



TEMAGAMI FIRST NATION
Draft Background Report
Master Land Use Plan

August 2019

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1.0 Introduction

Planning is about understanding the past, evaluating the present, and anticipating the future. Background research helps the planning team understand the history of the Nation, the values of its members, the opportunities and constraints to future development, local and regional economic development trends, and to analyse the impact potential changes will have on the lands of the Temagami First Nation (TFN) and the Teme Augama Anishnabai (TAA).

1.1 Purpose of the Master Land Use Plan

The Master Land Use Plan is a guiding document to be used in decision making related to the physical development, preservation, and overall management and administration of Bear Island and the Lands Set Aside. Its purpose is to describe what development and land use activities may be carried out, where they may occur, and how they shall contribute to the economic, social, cultural, and environmental well-being of the community.

The Master Land Use Plan is a roadmap to be used for:

- Setting the long-term goals and aspirations of the community as they relate to land development, economic growth, and environmental stewardship;
- Building a healthier, more sustainable and self-sufficient community;
- Providing greater certainty to members, residents, and developers on where and how development shall occur;
- Protecting and enhancing environmental and cultural resources; and,
- Creating further community laws and regulations related to development, building, housing, environmental protection, and land related activities.



1.2 Introduction to the Background Report

This Background Report assembles available information and knowledge to be considered in preparing a Master Land Use Plan for TFN for Bear Island and TFN/TAA for the Lands Set Aside.

This report is based on a review of existing conditions and previously identified future needs from a desktop review of available information on the built environment (infrastructure and community owned assets), the natural environment, and the socio-economic environment. Much of the information is from the 2011 Capital Planning Study (CPS) and the 2019 Community Profile. A number of documents and anecdotal information was provided from the Lands and Resources Committee and other TFN staff as well as data obtained from various municipal, provincial and federal government sources.

The desktop review was supplemented by information and observations gathered during a site visits and community engagement activities that took place between March 4th to 7th, 2019 on Bear Island, and in Temagami and North Bay. This draft Background Report is divided into the following sections:

Section 1	Introduction
Section 2	Community Setting and Character: Details TFN and TAA lands and the regional context.
Section 3	Population and Employment Overview: Outlines information on current and projected future population and highlights aspects of the social, economic, and cultural environment.
Section 4	Legislative and Policy Context: Creates a background of relevant legislative and First Nations policies pertinent to the development of the Master Land Use Plan.
Section 5	Natural Environment: Provides a summarized overview of the natural environment.
Section 6	Traditional Land Use: Provides a summarized overview of traditional land use activities on TFN and TAA lands.
Section 7	Built Environment and Existing Land Uses: Summarizes how TFN and TAA lands are used at present.
Section 8	Infrastructure & Services: Offers an overview of on-site services and infrastructure.
Section 9	Planning Considerations Summary: Highlights key findings noted throughout the document for consideration in preparing the Master Land Use Plan.



2.0 Community Setting and Character

TFN (also known as Bear Island Reserve #1) is located on 291 hectares (ha) [2,91 km²] of land, based on Bear Island on Temagami Lake (Temagami First Nation Community Profile, 2019). TFN is part of the Teme Augama Anishnabai (which means “Deep Water by the Shore People”) and members of the Anishinaabe community. TFN lies at the cultural and historic heart of n’Daki Menan (“Our Homeland”), which they have occupied as their traditional territory for thousands of years, in what is known today as northeastern Ontario.

n’Daki Menan is the traditional territory of TFN and the Teme Augama Anishnabai

While the Supreme Court of Canada recognizes that n’Daki Menan is the traditional territory of TFN and the Teme Augama Anishnabai (TAA) and that TFN/TAA are the traditional rights holders, historically they have not been engaged in lands and resourcing decisions and that as such the Crown failed to comply with its fiduciary obligations to TFN/TAA. These matters are currently the subject of ongoing negotiations between the Crown and TFN/TAA. We understand TAA includes status (TFN members) and non-status Indians that are the descendants of the original 14 families and that in 1975, the TAA was created as an organization to re-unite everyone, to assert self-determination, and take the lead in the court case and settlement negotiations.

2.1 Temagami Lands and Urban Form

2.1.1 Bear Island

Bear Island is a triangular shaped island, and the second largest island in Lake Temagami. It is located about 90 kilometres (km) northwest of the City of North Bay and 85 km south of the City of Temiskaming Shores. The closest urban centre is the Municipality of Temagami, 20 km northeast of Bear Island. Much of the island is bedrock with limited soil cover, and many slopes are too steep to support development. With these conditions, Bear Island faces development challenges with limited opportunities to site new structures and infrastructure (Temagami First Nation Community Profile, 2019).

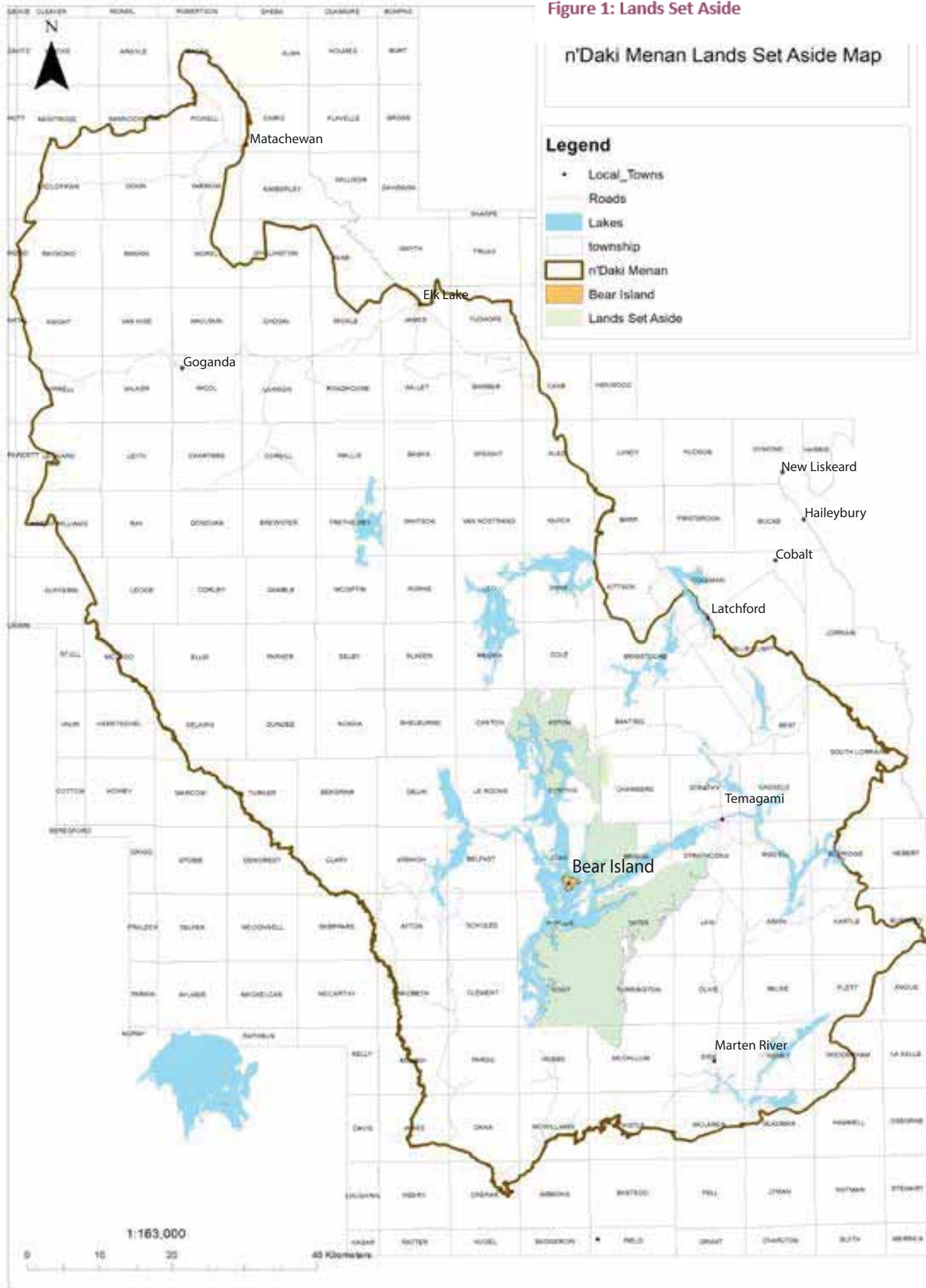
2.1.2 Land Acquisition Considerations for New Lands – ATR and Development Lands Set Aside

In addition to developing a Master Land Use Plan for the current reserve lands, TFN is seeking a plan that will help guide development for the Lands Set Aside to maximize the use and economic benefits of these lands.

In 1885, the federal government promised the community 25,900 ha (259 km²) around Austin Bay (Sinclair, 2011). Due to the resource rich nature of the land the government delayed the decision. As commercial pressures increased, Band leaders upped their demands to protect their way of life (Sinclair, 2011). In 1996, the Ontario government set aside lands that were previously selected by TAA as sole stewardship lands, which included the historic Austin Bay Tract. These Lands Set Aside are intended to provide new economic development opportunities for the Temagami Indigenous community and facilitate settlement of the TAA land claim.

Since that time, the Lands Set Aside have not been open to staking under the *Mining Act* and the Ontario government has made no new development or resource commitments on this land without the consent of TFN/TAA (Temagami First Nation RFP, 2018). **Figure 1** shows the Lands Set Aside, which together equal 38,633 ha (386 km²) of land.

Figure 1: Lands Set Aside



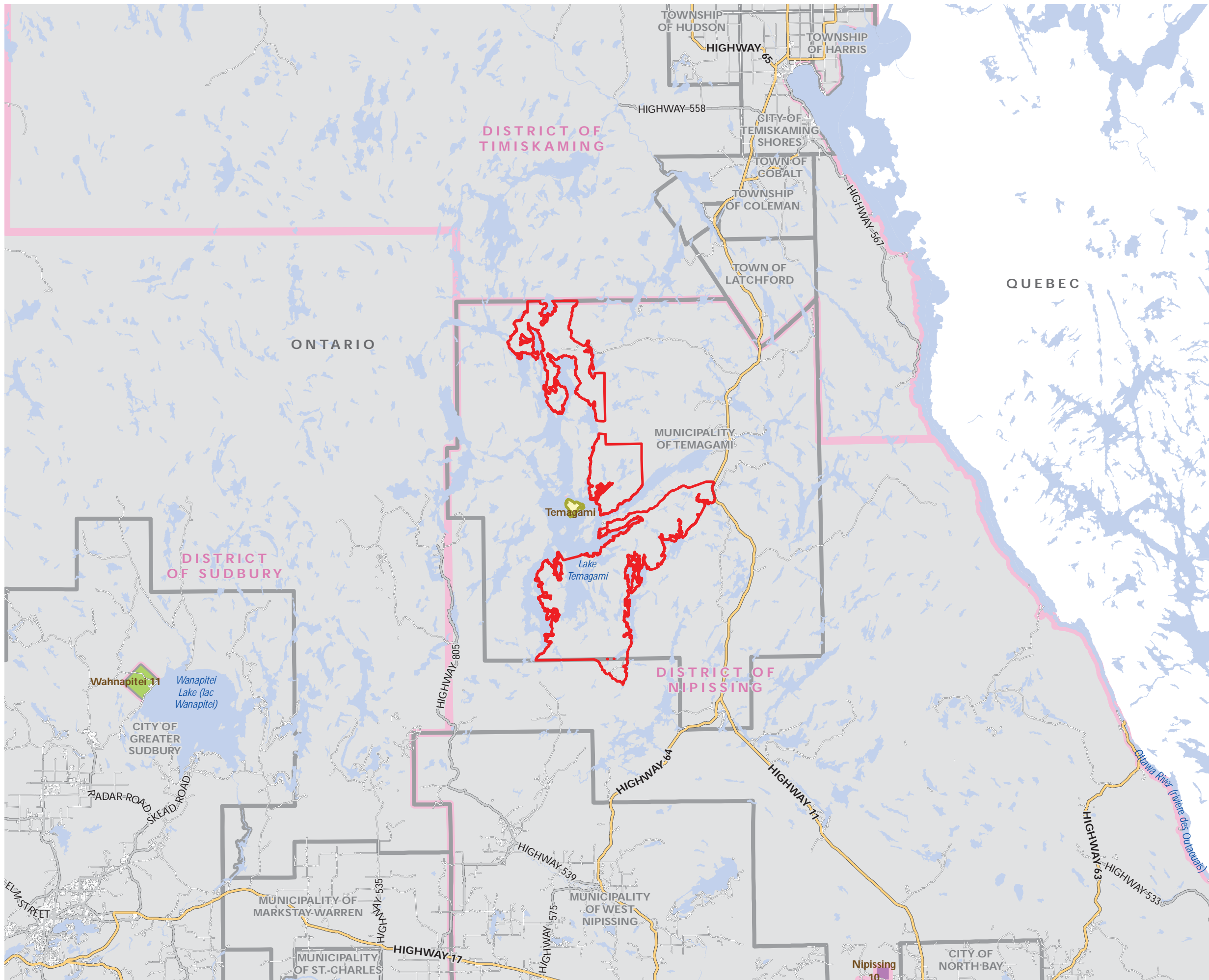
2.2 Regional Context

TFN is located in the Nipissing district, which is one of the most densely populated districts in Northern Ontario. In 2011, the Province prepared and approved the Growth Plan for Northern Ontario under the *Places to Grow Act* (2005). The goal of the Plan is to make the Region a place that has a skilled, educated, healthy and prosperous population that is supported by world-class resources, leading edge technology and modern infrastructure. The Plan also recognizes that a successful future for Northern Ontario can only be achieved by building upon the Region's relationship with Indigenous peoples, and that to achieve the long-term goals of the Plan, strategic coordination, partnerships and collaboration are essential. These goals and objectives should be considered throughout the land use planning process for TFN moving forward.

Although the community is located on Bear Island, it is within close proximity to the Municipality of Temagami (as shown in **Figure 2**). The town and the surrounding area draws many tourists to its attractions, such as its boreal forests, lakes, mountains (such as Caribou Mountain), fishing, wildlife (such as the Grey Owl), camping sites, cottage vacationing, Provincial Parks (such as Finlayson Point Provincial Park), hiking trails and extensive canoe routes. Tourism serves an important role in the Region. Bear Island itself has various youth camps, dance camps, spiritual retreats, and canoe adventures for tourists. The Lands Set Aside present opportunities for TFN to expand their existing tourism services, by providing more land and natural assets that can increase opportunities for tourism.

It is important to note that the Municipality of Temagami and Bear Island are located within a well-mineralized area of the province. Northeastern Ontario has considerable mining activity, as the Region is known for its rich mineral deposits and resources. Northeastern Ontario is served by the Ontario Northland Railway, which connects many of the Region's mining and resource towns. When the railway was first developed, it was one of the major factors in the economic growth of the province. The railway makes it possible to harness the timber resources of Northern Ontario, as well as provide access to the movement of the valuable mineral resources of the region, such as gold, silver, copper and nickel.

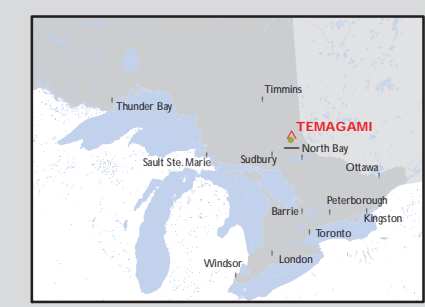
Although TFN is a rural community, it is connected to its surrounding Region and has the potential to benefit from the region's activities and economic and development opportunities. The regional context in which TFN is situated offers possible avenues for collaboration and meaningful partnerships, and the community should seek to become more actively involved in the region's economic opportunities and activities.



**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 2
REGIONAL CONTEXT**

- Land Set Aside
- Temagami First Nation
- Wahnapeitei 11 First Nation
- Nipissing 10 First Nation
- Single Tier Municipality
- District



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 188369
STATUS: DRAFT
DATE: 2018-12-12

2.3 Vision and Aspirations

For TFN, it is important that the community’s traditional knowledge and practices are being balanced with meeting the needs of today and the future. By taking a balanced approach, the community will be able to develop in a sustainable way for generations to come. This is reflected in TFN’s vision statement referenced in the 2005 Temagami First Nation Forest Strategy. ***The vision statement may be further refined over the course of the project and as part of upcoming community consultation events.***

“As the original stewards of Daki Menan, Temagami First Nation will incorporate the teachings of our ancestors, the importance of maintaining the ecosystem’s integrity and the need to make a modern living when contemplating modern forestry, resource development and land use practices. By doing so, present and future generations will realize the social and economic benefits of sustained life and sustainable development.”
 (Temagami First Nation RFP, 2018; Temagami First Nation Forest Strategy, 2005)

Community Input

Based on a survey conducted as part of the Background Report, community members identified the following as future priorities for the TFN:

- Environment (64%)
- Recreation (44%)
- Housing (38%)
- Preservation of Traditional Ways (37%)
- Economic (30%)
- Roads and Services (30%)

When asked how they felt connected to the land, participant responses fell into one or more of the following themes:

- Through traditional practices;
- Through my family;
- Through history and stories of ancestors living on the land;
- Meaningful interactions with the land (hunting, fishing, medicine harvesting, growing food, learning from Elders); and,
- Spiritual awareness (nature, balance, oneness)





3.0 Population and Employment Overview

3.1 Demographics

3.1.1 Current and Historic Population

TFN has a small population that is growing at a slow and steady rate. In 1990, the total population was 392 members (with 124 living on-reserve and 268 off-reserve). In 2000, the total population was 559 (with 222 living on-reserve and 337 off-reserve). As of 2019, the total population of TFN is 873 (INAC, 2019). **Figure 3** provides an overview of TFN's population as of February 2019.

Figure 3: Current TFN Population On- and Off-Reserve (2019)



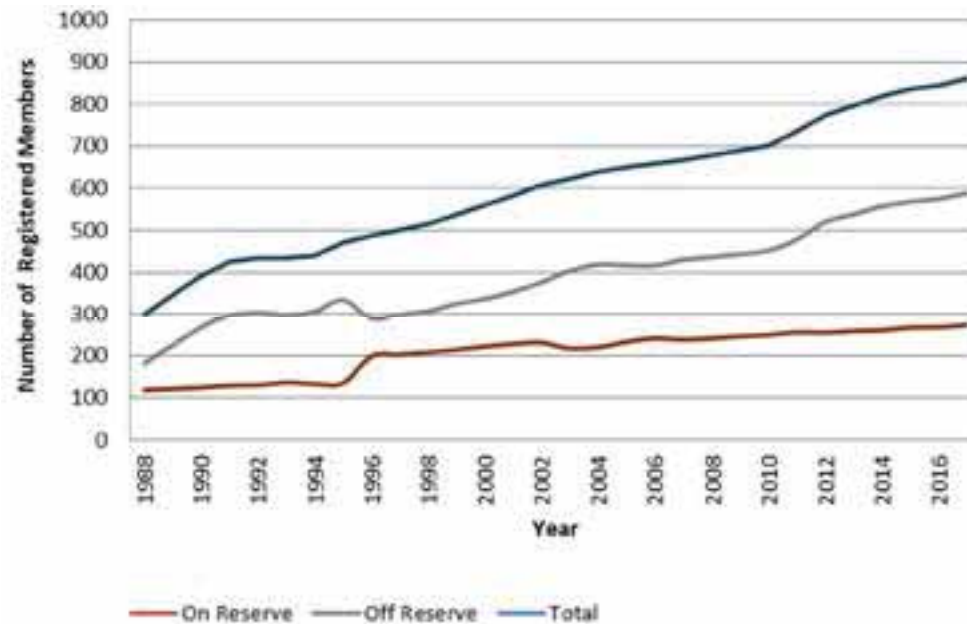
Source: INAC, 2019.

ISC maintains historical population data of Indigenous communities. Population data has been extracted directly from ISC's Indian Registry System and is based on the most current data from December 31, 2017. **Figure 4** below depicts historical growth of TFN registered members, both on and off Bear Island.

TFN has experienced a slow and steady population growth between 1988 and 2017, where total membership grew from 300 to 861 (Figure 4). During this period, total registered membership grew at an average annual rate of approximately 2.2%. The greatest growth in membership occurred between 2008 and 2012, where membership grew by approximately 3%.

Notably, according to 2016 Census data, TFN had a total on-reserve population of 153 whereas ISC reported a population of 268 for that same year. This discrepancy may be due to a high non-response rate in completing the 2016 Census. ISC data was used to carry out the population projections for consistency purposes.

Figure 4: TFN Registered Member Population by Residency 1988 to 2017

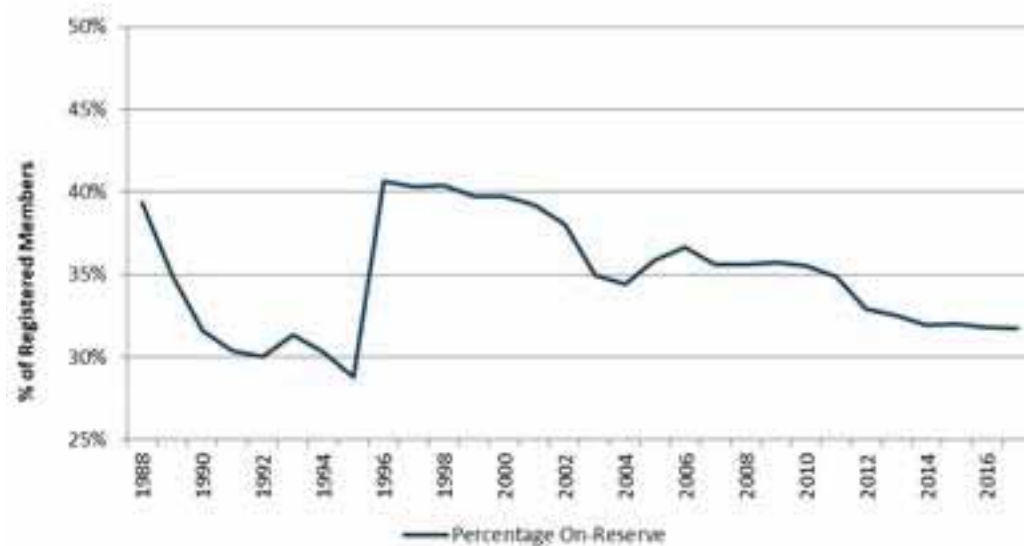


Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

Since 1988, the on-reserve population has experienced periods of growth and decline, with a low of approximately 29% in 1995 and a high of approximately 41% in 1996. Since then, the proportion of registered members living on Bear Island has declined to approximately 32% (**Figure 5**).

The number of members in the community and on-reserve fluctuates based on changes to economic activity and housing development. The creation of new economic activity, job opportunities, and housing in the area, as well as capacity building within the community result in increases in the migration of the community’s labour force, and increases in the population on-reserve.

Figure 5: Proportion of Total Registered Members Living on Bear Island, 1988-2017



Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

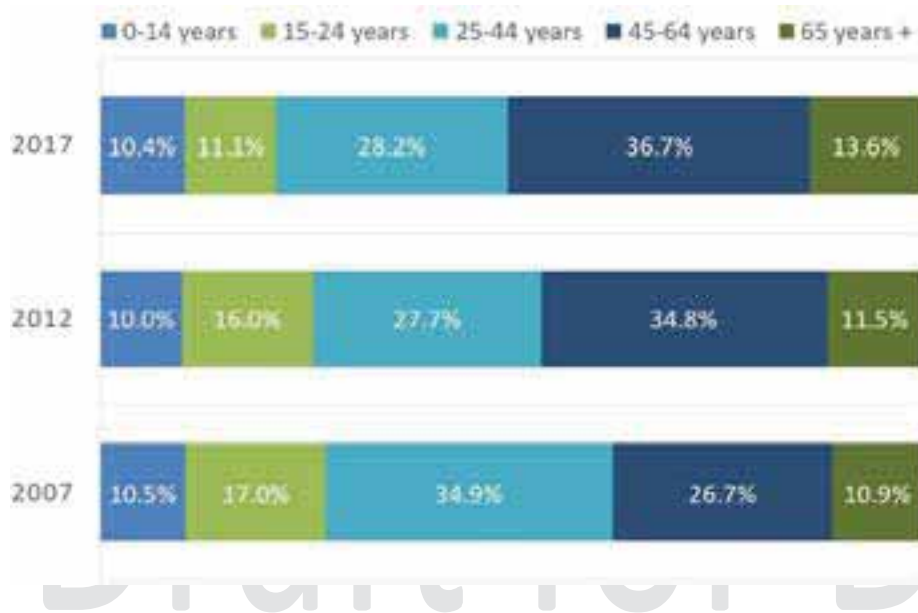
3.1.2 Age Distribution

The median age of a population summarizes the age distribution among a population, and it indicates the age where half of the population is younger and the other half is older. According to the 2017 data received by ISC, the majority of the population on Bear Island is between 25 and 44 years of age (**Figure 6**). In comparison, the majority of the total population (on- and off-reserve) is between 45 and 64 years of age (**Figure 7**).

Figure 6: Age Distribution of TFN Population Living on On-Reserve, 2007-2017



Figure 7: Age Distribution of TFN Population Living Off-Reserve, 2007-2017



Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

An analysis of available ISC data from 2007 to 2017 was conducted to assess the age distribution of the population living on Bear Island. Throughout this 10 year period, the 25 to 44 years age cohort has remained the largest age cohort of the population on Bear Island (i.e., 24.9% of the population). In addition, the 65 and older age cohort has increased from 11.8% in 2007 to 18.3% in 2017 while the 0 to 14 cohort has slightly declined (i.e., from 20.2% in 2007 to 17.9% in 2017). In comparison, the 25 to 44 years age cohort has slightly declined while the 45 to 64 years age cohort as increased for TFN’s off-reserve population.

Similar to many Indigenous communities across Canada, TFN has a relatively young population with 25.2% under the age of 25. In comparison, 28.7% of Ontario’s population is under the age of 25 (Statistics Canada, 2017). Based on **Figure 8** below, there are more women in the older senior age cohort than men.

Figure 8: Age Distribution of TFN’s Total Population and Ontario Population in 2017



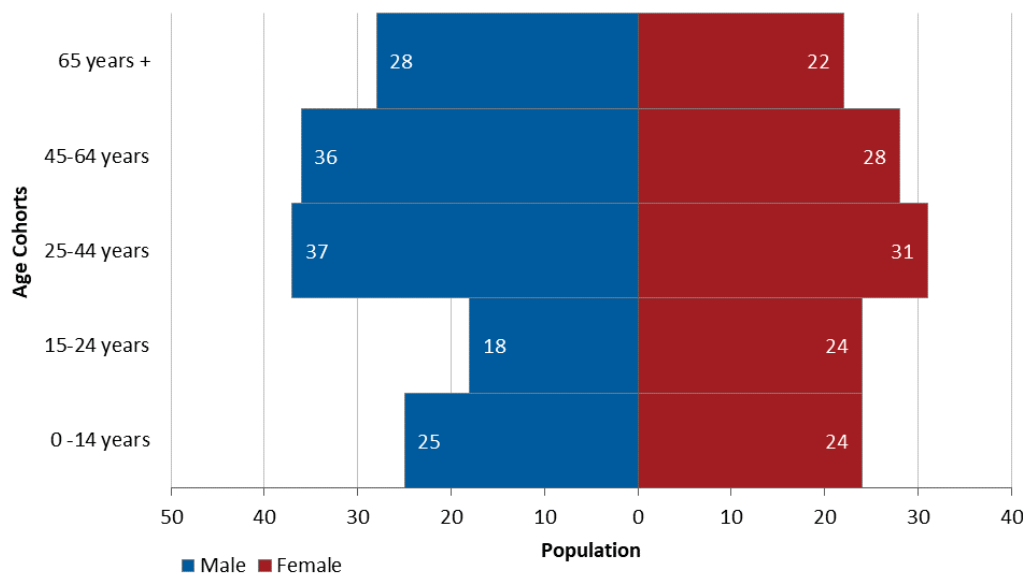
Source: Indian Register, December 31, 2017 (received via email October 22, 2018) and ON 2017 Population estimates on July 1st, by age and sex" retrieved from Statistics Canada

Planning consideration must be given to young families and associated housing and amenity needs in the immediate and near future. In addition, given the large aging population on Bear Island, special consideration should be given to more services, appropriate housing, mobility options, and meaningful community engagement opportunities to ensure this demographic successfully ages in place.

3.1.3 Gender Distribution

There is a relatively even distribution of males and females residing on Bear Island. Based on 2017 ISC data, approximately 129 (47.3%) of the total population on Bear Island is female and 144 (52.7%) are male. Provincial statistics from the 2016 census were not available for TFN or the province at the time the report was written. In 2019, INAC reported 126 males and 118 females on-reserve (INAC, 2019). Although this relatively even gender distribution generally holds true when comparing among age cohorts, there was a slightly higher proportion of males in some of the older cohorts and a slightly higher proportion of females in some of the younger cohorts (**Figure 9**).

Figure 9: Gender Distribution for TFN Population Living On-Reserve in 2017



Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

3.1.4 Future Population Trends

Future population growth or decline influences the demand for services and infrastructure required and provided by residents and members of TFN. This demand is dynamic in that both the amount and types of services are affected by the composition of the existing and future population. Typically, an increase in population will put more demand on existing services and infrastructure, such as increased potable water supply, increased sanitary sewage treatment, and an increase in travel demand within the First Nation’s administrative boundaries.

Characteristics of the First Nation’s population, particularly the age structure, can impact the type of services demanded by local residents and visiting band members. The following section will display future trends and projections for the population of TFN.

Data observed from 1988 to 2017 has been used and extrapolated to determine possible population trends for the next 25 years (2018 – 2043). **Table 1**, found below, identifies the total population of TFN and breaks down how many band members are located on- and off-reserve. The percentage of on-reserve members has also been identified.

Table 1: Residency Among Members (1988-2017)

Year	Total	On-Reserve	Off-Reserve	Percentage On-Reserve
1988	300	118	182	39.33%
1989	346	121	225	34.97%
1990	392	124	268	31.63%
1991	425	129	296	30.35%
1992	433	130	303	30.02%
1993	434	136	298	31.34%
1994	439	133	306	30.30%
1995	469	135	334	28.78%
1996	487	198	289	40.66%
1997	501	202	299	40.32%



Year	Total	On-Reserve	Off-Reserve	Percentage On-Reserve
1998	515	208	307	40.39%
1999	539	214	325	39.70%
2000	559	222	337	39.71%
2001	582	228	354	39.18%
2002	608	231	377	37.99%
2003	621	217	404	34.94%
2004	639	220	419	34.43%
2005	650	233	417	35.85%
2006	658	241	417	36.63%
2007	668	238	430	35.63%
2008	677	241	436	35.60%
2009	689	246	443	35.70%
2010	701	249	452	35.52%
2011	734	256	478	34.88%
2012	775	255	520	32.90%
2013	797	259	538	32.50%
2014	818	261	557	31.91%
2015	835	267	568	31.98%
2016	843	268	575	31.79%
2017	861	273	588	31.71%

Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

TFN’s total member population has seen generally steady medium (3% to 4%) growth rates since 1988 (**Table 2**). The average annual population growth among TFN members (on- and off-reserve) between 1988 and 2017 was 3.7%. For the population projections, an average annual growth rate of 2% was selected to estimate potential future populations on Bear Island.

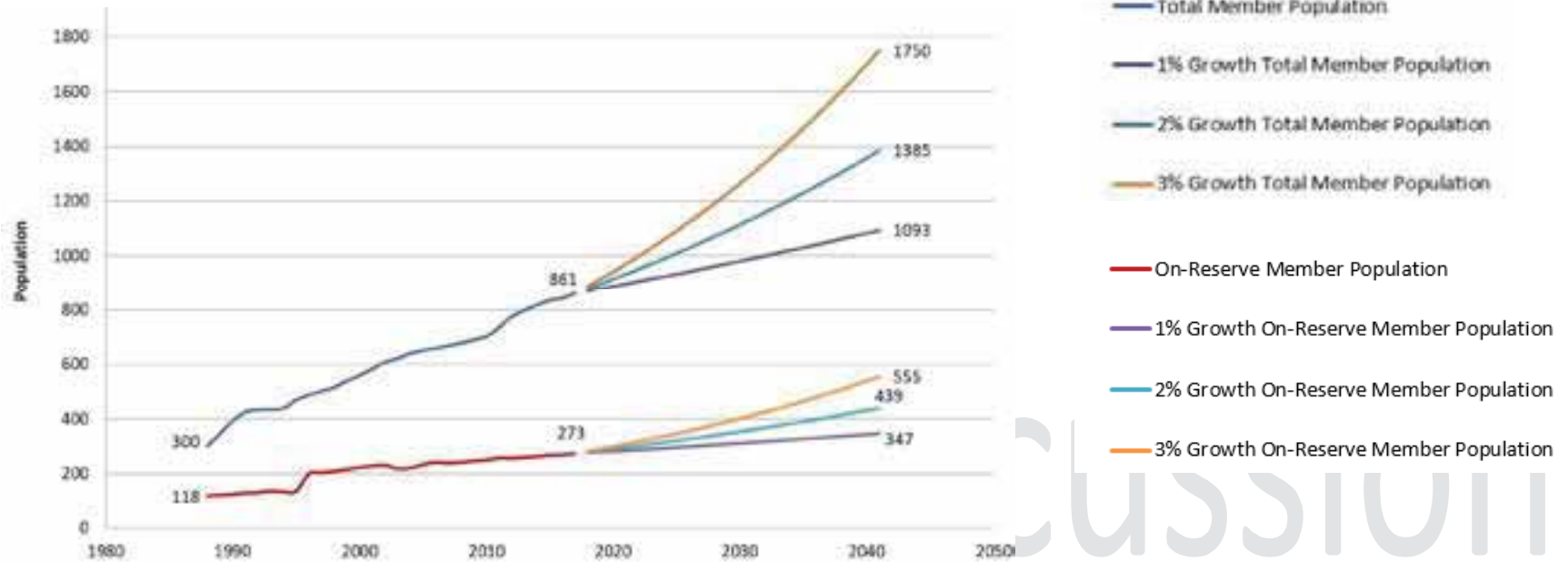
Table 2: Compound Annual Growth Rate from 1988 to 2017

Year	Total	On-Reserve	Off-Reserve
1988-1992	9.6%	2.5%	13.6%
1993-1997	3.7%	10.4%	0.1%
1998-2002	4.2%	2.7%	5.3%
2003-2007	1.8%	2.3%	1.6%
2008-2012	3.4%	1.4%	4.5%
2013-2017	1.9%	1.3%	2.2%
1988-2017	3.7%	2.9%	4.1%

Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

Figure 10 shows the historical population of registered members of TFN from 1988 to 2017, as well as potential population projection scenarios up to 2042. Based on a 2% growth rate, the total on-reserve membership of TFN is expected to be 439 by 2041 (i.e., in 25 years). At a higher growth scenario of 3% annual growth, the on-reserve population is expected to be approximately 555 in 25 years, while a lower growth scenario of 1% indicates the on-reserve population would be approximately 347. Future development on Bear Island will need to take into consideration potential population growth projections.

Figure 10: 25 Year Population Projects for On-Reserve Members (2018-2042)



Source: Indian Register, December 31, 2017 (received via email October 22, 2018)

It must be noted that the exponential growth projections do not consider the size of specific age groups in a population. The exponential projections presented could underestimate population decline, because the death rate could increase as the population ages.

3.2 Economy and Employment

3.2.1 Employment

Based on 2016 Census data, TFN had a labour force participation rate of 48%. In comparison, that same year Ontario had a labour force participation rate of 64.7%. The 2016 Census does not include information about the unemployment rate on Bear Island.

3.2.2 Economic Activities

Based on 2016 Census data, Health Care and Social Assistance is the primary form of industry on Bear Island. Based on the 2011 CPS the tourism industry also serves an important role for the community, with various youth camps, dance camps, spiritual retreats, and canoe adventures being offered on Bear Island. Other forms of industry and commercial activity on-reserve identified by the 2016 Census data are outlined in **Figure 11** below. The available data from Stats Canada is reflective of the “tourism industry” on-reserve, including day camps, canoe trips, and retreats.

Figure 11: Industry On-Reserve (15yrs+), 2016 Census



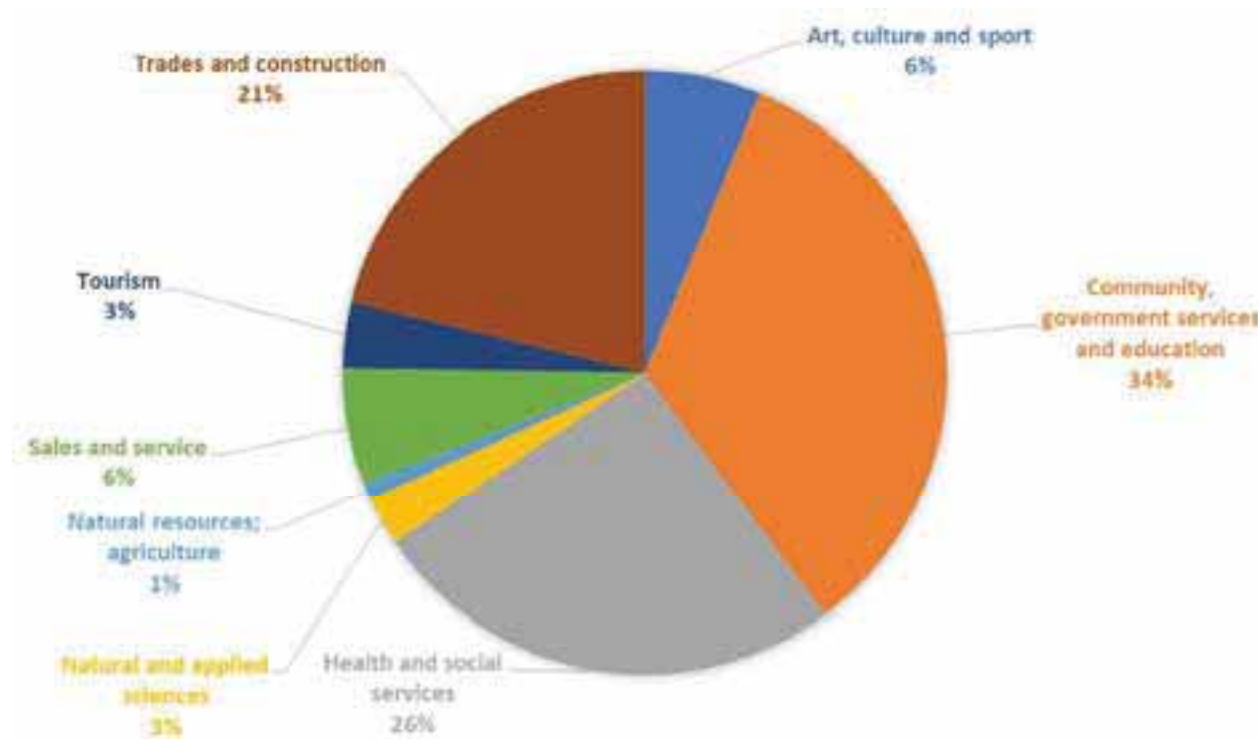
Source: 25% Sample - 2016 Census Data

The North American Industry Classification System (NAICS) defines the above mentioned industries as follows (Government of Canada, 2012):

- **Agriculture, Forestry, Fishing and Hunting** – This sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, harvesting fish and other animals from their natural habitats and providing related support activities.
- **Construction** – This sector comprises establishments primarily engaged in constructing, repairing and renovating buildings and engineering works, and in subdividing and developing land.
- **Finance and Insurance** – This sector comprises establishments primarily engaged in financial transactions (that is, transactions involving the creation, liquidation, or change in ownership of financial assets) or in facilitating financial transactions.
- **Real Estate, Rental and Leasing** – This sector comprises establishments primarily engaged in renting, leasing or otherwise allowing the use of tangible or intangible assets.
- **Educational Services** - This sector comprises establishments primarily engaged in providing instruction and training in a wide variety of subjects.
- **Health Care and Social Assistance** – This sector comprises establishments primarily engaged in providing health care by diagnosis and treatment, providing residential care for medical and social reasons, and providing social assistance, such as counselling, welfare, child protection, community housing and food services, vocational rehabilitation and child care, to those requiring such assistance.
- **Public Administration** – This sector comprises establishments primarily engaged in activities of a governmental nature, that is, the enactment and judicial interpretation of laws and their pursuant regulations, and the administration of programs based on them.

Based on the TFN Community Profile (2019) most popular occupations found within the community are Community, Government Services, and Education, see **Figure 12**.

Figure 12: On-Reserve Employment by Economic Sector



ssion

Source: Temagami First Nation Community Profile, 2019.

The Community Profile (2019) provides the following descriptions for each of the economic sectors:

- **Art, Culture and Sport** - Includes occupations in art and culture, including the performing arts, film and video, broadcasting, journalism, writing, creative design, libraries and museums. It also includes occupations in recreation and sports.
- **Community, Government Services and Education** - Includes occupations concerned with teaching, educational support, developing government policy, and administering government and other programs.
- **Health and Social Services** - Includes occupations concerned with providing health care and social services directly to patients and occupations that provide support to medical social service staff.
- **Natural and Applied Sciences** - Includes occupations in sciences, engineering, architecture and information technology.
- **Natural Resources; Agriculture** - Includes supervisors and equipment operators in the natural resource-based sectors of mining, oil and gas production, forestry and logging, agriculture, horticulture and fishing.
- **Sales and Service** - Includes retail and wholesale sales occupations and customer and personal service occupations related to a wide range of industries, such as accommodation and food services, travel, tourism and cleaning services.
- **Tourism** - Includes occupations that supervise and co-ordinate the activities of hotel accommodations, and travel guides, outdoor sport, hunting, fishing and recreational guides.
- **Trades and Construction** - Includes trades supervisors and contractors, construction and mechanical tradespersons, operators of transportation and heavy equipment and trades helpers. This category includes most of the apprentice trades, including all those related to the construction industry.

3.2.3 Household Income and Cost of Living

Based on 2016 Census Data, according to income statistics for Bear Island, the median total household income for private households was \$51,840 (Statistics Canada, 2016). In comparison, the median total household income for private households in Ontario was \$74,287 (Statistics Canada, 2016). Average income data for Bear Island was not available at the time of writing this report.

The median total income statistics per household on Bear Island is lower when compared to the Provincial Average. Data obtained on 2016 income statistics does not contain information regarding the prevalence of cost of living on Bear Island. This information is quite valuable and should be sought out to determine the economic standpoint of on-reserve members.

3.3 Planning Considerations for the Population and Employment Overview

The following highlights some of the planning considerations related to this section, that will be further explored through the land use planning process.

Demographic

- Land use planning should consider the impacts of population growth on:
 - Land use demands (i.e., the community will need to increase or reconsider the amount of land set aside for residential, commercial, community, and servicing/infrastructure uses);
 - Community amenity needs (e.g., amenities may include recreational and social gathering places);
 - Need for more services, appropriate housing, mobility options, and meaningful community engagement opportunities to ensure TFN's aging demographic successfully ages in place; and
 - Residential, education/childcare, and health options to accommodate both present and future land use needs of TFN's growing population.
- Land use planning may provide direction to address the lack of on-reserve housing to accommodate growing population. A housing strategy would be helpful in providing TFN's growing population with on-reserve housing options.
- Potential for planning policies to provide guidance towards reaching targets, vision, and objectives for on reserve housing.

Economy and Employment

- Land use planning has the opportunity to identify economic and employment opportunities, such as setting aside employment land and to encourage other forms of economic activity on-reserve (e.g., tourism, guiding, recycling, new residential technologies¹, etc.).

¹ For example: installation of spray foam insulation, solar panels on homes, etc.

4.0 Legislative and Policy Context

Within the legislative context are a number of acts, laws, and regulations that influence and apply to TFN lands. Considerations from these acts, regulations and policies are outlined in this section of the Background Report. These include but are not limited to:

- *The Indian Act*;
- *The First Nation Land Management Act*;
- *Family Homes On-Reserves & Matrimonial Interests or Rights Act*;
- *First Nations Fiscal Management Act*;
- *Canadian Environmental Assessment Act*;
- Temagami Land Code;
- Tribal Constitution; and,
- Certificates of Entitlement.

4.1 Federal Legislation

4.1.1 The Indian Act

The *Indian Act* was first passed in 1876. In 1971, the Bear Island Reserve was recognized as a reserve under the *Indian Act* by an Order in Council. Only a portion of the TAA was provided Indian Status under the *Indian Act*, while the majority are not accorded but still recognized as full community members. The *Indian Act* limited the territory of TFN to Bear Island, and settlement by the TAA at Bear Island was largely due to the enforcement of Crown rules and regulations on this community, such as regulating who would leave the reserve lands, how the forests of n'Daki Menan could be used, and requiring that children attend school on Bear Island. After years of contention, failed agreements and negotiations between TFN and the Supreme Court of Canada, the Nation remains without a finalized settlement agreement, and discussions regarding land rights and claims continue.

The *Indian Act* took away TFN jurisdiction and traditional law, which has impacted every facet of life for the TFN, especially pertaining to the management of their lands and the rights to its resources. Reserves were administered by the *Indian Act*, which meant they were set aside for use by TFN individually and could not be altered, bought, or sold without permission of the Minister of Indian Affairs or by Order-in-Council. The way in which the land was administered resulted in some uses which may not be in the best interests of TFN. A variety of mechanisms are in place to transfer responsibility of the reserve lands back to First Nation communities, such as the Reserve Land and Environmental Management Program (RLEMP), the Framework Agreement on First Nation Land Management (FNLM), and Comprehensive Self Government. **Section 4.1.2** below focuses on the FNLM and associated processes.

4.1.2 Framework Agreement on First Nation Land Management

The FNLM is a government-to-government agreement developed through the 1980s and 1990s. The agreement was signed by 14 First Nations and the federal government on February 12, 1996. The FNLM provides the opportunity for First Nations to opt out of land-related sections of the *Indian Act* and assume jurisdiction and reclaim control over their reserve lands and resources under their own Land Code, a legal instrument used by First Nations to ratify the FNLM (Lands Advisory Board, 2013). The federal government established Canada's roles and responsibilities in the FNLM and ratified the FNLM through the *First Nations Land Management Act* (FNLMA), which received royal assent in 1999.

A key aspect of the FNLM is the development of a community-specific Land Code, which replaces the land management provisions of the *Indian Act* and sets out the mechanisms for governance, law making, accountability, and interests in lands and resources. Once a Land Code is in place, the community has the authority to manage and enact laws over its reserve lands and resources. The benefits of Land Code include the following (Lands Advisory Board, 2013):

- Community control over land management and development, and environmental management, through the ability to make land-related decisions without the approval from the Minister;
- Ability to pass and enforce laws on-reserve lands, including the protection of cultural heritage, community values, and the environment;
- Inclusion of both on- and off-reserve members in important decisions;
- Increased accountability to First Nation members;
- Recognition of First Nation legal capacity to acquire and hold property, to borrow, to contract, to expend and invest money, to be a party to legal proceedings, to exercise its power, and to perform its duties;
- Transfer by Canada of previous land revenues to the First Nation;

- Recognition of the right to receive revenue from interests on First Nation land;
- Protection against arbitrary expropriation of First Nation land and the loss of First Nation land through surrender for sale;
- Ability of First Nation to address the current vacuum on rules related to land during marriage breakdown;
- Recognition of First Nation laws in Canadian courts; and,
- Ability to create a local dispute resolution process.

The FNLM includes a development phase and an operational phase:

Development Phase: In order to reclaim control, First Nations who are a signatory to the FNLM may exercise their land management option by creating their own Land Code, entering into an Individual Agreement with Canada², drafting a community ratification process and conducting a community vote. After a community vote in support of the Land Code, the Minister transfers the administrative control of the reserve lands to the First Nation community. Once the land code has been ratified and is in effect, the community is considered operational under the FNLM. This means that the community has the authority to manage and enact laws over its reserve lands.

Operational Phase: Once the Land Code is enacted, a Land Office should be created (if not already existing). The Land Office will focus on the development, management, protection and conservation of the land as well as other land-related matters. A governance authority, such as a Lands Committee, should be in place to communicate between Chief and Council and the community, as well as attend legal matters. At the end of year one a Matrimonial Real Property and Environmental Management Law must be passed and a Land Use Plan is created and implemented as per land code.

² The Individual Agreement sets out the specifics of the transfer of jurisdiction from Canada to the First Nation including: operational funding for land management to be provided to the First Nation by Canada; the return of revenue monies previously collected and held in trust by Canada; interests and associated information recoded in the Indian Land Registry System; known environmental issues identified during the Phase I Environmental Site Assessment with provisions for remediation processes; the transfer of Canada's rights and obligations to the land including leasehold interests held by Canada; and the reserve lands to be governed by the First Nation (Lands Advisory Board, 2013).

4.1.3 Family Homes On-Reserves & Matrimonial Interests or Rights Act

The *Family Homes On-Reserves & Matrimonial Interests or Rights Act* came into effect on December 16, 2014. The Act deals with family law matters on First Nation Reserves, which are not covered under provincial and territorial laws and the *Indian Act*. The Act provides a set of rules for spouses and common-law partners pertaining to their family home and real property on-reserve (Centre of Excellence for Matrimonial Real Property, n.d.). The rules come into effect:

- During a conjugal relationship;
- On breakdown of the relationship; and,
- On the death of a spouse or common-law partner.

4.1.4 First Nations Fiscal Management Act

The *First Nations Fiscal Management Act* came into effect on March 23, 2005. The Act provides the legal framework for real property taxation powers of first nations, to create a First Nations Tax Commission, First Nations Financial Management Board and First Nations Finance Authority and to make consequential amendments to other Acts (Government of Canada, 2005).

4.1.5 Canadian Environmental Assessment Act

The *Canadian Environmental Assessment Act* came into effect on July 12, 2010. The purpose of environmental assessments is to minimize or avoid adverse environmental effects before they occur and to incorporate environmental factors into decision making (Government of Canada, 2011).

The *Canadian Environmental Assessment Act* is based on the following principles:

- To achieve sustainable development by promoting high quality environmental assessment;
- To integrate environmental factors into planning and decision-making processes;
- To anticipate and prevent degradation of environmental quality; and
- To facilitate public participation in the environmental assessment of projects where the federal government is involved.

Public engagement is an important part of the environmental assessment process. By engaging the public, the proponent is able to gather local and traditional knowledge about the location and potential environmental effects of a proposed project (Government of Canada, 2011).

4.1.6 Temagami Land Code

The Framework Agreement on First Nation Land Management was ratified and came into effect under the *First Nations Land Management Act* (FNLMA) in 1999. The First Nations Land Management Regime refers to the Framework Agreement and the FNLMA, which together provide the opportunity for First Nations to opt out of land-related sections of the *Indian Act* and assume jurisdiction over their reserve lands and resources under their own land code (Aboriginal Affairs and Northern Development, 2013).

Through the Framework Agreement on First Nations Land Management, TFN developed a Land Code to regain control over the day-to-day management of its reserve lands and resources in 2017 (ratified in June 2017; certified August 25, 2017). The Land Code replaces 34 land-related sections of the *Indian Act* with TFN's own way of operating and doing things. Currently, the Land Code only applies to the reserve lands that are within the boundary of Bear Island Indian Reserve No. 1. However, any other future reserve lands, such as those in the Lands Set Aside that TFN may acquire can also be protected under the Land Code if the Nation chooses to do so.

The TFN Land Code contains nine parts, summarized below.

Part 1: Preliminary Matters	Introduces the Land Code and explains how it should be read and understood, including definitions and the purpose of the Land Code.
Part 2: First Nation Legislation	Outlines the law making powers and the process - how new land laws will be made under the Land Code.
Part 3: Community Input and Approvals	Explains how land laws and land matters are brought forward to Meetings of TFN for consultation and/or for approval.
Part 4: Protection of Land	Outlines how the Land Code can protect TFN reserve land. This includes land acquisitions, land exchanges, and protection of heritage sites.
Part 5: Accountability	Outlines how the Land Code will be administered include the rules for conflict of interest, financial management and reporting to members.

Part 6: Lands and Natural Resources Administration	Outlines the duties, roles and responsibilities of the Lands Committee.
Part 7: Interests and Licenses in Land	Outlines the operation of lands administration at TFN and focuses on registration of interests and licenses, existing interests, new interests and licenses, allocation of land to Members, Transfers, Residency and Access Rights.
Part 8: Dispute Resolution	Addresses how possible land-related disputes are resolved outside of the courts, and includes the basic rules and processes for resolving these issues.
Part 9: Other Matters	Provides information on other matters, such as liability, offences, revisions to the Land Code and Commencement.

The Land Code provides multiple benefits for the community, such as:

- Exercising jurisdiction over reserve lands and resources;
- Legal land tenure for land owners;
- Control over TFN land management and development (equivalent power to being land owners);
- Ability to protect the environment and deal with marital property in a way that does not discriminate, and resolve disputes here in the community as an alternative to court;
- Protection against provincial and federal expropriation (the government can no longer take or use our land without our consent. Expropriation of land by the Federal Crown is restricted to a national public purpose [*Emergencies Act*]);
- Making timely business and land decisions without Ministerial approvals from Indigenous Services Canada (ISC; formerly Indigenous and Northern Affairs Canada) [example, approve a lease without any say from Minister];
- Making and enforcing TFN's own laws that respect the community's way of life: culture, traditions and customs for the development, conservation, protection, management, use and possession of TFN land;
- Increased accountability to the members of TFN; and,
- Help TFN prosper like neighbouring First Nations who have a Land Code.

4.2 Temagami Land Management

4.2.1 Tribal Constitution

A Constitution is an important part of self-government. In the context of land management, a Constitution can communicate how a Nation will protect, care, and manage its lands. The Temagami First Nation Tribal Constitution guides community leaders and elected representation when making decisions for the community. It provides laws pertaining to membership, political representation, infrastructure, and the environment.

The Temagami First Nation Tribal Constitution enables Council to propose by-laws to maintain and improve the quality of life on Bear Island.

4.2.2 Lease Holdings

At present, TFN does not have any lease holdings. However, it should be noted that certain legislative gaps exist that impact land administration. For example, sections 42-50 of the *Indian Act* (which deal with Indian estates) are not part of the FNLMA. This can lead to difficulties when dealing with estates that have reserve land holdings that may be leased to third parties. For example, if a Certificate of Possession Holder dies and the heir is not a Band member, the property must be sold to a member or the First Nation, requiring ISC to become involved.

4.2.3 Certificates of Entitlement

Based on the 2011 CPS completed by TFN, all First Nation lands are controlled by the First Nation. Certificates of Entitlement, also referred to as Certificates of Possession, will be pursued by the community in the future. Certificates of Entitlement are issued for individual homes, but not for the land or parcel of land they are located on. Usually lands held under Certificates of Entitlement are subject to a community's Land Code and Master Land Use Plan (once approved), and any applicable community laws.



5.0 Natural Environment

TFN has a rich history that is associated directly with the community’s relationship to the land and water. The natural environment influences the form of the community, presenting opportunities and constraints for the physical development of Bear Island and the Lands Set Aside.

5.1 Climate

TFN is located in Canada’s Ontario Shield Ecozone which encompasses 61% of the province from the Hudson’s Bay Lowlands and Manitoba border to the northern boundary of the Mixedwood Plains of Southern Ontario (Crins et al., 2009). Climate in this Ecozone is humid and cool, and is influenced by the many surrounding freshwater lakes and moist forests of the Ontario Shield (Ecoregions Working Group 1989; Hills 1959; Mackey et al., 1996a, b).

Within the Ontario Shield, Bear Island and the Lands Set Aside fall within the Lake Temagami Ecoregion (Ecoregion 4E). The mean growing season length of this region is approximately 171 to 200 days (Crins et al., 2009). Climate and associated boundaries of Ecoregion 4E correlate highly to climatic variables associated with neighbouring regions located north and south; the region experiences a climate influenced by the cool-moist Boreal forest located north, and by warmer, dryer climates of the southern Mixedwood Plains (Crins et al., 2009).

Average annual temperature, rainfall, and snowfall data is provided in **Table 3** below for cities that are geographically close to TFN. As indicated by the table data from 1981-2010 Environment Canada’s climate study the area receives between 576.5 and 802.8 mm of mean annual rainfall. The annual amount of snowfall across the region is relatively consistent, with the region receiving a mean annual snowfall of 261.8 mm (Government of Canada, 2018).

Community Input

The community has a very close relationship with the natural environment. Natural features and areas must be protected.

The community would like to encourage a culture of sustainability and environmental stewardship.





Table 3: Climate Comparison (1981-2010)

	Earlton, Ontario	Sudbury, Ontario	North Bay, Ontario
Mean Annual January Daily Average (°C)	-16.2	-13.0	-12.5
Mean Annual July Average (°C)	15.6	19.1	18.9
Mean Annual Rainfall (mm)	576.5	675.7	802.8
Mean Annual Snowfall (mm)	222.4	263.4	299.6

Source: Data collected from Government of Canada, Federal website 1981-2010 Climate Normals, Earlton, Sudbury, North Bay.

Climate Change

Climate change is increasingly impacting communities across Canada. According to the Intergovernmental Panel on Climate Change, Canada is facing a rise in average temperatures, changes to freeze-thaw cycles, increased precipitation, and a rise in sea levels. Wildfires, flooding, and periods of drought are extreme weather events that are occurring more frequently and with greater severity, affecting regions across the country.

“Climate Change is a long term shift in weather conditions identified by changes in temperature, precipitation, winds, and other indicators. Climate change can involve both changes in average condition and variability for example extreme weather events” – Government of Canada

Bear Island and Lands Set Aside consist primarily of forest cover. Periods of drought may affect the health of forests in northern regions of Ontario. Periods of prolonged drought can lead to reduced soil water content and the early death of trees (Gabriel and Kreutzwiser, 1993; Natural Resources Canada, 2017a). Tree death can occur across a large geographical range if seasonal climate conditions exceed species-specific genetic limits, or if changes in climate cause outbreaks of pest species (Natural Resources Canada 2017a). The effect of drought on trees and forest communities is difficult to predict because relationships in ecosystems are complex, and many interacting factors may be involved (Natural Resources Canada 2017a, b).

Annual precipitation is expected to increase in Ontario in addition to predicted increased periods of drought. Annual precipitation is expected to increase in northern Ontario by approximately 10 -20% (Government of Canada, 2018a). Flooding could occur from periods of intense rainfall during downpours and thunderstorms, and increased precipitation throughout the year. While current monitoring programs for Lake Temagami do not exist (Government of Canada, 2018b), threats from flooding and rising lake levels are a growing concern from residents (Temagami Lakes Association, 2014a).

Climate Change has considerable impact on land use, often exposing land vulnerabilities. TFN would benefit from preparing a Vulnerability Assessment to improve understanding of how climate change may be impacting community infrastructure or emergency management as well as preparing an Adaptation Plan to prioritize options and to develop adaptation recommendations to lessen current or potential climate impacts.).

While climate change adaptation generally refers to a response to a severe weather event, climate change mitigation refers to taking actions to prevent or lessen the impacts of a severe weather event. An approach towards climate change therefore requires a combination of adaptation and mitigation related planning, which may be addressed in the context of a land use plan.

The impacts of climate change on communities can be severe, primarily due to location, infrastructure, and resources. Though we will not be undertaking a Climate Change analysis as part of the land use planning process, considering the effects of climate change as well as how to prepare, adapt and recover from associated weather events is critical.

Community Input

The community noted that the colour of Lake Temagami has changed.

The community noticed more severe weather events. In the winter of 2018 one of the community buildings collapsed due to heavy snow load on the roof. Future building design needs to be sensitive to these changes in weather.



The TFN Master Land Use Plan will consider the following factors as they relate to climate change:

- Potential impacts on community assets;
- Potential impacts on ability to deliver programs;
- Potential impacts on the natural system on-reserve;
- Damage or destruction of infrastructure including roads, businesses, bridges, schools, water (drainage and sewer systems) and community service buildings;
- Damage to residential buildings;
- Potential limited access to traditional hunting and gathering areas due to flooding; and,
- Disruptions to services due to impacts to infrastructure.

Draft for Discussion

5.2 Hydrogeography

Bear Island is located within Lake Temagami (**Figure 13**); the Lands Set Aside are located to the north, south and southeast of Bear Island and generally border the banks of the lake.

Lake Temagami has a total surface area of 22,654 ha (226.54 km²); the lake has a maximum depth of 109.7 m, an average depth of 17.6 m, and an average water clarity depth of 8.5 m (Ministry of Natural Resources and Forestry [MNRF], 2016). A single station (Station: 02DC010) monitored water levels of Lake Temagami for 69 years from 1926 – 1994; this station has since been discontinued without replacement (Government of Canada, 2018b). While trends in water level deviated over the 69 year period, annual average water levels of Lake Temagami appeared relatively constant from 1926 to 1994 (approximately 293.6 m ± 0.11; Government of Canada, 2018b).

A single area of unevaluated wetland exists within Bear Island; numerous unevaluated wetlands are mapped within the Lands Set Aside (MNRF, 2018b; MNRF, 2018c). Upon observation, no areas of evaluated Provincially Significant Wetland exist within the Lands Set Aside (**Figure 13**).

The entire area falls within the Great Lakes-St. Lawrence primary watershed of the Great Lakes Basin (MNRF, 2018a). At a finer scale, Bear Island and Lands Set Aside reside within the Wanapitei and French Secondary Watershed, and the Sturgeon Tertiary Watershed (MNRF, 2018c). Within the Tertiary Watershed, water from Lake Temagami and from surrounding water bodies (Anima Nipissing Lake, Cross Lake, Sturgeon River, and Temagami River) drain south to Lake Nipissing.

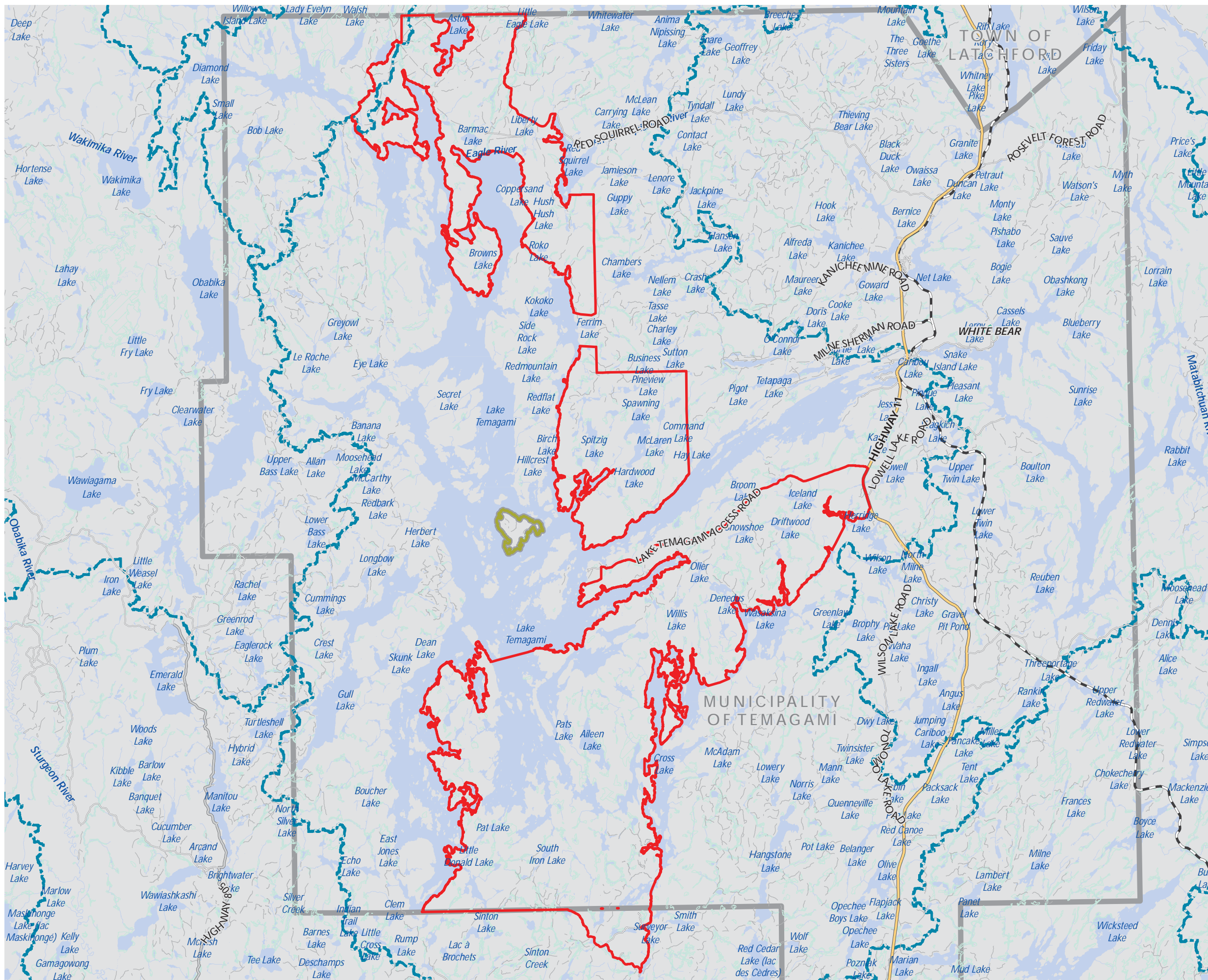
Surface flow of Lake Nipissing continues south to the French River and eventually outlets to Georgian Bay of Lake Huron. There is limited information available for the watercourses within the Lands Set Aside.

Community Input

The community expressed that Lake Temagami is an integral part of their identity, it sustains and provides life. Lake Temagami must be protected for future generations.

The community's goal is for the lake water to be safe for drinking and bathing.

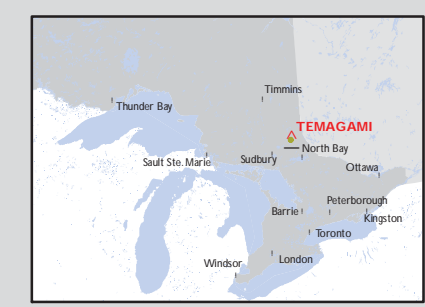




**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 13
WATER FEATURES**

- Temagami First Nation
- Land Set Aside
- Expressway / Highway
- Arterial Road
- Local Road
- Resource / Recreational Road
- Railway
- Quaternary Watershed Boundary
- Provincially Significant Wetland
- Unevaluated Wetland
- Single Tier Municipality
- Water Body



1:200,000
0 1 2 4 6 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 188369
STATUS: DRAFT
DATE: 2019-04-04

FILE LOCATION: I:\GIS\188369 - Temagami Land Use Plan\mxd\Figure 13 Water Features.mxd

As described in the Phase 1 Environmental Site Assessment (ESA) completed for TFN (Dillon Consulting Limited, 2015), surface drainage on the Island travels through course soils as infiltration or through roadside ditches and culverts that outlet to Lake Temagami. The depth to groundwater on Bear Island is unknown, however a review of water wells located on adjacent islands (Wingfood Island, Ogama Island and Adanac Island) indicate that the depth to groundwater in the vicinity of the Bear Island is highly variable and ranges from 16 m to 123 m (Government of Ontario, 2018). No groundwater wells exist within the Bear Island or within the vicinity of Lands Set Aside to the north, northeast, and east.

Past water monitoring programs (2014) for Lake Temagami completed by the Temagami Lakes Association have documented parameters indicating water quality (Temagami Lakes Association, 2014b). Land uses described by the Temagami Municipal Official Plan (2011), and the Temagami Lakes Association recognise activities that may pose moderate to low threats to groundwater and surface water. These activities include recreational activities, industrial logging, and year-round and seasonal residential use.

Specific threats that may impact water resources include:

- Fuel handling and storage;
- Clearing of vegetation and forest cover;
- Sewage; and,
- Waste.

5.3 Geology and Soils

Bear Island and Lands Set Aside are located within the Precambrian Shield (MNRF, 2018a); rocks of the Grenville Province, the Southern Province, and the Superior Province are layered by age in succession within the Shield formation (MNRF, 2018a). The Superior Province is the deepest and oldest geologic formation, and consists of the “greenstone belt” (metavolcanic and metasedimentary rock) and large areas of intrusive granitic rock. Within the Temagami Area, the Greenstone belt contains deposits of Iron, Copper-Nickel-Platinum group metals and Gold. Windows to the Greenstone belt are available through younger rock formations of the Southern and Grenville Provinces (MNRF, 2018a). Formations of the Southern and Grenville Provinces comprise of layers of glacial, fluvial and marine sediments and granitic rocks, respectively (MNRF, 2018a).

Moderately rolling/hilly rockland (undifferentiated igneous metamorphic bedrock) forms the primary cover of Bear Island. Bedrock is covered by a thin layer of glacial till (sand and gravel). Shallow soils (less than 1.9 m deep) consisting of Orthic Humo-ferric Podzols overlay bedrock on the island, and consists of well drained materials (non-calcareous very stony sand and sandy loam glacial till). Materials identified in Soil Survey Report No. 49 are consistent with depths of materials documented in records for groundwater wells on adjacent islands (Ministry of Agriculture Food and Rural Affairs, 1983; Ontario Geological Survey, 1991; MNRF, 2018a).

Similar soils are identified in Lands Set Aside located north, south and southeast of Bear Island, however soil survey reports are incomplete and do not cover the entire geographic region. Surficial geology of the Lands Set Aside indicates that these areas contain glacier deposits from the Pleistocene age containing gravel and sands in addition to igneous bedrock. Additionally, some northern areas of the Lands Set Aside contain Precambrian till (silty-sand) deposits.

Soil capability mapping completed for the area indicates that Bear Island and Lands Set Aside within the south and southeast have no capability for crop use or permanent pasture (Class 7). Northern areas of Lands Set Aside are similar; however contain areas consisting of soil classes with severe limitations to agriculture (Class 4) (Department of Energy, Mines and Resources, 1975; Ministry of Agriculture Food and Rural Affairs, 1983). These areas to the north are documented to have low natural fertility and are deficient in soil moisture. The Canada Land Inventory (CLI) provides a rating of soils ability to support agriculture for areas across Canada; in total there are seven CLI soil classes used to rate the agricultural land capability of areas. **Table 4** provides descriptions of the two soil classes present in the Bear Island; the CLI soil classifications on Bear Island and Lands Set Aside are illustrated in **Figure 14**.

Community Input

The community noted that the northern portion of Bear Island is particularly rocky. New construction may be difficult.

Community members identified High Rock as an important cultural feature.





Table 4: Canada Land Inventory: Soil Classifications

Soil Class	Description
Class 4	Soils in this class have severe limitations that restrict the choice of crops, or require special conservation practices and very careful management, or both. The severe limitations seriously affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. These soils are low to medium in productivity for a narrow to wide range of common field crops, but may have higher productivity for a specially adapted crop.
Class 7	Soils in this class have no capability for arable culture or permanent pasture. This class includes marsh, rockland and soil on very steep slopes.

Source: Agriculture and Agri Food Canada, 1998

5.3.1 Potentially Contaminated Sites

As part of the Phase 1 ESA completed for TFN (Dillon Consulting Limited 2015) sites with potentially contaminating activities were identified on Bear Island, see **Figure 15**. The analysis was based on observation of on-site commercial, industrial, institutional buildings and interviews with community members potentially contaminating activities. In addition the grounds of the buildings were screened for visible evidence of potential contamination where taken into consideration, such as:

- Vegetative stress
- Soil discoloration or staining
- Soil disturbance or fill placement.

Community Input

The community expressed concern over potentially contaminated sites on Bear Island.



Table 5 below provides an overview of the potentially contaminating activities on Bear Island based on the Phase I ESA. The Master Land Use Plan will consider the location of potentially contaminated sites when planning for future land use activities on Bear Island.

Table 5: Summary of Potentially Contaminating Activities on Bear Island Based on Phase I ESA (2015)

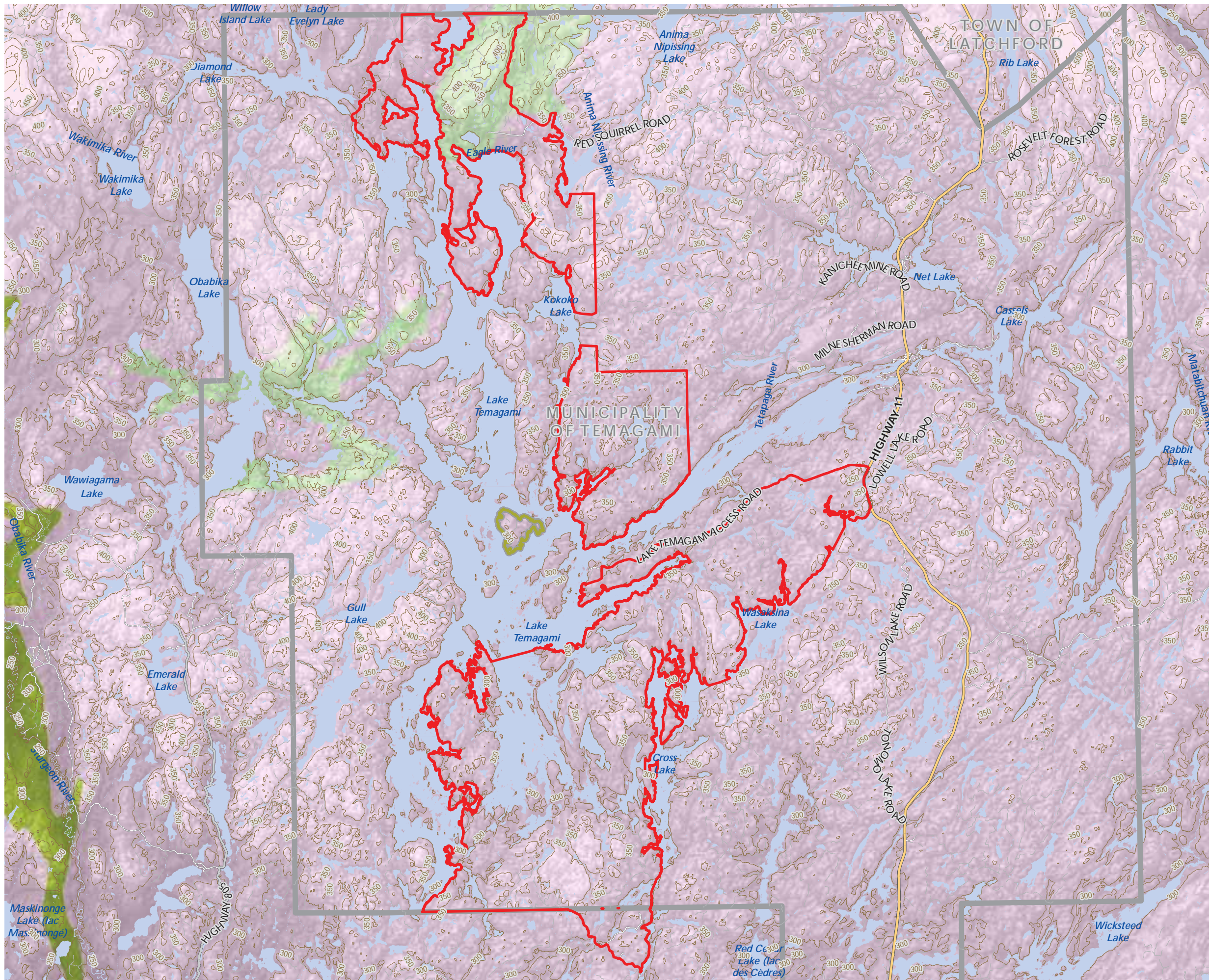
PCA #	Description	Rationale
1	Community Fire Hall	<ul style="list-style-type: none"> Storage of chemicals and an empty above-ground storage tanks (AST) was observed north of the Fire Hall building and halfway between the Fire Hall Building and the lake. Potential for release of contents (e.g., possibly PHCs or paint) to the ground surface resulting in impacts to shallow soils. Potential Contaminants of Concern: PHCs
2	Doreen Potts Health Centre	<ul style="list-style-type: none"> Active furnace oil AST and discarded jerrycan was observed east of the Doreen Potts Health Centre. Potential for release of contents to the ground surface from the release of residual gasoline from the jerrycan, filling AST and/or undocumented leaks or spills from the AST or associated piping resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: PHCs
3	Family Healing and Wellness Centre	<ul style="list-style-type: none"> Large waste compactor was formerly located adjacent to the AST. Potential for release of contents from the waste storage to the ground surface resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: PHCs, Metals, VOCs Two furnace oil ASTs are located outside of the Family Healing and Wellness Centre Building. Potential for release of contents to the ground surface from filling the ASTs and/or undocumented leaks or spills from the ASTs and associated piping resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: PHCs
4	Sonny Moore Recreational Building	<ul style="list-style-type: none"> Gasoline AST was reportedly located adjacent to the Sonny Moore Recreational Building. Potential impacts to soil and/or groundwater around the former location of the AST from residual petroleum hydrocarbons and lead from the former use of the AST. Potential Contaminants of Concern: PHCs, Lead
5	Marina Building	<ul style="list-style-type: none"> Based on the age of the building and flaking paint on the exterior of the building there is a potential for metal impacts to soil from paint. Gasoline AST and other unknown ASTs located around the building. Potential for release of contents to the ground surface from filling the ASTs and/or undocumented leaks or spills from the ASTs and associated piping resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: Metals PHCs, Lead
6	Former Hudson Bay Post	<ul style="list-style-type: none"> The former Hudson Bay Post was reported to have burnt down. Potential for impacts to the soil and/or groundwater from the fire and potential buried material within the footprint of the former building that was burnt in the fire. Potential Contaminants of Concern: Metals, PAH, Dioxins and Furans

PCA #	Description	Rationale
7	Water Treatment Plant	<ul style="list-style-type: none"> One active AST, three former ASTs and documented spill from former Gasoline AST. Potential for release of contents to the ground surface from filling the ASTs, from the documented spill in 2012 and/or from other undocumented leaks or spills from the ASTs and associated piping resulting in impacts to soil, groundwater, sediment and/or surface water. Potential Contaminants of Concern: PHCs, lead
8	Air/Police Boat Garage	<ul style="list-style-type: none"> A rusty-orange stained area on the ground surface near the Air/Police Boat Garage was observed. Potential impacts to the soil at the location of the rusty-orange stained area. Potential Contaminants of Concern: Metals, PHCs, VOC Former storage area for heavy equipment. Potential of historical leaks or spills of fuel or hydraulic oil from the heavy equipment resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: Metals, PHCs, VOC
9	Dock Warehouse	<ul style="list-style-type: none"> One gasoline AST is located to the west of the Dock Warehouse and one large premium gasoline AST is located north of the Dock Warehouse. Potential for release of contents to the ground surface from filling the ASTs and/or undocumented leaks or spills from the ASTs and associated piping resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: PHCs, lead
10	Public Works Garages	<ul style="list-style-type: none"> Vehicle maintenance activities and chemical storage inside buildings. Potential for release through the floor drain or directly to the subsurface from maintenance activities/chemical storage. Potential Contaminants of Concern: Metals, PHCs, VOCs ASTs, jerrycans, car battery storage and reported diesel spill outside buildings. Potential for release of contents to the ground surface from filling the ASTs, undocumented leaks or spills from the ASTs and associated piping and/or from the storage of jerrycans and car batteries and resulting in impacts to soil and/or groundwater. There are also potential impacts to the soil and/or groundwater from the reported spill of diesel fuel. Potential Contaminants of Concern: Metals, PHCs
11	Former Barge Landing Area	<ul style="list-style-type: none"> Two empty ASTs, a discarded jerrycan, an automotive battery and several discarded empty motor oil containers were observed on the ground surface near the former Barge Landing Area. Potential for release of contents to the ground surface from the long term storage of the ASTs, jerrycan, oil containers and automotive battery resulting in impacts to soil and/or groundwater. Potential Contaminants of Concern: Metals, PHCs, VOCs
12	Community Wood Pile	<ul style="list-style-type: none"> Empty drums and/or ASTs were formerly stored at the Community Wood Pile area. Potential impacts to soil and/or groundwater around the former or current location of the ASTs from residual hydrocarbons and lead. Soil fill piles were observed at the Community Wood Pile during the site visit. Potential Contaminants of Concern: Metals, Inorganics, PHCs, PAHs, PCBs, VOCs, leads

PCA #	Description	Rationale
13	Former Landfill	<ul style="list-style-type: none"> Reportedly used between 1971 to 1992 for unregulated disposal of domestic waste and construction and metal debris originating from Bear Island.³ Potential impacts to soil and/or groundwater from previous waste disposal activities and buried waste. Potential Contaminants of Concern: Metals, Inorganics, PHCs, PAHs, PCBs, VOCs
14	Historical Landfills	<ul style="list-style-type: none"> Several former waste disposal areas. Some of the former waste disposal areas were likely used prior to the 1980s for unregulated disposal of domestic waste and construction and metal debris originating from Bear Island. Potential impacts to soil, groundwater, surface water and/or sediment from previous waste disposal activities and buried waste. Potential Contaminants of Concern: Metals, Inorganics, PHCs, PAHs, PCBs, VOCs
15	Garbage Compactor/Scrap Metal Dump	<ul style="list-style-type: none"> The scrap metal dump and garbage compactor area is located in an unpaved area. Potential impacts to soil, groundwater and/or surface from the storage of scrap metal and garbage. Potential Contaminants of Concern: Metals, Inorganics, PHCs, VOCs
16	Waste Transfer Station	<ul style="list-style-type: none"> The Waste Transfer Station was identified as an area where waste, discarded vehicles and hazardous materials were stored. Potential impacts to soil, groundwater, sediment and/or surface water from the storage of waste, vehicles and hazardous materials. Potential Contaminants of Concern: Metals, Inorganics, PHCs, VOCs, PAHs
17	Lot 29 Beach	<ul style="list-style-type: none"> Oil was observed on the beach and on the lake near the shore. The oil was reported to be more apparent with an odour in warmer weather. Potential impacts to soil, groundwater, surface water and/or sediment from a potential oil spill. Potential Contaminants of Concern: Metals, PHCs, VOCs
18	Construction Yard	<ul style="list-style-type: none"> Storage of equipment, fuel containers, and ASTs. Potential for release of contents to the ground surface from filling the AST, and/or undocumented leaks or spills from the AST and associated piping resulting in impacts to soil and/or groundwater. Potential impacts to soil and/or groundwater from the storage and potential spills from jerrycans, oil drums and containers and storage of equipment. Potential impacts to the soil at the oil stained area on the ground surface. Potential Contaminants of Concern: Metals, PHCs, VOCs

³ Three large empty ASTs were observed at the former landfill during the site visit. A geophysics survey and soil sampling program was carried out at the landfill in 1997. The soil analysis was limited to metals and groundwater was not sampled. Soil standards and laboratory procedures have changed since 1997 and the results of the previous investigation may not reflect actual current conditions.

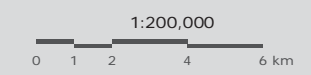
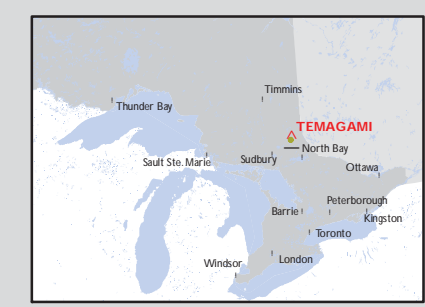
PCA #	Description	Rationale
19	Private Residence	<ul style="list-style-type: none"> Hydraulic oil leaks from a crane located on this lot was observed. Potential impacts to the soil, groundwater, sediment and surface water from the reported spills of hydraulic fluid near the break wall. Potential impacts to the soil and groundwater from the reported spills of hydraulic fluid in other areas, the observed stained areas and the reported placement of hydrocarbon impacted soil within the wood pile. Potential Contaminants of Concern: PHCs, PAH, metals
20	Cemetery	<ul style="list-style-type: none"> It was reported that chemicals were formerly stored in a cellar located in a historical cemetery on the island. Potential impacts to soil, groundwater from potential spills of chemicals stored in the cellar. Potential impacts to groundwater from the potential use of formaldehyde and other chemicals used for burial preparation, and the degradation of coffin materials (e.g., metals, varnishes, sealers). Potential Contaminants of Concern: Metals, Inorganics, PHCs, VOCs
21	Roadways and Adjacent to Doreen Potts Health Centre	<ul style="list-style-type: none"> Aggregates from the Sherman Mine Site has been used throughout the island as part of the road base and adjacent to the Doreen Potts Health Centre as a surface aggregate. Potential impacts to the underlying soils if the aggregates are considered to be acid producing rock. Potential Contaminants of Concern: Metals
22	Boat House	<ul style="list-style-type: none"> Based on the age of the Boat House and flaking paint on the exterior of the building there is a potential for metal impacts (i.e., lead and/or mercury) to sediment and near shore soil from paint. Potential Contaminants of Concern: Metals
23	New Warehouse	<ul style="list-style-type: none"> Reports of buried waste encountered during the construction of the new warehouse. There was also reports of an used oil AST located outside of the building. Potential impacts to soil and/or groundwater from buried waste and the former waste oil AST. Potential Contaminants of Concern: Metals, Inorganics, PHCs, VOCs, PCBs



**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 14
AGRICULTURAL SOILS
AND TOPOGRAPHY**

- Temagami First Nation
 - Land Set Aside
 - Expressway / Highway
 - Arterial Road
 - Local Road
 - Resource / Recreational Road
 - Single Tier Municipality
 - 50 m Elevation Contour
 - Water Body
- Soil CLI**
- 4
 - 5
 - 7



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR




MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N

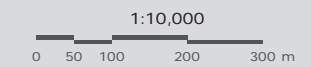
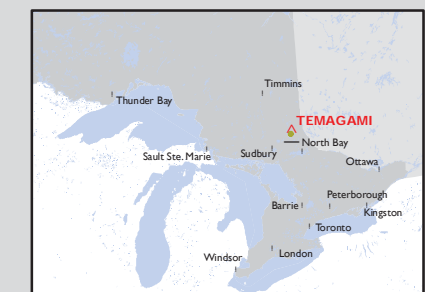


PROJECT: 188369
STATUS: DRAFT
DATE: 2019-04-04

**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 15
POTENTIALLY CONTAMINATED SITES**

-  Area of Potential Environmental Concern
-  Bear Island #1 First Nation
-  Water Body



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 188369
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APEC #	Description
1	Community Fire Hall
2	Doreen Potts Heath Centre
3	Family Healing and Wellness Centre
4	Sonny Moore Recreational Building
5	Marina Building
6	Former Hudson Bay Post
7	Water Treatment Plant
8	Air/Police Boat Garage
9	Dock Warehouse
10	Public Works Garage
11	Former Barge Landing Area
12	Community Wood Pile
13	Former Landfill
14	Historical Landfills
15	Garbage Compactor/Scrap Metal Dump
16	Waste Transfer Station
17	Lot 29 Beach – Reports of oil near beach
18	Construction Yard
19	Private Residence – Hydraulic oil leaks
20	Cemetery
21	Roadways and Adjacent to DPHC
22	Boat House
23	New Warehouse



5.4 Topography

Topography is strongly correlated to bedrock type. Superficial bedrock contributes to the rocky outcrops, hummocky terrain and sediment deposits present throughout the Ecoregion (MNRF, 2018a). Topography elevations for Bear Island and the Lands Set Aside can be reviewed in **Figure 16**.

Topography of Bear Island and within Lands Set Aside consists primarily of moderate rolling hills with lands sloping drastically towards the shoreline of Lake Temagami. In some central areas, Bear Island is relatively flat, resulting in poor drainage (Dillon Consulting Limited, 2015). Elevations range from approximately 300 m along the banks of Lake Temagami to 360 m inland in coniferous forests on Bear Island. In Lands Set Aside, elevations range from approximately 340 m to 400 m inland throughout mixed forest habitats (MNRF, 2018a).

5.5 Vegetation

TFN is located within Ecoregion 4E (between Lake Superior and the Quebec border). The Ecoregion is unique in that it contains transitional areas that contain species representative of the Great Lakes-St. Lawrence Forest Region (south) and the Boreal Forest Region (north) (MNRF, 2018a). While several large cities and towns exist within this Ecoregion, terrestrial areas remain dominated by forest cover (greater than 70%; Crins et al., 2009).

Bear Island and Lands Set Aside fall within the Temagami Forest Management Unit (FMP-1); the most recent Management Plan was developed in part, through collaboration between the MNRF (MNRF), timber producers, and the Temagami Local Citizens Committee (LCC) which included representation from TFN. Approximately 451,511 ha (4515 km²) of productive forest exist within the Temagami Management Unit (MNRF, 2018a); 340,792 ha (3408 km²) of this being eligible for forest management. Lands eligible for harvest management in the Forestry Management Plan are those comprised of mature forest stands near existing motorways and infrastructure, and positioned away from areas buffered by a “no cut reserve” (i.e., water features), as well as water crossings and steep terrain. Harvest eligibility also considered public input, and consultation with First Nation communities and stakeholder groups (MNRF, 2018a).

Community Input

The community identified various sugar bush locations on Bear Island and the Lands Set Aside that should be preserved for future generations.



5.5.1 Forest Composition

The historical composition of forests within FMP-1 were predominantly coniferous, and included Black Spruce (*Picea mariana*), Paper Birch (*Betula papyrifera*), Jack Pine (*Pinus banksiana*), Balsam Fir (*Abies balsamea*), Eastern White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), Eastern White Cedar (*Thuja occidentalis*), and Poplar species (*Populus sp.*) [MNRF, 2018a]. Over the last two centuries, this composition has shifted to include an increased coverage of mixed and deciduous hardwood forests. The shift in forest composition is attributed to past industrial activities (e.g., logging and mining), land settlement, and an influx in pest species (i.e., Spruce Budworm, *Choristoneura fumiferana*) [MNRF, 2018a].

Protected Conservation Areas of representative ‘Old Growth’ forest (Temagami Island Old Growth Stand) are located on Temagami Island North, within close proximity to Bear Island (1.1 km) and Lands Set Aside to the east (0.64 km) and south east (1.1 km). These conservation lands contain stands of Red Pine and White Pine estimated to be between 220 to 230 years old; the age, high quality, and composition of these lands have acquired a classification of Candidate Life Science Area of Natural and Scientific Interest (ANSI) [Schedule B-1, Municipal Official Plan, 2013; MNRF, 2017].

Currently, the EcoRegion consists primarily of mixed forest habitat (32.2%); the composition of these habitats has been mapped previously in studies meant to support planning documents for the Municipality of Temagami (MNRF, 2005) and Forestry Management Plans for the Temagami Forestry Unit (MNRF, 2018a). A review of these background studies and aerial photos (with de-leaved foliage) within **Table 6** provide a summary of the general forest composition and harvest eligibility of Bear Island and for Lands Set Aside.

Table 6: Dominant Forest Cover Composition

	Location	Forest Composition ¹	Harvest Eligibility ²
Bear Island	Bear Island	Immature Forests: Mixedwood dominant with pockets of spruce, fir and cedar. A section of mixed pines is present within northeastern shore of the island	N/A
Lands Set Aside	East-Southeast (Vogt to Strathcona County)	White Pine Mixedwood Forests: Mixedwood dominant with stands of pine, spruce, fir, cedar, and tolerant hardwoods found throughout.	<ul style="list-style-type: none"> • Select mature stands available for harvest within Term 1 (2019 – 2029) and Term 4 (2049 – 2059) • Includes harvesting of Commercial Fuel wood.
	East (Briggs County)	Coniferous Forests: Stands of mixed pines, spruce, fir, and cedar are dominant, but contain areas of tolerant hardwoods, and white pine mixedwoods. Pockets of immature forest are scattered throughout.	<ul style="list-style-type: none"> • Select mature stands available for harvest within Term 1 (2019 – 2029) and Term 4 (2049 – 2059)
	North (Aston County)	Mixed Deciduous Forest: Mixedwood containing intolerant hardwoods and stands of immature trees and mixed pines.	<ul style="list-style-type: none"> • Select mature stands available for harvest within Term 1 (2019 – 2029)

¹ Data collected from mapping completed for the Temagami Integrated Planning – Background Information, Figure 7 – Forest Cover (Ministry of Natural Resources 2005) and Temagami Management Unit 2019-2029 Forest Management Plan – Landscape Classes

² Term = 10 years within the Temagami Forestry Management Plan for FMP-1. (MNRF, 2018)

Fire cycles within mixed forests of Ecoregion 4E range between 70 and 210 years (Crins et al., 2009). Many seasonal climatic factors may influence the prevalence of forest fires; however, cycles are assumed to be less in forests where the composition of coniferous trees increases (Crins et al., 2009). Current forest fire control programs in Ontario further extend natural fire cycles, as they are focused on prevention, early detection, and suppression of wildfires within the FMP-1 (MNRF, 2018a).

Community Input

The community noted that emergency planning needs to be in place in the case of wild fires.



5.6 Wildlife

Wildlife within FMP-1 has been extensively studied in recent Forestry Management Plans (MNRF, 2018a). Areas surrounding the Bear Island and Lands Set Aside provide habitat to a mixture of mammals, birds, herptofauna, and fish. Commonly observed wildlife within the Temagami Area and FMP-1 include (but are not limited to) Moose (*Alces americanus*), Beaver (*Castor canadensis*), American Marten (*Martes americana*), American Black Bear (*Ursus americanus*), Broad-winged Hawk (*Buteo platypterus*), Osprey (*Pandion haliaetus*), Great horned Owl (*Bubo virginianus*), Barred Owl (*Strix varia*), American Black Duck (*Anas rubripes*), Great Blue Heron (*Butorides virescens*), Black-throated Green Warbler (*Setophaga virens*), Eastern Garter Snake (*Thamnophis sirtalis sirtalis*), Spring Peeper (*Pseudacris crucifer*), and Eastern Red-backed Salamander (*Plethodon cinereus*) [Crins et al., 2009; MNRF, 2018a].

Bear Island, Lands Set Aside, and adjacent areas are within Trapline Area TE001 and Temagami Wildlife Management Unit 40 (WMU40); this wildlife management unit is one of the most heavily hunted areas in Ontario. As these practices are considered important recreational activities in the Temagami area, specific wildlife habitats have been mapped within Forestry Management Plans (MNRF, 2018a) as well as in Planning Guidance Documents (MNRF, 2005). These background documents indicate locations of ecologically important areas that support hunting, fishing, and wildlife conservation within Lands Set Aside.

5.6.1 Moose Aquatic Feeding Areas

Several moose aquatic feeding areas have been identified and mapped within Lands Set Aside to the North, East and South East (MNRF, 2018a; **Figure 16**). These marsh habitats are generally found along the shorelines of small inland lakes surrounding Lake Temagami, as well as along connecting watercourses. These areas are defined by the MNRF as Significant Wildlife Habitat (SWH), as they provide moose with abundant food sources (pondweeds, water milfoil, and yellow water lily, etc.) [MNRF, 2000]. In addition, nearby vegetation on land (usually from lowland conifers) provides these feeding areas with shade and hiding cover (MNRF, 2000). These areas are important to Moose during the summer seasons (June – July), as they help moose replenish sodium levels (MNRF, 2000).

5.6.2 Fish Spawning Sites

Several fish spawning areas have been identified along the shorelines of Lands Set Aside to the southeast and north (MNRF, 2005; **Figure 16**). Background studies for the Temagami area report that Lake Temagami is a cold water system (MNRF, 2005 and 2018a). Coldwater species typical of Temagami Forestry Unit include Lake Trout (*Salvelinus namaycush*), Brook Trout (*Salvelinus fontinalis fontinalis*), Lake Whitefish (*Coregonus clupeaformis*), Rainbow Trout (*Oncorhynchus mykiss*), Aurora Trout (*Salvelinus fontinalis timagamiensis*), and Splake (*Salvelinus namaycush x fontinalis*) [MNRF, 2018a]. Representative cool water and warm water fish species found within Lake Temagami and connecting aquatic habitats include Northern Pike (*Esox lucius*), Walleye (*Sander vitreus vitreus*), Smallmouth bass (*Micropterus dolomieu*), Emerald Shiner (*Notropis atherinoides*), Longnose Sucker (*Catostomus catostomus*), Creek Chub (*Semotilus atromaculatus*), Rock Bass (*Ambloplites rupestris*), and Pumpkinseed (*Lepomis gibbosus*) [MNRF, 2018a].

Community Input

Fishing is a popular activity all year around. The community would like to see more fish farms.



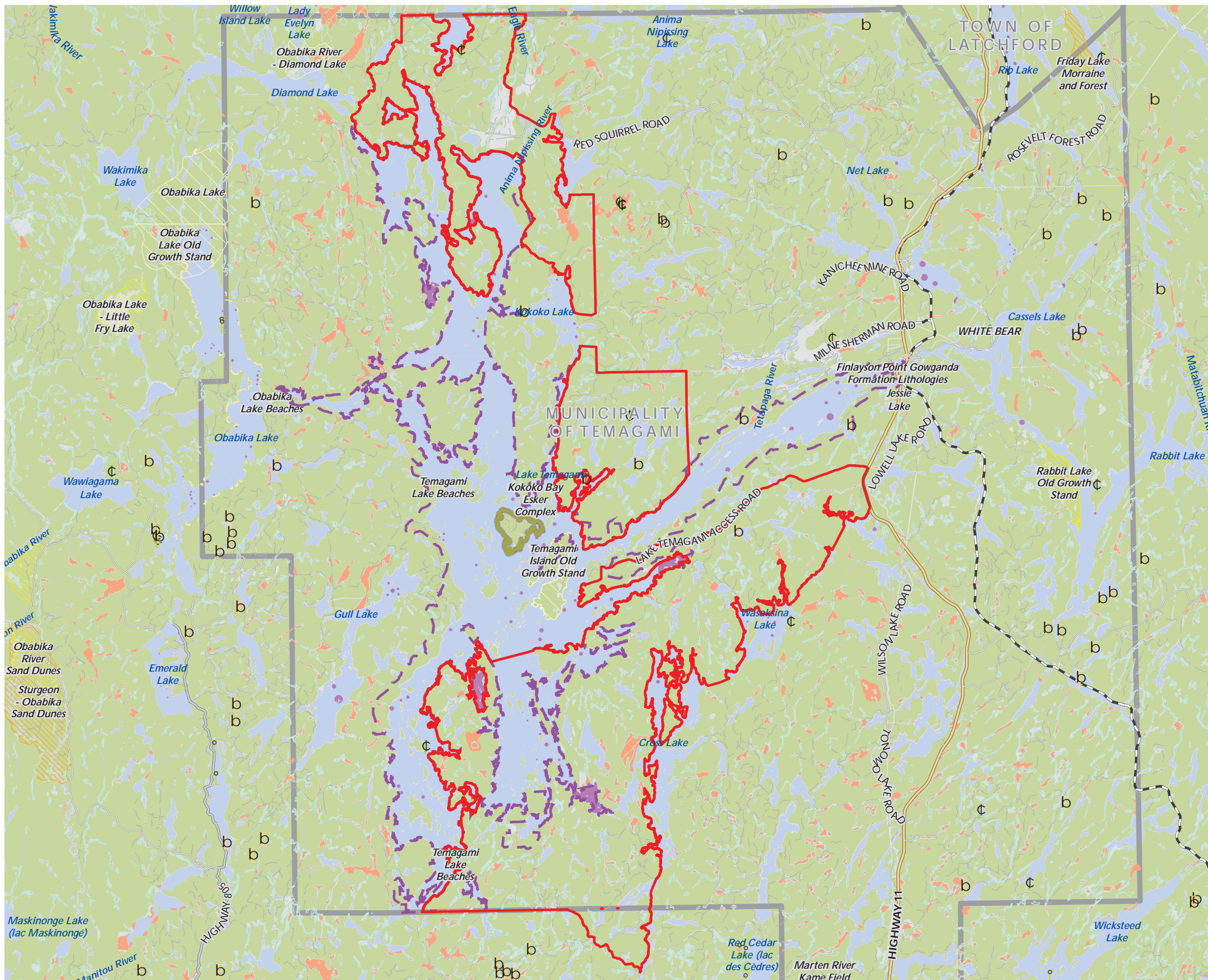
5.6.3 Bird Nesting Sites

Additional wildlife habitats mapped for protection by the Municipality of Temagami Official Plan (Schedule B-1, 2013) and Forestry Management Plan for FMP-1 (MNRF, 2018a) include the locations of observed raptor, heron and waterfowl/gull nests. While no waterfowl nesting grounds have been observed within Bear Island or Lands Set Aside, locations of raptor and heron nests have been previously documented within these areas (MNRF, 2018a; **Figure 16**). Nesting areas for raptors, herons and waterfowl are classified by the MNRF as SWH (MNRF, 2000).

Some raptor species require mature forest stands with complete and contiguous canopy cover for nesting and foraging, whereas others require nesting habitat in mature stands near open bodies of water. Many species show a strong preference to nesting sites and will return year after year (MNRF, 2000).

Similar preferences in nesting site selection are observed in Heron species and other colonial nesting birds; groups of herons return to the same nesting site every year. Colonial nesting birds require large undisturbed areas of wetland and swamp during the nesting season (May to August) to successfully fledge offspring (MNRF, 2000).

Waterfowl require large areas of wetland and swamp for nesting, with dense, tall vegetation (50 cm tall). The dense vegetation and size of these areas are important for breeding activities, as they provide cover from terrestrial predators (raccoons, skunk, and fox)[MNRF, 2000].



**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 16
NATURAL FEATURES**

- b** Raptor Nesting Site
- Waterfowl/Gull Nesting Site
- Heron Nesting Site
- Temagami First Nation
- Land Set Aside
- Lake Temagami Skyline Reserve
- Expressway / Highway
- Arterial Road
- Local Road
- Resource / Recreational Road
- Railway
- Provincially Significant Wetland
- Unevaluated Wetland
- ANSI, Earth Science
- ANSI, Life Science
- Candidate ANSI, Earth Science
- Candidate ANSI, Life Science
- Moose Aquatic Feeding Area
- Fish Spawning Area
- Single Tier Municipality
- Water Body
- Woodland

1:200,000
0 1 2 4 6 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



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5.6.4 Species at Risk

Based on background research, the following Species at Risk (SAR) and Species of Special Conservation Concern (SCC) listed in **Table 7** have been identified with the potential to occur within the lands of the FMP-1 Management Unit (MNRF, 2018a), including the Bear Island and Lands Set Aside.

SAR are defined as those listed as Endangered or Threatened under the *Endangered Species Act, 2007* (ESA). Species of Conservation Concern (SCC) are defined as species listed as Threatened or Endangered under the federal *Species at Risk Act* (SARA) 2002, but not under the provincial ESA; species that are provincially rare/tracked (i.e., have a Sub-national (provincial) Rank of S1 – Critically Imperilled, S2 – Imperilled or S3 – Vulnerable) and/or are designated as Special Concern under the ESA.

Table 7: Species at Risk with the potential to occur within the Temagami Forest Management Unit, Bear Island and Lands Set Aside

Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	Information Source ⁴
Birds					
<i>Haliaeetus leucocephalus</i>	Bald Eagle	---	SC	S2N,S4B	MNRF 2018
<i>Riparia</i>	Bank Swallow	THR	THR	S4B	MNRF 2018
<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B	MNRF SAR in Area
<i>Cardellina canadensis</i>	Canada Warbler	THR	SC	S4B	MNRF 2018
<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	S4B,S4N	MNRF 2018
<i>Chordeiles minor</i>	Common Nighthawk	THR	SC	S4B	MNRF 2018
<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	S4B	MNRF SAR in Area
<i>Antrostomus vociferus</i>	Eastern Whip-poor-will	THR	THR	S4B	MNRF 2018
<i>Contopus virens</i>	Eastern Wood Pewee	SC	SC	S4B	MNRF 2018
<i>Ixobrychus exilis</i>	Least Bittern	THR	THR	S4B	MNRF SAR in Area
<i>Contopus virens</i>	Olive-sided Flycatcher	THR	SC	S4B	MNRF 2018
<i>Falco peregrinus</i>	Peregrine Falcon	SC	SC	S3B	MNRF 2018

Scientific Name	Common Name	SARA Status ¹	ESA Status ²	SRank ³	Information Source ⁴
<i>Hylocichla mustelina</i>	Wood Thrush	THR	SC	S4B	MNRF 2018
Insects					
<i>Danaus plexippus</i>	Monarch	SC	SC	S2N,S4B	OBA
<i>Bombus terricola</i>	Yellow-banded Bumble Bee	SC	SC	S5	MNRF 2018
Fish					
<i>Acipenser fulvescens pop. 3</i>	Lake Sturgeon (Great Lakes - Upper St. Lawrence River population)	---	END	S2	MNRF SAR in Area
<i>Ichthyomyzon fossor</i>	Northern Brook Lamprey (Great Lakes - Upper St. Lawrence populations)	SC	SC	S3	MNRF SAR in Area
<i>Coregonus zenithicus</i>	Shortjaw Cisco	---	THR	S2	MNRF SAR in Area
Mammals					
<i>Myotis (Myotis leibii)</i>	Eastern Small-footed	---	END	S2S3	MNRF SAR in Area
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	MNRF SAR in Area
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	MNRF SAR in Area
<i>Perimyotis subflavus)</i>	Tri-coloured Bat	END	END	S3?	MNRF SAR in Area
<i>Puma concolor</i>	Mountain Lion	---	END	SU	MNRF SAR in Area
Reptiles and Amphibians					
<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3	MNRF SAR in Area, NHIC, OHA, MNRF 2018

¹Species at Risk Act, 2002; ²Endangered Species Act, 2007; ³Provincial Sub-national Rank (S1 – Critically Imperiled, S2 – Imperiled, S3 – Vulnerable, S4 – Apparently Secure, S5 – Secure, N – Non-breeding, B – Breeding, H – Historically known, ? – unknown or uncertain); ⁴Information sources included: NHIC = Natural Heritage Information Centre (MNRF 2018b), OBA = Ontario Butterfly Atlas, OHA = Ontario Reptiles and Amphibians Atlas; MNRF 2018 = MNRF, 2018a.

5.7 Planning Considerations for the Natural Environment

The following highlights some of the planning considerations related to this section, that will be further explored through the land use planning process.

Climate

- Land use planning should consider:
 - Impacts of Climate Change on current and future land uses.
 - Climate change adaptation measures, such as building for anticipated lake water level changes, increased wildfire prevalence, and energy sufficient building design.

Hydrogeography

- Land use planning should consider:
 - Stormwater management practices to help to minimize the impact of polluted runoff flowing into Lake Temagami and nearby water bodies, and reduce the strain that stormwater places on municipal infrastructure.
 - Erosion and sediment control are crucial to avoid runoff or contamination into Lake Temagami and other nearby water bodies.
 - Use of waterbodies by community members will need to be better understood as we consider land uses and policies around them.

Geology and Soils

- Land use planning should consider:
 - Soil composition should be retained to maintain good drainage of lands within Bear Island and Lands Set Aside.
 - Geology and soils of the Lands Set Aside should be further studied to understand their composition and fill gaps in current background documents.
 - Location of potentially contaminated sites when planning for future land use activities on Bear Island

Topography

- Land use planning should protect and enhance the shoreline of the Lake Temagami by introducing appropriate buffers and setbacks established for development from the Lake.

Vegetation

- Land use planning must consider that TFN is predominantly covered by mixed forest. These areas contain vital wildlife habitat and require careful consideration prior to any development or industrial activities.
- Land use planning must consider mixed Forest age and composition must be considered prior to planning and carrying out industrial logging activities.
- Land development must give consideration to plant medicine gathering areas.

Wildlife

- Land use planning must consider shoreline vegetation along Lake Temagami should be protected and enhanced with appropriate buffers and setbacks established for development.
- Land development and industrial activities must be considerate of existing trapping, hunting, and fishing areas which should be preserved and enhanced through any form of development.
- Land use planning must give special considerations when developing adjacent to critical habitat areas located along the borders of the Bear Island and Lands Set Aside.
- Land use planning must consider the SAR identified in the area and that there may be other species not part of the observations noted in **Section 5.6**.
- Land use planning should consider opportunities to introduce signage as a way to educate about protecting SAR habitat on-reserve.



6.0 Traditional Land Use and Archaeology

6.1 Traditional Land Use

This section provides a brief overview of the traditional land uses on TFN, and the broader n'Daki Menan lands, based on information made available in the Temagami First Nation: Traditional Land and Resource Use Study completed in 2016.

The traditional lands and waters of the TFN and TAA include Lake Temagami, Temagami River, Cross Lake, Marten River, Cassels Lake, Net Lake, Rib Lake, Anima Nipissing Lake, Lady Evelyn River, the north east of the Montreal River, Obabika Lake, and all other surrounding lakes, mountains and rivers within the territory that is commonly referred to as n'Daki Menan. **Figure 17** shows the extent of n'Daki Menan, which covers approximately 10,000 km of traditional lands.

Community Input

The community has a highly unique culture that is based on the knowledge and wisdom they have gathered over the years. The community's history and traditional knowledge must be preserved for future generations.

Ceremonial and sacred sites should be protected, such as Maple Mountain and High Point.

A need was expressed to preserve the cemetery. The current site of the cemetery is along the shores of Lake Temagami, which is slowly eroding.



Figure 17: Traditional Land Use

Map currently being prepared.

Draft for Discussion

6.1.1 Hunting and Trapping

A variety of animals and birds are hunted and trapped for use as food and medicine, including moose, deer, partridge, bear and duck, rabbit, beaver and muskrat. **Figure 17** shows where the major hunting and trapping areas are within the TFN traditional lands. On Bear Island itself, moose is a popularly hunted animal. Traditional knowledge related to these animals is also shared among the TFN community, and passed down from generation and generation. For example, knowledge such as how to prepare hunted moose, the medicinal properties of partridge, or the benefits of bear grease for curing certain ailments is shared between family members (Friday et al., 2016).

6.1.2 Fishing

Fishing provides a major part of the traditional TFN diet. Given that the TFN reserve is on an island, it has the benefit of being surrounded by water, allowing for many opportunities to fish for food. As **Figure 17** shows, there are many areas along the coastline of Bear Island where netting and reeling fish are popular practices. Similarly, the Lands Set Aside are also located along bodies of water and include an extensive network of coastlines that provide many opportunities for fishing. Some of the most commonly harvested fish species on the TFN traditional lands include pickerel, trout, whitefish, pike and bass. Similarly to hunting and trapping, many of the traditions, techniques and knowledge around harvesting fish is passed down from elders.

6.1.3 Gathering of Medicinal Plants

There is a wide array of medicinal plants found throughout the Temagami traditional territory. These plants are harvested for their healing properties, and the gathering and use of medicinal plants is intrinsically connected with TFN spiritual practices and traditional beliefs. Some of the most commonly gathered plants for medicine are cedar, cherry trees (e.g., pincherry, cherry bushes, cherry bark, and chokecherry), berry leaves, willow, poplar, tamarack, maple trees, yarrow and Labrador tea, and birch and pine.

Community Input

The community harvests nature's food. Community members regularly hunt, trap, and fish. The community enjoys the community garden and would like to see a store house/root house for food.

The community practices the growing of traditional medicines. Medicine walks were suggested as an activity that can be shared among generations as well as visitors.

Youth should be provided with lots of opportunities to participate in the above noted activities. Home, family connections and a healthy view of themselves should be nurtured.



6.1.4 Gathering of Food and Firewood

In addition to the important plants that are gathered for their medicinal use, many plants are also gathered as food. Berry plants in particular are a commonly harvested food, including blueberries, cranberries, raspberries and strawberries. As **Figure 17** shows, a large portion of Bear Island, particularly in the South, is identified as land used for berry harvesting. Other harvested food plants include cherries, apples, wild carrots and maple syrup.

Harvesting firewood is another important resource and traditional land use important to TFN. The availability of firewood in an area is a critical to selecting a habitation site, as firewood is essential for creating fire, providing warmth and to build cabins. Different tree varieties provide can be used in the construction of different objects including tools, boats, paddles, sleighs and snowshoes. Some wood varieties also serve spiritual and ceremonial uses, such as cedar bark. As **Figure 17** shows, there are two prominent areas for firewood on the TFN reserve, in the north and south of the island respectively.

6.1.5 Travel

Historically, TFN has used a variety of transportation modes to travel throughout the traditional territory during their lifetimes. And more traditional modes of travel, such as walking, snowshoeing and paddling provide the community with better knowledge of the land and a deeper connection to its resources. Travel is an important land use that has significance for the community. Protecting traditional trails and routes is a way to protect TFN/TAA and Bear Island and resources and to preserve the community's opportunities to continue their deep connection to their land.

Community Input

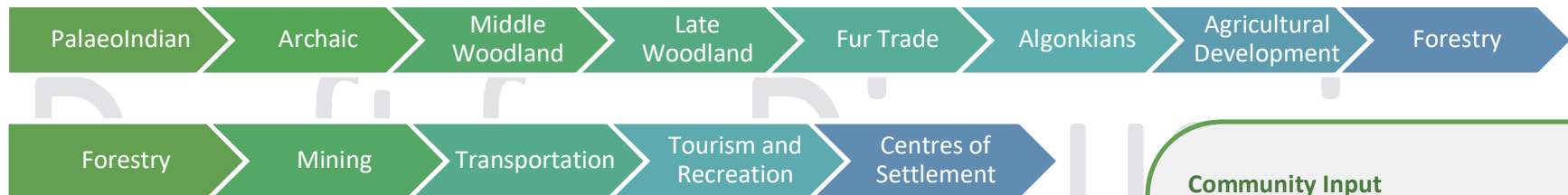
The community would like to see travel and exploring happening all over the land, not just Bear Island.



6.2 Archaeology

The Temagami area, much like the lands of Northern Ontario, was formed by great glacial movements that resulted in the lakes, bed-rock, forests and hilly terrain that now define the area. Anthropologists believe that Bear Island was likely one of the first places that humans (the ancestors of TAA) inhabited in the Temagami area. This is based on the fact that Tower Hill is one of the highest points of land on Temagami Lake, which offered a lookout location (Northwaters and Langskib, 2018). The tower itself was damaged during a tornado in the 1960s. Remnants of the tower still exist until this day.

The Temagami region has progressed through the following periods, in chronological order:



First Nations people are believed to have first settled in the area in the Archaic Period (from 5000 B.C. to 400 B.C). Archaeological research and excavations in the Temagami area have found evidence of early habitation at well-used portages, including evidence of several temporary Indian camps. There have also been discoveries from the Archaic Period which include blades, knives, stone axes, and slate choppers (Archaeological Services Inc. et. al, 1990).

On Bear Island, artifacts found in this area date back to the 15th century include arrowheads, pot shards and tools. There is evidence that people from the Southwest Arm of Lake Temagami came up to Bear Island and buried their dead on the east side of the island. They did not leave any grave markers, but instead dug pits in the ground and cut down trees for the burial area. Many of these gravesites exist on Bear Island today, while others remain to be discovered.

Community Input

St. Ursula's Church on Bear Island is designated as a heritage building. The church was built through donations and volunteerism. The community would like to see it maintained and restored.

Temagami culture should be preserved and protected through education (e.g., museum).



6.3 Planning Considerations for Traditional Land Use and Archaeology

The following highlights some of the planning considerations related to this section, that will be further explored through the land use planning process.

Traditional Land Use

- Land use planning must protect areas where traditional land uses have been identified and is being practiced including hunting areas, berry gathering sites, areas of firewood, etc.
- Planning should use appropriate buffers and setbacks established for development to protect traditional areas and land uses.
- Land use planning should explore the possibility of teaching opportunities that may be leveraged to promote protection.
- Land use planning must protect traditional trails and routes, which provide opportunities for traditional modes of travel within the Bear Island. This gives the community the opportunity to engage and connect with their land and resources.

Archaeology

- Land use planning must consider that there is a high potential for undocumented archaeological sites on Bear Island. These sites must be protected and managed responsibly by the community and developers. Documented and undocumented archaeology sites are protected under the *Heritage Protection Act*.
- Land use planning should identify sites to be preserved and avoided as part of land use planning exercise. Archaeological sites should be protected for future generations through appropriate development setbacks, buffer zones, and policies determined to preserve these valuable cultural resources.



7.0 Built Environment and Existing Services

Existing land uses on-reserve include residential, commercial, and community uses. Other land uses include closed waste sites, and agricultural lands. **Table 8** provides an overview of the existing buildings located on-reserve.

Table 8: Existing Buildings Located on Bear Island

Temporary Band Office (Lot #58)	Tillie Missabi Family Centre (Lot # 39)	Teachers Residence (Lot #106-2)
Community Fire Hall (Lot #8-2)	Police Station/Library Building (Lot # 39)	Teacherage #3
Fire Station Shed (Lot #8-2)	Air/Police Boat Garage (Lot #20)	Water Treatment Plant (Lot # 14)
Heavy Equipment Division Building (Lot #8-1)	Cold Storage Garage (Lot #8-1)	Sonny Moore Recreational Building (Lot #59)
Laura Mckenzie Learning Centre (Lot #60)	Dock Warehouse (Lot #19)	Northstar Building (Lot #12-6)
School Storage Shed (Lot #60)	Waste Treatment Plant Warehouse (Lot #14)	Roman Catholic Church (Lot #37-1)
Doreen Potts Health Centre (Lots #40 and 41)	Waste Transfer Station (No Lot Number)	TFN Warehouse (Lot #20)
Family Healing and Wellness Centre (Lot #34-2))	Public Works Garage (Lot #8-1)	Store Complex (Lot #12-7)
Portable Classroom (Lot #60)	New Warehouse (Lot #20)	Yurt (No Lot Number)

Figure 18 shows the existing land use on Bear Island based on the existing land use plan from 2011 and **Figure 19** shows the existing land use and facilities.

As illustrated in **Figure 18**, the majority of land uses and development on Bear Island has occurred along the shoreline of Bear Island. The largest area of development is in the south of the Island, where the majority of community services are concentrated, including the Band Office and Police Station. The commercial, institutional and the majority of residential uses are also located in this southern portion of the island. This largely due to the heavily wooded areas in central portion of Bear Island, as well the steep topography that have made other parts of the island less ideal for development.

The land uses on Bear Island include:

- Infrastructure/Public Works
- Wooded Area
- Cemetery
- Residential
- Institutional
- Commercial
- Recreational

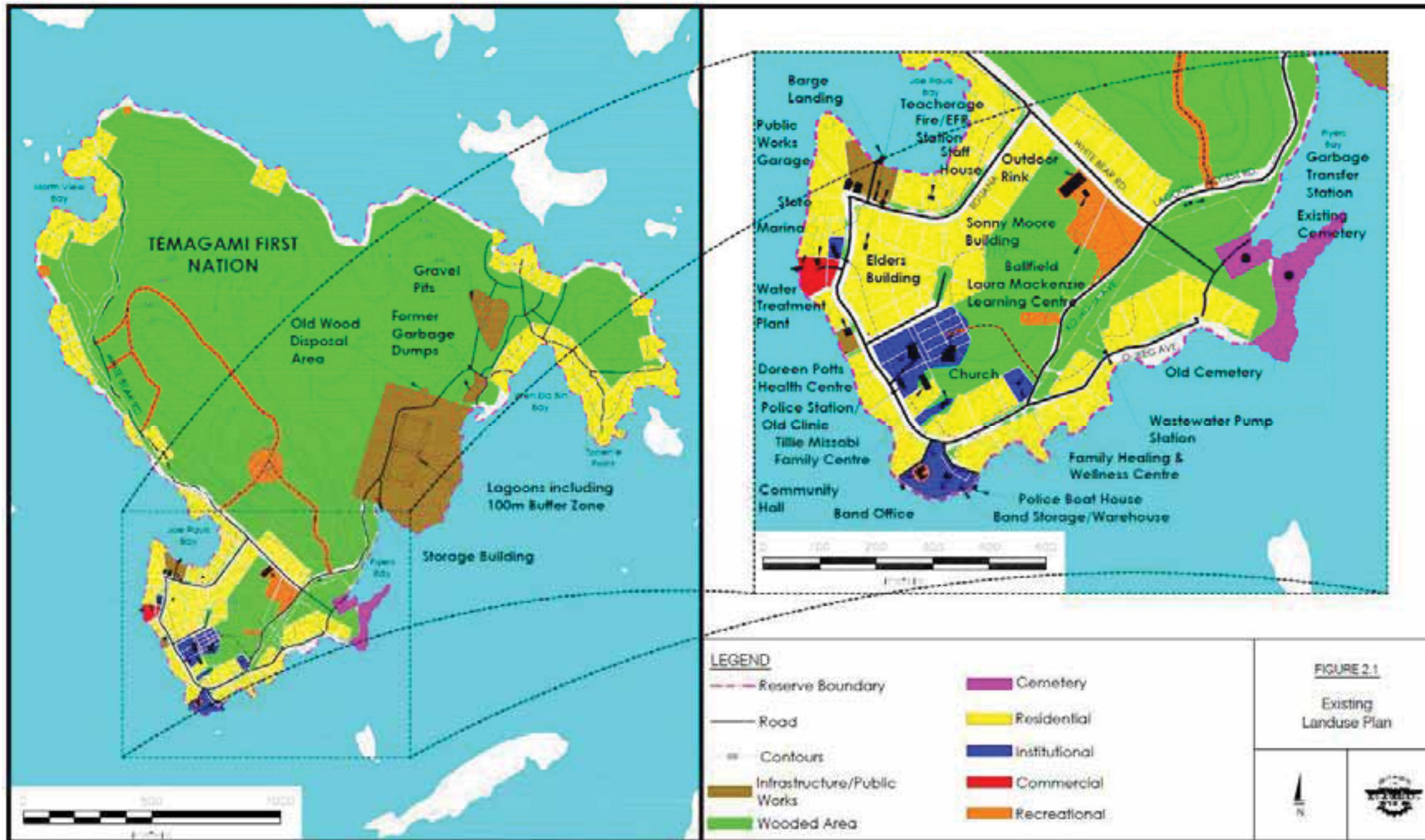
Community Input

The community would like to create economic opportunities through development of new community site (e.g., Shiningwood Bay and Diamond Lake), tourism, and resource extraction.

Any new development should be compatible with the built and natural environment (e.g., reduce light pollution).



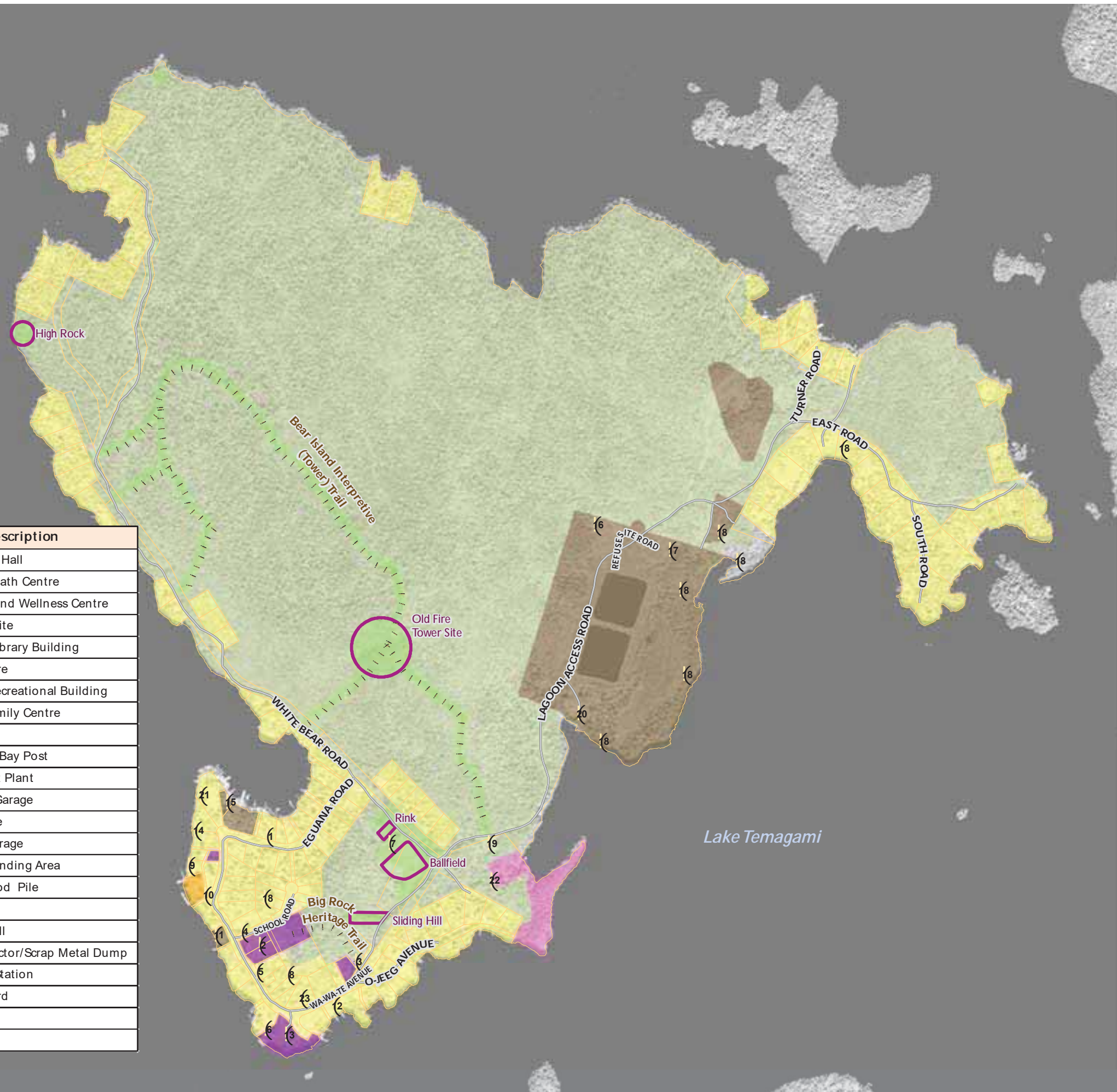
Figure 18: Existing Land Use Plan 2011



**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 19
EXISTING LAND USE AND FACILITIES**

ID	Description
1	Community Fire Hall
2	Doreen Potts Heath Centre
3	Family Healing and Wellness Centre
4	Former School Site
5	Police Station/Library Building
6	Recreation Centre
7	Sonny Moore Recreational Building
8	Tillie Missabi Family Centre
9	Marina Building
10	Former Hudson Bay Post
11	Water Treatment Plant
12	Air/Police Boat Garage
13	Dock Warehouse
14	Public Works Garage
15	Former Barge Landing Area
16	Community Wood Pile
17	Former Landfill
18	Historical Landfill
19	Garbage Compactor/Scrap Metal Dump
20	Waste Transfer Station
21	Construction Yard
22	Cemetery
23	New Warehouse



- (Place of Interest
 - ! ! ! Trail
 - Recreation Area
 - Parcel Boundary
- Existing Land Use**
- Cemetery
 - Commercial
 - Infrastructure/Public Works
 - Institutional
 - Recreational
 - Residential
 - Wooded Area



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: GM / LK
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 188369
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7.1 Community Services

TFN provides various community-related services on Bear Island. **Table 9** provides an overview of the existing services on-reserve:

Table 9: Existing Community Services Located on Bear Island

Community Services provided on Bear Island

Administration Services	<ul style="list-style-type: none"> • Administration Building (Band Office) • Administration • Communications • Infrastructure • Lands and Resources <ul style="list-style-type: none"> ○ Energy ○ Fish and Wildlife ○ Forestry ○ Land Code ○ Mining ○ Monitoring ○ Water ○ Membership • Housing • Human Resources • Stewardship & Summer Camp Bursaries • Finance • Economic Development 	Community Services	<ul style="list-style-type: none"> • Public Library • Community Hall • Recreation • Elders Facility • Fire Department
		Health Services	<ul style="list-style-type: none"> • Doreen Potts Health Centre
		Education and Child Care Services	<ul style="list-style-type: none"> • Laura McKenzie Learning Centre • Bear Island Education Authority • Tillie Missabie Family Centre – Daycare Services
		Commercial Services	<ul style="list-style-type: none"> • Aboriginal Affairs Consulting • Arts (independent musicians, artisans, painters) • Graphic Design • Fashion Design • Food Production (Maple Syrup and Wild Rice) • Massage Therapy • Tourism (Eco Tourism, Lodging, Tour Companies)

7.1.1 Administration Services

The Administration Building houses various Band departments, including Communications, Infrastructure, Lands and Resources, Housing, Human Resources, Stewardship and Summer Camp Bursaries, Finance, and Economic Development. The Band Administration employs approximately 61 staff. The administrative role of these staff members include:

- Executive Director
- Executive Assistant
- Communications Officer
- Infrastructure Manager
- Housing Coordinator
- Human Resources Stewardship Program and Summer Camp Bursaries Coordinator
- Finance Manager
- Payroll/Finance Clerk
- Enrichment/Finance Clerk
- Shuttle/Ferry Operator

TFN is currently constructing a Multi-Use Facility and Business Centre. The facility will include a community centre, job training facility and business centre, with adequate office space to accommodate current administrative/governance staff and any additional future anticipated staff, improving human resource efficiency with less crowded office space. It will incorporate a new Community Hall, which will accommodate community functions with capacity of up to 300 participants. The new Community Hall will be a large meeting space that will be rented out to other organizations (Temagami First Nation Community Profile, 2019).

7.1.2 Community Services

There are a variety of community buildings on Bear Island, which include the following:

- The Public Library offers various services, including a computer lap, children’s educational; resources, resume writing assistance, and special documentary night for children.
- The site of the newly constructed Multi-Use Facility used to feature a Recreation Centre. The Recreation Centre was a single story log building that operated as a community hall for various functions. A medical helipad is located at the shoreline directly beside the site, for emergency response purposes (Temagami First Nation Community Profile, 2019).
- The existing recreational facilities on Bear Island include a baseball diamond, seasonal ice rink, a sliding hill and hiking trails. These are located next to the Sonny Moore building, which is used to prepare for baseball games, pow wows and winter staking activities.
- The current Elders Facility (Northstar Building) is a gathering place rather than a residence (CPS, 2011). It hosts a variety of elder’s recreation activities.
- The Store Complex is a community owned building that is leased to a privately-owned confectionary business run by a TFN community member. It houses a post office (Temagami First Nation Community Profile, 2019).
- The Fire Department is run by community member volunteers. Available equipment includes a fire truck, various house, hydrants and other equipment.

Community Input

The community would like to promote art, music and cultural events using the 7 Grandfather Teachings on Bear Island and the Set Aside Lands.



7.1.3 Health Services

The Doreen Potts Health Centre is located on Bear Island and opened in 1996. The Centre provides health care services to community members, including the following programs:

- Non-Insured Health Benefits
- Native Child Welfare Prevention;
- Medical Transportation (On-Reserve)
- Diabetes Prevention;
- Healthy Babies – Healthy Children; and,
- Elders, Disabled and Youth.



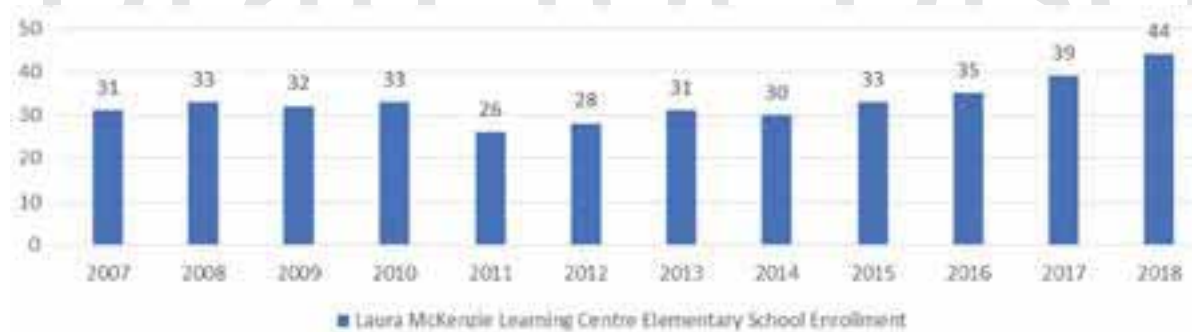
The Doreen Potts Health Centre also has a Community Health Nurse, Community Health Representative, Drug and Alcohol Worker, and a Health Promotions and Safety Worker on staff to provide assistance to community members.

7.1.4 Education and Child Care Services

The Tillie Missabie Family Centre is located on Bear Island, which operates an on-reserve licensed daycare and Aboriginal Head Start program to prepare young children for school. The centre’s programs are focused on education, health and nutrition, indigenous culture and language, parental and family involvement and social support.

TFN has an on-reserve school for elementary and junior high school students within the community, called Laura McKenzie Learning Centre. It offers a full curriculum from Junior Kindergarten to Grade 8. In addition to the core curriculum, the school offers traditional language as a subject course, and cultural activities and traditional teachings. The school also offers special education for students with learning difficulties. In 2018, the student body was approximately 44 (Ontario 211, 2017b). **Figure 20** provides an overview of student enrollment between 2007 and 2018.

Figure 20: Laura McKenzie Learning Centre Elementary School Enrollment



Source: Temagami First Nation Community Profile, 2019

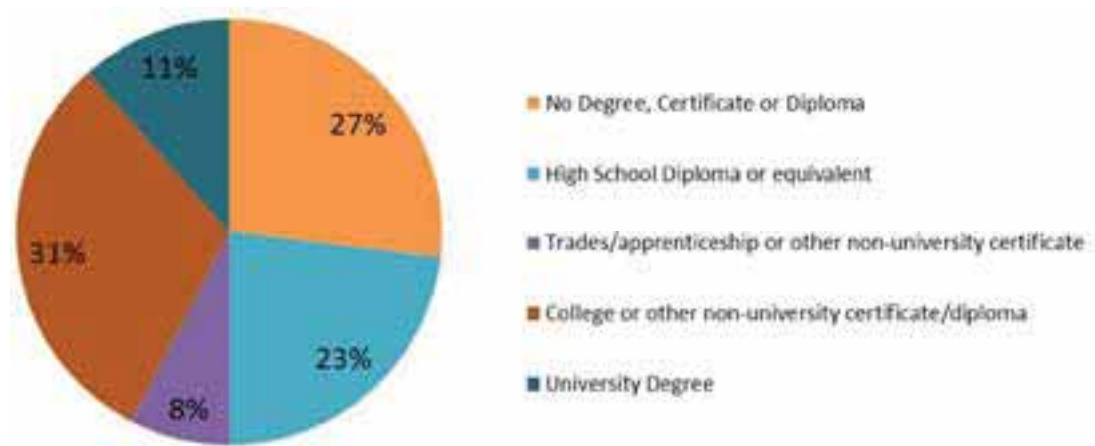
TFN youth attend school outside the community, with most travelling to New Liskeard to attend Temiskaming District Secondary School.



The Bear Island Education Authority provides educational services and support to students, such as funding tuitions, assisting in obtaining suitable living arrangements, counselling and guidance in choosing post-secondary education and covering transportation costs for students attending Temiskaming District Secondary School in New Liskeard.

Based on 2016 Census data, 23% of on-reserve members and 27% of Ontarians had a high school diploma as their highest level of education. **Figure 21** provides an overview of education levels on-reserve (Statistics Canada, 2016).

Figure 21: Level of Education On-Reserve, 2016 Census Data



Discussion

Source: 25% Sample - 2016 Census Data

7.2 Commercial Services

The Economic Development division of the Bear Island and Resources Department aims to promote businesses that are owned and operated by members of the community. Some of the existing commercial businesses include the following:

- Aboriginal Affairs Consulting
- Arts* (e.g., independent musicians, artisans, painters)
- Contractors/Construction*
- General Store*
- Graphic Design Fashion Design
- Food Production* (e.g., Maple Syrup, Wild Rice)
- Massage Therapy
- Tourism* (e.g., Eco Tourism, Lodging, Tour Companies)

** Business is located on Bear Island*

In 2014, TFN received funding from the federal government to build the Multi-Use Facility on the shores of Lake Temagami. The building is currently in the early phase of construction and will comprise 2,322+ m² on the community's waterfront area. The project will spur economic development, commercial opportunities, and serve as a hub for new community businesses, and as a community centre (Bodrug, 2014). The facility will also use renewable energy including solar power and geothermal heating.

7.3 Housing (Residential)

In 2011, there were 94 homes on TFN for the 246 people living on-reserve (CPS, 2011). This is an average of 2.6 people per home, which is comparable to the Municipality of Temagami (2.3 persons/home), Ontario (2.7 persons/home) and Canada (2.6 persons/home) average, respectively (CPS, 2011).

Since 2011 there was a slight increase in on-reserve housing. Based on the Community Infrastructure and Housing Annual Report (2018) there are 110 housing units on Bear Island. At the same time, the registered population on-reserve increased from 246 to 273 between 2011 and 2017 (TFN's demographic profile is further discussed in **Section 3**).

Table 10 below provides an overview of the housing characteristics on Bear Island.

Table 10: Summary of Housing Characteristics on Bear Island

Housing Units Without	
Electrification	6
Solid Waste Service	8
Road Access	2
Housing Units With Solid Waste Services	
Recycling	110
First Nation Municipal Service Agreements	0
Solid Waste Transfer Stations	110
Water Servicing (Source and Delivery)	
Surface	110
Community System	74
Individual System	36
Sewage Servicing (Collection)	
Treatment Facility	74
Ground	36

Source: Community Infrastructure and Housing Annual Report (2018)

7.4 Agricultural Uses

Approximately 90% of Bear Island is bedrock with very limited soil cover. And the soils that do exist are mostly permeable sands, see **Section 5.3**. The conditions on Bear Island are therefore not favourable for agriculture; however, TFN does offer some agriculture uses and services. Bear Island and the Lake Temagami area have a small maple syrup and wild rice industry. This is evidenced through the small TFN owned businesses



that harvest and produce these goods for retail. The Lands Set Aside, have a similar topography to Bear Island, defined by bedrock and sloppy terrain and therefore face similar challenges with agricultural uses.

7.5 Existing Land Uses for the Lands Set Aside under the Temagami Official Plan

TFN is part of the Teme-Augama Anishnabai community who have been stewards of the Temagami area for thousands of years. In addition to Bear Island, the Lands Set Aside are therefore an important geographical area for the community. As mentioned in **Section 2.1.2**, the Lands Set Aside equal 38,633 ha (386 km²) of land. The majority of the Lands Set Aside, approximately 37,760 ha (377 km²), fall within the boundaries of the Municipality of Temagami.

The Temagami Municipal Official Plan (2011) includes seven land use designations, which include the following: Integrated Management Area; Special Management Area; Protected Area; Future Development Area; Industrial; Mineral Aggregate; and, Tourism Commercial. The Lands Set Aside are designated under the Temagami Municipal Official Plan (2011), see **Figure 22**.

Approximately 96% of land in the Municipality of Temagami is Crown land. The Crown land is managed by the Province of Ontario and under the administration of the Ministry of Natural Resources and Forestry (Municipality of Temagami, 2011). The Crown land includes three land use designations: Integrated Management Area, Special Management Area, and Protected Area. The municipality's Crown land designations are consistent with those used by the Ministry of Natural Resources and Forestry.

The land uses for the Lands Set Aside under the Temagami Municipal Official Plan (2011) include:

- **Tourism Commercial** - The Tourist Commercial land use designation recognises existing commercial recreational and tourist facilities that serve lake residents and visitors. The Official Plan distinguishes between a Tourism Commercial (TC) and Tourism Commercial Youth Camp (TCYC) zone.


Community Input

The community recognizes that Bear Island has limited capacity to accommodate more housing and economic development.

Overall, community members are supportive of mainland development.

The Lands Set Aside provide economic development opportunities (e.g., hunting, fishing, forestry, aggregates).



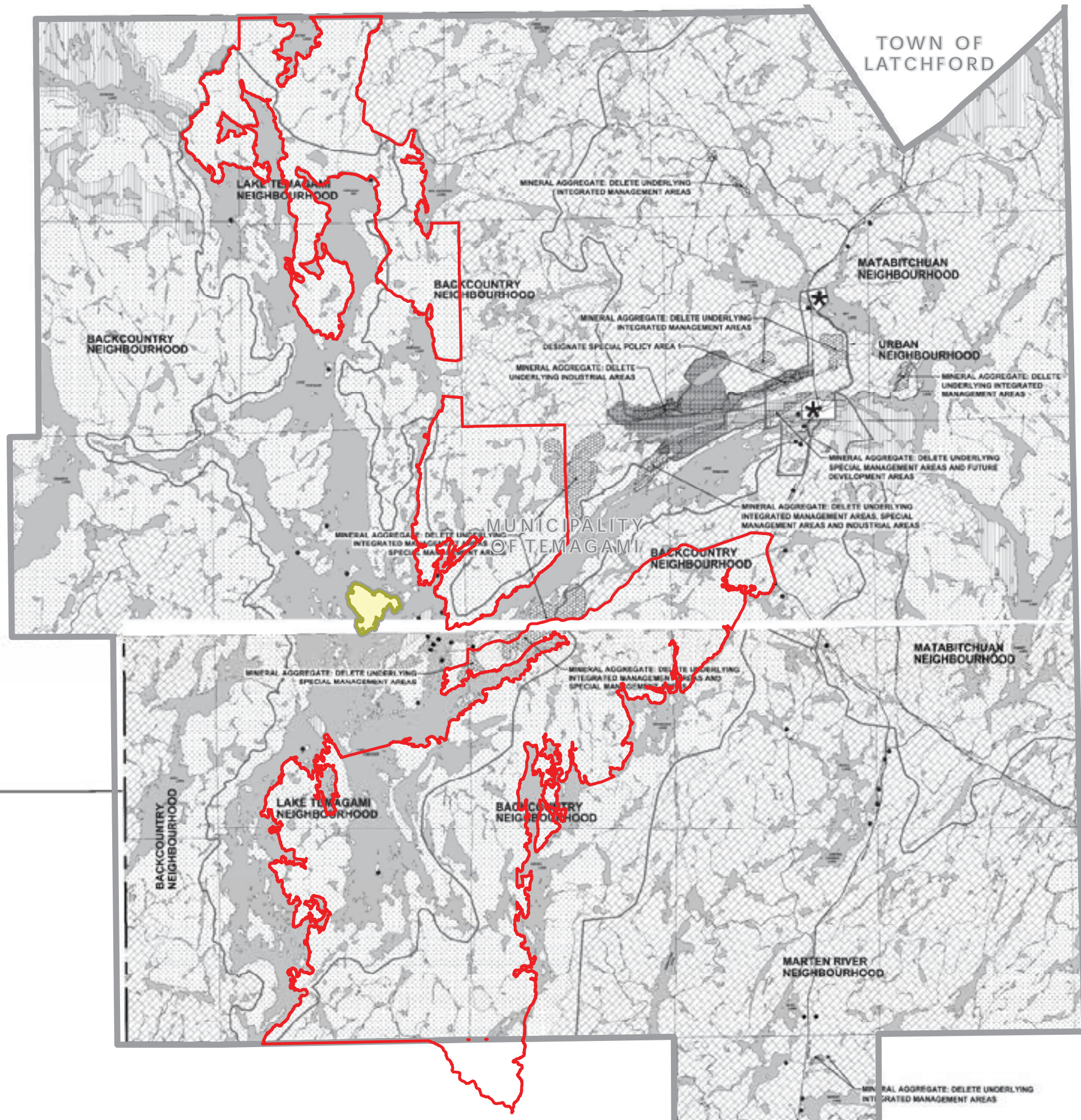
- 
- **Mineral Aggregate** - The Mineral Aggregate land use designation recognises existing mineral aggregate extraction operations and areas identified as having potential aggregate resources. Uses permitted in the Mineral Aggregate land use designation include aggregate extraction, crushing, stockpiling, concrete batching plants and asphalt plants.
 - **Special Management Area** - The Special Management Area land use designation recognises Crown land with significant resource values and features and/or the need to control access or to manage resources according to a special land use prescription set out in the Ministry of Natural Resources Temagami Land Use Plan.

In addition to the land uses listed above, the Lands Set Aside are surrounded by the following Temagami Municipal Official Plan (2011) land use designations:

- **Integrated Management Area** - Lands that are designated as Integrated Management Area recognise those Crown land areas where resource management activities and recreational uses may be integrated. To achieve this, resource extraction activities must be carefully managed to ensure compatibility with the significant uses and values. Lands designated as Integrated Management Area may be redesignated depending on their location.
- **Protected Area** - The Protected Area land use designation includes Crown land with representative 'old growth' red and white pine sites, some watersheds containing the headwaters of rivers flowing through the wilderness park, significant wetlands, provincially significant ecological and geological features and significant recreation areas and applies to a portion of Temagami Island.

In addition, the Temagami Municipal Official Plan (2011) uses the following land use Designations, but not in close proximity to the area of the Lands Set Aside:

- **Industrial** - The Industrial land uses designation recognises existing and future industrial areas in the Municipality. Permitted uses within the Industrial land use designation include a full range of non-hazardous and non-obnoxious resource and non-resource related industries including manufacturing, the processing of goods, warehousing and the servicing and storage of goods, materials and equipment.
- **Future Development** - Lands that are designated for Future Development may require a certain level of access to municipal services, maximum road grades and depth of soil overburden. Therefore, not all of the land designated for future development may necessarily be suitable for certain types of development. Detailed studies are required to determine the extent of development that may occur on the site.

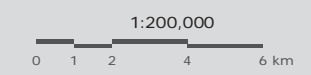
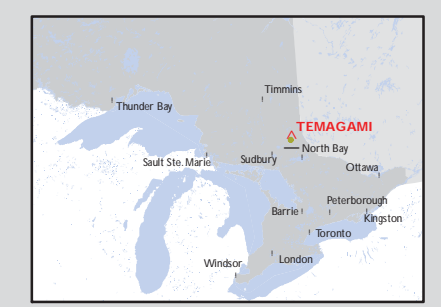


- INTEGRATED MANAGEMENT AREAS
- SPECIAL MANAGEMENT AREAS
- PROTECTED AREAS
- FUTURE DEVELOPMENT AREA
- INDUSTRIAL
- MINERAL AGGREGATE
- TOURIST COMMERCIAL
- NEIGHBOURHOOD BOUNDARY
- RAILWAY
- REFER TO SCHEDULES A-3 AND A-4

**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 22
EXISTING LAND USE DESIGNATIONS
FOR THE LANDS SET ASIDE**

- Land Set Aside
- Bear Island #1 First Nation
- Single Tier Municipality



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 188369
STATUS: DRAFT
DATE: 2019-04-04

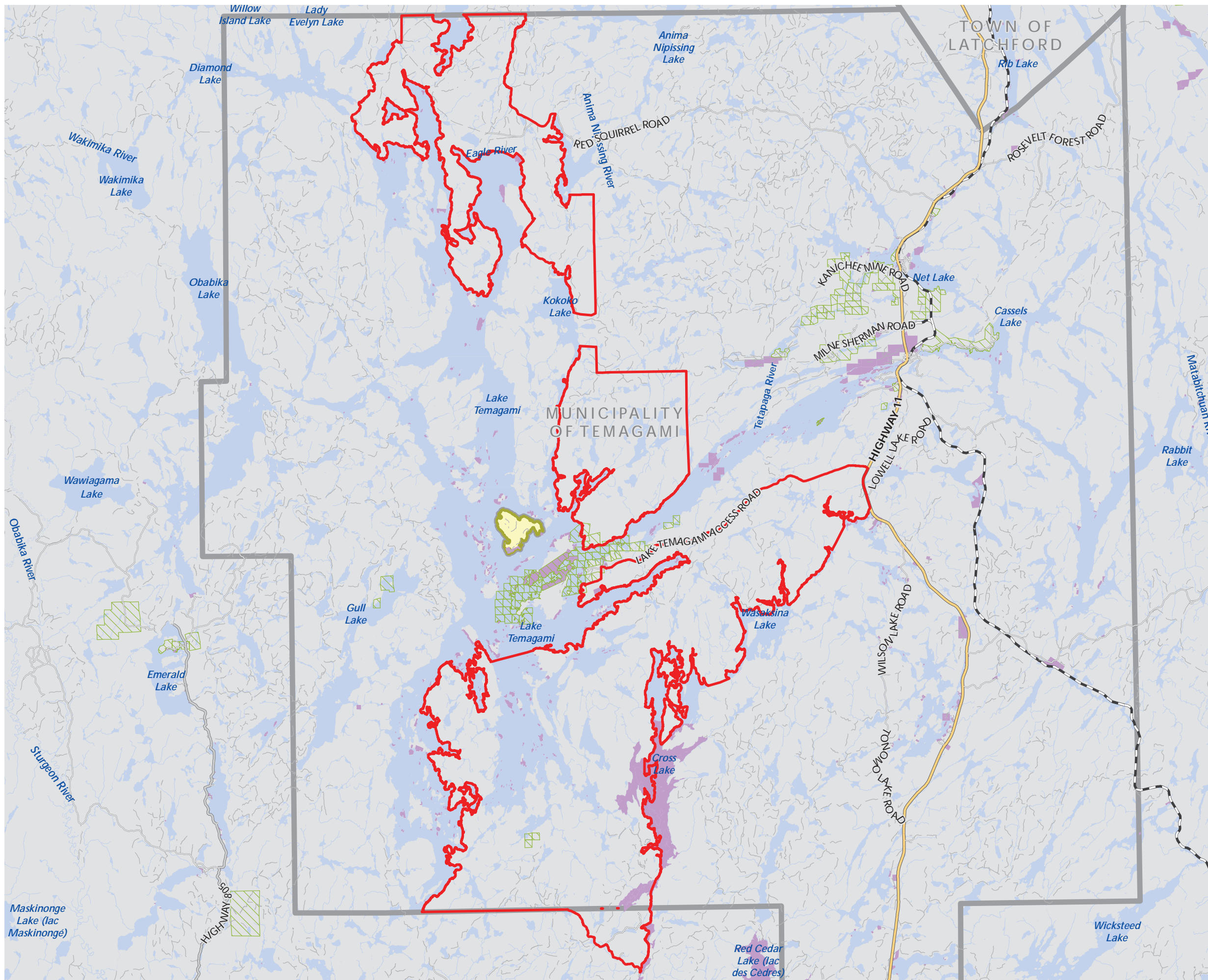
7.6 Resource Extraction in the Lands Set Aside

The purpose of the *Mining Act, 1990* is to encourage prospecting, staking and exploration for the development of mineral resources in a manner consistent with the recognition and affirmation of existing Aboriginal and treaty rights, including the duty to consult, and to minimize the impact of such activities on public health, safety and the environment. The Act allows the Ministry of Northern Development and Mines to govern all public land used for mining purposes and that of the mining industry. It also dictates where mining claims can and cannot be staked or recorded.

Mining uses and activities can be granted through **mining claims, mining leases or licences of occupation** for mining purposes. A mining claim grants its owner the exclusive rights to explore for minerals on a designated piece of land, but does not grant any right to the extraction or sale of any resources removed from that land. A claim can be converted into a mining lease, which grants its owner title and ownership to the land, therefore allowing for the extraction and sale of mineral resources found on that land.

The Figure below (**Figure 23**) shows the active mining claims that are currently staked within the on and around the Lands Set Aside. Although the majority of the claims in the area are outside of boundaries of the TFN reserve and the Lands Set Aside, there are some claims within the peripheries of the Lands Set Aside.

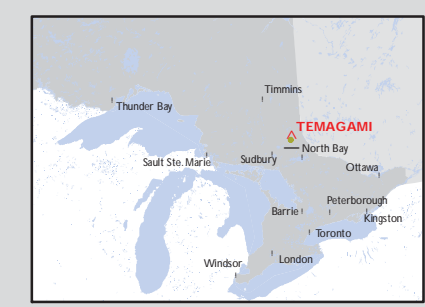
TFN and the Lands Set Aside are covered by mining alienations, as depicted in **Figure 24**. An alienated mining claim is an area of Crown land that has been withdrawn from any further staking by Provincial authorities. Reasons for alienation include designation of a given area for conservation purposes, identification of an area as falling under a prescribed burn area under provincial fire management activities, or areas where staking activities are thought to be contentious. This severely limits the ability of TFN from exploring resources extraction on its reserve and set aside lands.



**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 23
MINING LAND TENURE**

- Land Set Aside
- Expressway / Highway
- Arterial Road
- Local Road
- Resource / Recreational Road
- Railway
- Mining Land Tenure
- Non-Mining Land Tenure
- Temagami First Nation
- Single Tier Municipality
- Water Body



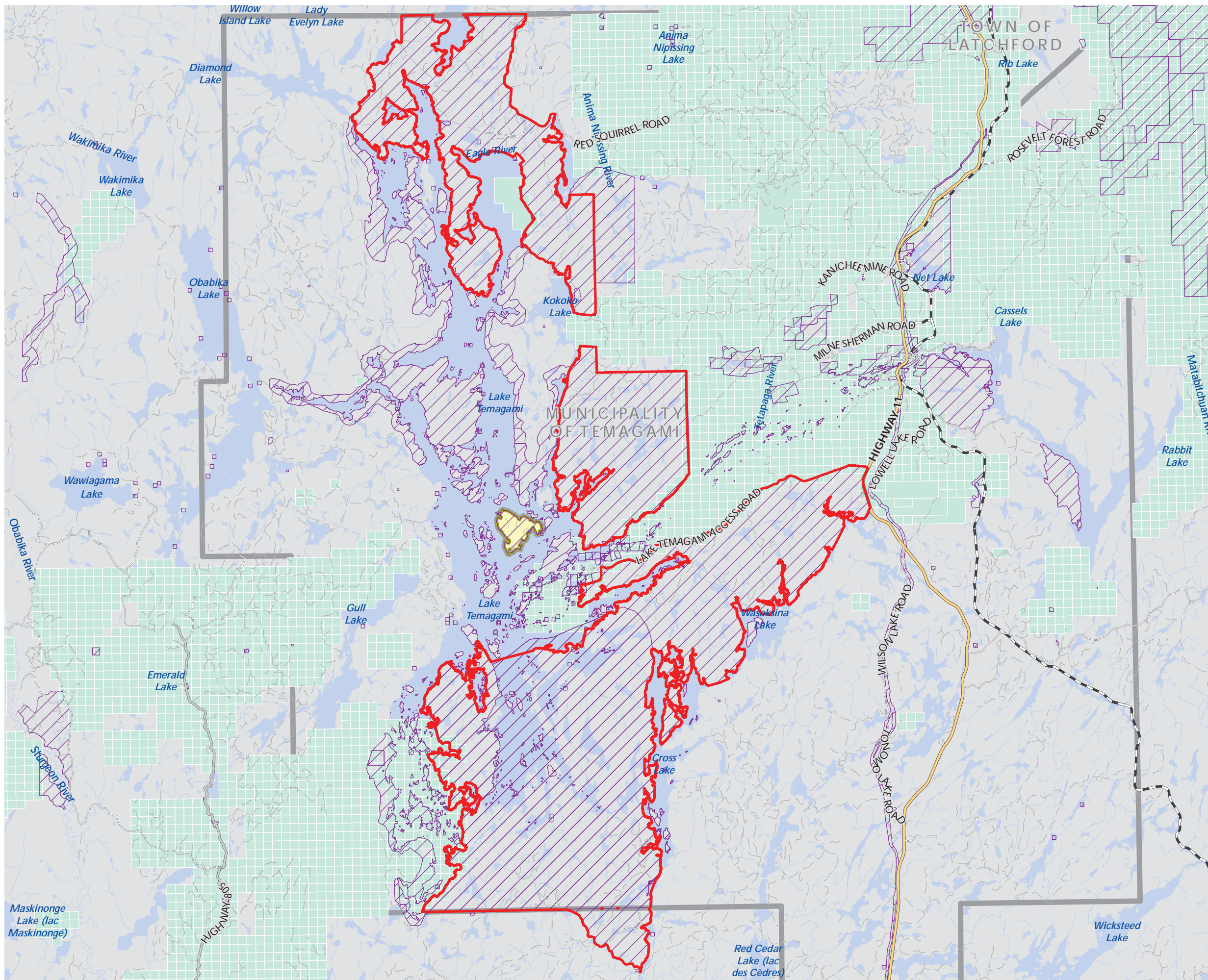
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MAP DRAWING INFORMATION:
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MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



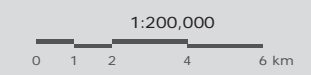
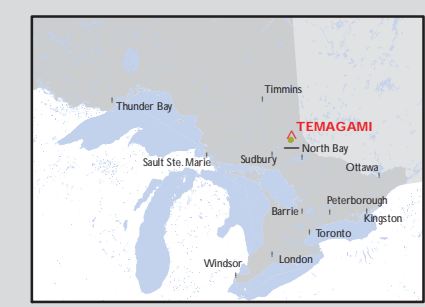
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DATE: 2019-04-04



**TEMAGAMI FIRST NATION
LAND USE PLAN**

**FIGURE 24
MINING CLAIMS AND ALIENATIONS**

- Land Set Aside
- Expressway / Highway
- Arterial Road
- Local Road
- Resource / Recreational Road
- Railway
- Mining Alienation
- Mining Claim
- Temagami First Nation
- Single Tier Municipality
- Water Body



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: HS
MAP PROJECTION: NAD 1983 UTM Zone 17N



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7.7.2 Commercial Land Needs

The purpose of the commercial designation in a Land Use Plan is to support the selling, leasing, or renting of products and services. The commercial designation may include uses such as retail sales, commercial services, offices, and gas stations. The designation provides an opportunity to promote economic development activities by supporting member-owned businesses. Generally, commercial areas should be easily accessible and connect to the local and regional transportation network.

As part of the 2011 CPS community members identified training programs, forestry, eco-tourism, prison, and water as potential employment and economic opportunities which they would like to explore.

The TFN Community Economic Development Systems Plan (2009) identifies convenience store products and gasoline as feasible products to be sold to local cottagers as well as other non-standard services including high-speed internet to the surrounding cottagers. In a survey conducted for the Economic Study, having no or minimal mainland development was seen as the main barrier/challenge to economic growth (by 70% of respondents). The second most identified barrier/challenge was the small number of successful businesses. Both of these barriers speak to the need for needing firstly, more commercial lands available for TFN development, which in turn will allow for more businesses to exist, develop and grow.

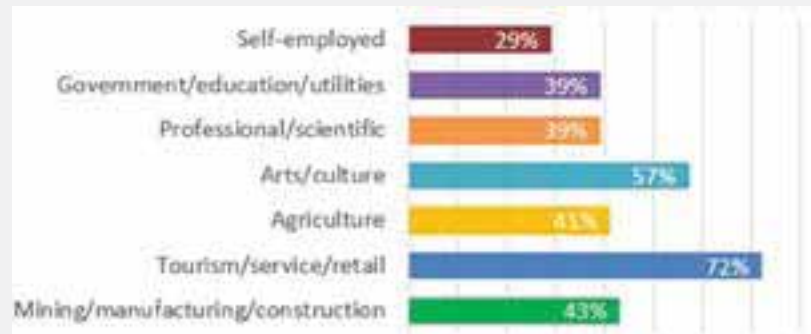
Community Input

Examples of economic development opportunities on Bear Island include spray foam and recycling businesses.

Bear Island also has a lot of potential for eco-tourism related ventures.

Examples of economic development opportunities on the Lands Set Aside include tourism (e.g., guided tours, casino), arts and crafts, as well as a Holistic Healing Incarceration Centre.

Based on a survey conducted as part of the Background Report, community members would like to see more employment in the following sectors:





As the population of TFN increases over the next 25 years, a natural demand for increased commercial land uses will follow. Commercial land uses suited for community use, such as restaurants, convenience stores, grocery stores, pharmacies, hardware stores, etc., should be considered in the Master Land Use Plan. Additionally, the Master Land Use Plan should allow for collaborative and adaptable commercial spaces to allow for individual economic development for community members.

7.7.3 Residential Land Needs

The purpose of the residential designation in a Land Use Plan is to provide housing options for community members of various ages. The residential designation may also permit home-based businesses to support community members to start their own business. Examples of home-based businesses include teaching/tutoring services and personal services (e.g., massage therapist, hairdresser, accountant, etc.).

Due to the limited availability of developable land on Bear Island, it is important that future residential development maximize land use. To achieve this, it is suggested that lot sizes could be made as small as possible, by intensifying development and using ¼ acre lots (Temagami First Nation, 2011). New developments should also be connected to the communal wastewater system, as this would eliminate the need to further development using septic systems. Alternative housing types should also be considered, rather than just single-storey detached homes. This includes seniors housing and multi-unit housing, and if there is a desire for un-serviced cabin style developments on larger lots away from main settlement areas.

Community Input

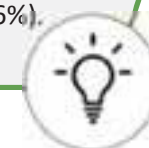
A need for more healthy on- and off-reserve housing exists (e.g., more insulation, better windows).

The community expressed a desire for living along the shorelines due to the deep connection to the water.

Potential development sites are Shiningwood Bay and Diamond Lake.

The community would like to see cohesiveness between island and mainland communities.

Based on a survey conducted for the Background Report, the community's top three housing choices include Single Family Detached (67%), Tiny Houses (38%), and Semi-detached (26%).



It has been projected that from 2017 to 2041, the on-reserve population will increase from 273 to 439 based on a 2% annual growth rate (see **Section 3**). Based on the housing density remaining constant at 2.6 people per home, the following number of houses will be required to accommodate the growing population (2011 CPS).

Projection	Number of Homes Required
10 Year Projected Need	131 Homes (37 new homes)
20 Year Projected Need	180 Homes (86 new homes)

7.7.4 Agricultural Land Needs

The purpose of an agricultural use designation in a Land Use Plan is to reserve land for agricultural uses, agriculture-related uses and on-farm diversified. The intention of the designation is to provide a stable, long term land base for agricultural activities.

Community Input
A few small businesses on Bear Island rely on farming.



7.7.5 Existing Land Use in the Lands Set Aside

The lands surrounding Bear Island are rich in natural resources and provide opportunities for tourism, forestry, wildlife conservation, mineral exploration and development (Municipality of Temagami, 2011). The Lands Set Aside provide a variety of untapped development opportunities for TFN, especially in the tourism and resource sector (e.g., mining and resource extraction).

Community Input
The community should be planned from the centre out with a circular pattern with the education, health, daycare, and community gathering space at the hub.



Due to the limited availability of developable land on Bear Island, land use planning should be considered of the potential opportunities the Lands Set Aside provide to the community in the short-, medium-and long-term future. In addition, land use planning should be considerate of the current land use designations surrounding the Lands Set Aside to promote land use compatibility. This holds particularly true for Lands Set Aside areas that are adjacent to the Mineral Aggregate designation.

7.7.6 Resource Extraction in the Lands Set Aside Land Needs

The purpose of a resource extraction designation in a Land Use Plan is to identify potential areas that are rich in mineral resource extraction. In addition, the designation protects the well-being of the community, wildlife, and the environment without hindering resource extraction. Resource extraction is usually associated with air quality and noise emissions. Depending on the type of operation, the resource extraction processes may impact drinking water and air quality. The resource extraction use should be easily accessible and connect to the local and regional transportation network. Resource extraction is a temporary use and the land is rehabilitated

The Lands Set Aside present the potential for developing and exploring new economic opportunities around mining and resource extraction. This does, however, need to be approached with caution and done so in a sustainable manner. There is concern within the community that mining and other industrial activities within the traditional territories have resulted in water contamination from metal and mercury exposure in fish and waterways (Wallace, 2015).

Community Input

Resources need to be managed wisely.

A small aggregate pit is located on Bear Island.

The community is open to explore resource extraction opportunities on the Lands Set Aside.



7.7.7 Planning Considerations for the Built Environment Services

The following highlights some of the planning considerations related to this section, that will be further explored through the land use planning process.

Community Services

- Land use planning must be considered of the space constraints on Bear Island and explore the opportunity to adaptively reuse existing buildings or creating multi-use facilities.
 - Based on the 2011 CPS the majority of community members rated the condition of existing parks and recreation services as poor. Community members would like to explore the following recreational facilities on Bear Island: an indoor swimming pool arena, fitness room, sports field, mini putt, hiking trails, ecotourism and golfing.
- Land use planning has the potential to consider current and future cemetery needs.

Education and Childcare

- Planning policies have the potential to provide guidance towards reaching targets, vision, and objectives for education through identifying lands for desired services.
 - Based on the 2011 CPS approximately 31% of community members identified the following education needs on Bear Island: adult education programs, secondary and post-secondary counselling services, distant education programs, more training programs, existing board of education needs improvement and language courses.
- Land use planning must be flexible in where education may take place (e.g., outdoor classroom).

Commercial Services

- Land use planning must consider TFN's distance to commercial services in the surrounding area. Any commercial or mixed (commercial-residential) use should provide for daily needs such as a general store or cafe in a central, walkable location.
 - Based on the 2011 CPS the majority of community members rated the condition of existing retail and commercial venture services as poor.
 - As part of the 2011 CPS community members identified training programs, forestry, eco-tourism, prison, and water as potential employment and economic opportunities which they would like to explore.

Housing (Residential)

- Planning policies have the potential to provide guidance towards reaching targets, vision, and objectives for healthy, well-built and affordable housing on-reserve.
- Land use planning should consider alternative housing forms (such as mid-rise buildings, complexes or multi-unit housing) in order to create more dense residential development, considering the limited space for development on Bear Island. New housing should be built in locations that allow for easy connection into the existing water system, to decrease the reliance on individual septic tanks.
- Engagement should be focused on future planning concerns related to a desired future housing choices by community members.

Agriculture

- Land use planning should consider that despite the terrain and quality of soil on Bear Island, there are some independent businesses who rely on agricultural practices. These spaces should be preserved and promoted.

Existing Land Use in the Lands Set Aside

- Land use planning should be considered of the potential opportunities the Lands Set Aside provide to the community in the short-, medium-and long-term future Potential for development opportunities, especially in the tourism and resource sector.

Resource Extraction in the Lands Set Aside

- Land use planning should consider the need to manage resources wisely and to set aside mineral resource areas for potential future resource extraction opportunities.
 - The community has expressed concern in the past that mining and other industrial activities within the traditional territories have resulted in water contamination from metal and mercury exposure in fish and waterways (Wallace, 2015).
- Land use planning may consider the potential for developing and exploring new economic opportunities around mining and resource extraction on the Lands Set Aside. Resource extraction policies should protect natural heritage and hydrogeology features and be compatible with existing and future land uses.



8.0 Infrastructure and Emergency Services

8.1 Roads and Drainage

The Lake Temagami Access Road located southeast of Bear Island is the primary road connecting Highway #11 to Lake Temagami. The Lake Temagami Access Road includes two docks, “Mine Landing” and “Manitou Landing.” From there, Bear Island is accessible by water taxi or private boat. During the winter months Bear Island is accessible by an ice road. While there is no regular scheduled ferry system a shuttle boat schedule for community members to arrange travel between Bear Island and the mainland does exist.

The road network on Bear Island has been identified as an area that requires significant improvements. The following roads are located on the island (see **Figure 19**):

- White Bear Road
- Eguana Road
- Ko-Ho-Ja Avenue
- O-Jeeg Avenue
- Lagoon Access Road
- East Road
- Turner Road
- South Road
- Refuse Site Road
- School Road

Community Input

The community would like to prevent congestion on Bear Island, particular around the school, clinic, and Elders Building.

The community expressed a need for improved road accessibility and highway frontage along Highway #11.



The current roads are in poor condition, very narrow shoulders, and are below the standards set by of the Ministry of Transportation (MTO). The increase in vehicle usage on the island has also further contributed to the degradation and damage to the roads (CPS, 2011). The existing system presents safety issues for pedestrians and motorists, especially Emergency vehicles, who have difficulty maneuvering the roadways. As more development occurs on the island, it will be crucial that the road network is prioritized, brought up to a safe standard, and it is recommended that a detailed study and design by conducted for road upgrades.

It is also important to note that TFN does not have year-round road access to a service centre and as a result, experiences a higher cost of transportation. The reserve on Bear Island is only accessible via ice road in the winter, or by boat in the spring, summer and fall months. In addition, the roads on Bear Island are not all looped. As a result, if a wildfire broke out on Bear Island some properties would be trapped by the fire and potentially be destroyed.

Drainage on Bear Island is achieved through a system of roadside ditches and culverts that outlets the surface drainage mainly to seasonal creeks. In the 2005 ACRS, it was reported that several of the roadside ditches require cleaning and some reconstruction, which we understand, remains a problem today.

8.2 Water

Bear Island is currently serviced by a water treatment plant and a distribution system, as well as an emergency power supply. In 2011, there were 53 residential units connected to the water distribution system. The raw water is collected from Lake Temagami and delivered via a low lift station to the water treatment plant.

The existing water treatment plant has a design capacity of a maximum 251 m³/day. Based on the 2011 CPS the plant has a remaining capacity to service approximately 30 more homes. Currently, the community has a fire fighting capability of 32L/s using water that is drawn from below ground reservoirs. It has been projected that the 20 year storage will require a 75.2 cubic metre expansion and a new fire pump for the 20 year planning horizon (CPS, 2011).

The community's wastewater collection, treatment and disposal system was constructed in 1998. The existing system includes two lagoons which are annually discharged into Lake Temagami. The lagoons have a rated capacity of 91.25 m³/day and an operating capacity of 250 people.

As identified in the 2011 CPS an additional 86 new homes will be required over the next 20 years. Approximately 65 homes in the interior would be communally serviced and 21 homes along the shoreline would be individually serviced. Water infrastructure will require upgrading to meet the demands of TFN's growing population.

8.3 Sewer

The southern portion of Bear Island currently has sewage collection services that are capable of collecting and pumping wastewater, which right now goes into a two celled sewage lagoon. This system accepts both grey water and sewage from residential homes within the area, which is then pumped into a station and forced to the lagoon for treatment. The current capacity of the lagoon system is 91,250 L/day and the estimated 20 year future flows are 157,491 L/day. Therefore, the lagoon will need to be upgraded in order to meet the increased future water needs. It has been recommended that the lagoon system be updated to an aerated lagoon.

8.4 Solid Waste

There is some existing curbside pick-up of waste and recyclables for certain Elders and those with disabilities through Community Support Services. Other residents are required to bring their waste to the barge landing where it is collected and disposed of in the Briggs Landfill Site. The barge landing also serves to load and unload construction materials, vehicles, and household waste.

The community's current existing landfill site has been previously recommended to be decommissioned. It has been recommended that the Nation provide weekly garbage collected by investing in a garbage truck that would take waste to the barge for transport to the landfill on the mainland. A recycling program is also something that the community should consider; in addition to a solid waste management plan to further identify areas of opportunity to improve the existing system. These changes would help the community achieve its sustainability goals by engaging in more sustainable practices and reducing its environmental footprint.

A Garbage Transfer Station is located south-east on the island and accepts household waste. The facility was constructed in 2005 and as of 2011 has a remaining service life of 35 years. The building is described as being in good condition (CPS, 2011).

8.5 Police, Fire and Emergency

Bear Island has one Emergency First Response team. This is a volunteer organization that began on in 1993. Response members are trained to respond to any emergency situations at a level beyond basic first aid. There is an Emergency First Response Building which accommodates storage for the volunteer Emergency First Response Team and vehicle.

The Police Services for TFN are also Island-wide, as Bear Island has its own Police department. It is housed in the same building as the TFN Public Library. The police service provides two Bear Island Police constables. The community operates a boat shuttle services and has an airboat that be used for emergency services. There is also a helipad for emergency airlift situations (Temagami First Nation Community Profile, 2019).

TFN has a community Fire Hall and Fire department consisting of a Fire Chief, Secondary Chief and a team of volunteer firefighters. They offer services in fire safety education, emergency planning, fire investigation, fire suppression, hazardous materials information and home safety (CPS, 2011).

Draft for Discussion

8.6 Communications Infrastructure

Temagami is well serviced by communications infrastructure. It has reliable internet connectivity throughout the Island, and there is a high rate of residential usage of internet. Cellular service is available in some locations on Bear Island; however, there are still areas where cellular signal is unpredictable and can be enhanced by improved cellular infrastructure.

The 2011 CPS identifies the following needs: an emergency communications system, a radio station, telecommunications, and a cell tower.

8.7 Hydro

Bear Island has three phase electrical power. Ontario Hydro is the service provider for Bear Island electricity. In the village area the power is distributed by poles and overhead wires. The submarine cables reach all the way to Win Da Bin and Adik Bays. All homes except for two are serviced by hydro. The other two homes utilize alternative energy. Overall, there is no concern of power supply for the community at this point in time as the service is fairly new. In addition, in the case of a power shortage additional power from other areas can be directed to Bear Islands (CPS, 2011).

Community Input

The community expressed a need for Better communication (i.e., cell tower, 911 on island).

3 Phase Power was installed in 2018 and supports housing development and development in general.

The community would like to introduce alternative energies, such as developing a geothermal greenhouse for food security and jobs. An interest exists in developing smaller homes with solar panels and outpost camps.



8.8 Planning Considerations for Infrastructure and Emergency Services

The following highlights some of the planning considerations related to this section, that will be further explored through the land use planning process.

Roads and Drainage

- Land use planning must take into consideration that the road network on Bear Island is poor and presents a safety hazard for pedestrians and motorists. The roads will require upgrades in order to bring them up to an acceptable and safe standard that can sustain the increased car usage that is anticipated on the Island.
- Land use planning must consider impacts of increased precipitation events and changes to the typical weather cycles which may be in excess of current design capacity, or be a detriment to the lifespan of the infrastructure. Land use planning should consider potential effects of climate change.
- Land use planning must take into consideration that the roads on Bear Island are not all looped. As a result, if a wildfire broke out on Bear Island some properties would be trapped by the fire and potentially be destroyed.

Water

- Land use planning must consider that water system upgrades are needed to support TFN's growing population.
 - The 2011 CPS recommends extending the existing water treatment plant and building a below grade reservoir.
- Land use planning must consider the expansion of the below ground reservoir to meet future firefighting capabilities. According to the 2011 CPS the 20 year storage will require a 75.2 cubic meter expansion.

Sewer

- Land use planning should consider locating new developments in areas where they can connect to the existing communal system, in order to reduce the reliance of individual septic tanks. It is recommended that the existing facultative lagoon system on-reserve be upgraded to an aerated lagoon.

Solid Waste

- Land use planning must consider a garbage collection service that provides weekly collection for residents on the island. The introduction of a recycling program should also be considered.

Police, Fire and Emergency

- Land use planning must take into consideration that the expansion of a new fire pump will be required for the 20 year horizon.



Communication Infrastructure

- Land use planning may consider the need for a Cell tower as identified in the 2011 CPS.

Hydro

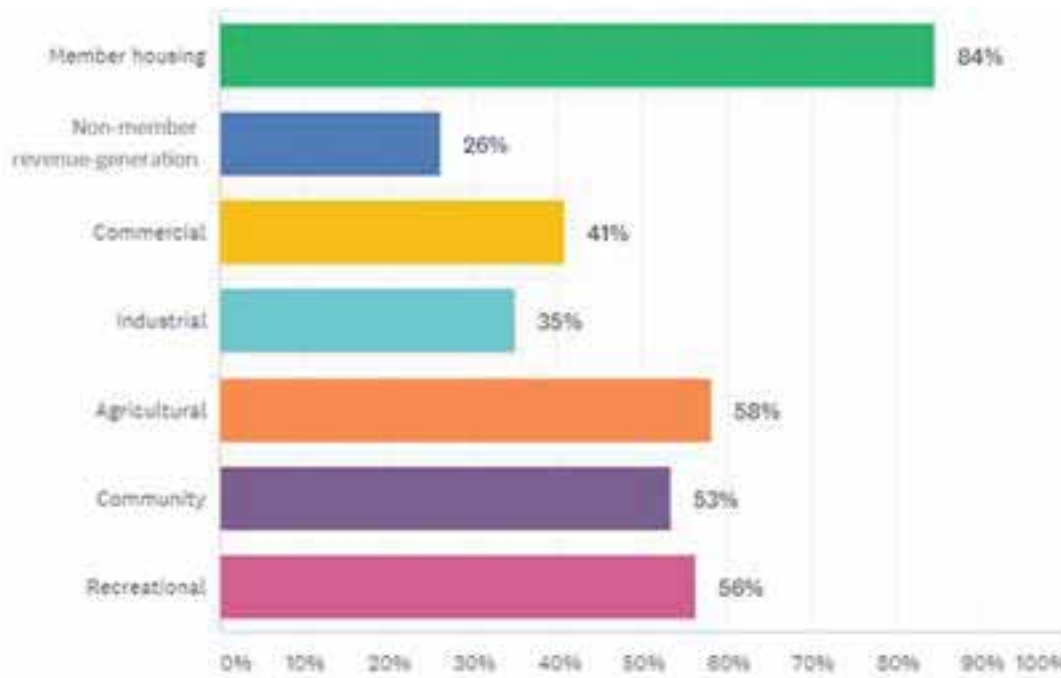
- Land use planning should take into consideration the future hydro needs of the community.

Draft for Discussion

9.0 Planning Consideration Summary

TFN is exploring a variety of development opportunities to optimize existing and future structures and lands on-reserve. As part of a survey conducted for the Background Report, community members identified the following types of development they would like to see on Reserve lands, see **Figure 25**.

Figure 25: Types of Development On-Reserve Community Members Would Like to See



Discussion

The table below provides a summary of the planning considerations outlined throughout the report.

Demographic

- Land use planning should consider the impacts of population growth on:
 - Land use demands (i.e., the community will need to increase or reconsider the amount of land set aside for residential, commercial, community, and servicing/infrastructure uses).
 - Community amenity needs (e.g., amenities may include recreational and social gathering places).
 - Need for more services, appropriate housing, mobility options, and meaningful community engagement opportunities to ensure TFN's aging demographic successfully ages in place.
 - Residential, education/childcare, and health options to accommodate both present and future land use needs of TFN's growing population.
- Land use planning may provide direction to address the lack of on-reserve housing to accommodate growing population. A housing strategy would be helpful in providing TFN's growing population with on-reserve housing options.
- Potential for planning policies to provide guidance towards reaching targets, vision, and objectives for on-reserve housing.

Economy and Employment

- Land use planning has the opportunity to identify economic and employment opportunities, such as setting aside employment land and to encourage other forms of economic activity on-reserve (e.g., tourism, guiding, recycling, foam spraying, etc.).

Climate

- Land use planning should consider:
 - Impacts of Climate Change on current and future land uses.
 - Climate change adaptation measures, such as building for anticipated lake water level changes, increased wildfire prevalence, and energy sufficient building design.

Hydrogeography

- Land use planning should consider:
 - Stormwater management practices to help to minimize the impact of polluted runoff flowing into Lake Temagami and nearby water bodies, and reduce the strain that stormwater places on municipal infrastructure.
 - Erosion and sediment control are crucial to avoid runoff or contamination into Lake Temagami and other nearby water bodies.
 - Use of waterbodies by community members will need to be better understood as we consider land uses and policies around them.

Geology and Soils

- Land use planning should consider:
 - Soil composition should be retained to maintain good drainage of lands within Bear Island and Lands Set Aside.
 - Geology and soils of the Lands Set Aside should be further studied to understand their composition and fill gaps in current background documents.
 - Location of potentially contaminated sites when planning for future land use activities on Bear Island

Topography

- Land use planning should protect and enhance the shoreline of the Lake Temagami by introducing appropriate buffers and setbacks established for development from the Lake.

Vegetation

- Land use planning must consider that TFN is predominantly covered by mixed forest. These areas contain vital wildlife habitat and require careful consideration prior to any development or industrial activities.
- Land use planning must consider mixed Forest age and composition must be considered prior to planning and carrying out industrial logging activities.
- Land development must give consideration to plant medicine gathering areas.

Wildlife

- Land use planning must consider shoreline vegetation along Lake Temagami should be protected and enhanced with appropriate buffers and setbacks established for development.
- Land development and industrial activities must be considerate of existing trapping, hunting, and fishing areas which should be preserved and enhanced through any form of development.
- Land use planning must give special considerations when developing adjacent to critical habitat areas located along the borders of the Bear Island and Lands Set Aside.
- Land use planning must consider SAR identified in the area and that there may be other species not part of the observations noted in **Section 5.6**.
- Land use planning should consider opportunities to introduce signage as a way to educate about protecting SAR habitat on-reserve.

Traditional Land Use

- Land use planning must protect areas where traditional land uses have been identified and is being practiced including hunting areas, berry gathering sites, areas of firewood, etc.
- Planning should use appropriate buffers and setbacks established for development to protect traditional areas and land uses.
- Land use planning should explore the possibility of teaching opportunities that may be leveraged to promote protection.
- Land use planning must protect traditional trails and routes, which provide opportunities for traditional modes of travel within the Bear Island. This gives the community the opportunity to engage and connect with their land and resources.

Archaeology

- Land use planning must consider that there is a high potential for undocumented archaeological sites on Bear Island. These sites must be protected and managed responsibly by the community and developers. Documented and undocumented archaeology sites are protected under the *Heritage Protection Act*.
- Land use planning should identify sites to be preserved and avoided as part of land use planning exercise. Archaeological sites should be protected for future generations through appropriate development setbacks, buffer zones, and policies determined to preserve these valuable cultural resources.

Community Services

- Land use planning must be considered of the space constraints on Bear Island and explore the opportunity to adaptively reuse existing buildings or creating multi-use facilities.
 - Based on the 2011 CPS the majority of community members rated the condition of existing parks and recreation services as poor. Community members would like to explore the following recreational facilities on Bear Island: an indoor swimming pool arena, fitness room, sports field, mini putt, hiking trails, ecotourism and golfing.
- Land use planning has the potential to consider current and future cemetery needs.

Education and Childcare

- Planning policies have the potential to provide guidance towards reaching targets, vision, and objectives for education through identifying lands for desired services.
 - Based on the 2011 CPS approximately 31% of community members identified the following education needs on Bear Island: adult education programs, secondary and post-secondary counselling services, distant education programs, more training programs, existing board of education needs improvement and language courses.
- Land use planning must be flexible in where education may take place (e.g., outdoor classroom).

Commercial Services

- Land use planning must consider TFN's distance to commercial services in the surrounding area. Any commercial or mixed (commercial-residential) use should provide for daily needs such as a general store or cafe in a central, walkable location.
 - Based on the 2011 CPS the majority of community members rated the condition of existing retail and commercial venture services as poor.
 - As part of the 2011 CPS community members identified training programs, forestry, eco-tourism, prison, and water as potential employment and economic opportunities which they would like to explore.

Housing (Residential)

- Planning policies have the potential to provide guidance towards reaching targets, vision, and objectives for healthy, well-built and affordable housing on-reserve.
- Land use planning should consider alternative housing forms (such as mid-rise buildings, complexes or multi-unit housing) in order to create more dense residential development, considering the limited space for development on Bear Island. New housing should be built in locations that allow for easy connection into the existing water system, to decrease the reliance on individual septic tanks.
- Engagement should be focused on future planning concerns related to a desired future housing choices by community members.

Agriculture

- Land use planning should consider that despite the terrain and quality of soil on Bear Island, there are some independent businesses who rely on agricultural practices. These spaces should be preserved and promoted.

Existing Land Use in the Lands Set Aside

- Land use planning should be considered of the potential opportunities the Lands Set Aside provide to the community in the short-, medium-and long-term future Potential for development opportunities, especially in the tourism and resource sector.

Resource Extraction in the Lands Set Aside

- Land use planning should consider the need to manage resources wisely and to set aside mineral resource areas for potential future resource extraction opportunities.
 - The community has expressed concern in the past that mining and other industrial activities within the traditional territories have resulted in water contamination from metal and mercury exposure in fish and waterways (Wallace, 2015).
- Land use planning may consider the potential for developing and exploring new economic opportunities around mining and resource extraction on the Lands Set Aside. Resource extraction policies should protect natural heritage and hydrogeology features and be compatible with existing and future land uses.



Roads and Drainage

- Land use planning must take into consideration that the road network on Bear Island is poor and presents a safety hazard for pedestrians and motorists. The roads will require upgrades in order to bring them up to an acceptable and safe standard that can sustain the increased car usage that is anticipated on the Island.
- Land use planning must consider impacts of increased precipitation events and changes to the typical weather cycles which may be in excess of current design capacity, or be a detriment to the lifespan of the infrastructure. Land use planning should consider potential effects of climate change.
- Land use planning must take into consideration that the roads on Bear Island are not all looped. As a result, if a wildfire broke out on Bear Island some properties would be trapped by the fire and potentially be destroyed.

Water

- Land use planning must consider that water system upgrades are needed to support TFN's growing population.
 - The 2011 CPS recommends extending the existing water treatment plant and building a below grade reservoir.
- Land use planning must consider the expansion of the below ground reservoir to meet future firefighting capabilities. According to the 2011 CPS the 20 year storage will require a 75.2 cubic meter expansion.

Sewer

- Land use planning should consider locating new developments in areas where they can connect to the existing communal system, in order to reduce the reliance of individual septic tanks. It is recommended that the existing facultative lagoon system on-reserve be upgraded to an aerated lagoon.

Solid Waste

- Land use planning must consider a garbage collection service that provides weekly collection for residents on the island. The introduction of a recycling program should also be considered.



Police, Fire and Emergency

- Land use planning must take into consideration that the expansion of a new fire pump will be required for the 20 year horizon.

Communication Infrastructure

- Land use planning may consider the need for a Cell tower as identified in the 2011 CPS.

Hydro

- Land use planning should take into consideration the future hydro needs of the community.

In addition to the above planning considerations, the Master Land Use Plan will identify lands that are vacant or underutilized or set aside for future development and can be leased in the interim for other purposes (e.g., storage area, hobby airfield, bee keeping, etc.). Interim land uses should not negatively impact the land.

TFN has a rich history associated directly with the relationship to the land and water, which must be preserved and protected. As TFN's on-reserve population is expected to increase from 273 members in 2017 to 439 members in 2041 some of the key planning considerations identified within this report must be taken into consideration to meet the needs of present and future generations. Some of the key issues identified include a lack of housing, employment opportunities, and limited infrastructure capacity (e.g., water and sewer system). As many communities and municipalities throughout Ontario, TFN also has to mitigate and adapt to climate change.

This Background Report provides the foundation for a Master Land Use Plan that will guide the decision-making process of Chief and Council when it comes to designating land ownership, regulating land use, and deciding which areas to invest in. It provides a foundation for collaboration and dialogue to create a Master Land Use Plan that is not only reflective of the TFN community, but highly informed by the community.

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