

# ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGISTRATION FOR 138 KV TRANSMISSION LINE IN THE MONCTON INDUSTRIAL PARK, MONCTON, NEW BRUNSWICK

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## 3.0 OVERVIEW OF ENVIRONMENTAL SETTING

### 3.1 PHYSICAL SETTING

#### 3.1.1 Physiography and Geography

New Brunswick is divided into six physiographic (geomorphologic) districts defined largely by the underlying bedrock geology. The Project lies within the Caledonian Highlands geomorphologic district, in the Moncton Basin (Rampton 1984). The Moncton Basin sub-district is underlain by non-calcareous sedimentary rocks, including Pennsylvanian sandstone, red mudstones, and grey lithic to feldspathic stones (Colpitts *et al.* 1995; NBDNR 2007).

#### 3.1.2 Topography and Drainage

The Project is located within the Petitcodiac Ecodistrict of the Eastern Lowlands Ecoregion. The Eastern Lowlands Ecoregion has elevations that range between 150 m and sea level; however, the Petitcodiac Ecodistrict is characterized by low-lying areas and gently-rolling hills with reliefs that seldom exceed 75 m (NBDNR 2007). The Petitcodiac Ecodistrict contains numerous wetlands that drain into the broad Petitcodiac River basin, which flows into Shepody Bay and then into the Bay of Fundy. The Project location drains to the north into the Jonathan Creek subwatershed of the Petitcodiac River.

The Petitcodiac Ecodistrict possesses a karst topography that is distinctive to this area. The dissolution of limestone and gypsum deposits by circulating groundwater has created a rare honeycombed karst, with caves, sinkholes, and funnel-shaped depressions (NBDNR 2007).

#### 3.1.3 Surficial Geology

The surficial geography in the general vicinity of the Project is comprised mainly of alluvial and tidal depositional materials that contain fine-textured soils comprised of red, slightly calcareous sandstone and mudstones (NBDNR 2007). These soils are relatively rich and fertile, and have been intensively farmed, especially along the major rivers in the ecodistrict.

### 3.2 BIOPHYSICAL SETTING

#### 3.2.1 Atmospheric Environment

The atmospheric environment consists of three components: air quality, climate/greenhouse gases (GHGs) and sound quality. These components are described as follows:

- Air quality is characterized by the composition of the ambient air, including the presence and quantity of air contaminants in the atmosphere, and the comparison of these air contaminants to applicable air quality objectives.

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- Climate is characterized by the historical seasonal weather conditions of a region, such as temperature, humidity, precipitation, winds, sunshine, and cloudiness. Statistical climate data are typically averaged over a period of many decades (GC 2017b). Project-based releases of GHGs (such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O)) are typically used as an indicator of the potential environmental interactions with climate change. GHGs released on a global scale from natural processes/sources and human activities increase global concentrations of GHGs in the atmosphere, and they are thought to be a contributor to climate change.
- Sound quality is characterized by the type, intensity, frequency and duration of noise (unwanted sound) in the outdoor environment. Vibration, or oscillation in matter that may lead to noise or stress in materials of adjacent structures, is also considered to be a component of sound quality.

The Project is located in an industrial area that includes paved roads travelled by transport trucks and passenger vehicles, transmission line RoW and industrial park properties and buildings, such as warehouses. There are currently no industrial facilities located within 1 km of the Project. Therefore, the existing air quality, GHG emissions and sound pressure levels (noise) in the surrounding area are expected to be predominantly influenced by vehicle traffic, and various sources of air contaminants and noise levels within the area, such as any machinery and/or equipment located on neighboring properties.

An Environment Canada weather station with historical data is located in Moncton. Climate normals data (1981 – 2010) from the Moncton weather station indicate that January is typically the coldest month of the year, with a daily average temperature of -8.9°C. July is typically the warmest month of the year, with a daily average temperature of 18.5°C. The average annual precipitation (including the water equivalent of snow) in Moncton is 1200.4 mm, with October being the rainiest month (112.1 mm on average) and January being the snowiest month (78.1 cm on average) (GC 2017a).

### 3.2.2 Freshwater Fish and Fish Habitat

The proposed transmission line is situated approximately 300 m from Jonathan Creek, within the Jonathan Creek watershed, a sub-drainage of the Petitcodiac River watershed, which empties into the Petitcodiac River. Several fish species of importance to commercial, recreational, or Aboriginal (CRA) fisheries are found within the Petitcodiac River system, including brook trout (*Salvelinus fontinalis*), alewife (*Alosa* spp.), American eel (*Anguilla rostrata*), rainbow smelt (*Osmerus mordax*), striped bass (*Morone saxatilis*), American shad (*Alosa sapidissima*), Atlantic tomcod (*Microgadus tomcod*), white perch (*Morone americanus*), smallmouth bass (*Micropterus dolomieu*), and chain pickerel (*Esox niger*) (DFO 1999, PWA 2015).

### 3.2.3 Water Resources

The lone watershed in the PDA (i.e., the Jonathan Creek watershed) drains a highly-developed urban landscape comprised largely of residential, commercial, and industrial developments, interspersed with transportation and electrical transmission infrastructure, as well as patches of

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treed or grassy areas. Aquifers within the Local Assessment Area (LAA) of the Project (see Section 4.3.1) are expected to follow the general drainage patterns of the watershed the LAA is located within; however, there are no protected wellfields within five kilometres of the Project, nor do any residential or commercial entities acquire potable water from the RoW (see Section Water Resources 5.2).

## 3.2.4 Terrestrial Environment

Outside of the urbanized, developed portions of the RoW, the terrestrial environment consists of upland and wetland habitats, vegetation and wildlife. Forests in the Petitcodiac Ecodistrict are dominated by red spruce, as well as black spruce, balsam fir, red maple, white birch and trembling aspen (NBDNR 2007). Disturbance along the Petitcodiac River often results in aspen dominated stands. The Project is located in an industrial area, and the habitat has been highly altered. Most of the LAA is occupied by buildings, paved surfaces, lawns. There are small patches of residual forest scattered throughout the LAA. At the eastern end of the LAA there is a stand of undisturbed forest that forms a buffer between Route 15 and a residential area to the east. Four wetlands are present in this area as well. A large electrical transmission Line 1124 runs parallel to Route 15 through the LAA. The power line RoW provides a corridor of natural (albeit heavily disturbed) habitat. Wildlife species found in the LAA are generally tolerant of disturbance, and include a variety of birds, mammals and invertebrates.

## 3.3 SOCIOECONOMIC SETTING

The Project is located within a highly-developed area of the City of Moncton, in the Parish of Moncton, Westmorland County (GNB 2016). This location is a part of the Southeast Regional Service Commission, or Regional Service Commission (RSC) 7. The City of Moncton is situated at the geographic centre of the Maritime Provinces, and is considered the transportation, communication and retail hub of the region (Moncton 2017). Greater Moncton, including the communities of Dieppe, Moncton and Riverview, has the fastest growth of all urban centres in Atlantic Canada (Southeast Regional Service Commission 2016), and it is the fifth fastest growing community in Canada with 17.8% growth between 2001 and 2011 (3+ Corporation n.d.). The Southeast region is the highest populated region in New Brunswick and contains the province's largest Census Metropolitan Area (CMA<sup>1</sup>) (138,645) (GNB 2013). Combined, the City of Moncton and the City of Dieppe hold 64% of Westmorland County's population, while Riverview is home to 66% of Albert County's population (GNB 2013).

### 3.3.1 Economic Activity and Economic Drivers

Both Atlantic and Canadian businesses have begun to invest in the region, and the Moncton CMA has quickly expanded as the centre of this economic activity (GNB 2013). The industry and labour

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<sup>1</sup> A census metropolitan area (CMA) or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a large urban area (known as the urban core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the urban core (Statistics Canada 2015).

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market in the Southeast Economic Region of the province is dominated by the services-producing sector, with the public-sector accounting for 28.2% of employment, followed by all other services-producing sectors (i.e., transportation and warehousing; professional, scientific and technical; information, culture and recreation; and other services) at 18.4%, and trade at 16.2% (GNB 2013).

The Southeast region has the largest bilingual population in New Brunswick (50.2%). The capacity to offer a bilingual workforce for many services and businesses, has been a key economic driver in the region (GNB 2013).

Known as one of the lowest cost locations for doing business in Canada (KPMG 2014), Moncton is home to four of Atlantic Canada's top business/industrial park campuses, has one of the fastest growing international airports in Canada (passenger and cargo), and is home to a number of world class firms in gaming technologies, knowledge industries and advanced manufacturing (Moncton 2017).

In July of 2017, Statistics Canada reported Moncton as the top investor in Atlantic Canada in non-residential building construction at \$167 million after the second quarter, ahead of Halifax, NS (\$138 million), Saint John, NB (\$64 million), and St. Johns, NF (\$96 million) (Statistics Canada 2017). Over the next few years, the City of Moncton is working to develop the following key economic sectors: transportation, logistics and distribution; health and life sciences; manufacturing; information and communications technologies; alternative energies; retail and tourism; back office industries (Moncton 2017).

### 3.3.2 Land Use

The Project is located in the Moncton Industrial Park. The largest component of the PDA is private land (1.01 ha, or 58%) followed by crown land (0.723 ha, or 42%). Most of the PDA is reserved for industrial purposes (1.47 ha, or 85.5%), followed by land reserved for transmission lines (0.22ha, or 12.6%), and land reserved for transportation, communication, and/or utilities (0.04 ha, or 2.3%).

The PDA consists of industrial properties, road RoWs, as well as transmission line and utility RoWs. While the PDA is a highly-altered landscape (Section 3.2.4), there is an unmapped wetland at the northeastern portion of the PDA.

According to the Service New Brunswick database (ca. 2017), there are no buildings located within the PDA; however, there are 16 private residences and approximately 66 businesses within 500 m of the PDA (i.e., within the LAA). The nearest private residence to the Project is located approximately 440 m from the PDA, and the nearest sensitive socio-economic receptor is Bernice MacNaughton High School, located approximately 340 m from the PDA (Figure 4.1).

Since the Project is located in an industrial park, designated for industrial land use, there are no recreation trails, watercourses, or forested areas with the PDA. As such, recreational activities, such as hunting, is not permitted to occur in the PDA; however, there may be some informal recreational use in the area that is not documented.

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### 3.3.3 Transportation, Infrastructure and Services

The PDA runs northeast from Edinburgh Drive, and crosses the intersection with Driscoll Crescent, along Arsenault Court, crossing two existing transmission lines on the most north-easterly end (Figure 2.2).

The Moncton Industrial Park is adjacent to CN's rail yards and Intermodal system with direct controlled access to the Trans-Canada Highway via Berry Mills Road. The Park is adjacent to Wheeler Boulevard, which provides fast, easy access to the Greater Moncton International Airport and all points in the Greater Moncton area (Moncton Industrial Development 2017).

The Moncton region has two world-class hospitals, three universities, multiple parks for walking/biking and many four-season entertainment opportunities. The City of Moncton offers residents and businesses numerous amenities including hotels, restaurants, bars, grocery, retail, and building supply and hardware stores, as well as walking trails, and the largest indoor and outdoor entertainment facilities in Atlantic Canada (Moncton 2017).

The City of Moncton has a team of approximately 600 (year-round) to 800 (summer) staff working on policy and program development and service delivery in Atlantic Canada. Available services include, but are not limited to (Moncton 2017):

- Emergency services (The Moncton Fire Department; along with RCMP detachment for policing)
- Water and sewer
- Engineering and environmental services department responsible for planning, design, construction, maintenance, and environmental management
- Building inspection and permitting services
- Animal control
- Public bus transportation
- An economic development group to identify economic growth opportunities for Moncton
- An event planning division which works with community groups and event organizers to expand the city's entertainment portfolio.

### 3.3.1 Heritage Resources

the PDA is situated in a previously disturbed area. A search of the Canadian Register of Historic Places (CRHP 2017) and the New Brunswick Register of Historic Places (NBRHP 2017) indicated that there are no cemeteries, historic places, or heritage sites located within or near the PDA (Section 5.5). There are also no registered archaeological sites within 500 m radius of the Project, and the potential for encountering unknown heritage resources within the PDA is low (Tricia Jarratt, NB Department of Tourism, Heritage and Culture, Archaeological Services Branch, 2017 personal communication).