

**Environmental Baseline Data
Report – Hardrock Project:
Socio-Economic**



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Executive Summary

Premier Gold Mines Hardrock Inc. (Premier) proposes the establishment, construction, operation, and retirement (closure) of an open pit gold mine and ore processing facility, and requisite ancillary activities, collectively known as the Hardrock Project. The Project is located approximately 275 kilometres (km) northeast of Thunder Bay, Ontario, in the Ward of Geraldton. Premier has retained Stantec to collect environmental baseline data from the Project, in support of the Environmental Assessment process. This Socio-Economic Baseline Data Report evaluates existing socio-economic conditions to support the assessment of Project effects on the socio-economic environment.

Between 2006 and 2011, the population of Ontario increased by approximately five percent while Northern Ontario's population decreased by 1.4 percent during the same time period. The populations of the Thunder Bay District and the Municipality of Greenstone also decreased between 2006 and 2011, by approximately two and four percent, respectively. Available population projections indicate that the Municipality will continue to see population decline, with an estimated population of 4,618 residents in 2018 and 4,480 residents in 2023.

The Northwest Ontario economic region includes the Districts of Thunder Bay, Rainy River, and Kenora. Spatially, this is the largest economic region in the province, while also having the smallest population of all Ontario economic regions. Between 2011 and 2012, there were increases in the region's employment and participation rate and a decrease in the unemployment rate. Mining is a key component of the economy in Northwestern Ontario with over 80 exploration projects during 2012. As of 2014, there were four active mines and a quarry operation in the Northwest Ontario region. These projects are located outside of Greenstone. The Thunder Bay District is expected to experience a shortage of skilled workers for mining projects, primarily because there is a lack of younger people with appropriate skills coming into the regional labour market. Increased recruitment and retention challenges are also anticipated as competition for workers increases.

Some municipal services and infrastructure have been reported to be at or near capacity, including waste water systems and solid waste facilities. Health care availability in the Municipality may become an issue since the area is considered to be under-serviced by health care professionals. Meanwhile, due to population decline, there has been a surplus of housing in some communities in Greenstone and there are some underdeveloped, designated residential areas to accommodate larger-scale future growth in the project vicinity, including in Beardmore, Longlac, Nakina, and Geraldton.

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Land and Resource Use (LRU) in the RSA has been shaped by mining and forestry activity. In the early 1930s, the region became known for gold mining; however, extraction ceased by the end of the 1960s leaving forestry as the main industry and land use in the region. Today, the most extensive land uses in the LRU regional study area (RSA) are forestry, tourism and consumptive recreation such as moose and black bear hunting, trapping and fishing.

The PDA is located within the Municipality of Greenstone and the Thunder Bay North Unorganized Territory. Land use is directed by the Land Use Policy for General Use area (G2967), Municipality of Greenstone Official Plan, MacLeod Provincial Park Management Plan, Kenogami Forest Management Plan and Lake Nipigon Forest Management Plan. The Municipality of Greenstone Official Plan establishes land use districts where development is prohibited or controlled such as in residential, commercial and industrial districts, lakefront districts, environmental protection districts and around natural heritage features. Although the Municipality of Greenstone Official Plan was approved by the municipality in 2010, it has not yet been accepted by the Ministry of Municipal Affairs and Housing (MMAH). The MMAH is the approval authority for matters under the Planning Act.

Forestry, recreation, transportation, mineral exploration, aggregate quarrying, urban land uses, trapping and potentially hunting also occur in the Project development area (PDA). Notable land use features in the PDA include the MacLeod and Hardrock townsites, Kenogamisis Golf Club, Highway 11 and Michael Power Boulevard, Barton Bay Wildlife Trail, snowmobile trails and powerlines and a transformer substation owned by Hydro One Networks Inc. The PDA is subject to an array of active and pending mining claims, dispositions and other transfers of title or interest.

Land and resource use areas and facilities in the LSA include:

- Part of MacLeod Provincial Park, which includes a campground, walking trail, cross-country skiing trails, and public beach
- Part of Geraldton, which includes a municipal park, boat launch and public beach, among other urban land uses
- A Crown land campsite
- Snowmobile trails
- Canoe routes
- Planned forest harvest areas and forest access roads
- Trapline Areas (GE021, GE022, GE065)
- Bear Management Areas (GE-21A-032, GE-21A-027)
- Bait Harvesting Areas (NI5035, NI5036, NI5027, NI5028)

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In addition to the types of land and resource use areas identified in the PDA and LSA, the RSA overlaps the Kenogamisis Lake Resort, a portage route of Kenogamisis River, the town of Geraldton and resource roads and other trails.

Abbreviations and Acronyms

| | |
|------------------|---|
| AADT | Annual Average Daily Traffic |
| ACP | Advanced Care Paramedics |
| APS | Anishinaabek Police Service |
| AZA First Nation | Animbiigoo Zaagi'igan Anishinaabek First Nation |
| BNA First Nation | Bingwi Neyaashi Anishinaabek First Nation |
| BZA First Nation | Biinjitiwaabik Zaaging Anishinaabek First Nation |
| CCAC | Community Care Access Centres |
| CMHC | Canada Mortgage and Housing Corporation |
| CN Railway | Canadian National Railway |
| EA | Environmental Assessment |
| EMS | Emergency Medical Services |
| ER | Emergency Room |
| ft | Feet |
| FTE | Full-Time Equivalent |
| GDP | Gross Domestic Product |
| GEDC | Greenstone Economic Development Corporation |
| GTA | Greater Toronto Area |
| km | Kilometres |
| LIO | Land Inventory Ontario |
| LRU | Land and Resource Use |
| LSA | Local Study Area |
| m ³ | Metres cubed |
| MiHR | Mining Industry Human Resources Council |
| MLS | Multiple Listings Service |
| MMAH | Ministry of Municipal Affairs and Housing |
| MNR | Ministry of Natural Resources |
| MNRF | Ministry of Natural Resources and Forestry (formerly the Ministry of Natural Resources) |
| MOE | Ministry of the Environment |
| MOECC | Ministry of the Environment and Climate Change (formerly the Ministry of the Environment) |
| MOF | Ministry of Finance |
| MTO | Ontario Ministry of Transportation |
| NHS | National Household Survey |
| NOSTA | North of Superior Tourism Association |

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| | |
|-----------------|---|
| NRRRI | Northern and Rural Recruitment and Retention Initiative |
| North West LHIN | North West Local Health Integration Network |
| OTN | Ontario Telemedicine Network |
| PCP | Primary Care Paramedics |
| PDA | Project Development Area |
| PGEs | Platinum Group Elements |
| RSA | Regional Study Area |
| TBFR | Thunder Bay Fire Rescue |
| TBIAA | Thunder Bay International Airports Authority |
| TBSSAB | Thunder Bay Social Services Administration Board |
| TBRHSC | Thunder Bay Regional Health Science Centre |
| TDR | Technical Data Report |

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

Introduction
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1.0 INTRODUCTION

Premier Gold Mines Hardrock Inc. (Premier, the Proponent) proposes the establishment, construction, operation, and retirement (closure) of an open pit gold mine and ore processing facility, and any ancillary activities, collectively known as the Hardrock Project (the Project). The Project is located approximately 275 kilometres (km) northeast of Thunder Bay, Ontario, in the Ward of Geraldton, at the intersection of Highway 11 and Michael Power Boulevard (Figure 1-1).

Premier completed a Preliminary Economic Assessment (PEA) for the Project in January 2014, which indicated favourable economics for open pit mining (Stantec 2014). Updated resource estimates were completed in July 2014. Feasibility studies and the environmental assessment (EA) are ongoing. Premier has retained Stantec to collect environmental baseline data from the Project development area (PDA), in support of the EA process.

1.1 PROJECT OVERVIEW

The Project is situated within a historical mine site. Premier acquired the Hardrock mining claim in December 2008 from Lac Properties. The property is a brownfield site that was actively mined between 1930s-1970s and in later years was known as the MacLeod-Mosher complex. The former underground operations include the MacLeod - Mosher Mine and the Hardrock Mine.

The preliminary (conceptual) site layout includes an open pit, onsite ore processing facility, waste rock and tailings disposal, water management activities and any ancillary facilities. Premier generally anticipates that the required mine-related facilities will be placed in close proximity to the open pit to the extent practicable.

Mining of the Hardrock deposit has been designed as an open pit with an anticipated 12,000 tonnes per day (tpd) of mineralized material processed at the mill during the first two years, and approximately 30,000 tpd of mineralized material processed at the mill starting during the third year, for 365 days per year of mill operation and mine operation. The estimated life of mine (LOM) is approximately 15 years.

Ore, mine rock and overburden removed from the open pit will be trucked to the surface. Ramp widths will be designed to accommodate the necessary heavy equipment.

The mill is anticipated to include ore crushing, ball milling, and gold recovery. Tailings will be stored in a constructed tailings management facility (TMF). Ongoing ore processing plant water requirements will be derived from water recycled from the TMF where possible. There may also be a need for additional surface water takings. Mine-contact water from within the perimeter of the mine facilities, and water from pit dewatering, may be directed to the TMF or the process plant, or discharged depending on its quality. Such discharge will meet applicable federal and provincial effluent discharge requirements.

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It is anticipated that site infrastructure may include maintenance garages, warehouses, a mine dry and administration buildings. Solid waste will be produced by the Project and will require collection and processing through methods that include re-use, recycling, and disposal. All waste including hazardous waste disposal shall be undertaken in accordance with existing regulations. A sewage treatment facility capable of handling approximately 300 people is envisaged for this Project.

The key components of the Project are expected to include, but not be limited to:

- open pit;
- waste rock storage areas;
- ore stockpile;
- mill feed storage area and crushing plant;
- ore milling and processing plant;
- tailings management facility;
- mine water treatment facility;
- internal access roads and pipelines;
- parking areas;
- mine dry, office building and assay lab;
- mine maintenance, shop and warehouse;
- explosives storage and manufacturing;
- aggregate pit(s);
- water supply and distribution system;
- sewage treatment facility;
- fuel supply, conversion, storage and distribution;
- power generation and distribution;
- domestic and solid waste handling facility;
- Highway 11 realignment (and potential relocation of Ministry of Transportation yard);
- watercourse realignments;
- relocation of a portion of the historical MacLeod tailings and Hardrock tailings;
- relocation of Hydro One Networks Inc. (HONI) substation; and
- natural gas pipeline.

At this time the need for a temporary camp is being considered, and will be confirmed and assessed as appropriate in the EA.

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

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1.2 STUDY OBJECTIVES

This Environmental Baseline Data Report – Hardrock Project: Socio Economic (The Socio-economic Baseline Data Report) describes existing socio-economic conditions to support the assessment of Project effects on the socio-economic environment.

This Socio-economic Baseline Data Report provides baseline information for the following socio-economic components:

- Demographics;
- Economy, Employment and Business;
- Community Infrastructure and Services; and
- Land and Resource Use (LRU).





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 Revised: 2015-03-06 By: mkraus

March 2015
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Legend

-  Project Location
-  Town/ Village
-  City
-  Highway
-  District Boundary
-  Waterbody

Notes

1. Coordinate System: NAD 1983 UTM Zone 16N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Orthoimagery © First Base Solutions, 20xx.

Client/Project

Premier Gold Mines Limited
Hardrock Project

Figure No.

1-1

Title

Project Location

2.0 METHODOLOGY

2.1 DATA COLLECTION AND SOURCES

The primary source of socio-economic baseline data is Statistics Canada and, in particular, the 2011 Census of Canada and National Household Survey (NHS). These sources provide baseline information on such topics as demographics, labour force, education level of the population, and housing. Additional information was also collected from:

- Municipal corporations;
- Provincial agencies, boards and commissions;
- Planning boards and boards of trade;
- School and health boards;
- District Social Services Administration Boards;
- Community Development Corporations;
- Police and other emergency response organizations; and
- Housing agencies.

Data collection for the LRU baseline was primarily a desktop exercise. Data sources included:

- Planning documents (e.g., Municipality of Greenstone Official Plan, MacLeod Provincial Park Management Plan, forest management plans);
- Government websites (e.g., Statistics Canada, Government of Ontario, Ministry of Northern Development and Mines [MNDM], Aboriginal Affairs and Northern Development Canada [AANDC], Municipality of Greenstone);
- Government databases (e.g., census profiles, mining claims dispositions);
- Interactive maps (e.g., MNDM's CLAIMaps);
- Government reports (forest management activity annual reports, various reports from MNDM, Ontario Parks, Ministry of Natural Resources and Forestry [MNRF] and Ministry of Tourism, Culture and Sport [MTCS]);
- Acts and regulations (e.g., Hunting Regulations Summary, Recreational Fishing Regulations);
- Local websites (e.g. tourism association websites, outfitter websites, Greenstone Economic Development Corporation website); and
- News articles.

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Methodology
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2.1.1 Mapping

Data sources used in creating figures and generating metrics for the LRU baseline included:

- Datasets from the Land Information Ontario data warehouse;
- Greenstone Official Community Plan; and
- Forest management plans.

2.1.2 Interviews and Consultation

Data on existing LRU were collected through ongoing discussions between Premier and local land and resource users, including trappers, at Premier's Community Relations office in Geraldton.

In the fall of 2014, a questionnaire on land and resource use in the Project Development Area (PDA) was developed. Copies of the questionnaire were made available at project open houses and in Premier's Community Relations office in Geraldton. At the time of writing a total of seven questionnaires were completed and returned to Premier by local land and resource users.

2.2 SPATIAL BOUNDARIES

Socio-economic study areas were determined based on the proximity of the Project to adjacent communities and the potential for Project effects on the existing socio-economic environment. Based on the current Project description, baseline conditions are described for a local study area (LSA) and a regional study area (RSA). The study areas for this Environmental Baseline Data Report are provided below.

Project development area (PDA): for baseline purposes encompasses an area slightly larger than the anticipated Project footprint and represents the anticipated area of physical disturbance associated with the construction and operation of the Project.

Local study area (LSA): encompasses communities proximal to the project primarily in the Greenstone Municipality.

Regional study area (RSA): seeks to capture the Northern Ontario regional context for describing socio-economic baseline conditions.

Study area boundaries for the Baseline Data Report were identified for economy, employment and business; community services and infrastructure; and land and resource use (described below). While the Baseline Data Report is intended to support assessment of Project effects on the socio-economic environment, the study areas may be adjusted at a later time to facilitate an accurate assessment of effects. For example, if additional potential effects are identified through public consultation, it may be necessary to adjust the study area in order to assess all potential interactions and effects.

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

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2.2.1 Economy, Employment and Business

For Economy, Employment and Business, the LSA includes the communities in which there is likely to be increased demand for local labour, goods, and services as a result of Project employment and expenditures. This is based on adjacency to the Project, and the potential for economic effects as a result of local employment, procurement, and government revenue. The LSA (Figure 2-1) is the Municipality of Greenstone, including the communities of Beardmore, Caramat, Geraldton, Jellicoe, Longlac, Macdiarmid, Nakina, and Orient Bay. It also includes the following First Nations communities:

- Animbiigoo Zaagi'igan Anishinaabek (AZA First Nation);
- Aroland First Nation;
- Bingwi Neyaashi Anishinaabek (BNA First Nation), formerly Sand Point First Nation;
- Ginoogaming First Nation;
- Long Lake #58 First Nation; and
- Rocky Bay First Nation (Biinjitiwaabik Zaaging Anishinaabek (BZA First Nation).

The RSA for Economy, Employment and Business is the Thunder Bay District (Figure 2-2). This area is selected based on the extent to which Project employment and expenditures can be reasonably expected to affect the regional economy. Project demand for labour, goods, and services will likely result in employment and expenditures and these can affect labour and economy in the RSA. In order to provide context, and because some economic effects (e.g., increased Gross Domestic Product [GDP]) extend to the provincial economy, some baseline conditions on demographics and economy have also been described for Ontario.

2.2.2 Community Services and Infrastructure

The LSA for Community Infrastructure and Services is the Municipality of Greenstone (including the communities listed above) since those communities are most likely to experience Project-related effects on infrastructure and services.

The RSA is the Thunder Bay District; however, most of the information for this region focuses on the City of Thunder Bay since it is the largest city in the RSA and would be most likely to provide infrastructure and services to the Project and its employees.

2.2.3 Land and Resource Use

Spatial boundaries for the LRU baseline were determined based on the proximity of the Project to adjacent communities and the potential for Project effects on the existing LRU. The spatial boundaries are defined for the PDA, LSA and RSA (Figure 2-3).

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Project activities may result in direct physical disturbance of other LRU and/or limit access to resource use areas in the PDA. The PDA as shown on Figure 2-3, is 2,622 ha in size. It is located within the District of Thunder Bay, mainly within the Municipality of Greenstone; however, 1.5 ha of the PDA overlaps Unorganized Territory associated with Thunder Bay District.

The LSA includes the PDA and adjacent areas where Project-related direct effects and/or disturbance to LRU may reasonably be expected to occur and can be predicted or measured with a reasonable degree of accuracy and confidence. The LSA for LRU includes the local study area defined in the Environmental Baseline Data Report – Hardrock Project: Acoustics (Acoustics Baseline Data Report), which encompasses a 1.5 km buffer around the PDA where a measureable change in acoustic environment may be experienced. The rationale for alignment with the Acoustic LSA is based on the potential for direct disturbance from project-related acoustic emissions on land and resource users as well as fish and wildlife resources, which are central to local hunting, trapping, and fishing activities. The total area of the LSA is 7,018 ha.

The RSA for LRU is the maximum area beyond the LSA where effects and/or disturbance from the Project could potentially interact cumulatively with the effects from other land uses to reasonably affect LRU. The RSA for LRU is 21,451 ha and draws on the study areas for the Environmental Baseline Data Report – Hardrock Project: Terrestrial (Terrestrial Baseline Data Report) and the (Environmental Baseline Data Report – Hardrock Project: Fish and Fish Habitat (Fish and Fish Habitat Baseline Data Report), which identify vegetation areas, wildlife habitats and fish habitats (respectively), which may coincide with areas that are used for non-traditional consumptive recreation activities such as hunting, fishing and harvesting edible plants. The RSA for LRU also takes into consideration the 3 km buffer used as the RSA for the Acoustic Baseline Data Report. To promote a conservative approach to baseline data collection, the boundaries of the LRU RSA also extend to the urban settlement boundary for the town of Geraldton and the entire area of Lake Kenogamisis.

The preliminary study areas identified for LRU in the Socio-Economic Baseline Report were reviewed and modified as appropriate for specific application for the assessment of potential environmental effects. The assessment areas applied are described below.

The PDA encompasses the Project footprint and is the anticipated area of physical disturbance associated with the construction and operation of the Project.

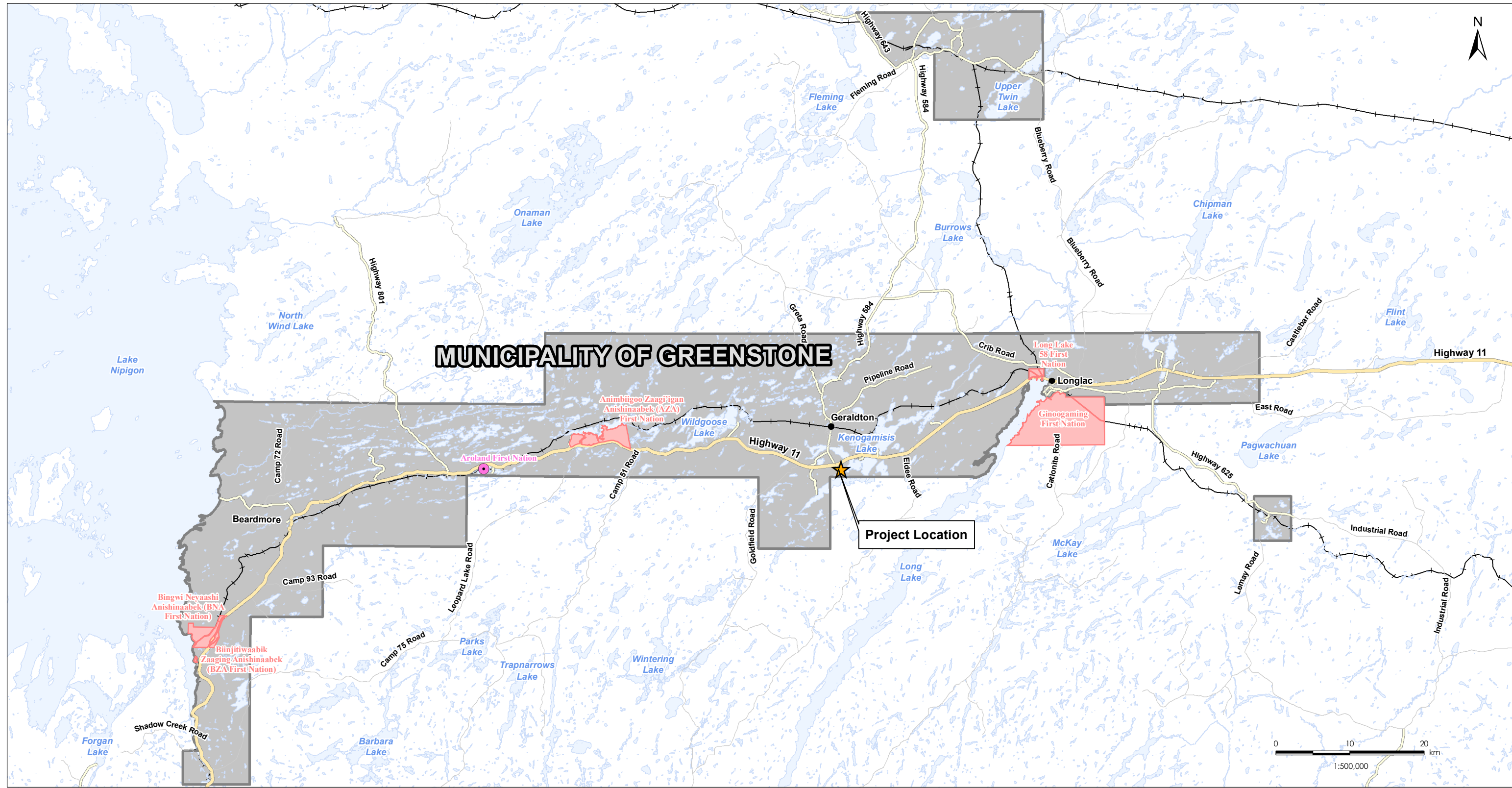
The Local Assessment Area (LAA) covers a broader area than the preliminary LSA identified in the Socio-Economic Baseline Report. Modifications were made to align the LAA with the LAAs for Wildlife and Wildlife Habitat and Fish and Fish Habitat, while also including all of Kenogamisis Lake and the Ward of Geraldton, where the majority of land and resource users in the area reside. This LAA was selected in order to capture the direct effects of the Project on opportunities for consumptive activities (i.e., trapping, guide outfitting, bait harvesting, fishing and hunting) as well as land and resource users' enjoyment of their activities.

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The Regional Assessment Area (RAA) was also expanded from that described as the preliminary RSA to align with the RAAs for Wildlife and Wildlife Habitat and Fish and Fish Habitat in order to capture the cumulative effects with other projects on land and resource use and the resources, such as fish and wildlife, upon which users depend.

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 Revised: 2015-03-06 By: mikraus



Legend

- Project Location
- Aroland First Nation (Band Office Location)
- Railway
- Highway
- Major Road
- Local Road
- First Nations Communities
- Municipality of Greenstone
- Waterbody

Notes

1. Coordinate System: NAD 1983 UTM Zone 16N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

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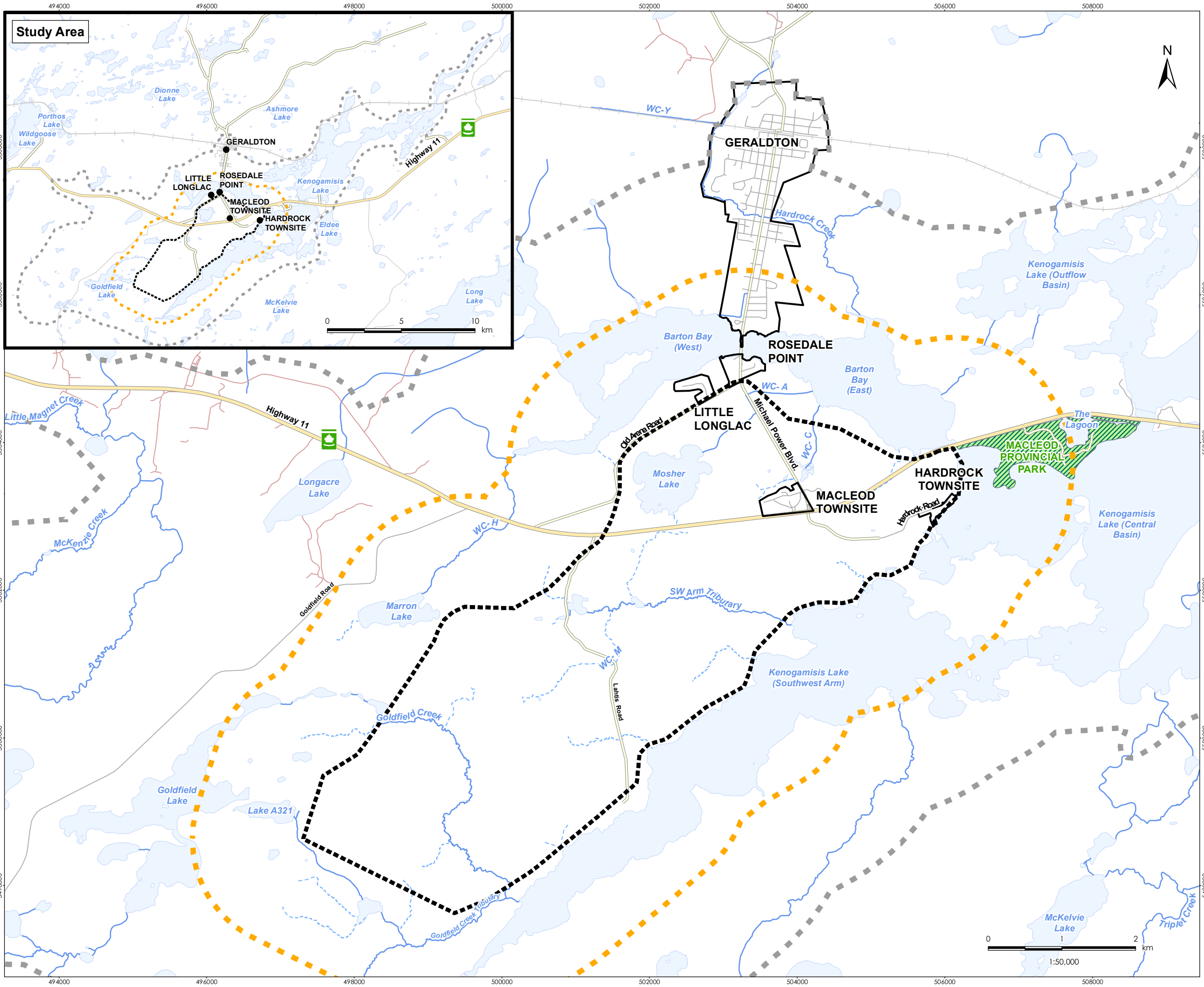
Client/Project

Premier Gold Mines Limited
Hardrock Project

Figure No.
2-1

Title

LSA for Economy, Employment and Business and Community Services and Infrastructure



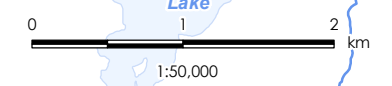
- Legend**
- Project Development Area*
 - Local Study Area
 - Regional Study Area
 - Highway
 - Major Road
 - Local Road
 - Urban Settlement Area
 - Watercourse - Permanent
 - Watercourse - Intermittent
 - Waterbody

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 16N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

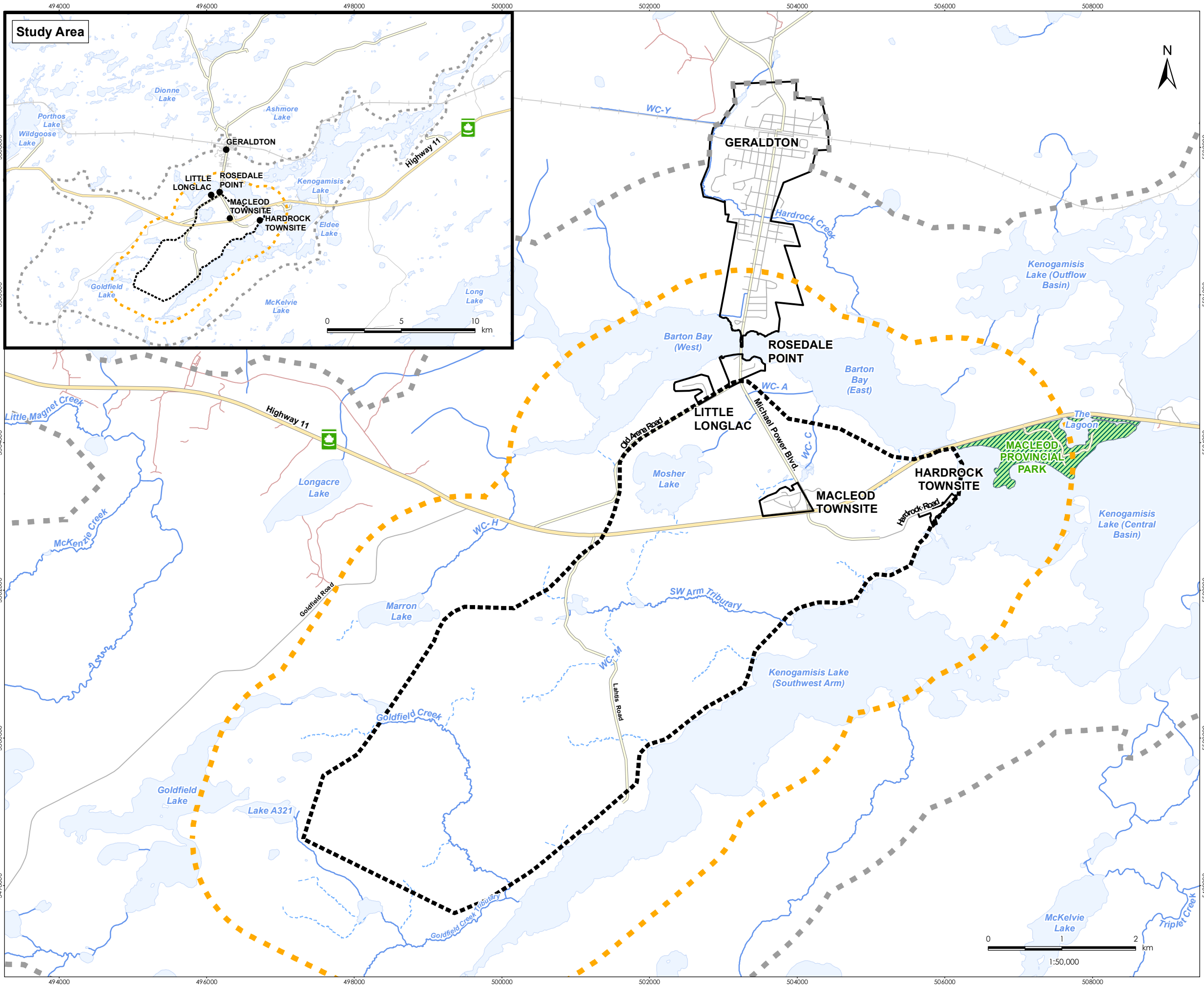
Client/Project
Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
2-3

Title
LSA and RSA for Land and Resource Use



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 Revised: 2015-03-06 By: mtraus 5498000



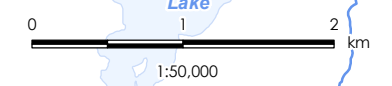
- Legend**
- Project Development Area*
 - Local Study Area
 - Regional Study Area
 - Highway
 - Major Road
 - Local Road
 - Urban Settlement Area
 - Watercourse - Permanent
 - Watercourse - Intermittent
 - Waterbody

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 16N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

Client/Project
Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
2-3

Title
LSA and RSA for Land and Resource Use



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 Revised: 2015-03-06 By: mtraus 5498000

3.0 POPULATION AND DEMOGRAPHICS

This section provides population and demographic profiles for Ontario, the Thunder Bay District, and Greenstone. This includes information on population and population change, age and gender, Aboriginal status, education, and language.

3.1 ONTARIO

3.1.1 Total Population

The 2011 Census recorded Ontario's population as approximately 12.85 million. However, due to data gaps in the Census count, the adjusted estimate for the 2011 population for Ontario is between 13.2 and 13.4 million (Ontario Ministry of Finance 2013a). Population estimates for the second quarter of 2013 report Ontario's population as 13,537,994 (Ontario Ministry of Finance 2013b). This marked an increase of approximately 126,000, or 0.9 percent, over the same period in 2012. Between 2012 and 2013 Ontario had a net natural increase (the number of births minus the number of deaths) of approximately 49,000. Net international migration to the province was approximately 99,000, while interprovincial migration resulted in a net decrease of approximately 21,000 people.

Census data indicate population growth between 2006 and 2011 for all provinces and territories, except Northwest Territories. The population of Canada increased by 1.86 million people between 2006 and 2011 and approximately 27 percent of national growth occurred in Ontario. Ontario's population increased 5.7 percent, representing the province's slowest five-year census interval growth rate since 1981-1986 (Figure 3-1). Ontario's population growth rate between 2006 and 2011 was slightly lower than the national rate (5.9 percent), and the sixth highest growth rate among provinces and territories, behind Yukon (11.6 percent), Alberta (10.8 percent), Nunavut (8.3 percent), BC (7.0 percent) and Saskatchewan (6.7 percent).

Within Ontario, there was substantial variation in the population growth rate across Census Divisions. Approximately 67.8 percent of Ontario's population growth between 2006 and 2011 was concentrated in just six Census Divisions, four of which were in the Greater Toronto Area (GTA). The GTA's population increased by 9.0 percent between 2006 and 2011 and approximately 47 percent of the provincial population lived in the GTA. By comparison, Northern Ontario's population decreased by 1.4 percent between 2006 and 2011. Its share of the provincial population also decreased, from 6.5 percent in 2006 to 6.0 percent in 2011 (Ontario Ministry of Finance 2012a).

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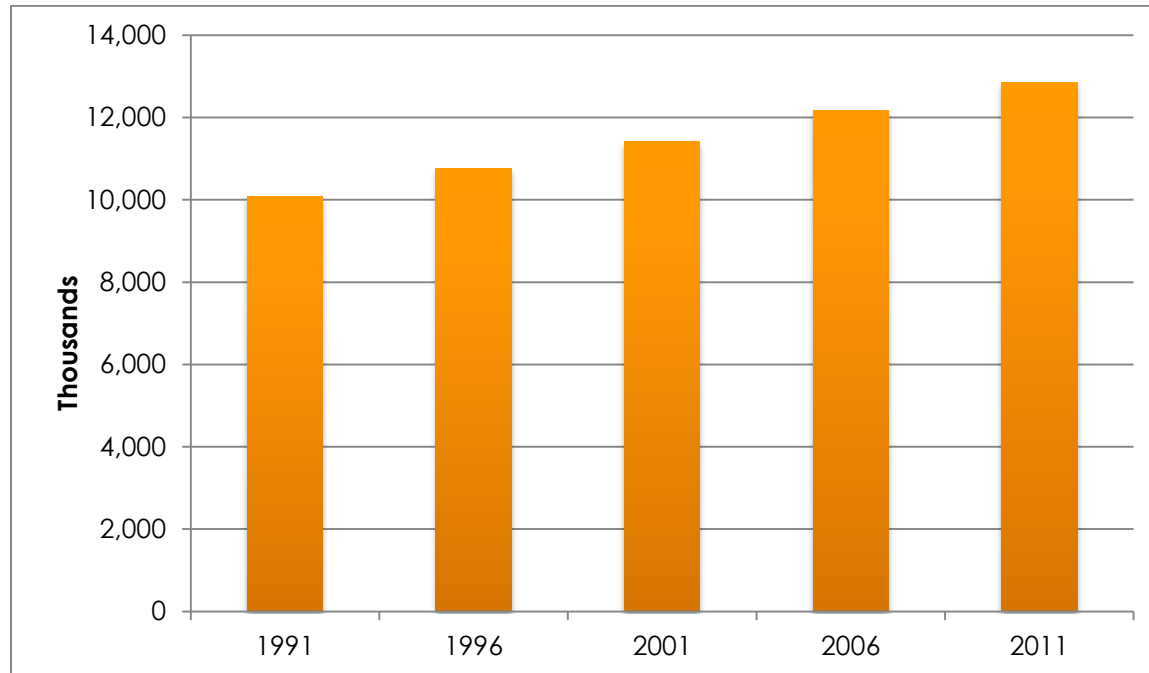


Figure 3-1: Population Change, Ontario, 1991-2011

The Ontario Ministry of Finance (2013c) provides population projections for three scenarios, including low, high, and medium population growth. Based on the medium growth scenario, Ontario's population is projected to grow at an annual rate near 1.0 percent for 2012-2036. The 2036 population is projected to reach almost 17.4 million, with the majority of population growth (71 percent) attributed to net migration. As the provincial population continues to shift to an older age structure, natural population increase is expected to diminish. The Ontario Ministry of Finance projects that the number of seniors aged 65 and over will increase from approximately 14.6 percent to 24.0 percent of the total provincial population by 2036. The number of Ontarians aged 15 to 64 is projected to represent approximately 60.4 percent in 2036, down from 69.1 percent in 2012.

Provincial population projections show some regional variation, with the GTA expected have the fastest population growth. This region's share of the provincial population is projected to increase from 47.6 percent in 2012 to 51.5 percent in 2036.

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3.1.2 Age and Gender

According to the 2011 Census, the median age of Ontario's population was 40.4 years (Statistics Canada 2012). This marked an increase of 1.4 years since 2006, when the median age was 39.0 years. Compared to the median age for Canada as a whole (40.6 years), Ontario's median age in 2011 was slightly lower. The older age groups in Ontario had the largest increases between 2006 and 2011. The 85+ age group increased 29 percent, while the 60-69 age group grew by 27 percent.

There were considerable increases in the number of seniors aged 65 and above (14 percent increase) and the working age population (15 to 64) was increasingly made up of older individuals (Ontario Ministry of Finance 2012a).

The 2011 Census indicated a gender ratio of 95.1 men for every 100 women in Ontario, which was slightly lower than in 2006 (95.2 percent). Women continued to substantially outnumber men in the older age groups (65+) (Figure 3-2).

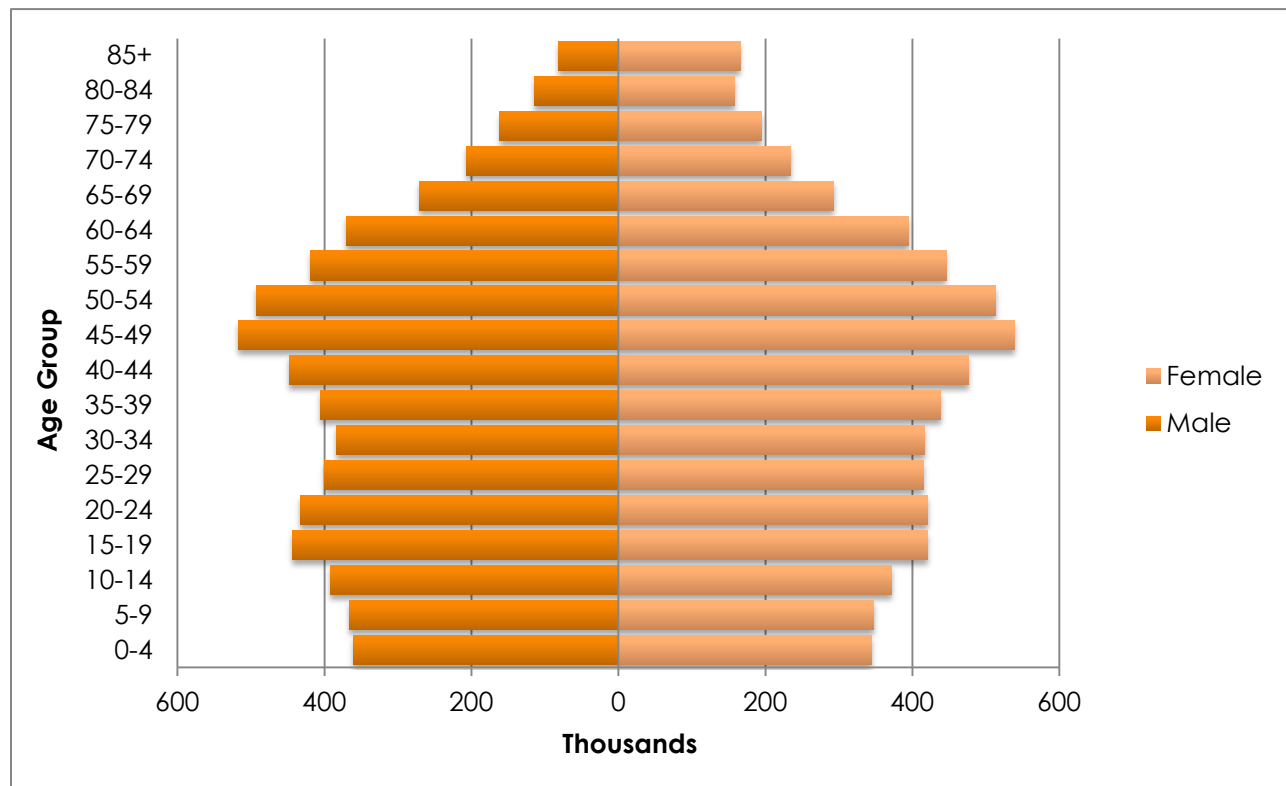


Figure 3-2: Population by Age and Gender, Ontario, 2011

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3.1.3 Aboriginal Status

Based on the 2011 National Household Survey (NHS), Ontario is the province with the largest Aboriginal population. Approximately 1 in 5 of Canada's Aboriginal persons lived in Ontario in 2011, and 2.4 percent of Ontario's population (301,430 people) self-identified as Aboriginal in the 2011 NHS. This represented an increase since 2006, when self-identified Aboriginal persons accounted for 2.0 percent of the provincial population. The Aboriginal population of Ontario increased by 24.3 percent – approximately five times faster than the growth rate for the non-Aboriginal provincial population (4.8 percent). Ontario Ministry of Finance (2013a) notes that demographic and non-demographic factors may account for this high growth rate (e.g., more individuals choosing to self-identify as Aboriginal persons).

As shown by Table 3-1, people who identified themselves as First Nations comprised the largest portion of Ontario's Aboriginal population in 2011, representing 1.6 percent of the total population. Métis accounted for 0.7 percent of the Aboriginal population. Inuk (Inuit) identity, multiple Aboriginal identities, or other Aboriginal identity each totaled less than 0.1 percent of the provincial population (Statistics Canada 2012).

Table 3-1: Aboriginal Identity, Ontario, 2011

| Aboriginal Identity Population | Total | Percent of Total Population |
|----------------------------------|------------|-----------------------------|
| Total Population | 12,651,790 | 100 |
| • Aboriginal Identity | 301,430 | 2.4 |
| – First Nations | 201,100 | 1.6 |
| – Métis | 86,020 | 0.7 |
| – Inuk (Inuit) | 3,355 | 0.03 |
| – Multiple Aboriginal Identities | 2,910 | 0.02 |
| – Other Aboriginal Identity | 8,040 | 0.06 |

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3.1.4 Education

The level of education for the provincial population aged 15 and older is shown by Figure 3-3 (Statistics Canada 2013a). In 2011, 23.4 percent of the provincial population aged 15 and above had a university degree. Among Ontarians aged 25 to 64, this proportion stood at almost a third (31.5 percent), representing the highest proportion of university graduates among all provinces and territories (Ontario Ministry of Finance 2013d). At 7.4 percent, the proportion of the population who had attained a trades certificate as their highest educational attainment was relatively low. In comparison, at the national level this proportion was 10.8 percent in 2011. The proportion of Ontarians aged 15 and above who did not have a high school diploma stood at 18.7 percent in 2011.

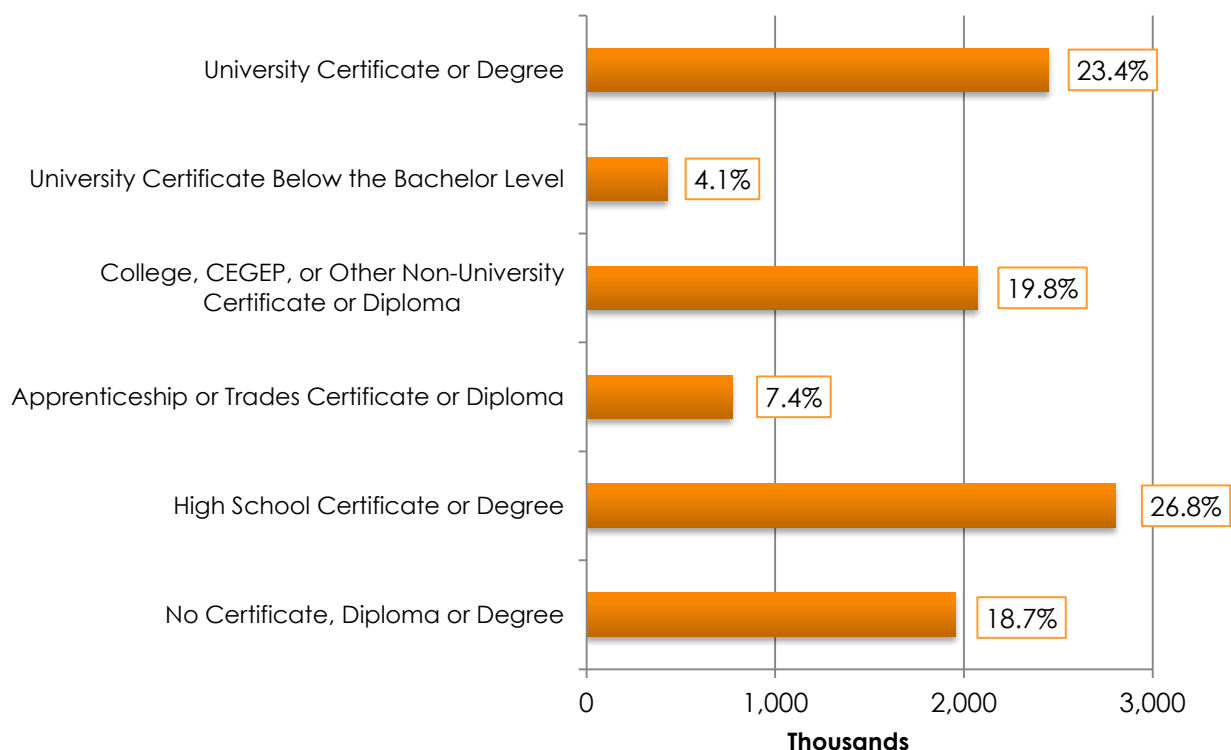


Figure 3-3: Educational Attainment, Ontario, 2011

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3.1.5 Language

English is the predominant language in Ontario (Figure 3-4) (Statistics Canada 2012). In 2011, approximately 80 percent of the provincial population reported English as the language spoken most often at home. In comparison, English was indicated as the mother tongue for approximately 67 percent of Ontarians. Non-official languages were identified as mother tongue for approximately one quarter of the provincial population. The proportion of Ontarians speaking non-official languages most often at home, however, was substantially smaller (14 percent).

Among non-official languages, Chinese languages were the most numerous mother tongue group in Ontario in 2011 (Ontario Ministry of Finance Language Factsheet). Since 2006, the fastest growing mother tongues in Ontario were Bengali (31.3 percent), Hindi (25.8 percent), Persian (25.6 percent), Tagalog (24.2 percent), Arabic (20.3 percent), and Punjabi (18.0 percent).

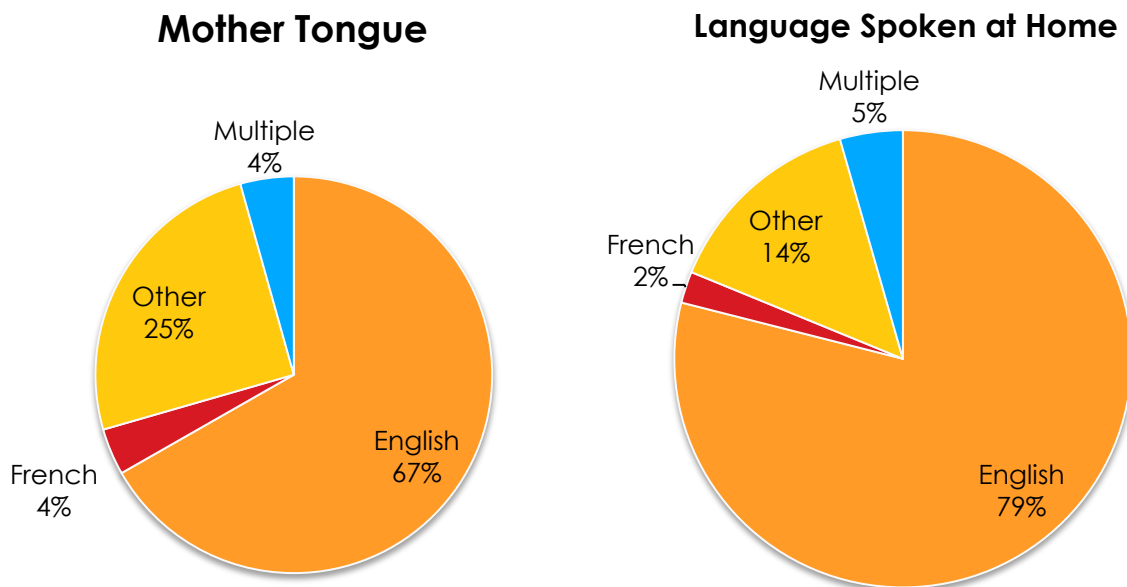


Figure 3-4: Mother Tongue and Language, Ontario, 2011

3.2 THUNDER BAY DISTRICT

3.2.1 Total Population

The 2011 Census recorded a population of 146,055 for the Thunder Bay District (Statistics Canada 2012). This marked a decrease of approximately 2 percent since 2006, when the population of the District was approximately 149,000 (Figure 3-5). In comparison, the population of the province as a whole grew by over 5 percent during the same period.

Approximately three quarters (74.2 percent) of the District population lived in the City of Thunder Bay in 2011. The city also saw a small decrease in population since 2006, from 109,160 to 108,359 (-0.7 percent) (Statistics Canada 2012).

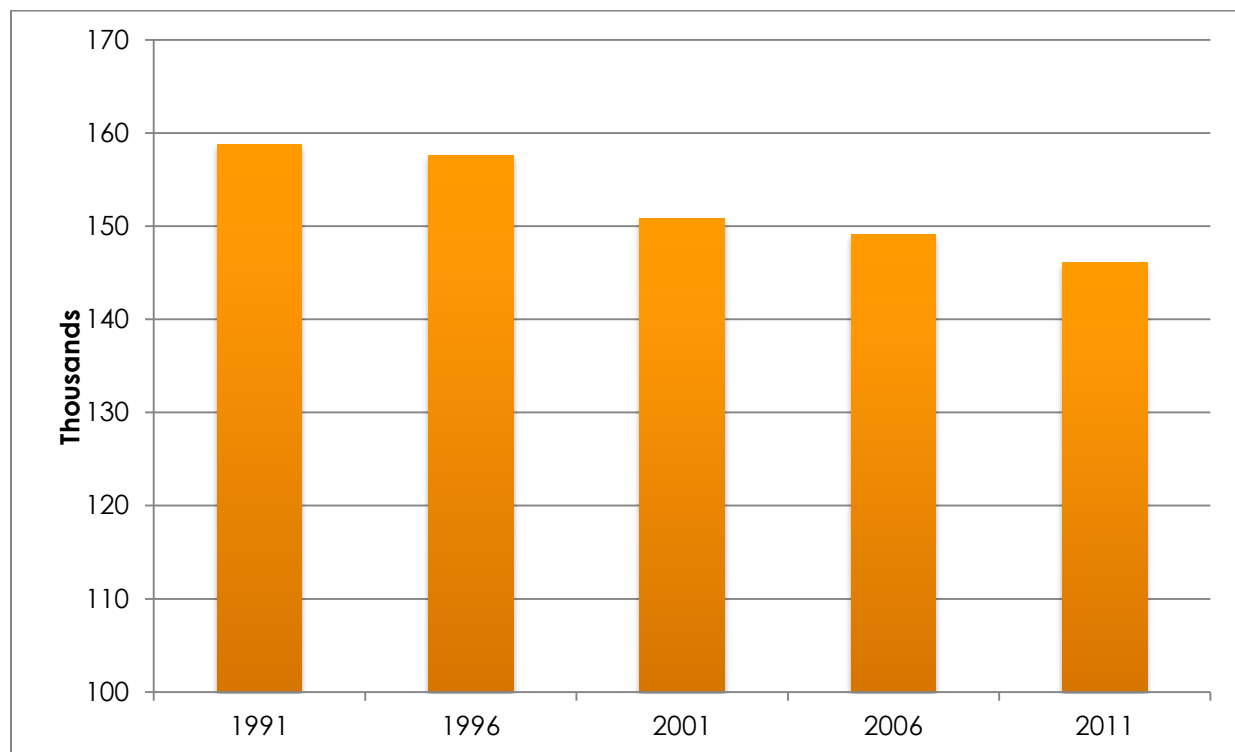


Figure 3-5: Population Change, Thunder Bay District, 1991-2011

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3.2.2 Age and Gender

The population of the District as of 2011 is shown by age and gender in Figure 3-6. The 2011 Census indicates an aging population in the Thunder Bay District. The median age of the District population was 43.8 years in 2011, which marked an increase of 2.1 years since 2006. In 2011, the District had a higher median age than the province as a whole (40.4 years). The gender ratio for the Thunder Bay District was 96.8 men to every 100 women in 2011 (Statistics Canada 2012).

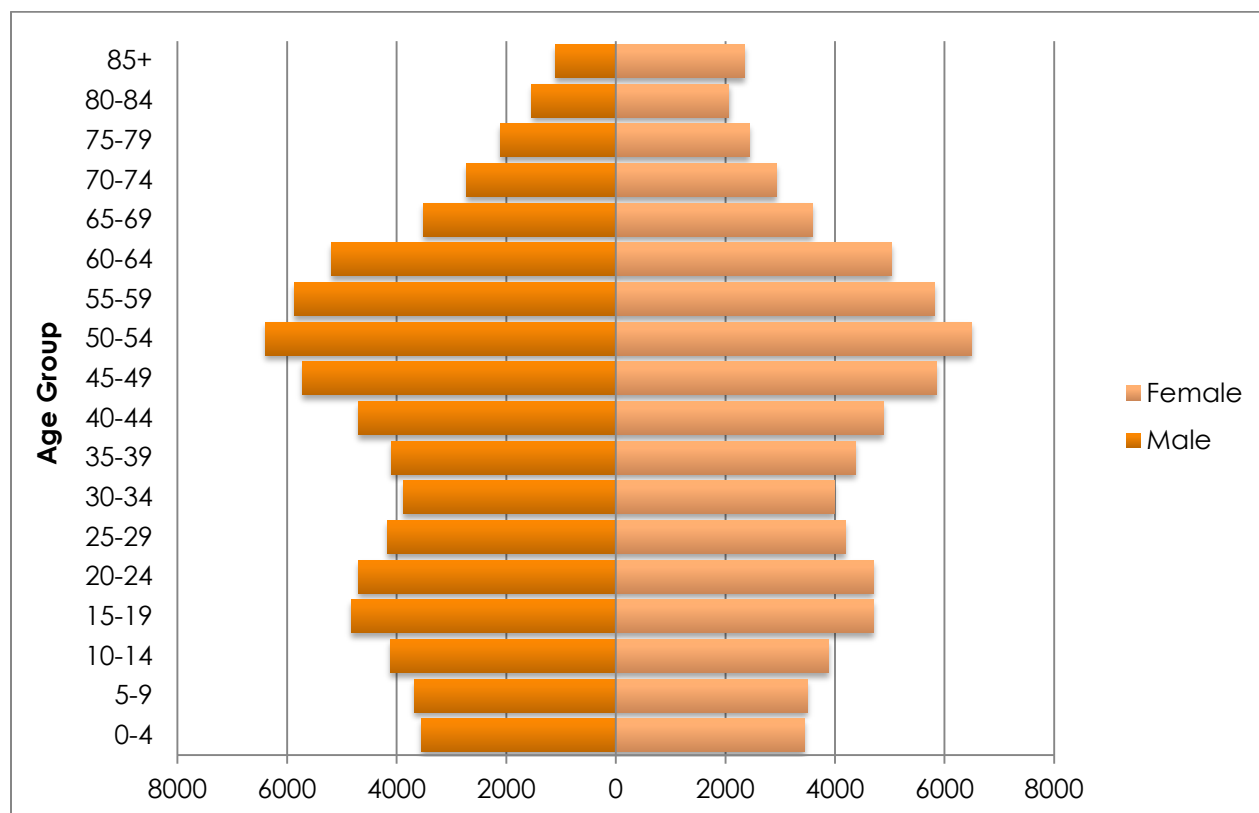


Figure 3-6: Population by Age and Gender, Thunder Bay District, 2011

3.2.3 Aboriginal Status

The proportion of the population who self-identified as being Aboriginal was greater in the Thunder Bay District (11.9 percent) than in the province as a whole (2.4 percent) in 2011 (Table 3-2). The majority of the Aboriginal identity population in the Thunder Bay District was First Nations (9.5 percent). Compared to 2006, the Aboriginal identity population in the District increased by 9.6 percent (Statistics Canada 2012).

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Table 3-2: Aboriginal Identity, Thunder Bay District, 2011

| Aboriginal Identity Population | Total | Percent of Total Population |
|----------------------------------|---------|-----------------------------|
| Total Population | 143,390 | 100 |
| • Aboriginal Identity | 17,135 | 11.9 |
| – First Nations | 13,670 | 9.5 |
| – Métis | 3,180 | 2.2 |
| – Inuk (Inuit) | 25 | 0.02 |
| – Multiple Aboriginal Identities | 115 | 0.08 |
| – Other Aboriginal Identity | 140 | 0.1 |

3.2.4 Education

Compared to the province as a whole, the Thunder Bay District had a smaller proportion of university graduates in 2011 (16.1 percent for the District compared to 23.4 percent for Ontario) (Figure 3-7) (Statistics Canada 2013a). However, at 11.3 percent of the District population aged 15 and above, the proportion of people who had earned a trade as their highest level of education was higher than in the District than in the province (7.4 percent). As of 2011, 22.7 percent of District residents aged 15 and older had not attained a high school diploma.

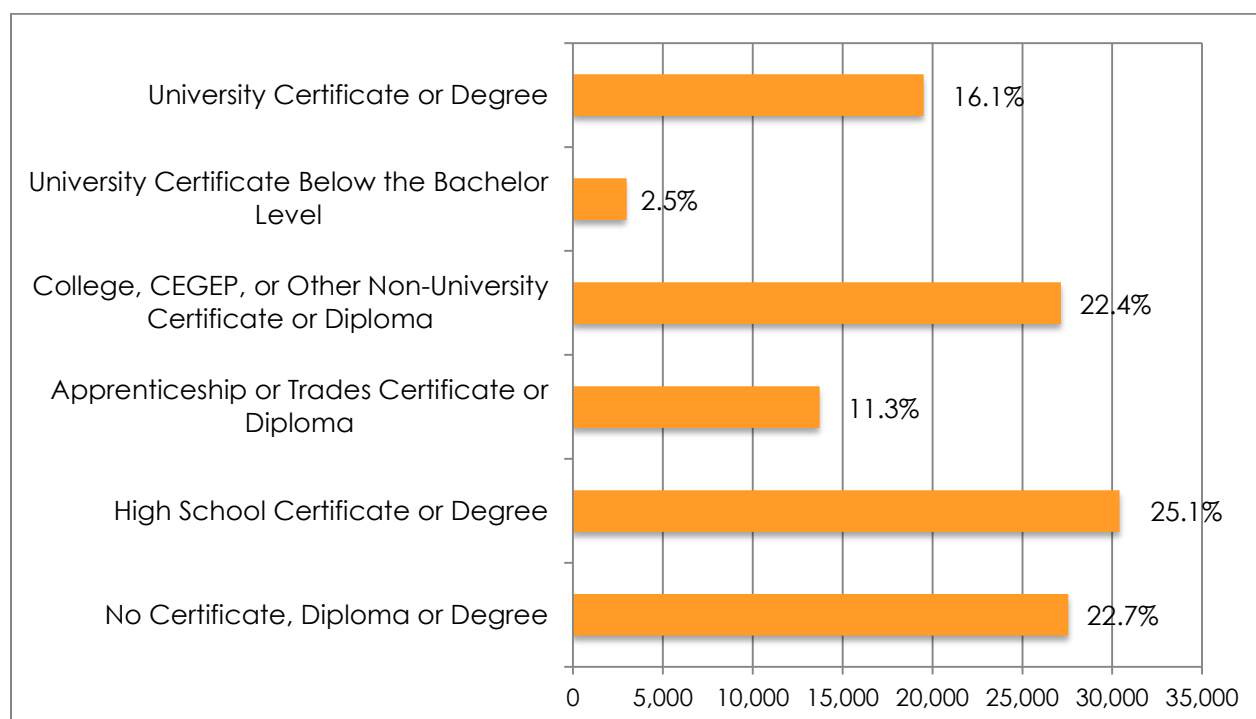


Figure 3-7: Educational Attainment, Thunder Bay District, 2011

3.2.5 Language

As noted for the province in Section 3.1.5, English is the majority mother tongue and the language spoken most often at home in the Thunder Bay District (Figure 3-8). Similar to the Province, there was a higher proportion of people who spoke English most often at home (94 percent) than those who identified the language as their mother tongue (84 percent) (Statistics Canada 2012).

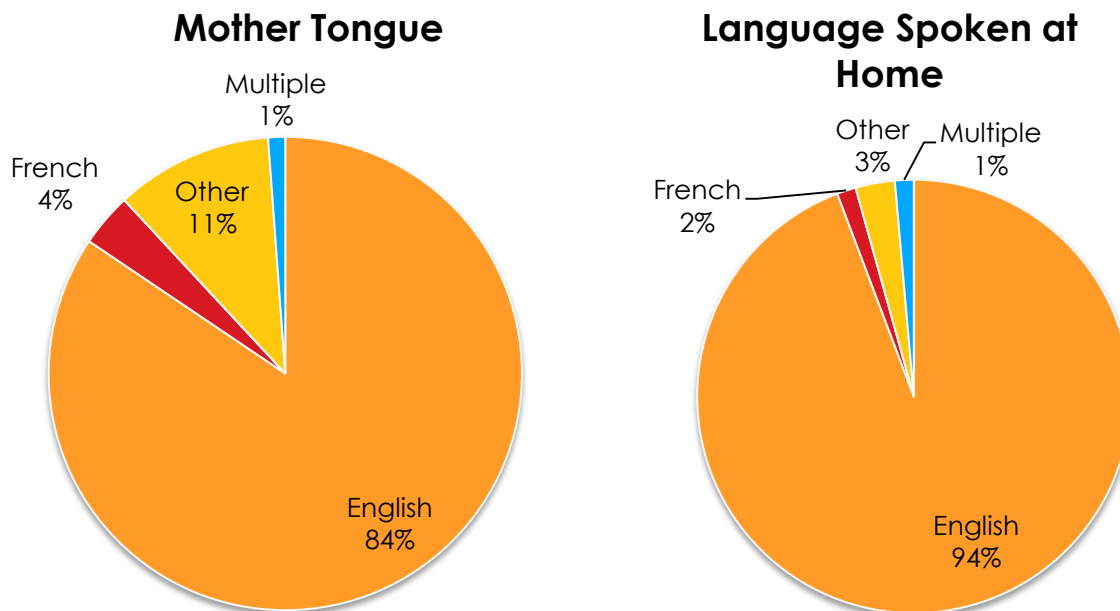


Figure 3-8: Mother Tongue and Language, Thunder Bay District, 2011

Among non-official languages identified as mother tongues in 2011, Aboriginal languages accounted for 11.6 percent, with non-Aboriginal languages representing the other 88.4 percent. The most prevalent Aboriginal mother tongue was Ojibway (1,320 people), followed by Oji-Cree (370) and Cree languages (105). For non-Aboriginal languages, aside from English and French, the five most common mother tongues were Italian, Finnish, Ukrainian, German, and Polish (Statistics Canada 2012).

3.3 GREENSTONE

3.3.1 Total Population

According to the 2011 Census, the population of Greenstone was 4,725 (Statistics Canada 2012). This represented 3.2 percent of the total population of the Thunder Bay District. There was a recorded decrease of 3.7 percent between the 2006 and 2011 Censuses (Figure 3-9). Within Greenstone, the population of Geraldton also decreased between 2006 and 2011, from 2,012 to 1,893. This represents a decrease of 5.9 percent. Population projections indicate that the municipality will continue to see population decline, with an estimated population of 4,618 residents in 2018 and 4,480 residents in 2023 (Invest in Greenstone 2014a).

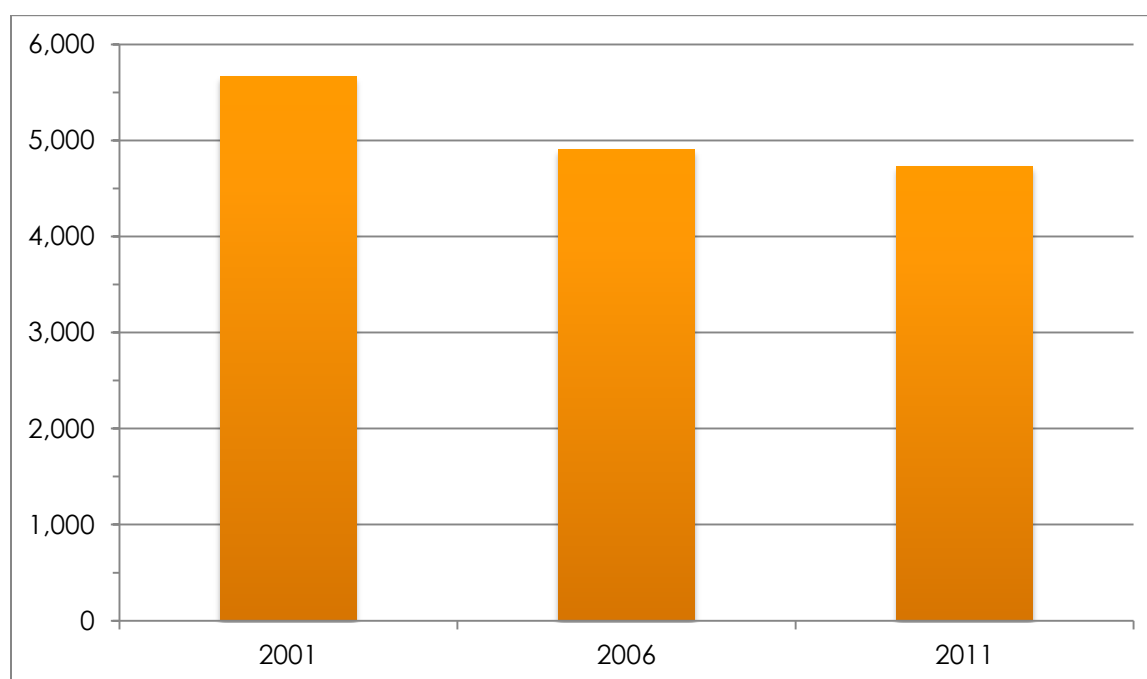


Figure 3-9: Population Change, Greenstone, 2001-2011

3.3.2 Age and Gender

The 2011 population of Greenstone is shown by age and gender in Figure 3-10. In 2011, the municipality had a gender ratio of 94.8 men to every 100 women. The median age of the population was 43.1 years, up 3.3 years since 2006. The median age for Greenstone was comparable to that recorded for the Thunder Bay District (43.8 years), but notably higher than the median age of the province as a whole (40.4 years) in 2011.

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Older age groups in Greenstone had the largest increases between 2006 and 2011. The 60-64 age group increased by 34.8 percent, while the 85+ group increased by 20.0 percent. There was a 7.6 percent increase in the number of seniors aged 65 and above. The working age population (15 to 64) decreased by 5.6 percent from 2006 to 2011, and a larger proportion of this group was made up of older people in 2011 (Statistics Canada 2012).

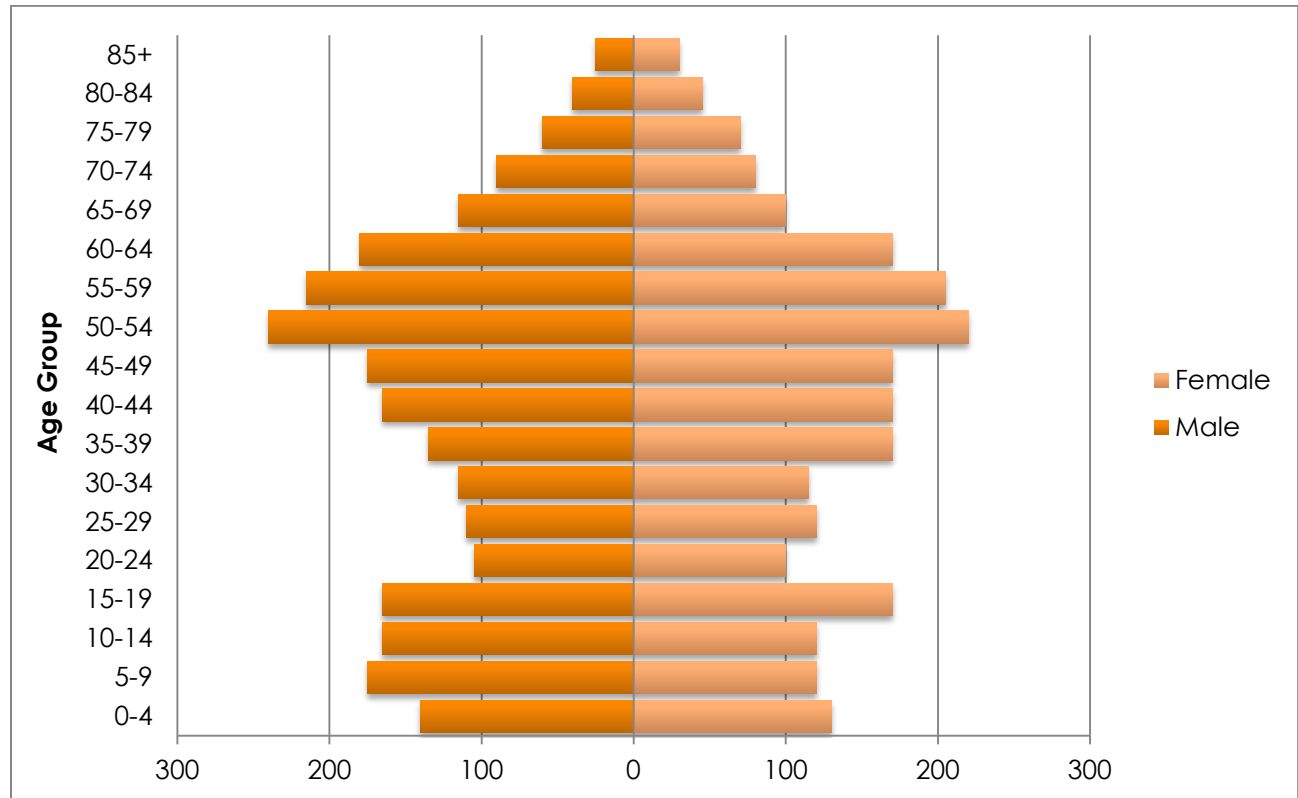


Figure 3-10: Population by Age and Gender, Greenstone, 2011

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3.3.3 Aboriginal Status

Greenstone had a relatively large Aboriginal identity population in 2011, with 28.2 percent of the municipal population being identified as Aboriginal (Table 3-3). This compared to 2.4 percent for the province as a whole and 11.9 percent for the Thunder Bay District. As with the province as a whole and the Thunder Bay District, First Nations composed the majority of the Aboriginal identity population in Greenstone, representing 20.7 percent of the total municipal population. Persons identified as Métis accounted for 7.3 percent of Greenstone's population in 2011.

Table 3-3: Aboriginal Identity, Greenstone, 2011

| Aboriginal Identity Population | Total | Percent of Total Population |
|----------------------------------|-------|-----------------------------|
| Total Population | 4,680 | 100 |
| • Aboriginal Identity | 1,320 | 28.2 |
| – First Nations | 970 | 20.7 |
| – Métis | 345 | 7.3 |
| – Inuit | 0 | 0 |
| – Multiple Aboriginal Identities | 0 | 0 |
| – Other Aboriginal Identity | 0 | 0 |

There are six First Nations in proximity to Greenstone (Invest in Greenstone 2014b). The First Nations within the municipal boundaries are AZA First Nation, BNA First Nation, BZA First Nation, and Long Lake #58 First Nation. Aroland First Nation and Ginoogaming First Nation are located just outside the Municipality, adjacent to the wards of Nakina and Longlac, respectively.

Population changes for these First Nations recorded by the 2006 Census and the 2011 NHS are presented in Table 3-4. Population increases were noted in Aroland First Nation (11.1 percent) and BZA First Nation (18.2 percent), while decreases were recorded for Ginoogaming First Nation (-4.6 percent) and Long Lake #58 First Nation (-12.0 percent). Population data for AZA First Nation and BNA First Nation were suppressed by Statistics Canada for confidentiality reasons, due to small populations.

Table 3-4: Aboriginal Population Change, Greenstone, 2006-2011

| | Aroland First Nation | AZA First Nation | BNA First Nation | BZA First Nation | Ginoogaming First Nation | Long Lake #58 First Nation |
|------------------------------------|----------------------|------------------|------------------|------------------|--------------------------|----------------------------|
| Population in 2011 | 361 | NA | NA | 182 | 167 | 367 |
| Population in 2006 | 325 | 20 | NA | 154 | 175 | 417 |
| 2006 to 2011 Population Change (%) | 11.1 | NA | NA | 18.2 | -4.6 | -12.0 |

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In addition to these First Nations, which are located within or are adjacent to Greenstone, Premier has also committed to consulting with other Aboriginal communities who may have an interest in the Project, including:

- Constance Lake First Nation
- Eabameton First Nation
- Green Stone Métis Council
- Marten Falls First Nation
- Ojibways of the Pic River First Nation
- Pays Plat First Nation
- Red Sky Independent Métis Nation

2011 and 2006 on-reserve population data for these communities are shown in Table 3-5.

Table 3-5: On-Reserve Population, Other Aboriginal Communities, 2006-2011

| | Constance Lake First Nation (Constance Lake 92) | Eabameton First Nation (Fort Hope 64)* | Greenstone Métis Council* | Marten Falls First Nation (Marten Falls 65) | Ojibways of Pic River (Pic River 50) | Pays Plat First Nation (Pays Plat 51) | Red Sky Independent First Nation* |
|---|---|--|---------------------------|---|--------------------------------------|---------------------------------------|-----------------------------------|
| Population in 2011 | 670 | - | - | 190 | 395 | 75 | - |
| Population in 2006 | 702 | - | - | 221 | 383 | 79 | - |
| 2006 to 2011 Population Change (%) | -4.6 | - | - | -14.0 | 3.1 | -5.1 | - |

Source: Statistics Canada 2012.
* Data for these communities are not available from Statistics Canada

In addition to on-reserve population data, information on registered members for each Aboriginal community is available from Aboriginal Affairs and Northern Development Canada (AANDC) and from community sources. Additional population information is provided for each community below:

- Aroland First Nation: 700 total members as of 2008, with 300 members living on-reserve and 400 members living off-reserve (MFN 2014)
- AZA First Nation: 476 members as of October, 2014 (AANDC 2014)
- BNA First Nation: 255 members as of October, 2014 (AANDC 2014)
- BZA First Nation: 715 members as of October, 2014 (AANDC 2014)
- Constance Lake First Nation: 1,672 members as of October, 2014 (AANDC 2014)
- Eabametoong First Nation: 2,525 members as of October, 2014 (AANDC 2014)

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- Ginoogaming First Nation: 773 members, with 168 living on-reserve, as of 2006 (GFN 2009)
- Long Lake 58 First Nation: 1,460 members as of October, 2014 (AANDC 2014)
- Marten Falls First Nation: 742 members as of October, 2014 (AANDC 2014)
- Métis Nation of Ontario (including Greenstone Métis Council): Over 15,000 registered Métis citizens (MNO 2013)
- Ojibways of the Pic River First Nation: 1,137 members as of October 2014 (AANDC 2014)
- Pays Plat First Nation: Approximately 200 members (PPFN 2014)
- Red Sky Métis Independent Nation: No official population information available

3.3.4 Education

In 2011, the proportion of Greenstone's population who were university graduates stood at 9.6 percent (Figure 3-11), which was considerably lower than the provincial proportion (23.4 percent) or the proportion of university graduates living in the Thunder Bay District (16.1 percent). Compared with the province as a whole, Greenstone had a notably higher proportion of people whose highest level of education was in a trade (15.5 percent compared to 7.4 percent, provincially). As of 2011, 30.3 percent of the municipal population aged 15 and above had not attained a high school diploma (Statistics Canada 2013a).

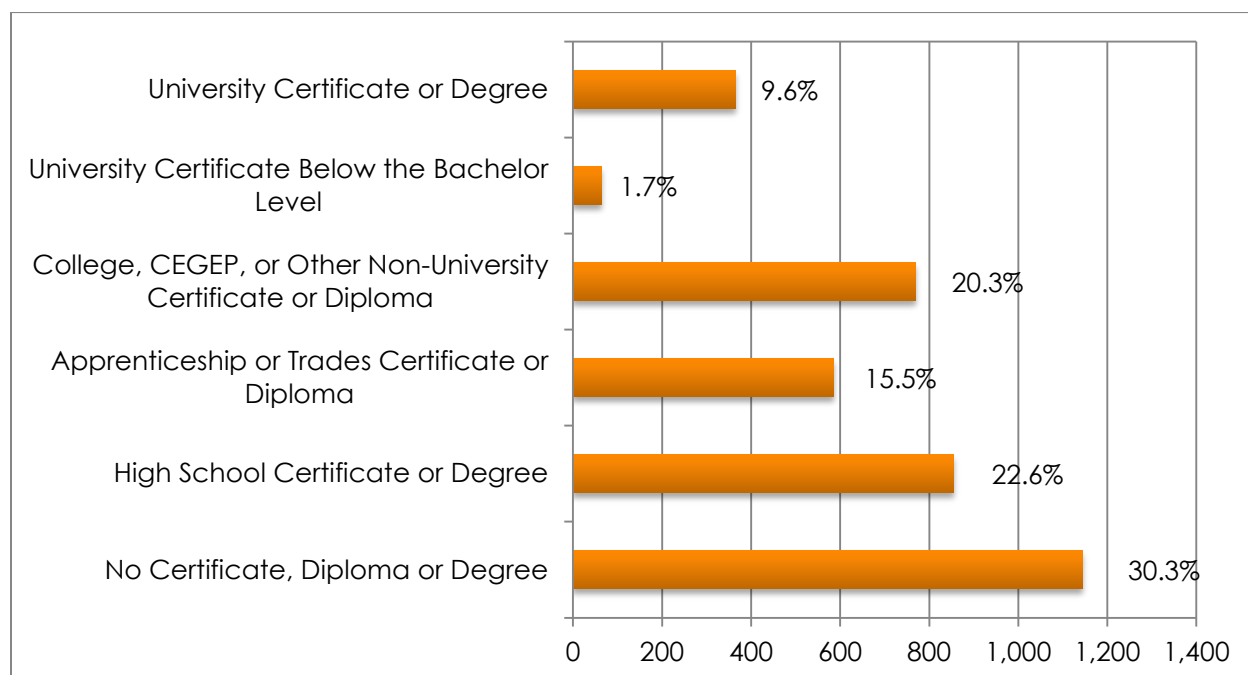


Figure 3-11: Educational Attainment, Greenstone, 2011

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Within the Aboriginal communities, nearly 70 percent of the population had no certificate, diploma or degree in 2011. Fourteen percent of the population had a high school diploma or degree and 10 percent had an apprenticeship or trades certificate or diploma. No residents of the Aboriginal communities had a University certificate or degree in 2011 (Table 3-6).

Table 3-6: On-Reserve Educational Attainment

| Census Subdivision | Total population over 15 yrs | No Certificate, Diploma or Degree | High School Diploma or Degree | Apprenticeship or Trades Certificate or Diploma | College, CEGEP or Other Non-University Certificate or Diploma | University Certificate Below the Bachelor Level | University Certificate or Degree |
|--------------------------|------------------------------|-----------------------------------|-------------------------------|---|---|---|----------------------------------|
| Aroland First Nation | 220 | 145 | 35 | 15 | 10 | 0 | 0 |
| AZA First Nation* | - | - | - | - | - | - | - |
| BNA First Nation* | - | - | - | - | - | - | - |
| BZA First Nation | 145 | 70 | 35 | 20 | 15 | 0 | 0 |
| Ginoogaming First Nation | 125 | 80 | 10 | 10 | 20 | 0 | 0 |
| Long Lake #58 | 260 | 180 | 25 | 30 | 20 | 0 | 0 |
| Total | 750 | 475 | 105 | 75 | 65 | 0 | 0 |

* Data for these census subdivisions have been suppressed by Statistics Canada for data quality or confidentiality reasons.
Source: Statistics Canada 2013

3.3.5 Language

In 2011, approximately 67 percent of the Greenstone population identified English as their mother tongue (Statistics Canada 2012) (Figure 3-12). This is comparable to the province, but considerably lower than the proportion of Thunder Bay District residents (84 percent). At 27 percent, Greenstone had a relatively high proportion of people reporting French as their mother tongue. English was most common language spoken at home (81 percent); however it was more common for people to speak French at home in Greenstone than in the province or in the Thunder Bay District (16 percent in the municipality compared to 2 percent for both the province and the District).

Other (non-official) languages accounted for approximately five percent of reported mother tongues in Greenstone. There were 245 Greenstone residents reporting a non-official language as their mother tongue in 2011. Of this number, approximately 30 percent had an Aboriginal mother tongue, with the remaining 70 percent representing non-Aboriginal languages. As with the Thunder Bay District (Section 3.2.5), Aboriginal mother tongues in Greenstone were Ojibway, Oji-Cree and Cree languages. The most common non-Aboriginal mother tongues, besides English and French, were Finnish, German, Italian, Portuguese, and Polish.

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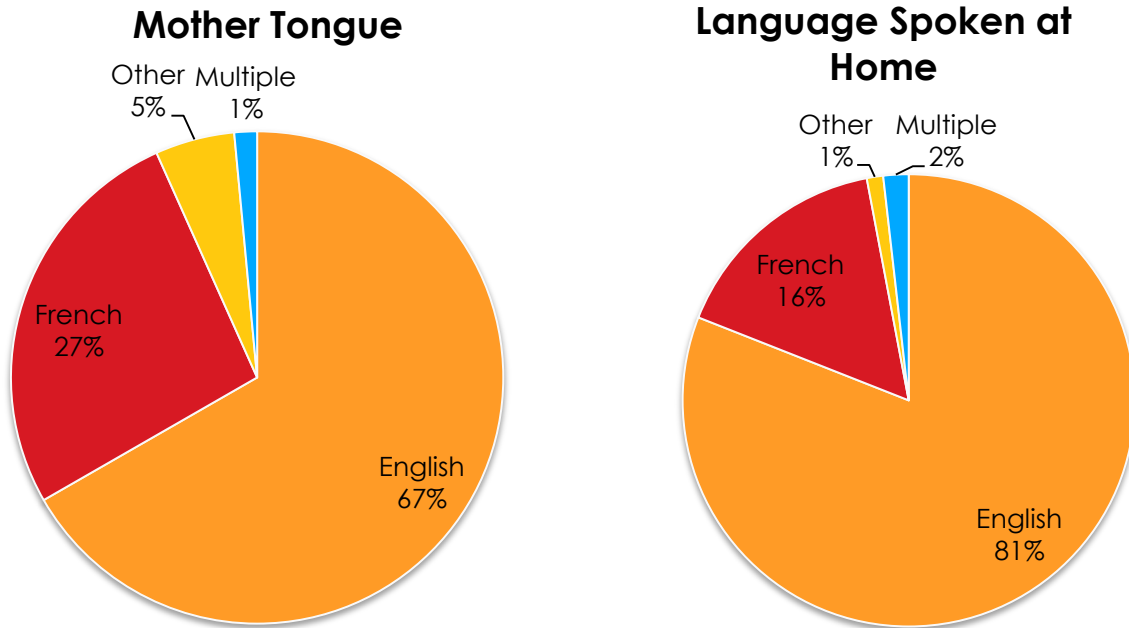


Figure 3-12: Mother Tongue and Language, Greenstone, 2011

4.0 ECONOMY, EMPLOYMENT AND BUSINESS

4.1 PROVINCIAL ECONOMIC OVERVIEW

Ontario's economy has been in a period of recovery since the 2008 global recession. Between 2008 and 2009, the provincial GDP decreased by 5.2 percent, while employment decreased by 4.0 percent – a total reduction of 266,000 jobs (Ontario Ministry of Finance 2013f). As of 2013, economic indicators such as real GDP and employment have risen above pre-recession levels. Economic recovery since the recession has been supported by government stimulus investment in infrastructure, business investment in plant and equipment, and strong growth in residential construction (Ontario Ministry of Finance 2013f).

The Ontario Ministry of Finance (2010) provides a projection of Ontario's economic growth over the 2010 to 2030 period. It indicates that Ontario's potential output will be determined by its labour supply, capital stock, and productivity growth. It is expected that slow growth in the working-age population (15 to 64) will affect the growth of Ontario's economic capacity. However, the Ontario Ministry of Finance projects that increased business investment, combined with tax measures and government infrastructure investments, will offset the effect of slowing labour-force growth. As a result, it is projected that Ontario's real GDP will increase at a rate that is comparable to past average annual growth.

Several external factors will also determine the future growth of Ontario's economy, including: the global, U.S., and Canadian economies; oil prices; the value of the Canadian dollar; inflation, and interest rates (Ontario Ministry of Finance 2010).

Selected economic indicators for Ontario are presented in Table 4-1.

Table 4-1: Actual and Projected Economic Indicators, Ontario, 2011-2016

| Economic Indicator | Actual Percent Change | | Projected Percent Change | | | |
|------------------------------|-----------------------|------|--------------------------|-------|------|------|
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Real GDP | 1.8 | 1.5 | 1.3 | 2.1 | 2.5 | 2.5 |
| Household Consumption | 2.3 | 1.4 | 1.5 | 2.1 | 2.2 | 2.2 |
| Residential Construction | 3.9 | 6.7 | 0.2 | (0.9) | 1.0 | 2.4 |
| Non-residential Construction | 8.0 | 0.4 | (0.6) | 3.4 | 3.2 | 3.5 |
| Machinery and Equipment | 17.5 | 4.8 | 0.5 | 5.6 | 5.4 | 5.3 |
| Exports | 6.1 | 4.4 | 1.7 | 3.7 | 4.0 | 3.3 |
| Imports | 7.4 | 4.3 | 1.6 | 2.7 | 3.0 | 2.2 |
| Nominal GDP | 4.8 | 3.0 | 2.5 | 3.8 | 4.3 | 4.3 |
| Retail Sales | 3.6 | 1.6 | 1.9 | 3.8 | 3.8 | 3.8 |
| Housing Starts (000s) | 67.8 | 76.7 | 59.0 | 58.0 | 65.0 | 68.0 |

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Table 4-1: Actual and Projected Economic Indicators, Ontario, 2011-2016

| Economic Indicator | Actual Percent Change | | Projected Percent Change | | | |
|--------------------------------------|-----------------------|-------|--------------------------|------|------|------|
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Home Resales | 2.6 | (2.1) | 0.5 | 2.0 | 2.0 | 2.0 |
| Primary Household Income | 4.2 | 3.2 | 2.9 | 3.6 | 4.4 | 4.7 |
| Compensation of Employees | 4.3 | 3.1 | 2.9 | 3.7 | 4.2 | 4.4 |
| Net Operating Surplus – Corporations | 14.1 | (2.0) | (3.6) | 4.6 | 4.2 | 4.4 |
| Consumer Price Index | 3.1 | 1.4 | 1.1 | 1.8 | 2.0 | 2.0 |
| Employment | 1.8 | 0.8 | 1.5 | 1.4 | 1.6 | 1.5 |
| Job Creation (000s) | 121 | 52 | 104 | 97 | 114 | 110 |
| Unemployment Rate (Percent) | 7.8 | 7.8 | 7.5 | 7.3 | 7.0 | 6.6 |
| Key External Variables | | | | | | |
| U.S. Real GDP | 1.8 | 2.8 | 1.6 | 2.6 | 2.9 | 2.8 |
| WTI Crude Oil (\$ U.S. per Barrel) | 95 | 94 | 99 | 98 | 96 | 96 |
| Canadian Dollar (Cents U.S.) | 101.1 | 100.1 | 97.4 | 96.5 | 97.0 | 97.0 |
| 3-month Treasury Bill Rate | 0.9 | 0.9 | 1.0 | 1.1 | 1.9 | 2.8 |
| 10-year Government Bond Rate | 2.8 | 1.9 | 2.3 | 3.0 | 3.3 | 3.8 |

Source: MOF 2013f
Note: Values in brackets indicate a negative percent change

4.2 REGIONAL ECONOMIC OVERVIEW

The Northwest Ontario economic region includes the Districts of Thunder Bay, Rainy River, and Kenora. Geographically, this is the largest economic region in the province, while also having the smallest population of all Ontario economic regions (224,034 in 2011). Between 2011 and 2012, employment in the region increased by 2.6 percent, which represented the greatest increase in employment among all economic regions in Ontario. Approximately 3,100 full time positions were created between 2010 and 2012. There was also an increase in the participation rate for 2012 (62.7 percent), while the unemployment rate decreased to 7.3 percent.

Service Canada (2013) attributes regional employment gains to capital investment in primary industries, particularly mining and forestry. In 2011, investment in mineral exploration in Ontario exceeded \$1 billion for the first time (MNDM 2012). There were over 80 exploration projects in the Northwest region during 2012 (Bahram et al. 2012). As of 2014, there were five active mines and a quarry operation in Northwest Ontario (MDNM 2014c). During 2012, mining projects in the mature exploration stage in the Northwest economic region included: Cliffs Resources' Ring of Fire chromite deposit; the Cameron Gold Project located near Sioux Narrows; and Stillwater Canada's copper and palladium property north of Marathon. However, as noted by Service Canada (2013), the viability of these projects is largely dependent on commodity prices. In

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November, 2013, Cliffs Resources announced its decision to indefinitely suspend its chromite project (Cliffs Natural Resources Inc. 2013).

The forestry sector in Northwestern Ontario has begun to recover from mass layoffs and mill closures in previous years (Service Canada 2013). Promising developments in the region included interest in bio-mass products, including wood pellets and rayon fiber. For example, the Atikokan Generating Station is being transformed from coal to wood bio-mass fuel, with completion expected for 2014. Two Northwestern operations will supply the station with wood pellets, which will support increased employment in the region (Service Canada 2013).

Other notable developments in this region over the past two years include the expansion of Activation Laboratories' assay services in Northern Ontario including in Red Lake and Thunder Bay, the creation of the Thunder Bay Regional Research Institute for health sciences, and the completion of the Sioux Lookout Meno Ya Win Health Centre (Service Canada 2013).

The Thunder Bay District has experienced labour supply issues related to an aging labour force, decreasing population, and outmigration. The Mining Industry Human Resources Council (MiHR 2013) reports that the Thunder Bay District will have a shortage of skilled workers, primarily because there is a lack of younger people with appropriate skills coming into the labour market. The MiHR also expects increased recruitment and retention challenges as competition for workers increases.

4.3 LOCAL ECONOMIC SECTOR REVIEW

Major industries providing employment in Greenstone are: trades, transport and equipment operations; processing, manufacturing and utilities, and; resource-based industries.

4.3.1 Mineral Exploration and Mining

Mineral exploration and mining has been identified by the GEDC as a key component of anticipated economic growth in the Greenstone region. As of 2010, there were no mines in operation within Greenstone. However, the Greenstone Economic Development Corporation (GEDC 2010) anticipated increased economic growth and employment through mining in the region, including the Project, as well as the Geraldton-Beardmore Gold Camp and the Ring of Fire, located approximately 300 km north of Greenstone. Identified Ring of Fire resources include platinum, palladium, and chromite (GEDC 2010). As of 2012, there were ten mining companies active in Greenstone, with mineral commodities including gold, nickel, copper, iron, platinum group elements (PGEs), lithium, rare metals, zinc, and silver.

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4.3.2 Forestry

Forestry has traditionally been an important component of the Greenstone economy. However, it has recently seen a downturn, with all four mills in the municipality closing, beginning in 2007 in Longlac (GEDC 2010). The decline of the forestry industry resulted in job losses for over 700 residents of Greenstone as of 2010. The local and regional forestry industry has been seeking government and private investment in the sector.

4.3.3 Construction

Construction was identified as a major industry for Greenstone in 2010 (GEDC 2010). Construction employment has increased as a result of infrastructure projects, as well as mineral exploration. The GEDC expects that increased mineral exploration will lead to increased demand for construction workers as mining projects become operational. In addition to project-related construction demand, the GEDC anticipates that construction employment will also increase as a result of associated infrastructure (GEDC 2010).

4.3.4 Tourism

Tourism is listed as one of five key growth sectors on the GEDC website (GEDC 2014). Outdoor recreation activities, including fishing, hunting, and camping, are the main tourism products promoted for Greenstone and the surrounding area. The North of Superior Tourism Association (NOSTA) (2012) promotes tourism in the District of Thunder Bay and in Northern Ontario in general. The association's member directory includes businesses in five categories: fishing, hunting, outdoors, touring, and winter activities. As of 2012, NOSTA represented approximately 500 direct tourism and industry-related businesses.

4.4 LABOUR FORCE

4.4.1 Participation and Unemployment

In 2011, the local labour force stood at 2,430, while regionally there were 74,610 people actively participating in the labour force (Statistics Canada 2013a). Greenstone had a higher unemployment rate (13.0 percent) than the Thunder Bay District (8.9 percent) or the province as a whole (8.3 percent) (Table 4-2). Participation rates in both Greenstone and the Thunder Bay District were less than the provincial rate.

Table 4-2: Labour Force Activity, 2011

| Location | Total Population Aged 15+ | Participation Rate (%) | Labour Force | Employed | Unemployed | Unemployment Rate (%) |
|----------------------|---------------------------|------------------------|--------------|-----------|------------|-----------------------|
| Ontario | 10,473,670 | 65.5 | 6,864,990 | 6,297,005 | 567,985 | 8.3 |
| Thunder Bay District | 121,310 | 61.5 | 74,610 | 67,975 | 6,635 | 8.9 |
| Greenstone | 3,785 | 64.2 | 2,430 | 2,115 | 315 | 13.0 |

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Changes in local and regional labour force activity between 2006 and 2011 are shown in Table 4-3. During this period, the total labour force of the Thunder Bay District decreased by 4.1 percent. However, the Greenstone labour force increased by 13 percent during the same period. The unemployment rate for Greenstone increased to 13 percent by 2011.

Table 4-3: Changes in Labour Force Activity, 2006 and 2011

| Location | Labour Force | | | Unemployed | | | Unemployment Rate (%) | |
|----------------------|--------------|--------|------------|------------|-------|------------|-----------------------|------|
| | 2006 | 2011 | Change (%) | 2006 | 2011 | Change (%) | 2006 | 2011 |
| Thunder Bay District | 77,775 | 74,610 | -4.1 | 6,330 | 6,635 | 4.8 | 8.1 | 8.9 |
| Greenstone | 2,430 | 2,745 | 13.0 | 310 | 315 | 1.6 | 8.9 | 13.0 |

In 2011, the regional and local Aboriginal labour force was characterized by lower participation rates and higher unemployment (Statistics Canada 2013b) (Table 4-4). The District of Thunder Bay had an Aboriginal labour force of 6,990 people, with a participation rate of 56.0 percent. This compared to 61.5 percent for the district overall. The Aboriginal work force in the district had an unemployment rate of 20.2 percent, considerably higher than the unemployment rate for the total district labour force (8.9 percent). Similarly, the Aboriginal workforce in Greenstone, which totaled 505 people, had lower participation (59.4 percent compared to 64.2 percent for the total municipal labour force) and higher unemployment (21.8 percent compared to 13.0 percent).

Table 4-4: Aboriginal Labour Force Activity, 2011

| Location | Thunder Bay District | | Greenstone | |
|------------------------|--------------------------------|---------------------------|--------------------------------|---------------------------|
| | Aboriginal Population Aged 15+ | Total Population Aged 15+ | Aboriginal Population Aged 15+ | Total Population Aged 15+ |
| Labour Force | 6,990 | 121,310 | 505 | 3,785 |
| Participation Rate (%) | 56.0 | 61.5 | 59.4 | 64.2 |
| Unemployment Rate (%) | 20.2 | 8.9 | 21.8 | 13.0 |

The on-reserve labour force numbered 415 in 2011 and the participation rate was 55.7 percent, lower than that for Greenstone (64.2 percent) (Table 4-5). The unemployment rate among residents of the Aboriginal communities was 37.3 percent, much higher than the rate for Greenstone (13 percent). Between 2006 and 2011, the labour force in these communities increased by 1.2 percent, while the number of unemployed residents increased by almost 50 percent (Table 4-6).

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Table 4-5: On-Reserve Labour Force Activity 2011

| | Total Population Aged 15+ | Participation Rate (%) | Labour Force | Employed | Unemployed | Unemployment Rate (%) |
|----------------------------|---------------------------|------------------------|--------------|------------|------------|-----------------------|
| Aroland First Nation | 215 | 58.1 | 125 | 75 | 50 | 40.0 |
| AZA First Nation* | - | - | - | - | - | - |
| BNA First Nation* | - | - | - | - | - | - |
| BZA First Nation | 140 | 60.7 | 85 | 55 | 25 | 29.4 |
| Ginoogaming First Nation | 130 | 57.7 | 75 | 45 | 30 | 40.0 |
| Long Lake #58 First Nation | 260 | 50.0 | 130 | 85 | 50 | 38.5 |
| Total | 745 | 55.7 | 415 | 260 | 155 | 37.3 |

* Data for this census subdivision have been suppressed by Statistics Canada for data quality or confidentiality reasons.
Source: Statistics Canada 2013

Table 4-6: Changes in On-Reserve Labour Force Activity, 2006 and 2011

| Location | Labour Force | | | Unemployed | | | Unemployment Rate (%) | |
|--------------------------|--------------|------------|--------------|------------|------------|---------------|-----------------------|-------------|
| | 2006 | 2011 | Change (%) | 2006 | 2011 | Change (%) | 2006 | 2011 |
| Aroland First Nation | 130 | 125 | -3.8% | 25 | 50 | +100% | 19.2 | 40.0 |
| AZA First Nation* | - | - | - | - | - | - | - | - |
| BNA First Nation* | - | - | - | - | - | - | - | - |
| BZA First Nation | 65 | 85 | +30.8% | 25 | 25 | 0% | 38.5 | 29.4 |
| Ginoogaming First Nation | 75 | 75 | 0% | 10 | 30 | +200% | 13.3 | 40.0 |
| Long Lake #58 | 140 | 130 | -7.1% | 45 | 50 | +11.1% | 32.1 | 38.5 |
| Total | 410 | 415 | +1.2% | 105 | 155 | +47.6% | 25.6 | 37.3 |

* Data for these census subdivisions have been suppressed by Statistics Canada for data quality or confidentiality reasons.
Source: Statistics Canada 2007; Statistics Canada 2013

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On-reserve labour force data for additional Aboriginal communities identified by MOECC are provided in Table 4-7.

Table 4-7: On-Reserve Labour Force Activity for Other Aboriginal Communities, 2011

| | Total Population Aged 15+ | Participation Rate (%) | Labour Force | Employed | Unemployed | Unemployment Rate (%) |
|--|---------------------------|------------------------|--------------|----------|------------|-----------------------|
| Constance Lake First Nation (Constance Lake 92) | 480 | 39.6 | 190 | 130 | 60 | 31.6 |
| Eabametoan First Nation (Fort Hope 64) | - | - | - | - | - | - |
| Greenstone Métis Council | - | - | - | - | - | - |
| Ojibways of Pic River (Pic River 50) | - | - | - | - | - | - |
| Pays Plat First Nation (Pays Plat 51) | 65 | 38.5 | 25 | 20 | 10 | 40.0 |
| Red Sky Independent First Nation | - | - | - | - | - | - |
| * Data for these communities are not available from Statistics Canada. Source: Statistics Canada 2013 | | | | | | |

4.4.2 Employment by Industry and Occupational Grouping¹

2011 data on regional and local employment by industry are listed in Figures 4-1 and 4-2, respectively. For the Thunder Bay District, 16.6 percent of employed workers had experience in basic (goods-producing) industries, including mining, quarrying and oil and gas extraction (2.8 percent); construction (6.6 percent); manufacturing (5.1 percent); and agriculture, forestry, fishing and hunting (2.1 percent). The majority of employed workers had experience in service-based industries. The industries that employed the largest percentages of workers in the Thunder Bay District were in services: health care and social assistance (15.2 percent); retail (11.8 percent); public administration (10.2 percent); and education (9.0 percent) (Statistics Canada 2013a).

Employment in Greenstone was also largely in service-based industries. However, Greenstone had a larger percentage (21.7 percent) of employed workers in basic industries than recorded for the Thunder Bay District. Mining, quarrying, and oil and gas accounted for 5.2 percent of employment. The municipality had a larger proportion of employed workers in agriculture, forestry, fishing, and hunting (7.9 percent) than the regional District. Approximately 5 percent of employed workers had experience in construction, while 3.3 percent had experience in manufacturing.

¹ Occupational categories are named according to standardized terms provided by Statistics Canada. This includes the standard category "Agriculture, Forestry, Fishing, and Hunting", which is aggregates data for each of these sectors. Baseline economic conditions in the LSA and employment data for Greenstone indicate that this category primarily represents employment in forestry.

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In 2011, service-based industries employed the largest percentages of workers in Greenstone. These industries were: public administration (16.5 percent); healthcare and social assistance (12.3 percent); education (10.8 percent); and retail (8.5 percent).

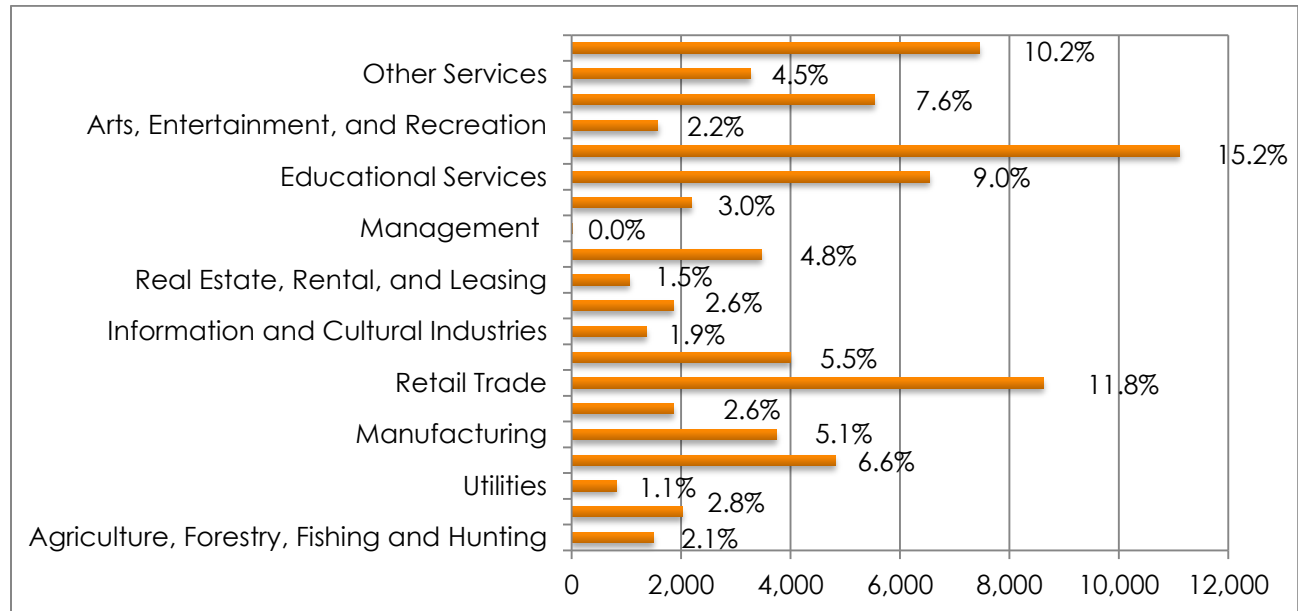


Figure 4-1: Employment by Industry, Thunder Bay District, 2011

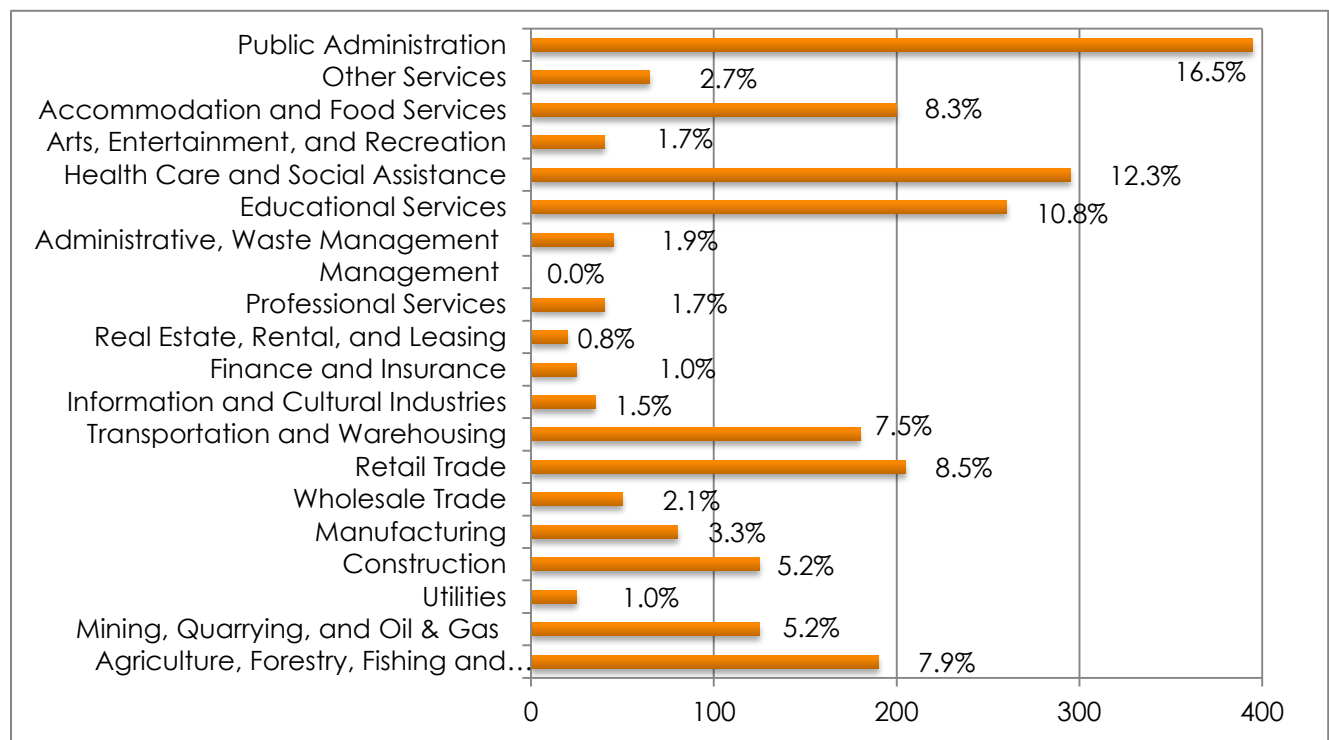


Figure 4-2: Employment by Industry, Greenstone, 2011

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The majority of on-reserve employees worked in public administration in 2011 (59 percent) (Table 4-8). Health care and social assistance and agriculture, forestry, fishing and hunting were the other major employers, employing 13 percent and 7 percent, respectively.

Table 4-8: On-Reserve Employment by Industry

| | Long Lake #58 | AZA First Nation* | Rocky Bay First Nation | Aroland First Nation | Ginoogaming First Nation | Total |
|---|---------------|-------------------|------------------------|----------------------|--------------------------|-------|
| Agriculture, forestry, fishing and hunting | 0 | - | 10 | 10 | 0 | 20 |
| Mining, quarrying, and oil and gas extraction | 10 | - | 0 | 0 | 0 | 10 |
| Utilities | 0 | - | 0 | 0 | 0 | 0 |
| Construction | 0 | - | 0 | 0 | 0 | 0 |
| Manufacturing | 0 | - | 0 | 0 | 0 | 0 |
| Wholesale Trade | 0 | - | 0 | 0 | 0 | 0 |
| Retail Trade | 15 | - | 0 | 0 | 0 | 15 |
| Transportation and warehousing | 0 | - | 0 | 0 | 0 | 0 |
| Information and cultural industries | 0 | - | 0 | 0 | 0 | 0 |
| Finance and insurance | 0 | - | 0 | 0 | 0 | 0 |
| Real estate and rental and leasing | 0 | - | 0 | 0 | 0 | 0 |
| Professional, scientific and technical services | 0 | - | 0 | 0 | 0 | 0 |
| Management of companies and enterprises | 0 | - | 0 | 0 | 0 | 0 |
| Administrative and support, waste management and remediation services | 0 | - | 0 | 10 | 0 | 10 |
| Educational services | 0 | - | 0 | 0 | 10 | 10 |
| Health care and social assistance | 10 | - | 0 | 15 | 10 | 35 |
| Arts, entertainment and recreation | 0 | - | 0 | 0 | 0 | 0 |
| Accommodation and food services | 10 | - | 0 | 0 | 0 | 10 |
| Other services (except public administration) | 0 | - | 0 | 0 | 0 | 0 |
| Public administration | 45 | - | 35 | 60 | 20 | 160 |
| Total | 90 | 0 | 45 | 95 | 40 | 270 |
| * Data for this census subdivision have been suppressed by Statistics Canada for data quality or confidentiality reasons. | | | | | | |
| Source: Statistics Canada 2013 | | | | | | |

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The largest public and private sector employers in Greenstone are summarized in Table 4-9. Services employ the highest numbers of workers, with approximately 115 people employed by the Geraldton District Hospital and approximately 100 people employed by school boards. Among private sector employers, the largest numbers of workers were employed in the mineral exploration sector. Other key private sector employers were in forestry, retail, construction, and transportation (Municipality of Greenstone 2012).

Table 4-9: Major Employers, Greenstone, 2012

| Employer | Sector | Approximate # of Employees |
|--|-----------------------------|----------------------------|
| Private Sector | | |
| Kodiak Exploration | Mining (Exploration) | 60 |
| Long Lake Logging | Forestry | 46 |
| Pat's No Frills | Retail (Grocery) | 40 |
| Cloutier Builders and Suppliers | Construction | 30 |
| Nakina Air Service | Transportation | 20 |
| Public Sector | | |
| Ministry of Natural Resources and Forestry | Natural Resource Management | 19 |
| Geraldton District Hospital | Health Care | 115 |
| School Boards | Education | 100 |
| MNRF Regional Fire Base | Forest Fire Management | 95 |
| Municipality of Greenstone | Municipal Government | 80 |

Employment data for 2011 are summarized by occupational grouping for the Thunder Bay District and Greenstone in Figures 4-3 and 4-4, respectively. For the District, there were large percentages of workers employed in service-based positions, including sales and service (24.5 percent); education, law, and social, community and government services (14.6 percent); and business, finance, and administration (14.3 percent). A relatively high percentage (17.4 percent) of employed workers had experience in trades, transport and equipment operations. This compared to 13.0 percent for the province as a whole. For the Thunder Bay District, 3.1 percent of employed workers had experience in natural resources, agriculture, and related occupations, while 2.7 percent had experience in manufacturing and utilities (Statistics Canada 2013a).

Trades, transport and equipment operations employed the largest percentage (22.2 percent) of workers in Greenstone. The large percentages of workers employed in the service industries discussed above are reflected in the employment by occupation data. Sales and service occupations accounted for 19.3 percent of employment in 2011. Large percentages of workers were also employed in occupations grouped under education, law, and social, community and government services (16.8 percent), as well as business, finance, and administration (10.4 percent). There was a greater percentage of workers employed in natural resources, agriculture, and related occupations (7.1 percent) in Greenstone than in the Thunder Bay District. The percentage of workers employed in manufacturing and utilities was the same for the District and the municipality (2.7 percent).

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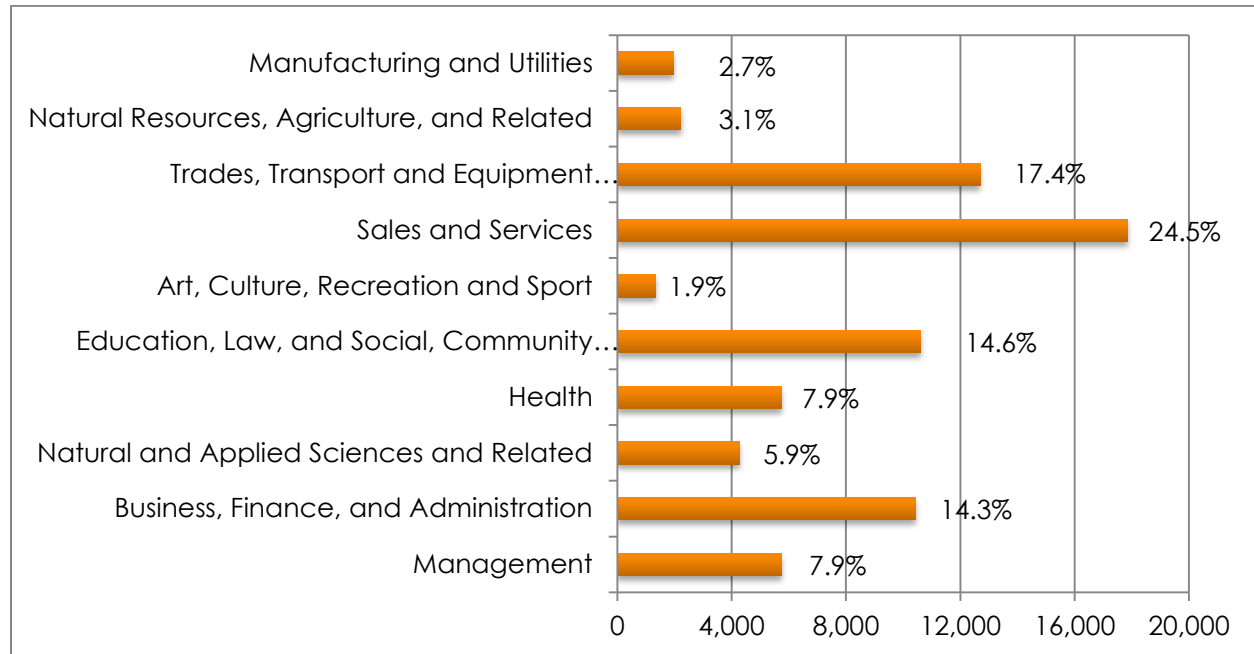


Figure 4-3: Employment by Occupation, Thunder Bay District, 2011

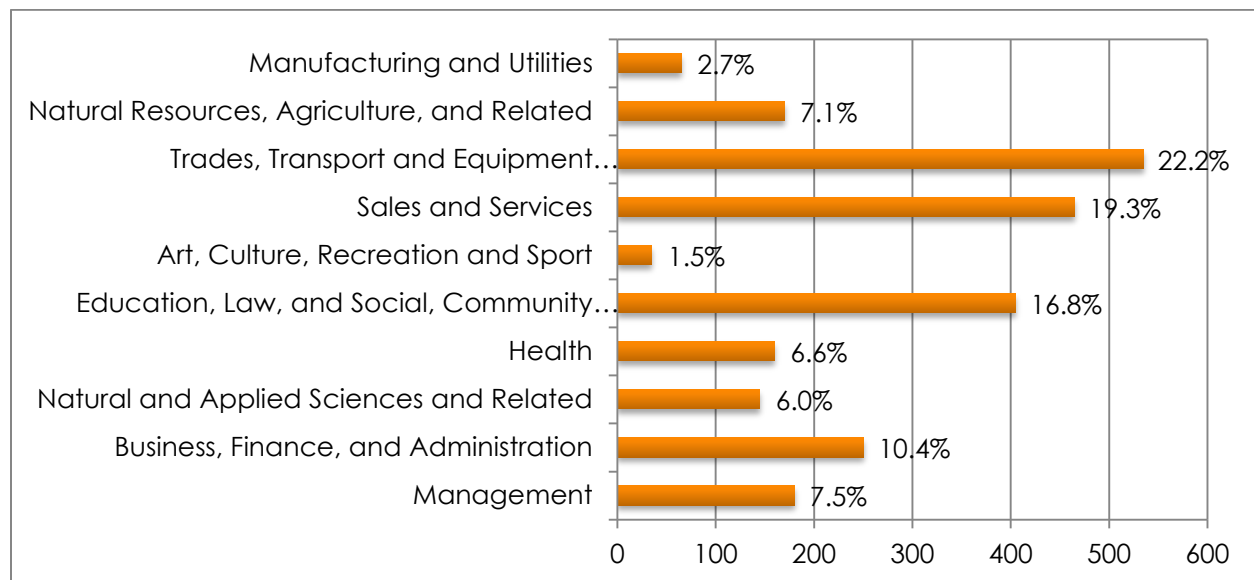


Figure 4-4: Employment by Occupation, Greenstone, 2011

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Education, Law and Social, Community and Government Services employed the largest percentage (28 percent) of workers in the Aboriginal communities in 2011. Sales and Services employed 17 percent and Business, Finance, and Administration, Trades, Transport and Equipment Operators and Related, and Natural and Applied Sciences and Related each employed 14 percent of on-reserve workers (Table 4-10).

Table 4-10: On-Reserve Employment by Occupation

| | Aroland First Nation | AZA First Nation* | BNA First Nation* | BZA First Nation | Ginoogaming First Nation | Long Lake 58 | Total |
|---|----------------------|-------------------|-------------------|------------------|--------------------------|--------------|-------|
| Management Occupations | 10 | - | - | 10 | 10 | 0 | 30 |
| Business, Finance, and Administration | 15 | - | - | 10 | 10 | 10 | 45 |
| Natural Resources, Agriculture and Related | 10 | - | - | 0 | 0 | 0 | 40 |
| Health Occupations | 0 | - | - | 0 | 0 | 0 | 0 |
| Education, Law and Social, Community and Government Services | 30 | - | - | 20 | 10 | 30 | 90 |
| Art, Culture, Recreation and Sport | 0 | - | - | 0 | 0 | 0 | 0 |
| Sales and Services | 10 | - | - | 0 | 10 | 35 | 55 |
| Trades, Transport and Equipment Operators and Related | 20 | - | - | 10 | 15 | 0 | 45 |
| Natural and Applied Sciences and Related | 10 | - | - | 10 | 10 | 15 | 45 |
| Manufacturing and Utilities | 0 | - | - | 0 | 0 | 0 | 0 |
| Total | 105 | 0 | 0 | 60 | 65 | 90 | 320 |
| * Data for these census subdivisions have been suppressed by Statistics Canada for data quality or confidentiality reasons. | | | | | | | |
| Source: Statistics Canada 2013 | | | | | | | |

4.4.3 Incomes

Income levels for residents of the Thunder Bay District and Greenstone, with data for Ontario, are presented in Table 4-11. Compared to the province as a whole, average incomes were lower regionally and locally. The Thunder Bay District had an average income of \$38,856, of which 65.9 percent came from wages and salaries, 2.7 percent from self-employment, 16.5 percent from government payments, and 14.9 percent from other sources (e.g., investments and pensions). The average income for Greenstone (\$37,727) was slightly lower than the District average. Residents of Greenstone had a higher reliance on government transfer payments as a source of income, with government sources composing 18.7 percent of total income in the municipality, compared to 16.5 percent for the District and 12.3 percent for the province (Statistics Canada 2013a).

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Among full-time workers aged 15 and above, the average employment income in Greenstone was \$57,273. This was slightly higher than average employment income in the Thunder Bay District (\$56,665), but lower than the provincial average (\$61,495).

Table 4-11: Average and Median Incomes, 2010

| Location | Median Income | Average Income | Average Employment Income* | Composition of Total Income | | | |
|----------------------|---------------|----------------|----------------------------|-----------------------------|---------------------|------------------|--------------------------|
| | | | | Wages & Salaries (%) | Self-Employment (%) | Other Income (%) | Government Transfers (%) |
| Ontario | \$30,526 | \$42,264 | \$61,495 | 70.1 | 4.6 | 13.0 | 12.3 |
| Thunder Bay District | \$31,191 | \$38,856 | \$56,665 | 65.9 | 2.7 | 14.9 | 16.5 |
| Greenstone | \$31,840 | \$37,727 | \$57,273 | 67.3 | 2.7 | 11.3 | 18.7 |

*Population aged 15 years and over who worked full year, full time and with employment income in 2010

There were gender-based differences in income levels recorded for both the Thunder Bay District and Greenstone in 2010. On average, males living in the Thunder Bay District had an income of \$45,439, compared to an average of \$32,476 (71.4 percent) for females. For full-time workers aged 15 and above males earned an average of \$62,952 in employment income, while females earned an average of \$49,257 (7.2 percent).

Table 4-12 summarizes 2010 individual income levels for Greenstone, the Thunder Bay District, and Ontario. The largest proportion of the Greenstone population (16.1 percent) had an income level of \$20,000 to \$29,999. This was also the most populated income level for the District (14.4 percent) and the province (13.0 percent). Greenstone generally had lower percentages of people than the District or the province as a whole in the \$60,000 and above income levels. The \$100,000 and above income level accounted for 3.0 percent of the municipal population, compared to 4.1 percent for the Thunder Bay District and 6.0 percent for Ontario.

Table 4-12: Total Income Levels, 2010

| Income Level | Greenstone | Greenstone (%) | Thunder Bay District (%) | Ontario (%) |
|---|------------|----------------|--------------------------|-------------|
| Total Population 15 years and over (by income 2011) | 3,780 | | 121,310 | 10,473,670 |
| Without Income | 130 | 3.4 | 4.3 | 5.3 |
| With Income | 3,655 | 96.7 | 95.7 | 94.7 |
| Under \$5,000 | 225 | 6.0 | 7.8 | 10.2 |
| \$5,000 to \$9,999 | 10 | 0.3 | 6.8 | 6.8 |
| \$10,000 to \$14,999 | 255 | 6.7 | 9.1 | 8.3 |
| \$15,000 to \$19,999 | 330 | 8.7 | 8.4 | 8.4 |
| \$20,000 to \$29,999 | 610 | 16.1 | 14.4 | 13.0 |
| \$30,000 to \$39,999 | 500 | 13. | 12.3 | 10.9 |

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Table 4-12: Total Income Levels, 2010

| Income Level | Greenstone | Greenstone (%) | Thunder Bay District (%) | Ontario (%) |
|------------------------|------------|----------------|--------------------------|-------------|
| \$40,000 to \$49,999 | 415 | 11.0 | 10.4 | 9.4 |
| \$50,000 to \$59,999 | 275 | 7.3 | 7.8 | 7.1 |
| \$60,000 to \$79,999 | 430 | 11.4 | 9.3 | 9.2 |
| \$80,000 to \$99,999 | 185 | 4.9 | 5.3 | 5.5 |
| \$100,000 + | 115 | 3. | 4.1 | 6.0 |
| \$100,000 to \$124,999 | 85 | 2.2 | 2.3 | 2.8 |
| \$125,000 | 30 | 0.8 | 1.8 | 3.2 |

5.0 COMMUNITY SERVICES AND INFRASTRUCTURE

5.1 MUNICIPAL ADMINISTRATION

5.1.1 Municipality of Greenstone

On January 1, 2001, the Town of Geraldton, the Town of Longlac, the former Township of Beardmore and the Township of Nakina were amalgamated as a town under the name of the Corporation of the Municipality of Greenstone. The Town Council comprises a Mayor and eight councilors (Municipality of Greenstone, no date).

Corporate Services for the Municipality of Greenstone encompass all aspects of municipal finances and reporting including the operating and capital budget, property taxes, water and sewer rates, user fees, billings and collections, and human resources.

The Municipality's Public Services Department has three divisions: Public Works, Facilities and Parks, and Airports. Each division oversees operational and maintenance functions of infrastructure and equipment to meet standards imposed by regulatory agencies.

The largest division, Public Works, is responsible for the following services and infrastructure:

- Water Supply and Distribution (i.e., water and sewage treatment, sanitary sewers, hydrants and watermains);
- Roads (including lanes, sidewalks, streetlights, drainage and snow removal);
- Sanitary Landfills (i.e., garbage collection, recycling and waste disposal); and
- Cemeteries

The Facilities & Parks division is responsible for the maintenance of all municipal buildings and oversees the operations of each Ward recreation complex and municipal parks.

The Airports division is responsible for the operation and maintenance of the Greenstone Regional Airport in Geraldton and the R.Elmer Ruddick Nakina Airport (Municipality of Greenstone, no date).

5.2 TRANSPORTATION

5.2.1 Airports

5.2.1.1 Thunder Bay District

The Thunder Bay International Airport is managed by the Thunder Bay International Airports Authority (TBIAA) and is serviced by Air Canada, Porter Airlines, WestJet, United, Bearskin Airlines, Wasaya Airways, Thunder Airlines, Canadian North, and Wiskair. Vacation charters using it include Air Transat and Sunwing.

Recent growth in the mining and health sciences sectors has resulted in increased demand for aviation services in the Thunder Bay District. Despite a slight reduction in airline capacity, passenger traffic increased by 6 percent to over 761,000 for 2012. Continued growth in demand coupled with less capacity has also resulted in an increase in average airfares (TBIAA 2012).

The airport's main asphalt runway is 7,320 ft long and the crosswind runway is 5,300 ft long. In 2009, the main runway was extended by approximately 1,100 ft. Several other upgrades to the airport have been completed in recent years, including in 2012, improvements to public areas, passenger loading bridge floor and canopy replacements, building systems and IT systems upgrades, and road system upgrades and repairs. In addition, furnishings like public area seating are gradually being replaced and updating/repainting of facilities is on-going. The TBIAA continued its capital program in 2012 with the completion of the parking and groundside redevelopment program, which included the addition of new short- and long-term parking, new rental car parking, the relocation and reconfiguration of the main parking entrances, the addition of a new exit and a "cell phone lane" (TBIAA 2012). In 2013, the airport authority received \$1.5 million from the federal government to expand its industrial park (Labine 2013).

5.2.1.2 Municipality of Greenstone

The (Geraldton) Greenstone Regional Airport is owned and operated by the Municipality of Greenstone. The airport has a 5,000 ft runway and it has approximately 4,000 recreational and commercial aircraft movements per year. Activity at the airport includes medical flights and private and commercial flights and it is also used by the Ministry of Natural Resources Fire Management Centre and by Recon Air Corporation as an aircraft maintenance and rebuilding centre (Greenstone 2014d).

Other air transport infrastructure in the vicinity of Geraldton includes a helipad on the west side of Geraldton and a floatplane facility located on Lake Hutchison. The float plan facility is generally open for landing and take-off from mid-May to early October.

The R. Elmer Ruddick Nakina Airport, located in Nakina, is owned and operated by the Municipality of Greenstone. It has a 3,500 ft runway and it is used for recreational and commercial use. Nakina Air Service provides scheduled air service with approximately 6,500

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aircraft movements per year. The airport also hosts Skyservices, an aircraft service and maintenance company (Municipality of Greenstone, no date).

Demand for air service out of Nakina has been increasing as a result of prospecting throughout Northern Ontario. It has been suggested that in order to accommodate the increase in demand, the airport will require a number of upgrades (Greenstone Economic Development Corporation and Matthew Fischer and Associates Inc. 2010), including:

- An extension of the runway from the existing 3,500 ft to 5,000 ft;
- An increase in the fuel storage capacity on the airport from the current 50,000 liters (1½ day supply) to at least two tanks of 70,000 liters each; and
- The development of commercial/industrial building lots at the airport to serve additional air service companies opening up the north.

5.2.2 Roads and Highways

5.2.2.1 Municipality of Greenstone

Main roads in the LSA include the Trans-Canada Highway (Highway 11), Michael Power Boulevard/Highway 584, Goldfield Road, Lahtis Road, Hardrock Road and Old Arena Road. Highway 11 and Highway 584 are the responsibility of the MTO. According to the Plan, all proposed development located near provincial highways or intersections within the MTO's permit control area must be approved by the MTO as per the Public Transportation and Highway Improvement Act (Tunnock Consulting Ltd. 2010).

The road system within the RSA is well developed. In addition to the roads mentioned above, the RSA is crossed by Highway 584 (named Michael Power Road in the PDA), Sakamoto Road, Cyr Way, Rosedale Point Road, Popowich Road, Lake Kenogamisis Road, and a number of streets within the town of Geraldton. There are also two bridges along Highway 11 within the RSA: West Narrows and Main Narrows, both located on Lake Kenogamisis. Table 5-1 lists the total lengths of main, or collector, roads in the PDA.

Table 5-1: Highways and Roads in the PDA

| Trail Type | PDA |
|--|-----|
| Highway 11 (km) | 4.5 |
| Michael Power Boulevard/Highway 584 (km) | 2.0 |
| Collector roads (km) | 6.6 |
| Secondary roads and municipal roads (km) | 3.4 |
| Resource roads (km) and km by type | - |

Source: MNRF 2014

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Highway 11 has undergone a number of upgrades in recent years, including in 2010, two four-laning projects on Highway 11/17 between Greenstone and Thunder Bay and resurfacing of a number of sections. In 2014, 27 km of Highway 11 between Geraldton and Jellicoe were repaved. In 2010, Annual Average Daily Traffic (AADT) on sections of Highway 11 around Greenstone ranged between 1,200 and 1,900 vehicles (Ontario Ministry of Transportation 2010).

Transportation infrastructure in northwestern Ontario, particularly in the Greenstone region, has been an important topic in relation to future and current mining development in the area. A number of highway construction projects have been discussed as ways to connect mining projects in rural northwestern Ontario to Greenstone communities, including a North-South transportation corridor between the proposed Ring of Fire mining developments and Greenstone (Invest in Greenstone 2012).

The Official Plan of the Municipality of Greenstone classifies municipal roads as those which are maintained year round and those which are seasonally maintained. Unassumed Roads include public roads which have not been assumed by Council (Tunnock Consulting Ltd. 2010).

Several local roads that intersect with highways within the LSA provide access to residential and commercial properties. Hardrock Road intersects Highway 11 south of the intersection with Highway 584. It provides access to the community of Hardrock, located on Lake Kenogamisis. The other significant local road within the LSA is Sunset Drive. It intersects with Highway 584, which provides access to several residential properties in Macleod.

Specific potential projects that would assist with the movement of goods and people on the Municipal and Provincial road infrastructure in Greenstone include (Millier Dickinson Blais 2012):

- A bypass for Highway 11 around Geraldton;
- Upgrades to Blueberry Road and Crib Road to handle increased traffic;
- Upgrades to Highway 11 at the entrance of Longlac; and
- Maintenance of existing logging roads to encourage tourism uses.

5.2.3 Rail

Many Greenstone communities are accessible by rail. The Canadian National (CN) Railway runs through Caramat, Longlac and Nakina on its route from Toronto to Western Canada. There is also passenger service available through Via Rail in Longlac and Nakina. A branch line, known as the Kinghorn Line, connecting to the main line was operated for freight transport between Nipigon and Longlac until CN Railway ceased operations in 2005 (ThunderWin Consultant Services 2005). In 2005, a feasibility study prepared for the Municipality of Greenstone assessed the potential for the municipality to purchase and operate the rail line (ThunderWin Consultant Services 2005).

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As part of potential future development planning for Northern Ontario, new rail lines connecting future mineral project sites to the existing CN rail line are being considered. It is thought that trains could transport mine products, materials and equipment to Nakina for interchange with CN. New rail lines in the region are considered vital for increased exploration and investment in northern Ontario and for providing access and improved infrastructure to isolated communities (Millier Dickinson Blais 2012).

5.3 PUBLIC UTILITIES

5.3.1 Water and Wastewater

Greenstone has five water treatment plants with a combined capacity of 13,415.2 m³/day (Table 5-2). The total daily use was 2,825.2 m³/day in 2012. In 2012, all of the drinking water systems in the Municipality were able to meet the demand of water use within each town without exceeding the Municipal Drinking Water Licence and Permit to Take Water (Ontario Clean Water Agency 2013a, 2013b, 2013c, 2013d; Municipality of Greenstone 2012).

Table 5-2: Water Treatment Plants, Municipality of Greenstone

| Water Treatment Plant | Rated Capacity (m ³ /day) | Average Daily Use (m ³ /day) |
|---------------------------------|--------------------------------------|---|
| Caramat Water Treatment Plant | 75.2 | 14.7 |
| Beardmore Water Treatment Plant | 752 | 103.9 |
| Geraldton Water Treatment Plant | 6,048 | 1,329.43 |
| Longlac Water Treatment Plant | 4,540 | 993.88 |
| Nakina Water Treatment Plant | 2,000 | 383.29 |
| Total | 13,415.2 | 2,825.2 |

Source: Municipality of Greenstone 2012; Ontario Clean Water Agency 2013a, 2013b, 2013c, 2013d

There are three wastewater treatment facilities in the Municipality – in Geraldton, Longlac, and Nakina. The capacity of these facilities is 2,500, 2,454 and 882 m³/day, respectively (Table 5-3). The average daily flow in each community in 2012 was less than the capacity of its treatment facility (Municipality of Greenstone 2012).

In the Greenstone Region Investment Readiness Project report released in January 2010, the sewer facilities of Longlac, Geraldton and Nakina were all identified as experiencing maximum flows exceeding their design capacity (Millier Dickinson Blais 2012).

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Table 5-3: Sewage Capacity, Municipality of Greenstone

| Sewer Facility | Rated Capacity (m ³ /day) | Daily Flow (m ³ /day) |
|----------------|--------------------------------------|----------------------------------|
| Geraldton | 2,500 | 1,788 |
| Longlac | 2,454 | 1,608 |
| Nakina | 882 | 359 |
| Total | 5836 | 3,755 |

Source: Municipality of Greenstone 2012

It has been suggested that if the sewer facilities in these communities are not upgraded, they will not support demands of future development in the area (GEDC 2014). In March 2014, the Ontario government, through its Small, Rural and Northern Municipal Infrastructure Fund, announced that it will spend more than \$700,000 to repair the water towers in Geraldton and Longlac (MNMD 2014a).

5.3.2 Solid Waste Management

The Municipality of Greenstone operates municipal sanitary landfills for the communities of Beardmore, Geraldton, Longlac and Nakina under the regulating authority of the Ministry of the Environment and Climate Change.

The Geraldton waste disposal site is located along the north side of Highway 11, about 3 km southeast of Geraldton. For a number of years, the site has been accepting waste beyond its original design capacity and has, therefore, expanded beyond its boundaries. In 2013, an Environmental Screening Report (ESR) was approved, which will recognize the current footprint of the waste disposal site and allow an additional refuse placement of 100,000 m³ (of which approximately 86,000 m³ has already been placed). This means that this site will allow for placement of an estimated additional 14,000 m³ of waste.

The Municipality is in the process of obtaining approval for alternative waste disposal option(s) so that it can continue servicing the waste disposal needs of the Municipality in the long-term (Engineering Northwest Ltd. 2012; Municipality of Greenstone 2013).

5.4 ACCOMMODATION

5.4.1 Permanent Housing

5.4.1.1 Thunder Bay District

In 2011, there were 71,235 total private dwellings in the Thunder Bay District and 62,318 total private dwellings occupied by usual residents (Statistics Canada 2012). Approximately 72 percent of occupied dwellings in the District were single-detached homes in 2011.

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During the third quarter of 2013, there were 150 total housing starts in the City of Thunder Bay, which represented a nearly 40 percent increase over the same period in 2012 when there were 108 starts. However, the total number of the Multiple Listings Service (MLS) sales in Thunder Bay fell 3.9 percent in the third quarter of 2013 as compared to the same period in 2012. During the fall of 2012, the average MLS house price was \$179,241, 11.1 percent lower than the average price one year later of \$199,064 (CMHC 2013).

Thunder Bay's vacancy rate has been on a downward trend since 2006 and this is expected to continue. The vacancy rate in Thunder Bay dropped to 0.9 percent in October 2013 from 1.1 percent the previous October and 1.7 percent in 2011. Average rent for a two-bedroom apartment in October 2013 was \$840, up from \$818 in October 2012 (CMHC 2013). Factors exerting downward pressure on vacancies include limited new rental supply, an extremely tight resale market, strong employment growth and positive and continued in-migration to the City (CMHC 2012).

Due to the aging population, the major housing need in the municipalities outside of the City is for support services to allow people to remain in their own homes and supportive housing for when they are unable to do so. Many residents are forced to relocate to the City of Thunder Bay to obtain appropriate housing with supports because there is virtually no supportive housing outside of the City. However, retirement homes within the Thunder Bay Census Metropolitan Area (CMA) have been experiencing high vacancy rates. In 2009, there were 327 retirement home spaces in the Thunder Bay CMA (CMHC 2009; Toni Farley and Associates 2011).

Social housing within the Thunder Bay District consists of 25 housing providers with approximately 3,750 units. The waiting list for social housing has grown from 903 applicants in 2004 to 1,284 as of September 2010. In December 31, 2012, there were 1,790 applicants on the wait list for social housing in the District (TBDSSAB 2012). Despite increasing pressure on the system, those in need are housed faster in the District of Thunder Bay than in almost any other jurisdiction in Ontario; average wait time in 2012 was 8 months, while the provincial average was over 2 years. It is exceptional that an applicant would wait more than two years to be housed. Thunder Bay experiences the greatest need for social housing within the District and it accounts for almost 90 percent of the District's total portfolio of social housing units (Toni Farley and Associates 2011).

5.4.1.2 Municipality of Greenstone

In 2011, the Municipality of Greenstone had 2,629 total private dwellings of which 1,992 were occupied by usual residents. The majority of dwellings (86 percent) were single-detached houses (Statistics Canada 2012). The Greenstone region's average housing price in 2008 was approximately \$87,664 and the average monthly rent was \$658 per month in 2010 (SHS Consulting 2010).

According to a 2011 housing analysis of the District of Thunder Bay, population decline in the Municipality of Greenstone has led to a surplus of housing in some communities (Toni Farley and Associates 2011). In Longlac, it was estimated that roughly 150 of the 500 homes in the community were vacant (Toni Farley and Associates 2011).

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However, the housing stock in the Municipality is generally older (97 percent built more than 20 years before compared to the Ontario average of 69 percent) and more properties (9.3 percent) are reported as requiring major repairs than are reported across the province (6.6 percent). Housing values are also considerably lower in Greenstone (\$83,832) than either the Thunder Bay District (\$137,923) or Ontario (\$297,479) (Greenstone Economic Development Corporation and Matthew Fischer and Associates Inc. 2010).

Some communities within the Municipality have underdeveloped, designated residential areas to accommodate larger-scale future growth, including Beardmore, Longlac, Nakina, and Geraldton. In Longlac, for instance, there are 78 vacant residential lots and Geraldton has approximately 250 vacant residential properties. There are plans for two subdivisions in Geraldton with a total of 147 lots on approximately 53 acres of land (Municipality of Greenstone 2013).

Social housing is available in the towns of Geraldton, Longlac and Nakina. In 2006, there were 105 social housing units available, half of which were for senior residents. The majority of units (70 percent) were located in Geraldton (Toni Farley and Associates 2011). While existing senior housing could be renovated to better serve the current population, the demand for social housing in general within Greenstone is weak (Toni Farley and Associates 2011).

5.4.2 Temporary Accommodations

5.4.2.1 Thunder Bay District

There are six shelters in the Thunder Bay District, two of which (Shelter House and the Salvation Army) serve the homeless and the other four serve victims of domestic violence (Table 5-3) (Toni Farley and Associates 2011). Shelter usage varies from month to month but there has been an upward trend since 2008.

Table 5-4: Emergency Shelters, Thunder Bay District

| Facility | Number of Beds |
|----------------------------------|--|
| Salvation Army | 17 beds for men |
| Shelter House | 27 beds for men 8 beds for women 10 beds for youth |
| Geraldton Family Resource Centre | 10 beds |
| Faye Peterson Transition House | 24 beds |
| Marjorie House (Marathon) | 10 beds |
| Beendigen Inc. | 24 beds |

Source: Toni Farley and Associates 2011

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5.4.2.2 Municipality of Greenstone

The Geraldton Family Resource Centre is the only emergency shelter in the Municipality of Greenstone. It has 10 beds for women and children and it operates 24 hours a day for 365 days of the year. It serves the areas of Fort Hope, Marten Falls, Aroland, Nakina, Geraldton, Longlac, Caramat, Ginoogaming and Reserve 58, as well as Jellicoe, Beardmore and any other clientele who require access to its services, regardless of jurisdiction. In addition to short-term safe housing the Centre offers a 24-hour crisis line, safety planning, outreach services, counselling for women and children, transitional housing and support services, court accompaniment, advocacy, and resource dissemination (Municipality of Greenstone 2013).

Temporary accommodations and operators are typically small in scale, such as bed-and-breakfasts, with many geared towards tourism associated with hunting and fishing (e.g. fly-in outfitters). Greenstone is home to 40 hotels/motels/resorts/tourism operators ranging from roofed hotels and motels to seasonal camps and fly-in accommodations, which provide 280 rooms. A number of projects aimed at generating tourism investment, such as a five-star ecolodge within the BNA community and lakefront cottage development lots along Lake Nipigon in partnership with three surrounding First Nations have been proposed for the Municipality (Miller Dickinson Blaise 2012).

5.5 INCOME SUPPORT AND EMPLOYMENT SERVICES

5.5.1 Thunder Bay District

Social Assistance is provided in Ontario through Ontario Works, a program of the Ontario Ministry of Community and Social Services, which offers income and employment supports to people who are in temporary financial need. It also provides employment assistance to help people become and stay employed. This includes job search support services, basic education and job skills training, community and employment placement, supports to self-employment, Learning, Earning and Parenting, addiction services and earning exemptions that allow participants to earn income as they move back into the workforce.

In the District of Thunder Bay, social service programs, including Ontario Works, are delivered through the Thunder Bay Social Services Administration Board (TBDSSAB). The TBDSSAB is also responsible for the delivery of the Community Child Care and Social Housing programs.

The main Ontario Works office in the RSA is located in Thunder Bay. In 2012, Ontario Works received 3,743 requests for Social Assistance in the District of Thunder Bay, which was a decrease of 9 percent from 2011. Of these requests, 2,267, approximately 60 percent of the total requests, were granted. On average, caseloads in the District numbered 2,680 per month, down 12 percent from the previous year. The average time spent on Social Assistance in the District of Thunder Bay in 2012 was 389 days, which was 21 percent less than the provincial average of 494 days (TBDSSAB 2012). In 2013, Ontario Works handled an average of 2,597 cases per month and approximately 80 percent of these were in Thunder Bay and surrounding area (TBDSSAB 2013).

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Within the District, employment resource services are provided directly by delivery sites and/or referral to community partners. Ontario Works offers a wide range of services, such as access to computers, fax, and photocopier, along with job boards, workshops and training opportunities, Community Placement and Employment Placement opportunities, telephone use and client voicemail for employers.

5.5.2 Municipality of Greenstone

There are two Ontario Works offices in the Municipality of Greenstone; in Geraldton and Longlac. In 2013, Ontario Works handled an average of 150 cases of Social Assistance per month in the Municipality of Greenstone. This was unchanged from the previous year and was up 17 percent from 2011 (TBDSSAB 2013).

Aside from the employment supports offered by Ontario Works, there is a Service Canada office in Geraldton, which provides access to free job postings through the Job Bank website and free local labour market information. Also, More Than Words Employment Services has offices in Geraldton and Longlac and is funded by Employment Ontario to provide bilingual assistance to Greenstone residents with their employment and training needs.

5.6 COMMUNITY HEALTH

The North West Local Health Integration Network (North West LHIN) is a non-profit organization, which was established in June 2005. It covers the Thunder Bay and Rainy River Districts and most of the Kenora District and is headquartered in Thunder Bay. The North West LHIN does not directly provide health care services but works with health care providers, communities and the public to set priorities and plan health services in Northwestern Ontario. It oversees the integration and coordination of local health services to make it easier for clients/patients to access the care they need (North West LHIN 2013a).

The North West LHIN is also responsible for allocating funding for the following health services in Northwestern Ontario:

- Hospitals;
- Community Care Access Centres (CCACs);
- Community support service organizations (e.g. homemaking and personal assistance);
- Long-term care homes;
- Community Health Centres; and
- Community mental health and addictions agencies.

The large physical area and relatively small, dispersed population of the North West LHIN results in challenges to health service delivery, including access to care, health human resources, the need for extensive travel, and higher costs of care per capita. The North West LHIN is the largest,

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physically, within Ontario (47 percent of the province) and it has the smallest population (approximately 231,000).

The North West LHIN has the highest rate of acute hospital use in Ontario and it has lower usage of out-patient programs and ambulatory clinics than elsewhere in the province (North West LHIN 2013b). To address these issues, the North West LHIN has identified four priority areas for change between 2013 and 2016:

- Building an Integrated Health Care System;
- Building an Integrated eHealth Framework;
- Improving Access to Care; and
- Enhancing Chronic Disease Prevention and Management (North West LHIN 2013b).

Relative to the province (based on 2009-2010 Canadian Community Health Survey (CCHS) data for ages 12 and over), the North West LHIN has a higher proportion of people who:

- Smoke daily;
- Are heavy drinkers;
- Are overweight or obese; and
- Have a strong sense of community belonging.

In 2012, there were 27,300 physicians in Ontario giving a physician to population ratio of 201 to 100,000. This is slightly smaller than the number of physicians per 100,000 people in the country as a whole, where the ratio was 214 to 100,000 in 2012. Ontario had 100 family doctors per 100,000 population while the ratio for specialists was 102 to 100,000. In the North West LHIN, there were 124 family doctors per 100,000 population and 72 specialists per 100,000 population in 2012. Between 2008 and 2012, the number of family physicians and specialists in the North West LHIN increased by 27.9 percent and 23.4 percent, respectively (CIHI 2012).

The North West LHIN has had issues with retention of physicians in recent years. Between 2007 and 2008, the number of active physicians dropped from 431 to 417 and for family medicine physicians specifically, from 265 to 253. However, initiatives, such as the Northern and Rural Recruitment and Retention Initiative (NRRRI), which was created in 2010, are helping to attract physicians to northern Ontario communities. Between 2009 and 2010, the total number of physicians practicing in the Northern LHINs increased by 19, compared to an increase of 35 between 2010 and 2011 after the NRRRI began (OHRRN 2012).

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5.6.1 Thunder Bay District

In Ontario, there are 36 Public Health Units, which are official health agencies established by a group of urban and rural municipalities to provide a more efficient community health program. Health units administer health promotion and disease prevention programs and inform the public about issues related to health (Ontario Ministry of Health and Long-Term Care 2013). The Thunder Bay District Health Unit has its main office in Thunder Bay and five additional offices in Marathon, Nipigon, Greenstone, Manitouwadge, and Terrace Bay.

The main hospital in the Thunder Bay District is the Thunder Bay Regional Health Science Centre (TBRHSC) and it has 375 acute care rooms. The operating room suite has 12 theatres and there are 28 beds in the Post-Anesthetic Recovery Unit and 40 beds in the Day Surgery Recovery area. In November 2013, the TBRHSC had to cancel a number of procedures as there were no beds available for patients waiting for admission. The hospital is funded for only 386 beds but at the time was using 440 beds and is operating significantly over-capacity (CBC News 2013a).

Efforts are being made to move patients requiring alternate-levels of care (ALC) and long-term care out of the TBRHSC to make more room for acute-care patients. A number of beds are being made available to ALC patients at other medical facilities, including the Lakehead Psychiatric Hospital and the McKellar Place seniors' apartment complex. Parking at the TBRHSC is also being improved with the creation of 300 addition parking spaces to one of the hospital's lots (The Chronicle Journal 2014).

The Emergency Department at the TBRHSC is one of the busiest in the country with approximately 95,000 annual visits. With the recent departure of six doctors from the ER, the TBRHSC has become dependent on locums, or temporary doctors. In November 2013, the hospital announced that it will be receiving 25 new short- and long-term locums in its ER (CBC News 2013b).

Ontario Telemedicine Network (OTN) is being used to its capacity. OTN has cut down the amount of time and money spent on travel between communities, facilitates staff training, and has opened up counseling services to rural communities (City of Thunder Bay, CEDC and FWFN 2013).

There is a NorWest Community Health Centres location in Thunder Bay, which provides primary health care and health education to people in the communities within the District of Thunder Bay. In May 2013, the government announced a multi-million dollar building expansion that will facilitate increased efficiencies in service, and provide a safer, more effective environment for clients and staff. It will help increase the capacity to partner with other organizations and will include new exam rooms, program facilities for chronic disease management, and more health promotion initiatives (NorWest Community Health Centres 2013).

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5.6.2 Municipality of Greenstone

Geraldton District Hospital provides health services to approximately 8,000 residents of Greenstone and surrounding First Nations communities. It was constructed in 1963, a heliport was added in 1986 and extensive renovations occurred in 1989 with the addition of the John Owen Evans Residence.

The hospital has 23 acute-care beds, 26 long-term care beds and a 24-hour emergency department. Services provided include clinical nutrition, diagnostic imaging (x-ray and ultrasound), laboratory, low risk obstetrics, outreach chemotherapy, rehabilitation, social work, and telemedicine. The hospital is almost 50 years old and building system equipment is failing faster than they can be upgraded. Improvements have been planned, including to ventilation systems and the roof and the Emergency Department may be relocated to provide more space and accommodate more outpatient services, such as mental health counseling (Geraldton District Hospital 2010).

The Northern Horizon Health Center, which was built adjacent to the Geraldton District Hospital in 2000, provides a centralized location for the following organizations:

- Community Care Access Centre
- Dental Office
- Diabetes Education Centre
- Geraldton Medical Group
- Greenstone Family Health Team
- Nutrition Services
- Thunder Bay District Health Unit

The NorWest Community Health Centres in Longlac provides primary care services and health promotion programs to that community, Caramat and the Long Lake #58 and Ginoogaming First Nations. The health care team at the NorWest Community Health Centres includes family physicians, nurse practitioners, nurses, and a dietitian.

The Nakina Clinic, located in Nakina, is staffed with a full-time bilingual registered nurse and a receptionist. Physicians from the Geraldton Medical Group provide scheduled services. It services the far north and surrounding First Nations (Geraldton District Hospital 2013).

Greenstone is designated as an underserved area by the Ministry of Health and Long-term Care, which allows the community to access incentives funds for the recruitment and retention of family physicians. Primarily though, it means that the existing community is underserved by health care professionals (Millier Dickinson Blais 2012).

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The Geraldton District Hospital plays the central role in the recruitment of physicians, nurses, and allied health professionals in the community, with other organizations supporting as necessary – such as through the Healthcare Committee of the Greenstone Community Adjustment Committee (Millier Dickinson Blais 2012).

5.7 EDUCATION

5.7.1 Thunder Bay District

The main school boards serving the Thunder Bay area are the Lakehead District School Board, the Thunder Bay Catholic District School Board, and the Conseil scolaire de district catholique des Aurores boréales. The Lakehead District School Board has 22 elementary schools, four secondary schools and a centre for adult studies. The Thunder Bay Catholic District School Board has 20 schools: 15 elementary, three senior elementary, and two secondary. The Conseil scolaire de district catholique des Aurores boréales operates one elementary and one high school in Thunder Bay, and an additional six schools throughout the Thunder Bay District (Thunder Bay CEDC 2009).

Between 2002 and 2008, elementary and secondary schools in Northern Ontario saw a decline in enrolment of 12 percent (Declining Enrolment Working Group 2009). In 2012-13, the Lakehead District School Board had a total enrolment of 9,795 students and 1,043 elementary and secondary teachers (Lakehead District School Board 2013). The Thunder Bay Catholic District School Board had a total 8,467 students and 576 teachers in 2012-13, the same number of students as the previous two years. The number of teachers, however, was slightly higher than 2011-12 (562) (Thunder Bay Catholic School Board 2011, 2012, 2013).

Secondary Education is available at Lakehead University Academy of Learning Career and Business College, Everest College of Business, Technology and Healthcare.

5.7.2 Municipality of Greenstone

Public education in the Municipality of Greenstone is managed by the Superior-Greenstone District School Board. In the 2013-14 school year, there were 12 elementary schools and five secondary schools in the communities of Beardmore, Geraldton, Longlac, Nakina, Caramat, Dorion, Nipigon, Red Rock, Schreiber, Terrace Bay, Marathon and Manitouwadge. The main office is located in Marathon (SGDSB 2013).

Total enrolment for the Superior Greenstone District School Board in 2013-14 was 1,545 students. In the last 10 years, enrolment within the school board has declined by 40 percent, resulting in very small class sizes and multiple grade groupings (SGDSB 2012). Between the 2003-04 and 2012-13 school years, the majority of elementary schools in the Superior-Greenstone District had class sizes of 20 or fewer students (Ontario Ministry of Education 2014).

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The Municipality of Greenstone has four public elementary schools (all English), four private elementary schools (including two English/French and one French), and two public high schools (one French), as well as Aboriginal schools at the Rocky Bay and Aroland First Nations.

Elementary schools throughout Greenstone operate at levels above their budgeted enrolment (252 budgeted full-time equivalent (FTE) spaces versus an actual 266.5 FTE students at the four schools). Geraldton Composite High School operates just below budgeted capacity (240 FTEs budgeted to accommodate 224.5 actual FTEs). Based on accommodations and population trends, the majority of these schools operate well below their theoretical physical capacity, or the number of students that could reasonably be accommodated with a higher level of resources. Similar pressures are likely being felt in the French language schools and the First Nations schools in Greenstone. Space does not appear to be an issue because the majority of schools have the physical capacity to accommodate additional students. However, the budgeted capacity, or the amount of resources needed to open up new spaces appears to be at, or approaching, capacity in many schools (Millier Dickinson Blais 2012).

Members of the Ginoogaming First Nation and Long Lake 58 First Nation attend Migizi Wazisin - Eagle Nest Elementary School and Nimiki Migiziki High School. The Elementary School is Band operated with four class rooms for grades junior kindergarten to eight. There is a Training Centre in the Long Lake 58 First Nation community that aids in developing life skills and offers Adult Learning.

Biinjitiwaabik Zaaging Anishinaabek Education Authority operates the Biinjitiwaabik Zaaging School in that community. Secondary students there are transported by a private bus company to and from Red Rock to attend Nipigon-Red Rock District High School. There is a Distance Education office located in the community recreation centre. Elementary and junior high school students of the Aroland First Nation attend Johnny Therriault Memorial School on-reserve.

Within the Municipality of Greenstone secondary education is available at Confederation College campus in Geraldton. Confederation College offers a one-year program in Mining Techniques and it may develop two- and three-year Mining Technician and Technology programs. It has been noted that the capacity of the Geraldton Campus of Confederation College should be expanded to incorporate additional programming, specifically programming related to the mining sector (Millier Dickinson Blais 2012).

Contact North offers distance education throughout Northwestern Ontario, including a variety of programs relevant to the mining sector and support services, such as Mining Engineering Technician, Building Environmental Systems, and Electro Mechanical Technician Certificate (Millier Dickinson Blais 2012).

The Greenstone Regional Skills Centre is a secondary training institution that is being developed by the Municipality of Greenstone, in collaboration with its regional partners in economic development. It will be located at the Greenstone Regional (Geraldton) Airport and will provide trades and related training to prepare the Greenstone workforce for employment in the mining sector. In January 2014, the Ontario and federal governments announced a joint investment of

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\$3.5 million to help build the Regional Skills Centre (Ontario Ministry of Northern Development and Mines 2014b). The Municipality is also working with College Boreal, Cambrian College, Confederation College, Northern College, Universite de Hearst, and Connect North on a range of different initiatives related to training capacity and accessibility of programming (Millier Dickinson Blais 2012).

5.8 RECREATION AND ENTERTAINMENT

5.8.1 Thunder Bay District

The City of Thunder Bay has numerous recreation facilities available to residents and visitors, including six indoor arenas, 124 parks with over 32 km of recreational trails, two campgrounds, three outdoor and two indoor swimming pools, thirteen community centres, two 55-plus adult centres, two golf courses, a tennis centre, three golf courses, seven skateboard and bike parks, two campgrounds, and the Canada Games Complex (Corporation of the City of Thunder Bay 2013).

Outdoor attractions in the City include Eagle Canyon, Kakabeka Falls and Lake Superior. Residents can participate in outdoor activities such as golf, kayaking, canoeing, windsurfing, snowmobiling and skiing throughout the City. Thunder Bay provides access to ball diamonds, soccer fields, football fields, tennis courts and parks that can be booked for special events (Corporation of the City of Thunder Bay 2013).

Thunder Bay also has a number of visual and performing arts venues, including art galleries, museums, and concert halls (Corporation of the City of Thunder Bay 2013). The City has a variety of restaurants for fine dining, casual dining, breakfast, fast food and pizza. Restaurants range in cuisine offered, including Asian, Japanese, East Indian, Thai, Jamaican, Lebanese, and Portuguese. The City also has several cafes, coffee and tea houses (Corporation of the City of Thunder Bay 2013).

The City also hosts many community events and festivals throughout the year, including movies in the park, sporting events, National Aboriginal Day, Festa Italiana, and the Blues Festival (The Corporation of the City of Thunder Bay 2013). Annual events in the City of Thunder Bay include the Bay Street Film Festival, Make it Short Movie Project, Thunder Bay Dragon Boat Race Festival and Thunder Bay Kite Festival.

5.8.2 Municipality of Greenstone

The Municipality of Greenstone has four arenas for hockey and skating, and ringette and swimming is offered at the Geraldton pool. There are also three community centres and a Sportsplex. Winter outdoor activities include cross country skiing and snowmobiling at clubs in Longlac and Geraldton, snowshoeing, and ice fishing. Warm weather activities include fishing, golfing, baseball, camping, hiking, kayaking, canoeing, and camping at the four municipal parks (iCompass Technologies Inc., 2013).

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Geraldton offers recreational programs, such as cardmaking, craft classes and sales, dance classes, watercolour instruction, and yoga and meditation classes. Longlac ward offers recreational programs in firearm safety and hunter's training (iCompass Technologies Inc., 2013). (iCompass Technologies Inc. 2013). One tourist attraction in the town is the Geraldton Discovery Centre, on Highway 11, which has exhibits on the area's forestry and mining history, current practices in both industries.

The Municipality has a small number of restaurants, including Geraldton Pizza & Subs, Mary Brown's Famous Chicken & Taters, Popeye Restaurant, Queen of Clubs Pizza Place, Queen's Chinese Food, Blue Lagoon Pizza, Crown and Anchor, and Country Club.

In the Municipality of Greenstone's Corporate Strategic Plan (2013), a majority of the residents of Greenstone (80 percent) either strongly or somewhat agreed that Greenstone needs additional recreational facilities, services and programs for its children and youth.

5.9 EMERGENCY SERVICES

5.9.1 Police

5.9.1.1 Thunder Bay District

The Thunder Bay Police Service has jurisdiction over six zones; five in Thunder Bay and one in the Municipality of Oliver Paipoonge. They practice Zone Policing, which focuses on neighbourhood policing to address issues at a neighbourhood level, increase the visibility of police officers, and provide the opportunity for greater contact between police officers and the community (Thunder Bay Police Service 2013a).

In 2012, a total of 317 authorized personnel worked for the Thunder Bay Police Service, 224 sworn members and 93 civilian members. Of the sworn members, 187 were male and 37 were female. The number of authorized personnel remained the same from 2010 to 2012 and the ratio of officers to residents in 2012 was 191 police officers per 100,000 population. This is slightly lower than the provincial ratio of 195 officers per 100,000 population. The number of officers in Thunder Bay decreased 2 percent between 2011 and 2012 (Statistics Canada 2013c; Thunder Bay Police Service 2012).

The Crime Severity Index, which tracks the severity of police-reported crime, in the Thunder Bay CMA was 108.8 in 2011, compared to 61.1 for the province of Ontario and 77.6 for the country (Statistics Canada 2013c).

All calls for service to the Thunder Bay Police Service decreased 50,894 to 46,786 from 2011 to 2012 (Thunder Bay Police Service 2012). In 2012, crimes of violence, crimes against property, and other criminal code offenses decreased from the previous year. The total federal statutes drug offences and other federal statute offences also decreased from 2011 to 2012. In addition, youth charged for crimes against violence, crimes against property, drug offences and other criminal code offences in 2012, decreased from the previous year (Thunder Bay Police Service 2012).

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On the 1,130 km of roadway policed in the City of Thunder Bay and the Municipality of Oliver Paipooonge, the motor vehicle collision rate and motor vehicle fatalities also decreased from 2011 to 2012 (Thunder Bay Police Service 2013b). Traffic offences, including dangerous/impaired operation of a motor vehicle, failure/refusal of breath/blood sample, failure to stop/remain at the scene of an accident, driving while prohibited/disqualified, careless driving and other Highway Traffic Act charges, increased by 248 from 2011 to 2012 (Thunder Bay Police Service 2012).

An online Citizen Satisfaction Survey was completed by approximately 1,107 people in 2012. The survey aimed to identify policing issues in the City of Thunder Bay. The most important policing issues participants identified were crime prevention and enforcement, followed by police being highly visible in patrol, traffic enforcement and police having contact with the public. 43.1 percent of participants indicated that they were satisfied with the Thunder Bay Police Service, whereas 26.7 percent were very satisfied and 26.7 percent were not satisfied (Thunder Bay Police Service 2012).

The priorities of Thunder Bay Police Services Board 2012 to 2014 Business Plan include using proactive and progressive policing to attain crime prevention and community safety, increasing community engagement and communication with regards to public safety and policing issues, increasing engagement with Aboriginal communities, and maintaining a well-respected and effective police force (Thunder Bay Police Service 2012).

5.9.1.2 Municipality of Greenstone

Police service in the Municipality of Greenstone is provided by the Ontario Provincial Police detachment out of Geraldton (Municipality of Greenstone 2012). Greenstone Detachment is staffed by 30 police officers who are dispatched to the surrounding communities of Greenstone and also provide support to the Aboriginal Policing Services in Greenstone as requested.

The Anishinaabek Police Service (APS) provides policing services to sixteen First Nation communities across Ontario, stretching from Kettle and Stony Point First Nation in the south to Fort William First Nation in the north. The APS Headquarters is located in Garden River First Nation near Sault Ste. Marie, Ontario. There are twelve detachments serving the sixteen First Nations. Anishinaabek Police Service has 62 sworn officers and 21 civilian members. The APS is divided into three regions, north, south and central, with a Director for each region and a Sergeant in each detachment. There are detachments in Aroland First Nations and the Ginoogaming First Nations.

5.9.2 Fire

5.9.2.1 Thunder Bay District

Thunder Bay Fire Rescue (TBFR) provides fire rescue services including fire suppression, fire prevention, explosions, auto extrications, hazardous material spills, industrial accidents, confined space rescue, high/low angle rescue, tiered mechanical response/defibrillation and emergency

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planning to the City of Thunder Bay. TBFR also provides emergency planning and fire protection to neighbouring First Nations communities (Corporation of the City of Thunder Bay 2013).

TBFR operates out of eight stations with 210 staff, serving an area of 322.5 square km and a population of 110,000. The eight fire stations are divided into north and south districts. The south district is comprised of Vickers, Brown, Neebing and James fire stations, and the north district has North Central, Junot, Hodder and Mapleward fire stations (Corporation of the City of Thunder Bay 2013). Since 1992, Neebing Station and Mapleward Station have seen population increases due to a shift in population from urban to rural areas. Populations have increased by 50.6 percent for the Neebing Station zone and 39.7 percent for the Mapleward Station zone (Thunder Bay Fire Rescue 2011).

TBFR is broken into five divisions: suppression, administration, fire prevention and investigation, apparatus and equipment, and training. The suppression division operates 24 hours a day and 365 days a year, with four platoons out of the eight fire stations. Within each district are one District Chief, three Captains and at least thirteen firefighters. The Platoon Chief oversees each District Chief and the platoons. The Administration Division operates out of an office in the Vickers Street Fire Station and is where the Fire Chief, two Deputy Fire Chiefs, Director of Administration and CEMC, Fire Prevention staff, Secretary to the Fire Chief, Accounting and Administrative Clerk, Fire Prevention Clerk and Program Support Coordinator work (Corporation of the City of Thunder Bay 2013).

Annual rescue calls, tiered response and medical calls have increased in recent years for TBFR. Responses increased from 6,828 in 2009 to 7,577 in 2010. The majority of calls were for medical/resuscitation, followed by false fire calls, rescue, property fires and explosions, and other responses. Inspections by the TBFR have also increased from 1,526 in 2004 to 2,762 in 2008 (Thunder Bay Fire Rescue 2011).

TBFR is planning improvements to its organizational structure, resources and facilities on an on-going basis. These include moving or rebuilding stations to improve deployment within the zones and increasing staffing levels in Training, Prevention and Administrative divisions (Thunder Bay Fire Rescue 2011). In September 2013, construction began on two new fire halls to upgrade outdated facilities and improve emergency response times. The relocation of the current Brown Street Station and the replacement of the Neebing Station in its present location are two of the eight high priority recommendations outlined in the Thunder Bay Fire Rescue 2012-2016 Strategic Master Fire Plan and represent the first major fire infrastructure renewal within the city in 25 years. The new fire stations are expected to be operational in early July 2014 (NetNewsLedger 2013).

5.9.2.2 Municipality of Greenstone

The Greenstone Fire Department has six sector fire stations that respond to fire alarms, fires, auto extrications/rescues and hazardous material spills. Fire stations are located in Beardmore, Geraldton, Longlac, Nakina, Caramat and Jellicoe and they are staffed by approximately 120 Volunteer Firefighters (iCompass Technologies Inc. 2013).

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The Greenstone Fire Department has 10 pumpers, five rescue units and other scout and command units, specialized rescue and extrication equipment, and tools/equipment required for structural fires.

Within recent years, the Department has responded to various calls in regards to assistance from the community, train derailments, aircraft accidents, prolonged highway closures and internal evacuations of residents in emergencies (iCompass Technologies Inc. 2013).

The Municipality of Greenstone has an Emergency Plan to protect the safety and welfare of its residents. The plan was formally adopted by Council in Bylaw 13-77 (The Corporation of the Municipality of Greenstone, 2013). The Emergency Plan covers initiatives such as training, public education, awareness and mitigation strategies, and is the responsibility of the Community Emergency Management Coordinator to upgrade and advance (iCompass Technologies Inc., 2013).

During natural disasters in other communities, Greenstone Fire Department personnel provide food, shelter and security for evacuees from the other communities. To date, The Municipality of Greenstone has hosted over 12,000 evacuees from communities experiencing natural disasters such as floods or fires (iCompass Technologies Inc., 2013). Geraldton Ward has housed over 15,000 residents of First Nation and non-First Nation communities over the years, serving as a Provincial Emergency Reception Centre (The Corporation of the Municipality of Greenstone, 2013).

5.9.3 Ambulance

5.9.3.1 Thunder Bay District

Superior North Emergency Medical Services (EMS), a division of the City of Thunder Bay, provides emergency medical care and health care service to 15 municipalities and areas throughout the District of Thunder Bay. Superior North EMS is comprised of more than 190 professionals, including approximately 170 paramedics and a management and administrative team of 21. It responds to 9-1-1 calls and inter-facility patient transfers from 17 stations utilizing 49 vehicles including four Paramedic Response Units and three Emergency Support Units posted in Geraldton, Marathon, and Thunder Bay (Superior North EMS 2012a).

There are two levels of paramedics in the District of Thunder Bay. Primary Care Paramedics (PCP) provide defibrillation and administer drugs for breathing, cardiac and diabetic problems, and for allergic reactions. Advanced Care Paramedics (ACP) perform the same skills but can also perform intra-venous therapy, intubations, and advanced assessments, and administer a wider array of drugs. ACPs practice in Thunder Bay and Armstrong.

In March of 2012, the service was reorganized and divided into City and District. District Operations oversee stations in Armstrong, Beardmore, Conmee, Geraldton, Longlac, Manitouwadge, Marathon, Nakina, Nipigon, Red Rock, Schreiber, Shuniah, Terrace Bay, and Upsala. City Operations are in charge of the City of Thunder Bay.

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In 2012, EMS responded to 25,571 calls in the City of Thunder Bay of which 53 percent were classified as Code 4 calls, or a life and death emergency or unknown situation. In 90 percent of calls, EMS responded within 10.58 seconds of receiving the call. This is a very slight increase over 2010 when 90 percent of calls were answered in 10.46 seconds or less (Superior North EMS 2012b).

Between 2002 and 2012, EMS call volumes within the District of Thunder Bay increased approximately 80 percent and the volume is projected to increase an additional 8 to 10 percent in the next ten years. The increase in call volume is related to the District's aging population, social factors, including increased violence, poverty and substance abuse, as well as difficulty accessing primary health care and overcrowding in local emergency departments. EMS staff are reported to be under significant pressure to respond to the increased demand for service (Aalto 2012).

In 2012, a new EMS headquarters opened in Thunder Bay. The headquarters contains EMS senior administration, training and logistics facilities, and a garage that houses 22 emergency vehicles. Approximately 100 paramedics respond to 9-1-1 calls from this facility. It is expected that the new facility will improve EMS response times to Thunder Bay North and address gaps involving geographical coverage, encompassing the north and south sides of the city (Superior North EMS 2012a).

In addition to EMS, rural areas of the District are serviced by 13 volunteer first responder teams, which aim to respond to a call in 10 minutes or less to initiate Basic Life Support care quickly until the arrival of the Advanced Life Support paramedics (Superior North EMS 2013).

5.9.3.2 Municipality of Greenstone

The Longlac, Beardmore and Nakina EMS stations each had eight full-time staff in 2012 while the Geraldton station had seven full-time staff (Superior North EMS 2012a).

In 2012, the Superior North EMS responded to 1,219 total calls for service. Of these, the greatest percentage (49 percent) was categorized as Code 4 calls. This is up from 1,181 in 2011 and 1,056 in 2010. Paramedics responded to 90 percent of calls within the municipality in 2012 within 17 seconds. This is up from 11.42 seconds in 2010 and 10 seconds in 2011. In Geraldton, the 90th percentile response times were 8.27 seconds in 2011, 7.24 seconds in 2011 and 8.12 seconds in 2012 (Superior North EMS 2010, 2011, 2012a).

Land and Resource Use
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6.0 LAND AND RESOURCE USE

6.1 LAND USE PLANNING AND ZONING

The PDA covers lands that are a mix of private lands and Crown Land. These lands are located within the Municipality of Greenstone and the Thunder Bay North District Unorganized Territory. Crown Land in the RSA falls under General Use Area (G2697), which covers the Geraldton Area. Permitted uses include a variety of commercial uses, land and resource use activities and recreation activities and facilities (Table 6-1).

Table 6-1: Permitted Land Use in General Use Area GC2697

| Commercial Use | Land and Resource Use Activities | Recreation Activities and Facilities |
|--|---|--|
| <ul style="list-style-type: none"> • Aggregate extraction • Bait fishing • Commercial fishing • Commercial fur harvesting • Commercial hydro development • Commercial power generation development • Commercial timber harvest • Mineral exploration and development • Wild rice harvesting | <ul style="list-style-type: none"> • Development and maintenance of new roads • Development and maintenance of existing roads • Crown land disposition | <ul style="list-style-type: none"> • Crown land recreation • Hunting • Road use of existing and new roads, with certain exceptions • Sport fishing |

Source: (MNR 2005).

As per the Ontario Planning Act (1990), every municipality in the province must adopt an Official Plan and update it every five years. The Ministry of Municipal Affairs and Housing (MMAH) is responsible for approving official plans and for granting amendments to plans. The MMAH is also the approving authority for any decisions that fall under the Planning Act in the Thunder Bay North District Unorganized Territory.

The Municipality of Greenstone Official Plan (Plan) was adopted by the municipality in 2010 and reviewed by MMAH in 2012; however, the Plan cannot be approved by MMAH until Municipal Board appeals to the 1998 Official Plan are settled. The Plan applies to the majority of the RSA, with the exception of those areas located within the Thunder Bay North District Unorganized Area.

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The Plan establishes three categories of settlement areas:

- Urban Settlement Areas: Beardmore (which includes Tansleyville), Geraldton (which includes Geraldton North, Little Longlac, Rosedale Point, MacLeod Townsite and Hardrock Townsite), Longlac, Nakina;
- Rural Settlement Areas: Caramat, Jellicoe, Orient Bay, Macdiarmid; and
- Rural Area.

The Urban Settlement Areas are recognized as the primary settlement areas for residential, commercial, industrial and institutional land uses in the Municipality of Greenstone. Rural Settlement Areas are also recognized as areas for future growth although this will be predominantly residential in character with some supporting commercial and public service facilities. The Rural Area is intended to provide for the development of rural land uses such as resource-based residential (forestry, mining, mineral aggregates, agriculture), rural residential, rural commercial, industrial, resource activities, infrastructure (waste management facilities) and other rural land uses (Tunnock Consulting Ltd. 2010).

Most of the territory overlapped by the PDA is located in the Rural Area; however, there are also two Urban Settlement Areas associated with past mining activity contained within it: the Hardrock Townsite and MacLeod Townsite. Figure 6-1 shows the location of townsites within the PDA, LSA and RSA, as well as land use districts and features described in the Plan. Hardrock Townsite covers an area of 6.6 ha and MacLeod Townsite is 19.9 ha.

According to the Plan, land uses within the Rural Area are mainly focused on resource-based uses, such as forestry, mining, and infrastructure such as landfills. Districts in the Rural Area include rural, lakefront, industrial, airport, salvage yard, and environmental protection areas.

Urban Settlement Areas are distinguishable by their dense urban form and mix of land uses (Tunnock Consulting Ltd. 2010). The principal districts are residential, commercial, industrial and environmental protection areas. Urban Settlement Areas generally aim for a mix of more urban land uses. Although zoning may include existing resource uses in some areas, the Plan aims to ensure compatibility between resource uses in the vicinity of Urban Settlement Areas and sensitive land uses such as residential land uses. The Plan proposes to achieve this compatibility through the implementation of a separation distance and influence area requirements (Tunnock Consulting Ltd. 2010). Table 6-2 lists the accepted uses within the Rural Area and Urban Settlement Areas.

Land use districts within Hardrock Townsite include residential and an area designated as a lakefront district, which has been identified as an area of value for environmental and recreational purposes where development is to be controlled (Tunnock Consulting Ltd. 2010). Hardrock Townsite is occupied by 12 residences and 11 vacant lots.

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According to Schedule E of the Plan, most of the MacLeod Townsite is designated as a residential district with two parcels of land designated as commercial districts located near the intersection of the Trans-Canada Highway and Michael Power Boulevard (Tunnock Consulting Ltd. 2010). There are 37 houses, five vacant lots, one commercial establishment, one public park within the townsite.

Table 6-2: Types of Land Use Districts and Permitted Land Uses by Category of Settlement Area

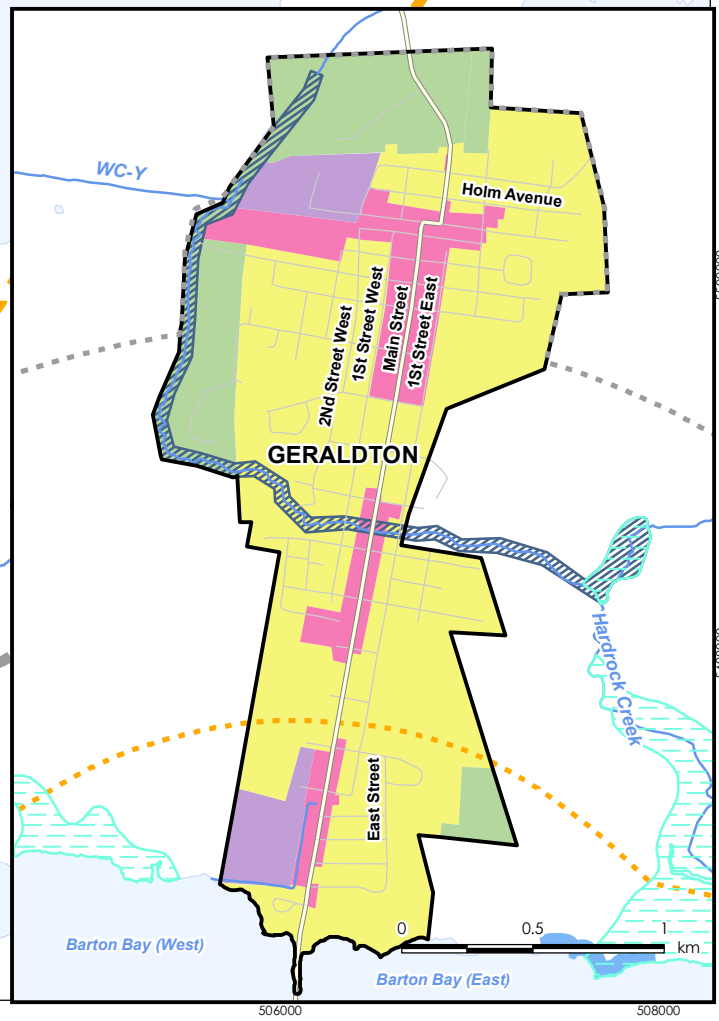
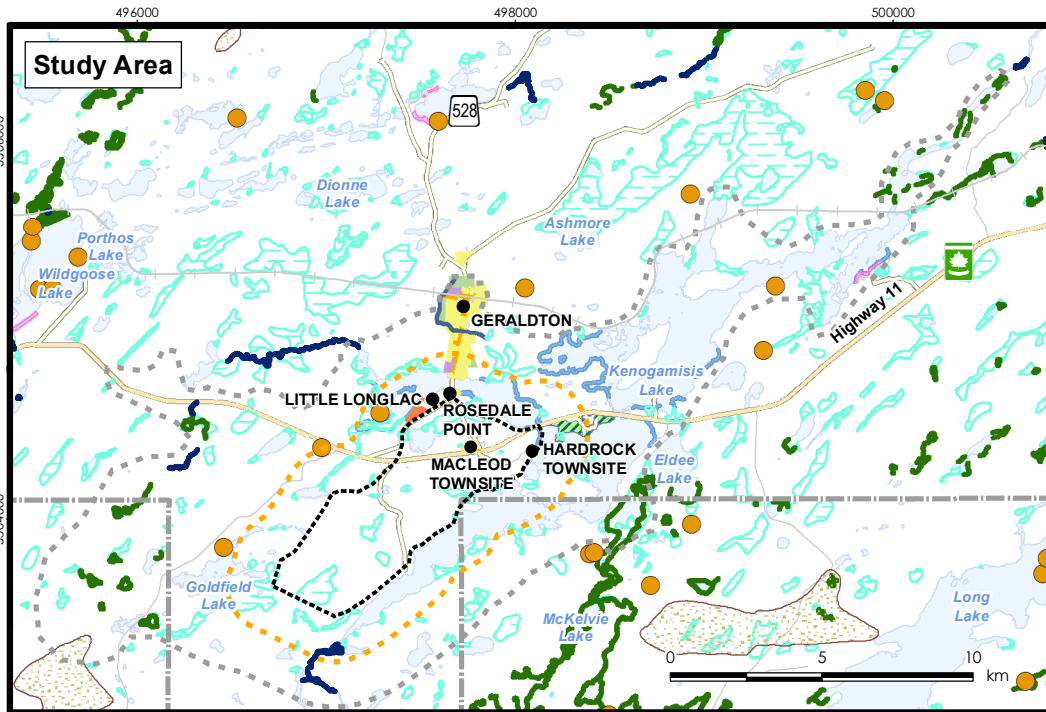
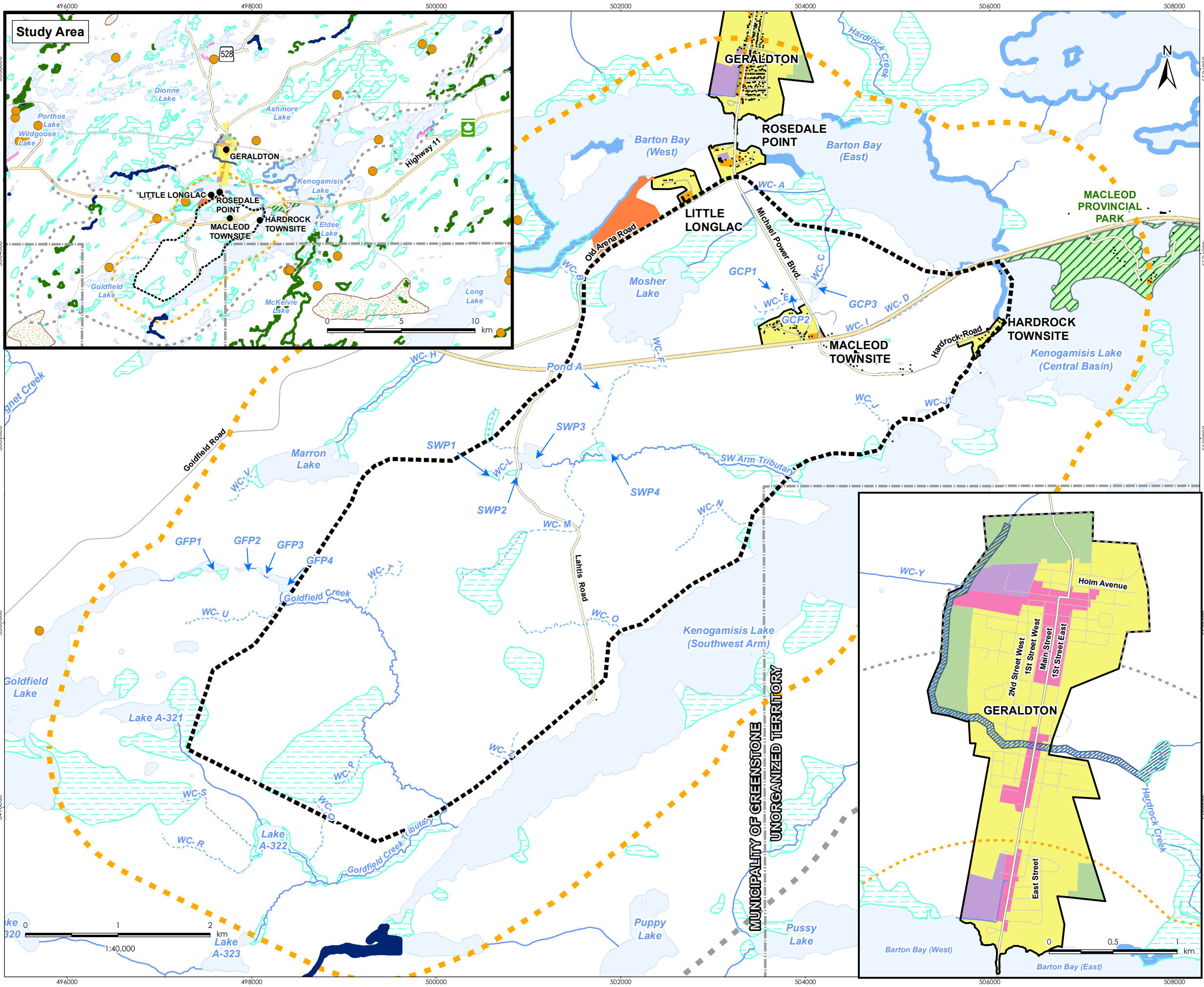
| Urban Settlement Area | Rural Area |
|---|--|
| <ul style="list-style-type: none"> • Residential District <ul style="list-style-type: none"> – Low to high density residential – Mobile home parks – Specialized residential • Commercial District <ul style="list-style-type: none"> – Full-range of retail, commercial, automotive, recreational and resort commercial, personal service uses and residential uses • Industrial District <ul style="list-style-type: none"> – Class I, II and III industrial uses and resource related industrial uses • All Districts (with restrictions in Environmental Protection Areas) <ul style="list-style-type: none"> – Full range of public service facilities – Full range of open space, park and special purpose trail uses, conservation uses, including waterfront parks – Municipal campgrounds – Full range of infrastructure uses and utilities excluding waste disposal facilities • All districts <ul style="list-style-type: none"> – Legally existing uses – Accessory uses to any main use | <ul style="list-style-type: none"> • Rural District <ul style="list-style-type: none"> – Low density residential – Mobile homes on individual lots – Resource related and rural service commercial uses – Recreational and resort commercial uses serving the tourism and leisure industries – Highway commercial uses – Agricultural uses – Hunting and fishing camps – Way side pits and quarries – Portable asphalt/concrete plants – Sea plane base – Public service and facilities, which are more appropriate in the Rural Area • Lakefront District <ul style="list-style-type: none"> – Single detached dwellings – Seasonal dwellings – Recreational and resort commercial uses serving the tourism and leisure industries – Recreational vehicles on individual lots or designated parks – Public services and facilities, infrastructure uses and utilities required to service Lakefront District • Industrial District <ul style="list-style-type: none"> – Class I, II and III industrial uses and resource related industrial uses – Transportation and distribution industries • Salvage Yard District <ul style="list-style-type: none"> – Salvage yards • Airport District <ul style="list-style-type: none"> – Airports and private airfields • All Districts (with restrictions in Environmental Protection Areas) <ul style="list-style-type: none"> – Full range of open space, park and special purpose trail uses, conservation uses – Full range of infrastructure uses and utilities • All districts <ul style="list-style-type: none"> – Legally existing uses – Accessory uses to any main use |

Source: Tunnock Consulting Ltd. 2010

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In addition to the MacLeod and Hardrock townsites, the LSA overlaps the townsites of Little Longlac and Rosedale Point, which abut the PDA, and the southern portion of the Town of Geraldton. The remaining portion of the Town of Geraldton is contained within the RSA.



- Legend**
- Project Development Area*
 - Local Study Area
 - Regional Study Area
- Land Use**
- Urban Settlement Area
 - Provincial Park
 - Environmental Protection
 - Lakefront District
 - Rural District
 - Industrial District
 - Commercial District
 - Residential District
 - Cottage Area
 - Proposed Subdivision
- Existing Features**
- Building
 - Highway
 - Major Road
 - Local Road
 - Watercourse - Permanent
 - Watercourse - Intermittent
 - Municipal Boundary
 - Waterbody
- Natural Heritage Features as per Greenstone OP and MNR**
- Nest
 - Moose Wintering Area
 - Moose Aquatic Feeding Area
 - Spawning Areas
 - Wetland, Unevaluated

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 16N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

Client/Project

Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
6-1

Title

Land Use Districts and Natural Heritage Features

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 Revised: 2015-03-06 By: mkrcaus

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6.2 CABINS

The PDA contains one area with cabins: a hunt camp comprising three structures located on a private parcel of land within the PDA at the south end of Lahtis Road. Although there are no additional cabins in the LSA, there are several cabin areas in the RSA. Those nearest the PDA are part of Kenogamisis Lake Resort, which has several private cabins for guests. According to the map data in the Land Information Ontario (LIO) Warehouse (MNR 2014), there is a cottage area located on the south shore of the Kenogamisis Lake Outflow Basin. Figure 6-1 shows the location of this cabin area within the RSA as well as nearby cabin areas located outside the RSA on Hutchison Lake and Wildgoose Lake. There are no trapper cabins located within the RSA.

6.3 PROTECTED AREAS

Areas protected from industrial development in the RSA include MacLeod Provincial Park, which is located within 52 m from the PDA, as well as areas and types of municipal land uses that are subject to certain protections under the Plan. These municipal land uses include the residential and commercial districts discussed in Section 6.1, but also include lakefront districts, natural heritage features, natural and manmade hazards, such as flood plains, and environmental protection areas. There are no national parks or conservation areas.

Protected areas within the PDA are limited to 4.1 ha of lakefront district and a number of natural heritage features designated in the Plan. The Plan identifies lakefront districts as areas of value for environmental and recreational purposes where development is to be controlled (Tunnock Consulting Ltd. 2010). As mentioned in Section 6.1, such districts exist along the shore of the Hardrock Townsite.

According to the Plan, development and/or site alteration is not permitted on natural heritage features (i.e., provincially and locally significant wetlands, significant wildlife habitat and habitat of endangered and threatened species, and significant areas of natural and scientific interest) or on lands adjacent to a natural heritage feature or area unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions (Tunnock Consulting Ltd. 2010). Such natural heritage features are described in the Terrestrial Environment Baseline Data Report.

Although the Plan shows over 210 ha of wetlands in the PDA, they are identified as “Unclassified” and the Plan does not specify protection measures for wetlands that are not classified as significant.

In addition to the aforementioned features, the LSA overlaps 61 ha, or 82 percent, of MacLeod Provincial Park (the Park). Since 1994, the Park has been managed jointly by Ontario Parks and the Municipality of Greenstone and operated by Geraldton Community Forest Inc. under a contract with the municipality (Ontario Parks 2011). The Park is designated as a recreational class park (Ontario Parks 2011) and its management is guided by the MacLeod Provincial Park Management Plan (Ontario Parks 2002). Park features within the LSA include day-use facilities

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and a band stand, a beach, several campsites and archaeological sites associated with the fur trade within the Park (Ontario Parks 2011).

According to the Provincial Parks and Conservation Reserves Act (2006), park management plans must be reviewed every ten years. Ontario Parks published a Terms of Reference in 2011 to initiate the review process for the MacLeod Provincial Park Management Plan (Ontario Parks 2011). Although an updated plan was not publicly available, the Terms of Reference (Ontario Parks 2011) indicates that the purpose of the plan is:

- The permanent protection of the woodlands, wildlife habitat and beaches in the Park
- The maintenance of biodiversity and protection of provincially significant elements of Ontario's natural and cultural heritage, including the archaeological sites in the Park
- The provision of opportunities for compatible, ecologically sustainable recreation

Despite the aim of protecting the natural and recreational value of the Park, the Park remains open to mineral development. As a condition of the sale of the surface rights to the Government of Ontario for the establishment of the Park, Oklend Gold Mines Ltd. and Consolidated Mosher retained the right to enter, explore and mine in the park where the mineral rights have been retained by the registered owners (Ontario Parks 2002). As of February 2015, the area of MacLeod Provincial Park was covered by active dispositions held by Premier Gold Mines Limited under licenses of occupation (MDMN 2015a) (Figure 6-2).

The RSA overlaps several lakefront districts, which cover 165 ha of shoreline along Lake Kenogamisis and the flood fringe area in the Town of Geraldton. New development or site alteration within the flood fringe is controlled. The RSA also encompasses the 18 ha area associated with the Hardrock Creek environmental protection district. According to the Plan, development in the district is prohibited unless for the purposes of watercourse protection or bank stabilization projects, and approved by the MNRF and the Department of Fisheries and Oceans (Tunnock Consulting Ltd. 2010).

6.4 MINERAL EXPLORATION AND DEVELOPMENT

6.4.1 Overview / Previous Mining Activity

In Ontario, mining activity is primarily regulated by the MNDM, MNRF and MOECC; however, the federal government may also be involved where Aboriginal matters arise, when a project is subject to the Canadian Environmental Assessment Act or where lands fall under federal jurisdiction. The MNDM divides the province into mining districts. The RSA is entirely contained within the Thunder Bay North District in Northwestern Ontario.

Between the 1930s and mid-1960s, there were 14 producing gold mines within the current boundaries of the Municipality of Greenstone (Greenstone Economic Development Corporation 2015).

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Three of these, the Consolidated Mosher Long Lac Mine, MacLeod-Cockshutt Mine and the Hardrock Mine, are intersected by the PDA, as are a number of historic mine shafts and camp buildings. The mines were closed and rehabilitated by the late 1990s. Historic mine infrastructure and tailing areas are shown in Figure 6-3. Table 6-3 lists the former gold mines located within the PDA, LSA and RSA.

Table 6-3: Former Mines within the PDA, LSA and RSA

| PDA | LSA | RSA |
|---|--|--|
| <ul style="list-style-type: none"> MacLeod-Cockshutt Consolidated Mosher Long Lac Hardrock | <ul style="list-style-type: none"> Little Long Lac (mine shaft) | <ul style="list-style-type: none"> Tombill Bankfield Magnet Consolidated Talmora Long Lac McLellan (a.k.a. Longacre Long Lac, Portage Long Lac) |

6.4.2 Active Mines

In the fall of 2014, there were three active gold mines, one platinum mine, four granite producers and seven amethyst producers in Northwestern Ontario (MNDM 2014c). None of these were located within the RSA.

6.4.3 Exploration Activities

Exploration activity in the Northwestern Ontario region is primarily focused on gold, with some activity also targeting diamonds, chromite, base metals and platinum. Between 2008 and 2012, exploration activity in the Ring of Fire area located about 230 km north of the Municipality of Greenstone uncovered nickel, copper, zinc, gold, diamonds and chromite deposits. In the fall of 2014, there were 54 major exploration projects in the region, including over 30 gold exploration projects (MNDM 2014c). In the winter of 2014, there were seven exploration projects in the Thunder Bay North District specifically (Table 6-4).

Table 6-4: Exploration Activity in the Thunder Bay North District

| Company | Commodity | Property |
|---|----------------------------|----------------------------------|
| Premier Gold Mines Ltd. | Gold | Hardrock |
| Premier Gold Mines Ltd. | Gold | Bankfield West |
| Bold Ventures Inc., Fancamp Exploration Ltd. and KWG Resources Inc. | Chromite | Koper Lake (Black Horse deposit) |
| GoldON Resources Ltd. (formerly Newcastle Minerals Ltd.) | Gold | Pickle Lake |
| Landore Resources Ltd. | Nickel, copper, Iron, gold | Junior Lake |
| Laurion Mineral Exploration Inc. | Gold | Ishkoday |
| Romios Gold Resources Inc. | Gold | Lundmark-Akow |

Source: White and Cundari 2014

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6.4.4 Mineral Tenures

The PDA intersects a total of 15 active mining claims, which are spread across the townships of Errington, Salsberg, Ashmore and McKelvie. Premier Gold Mines Hardrock Inc. is the sole holder of these claims. The PDA also overlaps 91 active dispositions (Figure 6-2).

Active mining claims overlapped by the PDA, LSA and RSA are documented in Table 6-5. The three largest claim holders in the RSA are Premier Gold Mines Hardrock Inc., Prodigy Gold Inc. and Scott David Shields (MNDM 2015b).

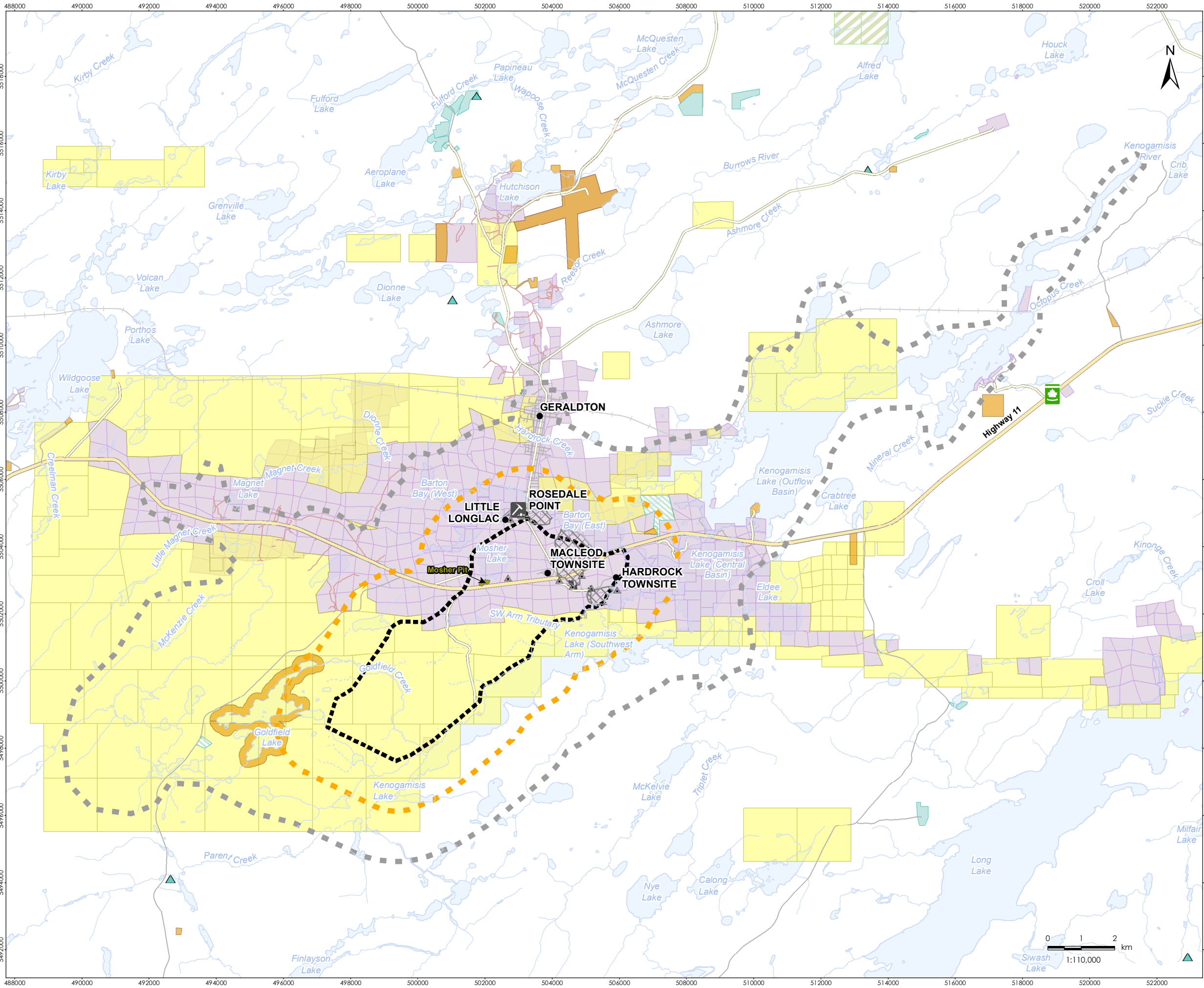
Table 6-5: Active Mining Claims, Dispositions and Alienations in the PDA, LSA and RSA

| | PDA | LSA | RSA |
|----------------------------------|-------|-------|--------|
| Number of active claims | 15 | 35 | 90 |
| Area of active claims (ha) | 1 555 | 3 787 | 10 169 |
| Number of active dispositions | 91 | 280 | 531 |
| Area of active dispositions (ha) | 1 088 | 2 959 | 6 153 |
| Number of active alienations | - | 2 | 5 |
| Area of active alienations (ha) | - | 97 | 289 |

Source: MNDM 2015b

6.4.5 Aggregate Quarries

One sand and gravel pit, the Mosher Pit, is located within the PDA to the south of Mosher Lake and north of Highway 11 (Figure 6-2). It was previously operated by Premier under permit. Additionally, the LSA overlaps about half of an aggregate site (17 ha) operated by the Ontario Ministry of Transportation (MTO). The RSA overlaps a second aggregate site, which is also operated by the MTO. Aggregate quarries are shown in Figure 6-2.



- Legend**
- Local Study Area
 - Regional Study Area
 - Mining Activity**
 - Active Aggregate Site
 - MTO Aggregate Site
 - Project Development Area*
 - Mosher Pit
 - Advanced Mining Exploration Activities
 - Inactive Aggregate Site
 - Historic Mine Shaft
 - Historic Mine Building
 - Historic Tailings Area
 - Active Alienation
 - Active Mining Claim
 - Pending Mining Claim
 - Active Disposition
 - Existing Features**
 - Highway
 - Major Road
 - Local Road
 - Watercourse - Permanent
 - Watercourse - Intermittent
 - Waterbody

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 16N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

Client/Project
Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
6-2

Title

Mining Tenures and Activity

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 Revised: 2015-03-06 By: mtrous

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6.5 FORESTRY

6.5.1 Overview

Following the closure of mines in the region in the late 1960s, the forestry industry became the dominant industry throughout much of the region. Unfavourable economic conditions from 2008 to 2011 led to the closure of the Terrace Bay Pulp Mill and the temporary and permanent closure of several other local mills in 2011. These operational stoppages, curtailed forestry activity and forest and forestry road management and maintenance activities in the Crown forests in the RSA (MNR and Ne-Daa-Kii-Me-Naan Inc. 2013). The Aditya Birla Group purchased the Terrace Bay Pulp Mill and began production in late 2012 (Ross 2012). The Woodlands Mill also restarted operations, spurring forest management activity (MNR and Ne-Daa-Kii-Me-Naan Inc. 2013).

Crown land represents 59 % (1,548 ha) of the area of the PDA, 70 % (4,882 ha) of the LSA and 78 % (16,666 ha) of the RSA. Crown forest units within the PDA, LSA and RSA include a mixture of mature and immature conifers and hardwoods (Terrace Bay Pulp 2011a). The primary tree species in the region are black and white spruce, balsam fir, poplar and white birch (MNR 2013c). Lowland forests make up almost 30 percent of the available production forest in the region (Terrace Bay Pulp 2011b). Lowland units tend to be wet and therefore harvesting activity is limited to winter under deep frost conditions, normally between January and March (Terrace Bay Pulp 2011b; MNR and Ne-Daa-Kii-Me-Naan Inc. 2013).

6.5.2 Forestry Tenures and Activity

Forestry activities on Crown land are regulated under the *Crown Forest Sustainability Act* and the *Forest Management Planning Manual*, which are administered by the MNRF (Government of Ontario 1994). The Act divides the province into Forest Management Units (FMUs) and requires that a forest management plan be prepared by the license holder of each FMU.

The PDA, LSA and most of the RSA are located within the Kenogami FMU; however, a small area of land in the westernmost portion of the RSA is located within the Lake Nipigon FMU.

Forest management is guided by the Kenogami Forest Management Plan 2011-2021 (Terrace Bay Pulp 2011b). The Kenogami FMU occupies an area of 1,977,684 ha (Terrace Bay Pulp 2011b). The FMU is jointly managed by Crown and Ne-Daa-Kii-Me-Naan Inc. (MNR and Ne-Daa-Kii-Me-Naan Inc. 2013). Ne-Daa-Kii-Me-Naan Inc. retains the right to harvest in the Kenogami FMU through an Enhanced Forest Resource Licence (MNR and Ne-Daa-Kii-Me-Naan Inc. 2013).

The total planned harvest in the Kenogami FMU over the period from 2011 to 2021 is 149,586 ha (Terrace Bay Pulp 2011b). A small proportion of this overlaps the PDA, LSA and RSA as indicated in Table 6-6. Most of the planned harvest areas are located in the western portion of the PDA, LSA and RSA; however, there are also small areas of planned harvest and renewal on the north shore of Lake Kenogamis near the Lake Kenogamis dam (Figure 6-3).

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Table 6-6: Planned Forest Management Activities in Kenogami FMU (2011-2021) in the PDA, LSA and RSA

| Forest Management Activity | PDA | LSA | RSA |
|----------------------------|-----|-----|-------|
| Planned harvest area (ha) | 442 | 820 | 1,376 |
| Planned renewal area (ha) | - | - | 28 |

Source: Terrace Bay Pulp 2011b

According to the 2012/2013 Annual Report for the Kenogami FMU (MNR and Ne-Daa-Kii-Me-Naan Inc. 2013), the total harvested area in the Kenogami FMU was 4,303 ha, which included:

- 2,068.8 ha of spruce pure
- 683.6 ha of conifer mixedwood
- 541.3 ha of pine-spruce mixedwood
- 363.8 ha of spruce lowland type 1
- 211.1 ha of hardwood mixedwood

Uses for the harvested wood include pulp, lumber and specialty products, veneer and plywood, fuel wood and road and bridge construction on cut blocks. Biofibre mixedwood that is harvested in the FMU is used to make bioproduct (MNR and Ne-Daa-Kii-Me-Naan Inc. 2013).

Harvesting, renewal and maintenance activities for the Lake Nipigon FMU are described in the Lake Nipigon Forest Management Plan (2011). The Lake Nipigon FMU is managed by Lake Nipigon Forest Management Inc., a co-operative composed of four First Nation owned business trusts. Harvesting is conducted by First Nations businesses and sold to mills in the area (SAI Global 2014). None of the areas planned for harvest in the Lake Nipigon FMU are located within the RSA.

There are no mills within the RSA. Based on data available from applicable forest management plans, the LIO dataset related to work camps and air photos, there are no decipherable forestry camps or timber yards within the RSA.

6.5.3 Forest Access Roads

The MNRF classifies forest access roads by three types: primary, branch and operational. The Crown is responsible for primary access roads and shares responsibility for branch roads within FMUs. The MNDF and MNRF provide funding for the maintenance of primary and branch roads through the Forest Access Capital Roads Program. These roads may serve several purposes including forest harvesting and management, public access to forest areas and public safety (MNRF 2011).

Forest access roads are shown in Figure 6-3 along with the current status of the road. Table 6-7 presents the total lengths of forest access road in the study areas by length.

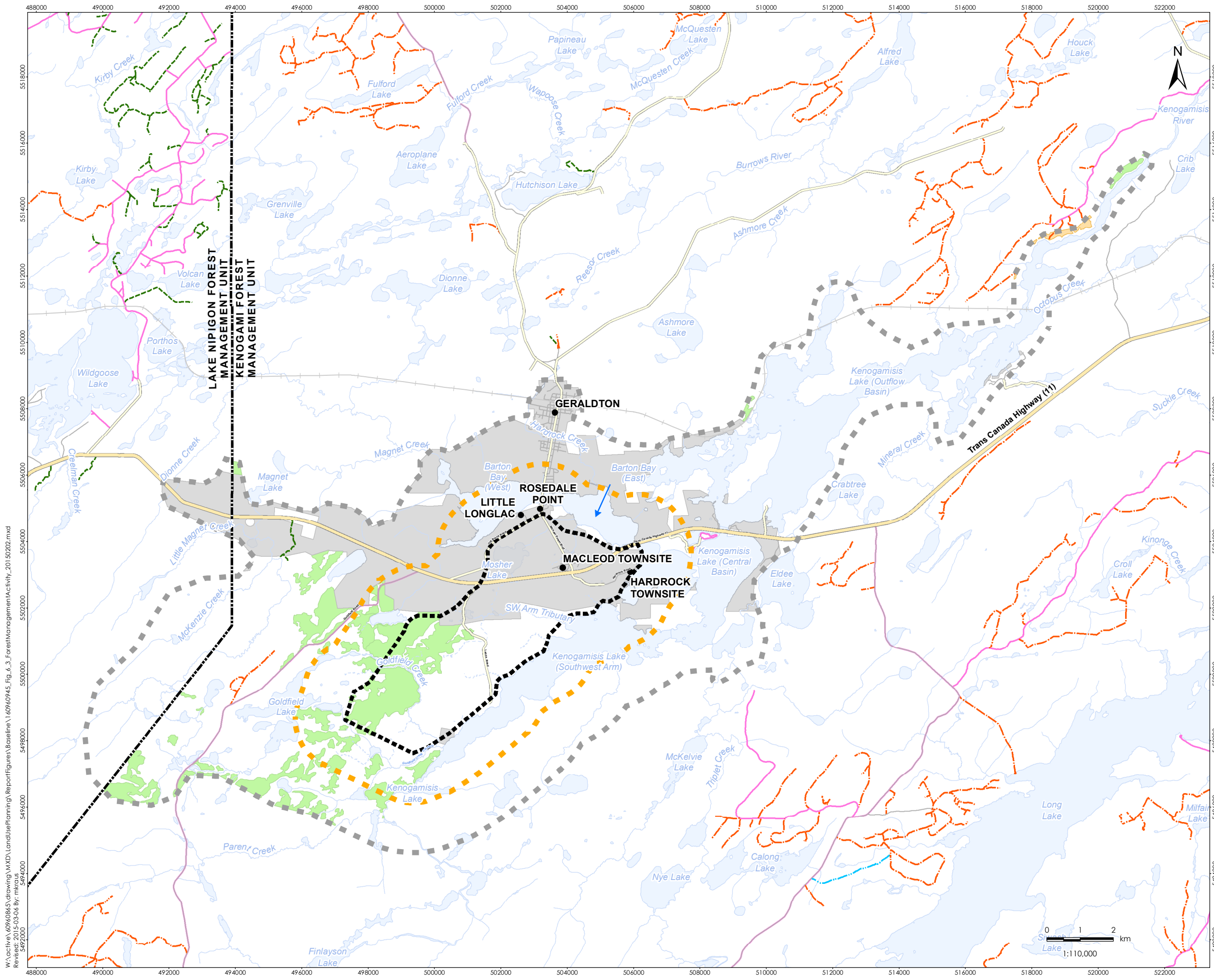
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Table 6-7: Forest Access Roads by Type in the PDA, LSA and RSA

| | PDA | LSA | RSA |
|---------------------------------------|------|------|------|
| Forest access roads - primary (km) | - | 2.3 | 10.6 |
| Forest access roads - branch (km) | 0.02 | 0.02 | 0.02 |
| Forest access roads - operations (km) | - | 0.2 | 6.6 |

Source: Terrace Bay Pulp 2011b



Legend

- Project Development Area*
- Local Study Area
- Regional Study Area
- Forest Management Unit

Forest Management Plan

- Patent Land
- Planned Harvest Area (2011-2021)
- Planned Renewal (2011-2021)
- Area of Concern

Existing Features

- Highway
- Major Road
- Local Road
- Forestry Road - Open
- Forestry Road - Limited
- Forestry Road - Winter
- Forestry Road - Status Unknown
- Watercourse - Permanent
- Watercourse - Intermittent
- Waterbody

- Notes**
- Coordinate System: NAD 1983 UTM Zone 16N
 - Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

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Hardrock Project

Figure No.
6-3

Title
**Forest Access Roads and
Planned Forest Management
Activity (2011-2021)**

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 Revised: 2015-03-06 By: mtraus
 5492000

6.6 AGRICULTURE

There is no agricultural activity within the LSA or RSA and no lands have been identified as prime agricultural lands (Tunnock Consulting Ltd. 2010).

6.7 HUNTING AND TRAPPING

6.7.1 Overview

Hunting and trapping are regulated by the MNRF under the *Fish and Wildlife Conservation Act* and Regulations (1997), which divide the province up into wildlife management units (WMUs) and govern hunting, trapping, fishing and wildlife management activities in the province (Government of Ontario 1997).

The PDA, LSA and RSA overlap two WMUs (Figure 6-4). Highway 11 (also known as the Trans-Canada Highway) forms the boundary between the two WMUs, with WMU 19 located to the north and WMU 21A to the south. WMUs 19 and 21A cover 10,564 km² and 18,909 km², respectively. The MNRF describes the level of interest in moose hunting as moderate in WMU 19 and high in WMU 21A (2013a; 2013b). In addition to moose, white-tailed deer and black bear are hunted in WMUs 19 and 21A (MNR no date a-c)().

In order to hunt in Ontario, non-Aboriginal residents require an Ontario resident Outdoors Card as well as all applicable licence tags for the specific species being hunted. For some species of game, game seals or validation tags, distributed through an annual draw, may be required. In the RSA, validation tags are only required for adult moose and antlerless deer

Licence tags for moose and deer are distributed by draw. These requirements do not apply to Apprentice Hunters or members of Aboriginal communities with Aboriginal or treaty hunting rights where the purpose of the hunt is sustenance or to uphold social or ceremonial traditions within their traditional or treaty area, or the hunter is visiting the traditional area of another First Nation and have received proper written permission to hunt from that First Nation. Within the RSA, residents may apply for the individual hunt or the group hunt. Non-resident hunters must hold a Temporary Outdoors Card as well as all valid licence tags. Table 6-8 presents the licensing requirements by species in WMU 19 and 21A.

Table 6-8: Hunting License requirements for WMUs 19 and 21A

| Species | Resident | Non-Resident | Other |
|---------|--|---|---|
| Moose | <ul style="list-style-type: none"> Resident licence tag | <ul style="list-style-type: none"> Non-resident licence tag | <ul style="list-style-type: none"> Dog licence (for big game retrieval only) |
| Deer | <ul style="list-style-type: none"> Resident licence tag | <ul style="list-style-type: none"> Non-resident licence tag (for antlered deer only) Non-resident licence tag (for antlered or antlerless deer) | <ul style="list-style-type: none"> Dog licence (for big game retrieval only) |

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Table 6-8: Hunting License requirements for WMUs 19 and 21A

| Species | Resident | Non-Resident | Other |
|--|--|--|---|
| Black Bear | <ul style="list-style-type: none"> Resident licence tag | <ul style="list-style-type: none"> Non-resident licence tag Non-resident Black Bear Hunting Licence Validation Certificate Questionnaire | <ul style="list-style-type: none"> Dog licence (for big game retrieval only) Licence to provide black bear hunting services |
| Small Game | <ul style="list-style-type: none"> Resident licence tag (applies to game birds and game mammals, except black bear, caribou, elk, deer and moose) | <ul style="list-style-type: none"> Non-resident licence tag (applies to fox, game birds (except wild turkey), rabbits and hares in most areas, raccoons (though not at night), wolf*, coyote*, and black, gray and fox squirrels (but not red squirrels), skunk, possum, and weasel, American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird, or starlings or any species of unscheduled wildlife) | <ul style="list-style-type: none"> Resident's dog licence for raccoon Non-resident licence to hunt game birds on a game bird hunting preserve General/Apprentice falconry licence Commercial falconry licence |
| Wolf and Coyote | <ul style="list-style-type: none"> Resident's wolf/coyote game seal (maximum of two per year) | <ul style="list-style-type: none"> Non-resident's wolf/coyote game seal (maximum of two per year) | - |
| Migratory Game Birds (waterfowl, common snipe, woodcock) | <ul style="list-style-type: none"> Federal Migratory Game Bird Hunting Permit Wildlife Habitat Conservation Stamp Outdoors Card Small game licence tag | <ul style="list-style-type: none"> Federal Migratory Game Bird Hunting Permit Wildlife Habitat Conservation Stamp Outdoors Card Small game licence tag | - |
| Pelts (Furbearing Mammals) | <ul style="list-style-type: none"> Licence to Possess a Pelt Notice of Possession | <ul style="list-style-type: none"> Licence to Possess a Pelt Notice of Possession | - |

Source: Government of Ontario (No date a)

Tables 6-9, 6-10 and 6-11 describe the open seasons for hunting and trapping activities in WMUs 19 and 21A.

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Table 6-9: Hunting Seasons in WMU 19 and 21A, 2014

| Species | Open Season (Residents) | Open Season (Non-Residents) |
|-----------------------------------|--|--|
| Moose | Bows-only: Sept. 20 to Oct. 10 Rifle, shotgun, bow, muzzle-loading guns: Oct. 11 to Dec. 15 | Bows-only: Sept. 20 to Oct. 10 Rifle, shotgun, bow, muzzle-loading guns: Oct. 13 to Nov. 15 |
| Deer | Bows only: Sept. 1 to Oct. 10 Rifle, shotgun, bow, muzzle-loading guns: Oct. 11 to Dec. 15 | No season |
| Black Bear | Rifle, shotgun, bow, muzzle-loading guns: Aug. 15 to Oct. 31 | |
| Sharp-Tailed Grouse and Ptarmigan | General: Sept. 15 to Dec. 31 Falconry: Sept. 1 to Mar. 31 | |
| Ruffed Grouse and Spruce Grouse | General: Sept. 15 to Dec. 31 Falconry: Sept. 1 to Mar. 31 | |
| Rabbit and Hare | General: Sept. 1 to June 15 Falconry (Cottontail, Varying Hare, European Hare only): Sept. 1 to Jun. 15 | |
| Raccoon | Oct. 15 to Jan. 15 | |
| Red Fox | Sept. 15 to the last day of Feb. | |
| Wolf and Coyote | Sept. 15 to Mar. 31 | |

Source: Government of Ontario (No date a)

Table 6-10: Migratory Waterfowl Hunting Seasons in the WMUs 19 and 21A, 2014

| Species | Open Season |
|---|--|
| Ducks (other than Harlequin Ducks), rails (other than Yellow Rails and King Rails), gallinules, coots, snipe and geese | September 6, 2014 (Waterfowler Heritage Day) |
| Ducks (other than Harlequin Ducks), rails (other than Yellow Rails and King Rails), gallinules, coots, snipe and geese (other than Canada Geese and Cackling Geese) | September 10 to December 24, 2014 |
| Canada Geese and Cackling Geese | September 1 to December 16, 2014 |
| Woodcock | September 15 to December 15, 2014 |

Source: Environment Canada 2014

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

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Table 6-11: Trapping Seasons for Furbearing Mammals in Part 2 for Trapping, 2015

| Species | Open Season |
|--------------------------------------|------------------------------|
| Beaver | Oct. 5 to May 15 |
| Otter | Oct. 5 to May 15 |
| Bobcat and Lynx | Oct. 25 to last day of Feb. |
| Mink | Oct. 15 to last day of Feb. |
| Muskrat | Oct. 15 to May 21 |
| Fisher and Marten | Oct. 25 to last day of Feb. |
| Red Fox ¹ | Sept. 15 to last day of Feb. |
| Raccoon ¹ | Oct. 15 to Jan. 15 |
| Arctic Fox ¹ | Oct. 25 to Mar. 31 |
| Skunk ¹ | All year |
| Red Squirrel and Weasel ¹ | Oct. 25 to last day of Feb. |
| Black Bear | Aug. 15 to Oct. 31 |
| Wolf and Coyote ¹ | Sept. 15 to Mar. 31 |

Note: ¹ May be hunted under the authority of a small game licence

Sources: MNRF 2014c, Ontario Fur Managers Federation 2012

The Terrestrial Environmental Baseline Data Report identifies a number of animal species of value to recreational hunters and trappers that frequent the PDA. These species include:

- Moose
- Black bear
- Grey wolf
- Red fox
- Snowshoe hare
- Woodchuck
- Beaver
- Ermine
- Lynx
- Pine marten
- Ruffed grouse
- Canada goose and cackling goose
- Wilson's snipe
- American woodcock
- Various duck species

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6.7.2 Resident Hunters

Resident hunters make up the majority of hunters in Ontario as well as WMUs 19 and 21A. In 2011, resident hunters received 95.3 percent and 92.8 percent of the licenced harvest for moose in WMUs 19 and 21A, respectively. As in most of Ontario, the number of hunters interested in hunting moose in WMUs 19 and 21A is greater than the available adult moose tags. Table 6-12 shows the licence tag quotas and applications in WMU 19 and 21A in 2013. In 2014, the MNR reduced the gun tag quotas for adult moose in both WMUs in response to diminished moose populations observed during aerial surveys (Government of Ontario No date a). This may result in a lower success rate amongst applying resident hunters.

Table 6-12 Adult Resident Tag Draw Quotas and Choice 1 Applications for Moose and Deer, 2013

| Wildlife Management Unit | Quotas | Applications ¹ |
|--------------------------|--|---|
| 19 | <ul style="list-style-type: none"> • Moose -Bow <ul style="list-style-type: none"> – 143 bull – 100 cow • Moose -Gun <ul style="list-style-type: none"> – 165 bull – 50 cow | <ul style="list-style-type: none"> • Moose -Bow <ul style="list-style-type: none"> – 438 bull – 44 cow • Moose -Gun <ul style="list-style-type: none"> – 931 bull – 321 cow |
| | <ul style="list-style-type: none"> • Antlerless Deer <ul style="list-style-type: none"> – 40 | <ul style="list-style-type: none"> • Antlerless Deer <ul style="list-style-type: none"> – 8 |
| 21A | <ul style="list-style-type: none"> • Moose -Bow <ul style="list-style-type: none"> – 104 bull – 200 cow • Moose -Gun <ul style="list-style-type: none"> – 1040 bull – 1220 cow | <ul style="list-style-type: none"> • Moose -Bow <ul style="list-style-type: none"> – 414 bull – 51 cow • Moose -Gun <ul style="list-style-type: none"> – 2389 bull – 1345 cow |
| | <ul style="list-style-type: none"> • Antlerless Deer <ul style="list-style-type: none"> – 200 | <ul style="list-style-type: none"> • Antlerless Deer <ul style="list-style-type: none"> – 59 |

¹ Applications include first choices from both rounds of the draws.

Source: Government of Ontario (No date a)

Generally, the actual reported harvest is less than the quota. Estimated tag-fill rates for adult moose harvested by residents in WMU 19 ranges from 14 to 25 percent (MNR 2013b). In WMU 21A, the estimated tag fill rate ranges from 13 to 33 percent (MNR 2013c). Table 6-13 shows the estimated number of hunters and harvests for moose, white-tailed deer and black bear in WMU 19 and 21A.

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Table 6-13: Estimated Number of Active Resident Hunters and Harvests by Species in WMU 19 and 21A, 2013

| Wildlife Management Unit | Species | Estimated # Active Resident Hunters ¹ | Estimated Total Harvest by Residents ² |
|--------------------------|-------------------|--|---|
| 19 | Moose | 1 540 | 92 |
| | White-tailed Deer | 92 | 0 |
| | Black Bear | 277 | 97 |
| 21A | Moose | 4 017 | 207 |
| | White-tailed Deer | 293 | 17 |
| | Black Bear | 554 | 97 |

Notes:

- 1 The estimate of the number of active hunters may vary from other reported values (e.g. total license sales) as it only includes hunters that applied for an adult validation tag, and some hunters may hunt in more than one WMU, while others may have purchased a license but decided not to hunt.
- 2 Harvest numbers are estimated from replies received from a sample of hunters and subject to statistical error. Harvest numbers have been rounded to the nearest whole number.

Sources: MNRF (No Date a, No date b, No date c)

Table 6-14 presents bag limits for various species of game for resident hunters in the RSA.

Table 6-14: Bag and Possession Limits for Resident Hunters in WMU 19 and 21A, 2014

| Species | Limits |
|-----------------------------------|---|
| Moose | <ul style="list-style-type: none"> • Bag limit is dictated by number of validation tags and seals |
| Deer | <ul style="list-style-type: none"> • Bag limit is dictated by number of validation tags and seals |
| Black Bear | <ul style="list-style-type: none"> • Bag limit is dictated by number of seals |
| Pheasant | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: 3 • Falconry <ul style="list-style-type: none"> – Daily limit: 2 of either sex – Possession limit: 2 of either sex |
| Sharp-Tailed Grouse and Ptarmigan | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: 5 Sharp-tailed Grouse and 5 Ptarmigan – Possession limit: 15 Sharp-tailed Grouse and 15 Ptarmigan • Falconry <ul style="list-style-type: none"> – Daily limit: 3 Sharp-tailed Grouse, 3 Ptarmigan – Possession limit: 9 Sharp-tailed Grouse, 9 Ptarmigan |
| Ruffed Grouse and Spruce Grouse | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: Combined total of 5 – Possession limit: Combined total of 15 • Falconry <ul style="list-style-type: none"> – Daily limit: Combined total of 3 – Possession limit: Combined total of 9 |

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

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Table 6-14: Bag and Possession Limits for Resident Hunters in WMU 19 and 21A, 2014

| Species | Limits |
|-----------------|--|
| Rabbit and Hare | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: 6 Cottontail Rabbit, 6 European Hare • Falconry <ul style="list-style-type: none"> – Daily limit: 6 Cottontail, 3 Varying Hare, 3 European Hare |
| Red Fox | <ul style="list-style-type: none"> • Not available |
| Wolf and Coyote | <ul style="list-style-type: none"> • Bag limit is dictated by number of seals |

Source: Government of Ontario (No date a)

6.7.3 Non-resident Hunters (Guide Outfitting)

In order to practice in Ontario, non-resident hunters must have a Non-Resident Outdoors Card in addition to any non-resident hunting or fishing licence tags and seals. Non-residents choosing to use a licensed bear hunting services operator are limited to hunting in the Bear Management Area (BMA) indicated on the licence validation certificate received from the operator. The RSA intersects five BMAs as shown in Figure 6-4.

There is one outfitter located within the RSA, Kenogamisis Lake Resort. It is located on the east side of the Central Basin (Figure 6-4). The resort offers hunting services related to moose, bear, wolves, ducks and grouse (Kenogamisis Lake Resort 2015).

Non-residents are allocated about five and seven percent of moose tag licences in WMUs 19 and 21A, respectively (MNR 2013b, MNR 2013c). Between 2008 and 2012, the average annual moose harvest by non-residents was three in WMU 19 (MNR 2013b) and 12 in WMU 21 (MNR 2013c).

Table 6-15 describes the bag limits for non-resident hunters for various species in the RSA.

Table 6-15: Bag and Possession Limits for Non-Resident Hunters in WMU 19 and 21A, 2014

| Species | Limits |
|------------|--|
| Moose | <ul style="list-style-type: none"> • Bag limit is dictated by number of validation tags and seals |
| Deer | <ul style="list-style-type: none"> • Bag limit is dictated by number of validation tags and seals |
| Black Bear | <ul style="list-style-type: none"> • Bag limit is dictated by number of seals |
| Pheasant | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: 3 • Falconry <ul style="list-style-type: none"> – Daily limit: 2 of either sex – Possession limit: 2 of either sex |

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

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Table 6-15: Bag and Possession Limits for Non-Resident Hunters in WMU 19 and 21A, 2014

| Species | Limits |
|-----------------------------------|---|
| Sharp-Tailed Grouse and Ptarmigan | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: 5 Sharp-tailed Grouse and 5 Ptarmigan – Possession limit: 15 Sharp-tailed Grouse and 15 Ptarmigan • Falconry <ul style="list-style-type: none"> – Daily limit: 3 Sharp-tailed Grouse, 3 Ptarmigan – Possession limit: 9 Sharp-tailed Grouse, 9 Ptarmigan |
| Ruffed Grouse and Spruce Grouse | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: Combined total of 5 – Possession limit: Combined total of 15 • Falconry <ul style="list-style-type: none"> – Daily limit: Combined total of 3 – Possession limit: Combined total of 9 |
| Rabbit and Hare | <ul style="list-style-type: none"> • General <ul style="list-style-type: none"> – Daily limit: 6 Cottontail Rabbit, 6 European Hare • Falconry <ul style="list-style-type: none"> – Daily limit: 6 Cottontail, 3 Varying Hare, 3 European Hare |
| Raccoon | <ul style="list-style-type: none"> • No night hunting |
| Red Fox | <ul style="list-style-type: none"> • Not available |
| Wolf and Coyote | <ul style="list-style-type: none"> • Bag limit is dictated by number of seals |

Source: Government of Ontario (no date a)

6.7.4 Trappers

In Ontario, trapping is subject to regulations under *the Fish and Wildlife Conservation Act (FWCA)* and policies, which are administered by MNR. As with hunting, trapping inside provincial parks and Crown game reserves is prohibited (Government of Ontario 1997). In accordance with FWCA 1997, trappers must:

- hold a license and complete a Fur Harvest, Fur Management and Conservation Course
- respect annual harvest quotas
- use humane certified traps
- limit trapping to traplines on Crown land or obtain written permission from the landowner if trapping on private property
- adhere to open trapping season

The RSA is located within the Ontario trapping region known as Part 2. There are two traplines that overlap the PDA, three in the LSA and eight in the RSA (Figure 6-4). All eight traplines are in active use and three traplines have associated trapper cabins, one of which is located in the LSA. Table 6-16 shows the area of the study area intersected by each trapline, as well relevant trapper licence information.

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Table 6-16: Registered Trapline Areas in the RSA

| Trapline Area Number | Licence Type | Cabin | Area in PDA (ha) | Area in LSA (ha) | Area in RSA (ha) |
|----------------------|--------------------------|-------|------------------|------------------|------------------|
| GE022 | Resident Trapper License | No | 2586,6 | 5689,1 | 9916,2 |
| GE021 | N/A | No | 34,9 | 1289,1 | 7483,1 |
| GE065 | Resident Trapper License | Yes | -- | 40,1 | 420,2 |
| GE121 | Resident Trapper License | Yes | -- | -- | 594,8 |
| GE020 | N/A | No | -- | -- | 1,0 |
| GE034 | Resident Trapper License | Yes | -- | -- | 2797,4 |
| GE120 | Resident Trapper License | No | -- | -- | 41,8 |
| GE023 | Resident Trapper License | No | -- | -- | 196,5 |

Source: MNRF 2014

6.7.5 Bait Harvesting

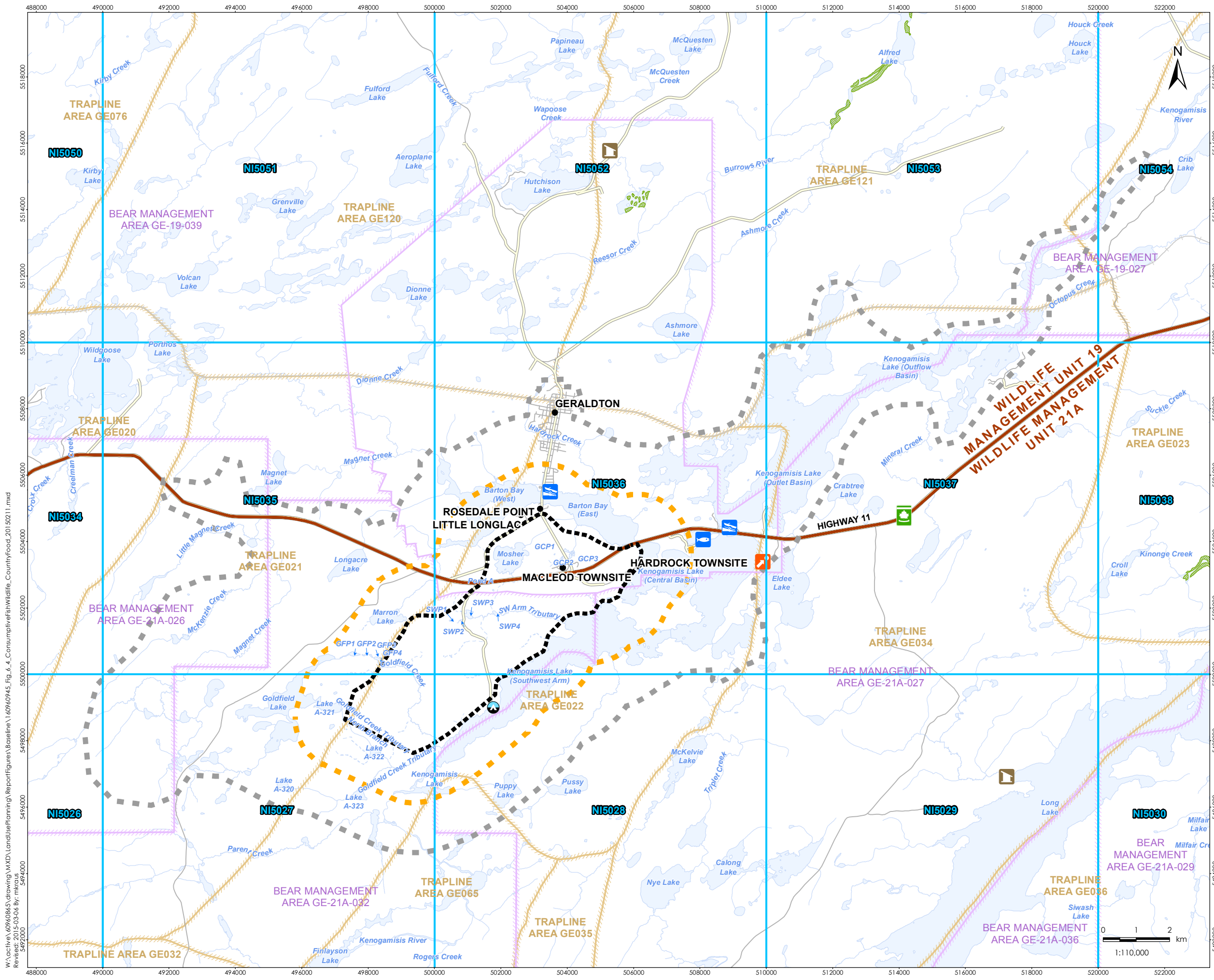
Bait harvesting is also carried out in the study area. Bait harvesting is a licensed commercial activity. The province divides the territory into bait harvesting areas. There are four such areas in the PDA, five in the LSA and eight that overlap the RSA (Figure 6-4). Minnow bait is harvested in the PDA, LSA and RSA in water bodies lying to the East, West and North of Geraldton, and in Mosher Lake. Minnow bait harvesting sites in Mosher Lake are accessed from Old Arena Road.

Table 6-17 shows the total areas of overlap between these bait harvest areas and the PDA, LSA and RSA.

Table 6-17: Registered Bait Harvest Areas in the RSA

| Bait Harvest Area Number | Area in PDA (ha) | Area in LSA (ha) | Area in RSA (ha) |
|--------------------------|------------------|------------------|------------------|
| NI5054 | - | - | 143.7 |
| NI5028 | 254.6 | 951.8 | 2 105.0 |
| NI5035 | 214.0 | 833.8 | 4 141.3 |
| NI5026 | - | - | 124.0 |
| NI5053 | - | - | 929.2 |
| NI5036 | 1669.4 | 3 899.0 | 7 477.6 |
| NI5037 | - | - | 2 387.0 |
| NI5027 | 483.5 | 1 333.7 | 4 143.0 |

Source: MNRF 2014



Legend

- Project Development Area*
- Local Study Area
- Regional Study Area

Country Food

- Wild Rice Area

Hunting, Trapping and Fishing

- Outfitter
- Public Boat Launch
- Fish Cleaning Station
- Public Access Point
- Trapper Cabin
- Trapline Area
- Bait Harvest Areas
- Bear Management Area
- Wildlife Management Unit

Existing Features

- Highway
- Major Road
- Local Road
- Watercourse - Permanent
- Watercourse - Intermittent
- Waterbody

Notes

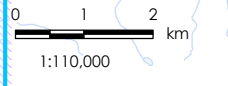
- Coordinate System: NAD 1983 UTM Zone 16N
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.

* Project Development Area may be refined as the Project progresses.

Client/Project
Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
6-4

Title
**Areas for Hunting, Trapping,
Guide Outfitting, Bait Harvesting
and Fishing**



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 Revised: 2015-03-06 By: mkrcaus

ENVIRONMENTAL BASELINE DATA REPORT – HARDROCK PROJECT: SOCIO-ECONOMIC

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6.8 FISHING

The RSA is located within Ontario Fisheries Management Zone (FMZ) 7. The FMZ includes important fisheries for recreation and tourism, with Walleye, Northern pike, Lake trout and Brook trout being the main fisheries (Government of Ontario 2015). As of January 2015, no fish management planning activities were underway in FMZ 7, nor were any of the lakes stocked with fish (Government of Ontario 2015).

There are no commercial fisheries within the RSA; however, recreational fishing is a popular sport. The most sought-after fish species are Walleye, Northern pike, Lake whitefish, Yellow perch and Burbot. Kenogamisis Lake is a popular destination for fishing; however, many other watercourses in the RSA also support recreational fisheries (Figure 6-4). Information on recreational fisheries is provided in the Fish and Fish Habitat Baseline Data Report. There is a fish cleaning station in MacLeod Provincial Park. Anglers tend to frequent the narrows around the two bridges on Kenogamisis, where the fast-moving water attracts walleye (Ellis, no date). During fieldwork, anglers were observed casting from boats or from the shore, on bridges. In 2011-2012, the Ministry of Environment (MOE) posted a consumption advisory for Barton Bay on Lake Kenogamisis. The advisory details recommended limits to the number of meals that people eat per month or certain species fished from Barton Bay. The species identified are lake herring, lake whitefish, northern pike, redhorse sucker, walleye, white sucker and yellow perch (MOE no date). Because no physical barrier separates Barton Bay from the rest of Lake Kenogamisis, sport fish from Barton Bay may be caught in other parts of Lake Kenogamisis.

Recreational fishing is also known to be practiced in Goldfield Lake and Lake A-323, and may also occur in the Kenogamisis River, Marron Lake, Mosher Lake and Southwest Pond 4.

In late June, Kenogamisis Fish and Game hosts the Geraldton Walleye Classic, a two-day walleye fishing tournament that is held on Lake Kenogamisis. In 2014, 226 anglers participated in the tournament, which is consistent with the participation rates for preceding years (Geraldton Community Forest 2014).

Recreational fishing in Ontario requires one of two recreational licence tags to fish. The Sport Fishing Licence Tag provides holders with catch and possession privileges and the Conservation Fishing Licence Tag provides anglers with a lower catch limit and is mainly for sport anglers who mostly participate in catch and release (Government of Ontario no date b). In addition to one of these two types of licence tags, sport anglers from Ontario and Canada must also hold an Outdoors Card, except for one-day fishing licences. Non-Canadian residents must hold an Outdoors Card and non-resident licence tag (Government of Ontario no date b).

The seasons and limits by fish species for FMZ 7 are presented in Table 6-18.

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March 5, 2015

Table 6-18 Limits and Seasons by Fish Species in FMZ 7

| Species | Open Season | Limit |
|--|---|---|
| Walleye and Sauger, or any combination | Jan. 1 to Apr. 14 and 3 rd Saturday in May to Dec. 31 | Sport fishing: 4; not more than 1 greater than 46 cm Catch and Release: 2; not more than 1 greater than 46 cm |
| Largemouth & Smallmouth Bass, or any combination | Open all year | Sport fishing: 6 Catch and Release: 2 |
| Northern Pike | Open all year | Sport fishing: 6; not more than 2 greater than 61 cm, of which not more than 1 greater than 86 cm Catch and Release: 2; not more than 1 greater than 61 cm, none greater than 86 cm |
| Yellow Perch | Open all year | Sport fishing: 50 Catch and Release: 25 |
| Sunfish | Open all year | Sport fishing: 50 Catch and Release: 25 |
| Brook Trout* | Jan. 1 to Labour Day | Sport fishing: 5; not more than 2 greater than 30 cm, of which not more than 1 is greater than 40 cm Catch and Release: 2; not more than 1 greater than 30 cm, none greater than 40 cm |
| Brown Trout* | Open all year | Sport fishing: 5 Catch and Release: 2 |
| Rainbow Trout* | Open all year | Sport fishing: 1 Catch and Release: 0 |
| Lake Trout* | Jan. 1 to Sept. 30 | Sport fishing: 2 Catch and Release: 1 |
| Splake* | Open all year | Sport fishing: 5 Catch and Release: 2 |
| Pacific Salmon* | Open all year | Sport fishing: 5 Catch and Release: 2 |
| Atlantic Salmon* | Open all year | Sport fishing: 1 Catch and Release: 0 |
| Lake Whitefish | Open all year | Sport fishing: 25 Catch and Release: 12 |
| Lake Sturgeon | Closed all year, except for waters located north of Hwy11 and east of Hwy 584 where the open season is Jan. 1 to Apr. 30 and Jul. 1 to Dec. 31. | Sport fishing: 0 Catch and Release: 0 |

Note: *Aggregate limits apply to species

Source: MNRF no date

6.9 RECREATION AND TOURISM

6.9.1 Overview

The RSA is located within Ontario Tourism Region 13c Northwest Ontario. In 2012, there were 2,536,800 person-visits to the region, of which 58 percent (1,463,500) were made by Ontarians (Ministry of Tourism, Culture and Sport (MTCS) 2014). The visitor numbers are highest in the summer. In 2012, 41 percent (1,042,100) of visits occurred between July and September and 25 percent (638,300) occurred between April and June (MTCS 2014).

Forty-eight percent of person-visits were for pleasure, with outdoor and sports activities being the reason for 43 percent of all person-visits (MTCS 2014). Boating and fishing were the main draws. Table 6-19 lists the person-visits by activity for pleasure in 2012.

Table 6-19: Person Visits to Northwest Ontario by Activity for Visits for Pleasure, 2012

| Activities | Person Visits |
|----------------------------------|----------------------|
| Festivals/Fairs | 54 100 |
| Cultural Performances | 51 700 |
| Museums/Art Galleries | 67 500 |
| Zoos/Aquariums/Botanical Gardens | 20 100 |
| Sports Events | 65 400 |
| Casinos | 17 900 |
| Theme Parks | 14 300 |
| National/Provincial Nature Parks | 214 700 |
| Historic Sites | 134 100 |
| Any Outdoor/Sports Activity | 1 101 500 |
| Boating | 390 400 |
| Golfing | 30 800 |
| Fishing | 692 100 |
| Hunting | 67 600 |
| Downhill Skiing/Snowboarding | 29 600 |

Source: MTCS 2014

6.9.2 Recreation Areas, Facilities and Trails

Recreational and tourism resources within the PDA include the Discover Geraldton Interpretive Centre and the Historic McLeod-Cockshutt Mining Headframe. A walking trail, known as the Barton Bay Wildlife Trail, departs from the interpretive centre and crosses the PDA and LSA toward the shore of Barton Bay east (Figure 6-5). The trail is 4 km long and is used regularly by local users, school groups and tourists (Discover Geraldton Interpretive Centre 2013).

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March 5, 2015

The Kenogamisis Golf Club, an 18-hole course, is located almost entirely (98 percent) within the PDA (Figure 6-5) Premier currently owns the golf course property and leases it to the Municipality. The golf club is open to the public in season and organizes eight tournaments per year between mid-June and mid-August (Kenogamisis Golf Club 2014).

MacLeod Provincial Park is another important recreational area that is partially contained within the LSA. The park covers 74 ha in total (Ontario Parks 2011), 61 ha of which are overlapped by the LSA. The park contains a beach for swimming and has 120 campsites. The campsites are grouped into two sectors, one of which is located in the LSA and the other in the RSA (Figure 6-5). The campsites are open for use from May 15 until the last weekend in September (Ontario Parks 2014).

Summer activities in MacLeod Provincial Park include fishing, swimming, boating, canoeing, biking, picnicking and birding. Birdwatching opportunities include for red-eyed vireos, ovenbirds, northern warblers, broad-winged hawks and ospreys (Ontario Parks 2014). There is also a one kilometer hiking trail (Ontario Parks 2014). In winter, the Park is open for cross-country skiing and snowshoeing (MNR 2002). The Geraldton Nordic Ski Club maintains about eight kilometers of ski trails in the Park, of which about five cross the LSA (Geraldton Nordic Ski Club 2014). The highest visitor rates to the Park occur in August when the Geraldton Community Forest organizes the three-day Geraldton Music Jamboree. Visitor rates can reach up to 5 000 people (Ontario Parks 2011).

Other recreation areas within the LSA include a public beach at the south end of Geraldton, Rotary Park located within the rural district in the southeast end of Geraldton and a Crown land camping area situated directly south of the PDA. The RSA also overlaps several municipal parks in Geraldton (Figure 6-5).

All three study areas are crisscrossed by snowmobile trails (Figure 6-5). Several segments of the snowmobile trails within the PDA follow existing right-of-ways associated with Lahtis Road, Old Arena Road, part of Highway 11 and a portion of a hydro-electric corridor between Rosedale Point and MacLeod townsites. The trails are maintained by the Geraldton Snow Club and are part of a regional network jointly managed with the Longlac Snowmobile Club. The Ontario Federation of Snowmobile Clubs coordinates activities among regional snowmobile clubs in Ontario and issues permits for the use of local trails.

Table 6-20 provides the total distances of recreational trails in the PDA, LSA and RSA.

Table 6-20: Recreational Trails in the PDA, LSA and RSA

| Trail Type | PDA | LSA | RSA |
|---------------------------------|------|------|------|
| Hiking trails (km) | 1.3 | 4.2 | 4.2 |
| Geraldton Snow Club trails (km) | 11.6 | 22.9 | 60.8 |
| Canoe routes (km) | - | 12.0 | 38.5 |
| Cross-country ski trails (km) | - | 5.0 | 6.8 |

Source: MNRF 2014

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Land and Resource Use
March 5, 2015

In addition to the recreational trails identified in Section 6.10, a number of unidentified trails also cross the LSA and RSA (Figure 6-5). These trails have a total length of 13.6 km.

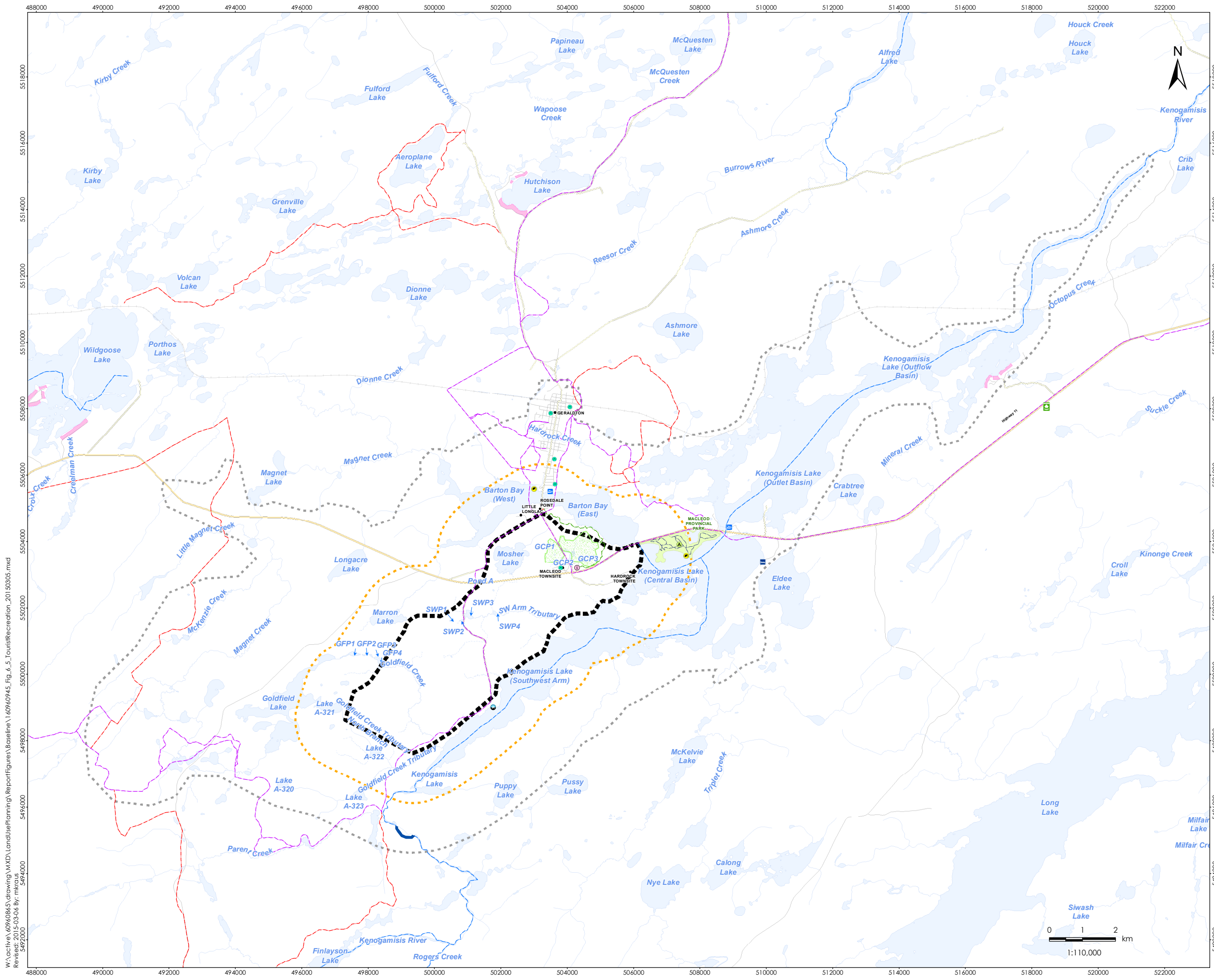
6.9.3 Boating

There are many boating opportunities within the RSA. Kenogamisis Lake hosts two public boat launches, one of which is located within the LSA at the south end of Geraldton and the other is located outside in the LSA in MacLeod Provincial Park. The Crown Land campsite located in the LSA provides public access to the Southwest Arm of Kenogamisis Lake (Figure 6-5). Lahtis Road which provides access to the Crown Land campsite is also used to access remote inland lakes. In addition to these public access sites, there is access to the lake at the site of two boathouse structures on the north shore of the lake under a limited use permit. This does not include private access sites in the RSA.

There are also several canoe routes that traverse Kenogamisis Lake, as well as a portage trail in the RSA on the Kenogamisis River south of Kenogamisis Lake (Figure 6-5). During field work for the Fish Baseline Report, people were seen to be engaged in recreational boating on Goldfield Lake and Lake A-323. Table 6-21 lists other watercourses in the PDA, LSA and RSA identified as being potentially navigable by boat during field work for the Fish and Fish Habitat Baseline Report. Many are shallow or may require portaging and therefore their potential for navigation is limited to canoes or kayaks.

Table 6-21: Recreational Trails in the PDA, LSA and RSA

| Watercourse | Potential for Boating | PDA | LSA | RSA |
|--|-----------------------|-----|-----|-----|
| Goldfield Lake | Y | N | Y | Y |
| Goldfield Creek (downstream of Goldfield Lake) | Y* | Y | Y | Y |
| Goldfield Creek Tributary (downstream of Lake A-323 only) | Y* | N | Y | Y |
| Goldfield Creek Tributary – North Branch (downstream of Lake A-322 only) | Y* | N | Y | Y |
| Kenogamisis Lake | Y | N | Y | Y |
| Lake A-323 | Y | N | N | Y |
| Lake A-320 (remote) | Y | N | N | Y |
| Lake A-322 (remote) | Y | N | Y | Y |
| Marron Lake | Y | N | Y | Y |
| Mosher Lake | Y | Y | Y | Y |
| Southwest Arm Tributary Pond 3 (SWP3) | Y | Y | Y | Y |
| Southwest Arm Tributary - (downstream of SWP3) | Y* | Y | Y | Y |
| Magnet Creek | Y* | N | N | Y |
| Watercourse H (downstream of Marron Lake) | Y* | N | Y | Y |
| Longacre Lake | Y | N | N | Y |
| McKenzie Creek | Y* | N | N | Y |



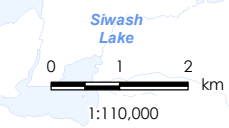
- Legend**
- Project Development Area*
 - Local Study Area
 - Regional Study Area
- Tourism and Recreation**
- Discover Geraldton Interpretive Centre
 - Public Beach
 - Provincial Park Campground
 - Park or Sports Field
 - Kenogamis Lake Resort
 - Public Boat Launch
 - Public Access Point with Crown Land Camping Area
 - Cross Country Ski Trail
 - Hiking Trail
 - Snowmobile Trail
 - Canoe Route
 - Other Trail
 - Portage Trail
 - Golf Course
 - Cottage Area
 - Provincial Park
- Existing Features**
- Highway
 - Major Road
 - Local Road
 - Watercourse - Permanent
 - Watercourse - Intermittent
 - Waterbody

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 16N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

Client/Project
Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
6-5

Title
Tourism and Recreational Activity



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6.10 OTHER LAND AND RESOURCE USE

6.10.1 Utilities and Other Facilities

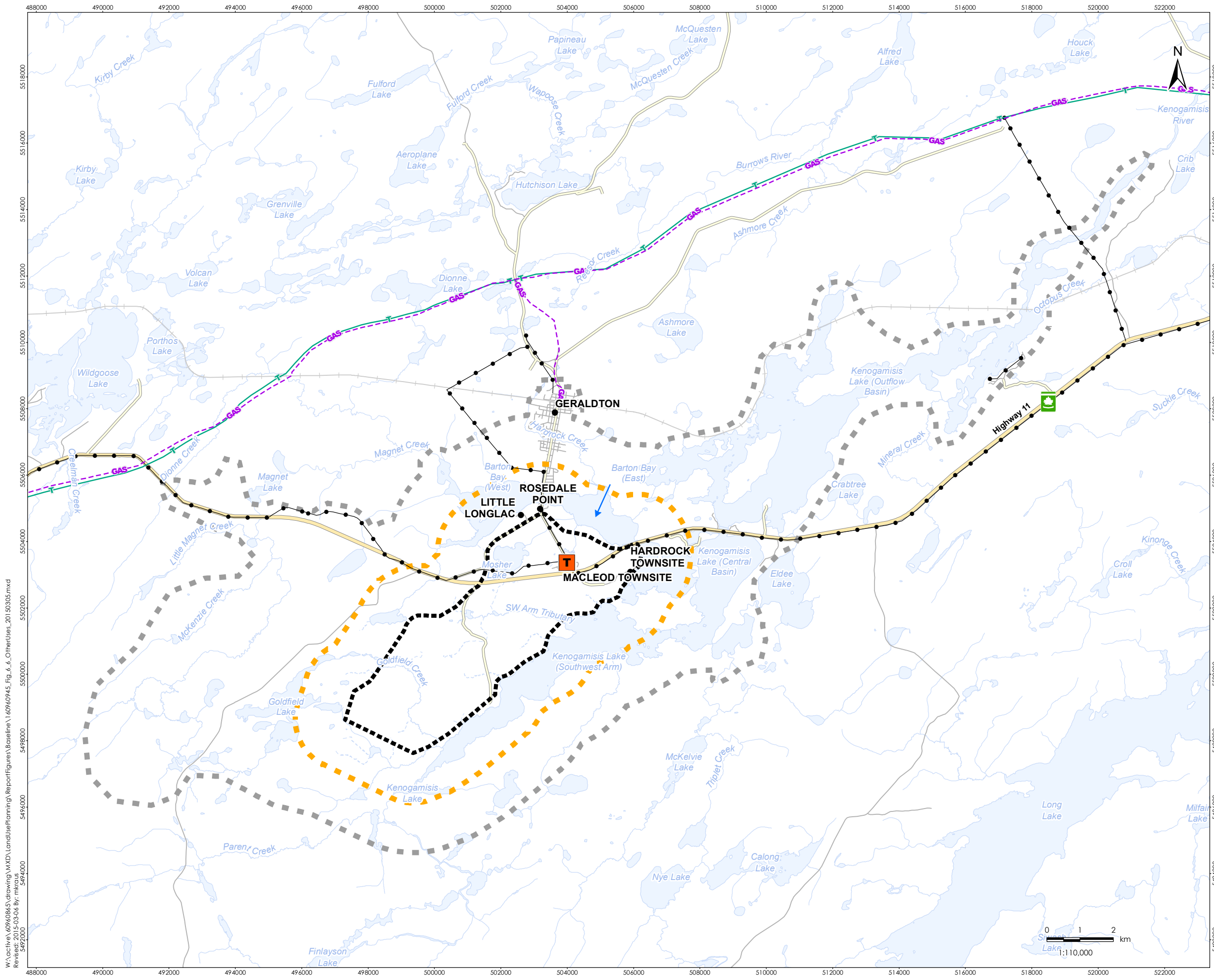
As illustrated in Figure 6-6, hydro-electric lines run through the RSA in various places, most notably along the Highway 11 corridor. These lines, which are operated by Hydro One Networks Inc. (HONI), travel a total of 6.7 km within the PDA to a Hydro One transformer station, located adjacent to the MacLeod Townsite.

Other utilities in the RSA include gas lines operated by Union Gas. The main natural gas line in the RSA runs between Geraldton and the Energy East natural gas pipeline operated by TransCanada Pipelines Limited (Figure 6-6). Residential gas lines also extend into the PDA to service the MacLeod and Hardrock townsite; however, mapping data were not available at the time of writing and these lines are therefore not shown in Figure 6-6.

Other public utilities within the RSA include several active and closed landfill sites. One of these closed landfills is located east of Lahtis Road (Figure 6-6). The Geraldton Landfill, located in the LSA, is the nearest active landfill to the PDA and occupies an area of 1.9 ha. This landfill is discussed in more detail in Section 5.3.1.

6.10.2 Peat Harvesting

The Municipality of Greenstone Corporate Strategic Plan identifies peat harvesting as a promising opportunity for local fuel generation in Greenstone (Corporate Strategic Plan). The municipality has a total resource of approximately 1.9 billion cubic meters (Gerfor Training and Consulting Inc. 1996); however, there are no peat harvesting areas within the RSA.



Legend

- Project Development Area*
- Local Study Area
- Regional Study Area
- Existing Transformer Station
- Communication Line
- Hydro Line
- GAS- Natural Gas Pipeline

Existing Features

- Highway
- Major Road
- Local Road
- Watercourse - Permanent
- Watercourse - Intermittent
- Waterbody

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 16N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
- * Project Development Area may be refined as the Project progresses.

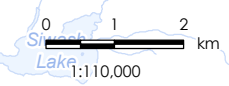
Client/Project

Premier Gold Mines Hardrock Inc
Hardrock Project

Figure No.
6-6

Title

Other Land Uses



W:\active\60960865\drawing\MXD\LandUsePlanning\ReportFigures\Baseline\60960945_Fig_6_6_OtherUses_20150305.mxd
 Revised: 2015-03-06 By: mtraus

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