the City of Thunder Bay, Longlac, Armstrong, and Kakabeka Falls (NorWest Community Health Centres 2023).

It is likely that other Indigenous communities located within the Community Services and Facilities LSA would utilize limited local healthcare services (e.g., wellness programs, mobile clinics) provided in-community, or services provided by the closest large municipality (e.g., Thunder Bay Metropolitan Area, City of Dryden, and Town of Atikokan).Information from the Ontario Ministry of Health and Long-Term Care was available for the Thunder Bay Metropolitan Area regarding EMS response times. In 2021, District of Thunder Bay EMS met or exceeded its response time targets for 4 Canadian Triage and Acuity Scale levels (CTAS 2, CTAS 3, CTAS 4, and CTAS 5), but failed to meet time standards for 2 Canadian Triage and Acuity Scale levels (CTAS 1 and SCA). Targets for CTAS 1 were not met within 1.0% of the target and SCA was not met within 3.0% of the target (MOHLTC 2022).

District of Kenora

The Kenora District Service Board provides land ambulance, pre-hospital care, integrated social services and health-related infrastructure through Northwest Emergency Medical Services (Northwest EMS) to Community Services and Facilities LSA communities, including Dryden, Ear Falls, Ignace, Kenora, Machin, Pickle Lake, Red Lake, Sioux Lookout, Sioux Narrows/Nestor Falls and nearby unincorporated areas (Kenora District Services Board, 2022a).

Ambulance bases are located in nine communities including Dryden, Ear Falls, Ignace, Kenora, Nestor Falls, Pickle Lake, Red Lake, Sioux Lookout and Sioux Narrows. The fleet of 26 vehicles includes 22 ambulances, one multi-casualty support vehicle, and three emergency response vehicles. Northwest EMS employs approximately 120 primary care paramedics and 10 administrative personnel (Kenora District Services Board, 2022b). In 2021, Northwest EMS received 19,137 calls and had an average response time of 14 minutes and 34 seconds (Government of Ontario 2022).

In 2021, Northwest EMS met or exceeded its response time targets for three Canadian Triage and Acuity Scale levels (CTAS 1, CTAS 3, CTAS 4), but failed to meet time standards for three Canadian Triage and Acuity Scale levels (CTAS 2, CTAS 5, SCA). Targets for CTAS 2 were not met within 0.5% of the target, CTAS 5 was not met within 4.8% of the target, and SCA was not met within 4.0% of the target (Government of Ontario 2022). Due to close proximity to Community Services and Facilities LSA communities, Migisi Sahgaigan (Eagle Lake First Nation), Fort William First Nation and Wabigoon Lake Ojibway Nation health care services were examined. No information about healthcare facilities or services was publicly available for Migisi Sahgaigan (Eagle Lake First Nation) and Wabigoon Lake Ojibway Nation. There is one family health clinic (Dilico Family Health Team) and one dental clinic (Anishinabek Dental Hygiene Clinic), which operates in Fort William First Nation and serves residents of the First Nation. The Dilico Family Health Team operates a walk-in clinic and provides family, community and personal support services, as well as mental health resources.

It is likely that other Indigenous communities located within the Community Services and Facilities LSA would utilize limited local healthcare services (e.g., wellness programs, mobile clinics) provided in-community, or services provided by the closest large municipality (e.g., Thunder Bay Metropolitan Area, City of Dryden, and Town of Atikokan).

7.2.5.6 Community Services and Facilities – Municipal Services

7.2.5.6.1 Educational Facilities and Services

Thunder Bay Metropolitan Area

The Thunder Bay Metropolitan Area is the largest educational hub within the Community Services and Facilities LSA and has three different school boards that operate within the city. These are the Lakehead District School Board – which operates 17 elementary schools, three high schools and one adult school; the Thunder Bay Catholic District School Board – which operates 18 elementary schools and two high schools; and the Conseil scolaire de district catholique des Aurores boréales – which operates one elementary school and one high school (Conseil Scolaire de District Catholique des Aurores Boréales 2022; Lakehead District School Board 2022; Thunder Bay Catholic District School Board 2022).

Within of Thunder Bay Metropolitan Area, there are also two private schools, two colleges, one university, one medical school and one adult education centre. These include the Northern Ontario School of Medicine, Lakehead University, and Confederation College. The Seventh Fire Education Institute is also located in the Thunder Bay Metropolitan Area and is an Indigenous educational institute established by Lac des Mille Lacs First Nation. The Seventh Fire Education Institute (Lac des Mille Lacs Education Centre) provides daycare, elementary, and high school education to students with a focus on Indigenous youth (21 years of age and younger) living in Thunder Bay; however, non-Indigenous students are also welcome (Lac des Mille Lacs First Nation 2023).

City of Dryden

The City of Dryden offers a number of educational facilities and service options for people living in the area. School boards that operate in the City of Dryden include the Keewatin Patricia District School Board – which operates two elementary schools and one high school; the Northwest Catholic District School Board – which operates one elementary school; and the Conseil scolaire de district catholique des Aurores boréales – which operates one elementary school. There is one private school, the True North Christian Academy, which is located within the city, and a satellite campus for Confederation College (Conseil Scolaire de District Catholique des Aurores Boréales 2022; Keewatin Patricia District School Board 2022; The Northwest Catholic District School Board 2022;).

Town of Atikokan

The Town of Atikokan offers limited resources pertaining to educational facilities and services. School boards that operate in the Town of Atikokan include the Rainy River District School Board – which operates two elementary schools and one high school; and the Northwest Catholic District School Board – which operates one elementary school (Rainy River District School Board 2022; The Northwest Catholic District School Board 2022).

District of Thunder Bay and District of Kenora

Additional educational facilities are found within the greater District of Thunder Bay and District of Kenora, in the Town of Upsala and Town of Ignace, and include day care facilities and elementary schools.

Educational Facilities Located in Indigenous Communities

Educational facilities are also found in a number of Indigenous communities located in the LSA including the following communities:

- Lac des Mille Lacs First Nation: There is one school (Lac des Mille Lacs Education Centre) located in the City of Thunder Bay which offers both elementary and high school education.
- Lac La Croix First Nation: There is one school (Zhingwaako Za'iganing School [Lac La Croix School]) located in the community which offers both elementary and high school education.
- Mitaanjigamiing First Nation: There is one satellite location of the Seventh Fire Education Institute (established by Lac des Mille Lacs First Nation) which offers high school level education services.
- Migisi Sahgaigan: There is one school (Migisi Sahgaigan School) located in the community which offers elementary school education.
- Ojibway Nation of Saugeen: There is one school (Ojibway Nation of Saugeen School) located in the community which offers elementary school education.
- Seine River First Nation: There is one satellite location of the Seventh Fire Education Institute (established by Lac des Mille Lacs First Nation) which offers high school level education services.
- Wabigoon Lake Ojibway Nation: There is one school (Waabshki Penasi School) located in the community which offers both elementary and high school education.

In cases where educational facilities and/or services are not available in Indigenous communities (at either or both elementary/high school levels), students are transported to other nearby communities which include but are not limited to Dryden, the Thunder Bay Metropolitan Area, Fort Frances, Sioux Lookout, Mine Centre, Ignace, and the Town of Atikokan. A more detailed breakdown of educational facilities is found in Table 7.2-22.

Table 7.2-22: Educational Facilities in the Community Services and Facilities Local Study Area

Location	School Board/ Administrator	Type of School

Thunder Bay Metropolitan Area	Lakehead District School Board	• Elementary Schools:
		  • Algonquin Avenue Public School
		  • C.D. Howe Public School
		  • Claude E. Garton Public School
		  • École Elsie MacGill Public School
		  • École Gron Morgan Public School
		  • Five Mile Public School
		  • Gorham and Ware Community School
		  • Kingsway Park Public School
		  • Lakehead Virtual Elementary School
		  • McKellar Park Public School
		  • McKenzie Public School
		  • Ogden Community School
		  • Sherbrooke Public School
		  • St. James Public School
		  • Vance Chapman Public School
		  • Westmount Public School
		  • Woodcrest Public School
		• High Schools:
		  • Hammarskjold High School
		  • Superior Collegiate and Vocational Institute
		  • Westgate Collegiate and Vocational Institute
		• Adult Learning
		  • Lakehead Adult Education Centre

Thunder Bay Metropolitan Area	Thunder Bay Catholic District School Board	• Elementary Schools:
		  • Bishop E.Q. Jennings
		  • Bishop Gallagher
		  • Corpus Christi
		  • Holy Cross
		  • Holy Family
		  • Our Lady of Charity
		  • Pope John Paul II
		  • St. Ann
		  • St. Bernard
		  • St. Elizabeth
		  • St. Francis
		  • St. Jude
		  • St. Margaret
		  • St. Martin

Location	School Board/ Administrator	Type of School

		• St. Paul
		• St. Pius X
		• St. Thomas Aquinas
		• St. Vincent
		• High Schools:
		  • St. Ignatius
		  • St. Patrick

Thunder Bay Metropolitan Area	Conseil scolaire de district catholique des Aurores boréales	• Elementary Schools:
		  • Catholic School Franco-Superior
		• High Schools:
		  • ÉSC de La Vérendrye

Thunder Bay Metropolitan Area	Other (Post-Secondary Education and Private Schools)	• Aviation Centre of Excellence • Confederation College • Dennis Franklin Cromarty School • Lakehead University • Negahneewin College • Seventh Fire Education Institute / Lac des Mille Lacs Education Centre (established by Lac des Mille Lacs First Nation) • Thunder Bay Christian School

City of Dryden	Keewatin Patricia District School Board	• Elementary Schools:
		  • New Prospect School (also offers nursery school)
		  • Open Roads Public School
		• High School:
		  • Dryden High School

City of Dryden	Northwest Catholic District School Board	• Elementary Schools: • St. Joseph's School
City of Dryden	Conseil scolaire de district catholique des Aurores boréales	• Elementary School: • École catholique de l'Enfant-Jésus
City of Dryden	Other (Post-Secondary Education and Private Schools)	• Confederation College – Satellite Campus • True North Christian Academy

Location	School Board/ Administrator	Type of School

Town of Atikokan	Rainy River District School Board	• Elementary Schools:
		  ◦ North Star Community School
		  ◦ Northern Lakes School
		• High Schools:
		  ◦ Atikokan High School

Town of Atikokan	Northwest Catholic District School Board	• Elementary Schools: ◦ St. Patrick's School

Couchiching First Nation	Other	• Elementary Schools:
		  ◦ Students are transported to other nearby communities.
		• High Schools:
		  ◦ Students are transported to other nearby communities.

Fort William First Nation	Other	• Elementary Schools:
		  ◦ Students are transported to other nearby communities.
		• High Schools:
		  ◦ Students are transported to other nearby communities.

Lac des Mille Lacs First Nation	Other	• Elementary Schools:
		  ◦ Students are transported to other nearby communities.
		• High Schools:
		  ◦ Students are transported to other nearby communities.

Lac La Croix First Nation	Other	• Elementary Schools:
		  ◦ Zhingwaako Za'iganing School (Lac La Croix School)
		• High Schools:
		  ◦ Zhingwaako Za'iganing School (Lac La Croix School)

Mitaanjigamiing First Nation	Other	• High Schools: ◦ Seventh Fire Education Institute satellite location (established by Lac des Mille Lacs First Nation)

Migisi Sahgaigan (Eagle Lake First Nation)	Other	• Elementary Schools:
		  ◦ Migisi Sahgaigan School
		• High Schools:
		  ◦ Students are transported to other nearby communities.

Location	School Board/ Administrator	Type of School

Nigigoonsiminikaaning First Nation	Other	• Elementary Schools:
		  ◦ Students are transported to other nearby communities.
		• High Schools:
		  ◦ Students are transported to other nearby communities.

Ojibway Nation of Saugeen	Other	• Elementary Schools:
		  ◦ Ojibway Nation of Saugeen School
		• High Schools:
		  ◦ Students are transported to other nearby communities.

Seine River First Nation	Other	• Elementary Schools:
		  ◦ Students are transported to other nearby communities.
		• High Schools:
		  ◦ Seventh Fire Education Institute satellite location (established by Lac des Mille Lacs First Nation)

Wabigoon Lake Ojibway Nation	Other	• Elementary Schools:
		  ◦ Waabshki Penasi School
		• High Schools:
		  ◦ Waabshki Penasi School

Source: (211 Ontario North 2023a; 211 Ontario North 2023b; 211 Ontario North 2022c; 211 Ontario North 2022d; Conseil Scolaire de District Catholique des Aurores Boréales 2022; Dryden Full Gospel Church 2022; Keewatin Patricia District School Board 2022; Lac des Mille Lacs First Nation 2023; Lac La Croix School 2023; Lakehead District School Board 2022; Ojibway Nation of Saugeen 2019; Rainy River District School Board 2022; The Northwest Catholic District School Board 2022; Thunder Bay Catholic District School Board 2022; Town of Atikokan 2022c).

7.2.5.6.2 Solid Waste Disposal

Solid waste disposal facilities consist of municipally-operated landfills. Table 7.2-23 lists the number of active, inactive (closed/non-operating) infrastructure and disposal facilities in the Community Services and Facilities LSA. Information on the number of proposed (new) solid waste infrastructure and disposal facilities was not available at the time of reporting.

Table 7.2-23: Solid Waste Infrastructure in the Community Services and Facilities Local Study Area

Community	Number of Active (Operating) Facilities	Number of Inactive (closed/non-operating) Facilities
Armstrong Area	3	8
Atikokan Area	7	25
Dryden Area	1	1
English River Area	2	1
Fort Frances Area	2	7
Ignace Area	2	9
Lac Seul Area	1	1
Lakehead/Thunder Bay Area	12	35
Shebandowan Area	8	19
Sioux Lookout	0	1
Wabigoon Area	2	9
Total Solid Waste Infrastructure Facilities in the Local Study Area	**40**	**116**

Source: (Google Earth 2020; MECP 2022).

Notes: Solid waste sites identified by MECP located in the Community Services and Facilities local study area include dumps, landfills, waste disposal areas within campgrounds, unauthorized, illegal, Ad Hoc, or historical sites.

Based on MECP data, there are currently 40 active (operating) and 116 inactive (closed/non-operating facilities) waste sites located within 120 km of the Project footprint. (Google Earth, 2020; MECP 2022). It is expected that solid waste will likely be disposed of at waste sites located within municipalities nearest to the Project footprint. The MacGregor Landfill, Mctavish Waste Disposal/Hauled Sewage Site, Oliver Paipoonge North and South Landfills, and the Thunder Bay Solid Waste and Recycling Facility are the main waste disposal sites located within the Thunder Bay Metropolitan Area, while the Town of Dryden Landfill services the City of Dryden and the Town of Atikokan Landfill serves the Town of Atikokan.

The approved and remaining capacities (m^3) for the MacGregor Landfill, Mctavish Waste Disposal/Hauled Sewage Site and Oliver Paipoonge North and South Landfills are not known and was not included in the MECP data as no information on capacities was provided for small landfills. The Thunder Bay Solid Waste and Recycling Facility is defined as a large landfill by MECP and data regarding capacities was available for this site. The approved capacity at the Thunder Bay Solid Waste and Recycling Facility 8,728,577 m^3, while the estimated current volume is 2,846,067 m^3. The approximate remaining capacity is 5,882,510 m^3.

7.2.5.6.3 Water and Wastewater Treatment

Water distribution and treatment services in the Community Services and Facilities LSA are provided by municipalities or through wells. A summary of water treatment and supply services are provided in Table 7.2-24. A summary of available sewage treatment services for the Thunder Bay Metropolitan Area, City of Dryden and Town of Atikokan is provided in Table 7.2-25.

Table 7.2-24: Water Treatment and Supply Services in the Community Services and Facilities Local Study Area

Community	Water Treatment Service/Supply (Treatment Type)	Capacity (Usage)
Thunder Bay Metropolitan Area	City of Thunder Bay Bare Point Water Treatment Plant	• System Rated Capacity: 113.5 million L/day • Average Flow: 41.9 million L/day • Maximum Flow: 69.6 million L/day
City of Dryden	City of Dryden Water Treatment Plant / Wabigoon Lake Intake	• n/a
Town of Atikokan	Town of Atikokan Water Treatment Plant	• System Rated Capacity: 6,048 m^3/day • Average Flow: 1,613 m^3/day • Maximum Flow: 2,888 m^3/day

Source: (City of Thunder Bay 2014; City of Thunder Bay 2021; Town of Atikokan 2021).

Notes: A combination of wells and intake lakes are used to supply water to more rural areas not serviced by the above-mentioned treatment plants. Sanitary services such as septic fields, holding tanks and pit privies may also be utilized for wastewater purposes.

L/day = litres per day; m^3 = cubic metres; m^3/day = cubic metres per day; n/a = not available; % = percent.

Table 7.2-25: Sewage Treatment in the Community Services and Facilities Local Study Area

Community	Sewage Treatment Service	Capacity (Usage)
Thunder Bay Metropolitan Area	Thunder Bay Water Pollution Control Plant	• System Rated Capacity: 84.5 million L/day • Average Flow: 71.9 million L/day • Maximum Flow: n/a
City of Dryden	Dryden Sewage Treatment Plant	• System Rated Capacity: 5,819 m^3/day • Average Flow: n/a • Maximum Flow: n/a
Town of Atikokan	Town of Atikokan Water Treatment Plant	• System Rated Capacity: 6,038 m m^3/day • Average Flow (Treated): 1,613 m^3/day • Maximum Flow (Treated): 2,888 m^3/day

Sources: (City of Thunder Bay 2017; Town of Atikokan 2021; Ministry of the Environment 2010).

Notes: A combination of wells and intake lakes are used to supply water to more rural areas not serviced by the above-mentioned treatment plants. Sanitary services such as septic fields, holding tanks and pit privies may also be utilized for wastewater purposes.

L/day = litres per day; m^3/day = cubic metres per day n/a = not available; % = percent.

7.2.5.6.4 Additional Community-Based Facilities and Services

Thunder Bay Metropolitan Area

The Thunder Bay Metropolitan Area has a number of community-based facilities and services including recreational facilities, parks and conservation areas and places of worship. Recreational facilities are outlined on the City of Thunder Bay's website and include eleven community centres, one conservatory, two golf courses, a number of public beaches, splash pads and pools, as well as over 100 city parks and more than 55 km of paved recreational trails (City of Thunder Bay 2022b). A number of different places of worship are available throughout the city, including various church denominations and one mosque (Thunder Bay News Watch 2022).

City Of Dryden

The City of Dryden has a recreational centre, which includes a fitness centre and a pool. The city also has an arena, an outdoor rink and multiple parks, beaches and walking trails for residents to use throughout the year (City of Dryden 2022b).

Town of Atikokan

The Town of Atikokan provides community-based facilities and services to its residents including a golf course, sports complex, arena and outdoor rinks, a fitness centre, baseball diamond, multiple parks and walking trails, as well as the Atikokan Recreation and Wellness Centre, which includes the town's indoor rink, a pool and a multi-purpose room (Town of Atikokan 2022d).

District of Thunder Bay and District of Kenora

Additional community-based facilities are found within the greater District of Thunder Bay and District of Kenora in and may include provincial parks, recreational areas, and places of worship.

7.2.6 Potential Project-Environmental Interactions

Potential Project-environment interactions were identified through a review of the Project Description and existing environmental conditions. The linkages between Project components and activities and potential effects to community well-being are identified in Table 7.2-26.

Table 7.2-26: Project-Environment Interactions for Community Well-Being

Criteria	Indicators	Project Construction Stage[(a)]*	Project Operation and Maintenance Stage	Project Retirement Stage	Description of Potential Project Environment Interaction

Population and Demographics	• Change to population and demographics considering:
	  • Population and demographics of the settlements in the Population and Demographics local study area;
	  • Size, location, and duration of anticipated workforce; and
	  • Location and availability of accommodation for the workforce.
		✓	–	–	Change in population and demographics.

Quality of Life	• Change to quality of life considering: • Nuisance Effects from Changes in Air Quality	✓	–	–	Changes in air quality which may result in nuisance effects.
Quality of Life	• Change to quality of life considering: • Nuisance effects from changes in ambient Noise and vibrations	✓	✓	✓	Changes in noise and vibration which may result in nuisance effects.
Quality of Life	• Change to quality of life considering: • Risks to public safety.	✓	–	✓	Change in public safety.
Quality of Life	• Change to quality of life considering: • The potential for undesirable interactions between Project workforce and communities.	✓	–	–	Potential social issues due to worker-community interactions.

Criteria	Indicators	Project Construction Stage[(a)]*	Project Operation and Maintenance Stage	Project Retirement Stage	Description of Potential Project Environment Interaction

Transportation and Energy Infrastructure	• Change in transportation and energy infrastructure considering:
	  ◦ Proximity to transmission lines, pipelines and other utilities in the Transportation and Energy Infrastructure local study area;
	  ◦ Proximity to roads, highways, rail lines and airports in the Transportation and Energy Infrastructure study area;
	  ◦ Distance and condition of existing access roads available for use; and
	  ◦ Capacity of local infrastructure
		✓	–	–	Change in demand for transportation infrastructure and capacity.
					
					Change in demand for energy infrastructure and capacity.

Community Services and Facilities	• Change to community services and facilities considering:
	  ◦ Proximity to active, inactive (closed), and proposed (new) waste management facilities in the Community Services and Facilities local study area;
	  ◦ Proximity to healthcare facilities in the Community Services and Facilities local study area (e.g., hospitals, clinics, etc.);
	  ◦ Proximity to educational facilities in the Community Services and Facilities local study area (e.g., schools, colleges, universities, etc.);
	  ◦ Proximity to community-based recreational facilities in the Community Services and Facilities local study area (e.g., community centres, libraries, etc.);
	  ◦ Proximity to places of worship in the Community Services and Facilities local study area; and
	  ◦ Capacity of the community services identified in the Community Services and Facilities local study area.
		✓	–		Change in demand for community services and facilities and capacity - non-emergency, emergency and social services.
					
					Change in demand for community services and facilities and capacity - municipal services.

✓ = A potential Project-environment interaction could result in an environmental or socio-economic effect.

– = No plausible interaction was identified.

Notes: For the interactions where potential effects have been identified in the table above, Section 7.2.7 further assesses these potential effects.

7.2.7 Potential Effects, Mitigation Measures, and Net Effects

This section presents the potential effects, appropriate mitigation measures and predicted net Project effects for community well-being. A summary of the potential effects, mitigation measures, and net effects are presented in Table 7.2-28.

While Hydro One always strives to avoid and mitigate potential effects to the natural and socio-economic environment, and restore areas that are affected by the Project, Hydro One acknowledges that there may be adverse effects that cannot be avoided, or that occur even when appropriate mitigation and restoration measures are employed. Because these net effects cannot be further avoided or mitigated, they are typically compensated for by undertaking positive environmental activities (e.g., community investment opportunities). For more information on how Hydro One will be offsetting net effects of the Project, see Section 10.0 of the EA.

Potential Increased Risks to Specified Populations (Gender-Based Analysis Plus)

With respect to the potential effects on community well-being, sections covering social issues (Section 7.2.7.2.4) and community services (Section 7.2.7.4.1) apply a Gender-Based Analysis Plus (GBA+) approach to identifying disproportionate impacts that identified issues may have on specific members of the local population.

GBA+ examines intersectional relationships between gender, age, ethnicity, race, religion, legal status, and socioeconomic status to identify how these factors inform access to resources, activities, or any constraints individuals face in a particular context. GBA+ identifies and explores the various roles people fulfil in their households, communities, workplace, political processes, and economy. These different roles may result in an asymmetrical division of power and access. Often, women and non-binary people have less access to, and control over, resources. These individuals may have less influence in decision-making processes, and greater perceived risks and stressors related to their own intersecting identities. In the context of this Project, the GBA+ assessment focused on members of the local population that are particularly vulnerable to potential Project effects, including but not limited to Indigenous women, low-income individuals, differently abled individuals, and Two Spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex, and asexual (2SLGBTQQIA) people living near the Project.

Information to inform GBA+ considerations was obtained from a number of sources, including government reports and peer-reviewed publications. Additionally, a review of relevant transmission lines and linear development projects was taken to identify related issues and concerns. Some research informing GBA+ considerations refer to impacts related to resource extraction industries, which are referenced where potentially applicable to this Project, as this Project encompasses similar factors associated with the resource extraction industry (i.e., the presence of resource camps and the potential need for a workforce that will include a non-local component). Regional information was not available from secondary sources for all potential sub-groups to inform GBA+ considerations. For example, some sections may address potential

impacts to Indigenous women or low-income older adults, but not to 2SLGBTQQIA, differently abled individuals or those experiencing mental health challenges, due to information limitations. This GBA+ analysis is not intended to be an exhaustive list of potential GBA+ related Project effects, but rather an analysis of potential impacts to specific populations from what is identified in the scope of potential effects outlined in this section.

7.2.7.1 Population and Demographics

7.2.7.1.1 Change in Population and Demographics

Potential Effects

To construct the Project, a peak workforce of approximately 220 construction employees is anticipated, dependent on the activities being completed (e.g., peak direct construction employment is expected to occur during the construction stage for foundation and structure assembly). Construction of the Project is expected to commence in 2024, once applicable permits and authorizations have been obtained. The duration of construction is dependent upon in-service requirements established by the Independent Electricity System Operator (IESO). At the time of writing, construction is expected to take approximately three to five years.

Local populations have the potential to be affected by an influx of workers required to construct and operate the Project. These workers, and potentially their families, can present challenges for communities in terms of municipal service provision, such as schools and health care, housing and infrastructure capacity, such as roads and utilities; however, some economic benefits may occur due to an increased need for local goods and services. A change in the local population also has the potential to change the character of a community for those existing residents, potentially causing disruption and out-migration.

Population change was identified as a community well-being indicator during the development of the Terms of Reference (ToR) for the Project. However, the evolution of the Project since the publication of the ToR included the decision to use temporary construction camps to house construction staff. With the use of camps to house construction workers, measurable increases in population are not anticipated to result in effects to the population or demographics of local communities, particularly related to the availability of housing/accommodations.

Temporary accommodation, such as motels/hotels, will only be used in instances where camps cannot accommodate the full workforce or to meet specific logistical requirements where available. The presence of the workforce and the construction camps and the use of local accommodation, if needed, will be temporary as the workforce will move along the corridor of construction sites. Their short-time presence in any given area along the ROW is not predicted to result in measurable population changes in these areas.

Based on a review of hotel accommodations in Population and Demographics LSA communities (see Section 7.2.5.1 for details), it is expected that the Population and Demographics LSA communities have sufficient accommodations to support the potential need with ample provision

in Thunder Bay and Dryden and moderate provision in Atikokan. This review did not account for private accommodation rentals via platforms such as AirBnB and VRBO.

The majority of workers will be housed in construction camps during the construction period. Workers will be housed primarily in three temporary construction camps which can accommodate approximately 350 employees each. Should there be any overflow, contingency or activities located close to a community, workers will be housed in hotel accommodations in Thunder Bay, Atikokan, and Dryden, where appropriate and available. At the time of writing, it is not known how many workers from outside the area will be required and how many will be sourced from Population and Demographics LSA communities. However, local hiring will be prioritized to the extent practicable.

Most construction employment will be temporary, related to specific construction activities, and dispersed across the Project footprint. However, many positions will be highly technical in nature, requiring a trained workforce (Section 7.3.6 describes the construction workforce composition in more detail). It is expected that local trades and technical contractors in the Community Services and Facilities LSA will be used, to the extent practicable. Some positions may be filled by non-local workers as needed. The small amount of employment associated with site clearing, camp workers and other entry level tasks may be filled by local labourers.

As much of the construction workforce will be housed at the temporary Project construction camps and any non-local workers not housed at the temporary construction camps would only require short-term accommodation in Thunder Bay, Atikokan, or Dryden, the Project is not anticipated to result in measurable change in population (either temporary or permanent) in the Population and Demographics LSA communities. Given the short-term nature of the construction period, availability of accommodation in the Project-specific temporary construction camps, and the limited number of non-technical employment opportunities, temporary workers from outside of the Population and Demographics LSA are not expected to relocate permanently to the Population and Demographics LSA and are not anticipated to relocate their families to the LSA communities, thereby drawing on local services and infrastructure (given the short-term nature of many positions). Similarly, residents employed by the Project who live in the Population and Demographics LSA are not anticipated to relocate their families to other Population and Demographics LSA communities as Project construction continues along the transmission line ROW.

Gender-Based Analysis Plus Considerations

In Canada, research shows that housing pressures faced by regions impacted by economic waves and worker in-migration include limited availability of all housing types, increased costs of housing and rent, and low availability of vacant properties (Ryser et al. 2014). As noted above, much of the construction workforce will be housed at the temporary Project construction camps with a limited number of non-local workers requiring short-term accommodation in Thunder Bay, Atikokan or Dryden.

Single-parent households, women seeking to escape intimate partner violence, and low-income, unemployed, and underemployed individuals can face increased challenges finding suitable housing. Low-income older women living alone may incur higher housing costs compared to other older adult groups in regions experiencing influxes of new workers, as low-income older women may not have the financial resources to cover expenses in competitive housing markets (Ryser and Halseth 2011).

Mitigation Measures

Construction camp accommodation will be maximized to the extent possible and temporary accommodations only used should there be overflow or to realize geographic efficiencies for short-term operational logistics. Workers are not expected to relocate themselves or their families to the Population and Demographics LSA communities permanently. Local hiring and procurement where practicable will be supported to limit the number of out-of-area workers required. These mitigation measures are anticipated to minimize any change to the local population.

Net Effects

With the use of camps to house construction camps, temporary increases in population are not anticipated to result in effects on the population of local communities, particularly related to the availability of housing/accommodations. As a result, there are no net effects anticipated to the population and demographic profile of the Population and Demographics local study area.

7.2.7.2 Quality of Life

7.2.7.2.1 Change in Nuisance Effects due to Changes in Noise and Vibration

Potential Effects

The potential Project nuisance effects (under the Quality of Life criterion) were assessed taking into consideration the changes in noise levels due to Project construction, operation, maintenance, and retirement activities, as well as the potential for these changes to result in nuisance effects on sensitive human receptors identified within the Project ROW to 1,500 m away – or the edge of the Quality of Life LSA (Table 7.2-9).

Excessive noise from a magnitude and frequency perspective can result in annoyance or nuisance to human points of receptors (POR). However, perception of noise, including perception of whether noise is a nuisance, is subjective.

A qualitative assessment of noise effects was conducted (Section 6.9) and potential effects, mitigation measures, and net effects are discussed in Section 6.9.8. This study concluded that:

- Noise emissions from construction stage activities have the potential to increase noise levels at PORs due to use of construction equipment, helicopter use, cable splicing, use of temporary aggregate pits;

- Vibration emissions from construction stage activities could increase existing vibration levels at PORs due to use of construction equipment and blasting; and
- Noise emissions from operation and maintenance stage activities have the potential to increase noise levels at PORs due to maintenance and inspection of the ROW, fencing, transmission line, conductors, tower foundations, permanent access roads, operations of transformer stations, and electricity transmission.

Mitigation Measures

Numerous mitigation measures will be implemented to minimize the potential impact of noise emissions (i.e., Section 6.9.8). Primarily, Hydro One and its contractors will comply with local municipal noise by-laws and the MECP Model Municipal Noise Control Bylaw (i.e., NPC-115). A complaint resolution mechanism will be developed whereby people can contact Hydro One if they have noise concerns. In addition, construction activities will typically occur during one 10-hour shift per day, generally within the daytime period (i.e., 07:00 to 18:00). Night-time work is not anticipated. In the event construction will occur beyond the daytime period, Hydro One and its contractors will review and implement applicable mitigation measures.

As described in Section 6.9.8, mitigation measures will be implemented to minimize the potential impact of vibration from general construction activities. A complaint resolution mechanism will be developed whereby people can contact Hydro One if they have or perceive vibration concerns. Construction activities will typically occur during one 10-hour shift per day, generally within the daytime period (i.e., 07:00 to 18:00). Night-time work is not anticipated. In the event construction will occur beyond the daytime period, Hydro One and its contractors will review and implement applicable mitigation measures.

As described in Section 6.9.8, during construction blasting activities, Hydro One and its contractors will ensure that blasts are carried out in compliance with applicable structure impact vibration limits, including the OPSS 120 and NPC-119. Mitigation measures are included in Section 6.9.8 to minimize the potential of human annoyance due to construction blasting activities.

The vibration mitigation necessary to minimize the potential blasting vibration effects during Project construction will be incorporated into Project design. This mitigation includes reducing the explosive charge weight detonated at a given instant within the blast, staggering the detonations, and using blast mats. Such mitigation strategies will be outlined specifically within the Blasting Management Plan prepared by Hydro One and its contractor(s).

As described in Section 6.9.8, during operations and maintenance activities, Hydro One and its contractors will comply with the Ontario Hydro Protocol, local municipal noise by-laws, the MECP Model Municipal Noise Control Bylaw (i.e., NPC-115) and MECP's NPC-300. Hydro One will notify Indigenous communities, landowners, and other stakeholders along the ROW of planned maintenance activities involving helicopter use.

Transformer stations will continue to operate in accordance with an Environmental Compliance Approval or Environmental Activity Sector Registration. In addition, noise abatement equipment on machinery will be properly maintained and in good working order through regular maintenance and inspection. Where reasonable and practical, vehicles and equipment will be turned off when not in use, unless weather and/or safety conditions dictate the need for them to remain turned on in a safe operation condition.

Access roads will be designed to minimize the need for reversing to minimize the use of backup beepers, where reasonably possible. Nearby Indigenous communities, landowners, and other stakeholders along the ROW will be notified of the planned construction schedule before the start of construction activities.

Net Effects

Noise emissions and vibrations during the construction and operation and maintenance, stages are predicted to have a net effect resulting from changes in ambient noise and vibration levels that have the potential to impact quality of life for human receptors at the PORs and was therefore carried forward to the net effects characterization (Section 7.2.8).

7.2.7.2.2 Change in Nuisance Effects due to Changes in Air Quality

Potential Effects

The potential Project nuisance effects on quality of life were assessed taking into consideration the changes to air quality from fugitive dust emissions during the Project construction stage and potential for these changes to result in nuisance effects on sensitive human receptors.

The potential sources of air and fugitive dust emissions are from equipment, vehicles and activities associated with construction of the Project. Specifically, construction activities have the potential to temporarily affect local air quality in the immediate vicinity of the Project. Emissions from construction are primarily comprised of fugitive dust (i.e., particulate matter that is suspended in air by wind action and human activity) and tailpipe emissions (i.e., CAC) from the movement and operation of construction equipment and vehicles.

Acceptability of fugitive dust and perceived nuisance effects will vary with individuals and is likely to vary based on previous experience as well as characteristics of the dust emission and frequency, duration and intensity of the occurrences. While thresholds or standards specific to nuisance dust are not available, health-based air quality standards such as the Ontario Ambient Air Quality Criteria and the National Ambient Air Quality Standards provide goals for particulate matter (PM) and outdoor air quality that protect public health, the environment, or aesthetic properties of the environment.

A conservative screening assessment was completed to assess potential effects on air quality. In Ontario, there are no applicable regulatory limits for air quality emissions from construction activities. Therefore, predicted concentrations were assessed against the Project indicators that provide an indicator of good air quality. The results of the screening assessment indicate that predicted concentrations from Project activities, and predicted concentrations from Project

activities in combination with background air quality for indicator compounds, are below the relevant regulatory criteria within approximately 100 m of the Project footprint for average assessed periods. Predicted concentrations decrease by as much as 40% approximately 100 m from the Project footprint.

A series of potential air sensitive receptors were identified using MNRF LIO data. The MNRF LIO spatial dataset identifies existing structures that include, but are not limited to, dwellings, garages, sheds and barns. These structures have been conservatively considered as sensitive receptors, but it is anticipated that a number of these structures may not qualify as sensitive receptors and would require further verification (e.g., sheds). In addition, First Nation reserve lands, provincial parks, conservation reserves, conservation authority administrative areas, and other protected areas (also described in Section 7.1 [Land and Resource Use]), Ontario trail network segments and Ministry of Health Service locations were also identified using this data and included as potential sensitive receptors. The number of existing potential receptors, within given distances to the Project footprint in the Quality of Life LSA, is summarized in Section 7.2.5.2.3. The spatial boundaries for the air quality local study area are limited to the Project footprint; a 2 km buffer on the transmission line ROW, a 1.5 km buffer on the transmission line footprints, and a 500 m buffer on access roads, supporting structures and aggregate pits (Section 6.9).

In terms of effects to community well-being from nuisance, receptors within 100 m are most likely to experience nuisance effects related to land clearing, material handling, construction vehicle emissions, fugitive dust from vehicles travelling on unpaved roads, and diesel generators at the construction camps. Air quality levels are still expected to remain within the regulatory criteria for PORs within 100 m as effects to air quality associated with construction activities are anticipated to be minimal due to their short duration and intermittent frequency, occurring at one location for short periods of time.

A screening assessment was completed to assess potential short-term effects on local air quality assuming a worst-case scenario of all activities occurring concurrently at the same location. For PORs located beyond 100 m, it is expected that background levels for air composition would return to a level typical to the air quality local study area. The screening assessment is described in Section 6.9.

Mitigation Measures

Where reasonable and practicable, vehicles and equipment will be turned off when not in use and will be regularly serviced, maintained and inspected for leaks. In addition, other dust control practices (e.g., wetting with water or a chemical dust suppressant) will be implemented, as appropriate. Dust-generating activities will be reduced, as practical, during periods of high wind. Multi-passenger vehicles will be used to transport personnel, where practicable.

If construction activities (e.g., clearing, foundations, structure assembly, structure erection and stringing) are being undertaken within 100 m of a confirmed occupied residence, Hydro One will assess the construction schedule, environmental conditions, and season and evaluate the need

for monitoring. Monitoring will be undertaken when these emission-generating activities have the potential to impact the receptor.

Air quality concerns will be addressed as they arise through a complaint resolution mechanism whereby persons can contact Hydro One if there are perceived air quality issues.

Net Effects

A net effect is predicted as a result of nuisance effects resulting from measurable changes in air quality levels that have potential to impact quality of life for human receptors at PORs in proximity to the Project. Therefore, a net effect of this Project-environment interaction is carried forward to the net effects characterization (Section 7.2.8).

7.2.7.2.3 Change in Public Safety

Potential Effects

The potential Project effects on public safety were assessed taking into consideration specific Project construction activities that could create physical hazards and negatively affect public safety (e.g., interactions with construction activities, risk of electrocution).

Clearing and maintaining the transmission line ROW, developing access roads, temporary laydown areas and construction camps, transporting workers, goods, and equipment between the site and source, and the assembly of towers are activities that may happen during Project activities that could pose risks to public safety. During operations there are Project components in the ROW from infrastructure like guyed wires which could present a trip hazard to people walking in the ROW.

Mitigation Measures

Public safety measures and procedures, including the following, will be applied by the contractor for Project construction:

- **Access Plan** – a Project-specific Access Plan for construction includes communication Project activities and mechanisms to limit accidental public access of the construction area. Existing public roads, highways, and private all-season roads will be used to the extent practicable to provide access to the ROW at strategic locations. Access from the road to the ROW will be controlled with signs, barriers, and using monitors or safety personnel where appropriate. In private land areas, the road requirements and traffic will be negotiated with each landowner.
- **Emergency Response Plan** – The contractor will maintain a Project-specific emergency response plan to facilitate potential emergencies for the Project. Plans are specific to Project construction stages and developed in coordination with local agencies to ensure readiness in the event of any impact or potential loss.

The following plans are also intended to be implemented to reduce effects to public and worker safety:

- Fire Prevention and Preparedness Plan;
- COVID-19 Pandemic Management Plan;
- Emergency Response Plan; and
- Worker of Standards of Conduct Policy.

Net Effect

The net effect of Project construction and operation and maintenance activities on public safety is expected to be highly unlikely with effective implementation of the mitigation measures summarized above. However, there is the potential to expose the public to safety risks, which could result in severe consequences; thus, this net effect is carried forward to the net effects characterization (Section 7.2.8).

7.2.7.2.4 Potential Social Issues due to Worker-Community Interactions

Potential Effects

Engagement with Indigenous communities has highlighted concern among community members related to issues such as drug and alcohol abuse and increased violent crime/vandalism might occur in communities as a result of an increased workforce. Challenges from a social perspective, such as addiction, homelessness, and human trafficking, in the LSA communities are presented in Section 7.2.5.2.4.3. Large-scale projects requiring a sizable workforce may have the potential to exacerbate social challenges which are present in already vulnerable communities and may not possess adequate capacity to address additional pressures.

To the extent possible, Hydro One and its contractor will source the workforce locally for the construction of the Project. However, if the necessary labour skills for construction cannot be sourced locally, labour will need to be sourced from other areas in Ontario or outside of Ontario. Employment of workers from outside the area is anticipated. The contractor will implement a Substance Abuse Program as one of the terms and conditions of employment for their employees. Impaired individuals will not be tolerated on worksites and individuals suspected to be under the influence of alcohol and/or drugs will be escorted out of the work area immediately and be dealt with as dictated by following the contractor's Substance Abuse Program. The contractor's Substance Abuse Program includes reasonable grounds testing and post-incident testing.

Additionally, the contractor will encourage employees who believe they may require the help provided by substance abuse experts and employee assistance plans to voluntarily request help by contacting their supervisor or safety advisor and by taking such steps as are necessary to ensure that he or she presents no safety risk to himself or herself or to others at the workplace. An employee requesting help will not be disciplined unless they have failed to comply with the alcohol and drug work rule. Workers must also report any prescription and non-prescription drugs including cannabis use.

The closest First Nation reserve to any construction camp is Wabigoon Lake Ojibway Nation (Wabigoon Lake 27), which is located 53 km from the closest camp. Migisi Sahgaigan (Eagle Lake First Nation) and Seine River First Nation (Seine River 23A) are also located 86 km and 93 km from the nearest camps, respectively. Couchiching First Nation (Couchiching 16A), Fort William First Nation (Fort William 52), Lac des Mille Lacs First Nation (Lac des Mille Lacs 22A1), Lac La Croix First Nation (Neguaguon Lake 25D), Nigigoonsiminikaaning First Nation (Rainy Lake 26A), Mitaanjigamiing First Nation, and Ojibway Nation of Saugeen have reserves which are located over 100 km from the nearest construction camps. The closest MNO office to any construction camp is the MNO – Atikokan Métis Council office, which is located 29 km from the closest camp. The MNO – Thunder Bay Métis Council office is located 178 km from the closest camp, the MNO – Northwest Métis Council office is located 70 km from the nearest camp, and the Red Sky Métis Independent Nation office is located 180 km from the nearest camp. The distances of Project components (including camps) to all communities and MNO offices are presented in Table 7.2-3.

In terms of non-Indigenous communities, the Town of Atikokan is closest and is located adjacent to (32 km away) the nearest potential camp location, the Thunder Bay Metropolitan Area is located 186 km away and the City of Dryden is located 63 km away. There may be a greater chance of effects related to social issues in communities located in closer proximity to construction camps such as the Town of Atikokan and the City of Dryden. The Town of Atikokan has the highest likelihood of being impacted by effects related to construction camps, while City of Dryden and the Thunder Bay Metropolitan Area are located at increased distances from the camp locations, lessening the likelihood that workers may travel to them when off shift.

Smaller unincorporated communities located within the (unorganized) districts of Thunder Bay, Rainy River, and Kenora are also located in close proximity to potential camp locations, as follows:

- Camp L13 is located along Highway 11 and is approximately 9.7 km southeast of Sapawe and 65.8 km west of Kashabowie.
- Camp L15, Camp L17, Camp L18 and Camp L23 are located along Highway 17 and are approximately 12.5 km northwest of the Township of Ignace and approximately 43 km southeast of Borups Corners.
- Camp L16 is located along Highway 623 and is approximately 2.3 km south of Sapawe and Kawene.
- Camp L20, Camp L22, and Camp L24 are located east of White Otter Lake and are accessible via Anne Bay Road the closest settlement area is the Town of Atikokan, approximately 85 km away.
- Camp L25 and Camp L26 are located along Highway 17 and are approximately 37.2 km northwest of the Township of Ignace and approximately 18 km southwest of Borpus Corners.

Locating construction camps a considerable distance from reserves/communities further deters workers travelling to them. In addition, the contractor will implement strict controls on access of unauthorized visitors to construction sites and camps.

Potential incidents and/or criminal offenses contributing to or exaggerating social challenges are described in Section 7.2.5.2.4.3. Although social challenges exist in all communities and are somewhat unavoidable, it is possible to identify those communities where effects are most likely to be experienced; however, a quantitative evaluation of change is not possible.

Gender-Based Analysis Plus Considerations

Social challenges within the LSA communities, such as addiction, homelessness, and human trafficking, have the potential to be worsened by the presence of large-scale projects requiring a sizable workforce (Kenora District Services Board, 2021; Kenora Online 2019; Northern Ontario Policy Institute 2020; Northern Ontario Business 2022a). These impacts may be disproportionately felt by specific members of the population that are already vulnerable to violence, human trafficking, and drug and alcohol abuse.

The National Inquiry on Missing and Murdered Indigenous Women and Girls (MMIWG), has noted that industries that create environments with transient workforces have the potential to contribute to "increased rates of drug- and alcohol-related offences, sexual offences, domestic violence, and gang violence, as well as sex industry activities in the host communities… disproportionately impact[ing] Indigenous women, girls, and 2SLGBTQQIA people" (MMIWG 2019). In Canada, research has shown a potential linear relationship between "work camps" associated with the resource extraction industry, and a rise in crime, sexual violence, and the trafficking of Indigenous women (MMIWG 2019; Standing Committee on the Status of Women 2022). Specific factors identified in this link, as illustrated in the MMIWG inquiry, include rotational shift work, workplace sexual harassment, substance abuse, economic instability, and a predominantly transient workforce, all of which can contribute to an escalation in violence against Indigenous women living in proximity to these camps (MMIWG 2019).

There are 11 gender-based violence shelters in the LSA, providing temporary residence and supports for women experiencing domestic and sexual violence. If a rise in gender-based violence were to occur, existing support services may face capacity issues. Additionally, remote locations of project sites and Indigenous communities can result in low reporting rates of sexual violence and trafficking (MMIWG 2019).

In addition to facing increased risk of adverse social effects from projects with transient workforces, Indigenous women, girls, and 2SLGBTQQIA people often do not have equitable access to the economic benefits these industries can provide (MMIWG 2019). This was echoed in The House of Commons' Standing Committee on the Status of Women report, *Responding to the Calls for Justice: Addressing Violence Against Indigenous Women and Girls in the Context of Resource Development Projects* (2022), which found that "the threat of [Indigenous women and girls] experiencing violence in their communities can mean that they choose to alter their daily activities to ensure their safety… [and choose] not to visit certain sites or not to participate

in select activities.” This has the potential to result in participation barriers for Indigenous women to be employed by the Project, or in proximity to the Project. Additionally, witnesses before the Standing Committee “explained that social and economic changes in Indigenous communities caused by resource development projects can lead to family breakdowns, increased human trafficking, and a rise in substance use and addiction problems in communities” (Standing Committee on the Status of Women 2022).

Section 7.7 and 7.8 of this Final EA Report outline potential project effects to First Nations and Métis rights, interests and use of land and resources, including concerns raised at First Nation community meetings related to potential changes in the availability of harvested resources. As discussed in these sections, the construction stage of the Project will result in removal and disturbance to some areas of fish and wildlife habitat, and removal of vegetation within the Project Footprint; thereby potentially impacting Indigenous Nations participation in traditional activities. This is also reflected in the MMIWG inquiry, which highlights Indigenous women’s concerns about the effects of extractive industry activities on traditional practices that rely on maintaining the integrity of the environment. Degradation of ecological integrity can, in turn, impact food security.

Research has shown that the intake of traditional foods over market foods, even in limited amounts, improves Indigenous diet quality; therefore, as the proportion of traditional foods in the diet of Indigenous People decreases, "so does the diet quality, which may lead to changes in physical health status and the development of chronic diseases” (Shafiee et al. 2022). Research has further shown that women (both Indigenous and non-Indigenous) are particularly vulnerable to food insecurity, as they may skip meals or cut meal sizes to allow other members of the family to eat (Collins 2009). Households relying on social assistance programs, renters, lone parent women-led households, and Indigenous Peoples have been found to be disproportionately at risk of food insecurity (PROOF 2022). In 2021, food insecurity was reported by 63.1% of households relying on social assistance programs, 25.9% of renters, 38.0% of lone parent women-led households, and 30.7% of Indigenous Peoples (PROOF 2022).

See Section 7.7.10.2 of this Final EA Report for mitigation measures related to potential changes in the availability of harvested resources.

Mitigation Measures

The contractor's Substance Abuse program is a term and condition of employment for its employees. Impaired individuals will not be tolerated on worksites. Individuals suspected to be under the influence of alcohol and/or drugs will be escorted out of the work area immediately and be dealt with as dictated by following the contractor's Substance Abuse Program, which includes reasonable grounds testing, and post-incident testing. The contractor will encourage employees who believe they may require the help provided by substance abuse experts and employee assistance plans to voluntarily request help and requesting help will not result in employees being disciplined unless they have failed to comply with the alcohol and drug work rule. An employee who believes that they may be unable to comply with the alcohol and drug

work rule must seek help, by contacting their supervisor or safety advisor and by taking such steps as are necessary to ensure that they present no safety risk to themselves or to others at the workplace. Workers must report any prescription and non-prescription drugs including cannabis use. Worker camps will also have policies that forbid the consumption of drugs and alcohol on camps.

Hydro One recognizes the sensitivity and concern related to temporary construction camps where workers are brought temporarily to the area to support construction. Hydro One requires a strong health and safety management system and a commitment to following utility best practices. Hydro One incorporates public health and safety into business decisions and will implement the following policies related to the operation of the construction camps and other GBA+ considerations:

- The Project contractor will create safety protocols applicable to the project area (including construction camps). For example, the Project contractor will maintain a Substance Abuse program, which is a term and condition of employment for their employees.
- Workers will be required to adhere to an Employee and Contractor Code of Conduct that outlines appropriate behavior at the worksite, temporary construction camps, in Quality of Life LSA communities, and while travelling to and from work rotations.
- The contractor will support community safety programs for the First Nations close to the proposed Project.
- The contractor will implement mandatory training for all employees on gender-based and sexual violence, anti-racism, cultural safety, diversity and inclusion, and the effects of colonization on Indigenous peoples.
- Transport to the construction camp and site will generally be completed using multi-passenger vehicles; personal vehicles will be minimized to the extent practicable.
- The contractor will prohibit non-Project personnel from riding in company vehicles (including hitch hikers).
- The contractor will maintain a set of camp rules that describes what is and is not acceptable practice in camp, including a curfew, and prohibited items, actions or practices.
- Only authorized individuals will be allowed within the construction camp and visitors will be required to check in with security upon arrival. Bringing an unauthorized individual onto site would be a violation of the terms and conditions of employment.

- The contractor will develop and implement systems for tracking and reporting incidents of harassment and violence. Any incidents that violate the contractor policies or rules and require immediate attention or action, will be appropriately addressed by Project leadership, which may include termination.
- The contractor will explore options to increase the representation of Indigenous women and gender diverse individuals in the workforce at all employment levels.
- Hydro One will work with Gwayakocchigewin Limited Partnership on a community-led committee to provide feedback and develop additional mitigation measures, where required.

As noted, construction camps will be located a considerable distance from communities and towns, minimizing the use of personal vehicles reduces the likelihood that workers will travel these distances. Hydro One's Code of Business Conduct details their expected standards in order to deliver projects in a manner than minimizes risks to staff and the general public. This code of conduct should be reviewed by and adhered to by Project personnel at all times.

A formal complaints process will be implemented that allows, emergency services, municipalities, and community members to share any issues and concerns with Hydro One and its contractor(s) during the construction stage. Monitoring of complaints and issue resolution will help minimize or remove any ongoing effects to community well-being.

Net Effect

There is a net effect predicted after implementation of the mitigation measures described above as, due to the nature of human behaviour, potential interactions cannot be completely ruled out. This effect is primarily expected to be felt in those communities closest to camp sites including those described throughout Section 7.2.7.2.4 since the likelihood of workers travelling significant distances when off shift, and with limited transportation is low. This net effect is carried forward to the net effects characterization (Section 7.2.8).

7.2.7.3 Transportation and Energy Infrastructure

7.2.7.3.1 Change in Demand for Transportation Infrastructure and Capacity

Transportation of the Project construction workforce, materials, and goods could increase use of and demand on road, air and rail transportation services.

Potential Effects

The potential Project effects of road, air and rail transportation (under the transportation and energy infrastructure criterion) were assessed taking into consideration Project-induced traffic, such as route usage and types of vehicles utilizing highways and local road networks during Project construction, and local traffic conditions including traffic volumes and safety (e.g., collision data), as well as the capacity of existing road, air, and rail transportation infrastructure to support changes in use and services.

Road Transportation

Highways, municipal roads, and forestry roads will be used to support the Project according to the access plan prepared by the contractor. In some cases, inactive roads will require improvements including clearing of right-of-way vegetation, grading, re-installation of watercourse crossings or widening. New access roads will be created and primarily confined to the transmission line ROW. Approximately 30% of new access roads will remain following completion of Project construction. Reclamation of temporary roads after construction activities will be completed unless otherwise required by Hydro One for ongoing Operation and Maintenance of the facilities and/or infrastructure.

During Project construction, existing highways, local roadways, and access roads will be used to transport workers to the Project areas (including local workers living in the Transportation and Energy Infrastructure LSA and non-local workers from local airports). Non-local workers may be transported from the airports by charter bus. Local workers living within the Transportation and Energy Infrastructure LSA may use their own vehicles to drive to nearby pick-up points, where they may then be transported via bus or van to the Project site(s). Local roads will provide access for vehicles and emergency responders. Equipment may be transported during construction using existing highways, local roadways, and access roads as well.

While attempts to source as many materials and consumables locally as possible will be made, construction materials may be required from outside the Transportation and Energy Infrastructure LSA and it is expected that the bulk of out-of-area construction freight will be transported by road and helicopter (in poorly accessible areas). Materials will generally be transported to the corridor using line trucks and flatbed transport trucks. Some specialty materials may be sourced from overseas including foundation and tower steel, conductor, and other specialty materials. Construction materials will be distributed from the temporary laydown areas using trucks, or other vehicles as dictated by the terrain or other environmental conditions. Off-road track units will be used where conditions are not suitable for trucks.

Sections of Highway 17, Highway 11, Highway 11B, Highway 72, Highway 102, Highway 601, Highway 622 and Highway 655 will be used to transport workers, materials, and equipment from the Transportation and Energy Infrastructure LSA communities (e.g., Thunder Bay, Atikokan and Dryden) to various segments of the Project, as well to transport construction waste to regional disposal facilities.

- The portion of the Project footprint from Thunder Bay to Shabaqua Corners will be accessed via Highway 11/17, Highway 102, Highway 589;
- The portion of the Project footprint from Shabaqua Corners to Atikokan will be accessed via Highway 17, Highway 11, Highway 11B and Highway 622; and
- The Portion of the Project footprint from Atikokan to Dryden will be accessed via Highway 17, Highway 11B, Highway 601, Highway 622, and Highway 655.

The ROW will primarily be accessed along Highway 17 and Highway 11 (Figure 7.2-).

The number of times the Project footprint intersected each highway was calculated in order to determine if they could potentially be impacted by construction, operation, maintenance, and retirement activities (e.g., transportation of workers, materials, equipment, and waste) and found that Highway 11, Highway 17 and Highway 622 were intersected more often in comparison to Highway 11B, Highway 72, Highway 102, Highway 527, Highway 601, Highway 603, Highway 655 and Highway 802. The number of times each highway was intersected by the Project footprint is detailed below:

- Highway 17: Intersected 36 times;
- Highway 11: Intersected 51 times;
- Highway 11B: Intersected twice;
- Highway 527: Intersected ten times;
- Highway 622: Intersected 23 times;
- Highway 72: Intersected four times;
- Highway 102: Intersected seven times;
- Highway 601: Intersected eight times;
- Highway 603: Intersected four times;
- Highway 655: Intersected three times; and
- Highway 802. Intersected once.

New and existing access roads will be needed for the preferred route. These are detailed in Table 7.2-27 below.

Table 7.2-27: Breakdown of Use of New, Improved and Existing Access Roads

Type of Road Required	Total Distance
Existing access road – no improvements required	549.1 km
Existing access road – potential improvements required	303.8 km
New access road (preferred)	329.6 km
New access road (alternative)	117 km

km = kilometre

Temporary and permanent access roads will be required during the construction and operation and maintenance stages of the Project. During the construction stage, temporary access roads will be required for clearing, site preparation, construction towers, and for cleanup/site restoration. During the operation and maintenance stage, permanent access roads will be required for maintenance, emergency repairs, and vegetation management. Additional information regarding the construction of access roads is outlined in Section 3.0.

Hydro One's preference will be to use existing roads and trails to access the Project ROW Where travel along the ROW with heavy equipment is not possible due to terrain, ground conditions, or environmental sensitivities, Hydro One and its contractors will be required to construct new access roads, as appropriate. Permits or authorizations for new access roads, water crossings, or improvements to existing access roads on Crown land will be obtained prior to construction, as applicable. Access roads may be located along existing roads if situated within a provincial park and may be located outside the Project ROW in certain areas to reduce the number of watercourse crossings or where the Project ROW crosses difficult terrain. Some access roads may be retained permanently to support long-term inspection and maintenance activities and for multiple use/integration with other industrial operations (e.g., forestry operations).

The number, location, and characteristics of existing and proposed new access roads will be refined through detailed planning work and consultation. A preliminary access plan has been included as part of the Project footprint and is shown on the preliminary Project footprint map book in Appendix 3.0-B. This includes the following categories of access roads:

- New Access Road – Preferred – These roads are the preferred option to be used for construction. Approximately 329.6 km of new access roads are planned to be constructed.
- New Access Road – Alternate – These roads are alternatives that could be used during construction if there are constraints identified for the preferred new access road. It is expected that both the preferred and alternate access roads would not be used during construction, but both have been included as part of the Project footprint as a conservative measure so that environmental effects are not underestimated. Approximately 117.0 km of new access roads may be used dependant on constraints identified.
- Existing Access Road – Potential Improvements – These are existing roads that require minor improvements, such as clearing of regrowth, surfacing, widening, and water crossing repair. Approximately 303.8 km of existing access roads are planned to have potential improvements.

- Existing Access Roads – No Improvements – These are existing access roads that do not require improvements but could require regular maintenance such as grading and spot gravelling. Approximately 549.1 km of existing access roads are planned to have no improvements.

All access roads will be built or upgraded to have an average 6 m wide driving surface and an average 20 m vegetation clearing area. Construction access roads that are presented in the EA Report would be considered preliminary subject to refinement based on detailed planning.

Some existing access roads will be upgraded if required and temporary access roads will be reclaimed/rehabilitated following construction.

The number, schedule and type of haul trucks, as well as multi- and single passenger vehicles travelling on major highways will be determined at the detailed Project design stage. The schedule and type of haul trucks transporting equipment, supplies and waste will also be determined at the detailed Project design stage.

The current condition of existing roads in the Transportation and Energy Infrastructure local study area is not known; however, there is the potential for increased maintenance (i.e., gravelling or grading) due to increased traffic depending on the type and condition of the road.

Air and Rail Transportation

Out-of-area workers will be flown on commercial flights routed to Winnipeg or Thunder Bay.

Thunder Bay International Airport is the busiest airport in the region and will be the main hub for Project personnel arriving and departing. It is not anticipated that the number of staff requiring to be flown in would place any strain on the airport as an existing major air hub in the area. Winnipeg airport will also be used to transport staff as the closest airport to Dryden. No additional strain on capacity at Winnipeg airport is expected.

The Project is not expected to affect VIA Rail operations as there are currently no operational VIA Rail stops/services in the Thunder Bay Metropolitan Area, City of Dryden or Town of Atikokan. An existing rail network providing freight services is available in the Transportation and Energy Infrastructure LSA. Both the CNR and CPR rail lines pass through the Project area. The CNR runs westward in close proximity to Highway 11 and provides freight service between Thunder Bay, Fort Frances and Winnipeg, as well as international connections to the United States. The CPR line runs northwest in close proximity to Highway 17 and provides freight service Between Thunder Bay, Dryden, Kenora and Winnipeg. The railway network may be used where practical, to transport equipment and supplies to regional terminals, where it would be transported by road to the construction laydown, camp and other Project areas.

Mitigation Measures

Road Transportation

A Traffic Control Plan will be developed for the Project prior to the start of construction activities and will be shared with local municipalities as necessary. Damage to existing roads caused by Project activities will be monitored and Hydro One will communicate with the municipalities, local service and roads boards, and/or Ministry of Transportation where applicable jurisdiction applies, as required to ensure necessary repairs are completed.

Air and Rail Transportation

Hydro One with its contractor will communicate with air transportation providers and rail service providers to confirm Project needs to coordinate schedules, and to confirm service capacity.

Net Effects

There is a net effect predicted after implementation of the mitigation measures described above and in due to increased road traffic, particularly on Highway 17 and Highway 11. This net effect is carried forward to the net effects characterization (Section 7.2.8).

7.2.7.3.2 Change in Demand for Energy Infrastructure and Capacity

There is the potential for the Project to interact with existing energy utility infrastructure.

Potential Effects

Project effects on existing utilities (e.g., natural gas, existing transmission lines,) were assessed taking into consideration the Project footprint, existing capacity, service provision and ability to respond to incidents (e.g., power outages). The impact on existing utilities located within the Transportation and Energy Infrastructure local study area are not expected to be significant.

The Project footprint crosses five natural gas pipelines and there are 50 transmission lines that intersect the Project footprint. There is potential for the Project to affect the operation of existing utilities including electricity, gas, telecommunications, and water/wastewater services during scheduled power outages which may occur as a result of construction activities; however, the extent and the frequency of these outages are not currently known. There is also potential for the Project to result in unscheduled outages due to accidents, malfunctions, and/or natural disaster. For example, through accidental striking of pipelines during excavation work, outages during maintenance/upkeep activities, or due to severe weather events which may cause damage to existing infrastructure. No intentional shut down of gas pipelines is anticipated during construction; this would only happen as the result of an accidental strike requiring emergency shut down. Scheduled temporary electricity outages may occur in some sections of line where/when the new line is connected. These outages would be communicated in advance and likely short-term in duration.

Construction camps are not anticipated to result in additional stress on existing electricity infrastructure as the use of electricity is expected to be within the capacity of existing infrastructure.

Additionally, the Project will create positive effects through the provision of additional electrical capacity for the region, increasing the availability of reliable energy.

Mitigation Measures

Construction camp facilities will comply with the Ontario *Occupational Health and Safety* Act and required permits, authorizations and approvals will be acquired prior to their construction. Electricity at camp facilities will be supplied through the existing electrical grid or temporary diesel generators. Hydro One will ensure operation of existing utilities are not disrupted and work with its contractor to identify any existing infrastructure potentially affected by the Project and acquire locates to minimize accidental interactions.

Advance notice will be provided to nearby residences, landowners, and commercial operations, if planned disruptions to existing utilities will occur as a result of the Project.

Net Effect

There are net effects predicted after implementation of the mitigation measures described above as there is the potential for power outages which may inconvenience residents. These net effects are carried forward to the net effects characterization (Section 7.2.8).

7.2.7.4 Community Services and Facilities

7.2.7.4.1 Change in Demand for Community Services and Facilities and Capacity - Non-Emergency, Emergency and Social Services

There is the potential for the Project to increase demand on non-emergency, emergency, social and protective services.

Potential Effects

The potential Project effects on non-emergency and emergency health services, social and recreational services were assessed taking into consideration the changes in demand for these services due to the presence of the Project workforce and construction and the capacity of these services to support the incremental demand generated by the Project.

Based on the above analysis, there would be no new school age population moving into the Community Services and Facilities LSA. Temporary workers from outside the services and infrastructure LSA are unlikely to establish new relationships with non-emergency healthcare and social service providers (e.g., family physicians, optometrists, dentists, therapists), instead maintaining their existing health and social service providers in their places of origin.

Accidents and malfunctions, and worker injuries during Project construction have the potential to increase demand for emergency services (i.e., ambulance, fire response and emergency medicine) in the Community Services and Facilities LSA. Some response services including emergency medical, ambulance, and fire response services, would be drawn from the nearest community to the incident, in the unlikely event of a medical emergency requiring off-site attention or a fire emergency.

The out-of-area Project workforce will be temporarily housed at construction camps during the construction stage and therefore no increased demand on non-emergency and emergency health services, social and recreational services are expected. It is anticipated that hospitals in the City of Thunder Bay or City of Dryden would have the capacity to accommodate any emergencies that may occur as a result of the Project. Health services in the Town of Atikokan are likely to have less capacity for emergency or mass casualty situations should they occur.

Emergency services (e.g., fire and/or police services) may be provided by Indigenous communities which are located in close proximity to the Project pending that offering those services does not create unnecessary risk to the community. Indigenous communities which possess emergency services and are located in close proximity to the Project include Fort William First Nation (36 km away) and Wabigoon Lake Ojibway Nation (11 km away) (Section 7.2.5.2.4). It is considered unlikely that the Project would draw upon emergency services from Indigenous communities as adjacent municipalities generally maintain a larger quantity of staff, equipment, and resources required to respond to emergency situations (Table 7.2-13 and Table 7.2-14). Migisi Sahgaigan (Eagle Lake First Nation) (20 km away) and Lac des Mille Lacs First Nation (103 km away) were not considered due to resource limitations related to the provision of emergency services.

Some increased demand on emergency services may occur should a significant incident occur during construction, but this is expected to be unlikely and within the capacity of the local health network should it occur.

Hydro One will provide private, on-site security to address any security related concerns at temporary construction camps; however, local police would be called to address any criminal behaviour. Local police detachments could experience an increase in service demand as a result of the presence of the Project in the community (e.g., from any health and safety incidents or traffic incidents). Effects to the community from potential interactions between Project personnel and communities are evaluated in Section 7.2.7.

Gender-Based Analysis Plus Considerations

Though transient workers are not expected to have an impact on the long-term demand of health care services in the LSA, the Project could place additional short-term demand on healthcare services and infrastructure through three pathways.

The first pathway is through a potential increase in demand for health care services by a temporary mobile workforce (i.e., occupational injuries, traffic accidents, alcohol and drug-related health problems, or higher rates of infectious diseases), impacting the quality of care for the local population (i.e., increased patient wait times, increased workload in understaffed areas). This may disproportionately impact members of the local population who require regular healthcare services, such as older adults, immunocompromised individuals, differently abled individuals, or those experiencing mental health challenges.

Another pathway is through a potential increase in demand for health care services by the local population, due to potential increased rates of sexual violence (as described in Section 7.2.7.2.4), infectious diseases, traffic-related injuries, or health effects related to sensory disturbances. Regions seeing rapid in-migration of young, primarily male workers may experience increased public health problems related to sexually transmitted infections (STIs) (Goldenberg et al. 2008). While evidence suggests that these workers represent important targets for STI testing, youth often face socio-cultural and structural barriers, including "stigma, shame, and social discomfort; privacy concerns; and limited information," in addition to barriers related to clinic hours of operation (Goldenberg et al. 2008). As discussed, in Section 7.2.7.2.4, Indigenous women, girls, and 2SLGBTQQIA people are at increased risk of sexual violence due to the presence of work camps, ultimately increasing demand on local health and emergency services (MMIWG 2019).

Project-related construction could potentially place additional demand on emergency healthcare services by affecting timely delivery of services, such as through travel restrictions due to construction, or presence of slow-moving vehicles on roadways, slowing travel for access including for ambulances. This may impact at-risk members of the local population, such as older adults, immunocompromised individuals, differently abled individuals, or those experiencing mental health challenges, by potentially affecting timely access to health care and emergency services (Manitoba Hydro 2015).

Mitigation Measures

Construction camps will be located in remote areas near to construction activities along the ROW to reduce the use of non-emergency and emergency health services, social and recreational services by the out-of-area workforce. Section 7.2.7.2.4 outlines rules within camps and applicable to the temporary construction workforce to establish a strong health and safety management system and a commitment to following utility best practices including a Substance Abuse Program, limited use of personal vehicles from camps to local communities, curfew and visitor rules within camps as well as follow-up on non-compliance or incidents. Hydro One's Code of Business Conduct details their expected standards in order to deliver projects in a manner than minimizes risks to staff and the general public. This code of conduct is to be reviewed by and adhered to by Project personnel at all times.

The following types of controls will be implemented to address non-emergency health and safety issues (quantities and locations to be determined):

- Primary Care Paramedics and/or Emergency Medical Responders;
- First Aiders;
- First Aid Clinics; and
- Mobile Treatment Centre.

These medics provide emergency response, medical assessment, primary health care, chronic disease management, injury prevention, health promotion, medical referral, and coordinate emergency medical evacuations as needed for workers in remote and isolated settings.

During pre-construction preparations, Hydro One and its contractor will engage with the local emergency services that may be impacted by the Project and provide them with pertinent information such as the location of work fronts within the emergency services district, types of work activities occurring, estimated manpower, emergency planning, etc. It is not anticipated that service agreements will be required with local districts. Hydro One and its contractor will be engaging its internal occupational health services Project team to assist with managing Project-related injuries to lessen the burden on local emergency services.

A formal complaints process be implemented that allows, emergency services, municipalities, and community members to share any issues and concerns with Hydro One and its contractor(s) during the construction stage. Monitoring of complaints and issue resolution will help minimize or remove any on-going effects to community well-being.

The Project will be designed, constructed, and maintained in accordance with the *Ontario Occupational Health and Safety Act* and other relevant regulations which establish clearances from other man made and natural structures, as well as tree trimming requirements to reduce or avoid fire hazards and associated accidents. Hydro One will maintain the transmission line ROW and immediate area during the Operations and Maintenance phases in accordance with existing regulations and accepted industry practices that will include identification and abatement of fire hazards.

Net Effects

Following the implementation of mitigation measures and best practices and given the nature of Project employment (e.g., short term) there is not expected to be any changes to non-emergency, emergency, social and protective services. No Project related in-migration is anticipated and there is not expected to be any noticeable effect from the Project on their ability to continue with the current level of service provision. Likewise, Project utilization of and demand on local infrastructure and services is not expected to negatively affect service capacity in the Community Services and Facilities LSA. This effect is not carried forward to the net effects characterization (Section 7.2.8).

7.2.7.4.2 Change in Demand for Community Services and Facilities and Capacity - Municipal Services

Project direct use of electricity, water, and generation of wastewater and solid waste could increase demand on power, water, wastewater and solid waste services. Such demand could put pressure on the existing services and infrastructure capacity.

Potential Effects

The potential Project effects on community services were assessed taking into consideration the changes in demand for community services due to direct use during Project construction and

capacity of these services to support the incremental demand generated by the Project. It is expected that the Project will require electricity, potable water, sewage disposal, and solid waste disposal during construction, particularly at the temporary construction camps.

To construct the Project, a peak workforce of approximately 220 construction employees are anticipated, dependent on the activities being completed (e.g., peak direct construction employment is expected to occur during the construction stage for foundation and structure assembly).

Given the short-term nature of the construction period, availability of accommodation in the Project specific temporary construction camps, and the limited number of non-technical employment opportunities, temporary workers from outside the Community Services and Facilities LSA are not expected to relocate permanently to the Community Services and Facilities LSA, and are not anticipated to relocate their families to the Community Services and Facilities LSA (given the short-term nature of many positions) and will not place additional demands on existing municipal infrastructure. Similarly, residents employed by the Project who live in the Community Services and Facilities LSA are not anticipated to relocate their families to other Community Services and Facilities LSA communities as Project construction continues along the transmission line ROW.

Construction camps have an allowable maximum number of clients, and are equipped with water, waste and electricity connections and infrastructure and supply to service maximum and peak periods. These service requirements are accounted for in existing municipal water, waste and power supply distribution planning.

Mitigation Measures

Electricity will be supplied to one of the three temporary construction camps using temporary diesel generators, while the other two camps will be located in proximity to existing transmission line infrastructure and will use grid-supplied electricity. The diesel generators will be operated in compliance with applicable regulations and guidelines, including acquiring any necessary permits and approvals. It is not anticipated that this use of electricity will be in excess of existing infrastructure capacity.

Potable water for work sites (e.g., ice roads, snow making, concrete, etc.) will be sourced from local water sources using a Permit to Take Water (PTTW).

Catering and cleaning services will be subcontracted to local regional and Indigenous businesses. The Contractor will also work with local businesses for water and sewage transportation, as well as the disposal of construction and camp waste, in alignment with common industry practices.

It is anticipated that potable water for construction camps will be obtained from municipal sources, where available, or from groundwater wells. Permits to take water or Environmental Activity and Sector Registry (EASR) will be required prior to taking or discharging groundwater.

Municipal sewage disposal services will be used where available and where they are not, septic fields, on-site treatment and trucking off-site are options for sewage disposal. The appropriate approvals (e.g., environmental compliance approvals, municipal approvals, etc.) will be acquired, as needed. Grey water will be discharged according to permit and/or authorization requirements. As domestic effluent will only be disposed at municipal wastewater treatment facilities that have authorization and have capacity to accept the waste, the effect of Project-related demand on existing municipal wastewater treatment facilities on local wastewater treatment capacity is anticipated to be negligible.

Organic solid waste disposal at the camps will be in compliance with applicable guidelines and regulatory requirements. Organic solid waste may be temporarily stored in bear-proof containers before being transported to an approved waste disposal site. A recycling program will be implemented at the camps to reduce the amount of solid waste generated as a requirement of the construction contract with Hydro One. As solid waste will only be disposed at facilities with both authorization and capacity to accept the waste and programs will in place to minimize solid waste generation, the effect of Project-related demand on existing solid waste treatment facility capacity is anticipated to be negligible.

Construction camps will be equipped with water supply, water treatment, electricity (using either grid-connected or diesel generation systems), solid waste (hazardous and non-hazardous) handling and storage facilities, recycling storage areas, fueling areas and communication systems.

Waste management guidelines will be provided in the contractor Environmental Protection Plan (EPP) and will outline guidelines for all wastes including excess soils, slurry, construction waste, recyclable office waste, organic waste, sanitary waste/sewage, and grey water. The contractor EPP will also provide guidelines for the storage, handling and transport of waste, and handling of contaminated soils/materials and designated substances.

Net Effects

There is a net effect predicted after implementation of the mitigation measures described above as the Project will represent a new user of municipal services but is not expected to push these services beyond capacity. This net effect is carried forward to the net effects characterization (Section 7.2.8).

7.2.7.5 Summary of Potential Effects, Mitigation Measures and Net Effects to Community Well-Being Criteria

Table 7.2-28: Summary of Potential Effects and Mitigation Measures to Community Well-Being Criteria

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
Population and Demographics • Project activities during the construction stage: ◦ Employment and procurement of goods and services.	• Change in population and demographics. Potential effects could be disproportionately felt by single-parent households, women seeking to escape intimate partner violence, and low-income, unemployed, and underemployed individuals.	• Housing out of area construction staff in construction camps. • Prioritizing local hiring as much as possible.	• No net effects to population and demographics are anticipated.

Quality of Life – Noise and Vibration
Project activities during the construction stage:
• Construction of temporary construction camps, temporary laydown areas and access roads, the use of aggregate pits (including blasting), upgrades to the transformer stations, and construction of the transmission line, which is expected to include clearing, access, foundations and anchors (including blasting), assembly, erection, stringing (including cable splicing), and reclamation;
• Operation of vehicles and construction equipment; and
• Decommissioning and reclamation of the decommissioned access roads, temporary laydown areas, staging areas, and construction camps.
 	
Project activities during the operation and maintenance stage:
• Operation, replacement and maintenance of transmission line, transmission line ROW and permanent access roads; and
• Operation and maintenance of transformer stations.
	• Change in nuisance effects due to changes in noise and vibration.	• Noise emissions from construction, operation, and maintenance activities:
		  ◦ Hydro One, with their contractor(s), will prepare and implement an EPP and Noise Management Plan prior to construction.
		  ◦ Comply with local municipal noise by-laws and the MECP Model Municipal Noise Control Bylaw (i.e., NPC-115).
		  ◦ Construction activities will typically occur during one 10-hour shift per day, generally within the daytime period (i.e., 07:00 to 18:00). Night-time work is not anticipated. In the event construction will occur beyond the daytime period, Hydro One will review and implement applicable mitigation measures and obtain any required permits or bylaw exemptions.
		  ◦ Hydro One, with their contractor(s), will check that equipment and machinery used on site is maintained in good working conditions through regular maintenance and inspection.
		  ◦ Design access roads to minimize reversing, which is expected to minimize use of backup beepers, where possible.
		  ◦ Locate and operate construction equipment as far as possible from PORs.
		  ◦ Notify Indigenous communities, landowners, and other stakeholders along the ROW of the planned construction schedule before the start of construction.
		  ◦ Where reasonable and practicable, vehicles and equipment will be turned off when not in use, unless weather and/or safety conditions dictate the need for them to remain turned on and in a safe operating condition.
		  ◦ Investigate noise concerns as they arise through a complaint resolution mechanism whereby persons can contact Hydro One if there are perceived noise issues.
		  ◦ Operate vehicles and equipment such that impulsive noise is minimized, where possible.
		• Vibration from construction activities:
		  ◦ Develop a construction vibration workplan prior to the start of construction describing the construction schedule, list of construction equipment, list of POR locations, applicable guidance documents including criteria and municipal by-laws (i.e., residential, heritage structures and utilities) and control measures.
		  ◦ Consider the use of frequency dependent vibration limits as more detailed information regarding the construction activities is known.
		  ◦ Notify Indigenous communities, landowners, and other stakeholders along the ROW of the planned construction schedule before the start of construction.
		  ◦ Investigate vibration concerns as they arise through a compliant resolution mechanism whereby persons can contact Hydro One if there are perceived vibration issues.
		  ◦ Construction activities should be limited to the daytime period (i.e., 07:00 to 19:00). Night-time work is not anticipated. In the event construction will occur
			• Net change in nuisance effects due to change in noise emissions during construction activities.
			• Net change in nuisance effects due to change in noise emissions during operation and maintenance stage.
			• Net change in nuisance effects due to changes in vibration during construction activities.

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
		beyond the daytime period, Hydro One will review and implement applicable mitigation measures and obtain any required permits or bylaw exemptions. • Locate and operate construction equipment as far as possible from PORs. • Avoid operating equipment expected to be a significant source of vibration simultaneously. Vibration levels could be less when operating separately. • Construction blasting will be carried out in compliance with the OPSS 120 and NPC-119.The OPSS 120 details items such as vibration limits, protective measures, pre-blast surveys and notification to nearby owners and tenants. All blasts, which might impact local structures or disrupt humans, should be monitored for ground and air vibrations. • Minimize human annoyance at identified PORs, as appropriate. • Provide adequate notice to appropriate stakeholders along the ROW prior to blasting and implosion operations. • Blasting delays and blast mats will be used to control vibration and fly rock as required.	
Quality of Life – Air Quality • Project activities during the construction stage: • Clearing, grading, earth moving, grubbing of vegetation, and stockpiling of materials along the ROW and other access and construction areas, and construction of infrastructure (e.g., access roads, bridges, temporary laydown areas, aggregate pits and temporary construction camps); • Operation of vehicles and construction equipment; and • Decommissioning and reclamation of the decommissioned access roads, temporary laydown areas, staging areas, and construction camps.	• Change in nuisance effects due to changes in air quality.	• Where reasonable and practicable, vehicles and equipment will be turned off when not in use, unless weather and/or safety conditions dictate the need for them to remain turned on and in a safe operating condition. • Vehicles and equipment will be regularly serviced, maintained and inspected for leaks. • Obey speed limits to limit fugitive dust. • Slash pile burning will be subject to permits and approvals by appropriate regulatory agencies, and in compliance with O. Reg. 207/96. • Dust control practices (e.g., wetting with water) will be implemented at work sites and on access roads near residential areas or other areas. • Minimize dust-generating activities, as practical and where required, during periods of high wind to limit dust emissions and spread. • Minimize vehicular traffic to exposed soils and stabilize high traffic areas with suitable cover material. • Restore disturbed areas as soon as practicable to minimize duration of soil exposure. • Cover or otherwise contain loose construction materials with potential to release airborne particulates during transport, installation or removal as appropriate. • Multi-passenger vehicles will be used to transport personnel, where practicable. • Hydro One or its contractor will prepare and implement a Dust Control/Air Quality Plan prior to construction.	• Net change in nuisance effects due to changes in air quality.
Quality of Life – Public Safety • Project activities during the construction stage: • Construction of infrastructure; • Electrification • Operation of vehicles and construction equipment • Project activities during operation and maintenance stage: • New infrastructure in ROW (e.g., guyed wires)	• Change in public safety.	• Hydro One with its contractor will prepare and implement the following management plans to limit risks to public safety: • Fire Prevention and Preparedness Plan; • COVID-19 Pandemic Management Plan; • Emergency Response Plan; • Worker of Standards of Conduct Policy; and • Use appropriate road signage during construction activities. • Notify access road users (e.g., those dependent on Project impacted roads for access to businesses, residences) of construction activities and planned access restrictions and detours.	• Net changes in public safety.

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
		• Store construction and hazardous waste in a manner compliant with legislation and health and safety guidelines. • Workers will be required to adhere to an Employee and Contractor Code of Conduct that outlines appropriate behavior at the worksite, temporary construction camps, in Quality of Life LSA communities, and while travelling to and from work rotations.	
Quality of Life – Project-Community Interactions • Project activities during the construction stage: ◦ Employment and housing of workforce	• Potential increase in social issues due to worker-community interactions. Potential effects could be disproportionately felt by Indigenous women, girls, and 2SLGBTQQIA people.	• The Project contractor will create safety protocols applicable to the project area (including construction camps). For example, the Project contractor will maintain a Substance Abuse program, which is a term and condition of employment for their employees. • Workers will be required to adhere to an Employee and Contractor Code of Conduct that outlines appropriate behavior at the worksite, temporary construction camps, in Quality of Life LSA communities, and while travelling to and from work rotations. • The contractor will support community safety programs for the First Nations close to the proposed Project. • The contractor will implement mandatory training for all employees on gender-based and sexual violence, anti-racism, cultural safety, diversity and inclusion, and the effects of colonization on Indigenous peoples. • Transport to the construction camp and site will generally be completed using multi-passenger vehicles; personal vehicles will be minimized to the extent practicable. • The contractor will prohibit non-Project personnel from riding in company vehicles (including hitch hikers). • The contractor will maintain a set of camp rules that describes what is and is not acceptable practice in camp, including a curfew, and prohibited items, actions or practices. • Only authorized individuals will be allowed within the construction camp and visitors will be required to check in with security upon arrival. Bringing an unauthorized individual onto site would be a violation of the terms and conditions of employment. • The contractor will develop and implement systems for tracking and reporting incidents of harassment and violence. Any incidents that violate the contractor policies or rules and require immediate attention or action, will be appropriately addressed by Project leadership, which may include termination. • The contractor will explore options to increase the representation of Indigenous women and gender diverse individuals in the workforce at all employment levels. • Hydro One will work with Gwayakocchigewin Limited Partnership on a community-led committee to provide feedback and develop additional mitigation measures, where required. • A formal complaints process that allows community members to share any issues and concerns with Hydro One and its contractor(s) during the construction stage.	• Potential increase in social issues due to worker-community interactions.

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect

Transportation and Energy Infrastructure – Transportation Routes
• Project activities during the construction stage:
  ◦ Transportation of workforce
  ◦ Procurement of goods and services
	• Change in demand for transportation infrastructure and capacity.	• Use appropriate road signage during construction activities.
		• Notify access road users (e.g., those dependent on Project affected roads for access to businesses or residences) of construction activities and planned access restrictions and detours.
		• Hydro One with its contractor will prepare and implement a Traffic Control Plan for Project traffic.
		• Minimize the frequency of the transport of goods and equipment, to the extent practical.
		• Multi-passenger vehicles will be used to transport personnel, where practical (Charter buses). Establish user agreements with transportation service providers with sufficient capacity to supply both the Project and their existing and anticipated user base.
		• Hydro One with its contractor will communicate with the local airports used by the Project (and with CPR and CN rail if used) to inform them of proposed Project schedules, and to confirm service capacity, siding availability, schedules and any potential interactions with existing air and rail users, and operations.
			• Net change in demand for transportation infrastructure and capacity.

Transportation and Energy Infrastructure – Utilities
• Project activities during the construction stage:
  ◦ Construction of infrastructure including trenching and digging
  ◦ Powering construction machinery and construction camps
	• Change in demand for energy infrastructure and capacity.	• Notification to other utility providers to notify them of any construction activities which may cross or interact with existing utility infrastructure.
		• Acquire locates prior to construction activities.
			• Net change in demand for energy infrastructure and capacity.

Community Services and Facilities – Non-emergency, emergency and social services
• Project activities during the construction stage:
  ◦ Employment of workforce
  ◦ Construction activities and associated waste disposal, water use and wastewater
  ◦ Construction camp waste disposal, water use and wastewater
  ◦ Emergency incidents during construction
	• Change in demand for community services and facilities and capacity - non-emergency, emergency and social services. Potential effects could be disproportionately felt by older adults, immunocompromised individuals, differently abled individuals, or those experiencing mental health challenges.	• The majority of temporary workers hired from out of the criterion-specific LSAs will be housed in temporary construction camps or other existing temporary accommodation establishments.
		• Workers are not expected to permanently relocate themselves or their families to Community Services and Facilities LSA communities.
		• Worker camps will have private security in place.
		• Project-specific measures, such as on-site emergency medical care, will reduce need for local hospitals or EMS in the event of a work-related incident.
		• Provide first aid stations at temporary construction camps and job sites.
		• Train employees in standard first aid. Hydro One with their contractor will prepare and implement an Occupational Health and Safety Plan.
		• Hydro One will review and approve an environmental and safety orientation program, to be implemented by the contractor.
		• Maintain a zero-tolerance policy toward workers being under the influence of drugs or alcohol while working, or while travelling to and from work.
		• Maintain drug and alcohol-free temporary construction camps and worksites.
		• Hold workers to both a Worker Code of Conduct and an Occupational Health and Safety Management Plan.
		• Project personnel will receive applicable training in health and safety and emergency response. Hydro One will identify potential safety, health and environmental concerns related to the Project stages. Prevention measures and response procedures will be described in a Health and Safety Plan (HASP) and a Spill Prevention and Emergency Response Plan. All Project personnel will receive applicable training in health and safety and emergency response.
			• No net effects to emergency, non-emergency and social services.

Project Component or Activity	Potential Effect	Mitigation Measures	Net Effect
		• Project construction, operation, maintenance, and retirement activities will be undertaken with appropriate safety measures in place. • Hydro One with their contractor will be required to comply with the *Ontario Occupational Health and Safety Act*, 1990 (Government of Ontario 1990) and other legislated safety requirements. Hydro One will also be required to have a HASP in place. • A formal complaints process will be implemented that allows, emergency services, municipalities, and community members to share any issues and concerns with Hydro One and its contractor(s) during the construction stage.	

Community Services and Facilities – Municipal Services
• Project activities during the construction stage:
  ◦ Employment and procurement of goods and services
	• Change in demand for community services and facilities and capacity - municipal services.	• Electricity at two of the three temporary construction camps will use diesel generators. The diesel generators will be operated in compliance with applicable regulations and guidelines, including acquiring any necessary permits and approvals.
		• Potable water for work sites (e.g., ice roads, snow making, concrete, etc.) will be sourced from local water sources using a PTTW.
		• Catering and cleaning services will be subcontracted to local regional and Indigenous businesses. The contractor will also work with local businesses for water and sewage transportation, as well as the disposal of construction and camp waste, in alignment with common industry practices.
		• Water for temporary construction camps and laydown areas will be obtained from local suppliers via water tank trucks. Wells may be drilled at the temporary construction camps if this option is more feasible. Domestic effluent will be removed from the temporary construction camps by approved disposal trucks and disposed of at municipal wastewater treatment plants with authorization and capacity to accept this waste. Solid waste disposal services, including hazardous and non-hazardous waste, will be provided on-site at temporary construction camps.
		• Hydro One with its contractor will prepare and implement Waste Management Plans that describe the appropriate management of solid, liquid and hazardous waste, including:
		  ◦ Construction related garbage, debris, and surplus materials;
		  ◦ Hazardous materials such as used oil, filter and grease cartridges, lubrication containers; and
		  ◦ Domestic garbage and camp waste (i.e., food and grey water).
		• The transportation, storage, and handling of fuel will be in compliance with the *Technical Standards and Safety Act*.
		• Fuel and hazardous materials will be transported in approved containers in licensed vehicles.
		• A recycling program will be implemented at temporary construction camps to reduce the amount of solid waste generated as a requirement of the construction contract with Hydro One.
			• Net change in demand for community services and facilities and capacity - municipal services.

LSA = local study area; ROW = right-of-way.

7.2.8 Net Effects Characterization

7.2.8.1 Net Effects Characterization Approach

The effects assessment approach followed the general process described in Section 5.0 (methods section). Potential effects with no predicted net effect after implementation of mitigation measures identified in Table 7.2-28 are not carried forward to the net effects assessment. Net effects are described using the significance factors identified in Table 7.2-28. Effects levels are defined for the magnitude of effects characteristics for community well-being in Table 7.2-29

Table 7.2-29: Magnitude Effect Levels for Community Well-Being Indicators

Indicator / Net Effect	Negligible	Low	Moderate	High
Community Services and Facilities	A small measurable change that is expected to be within the range of baseline or guideline values, or within the range of natural variability.	A small but discernible effect that is within government capacity for response.	A demonstrable effect that is within government capacity for response.	A demonstrable effect beyond historical norms and/or government capacity for response.
Transportation and Energy Infrastructure	A small measurable change that is expected to be within the range of baseline or guideline values, or within the range of natural variability.	A small but discernible effect that is within capacity of the existing infrastructure.	A demonstrable effect that is within capacity of the existing infrastructure.	A demonstrable effect beyond historical norms and/or capacity of the existing infrastructure.
Quality of Life – Community Well-being	A small measurable change that is expected to be within the range of baseline or guideline values, or within the range of natural variability.	A small but discernible effect which is within the range within which a community is capable of adapting to.	A demonstrable effect which is within the range within which a community is capable of adapting to.	A demonstrable effect beyond historical norms and/or ability for a community to adapt and will leave lasting change to the character of a community.
Quality of Life – Noise	Project related change in daytime, evening, and nighttime equivalent noise level is ≤3 dB.	Project related change in daytime, evening, and nighttime equivalent noise level is >3 dB and ≤6 dB.	Project related change in daytime, evening, and nighttime equivalent noise level is >6 dB and ≤10 dB.	Project related change in daytime, evening, and nighttime equivalent noise level is >10 dB.

Indicator / Net Effect	Negligible	Low	Moderate	High
Quality of Life – Air Quality	Maximum predicted concentration (including background) is less than 10% of Project Criteria.	Maximum predicted concentration (including background) is between 10% and 50% of Project Criteria.	Maximum predicted concentration (including background) is between 50% and 100% of Project Criteria.	Maximum predicted concentration (including background) is greater than 100% of Project Criteria.

7.2.8.2 Net Effects Characterization

A summary of the characterization of net effects of the Project on community well-being is provided in Table 7.2-30. Net effects are described after the implementation of effective mitigation measures, and summarized according to direction, magnitude, geographic extent, duration/reversibility, frequency, and probability of the effect occurring following the methods described in Section 5. Effective implementation of mitigation measures summarized in Table 7.2-28 is expected to reduce the magnitude and duration of net effects on community well-being.

7.2.8.2.1 Net Change in Nuisance Effects Due to Changes in Noise Emissions During Construction Activities

Existing noise levels at given PORs can be expected to increase, on occasion, due to construction activities when occurring nearby, and would be considered direct and negative. The magnitude at a given POR is dependent on the distance to the Project activities. Based on the qualitative assessment of construction noise, it is expected that a magnitude of negligible, low, moderate, or high could occur depending on the distance between the PORs and the construction activities. However, the increased noise levels are expected to be local (i.e., limited to the LSA) and short-term in duration at a given location relative to the entire construction schedule. Frequency is considered periodic, as while the Project is predicted to produce noise throughout the construction period during the daytime, it will not affect any one POR throughout the full construction period. As well, there is no potential for a change in noise levels during the nighttime period as Project construction will typically occur during the daytime period (i.e., 07:00 to 18:00). When the construction activities exist in proximity to a given POR, increased noise levels are expected to be probable.

7.2.8.2.2 Net Change in Nuisance Effects Due to Change in Noise Emissions During the Operations and Maintenance Stage

If there are Project updates that modify noise emissions, existing noise levels at given PORs have the potential to increase due to the operation of the transformer stations. The effect would be considered direct and negative. The increased noise levels are expected to be local (i.e., limited to the LSA) and long-term in duration at a given location, as they will persist for the life of the Project but are reversible (i.e., would cease if the operation of the transformer stations ceased). Frequency is considered continual, as the transformer stations will operate throughout

the operation and maintenance period. When the transformer stations exist in proximity to a given POR, increased noise levels are expected to be probable.

Existing noise levels at given PORs can be expected to increase, on occasion during adverse weather conditions, such as rain, fog, and wet snow, when in close proximity to the operation of the transmission line and would be considered direct and negative. It is expected that a magnitude of negligible, low, moderate, or high impact could occur depending on the distance between the noise source and the POR. However, the increased noise levels are expected to be local (i.e., limited to the LSA) and infrequent and short-term in duration as it would only occur during adverse weather conditions. When the transmission line exists in close proximity to a given POR, increased noise levels are expected to be probable.

Existing noise levels at given PORs can be expected to increase, on occasion, due to maintenance, replacement and inspection activities when occurring nearby, and would be considered direct and negative. The magnitude at a given POR is dependent on the distance to the Project activities. It is expected that a magnitude of negligible, low, moderate, or high could occur depending on the distance between the POR and the maintenance, replacement or inspection activities. However, the increased noise levels are expected to be local (i.e., limited to the LSA) and short-term in duration at a given location. Frequency is considered periodic, as maintenance, replacement or inspection activities near a given POR will occur intermittently throughout the operation and maintenance period. When maintenance, replacement or inspection activities exist in proximity to a given POR, increased noise levels are expected to be probable.

7.2.8.2.3 Net Change Nuisance Effects Due to Changes in Vibration During Construction Activities

Existing vibration levels at given PORs can be expected to increase, on occasion, due to construction activities (e.g., blasting, helicopter use, cable splicing) when occurring nearby, and would be considered direct and negative. The magnitude at a given POR is dependent on the distance to the Project activities. Based on the qualitative assessment of construction vibrations, it is expected that a magnitude of negligible, low, moderate, or high impact could occur depending on the distance between the PORs and the construction activities. However, the increased vibration levels are expected to be local (i.e., limited to the LSA) and short-term in duration at a given location relative to the entire construction schedule. Frequency is considered periodic, as while the Project is predicted to produce vibration throughout the construction period (during the daytime), it will not affect any one POR throughout the full construction period. As well, there is no potential for a change in vibration levels during the nighttime period as Project construction will typically occur during the daytime period (i.e., 07:00 to 18:00). When the construction activities exist in proximity to a given POR, increased vibration levels are expected to be probable.

7.2.8.2.4 Net Change in Nuisance Effects Due to Changes in Air Quality

With the mitigation measures outlined in Table 7.2-28 in place, the effect of the Project on air quality is predicted to be negative in direction and negligible in magnitude. The net effect on community well-being is anticipated to be local in geographic extent, reversible, long-term in duration, of continuous frequency and probable to occur.

7.2.8.2.5 Net Changes in Public Safety

While the direction of the effect is negative, the magnitude is assessed to be negligible after the implementation of mitigation measures identified in Table 7.2-28. These measures include the implementation of management plans to limit risks to public safety, as well as adherence to the contractor's Employee Code of Conduct by Project workers during the construction stage. The effect is local in geographic location and short-term in duration, infrequent and of unlikely occurrence.

7.2.8.2.6 Potential Increase in Social Issues Due to Worker-Community Interactions

While the direction of the effect is negative, the magnitude is assessed to be negligible to moderate after the implementation of mitigation measures identified in Table 7.2-28. These measures include the implementation of management plans and rules for worker conduct on construction camps. The contractor's Employee Code of Conduct will be enforced to Project workers during the construction stage. The effect is local in geographic location and short-term in duration, infrequent and of unlikely occurrence.

7.2.8.2.7 Net Change in Demand for Energy Infrastructure and Capacity

While the direction of the effect of the Project on energy infrastructure and capacity is negative, the magnitude is assessed to be negligible after the implementation of mitigation measures identified in Table 7.2-28. These measures include the communication with utility companies and locate detection. There is the potential for power outages as a result of interactions between the Project and existing infrastructure or accidental interactions with utility infrastructure. The effect is therefore assessed to be of negligible magnitude, local in geographic extent and short-term in duration. It is predicted to be a continuous effect that is possible to occur.

7.2.8.2.8 Net Change in Demand for Transportation Infrastructure and Capacity

While the direction of the effect of the Project on Transportation Infrastructure and capacity is negative, the magnitude is assessed to be negligible after the implementation of mitigation measures identified in Table 7.2-28. These measures include the implementation of the traffic/ road management plan, and the establishment of regular and ongoing communication and planning with local airports and rail networks of Project schedules. It is also anticipated that road network in the Transportation and Demographics local study area is sufficient to handle the increased traffic during the Project construction stage. The effect is therefore assessed to be of

negligible magnitude, local in geographic extent and short-term in duration. It is predicted be a continuous effect that is probable to occur.

7.2.8.2.9 Net Change in Demand for Community Services and Facilities and Capacity – Municipal Services

While the direction of the effect is negative, the magnitude is assessed to be negligible after the implementation of mitigation measures. This is because the Project will procure services and infrastructure for construction activities from local service providers in consideration of their total capacity. Water used for construction work will also be taken from existing water sources using a PTTW. In addition, the Project workforce will be housed at temporary construction camps and no-permanent in-migration is expected. The effect is therefore assessed to be of negligible magnitude, local in geographic extent and short-term in duration. It is predicted be an infrequent effect that is unlikely to occur.

7.2.8.3 Characterization of Predicted Net Effects for Community Well-Being

Table 7.2-30: Characterization of Predicted Net Effects for Community Well-Being

Criteria	Indicators	Net Effect	Direct/Indirect	Direction	Magnitude	Geographic Extent	Duration/ Irreversibility	Frequency	Likelihood of Occurrence	Significance
Quality of Life – Noise	Nuisance: Noise	Net change in nuisance effects due to changes in noise emissions during construction activities.	Direct	Negative	Negligible to High	Local	Short-term/Reversible	Periodic / One-time event	Probable	Not Significant
Quality of Life – Noise	Nuisance: Noise	Net change in nuisance effects due to changes in noise emissions during operation and maintenance – maintenance activities	Direct	Negative	Negligible to High	Local	Short-term	Periodic	Probable	Not Significant
Quality of Life – Noise	Nuisance: Noise	Net change in nuisance effects due to changes in noise emissions during operation and maintenance – operation of the Transformer Stations	Direct	Negative	Negligible	Local	Long-term	Continuous	Probable	Not Significant
Quality of Life – Noise	Nuisance: Noise	Net change in nuisance effects due to changes in noise emissions during operation and maintenance – operation of the transmission line	Direct	Negative	Negligible to High	Local	Short-term	Infrequent	Probable	Not Significant
Quality of Life – Vibration	Nuisance: Vibration	Net change in nuisance effects due to changes in vibration during construction activities.	Direct	Negative	Negligible to High	Local	Short-term	Periodic	Probable	Not Significant
Quality of Life – Air Quality	Nuisance: Air Quality	Net change in nuisance effects due to changes in air quality during construction activities.	Direct	Negative	Moderate to High	Local	Short-term/Reversible	Frequent	Possible	Not Significant
Quality of Life – Public Safety	Public Safety	Net changes in public safety.	Direct	Negative	Negligible	Local	Short-term/Reversible	Infrequent	Unlikely	Not Significant
Quality of Life – Community-Worker Interactions	Interactions between site staff and communities	Potential increase in social issues due to worker-community interactions.	Direct	Negative	Negligible to Moderate	Local	Short-term	Infrequent	Possible	Not significant
Transportation and energy infrastructure – utilities	Demand for Services and Infrastructure	Net change in demand for energy infrastructure and capacity.	Direct	Negative	Negligible	Local	Short-term/Reversible	Continuous	Possible	Not Significant
Transportation and energy infrastructure – transportation routes	Demand for Services and Infrastructure	Net change in demand for transportation infrastructure and capacity.	Direct	Negative	Negligible	Local	Short-term/Reversible	Continuous	Probable	Not Significant
Community Services and Facilities – municipal services	Demand for Services and Infrastructure	Net change in demand for community services and facilities – municipal services.	Direct	Negative	Negligible	Local	Short-term/Reversible	Infrequent	Unlikely	Not Significant

7.2.9 Assessment of Significance

The assessment of significance of net effects of the Project is informed by the interaction between the significance factors, with magnitude, duration and geographic extent being the most important factors. Consideration is also given to comments and concerns raised by Indigenous communities, government officials and agencies, and interested persons and organizations during consultation and engagement, and through review comments on the EA report. Net effects to a criterion would be considered significant if the majority of the net effects for its indicators are assessed as high magnitude, long-term or permanent in duration, at any geographic extent, and represent a management concern.

Implementation of proven mitigation measures is expected to avoid or reduce the magnitude and duration of net effects on community well-being.

For the community well-being indicators assessed, the direct and indirect effects that are local (in the Quality of Life LSAs) were not assessed to be significant.

7.2.10 Cumulative Effects Assessment

In addition to assessing the net environmental effects of the Project itself, the assessment also evaluates the significance of the net and cumulative effects from the Project that overlap temporally and spatially with effects from other past, present and reasonably foreseeable development and activities. The factors used to determine if a net effect should be carried forward for further analysis in the cumulative effects assessment are outlined in Section 5.7.

For this assessment, the net effects characterized in Table 7.2-30 are carried forward to a cumulative effects assessment if they have a likelihood of occurrence of ‘probable’ or ‘certain’ and a non-negligible magnitude. Net effects with this characterization are most likely to interact with other reasonably foreseeable developments. As per Table 7.2-29, no effects were deemed greater than moderate-high, and so are not carried forward to the cumulative effects assessment. Positive effects are not carried forward into the cumulative effects assessment.

Effects related to quality of life (e.g., air quality, noise and vibration, safety and community-workforce interactions) are assessed to be short-term and reversible. Given the short-term duration and local effects to all quality of life criteria, it is not expected that these net effects will overlap temporally and spatially with the net effects from the reasonably foreseeable developments identified in Section 9.0. Therefore, a cumulative effects assessment was not completed for these net effects.

Effects related to transportation and energy infrastructure (e.g., road use, utilities) are assessed to be short-term and reversible. Effects related to transportation and energy infrastructure (e.g., utilities, road use) are not carried forward to cumulative effects.

Effects to the community services and facilities criterion (municipal services) were also assessed to be short-term and reversible and a cumulative effects assessment was not conducted.

7.2.11 Monitoring

This section identifies recommended effects monitoring to verify the prediction of the effects assessment and to verify the effectiveness of the mitigation measures and compliance monitoring to evaluate whether the Project has been constructed, implemented, and operated in accordance with the commitments made in the EA Report.

In order to evaluate effects to community well-being, a formal complaints process be implemented that allows emergency services, municipalities and community members to share any issues and concerns with Hydro One and its contractor during the construction stage. Monitoring of complaints and issue resolution will help minimize, avoid or remove any on-going effects to community well-being.

As described in Section 6.7.11, if the construction activities (e.g., clearing, foundations, structure assembly, structure erection and stringing) are being undertaken within 100 m of a confirmed occupied residence, Hydro One will assess the construction schedule, environmental conditions, and season, and evaluate the need for monitoring. Monitoring will be undertaken when these emission-generating activities have the potential to impact the receptor.

As described in Section 6.9.12, the Project does not require monitoring programs for noise; however, through the MECP approvals process for permitting of the transformer stations, the MECP may require monitoring programs. The assessment does recommend vibration monitoring programs in accordance with general industry practice and stakeholder requirements.

7.2.12 Prediction Confidence in the Assessment

Prediction confidence refers to the degree of certainty in the net effects prediction and associated assessment of significance. The predicted confidence in Project effects on community services and facilities, transportation and energy infrastructure due to direct Project service and infrastructure use (i.e., emergency and health, electricity, water, wastewater and solid waste, road and air transportation), are rated as moderate to high based on:

- Understanding of Project transportation and utility use requirements;
- Road and air transportation, services and utilities capacity and supply characteristics; and
- Assumed implementation and monitoring of mitigation measures, and public safety management policies and procedures by the Project.

The predicted confidence in Project effects on community well-being due to nuisance from air emissions is rated as high for air quality based on confidence statements associated with the air quality assessment (Section 6.7) and based on the translation of these results into the assessment of effects to community well-being.

The predicted confidence in Project effects on community well-being from noise and vibration is rated as moderate considering that the mitigation measures indicated in Section 6.9 are based on accepted and proven best management practices that are well understood and have been applied to similar projects throughout North America. Uncertainty in the assessment has been further reduced by making conservative assumptions, planned implementation of known effective mitigation measures, and available adaptive management measures to address unforeseen circumstances should they arise.

The predicted confidence in Project effects on community well-being with respect to safety and community interactions is rated as moderate due to the unpredictable nature of the effects. While every attempt to ensure safety to community members from both Project construction and interactions between communities and workers human behaviour and unforeseen incidents cannot be controlled for and leaves a level of uncertainty.

7.2.13 Criteria Summary

Table 7.2-31 presents a summary of the assessment results for community well-being by criteria.

Table 7.2-31: Community Well-Being Assessment Summary

Criteria	Assessment Summary
Population and Demographics	• No effects to population and demographics are anticipated. • The Project is not predicted to contribute to cumulative effects.
Quality of Life – Noise – Construction Stage	• Net effects are assessed to be not significant. • The Project is not predicted to contribute to cumulative effects.
Quality of Life – Noise – Operation and Maintenance Stage	• Net effects are assessed to be not significant. • The Project is not predicted to contribute to cumulative effects.
Quality of Life – Vibrations – Construction Stage	• Net effects are assessed to be not significant. • The Project is not predicted to contribute to cumulative effects.
Quality of Life – Air Quality	• Negative net effects of the Project are predicted to be not significant. • The Project is not predicted to contribute to cumulative effects due to the limited geographic extent of the net effect.
Quality of Life – Public Safety	• Net effects are assessed to be not significant. • Cumulative effects are not assessed as net effects are assessed to be negligible.

Criteria	Assessment Summary
Quality of Life – Project – Community-Worker Interactions	• Net effects are assessed to be not significant. • Cumulative effects are not assessed as net effects are assessed to be negligible to moderate, short term and possible.
Transportation and Energy Infrastructure – Transportation Services	• Net effects are assessed to be significant, but positive. • Cumulative effects are not assessed as net effects are assessed to be negligible.
Transportation and Energy Infrastructure - Utilities	• Net effects are assessed to be significant, but positive. • Cumulative effects are not assessed as net effects are assessed to be positive.
Community Services and Facilities – Emergency and Social Services	• No effects to emergency and non-emergency services and social services are anticipated. The Project is not predicted to contribute to cumulative effects.
Community Services and Facilities – Municipal Services	• Net effects are assessed to be not significant. • Cumulative effects are not assessed as net effects are assessed to be negligible.

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