FINAL

# Town of Gander
# Municipal Plan 2018 – 2028
# Background Report

Submitted to:

**Town of Gander**

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Submitted by:

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# TABLE OF CONTENTS

## LIST OF TABLES



## LIST OF FIGURES

## LIST OF APPENDICES

# 1.0 INTRODUCTION

This Background Report is based on a review of socioeconomic conditions such as population trends, changes in demographic patterns, economic factors, land use and current development, infrastructure and servicing and environmental conditions in the Town of Gander. It outlines issues and options resulting from the collection and analysis of data and information, stakeholder engagement and public consultation, and provides the basis for preparation of the Town of Gander Municipal Plan and Development Regulations 2019-2029. It forms the framework and rationale for updates and changes to the current Municipal Plan and Development Regulations.

## 1.1 Historical Context

Gander International Airport (formerly the Newfoundland Airport), which had its first landing in 1938, was a strategic launching point for the Royal Air Force Ferry Command during World War II. A community grew up around the airfield to house, and provide support services to British, Canadian and American military engaged in transatlantic flight missions. Following the war, the Airport was transferred to civilian control and residents were moved away from the airport site. Construction of the present townsite began in the 1950s and the Town of Gander was incorporated in 1958 (Town of Gander 2017).

With the longer travel range of modern aircraft, Gander's military role evolved though the Airport remained a service station for military flights throughout the Cold War until about 1990. The Airport became an important contributor to civil aviation with numerous transatlantic refueling stops throughout the 1950s and 1960s. Gander Airport played a role in the first transatlantic test flights of the SST Concorde in the 1970s and served as a designated alternate landing site throughout NASA's Space Shuttle program (Town of Gander 2017). Gander Airport's large runways were used to accommodate 38 diverted transatlantic flights during the September 11, 2001 crisis and subsequent closure of American airspace. Gander and surrounding communities have received acclaim for the care provided to the nearly 6,600 passengers and crew (CBC News 2011).

Gander has continued to thrive based on the Airport and the aerospace industry. Today local businesses include a charter air carrier, aircraft maintenance facility, a flight school and a manufacturer of bonded-composite components for military and civilian fixed- and rotary-wing aircraft. Gander Airport is also the site of Canadian Forces Base Gander as well as a Nav Canada's Area Control Centre and North Atlantic Oceanic Control Centre (Town of Gander 2017; Nav Canada 2017; EVAS 2018).

## 1.2 Regional Context

Gander is the regional commercial and government service hub for an area of approximately 80,000 people in more than 300 communities in Central Newfoundland. Gander has ready access to the Trans-Canada Highway (TCH) and an Airport with flight service within the province and to other sites in Canada (Figure 1-1). Gander is the location of the James Paton Memorial Hospital, several long-term care facilities and many medical and dental clinics. The College of the North Atlantic has a campus in Gander and various Provincial Government departments have offices providing services to the public. Also, Gander's strong commercial/retail sector is an attraction to people of the region. A number of hotels and restaurants serve the public accessing services in Gander as well as many regional and provincial conferences, training workshops, trade shows and sports events.

Gander's nearest neighbouring communities are Benton, which is approximately 20 km to the east, and Glenwood, which is approximately 20 km to the west. Clarke's Head is located approximately 45 km to the north on Gander Bay. Note that the Town of Gander Planning Area Boundary surrounds but does not include the Local

Service District of Benton. As Benton is an unincorporated community, it does not have a municipal plan and the Town of Gander does not have regulatory authority for land use in Benton.

## 1.3 Stakeholder Engagement and Public Consultation

During the 2017-2018 Municipal Plan Review, the consultants organized an engagement program to receive input from stakeholders and the general public (Table 1-1). Activities included public open house meetings with exit surveys, a public presentation, an online survey, focus-groups with key stakeholders and meetings with local interest groups and individuals. Meetings were also held with Town Council, the Municipal Plan Review Steering Committee and Town Staff. Interview participants included developers, engineering consultants, Town staff and other interested parties. These activities were used to discuss various development opportunities and planning issues currently affecting the Town of Gander.

**Table 1-1: Stakeholder Engagement and Public Consultation Activities**

| Date | Activity | Participation |
|---|---|---|
| October 23, 2017 | Business Focus Group | 7 |
| October 23, 2017 | Business Focus Group | 5 |
| October 24, 2017 | Public Open House | 13 |
| October 24, 2017 | Public Meeting | 24 |
| October 24, 2017 | Exit Survey | 6 |
| October 16 to November 13, 2017 | Online Survey | 26 |
| October 2017 to March 2018 | Interviews | 20 |

Consultation opportunities were promoted through the Town of Gander website as well as the Town's Facebook and Twitter accounts. To ensure that as many people as possible were aware of the opportunities to engage in the Municipal Plan Review, notices were also placed in the local newspaper, mailed to 5,600 local addresses and broadcasted using the Town's electronic notice system. In addition, various identified stakeholders were invited to participate in the process.

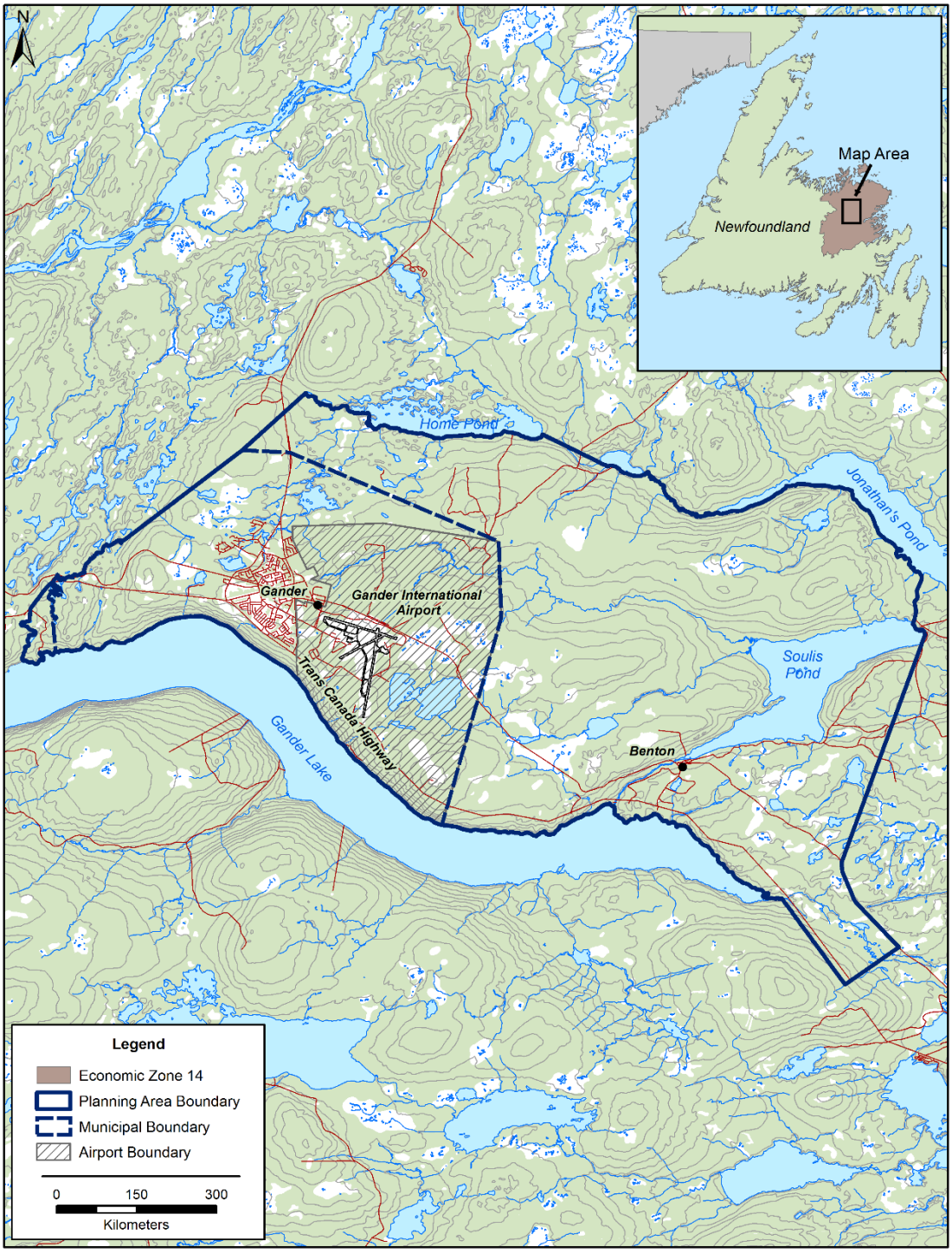


**Figure 1-1 Gander and the Central Newfoundland Region**

# 2.0 DEMOGRAPHIC PROFILE

Population is the basis of change in any community and drives the need for services and infrastructure, including schools, health care, social programs, housing, water and sewer, waste management, transportation and others. Population increase or decrease, change rate, age, household size, income and migration need to be examined as they will affect the future growth and development of a community and its Municipal Plan.

## 2.1 Population Change

Gander is a medium-sized Newfoundland and Labrador community located in Economic Zone 14 (Zone 14). From 1991 to 1996, Gander's population ranged between 9,500 and 10,500 (Table 2-1). Gander's population has been steadily increasing since 2001, and it grew by nearly 18% between 2006 and 2016. Also, in the last 25 years, Gander's net population growth was 13.0% whereas the regional population declined by 18% although the rate of decline slowed considerably after 2006. After a rapid decline beginning in 1991, provincial population growth stabilized after 2001 and experienced slightly positive growth after 2006 (Statistics Canada 2017; NLSA 2017).

**Table 2-1: Gander Population Change from 1991 to 2016**

| Census | Gander | | Zone 14 | | Newfoundland and Labrador | |
|---|---|---|---|---|---|---|
| | # | % Change | # | % Change | # | % Change |
| 1991 | 10,339 | - | 57,020 | - | 568,474 | - |
| 1996 | 10,364 | 0.2% | 54,200 | -4.9% | 551,792 | -2.9% |
| 2001 | 9,651 | -6.9% | 48,595 | -10.3% | 512,980 | -7.0% |
| 2006 | 9,951 | +3.1% | 46,850 | -3.6% | 505,470 | -1.5% |
| 2011 | 11,054 | +11.8% | 46,275 | -1.2% | 514,536 | +1.8% |
| 2016 | 11,688 | +5.7% | 46,749 | +1.0% | 519,716 | +1.0% |

Source: NLSA 2017

Until 2001, the population of Gander, Zone 14 and the province showed similar trends (Figure 2-1). All were declining but the regional and provincial populations were declining faster. The continued decline and/or slow growth of the regional and provincial populations are the result of various factors including low birth rate and out-migration. The regional population was stable in the 2016 census and may be attributed to growth in Gander. Following rapid decline beginning in 1991, the Newfoundland and Labrador population showed stability after 2001. The provincial population began to increase due to a strong economy driven by high oil and commodity prices and an industrial construction boom. However, the province's net growth from 2006 to 2016 was just under 3% (Statistics Canada 2017; NLSA 2017).

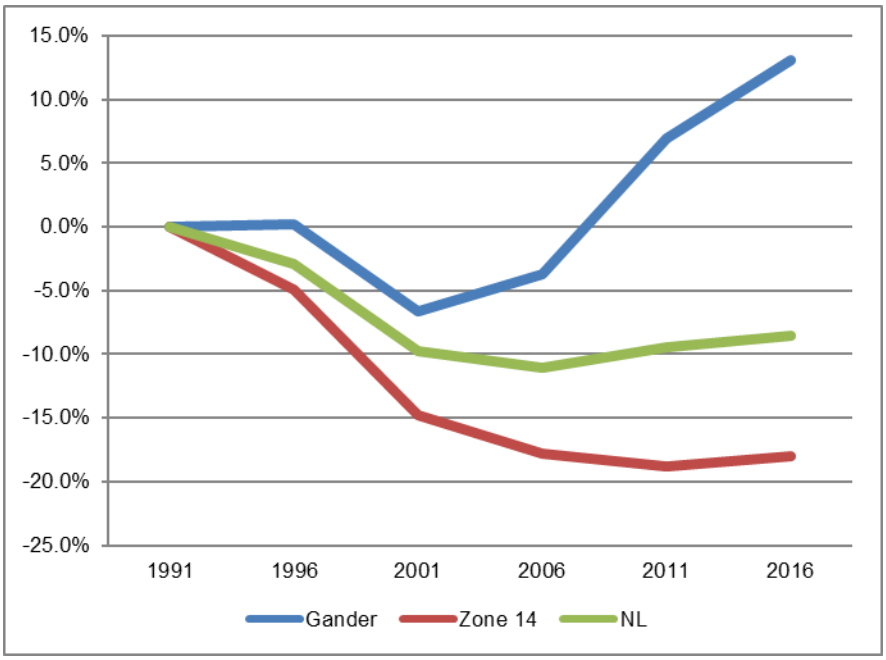


**Figure 2-1 Gander Population Change Rate from 1991 to 2016 (Statistics Canada, 2017)**

Population change is a consequence of natural change or births minus deaths and net migration into or out of a community. Between 2009-2014, a population increase of 1,070 (10.5%) resulted from natural increase of 80 residents (0.8%) and a net in-migration of 990 residents (9.7%) in Gander (Table 2-2). In comparison, the province experienced a population increase of 2.1% over the same period. As natural change was virtually negligible (70 more births than deaths), net migration into the province was solely responsible for this growth.

**Table 2-2: Components of Population Change in Gander from 2009 to 2014**

| Year | Population | | Births | Deaths | Natural Change | Net Migration |
|---|---|---|---|---|---|---|
| | 2009 | 2014 | | | | |
| 2009 | 10,210 | 10,460 | 125 | 80 | 45 | 205 |
| 2010 | 10,460 | 10,730 | 115 | 120 | -5 | 275 |
| 2011 | 10,730 | 10,930 | 120 | 90 | 30 | 170 |
| 2012 | 10,930 | 11,010 | 100 | 85 | 15 | 65 |
| 2013 | 11,010 | 11,090 | 110 | 110 | 0 | 80 |
| 2014 | 11,090 | 11,280 | 110 | 115 | -5 | 195 |
| Total Change | 1,070 (10.5%) | | 680 | 600 | 80 (0.8%) | 990 (9.7%) |

Source: NLSA 2017

Between 2011 and 2016, a total of 2,110 people moved into Gander (Table 2-3). The majority of these came from other locations within Newfoundland and Labrador. Also, a strong proportion came from other provinces (Statistics Canada 2017).

**Table 2-3: Gander In-Migration from 2011 to 2016**

| Mobility Status – Internal Migrants | Number | Percentage of Total |
|---|---|---|
| Intra-Provincial In-Migrants | 1,230 | 58.3% |
| Inter-Provincial In-Migrants | 880 | 41.7% |
| Total | 2,110 | 100% |

Source: Statistics Canada 2017

While it is difficult to confirm, some of these individuals likely moved to Gander for employment opportunities. Based on census data and anecdotal information, it is likely that a proportion have relocated from smaller communities to improve access to services and amenities such as commercial, medical, educational, seniors' housing and long-term care. Other intra-provincial migrants may be retirees moving to the Central region from areas such as the Northeast Avalon and choosing to live in Gander due to access to amenities. The in-migrants from other parts of Canada may also include retirees returning to Newfoundland following a career elsewhere.

## 2.2 Age Structure

From 2001 to 2016, the population of Gander, Central Newfoundland census division (comparable data are not available for Zone 14), the province and Canada all showed ageing (Table 2-4). Aging is the result of longer life expectancies, low death rates and low birth rates. Gander's population is ageing at a somewhat slower rate than the local benchmarks but faster than that of Canada (Statistics Canada 2017).

**Table 2-4: Median Age in Gander from 2001 to 2016**

| Year | Gander | Division No. 2 | Newfoundland and Labrador | Canada |
|---|---|---|---|---|
| 2001 | 37.3 | 39.8 | 38.4 | 37.6 |
| 2006 | 39.6 | 42.9 | 41.7 | 39.5 |
| 2011 | 41.1 | 45.2 | 44.0 | 40.6 |
| 2016 | 43.2 | 47.5 | 46.0 | 41.2 |

Source: Statistics Canada 2017

Gander's population is experiencing a wide variation of growth between the major age cohorts (Figure 2-2). While the 0-19 and 20-44 age groups decreased by 530 and 1,065 respectively, the 45-64 age group increased by 1,680 and the 65+ age group increased by 1,250. In proportional terms, the 0-19 age group decreased from being 30.5% of the total population in 1991 to 22.5% in 2016 while the 20-44 age group declined from 44.6% to 30.4%. In contrast, the 45-64 age group almost doubled in absolute numbers and proportionately increased from 16.8% to 29.2%. The 65+ age group increased from 8.1% of the population in 1991 to 17.9% in 2016 (Statistics Canada 2017). This demonstrates that Gander's population is aging rapidly.

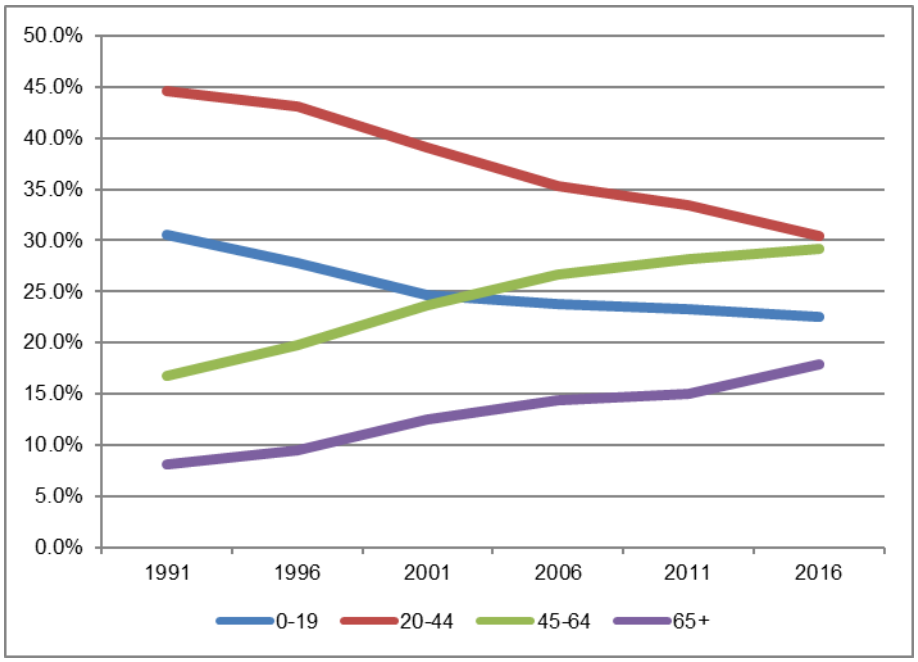


**Figure 2-2 Gander Population Change by Major Age Cohorts from 1991 to 2016 (Statistics Canada, 2017)**

Despite a decline in the youngest age cohorts, Gander has a higher proportion of children under 14 years of age than many Newfoundland and Labrador communities (Figure 2-3). This has implications for providing services and infrastructure for children and young families.

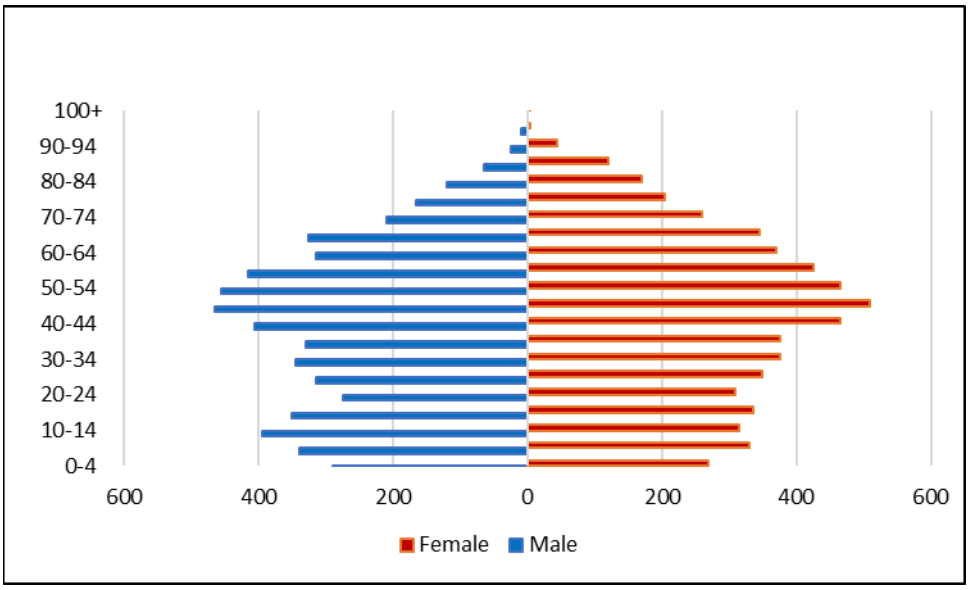


**Figure 2-3 Gander Age-Sex Composition in 2016 (Statistics Canada, 2017)**

Gander's population is increasing mainly in the number of older people (45 years and older). This is likely due to in-migration of older people from surrounding communities, elsewhere in Newfoundland and Labrador, and

retirees returning to the province. The needs of older people may include increased access to health care, specialized recreational programs, accessible housing, long term care and increased usage of support services (e.g., personal care, housekeeping, property maintenance). The needs of the elderly may also include opportunities for social engagement.

## 2.3 School Age Population

Enrolment in Gander's schools has been stable since 2011 with increases in grades kindergarten to nine (Table 2-5). Enrolment has declined slightly in grades 10 to 12 (DOE 2017). School enrolment has increased slightly (by 43 students) in total since 2011.

**Table 2-5: Gander School Enrolment from 2011/12 to 2016/17**

| School | Grades | School Year | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
| Gander Academy | K-6 | 921 | 921 | 931 | 920 | 907 | 935 |
| St. Paul's Intermediate School | 7-9 | 371 | 382 | 398 | 424 | 436 | 409 |
| Gander Collegiate | 10-12 | 413 | 418 | 411 | 397 | 402 | 404 |
| Total | - | 1,705 | 1,721 | 1,740 | 1,741 | 1,745 | 1,748 |

Source: DOE 2017

Between 2011 and 2016, Gander experienced an increase of 560 in the preschool population who should enter the school system by 2021 (Statistics Canada 2017). The number of children can increase demand for schools and recreational facilities. It also drives the demand for infrastructure and services to meet the needs of families.

## 2.4 Community Health and Wellbeing

This section presents information on health and wellbeing for Gander residents. Where data are not available for the Town of Gander, data from other jurisdictions such as Zone 14 or Central Health Region are used.

In 2013-2014, residents of Gander had similar health outcomes as those of the provincial and national population for self-reported health status (Table 2-6). While the number of cigarette smokers is not available for Gander, the incidence of daily cigarette smoking was similar for Zone 14, the province and Canada. Alcohol consumption and obesity rates were higher in the province generally than that of Canada. The highest number of hospital morbidity/separations in Gander were for diseases of the circulatory system, which was the same for the province (Statistics Canada 2015; NLSA 2017).

**Table 2-6: Gander Community Health Indicators (2013-2014)**

| Indicator (% of population) | Jurisdiction | | | |
|---|---|---|---|---|
| | Gander | Zone 14 | NL | Canada |
| Self-reporting excellent or very good health (12 years of age and over) | 60.7% | na | 61.2% | 60.9% |
| Current daily smokers (12 years of age and over) | na | 17.7% | 16.7% | 18.5% |
| Consumed 5 or more drinks (4 for women) on one occasion in last month (12 years of age and over) | na | 31.9% | 33.3% | 19.2% |
| Overweight or obese (8 years of age and over) | na | 74.4% | 68.8% | 52.1% |

Source: NLSA 2017; Statistics Canada 2015

Central Health has identified the most prevalent issues for the Region. Like all of Newfoundland and Labrador, the Central Region has a high percentage of elderly people, which can contribute to the high incidence of chronic health conditions such as higher incidences of being overweight or obese along with hypertension, arthritis, diabetes, asthma, chronic obstructive lung disease and cancer. Many of these conditions are the result of lifestyle practices such as poor diet, lack of exercise, cigarette smoking and alcohol consumption as well as age. Central Health has launched information campaigns to raise awareness about obesity, smoking, physical activity and fruit and vegetable consumption (Central Health 2017).

The physical form of communities can affect population health. Compact urban forms with safe streets and/or trails facilitate increased physical activity and active transportation whereas urban sprawl contributes to use of automobiles and sedentary lifestyles. Physical activity is important for chronic disease prevention and for the elderly to remain mobile.

Many municipalities provide recreational amenities with a view to facilitating increased physical activity (along with organized sports) and space for community gardens to improve access to fresh nutritious food, create a low-cost recreational activity and to contribute to social cohesion. In addition, complete streets are designed for all ages, abilities and modes of travel. Safe and comfortable access for pedestrians, bicycles, transit users and the mobility-impaired is an integral planning and design feature rather than an afterthought. Safe active transportation options result a healthier population and has benefits for healthy ageing (CIP 2012; TCAT 2017).

Gander has a clean environment and limited concerns about clean air and water. The community is safe and many people have a high standard of living. Nutritious food can be expensive in Newfoundland and Labrador and especially challenging for those on low incomes. Most respondents to the community survey indicated that they drive a personal vehicle to commute around Gander. Walking and cycling are used though safety is a concern. Thus, many people in Gander are not as active as they could be. The Town of Gander could improve active transportation amenities and access to community gardening.

## 2.5 Employment, Education and Income

The main employment industries in Gander are retail trade, health care and social assistance, public administration, transportation and warehousing and accommodation and food services (Figure 2-4). Together, these make up nearly 66% of Gander's labour force (Statistics Canada 2017). The province of Newfoundland and Labrador's three largest employment sectors are like Gander's but the provincial economy is more dependent on construction and educational services.

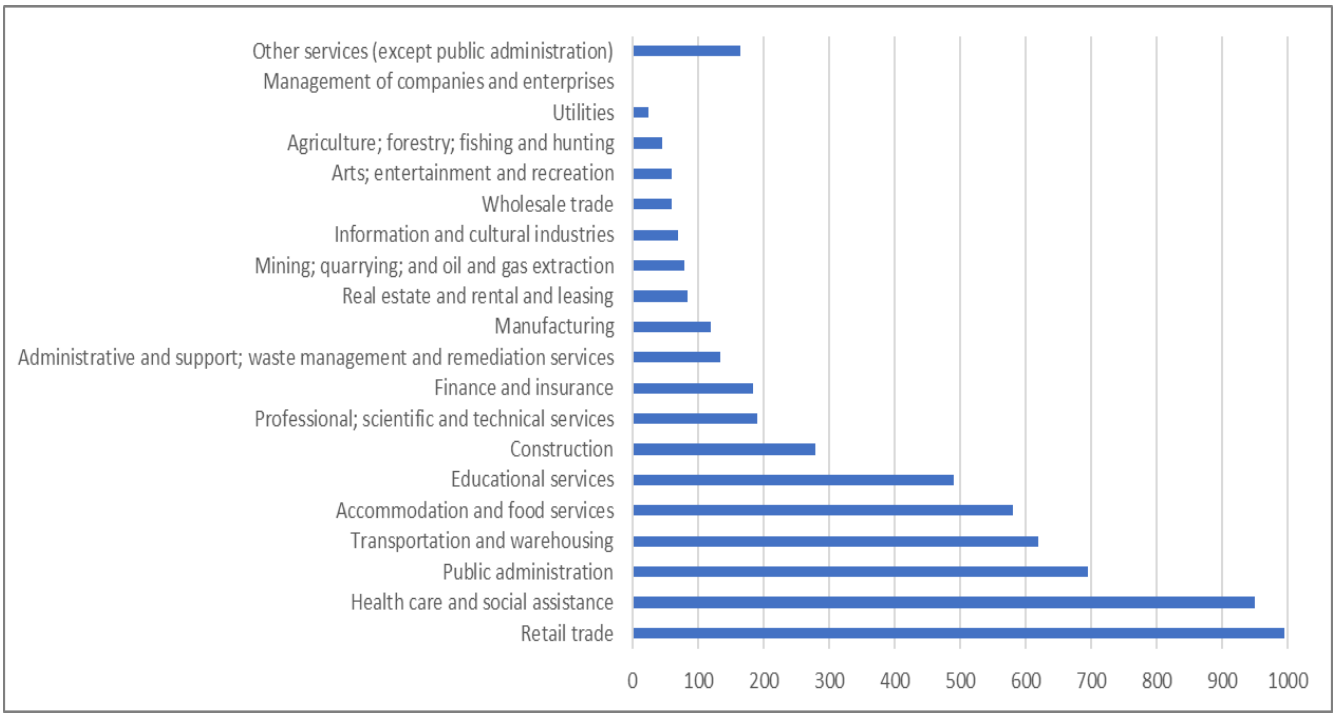


**Figure 2-4 Gander Employment by North American Industry Classification System in 2016 (Statistics Canada, 2017)**

Residents of Gander experience higher employment rates and median income than the province in general (Table 2-7). Median household income is approximately $6,000 higher than that of the provincial population. Nonetheless, the prevalence of low income status is nearly as high in Gander as it is for the province in general. In 2016, approximately 43% of individuals in Gander earned less than $30,000 per year (Statistics Canada 2017).

**Table 2-7 Gander Labour Force and Income in 2015/2016**

| Indicator | Gander | Province |
|---|---|---|
| Labour force participation rate (2016) | 62.7% | 58.7% |
| Employment rate (2016) | 56.4% | 49.5% |
| Unemployment rate (2016) | 10.0% | 15.6% |
| Median total income of individuals (2015) | $35,954 | $31,754 |
| Median total income of households (2015) | $72,944 | $67,272 |
| Prevalence of low income | 12.1% | 15.4% |

Source: Statistics Canada 2017

During consultation with the business community, Gander was often compared to Grand Falls-Windsor. The 2016 census shows that the median value of a home in Gander is about 25% higher than Grand Falls and that the median household income is about 21% higher in Gander. The proportion of residents in Grand-Falls spending more than 30 percent of their income on housing is slightly higher than that of Gander (Statistics Canada 2017).

Despite the general prosperity in Gander, one-third of households have a total income of less than $50,000 per year (Statistics Canada 2017). Understanding the income levels of the community is an important consideration

when planning for the growth of the Town. Limited income is directly related to housing affordability and the ability to participate in organized activities particularly those that are provided by private agencies as opposed to municipal government. Limited income also affects attraction and retention of labour in the service industry.

## 2.6 Diversity and Inclusion

Diversity refers to composition of the population from different cultures, races, ethnicities, languages, religions, abilities, ages and sexual orientations. It is difficult to monitor some aspects of diversity due to the availability of data, privacy concerns particularly in small communities and the legality of requesting such information. The Canadian census reports data that can be used to identify some diversity characteristics. The following paragraphs use available data to identify diversity characteristics of Gander's population. Numbers are rounded due to small populations represented. Information about the age and gender of Gander residents is presented in previous sections. No data were available about the number of people with physical or intellectual disabilities.

The Town of Gander, like the province of Newfoundland and Labrador, has a homogenous population. In the 2016 census, approximately 5% of Gander residents (600 individuals) reported Aboriginal identity and nearly 47% of these were Registered Indians. Of these, 65% indicated that they were First Nations, 20% were Metis and 10% were Inuk (Statistics Canada 2017). This is like the population of Newfoundland and Labrador. It is important to note that establishment of the Qalipu Mi'kmaq First Nation and the registration process has resulted in an increase in the number of people in the province self-identifying as Indigenous.

Less than 2% of Gander residents reported being of visible minority and those that did so indicated that they are Chinese, South Asian, black, Pilipino and Southeast Asian (Figure 2-5). For comparison, the province had a 2.3% visible minority population in 2016. Gander has approximately 60 recent immigrants, which are defined as an immigrant who first obtained landed immigrant or permanent resident status between January 1, 2011 and May 10, 2016. Approximately 45 of these came from Jamaica (15), the United Kingdom (10), Nigeria (10) and China (10) (Statistics Canada 2017).

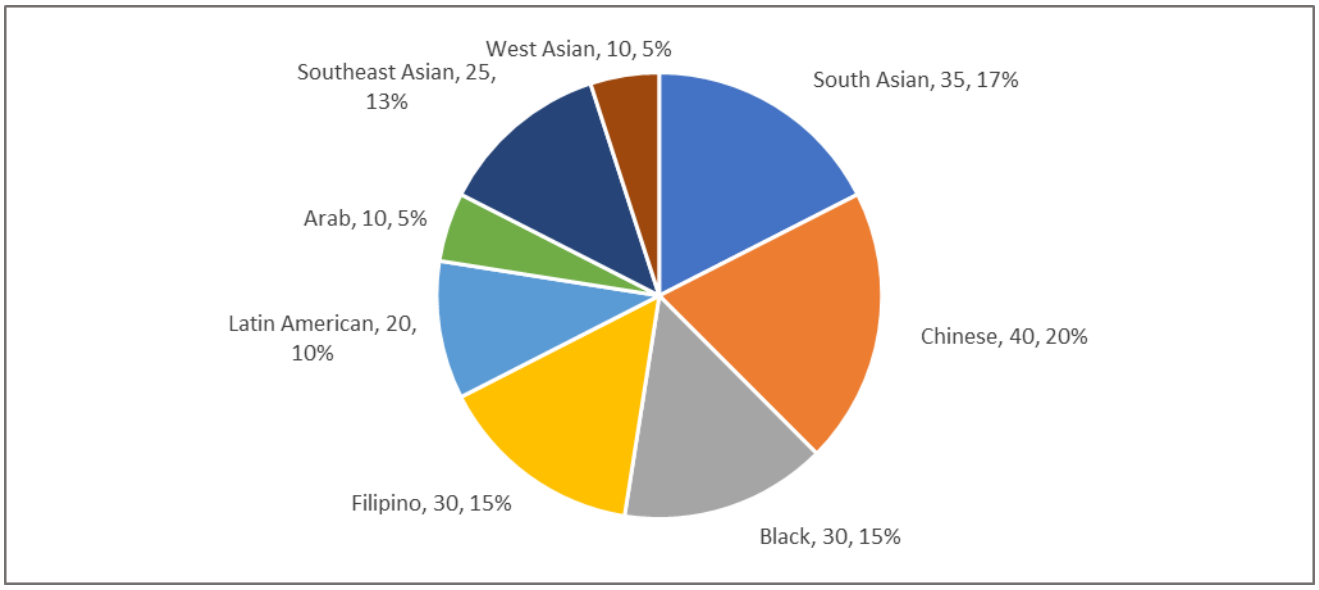


**Figure 2-5 Gander Visible Minority Population in 2016 (Statistics Canada, 2017)**

About 98% of residents of Gander speak English as a mother tongue and 0.5%, French. Approximately 165 residents spoke a mother tongue other than an official language. The most common of these include Arabic, Sino-Tibetan languages (i.e. Cantonese, Mandarin and others), Tagalog (Filipino) and Indo-Iranian languages (i.e., Hindi, Punjabi and Farsi). Small numbers of individuals speak Spanish, Afrikaans, Thai, Creole, Polish, Ukrainian, German and American Sign Language (Statistics Canada 2017).

Inclusion is the concept of working together as a community to ensure that everyone feels valued, respected and supported regardless of their background or status. As indicated previously, approximately 15% of Gander's 2016 population (1,665 individuals) was over the age of 65 years. In 2012, 27.1% of Newfoundland and Labrador residents 65 years and over had a disability and the prevalence increased to 37.6% for those over 75 years (Statistics Canada 2014). The number or proportion of people with physical or intellectual disabilities in Gander are not available. Nonetheless, it is these populations that may require the most support in terms of the built environment. It is important for a municipality to understand the population, to the extent possible, so that any identified needs such as housing or accessibility can be accommodated where and as relevant.

## 2.7 Future Demographic Trends

Gander's population comprised a quarter of Zone 14's population in 2016. Gander's population grew by 13.0% over the 1991-2016 period while Zone 14 as a whole declined by 18.0% (Table 2-8). Between 2006 and 2016, the Town's population grew by 17.5% while Zone 14 grew by only 0.2%. This clearly shows that while Gander experienced healthy growth, the remainder of the region in total has seen a considerable decline. A review of census data since 1991 indicates an average difference of about 8% between the rates of change for Gander and the remainder of Zone 14 (Statistics Canada 2017).

The NL Statistics Agency provides population projections to 2036 for the province and each economic zone. These projections are based on low, medium and high scenarios. Over the next four census periods, the low, medium and high projections for Zone 14 show the population declining in each five-year period from 2016 to 2036 under each scenario (NLSA 2017).

A population forecast was prepared using Government's low and high projections for Zone 14 to 2036 (Table 2-8). It assumes that the average five-year rate of change in Gander will be 7.5% higher than the projected rate for Zone 14. This is the approximate differential between Gander's and Zone 14's population change over the previous 25 years.

**Table 2-8: Gander Population Forecast Scenarios from 2021 to 2036**

| Year | Low-Growth Scenario | | | High-Growth Scenario | | |
|---|---|---|---|---|---|---|
| | Population | Change (#) | Change (%) | Population | Change (#) | Change (%) |
| 2021 | 12,050 | 362 | 3.1% | 12,120 | 432 | 3.7% |
| 2026 | 12,472 | 422 | 3.5% | 12,702 | 582 | 4.8% |
| 2031 | 13,021 | 549 | 4.4% | 13,477 | 775 | 6.1% |
| 2036 | 13,268 | 247 | 2.1% | 14,030 | 553 | 4.1% |
| 20-Year Change | - | 1,580 | 13.5% | - | 2,342 | 20.0% |

Gander's population is forecasted to grow at a stable rate over the next 20 years (Figure 2-6). The projected growth from 2016 to 2036 ranges from a low of 1,580 to a high of 2,342. The population by 2036 is projected to range from 13,268 to 14,030 residents (Statistics Canada 2017).

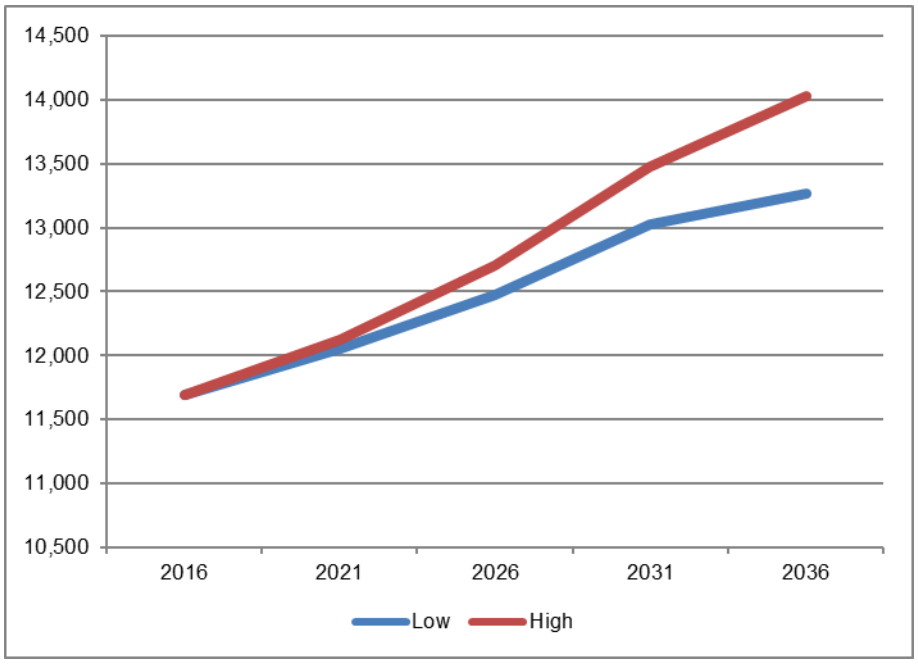


**Figure 2-6 Gander Population Forecast from 2021 to 2036**

The population of Newfoundland and Labrador is aging and the province has one of the oldest populations in Canada. Gander is experiencing modest growth in population with a strong aging trend, resulting from both a declining birth rate and longer life expectancy. There is significant outmigration, particularly by the 20 to 44-year age cohort. Outmigration is being offset by new additions to the population in a small number of new births but mostly as a result of in-migration of older people (Statistics Canada 2017). Population and age structure are important considerations for many aspects of community planning including housing, recreation, other community services and economic development.

# 3.0 ECONOMY

Gander was established as a strategic North American air base for transatlantic military flights during WWII. Gander Airport continues to be a major focus of economic activity for its role as a regional Airport, military base and support site for cargo and passenger aircraft. The Airport is now part of cluster of aerospace related activities. Meanwhile, the Town of Gander has developed into a full-service community with immediate access to the TCH and Gander Airport and is a short haul to the deep-water port of Lewisporte.

## 3.1 Key Economic Sectors

A large number of people in Gander are employed with the provincial, federal and municipal governments. The Town of Gander has estimated that the Government of Newfoundland and Labrador is its largest employer and most individuals work in health care, education and transportation (Town of Gander 2017). The Government of Canada employs a number of people in Gander, most of which are associated with Canadian Forces Base (CFB) Gander and Royal Canadian Air Force (RCAF) 9 Wing Gander.

Gander is a regional service centre. A strong service industry includes retail shopping, accommodations and food services. These services support the regional population including people that access health care and government services in Gander. Owing to its strategic location, Gander has a strong tourism industry, particularly in the meeting, convention and event market, for sports events and as an access point to destinations such as Fogo Island, Change Islands and Twillingate. Gander has experienced new tourism activity since the 2001, 911 crisis as passengers and crew return to the community and more recently with the success of the award-winning hit musical "Come From Away", which is based on Gander's role in the story. Local organizations are working to increase tourism opportunities in Gander to encourage longer visits by business and leisure tourists.

The transportation sector includes Gander Airport and the aerospace industry that surrounds it. Since 2013, the Gander International Airport Authority Inc. (GIAA) has managed and operated the Airport under a lease with Transport Canada. In 2014, GIAA was directly responsible for 1,260 full-time jobs, $90 million in wages, $140 million in GDP and $240 million in economic impact (GIAA 2016).

Nav Canada is a privately run, not-for-profit corporation created in 1996 when the Government of Canada privatized air traffic management in Canadian airspace. The agency owns and operates Canada's civil air navigation system (ANS) and employs air traffic controllers (ATCs), flight service specialists (FSSs) and technologists throughout Canada. Gander is one of Nav Canada's seven Canadian area control centres meaning that it has responsibility for a particular volume of airspace at high altitudes. Nav Canada's Gander operations manages approximately 1,000 oceanic air traffic flights daily (Nav Canada 2017; Nav Canada 2018).

Exploits Valley Air Services (EVAS Air) has operated at Gander Airport for approximately 25 years. EVAS Air provides corporate air charters, air cargo transportation, air ambulance transfers, aircraft maintenance and repair and daily Air Canada Express flights throughout Atlantic Canada. The company also operates Gander Flight Training (GFT), which is a Cessna parts/service and pilot training centre (EVAS 2018). EVAS and GFT employ approximately 225 people in Atlantic Canada, most of which are in Gander (Western Star 2017).

D-J Composites specializes in composite and bonded metal components for the aerospace industry. The company, which was established in 1999, has approximately 80 employees who manufacture aircraft components and provide aircraft maintenance and repairs to meet the specifications of agencies such as Transport Canada and the United Stated Federal Aviation Administration (DJC 2017).

Gander has two community colleges. Keyin College offers a variety of programs from adult basic education, business, health care, technology and trades (Keyin 2017). The College of the North Atlantic (CNA) offers similar programs as well as courses specific to the needs of the local economy. These include Aircraft Maintenance Engineering Technician and Aircraft Structural Repair Technician (CNA No Date). As mentioned above, Gander Flight Training (GFT) is a pilot training centre (EVAS 2018).

Home-based businesses are important in Gander and, to a lesser extent, long distance commuting for work are elements of Gander's economy. In 2016, approximately 2.8% (150 individuals) of the employed labour force of Gander worked at home. A smaller number, approximately 1.4% (or 65 individuals) of Gander's employed labour force commuted to work in other provinces and 1% commuted to work within the province of Newfoundland and Labrador but outside of the Central Census Division (Statistics Canada 2017).

## 3.2 Development Activity

The Town of Gander experiences fluctuations in the number of new builds and the total value of permits issued (Figure 3-1). From 2007 to 2017, the number of new builds were between 56 and 143 annually. Residential buildings, which made up 94% of new builds, were strongest between 2007 and 2011. Commercial development was limited but also stronger is the earlier part of the reporting period with the highest annual number of permits being issued in 2007 and 2008. Institutional development has been limited. No new hotel, industrial or apartment buildings were constructed during the period and demand has generally declined since 2011.

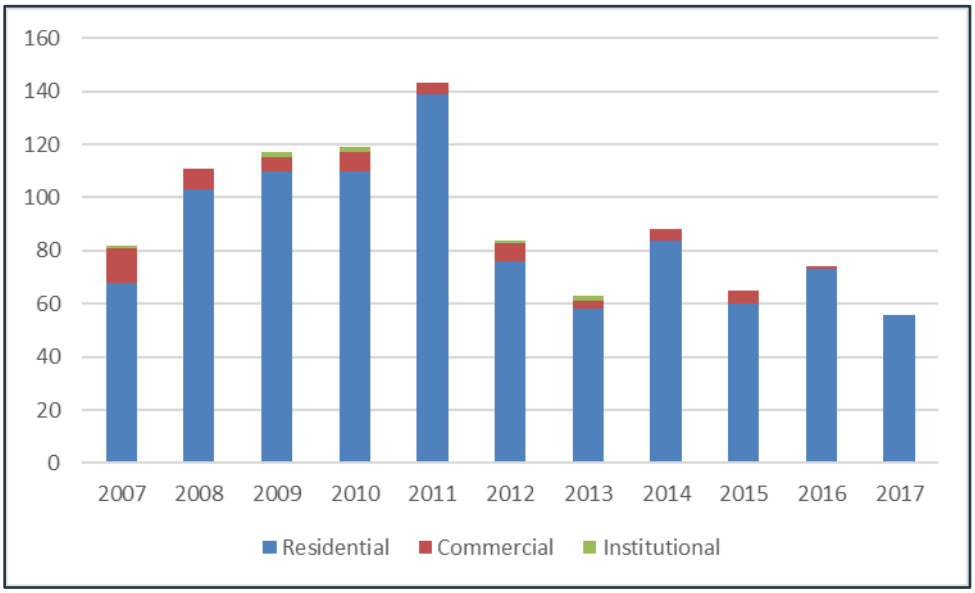


**Figure 3-1 Number of Development Permits in Gander from 2007 to 2017**

Between 2007 and 2017, the total value of building permits was between $11 and $32 million annually and the number of permits issued was between 56 and 143 (Table 3-1). The highest number of annual permits were issued between 2008 and 2011. The highest annual value of permits ($32 mil) occurred in 2016 when the number of new builds was below average but one commercial permit issued was valued at $800,000. The highest average value of permits occurred in 2015 when five commercial permits totalled $927,000.

**Table 3-1 Value of Gander Development Permits from 2007 to 2017**

| Year | Total Permits | Residential | Commercial | Institutional | Total Value | Average Value |
|---|---|---|---|---|---|---|
| 2007 | 82 | 68 | 13 | 1 | $13,037,125 | $158,989 |
| 2008 | 111 | 103 | 8 | 0 | $16,412,909 | $147,864 |
| 2009 | 117 | 110 | 5 | 2 | $24,423,545 | $208,748 |
| 2010 | 119 | 110 | 7 | 2 | $31,014,972 | $260,630 |
| 2011 | 143 | 139 | 4 | 0 | $21,087,130 | $147,462 |
| 2012 | 84 | 76 | 7 | 1 | $16,322,839 | $194,320 |
| 2013 | 63 | 58 | 3 | 2 | $17,759,755 | $281,901 |
| 2014 | 88 | 84 | 4 | 0 | $19,297,840 | $219,294 |
| 2015 | 65 | 60 | 5 | 0 | $15,279,730 | $497,353 |
| 2016 | 74 | 73 | 1 | 0 | $32,327,915 | $158,019 |
| 2017 | 56 | 56 | 0 | 0 | $11,693,425 | $208,811 |
| Total | 1,002 | 937 | 57 | 8 | $218,657,185 | $218,221 |

Gander's growth pressure has been mainly for residential development, with some commercial and limited government/institutional development. Residential growth impacts the need for municipal infrastructure, services and amenities. However, the number of housing starts has declined since 2011 and commercial developments have declined since 2015. Thus, future development in Gander could be expected to be slower than the most recent decade and to remain highest in the residential and commercial categories, with minimal development for the government/institutional category.

## 3.3 Economic Outlook

The economy of Newfoundland and Labrador has expanded in the last 20 years due to growth in both offshore oil (mainly in Eastern Newfoundland) and mining (mainly in Labrador). Development of natural resource based projects, large capital investments and subsequent royalties have been the source of strong employment, increased incomes and enhanced government revenues when commodity prices are high. However, the provincial economy is vulnerable to global downturns especially in the price of hydrocarbons and minerals. During this expansion period, economic indicators continually improved until 2014 at which point they began to weaken. Nonetheless, labour force participation and employment are still stronger than they were in 2006 (NLF 2017).

Major capital investments in Newfoundland and Labrador were at an unprecedented high between 2010 and 2014. They have since declined but are still higher than historic levels. As ongoing large construction projects (e.g., Vale's nickel processing facility, Hebron Project, Muskrat Falls) are completed or near completion, economic activity from construction has slowed down. In addition, sustained soft commodity prices have contributed to a weaker economic outlook and deferral of development projects (e.g., West White Rose Extension Project, Kami Iron Ore Project and related construction). In turn, a slower economy in general has resulted in a decline in residential investment (i.e., fewer housing starts and less money being spent on renovations). Decreased royalties from mining and oil and gas have resulted in deficit reduction measures to combat ongoing Provincial Government budget shortfalls. These factors have all contributed to a general economic downturn in Newfoundland and Labrador (NLF 2017).

The preliminary results for 2017 indicate that economic decline has continued. Though exports of oil and gas and minerals have increased and new projects (e.g., Husky's West White Rose expansion) are advancing, GDP is expected to have again declined. The loss is attributed to a decline in capital investment as major construction projects are nearing completion. The effects of a slower economy and Government debt reduction measures continue to have a negative effect on home building and renovations. Consumer spending showed growth in 2017 over 2016 with increases in sales of vehicles, retail goods and in the food and beverage sector (NLF 2017).

In the short to medium term, several developments are anticipated to add to construction and boost economic output. Construction of the Vale NL underground mine at Voisey's Bay began in 2016. This investment will extend the life of the Voisey's Bay mine beyond 2030 and is expected to add to production output and manufacturing shipments. Major investments are being made in the aquaculture industry and in transportation, hotel and convention infrastructure. The long-term economic potential and confidence in the provincial economy is still related to the energy sector with substantial offshore oil and gas resources and exploration investments, particularly in the Flemish Pass (NLF 2017).

Gander's economy is not dependent on natural resource industries but economic growth in Gander is affected by provincial trends. Central and western Newfoundland have strong links to the forestry sector and Corner Brook Pulp and Paper (CBPP) has a number of harvesting leases in and around Gander. CBPP is the only remaining newsprint producer in Newfoundland. Though the number of small farms and total area farmed have declined in the province, the value of agricultural revenue has increased. Potential developers have expressed interest in agriculture to the north of Gander and near Gander Lake. Of the approximately 150 major capital projects (greater than $1 m) active in the province in 2017, three and a portion of a fourth were located in Zone 14 and in Gander in particular. These included investments of $8 m (from 2012-2019) in the Eastgate subdivision, $5.5 m (2014-2018) in a new Pentecostal Assemblies ministry facility, $2.8 m (2017) in improvements at Gander Airport and a portion of $5.6 m (2017) being spent by Northview Apartment REIT on apartment building upgrades in several locations (NLF 2017).

Gander has benefited from provincial and local economic growth as evidenced by its population growth, new businesses and strong housing demand. Currently, a weak provincial outlook is expected to continue and to adversely affect GDP, employment, personal income and retail sales. The population declined by an additional 0.3% between 2016 and 2017 (NLF 2017). The stagnant population growth in turn is tempering economic growth such as GDP, retail sales and housing starts. This likely points to weaker economic growth in Gander but a stronger local economy than that of the province in general.

# 4.0 LAND USE

The original development pattern established for Gander in the original 1957 Municipal Plan, prepared by Canada Mortgage and Housing Corporation (CMHC), established the foundation for a well laid-out and efficient community. Subsequent development areas have also been well-planned but Gander is no longer compact.

## 4.1 Land Use Mix

Gander's municipal boundary encompasses approximately 108 km2 with a population density of 112 persons per km2. The population density is low as much of the area is undeveloped but 41% of the area of the municipal boundary is taken up by Gander International Airport (Figure 4-1). Gander's land use mix also includes residential, open space, commercial, industrial, tourism and recreation, public/institutional, rural resource and others.

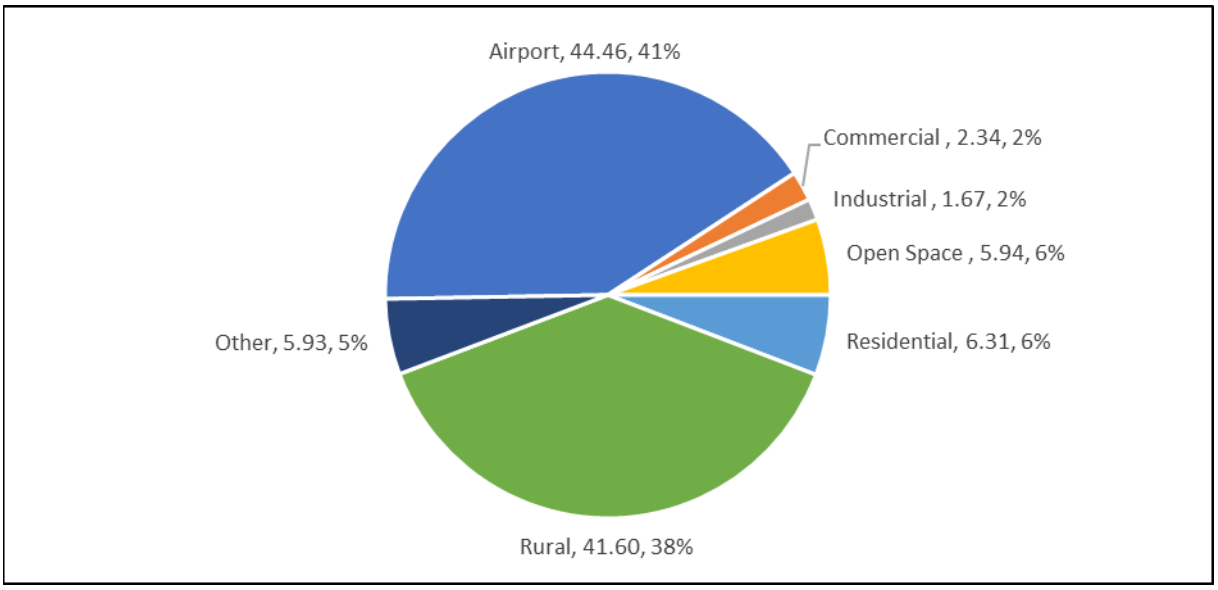


**Figure 4-1 Gander Land Use Mix in 2018**

## 4.2 Residential

In 2016 Gander had a total of 4,885 dwelling units (excluding long term care homes) (Figure 4-2). Most dwellings (65%) are single family detached units (including mini-homes) followed by apartments (subsidiary apartments, apartments in buildings, military apartments and condominiums together make up about 22% of dwellings). Semi-detached and row houses together account for 13% of dwelling units. Gander also has 119 units in long-term care facilities. The total number of dwellings in Gander increased by 1,015 between 2006 and 2016 (Statistics Canada 2017).

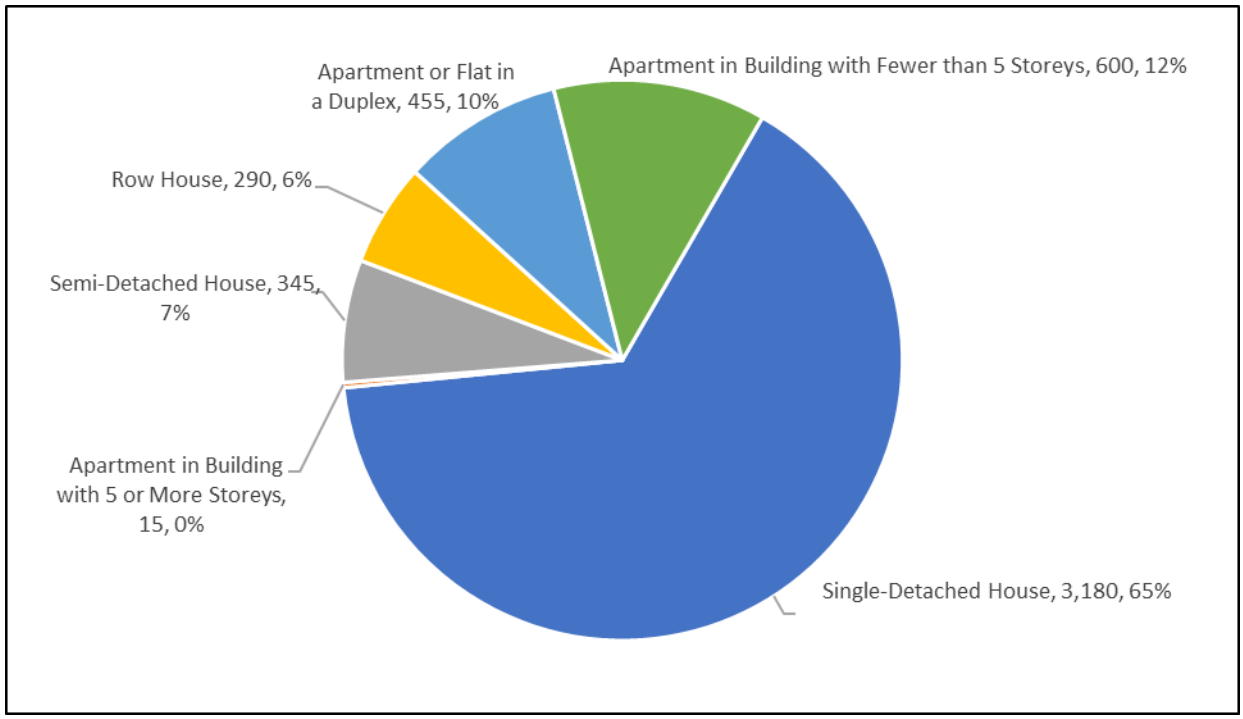


**Figure 4-2 Gander Dwellings by Type in 2016 (Statistics Canada, 2017)**

Most of Gander's development since 2006 has been new home construction as the number of single family dwellings increased by 61% (Table 4-1). The total number of apartments increased by approximately 27% or 270 units. Based on the Town's data, the number of military apartments decreased from by 29 (i.e., from 76 to 47) between 2007 and 2017 meaning that the number of new apartment units may be as many as 300 (Statistics Canada 2017; Town of Gander 2018).

**Table 4-1: Gander Housing Growth by Dwelling Type from 2006 to 2016**

| Dwelling | 2006 | | 2016 | | 10 Year Increase | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Single Detached | 2,560 | 66.1% | 3,180 | 65.1% | 620 | 61.1% |
| Semi Detached | 310 | 8.0% | 345 | 7.1% | 35 | 3.4% |
| Row House | 200 | 5.2% | 290 | 5.9% | 90 | 8.9% |
| Apartment | 800 | 20.7% | 1,070 | 21.9% | 270 | 26.6% |
| Total | 3,870 | 100.0% | 4,885 | 100.0% | 1,015 | 100.0% |

Source: Statistics Canada 2017

While detached dwellings made up approximately two-thirds of Gander's total occupied dwellings in 2016, the proportion was somewhat lower in new construction between 2006 and 2016. Of the 1,015 new units added, detached units comprised 61.1%. This decline in the proportion of detached dwellings may be indicative of a gradual market trend towards smaller and more affordable attached housing types. Further, while row houses comprised 5.6% of housing stock in 2006, they made up 8.9% of new development over the next 10 years.

Similarly, apartment units comprised 26.6% of new dwellings over this period compared to being 20.7% of the 2006 housing inventory in 2006 (Statistics Canada 2017).

The number of rented dwelling units compared to owner-occupied units in Gander is also increasing (Table 4-2). Whereas rental units comprised 31.3% of the total in 2006, they made up 44.9% of new dwellings that came on stream over the ensuing 10 years (Statistics Canada 2017). This can probably be attributed, at least in part, to increasing provision of seniors rental housing.

**Table 4-2: Growth in Owned Versus Rented Housing in Gander from 2006 to 2016**

| Unit Type | 2006 | | 2016 | | 10 Year Increase | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Owner Occupied | 2,660 | 68.7% | 3,225 | 65.9% | 565 | 55.1% |
| Renter Occupied | 1,210 | 31.3% | 1,670 | 34.1% | 460 | 44.9% |
| Total | 3,870 | 100.0% | 4,895 | 100.0% | 1,025 | 100.0% |

Source: Statistics Canada 2017

The number of annual home sales in Gander ranged from 107 and 240 between 2007 and 2017 (Figure 4-3). As with building permits, housing sales were strongest in the earlier part of the 11-year period and the number of sales have declined since 2015 (Statistics Canada 2017). This could be an indication that the demand is being met or the values have risen too high for some home buyers.

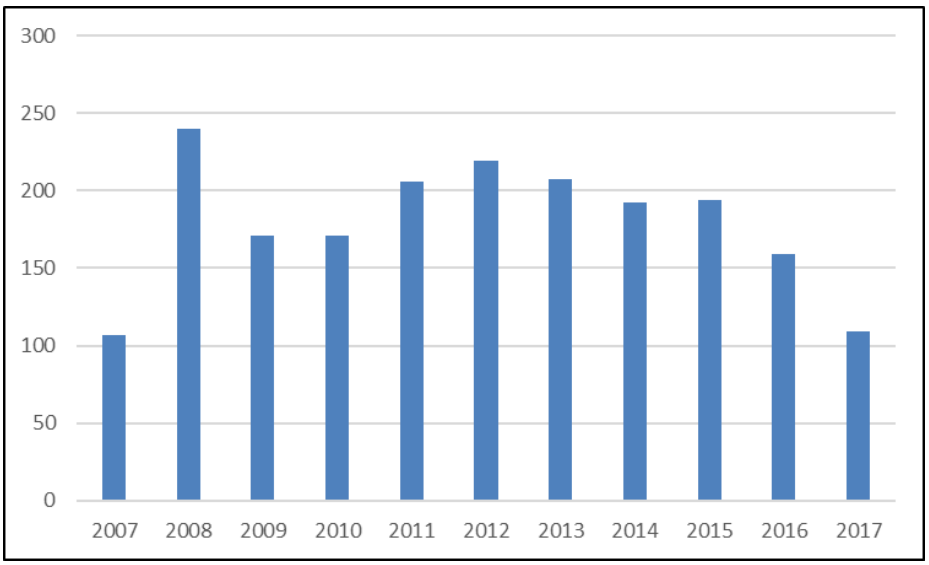


**Figure 4-3 Number of Housing Sales in Gander from 2007 to 2017**

Between 2007 and 2017, average selling price for a home (excluding mini-homes) in Gander increased by more than $118,000 (Figure 4-4). The increase in housing cost is to some extent attributed to the type of homes being constructed. The average sale price of mini-homes fluctuates greatly and was between $32,250 and $104,500. Some mini-homes are on leased land and thus the cost of land would not be included in the sales price.

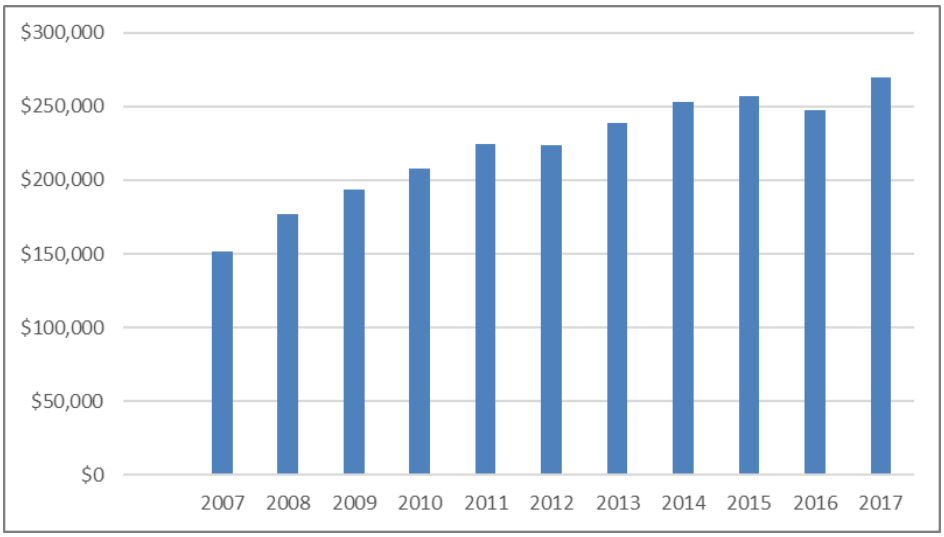


**Figure 4-4 Average Value of Housing Sales in Gander Excluding Mini-Homes from 2007 to 2017**

### 4.2.1 Affordable Housing

The Town Gander has recognized the increasing cost of housing and in 2015 completed an affordable housing needs assessment. The cost of housing has increased at a rate that has outpaced increases in income. Two groups were identified as being most affected by the high cost of housing. Those with low incomes (below $30,000), who are mainly served by social housing, are limited to existing units, which are ageing and no new units are being added. In addition, low income renters compete with higher earners for rental units. For those with moderate income ($30,000 to $50,000), there are limited affordable homes in the resale market, new single detached homes are not targeted for this group and there is a negative perception about attached homes as being social housing for low income families (Refact 2015).

The high cost of housing affects various sectors of the population including low income individuals and families, single parent and single person households, renters including students, first-time buyers and seniors with low incomes. It is also an issue for the retail and service industry in Gander as it is difficult to attract and retain workers to a community with high housing costs. Some developers are responding by providing smaller homes on smaller lots.

The Town of Gander is proactively addressing affordable housing needs by establishing a higher density development area that will be exclusively for affordable homes. In 2017, the Town issued a call for proposals to develop a parcel of land to accommodate more than 250 smaller homes with a market price of under $200,000. The new subdivision will be located between Carr Crescent and Ogilvie Street in the western area of the Town. In 2017, the Evangel Pentecostal Church received $1.25 million (50%) in funding from the Provincial *Investment in Affordable Housing Agreement* to convert its former community centre 10 affordable rental units for seniors in Gander (Gander Beacon 2017). The Church is also planning to renovate its former church building into affordable rentals. The Town is anticipating that these initiatives will help address affordable housing issues in Gander. In addition, the Provincial government has assistance programs. These include the First-time Homebuyers Program, Home Purchase Program, Home Energy Savings Program, Home Modification Program and Provincial Home Repair Program (NLHC 2018).

## Small Homes

Despite that fact that many new homes in Gander have been larger detached family homes, the housing market maintains an interest in more affordable units including mini-homes, small houses, duplexes and row houses in higher density developments. Gander has 86 mini-homes in the Viscount Crescent, Gray Avenue and Curtiss Avenue area. Attached homes have been developed along with detached houses on streets such as Morgan Drive, Wood Crescent, Bennett Drive, Gordon Street and Richenbacker Road. In recent years, smaller units have been developed in new subdivisions such as Kingsford Smith Place and Freedom Village. The new subdivision near Carr Crescent will result in approximately 120 affordable homes (CBC 2016). Smaller homes are of interest to seniors, retirees, small families and those with limited income. Given the current population and housing trends in Gander, it is anticipated that this type of home will remain, and perhaps increase, in demand.

## Tiny Homes

Some residents have expressed interest in tiny homes. The tiny house concept is a social movement where people (mostly young) are choosing to live in tiny houses (typically 200 to 400 ft2) for environmental reasons (e.g., use of resources and personal footprint), financial reasons (e.g., housing affordability) and lifestyle (e.g., simplification, enabling flexibility in employment and/or an interest in freeing disposable income for other uses such as travel) (CMHI 2016). No tiny houses have been proposed for Gander at this point but the Town will have to consider this possibility of such proposals.

Housing affordability can also be approached through smart growth techniques that include infilling, building multi-story buildings, reusing already-developed land and existing structures. Neighborhoods are designed so that homes are near shops, offices, schools, parks and other amenities. Communities provide a range of housing types so that seniors may stay in their neighbourhoods, young people can invest in a first home, and families can find safe, attractive and affordable homes.

### 4.2.2 Housing Forecast

Housing demand is driven by two factors – population change and change in household size. Between 1996 to 2016, Gander's net population growth was 1,324 residents and housing growth was 1,232 units – a ratio of almost one to one (Table 4-3). While the population increased by 12.8%, the number of dwellings increased by 33.7% because household size decreased by 15.8% (Statistics Canada 2017).

**Table 4-3: Gander Household Size from 1996 to 2016**

| Year | Population | Occupied Dwellings | Household Size |
|---|---|---|---|
| 1996 | 10,364 | 3,655 | 2.84 |
| 2001 | 9,651 | 3,720 | 2.59 |
| 2006 | 9,951 | 3,869 | 2.57 |
| 2011 | 11,054 | 4,517 | 2.45 |
| 2016 | 11,688 | 4,887 | 2.39 |
| 20-Year Change | 1,324 (12.8%) | 1,232 (33.7%) | -0.45 (-15.8%) |

Source: Statistics Canada 2017

Decreasing household size is part of a national long-term trend driven by demographic and societal changes. Between 1961 to 2011, the average number of children per family decreased from 2.7 to 1.9 in Canada. There are

now more single-person households than there are couple households with children. Couples without children now outnumber couples with children (Statistics Canada 2017).

Two scenarios (based on low-growth and high-growth) were forecasted for Gander's future housing needs. It is assumed, regardless of growth, that average household size will decline by 0.06 persons per household within each five-year interval, similar to the rate of change from 2001 to 2016. Under the low-growth scenario, there would be a need for approximately 1,281 units over the next 20 years for an average of about 64 units per year (Tables 4-4).

**Table 4-4: Gander Low-Growth Housing Forecast from 2021 to 2036**

| Year | Population | Household Size | Dwelling Units | 5 Year Demand |
|---|---|---|---|---|
| 2021 | 12,050 | 2.33 | 5,172 | 282 |
| 2026 | 12,472 | 2.27 | 5,494 | 322 |
| 2031 | 13,021 | 2.21 | 5,892 | 398 |
| 2036 | 13,268 | 2.15 | 6,171 | 279 |
| 20-Year Change | 1,580 | - | - | 1,281 |

The same assumption about household size was applied to a high-growth scenario. Under the high-growth scenario, there would be a need for 1,636 units for an average of about 82 units per year (Table 4-5).

**Table 4-5: Gander High-Growth Housing Forecast from 2021 to 2036**

| Year | Population | Household Size | Dwelling Units | 5 Year Demand |
|---|---|---|---|---|
| 2021 | 12,120 | 2.33 | 5,202 | 312 |
| 2026 | 12,702 | 2.27 | 5,596 | 394 |
| 2031 | 13,477 | 2.21 | 6.098 | 502 |
| 2036 | 14,030 | 2.15 | 6,526 | 428 |
| 20-Year Change | 2,342 | - | - | 1,636 |

Approximately 700 to 800 residential lots are estimated to be in the planning stages. Based on the current housing needs forecast, the current planned developments can accommodate anticipated growth for the next 10 years. Crown Lands Division of DMAE has also received a request for land for residential development north of the Spruce Court subdivision. The Town is constructing a new sewage treatment to the north near Whitman's Pond and plans to grow in this direction. Despite the existence of extensive wetlands, with the stewardship zone and habitat management units, large parcels of dry land with moderate slopes exist in this area.

## 4.3 Commercial

The commercial areas of Gander grew around the central retail area of the original Town site. These areas include Town Square, Elizabeth Drive Shopping Centre, Airport Boulevard and Armstrong Boulevard where a number of small businesses are located in low rise buildings. Gander's downtown core grew around the retail malls and the area now includes larger commercial operations (e.g., car dealerships, large grocery and hardware stores). Some commercial space has been used for Government offices and displaced the Town's only movie theatre. These larger businesses are not typical of traditional downtown developments and have resulted in buildings that are

setback from streets and fronted by large parking areas. Such development lacks the scale, aesthetic and walkability associated with downtown areas.

In 2006, the Town of Gander completed a Downtown Redevelopment Study, which makes recommendations for facade improvements to the Elizabeth Drive and Airport Boulevard retail areas but these recommendations have been not been implemented. Redevelopment of the downtown has been challenged by development of other commercial areas. In addition, several vacant buildings and lots in the downtown area have not been made available for sale for suitable developments (e.g., pubs, restaurants, movie theatre) that may have created incentives for other building owners to improve their properties.

The Roe Avenue commercial area development has resulted in several large stores such as Walmart and Kent Building Supplies along with a number of other retail and service businesses. Many new businesses express their desire to be near Walmart to take advantage of the larger number of shoppers attracted by the anchor store. This area has been successful but space has become limited and the development has contributed to the decline of the downtown area. A 2003 study indicated that the most suitable location for a new major retail outlet would be the Gander Business Park area (McMillian 2003). The Town has explored options for attracting additional large stores including a second supermarket but these developments have not yet transpired.

The Town is seeking opportunities for new commercial areas. Maximizing opportunities for commercial growth and development will ensure that the Gander economy remains strong in the region. As much as possible, the Town should seek opportunities to revitalize the downtown area and encourage infill development and reuse of existing buildings and sites. If new commercial areas are to be developed, they should maximize existing commercial areas and/or be planned in proximity to new neighbourhoods to provide convenience and walkability in those areas. In many North American cities, business parks are being designed to minimize run-off and reduce heat gain, visual screening, sensitive sighting and orientation to take advantage of natural light, solar energy and wind protection.

New commercial development has occurred within the built-up areas of the Town and on the Airport property. The Town has limited new areas for commercial development. Development at the Airport site is beneficial to the Town as the municipality receives tax revenue from such developments. The GIAA does not own the Airport land but operates the Airport on behalf of Transport Canada. The GIAA is permitted to lease land to businesses. This development model is suitable for companies that wish to lease land rather than purchase. Businesses requiring land for purchase, will need to be accommodated either within the existing developed areas or in new developed areas.

## 4.4 Industrial

Gander has two well-established industrial areas: McCurdy Drive and Carr Crescent. They contain a mixture of industrial operations. In addition, the Gander Business Park is located north of the Airport on Roe Avenue. This area consists of 113 acres of industrial development. Due to a lack of industrial development demand, a portion of Baird Place in the Business Park was re-zoned to Commercial Light Industrial and this resulted in new development.

The demand for industrial development remains slow and several Industrial General lots on Baird Place have remained vacant. No permits for the construction or renovation of industrial developments were issued between 2000 and 2017. The last permit issued for an industrial project was in the early 1980s. This trend is likely to continue in the near future.

Additional lands are designated for industrial uses and provide more than adequate land for future development. In addition, land is also available at Gander Airport. These serviced lots available for lease and provide access to Airport services and the TCH (ADI 2009).

Light industrial development has also occurred on the Airport property. Continued development at the Airport site is also beneficial to the Town.

## 4.5 Airport Lands

A Land Use Plan was prepared for Gander Airport in 1999 when the Airport was under the management of Transport Canada. This Land Use Plan is still in effect but is currently being updated. Development at Gander Airport has specific requirements. The Noise Exposure Forecast in the Land Use Plan recommends that residential development should not occur in areas within the 35 Noise Exposure Contour. Any airport developments of more than 5 ha are to be approved by the Federal Minister of Transportation.

The GIAA has a mandate to diversify the Airport's revenue streams and make the facility self-sustaining. (GIAA 2016). Various industrial businesses that serve the Airport are located on site and the GIAA has plans to develop 150 acres to the east side of Cooper Boulevard as a business park (the Airport Authority does not intend to develop residential areas). These lots provide high visibility in a prime location near the business district of Cooper Boulevard and Roe Avenue and the TCH.

Strategic marketing by the GIAA and the Town of Gander has attracted businesses some of which have chosen locations on Airport property. Several commercial businesses have established on leased Airport land (mainly automobile and other vehicle sales and services). Leasing land may not be suitable for many smaller businesses that may need property to secure bank financing (Burbridge 2017; Dalton 2017).

The Town of Gander does not have development control at the Airport due to its federal jurisdiction. Nonetheless, development on Airport lands, like all development, is beneficial as the Town collects business tax and property tax from such developments. The GIAA and the Town work cooperatively to attract businesses and have a shared service agreement regarding municipal services.

The Town of Gander could expand into lands north of the developed area of the Airport but this would require obtaining land presently owned by Transport Canada. The GIAA does not own the Airport land and is unable to sell or transfer property belonging to the Government of Canada. Under the Terms of Union with Canada, any surplus Airport land reverts to the Province of Newfoundland and Labrador. Once this occurs, the Town of Gander can request sale or transfer of land from the Province (Burbridge 2017; Dalton 2017).

## 4.6 Public/Institutional

The Town of Gander has a variety of institutional land uses including schools, churches, hospital, entertainment and cultural facilities, a library and utilities. A total of eight institutional permits were issued in Gander between 2007 and 2017 and none have been issued since 2013. Gander has completed studies to investigate the possibility of a second ice-surface for the community but to date, this project has not proceeded.

In November 2017, the Provincial government announced funding for a 60-bed long-term care facility in Gander. The site for the new facility will also include sufficient space to accommodate a replacement facility for Lakeside Homes. The result will be one larger facility to address current and projected demands for long-term care in Gander (The Telegram 2017).

The new Gander Elementary school, which opened in 2017, is now serving students from Grades 4 to 6. Gander Academy, which accommodates the school population from Kindergarten to Grade 3 will be redeveloped on its existing site. This project will result in the loss of one soccer field at the school site.

## 4.7 Open Space – Recreation and Conservation

Gander has a variety of recreation facilities and recreational lands. Within the developed area of the Town, residents enjoy organised activities at facilities such as the Steele Community Centre (ice arena, walking track and performance space), Airport Nordic Ski Club and Gander Golf Club (Figure 4-5). Private operators and sports associations also provide recreational programs. Leisure amenities includes Cobb's Pond Rotary Park, Thomas Howe Demonstration Forest, Little Harbour on Gander Lake, the Newfoundland and Labrador T'Railway Provincial Park (T'Railway), snowmobile trails and Jonathan's Pond Campground (in a Provincial Park Reserve). Other recreation areas including a ball hockey court, splash pad, ballfields, playgrounds, skateboard park and a seasonal outdoor ice rink are located throughout the Town (TCII 2018).

The Town of Gander continues to invest in Cobb's Pond Rotary Park and other sites. The T'Railway, which runs through Gander's Municipal Boundary and Planning Area, is protected and administered under the authority of the Provincial Parks Act and its subordinate regulations by the Parks Division (ILUC 2017). In addition, a volunteer group is planning a long-distance hiking trail from Gander to Appleton via Gander Lake. This trail is intended to be of benefit to residents of Central Newfoundland and to provide a focus for outdoor tourism.

The Province of Newfoundland and Labrador has guidance and legislation regarding the development, operation, maintenance and promotion of walking and hiking trails. Under the *Lands Act*, trails developed on Crown Land (including within a municipality) require a Licence to Occupy (LTO). As part of the LTO application, trails will be reviewed by the Provincial Archaeology Office (PAO) in keeping with the *Historic Resources Act*. Trails owned by municipalities are covered by the municipality's liability insurance but other owners/managers of trails may be subject to liability claims related to use of trails that they promote to the public. Use of Provincial signage and off-site signage are permitted by application through Service NL. Organizations constructing trails are encouraged to use construction standards (e.g. for rise and run of steps), use experienced professionals and consider durable low maintenance materials. Trails developed as a tourism and/or recreational asset are recommended to consider ownership, collaboration with neighbouring towns, amenities, safety and emergency response and regular inspections. Trails of more than 10 km in length are required to be registered for environmental assessment under the *Environmental Protection Act*., *2003* and trails within 200 m or a scheduled salmon river may require registration. Under the Water Resources Act, a permit is required for trails constructed within 15 m of a water body including wetlands (DTCII no date).

Public trails may be designated under the *Pedestrian Trails Liability Protection Act* and *Regulations* and the operator of the trail, protected from liability. Such trails must meet Provincial standards for ownership, insurance, signage, inspections and maintenance (GNL 2010). To date, the East Coast Trail is the only trail designated under this legislation.

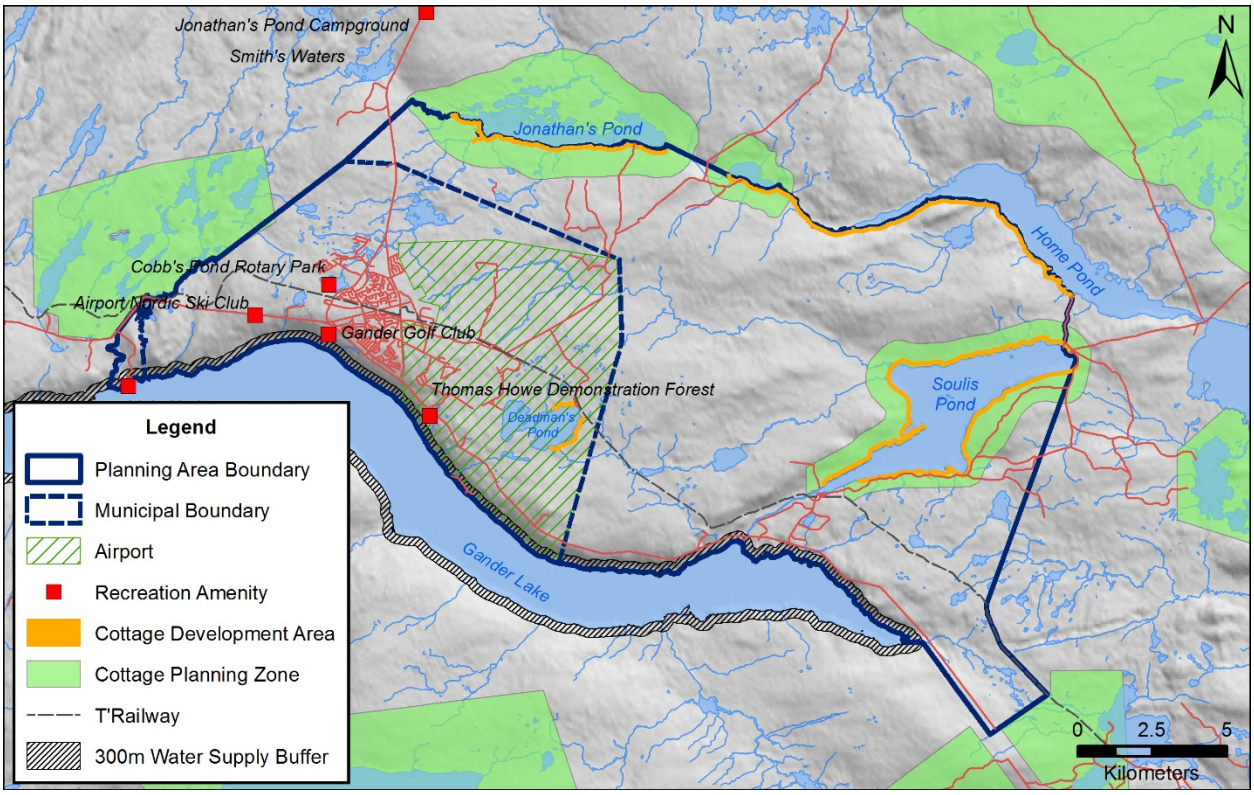


**Figure 4-5 Recreation Amenities and Cottage Development Areas in the Gander Municipal Planning Area**

Open space, recreation and other public areas play an important role in municipalities. These areas are beneficial to individuals and the community as a whole. They provide space for personal development and social opportunities and also contribute to environmental conservation. Public spaces are beneficial socially and economically (e.g., for concerts, festivals and other gatherings) as they also contribute to the attractiveness of the Town for business investors and new residents.

The importance of open space in public health and active living cannot be underestimated. While organized programs and activities can be costly, outdoor activities such as walking or hiking are affordable to most anyone. Active living, which includes physical activity as integral to daily life, is enhanced by the availability of recreation facilities and recreational open space in close proximity to residential areas. Green belts between open spaces in the community facilitate active transportation such as walking and bicycling. This concept has become even more important with the realization that Canada's children are physically inactive leading to early onset of chronic diseases. It is also recognized that being active enables the elderly to live more meaningful lives (CIP 2012; TCAT 2017).

The Town of Gander commissioned a recreation master plan in 2015. Along with priorities for development of recreation facilities, the report recommended preparation of a parks, open spaces and trails development master plan and development of neighbourhood parks, open spaces and trails with connectivity to other parts of the Town (Tract Consulting 2015).

Open space set aside in subdivisions can serve two purposes: recreation and environmental conservation. Gander's subdivision regulations generally require an allocation of 10% of the area of the subdivision or 25m2

per dwelling unit (whichever is greater) for open spaces, neighbourhood parks and green belts. The Town has experienced issues regarding the quality, suitability and accessibility of lands that have been reserved for open space and the public has expressed dissatisfaction with this process and its outcome. The Town of Gander wishes to ensure that conserved open space is desirable for open space and recreation amenities rather than land that was unsuitable for subdivision development.

This should be where we discuss issues that arose – i.e. 10% open space requirement – need for good quality land and the proposed site for a new community recreational area.

### 4.7.1 Cottage Development Areas

Cabins have been developed in various areas near Gander. These areas include Joe Batts Pond, Miller's Waters, Smith's Waters, Jonathon's Pond, Boot Pond, Home Pond, Soulis Pond and Deadman's Pond. The Department of Municipal Affairs and Environment, Crown Lands Administration Division has requested that the Town of Gander apply appropriate zoning to cottage development areas that fall within the Municipal Planning Area. It was also noted by Crown Lands that CBPPL, which has timber rights in some of these areas, should be consulted regarding cottage development areas (ILUC 2017).

### 4.7.2 Historic Resources

The Department of Tourism, Culture, Industry and Innovation, Provincial Archaeology Office (PAO) has forwarded comments regarding the Municipal Plan Review. The PAO suggests that there is potential to encounter historic resources within the Town of Gander Municipal Planning Area. The PAO requests that any development proposals involving ground disturbance around Gander Lake, Soulis Pond, Home Pond, Boot Pond or Jonathan's Pond be forwarded for review prior to commencement of the Project (ILUC 2017).

## 4.8 Rural Resource Uses

A number of rural resource uses are located outside the built-up area of Gander. The following describes these uses and implications for future planning.

### 4.8.1 Forestry

Various areas within the Town of Gander's Planning Area are slated for domestic and commercial harvesting. The domestic areas are located off Gander Bay Road, a large area from north of Jonathan's Pond to the Airport property and near Benton. Corner Brook Pulp and Paper Limited (CBPPL) holds timber rights for commercial harvesting and silviculture for large portions of the Planning Area. East of the Gander Bay Highway (Route 330), the holdings extend from the south side of Whitman's Pond to beyond the north side of Jonathan's Pond. West of the Gander Bay Highway, the holdings take in the majority of land from Gander Lake north to the Planning Area boundary and beyond (Figure 4-6).

Department of Fisheries and Land Resources advises that there are significant forestry resources in the Gander Municipal Boundary including two current Five-Year Plan commercial blocks at Boot Pond and Domestic Cutting Areas used by more than 300 domestic harvesters as well as forestry roads and silviculture areas. Corner Brook Pulp and Paper Limited (CBPPL) has timbers rights within the Municipal Boundary and Planning Area. The Forestry Division recommends that these harvesting rights be protected and the Town of Gander maintain communication with Crown Lands and CBPPL regarding access to forestry lands within the Municipal Boundary and Planning Area (ILUC 2017).

Ownership of timber rights in the Gander Planning Area are shared between the Crown, Corner Brook Pulp and Paper Ltd. (CBPPL) and Gander Airport. CBPPL's timber holdings cover a substantial area of land within and adjacent to the Planning Area. In the areas of highest to the north on both sides of Gander Bay Road, the timber holdings are owned mostly by CBPPL. These holdings are in the form of long-term licenses, which provide exclusive ownership of the timber resource.

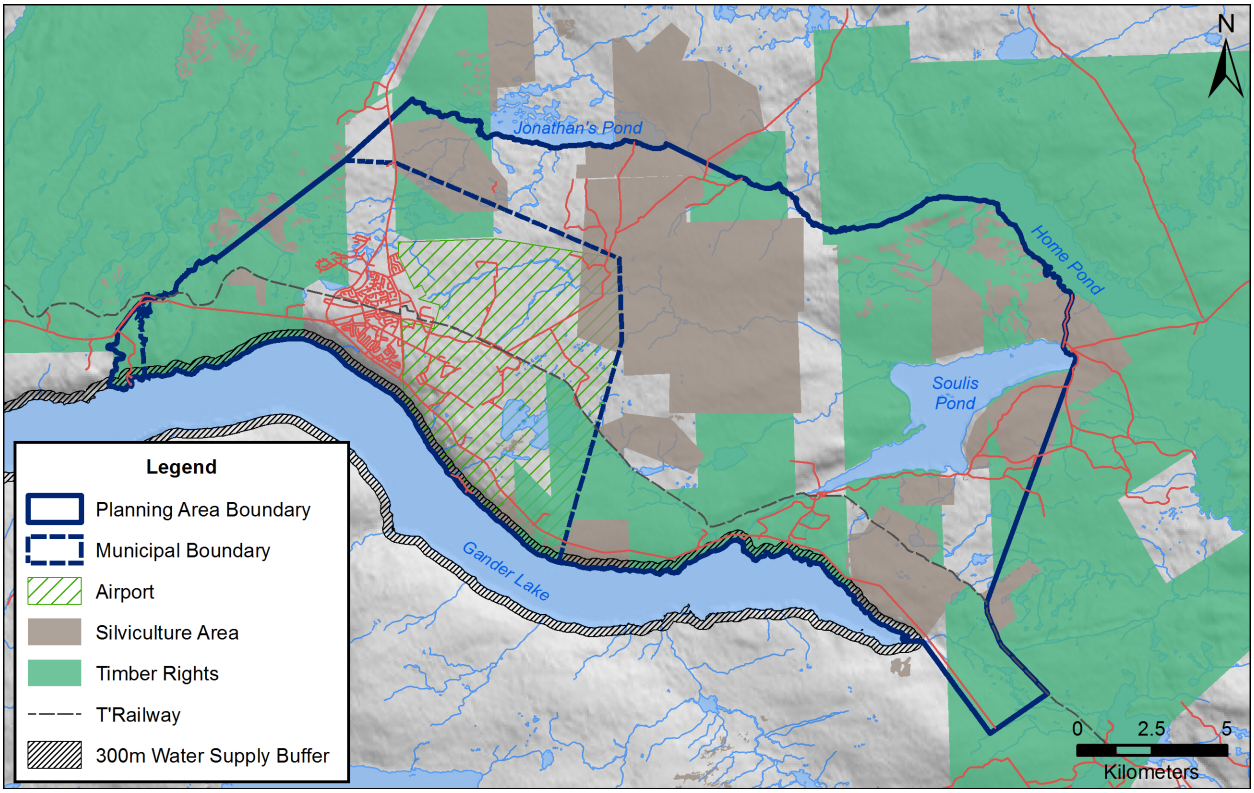


**Figure 4-6 CBPP Timber Holdings in the Gander Municipal Planning Area**

As part of the background review, the consultant met with CBPPL's Woodlands Manager and Environmental Manager to discuss how future land development might affect the company's timber holdings in Gander. Two Provincial Forestry officials were also interviewed (Regional Planner for the Central region and provincial Forest Ecosystem Manager). CBPPL indicated that to relinquish any of these timber holdings, it would be necessary for the company to acquire equal compensatory holdings owned by the Crown in an alternative location. This would be necessary for the company to maintain its Annual Allowable Cut (AAC) at the current level (Knott 2017; Chamberlain 2017).

Generally, such transfers or exchanges of timber rights, by necessity, must involve the Provincial government as the only other major timber holder in the province. This would necessitate three-way discussions between the Town, CBPPL and the Province. To initiate the process, the Town would need to send a letter, including a map, to the Department to identify the lands in question and should correspond with CBPPL regarding the matter. Cabinet approval would be required for an exchange to occur. Once the timber rights exchange occurs, the Town or any developer could apply for the Crown land through the usual application process (Poole 2018; Oake 2018).

While CBPPL may not have been previously compensated for timber losses resulting from municipal expansion, the Province recently negotiated a significant land transfer for future agricultural development for which CBPPL was financially compensated. A Crown to CBPPL transfer might be difficult as virtually all of the Crown AAC in the Central region is already allocated to the sawmill industry. There is no timberland of comparable quality available to satisfy an exchange agreement with CBPPL (Poole 2018; Oake 2018).

A possible alternative to a timber exchange is to include forestry as a permitted or discretionary use in any zoning that takes in CBPPL licensed lands. In this way the company's AAC would not be affected until such time as the land is needed for development (Poole 2018; Oake 2018). This approach might negate the need for a one-time timber exchange of any significant scale. An alternative approach might be to negotiate smaller incremental exchanges as land is needed for development. This would likely require an agreement in principle.

### 4.8.2 Mining and Quarrying

Mining activity includes mineral exploration, mineral extraction and quarrying. A number of mines exist in the Province and mineral exploration and quarrying are widespread. Mineral exploration activities, and recognized mineral occurrences, are extensive to the west of Gander and occur to a much lesser extent within the Municipal Boundary and Planning Area (Figure 4-7). Mineral exploration is occurring outside of developed areas of the Town at the west end of the Planning Area, to the east of the Airport property and east of Benton (ILUC 2017).

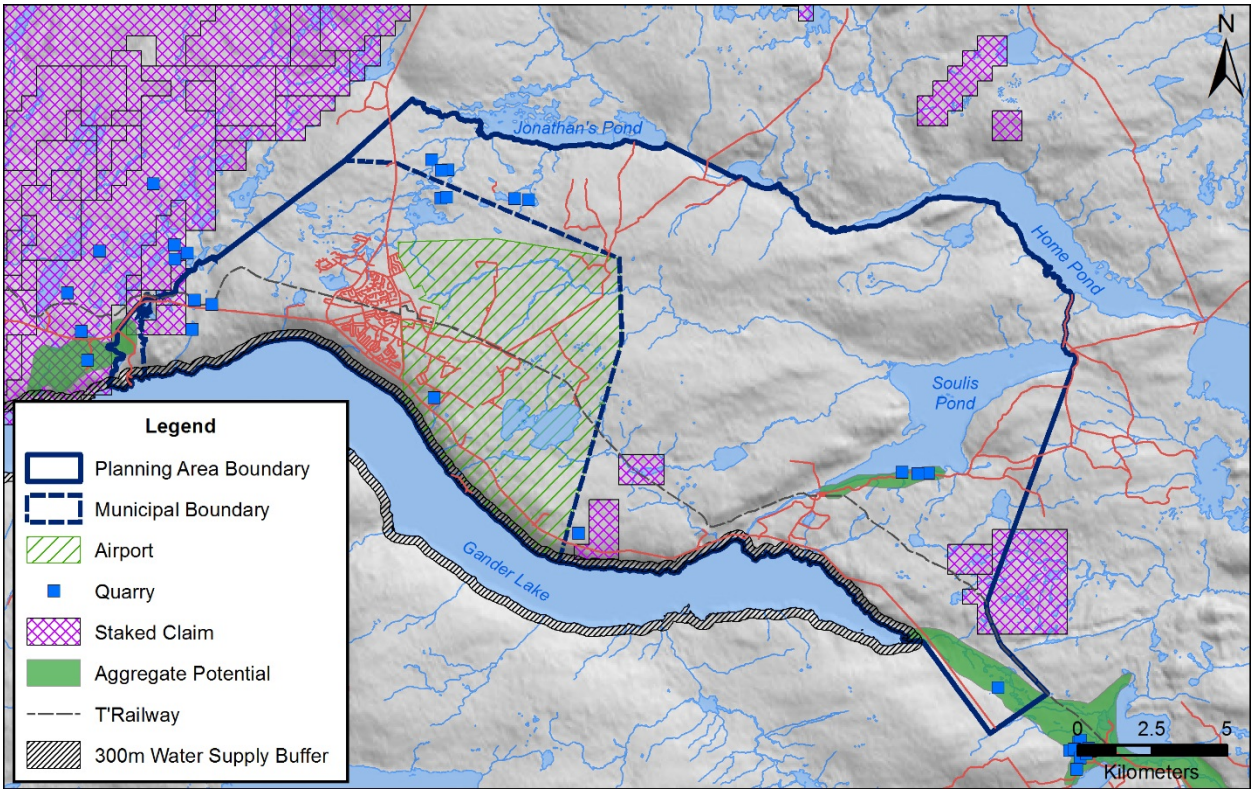


**Figure 4-7 Mining and Quarrying in the Gander Municipal Planning Area**

Most quarries are located west and north of the developed area of the Town within the Municipal Boundary and Planning Area. Others are located on the Airport property, near the TCH east of Gander and near Benton at the

outflow of Soulis Pond. Areas of recognized aggregate resource potential (i.e., areas recognized as containing, or likely to contain, sand and gravel deposits of suitable size and quality for quarrying) have also been identified in and near the Planning Area near Little Harbour, Soulis Pond and the east end of Gander Lake (ILUC 2017).

The Department of Natural Resources, Mines Branch recommends that current quarrying and mineral exploration interest and other identified mineral resources are to be considered in the Gander Municipal Plan Review. The Mines Branch also advises that quarrying and mineral exploration may be proposed for other locations in the future and new resources may be discovered (ILUC 2017).

### 4.8.3 Agriculture

Land in the Gander area is rated as having fair to good capability for agriculture. Parcels of agricultural land are located on Gander Bay Road, Magee Road and off the TCH near Oglivie Street within the Gander Municipal Boundary (Figure 4-8). Agricultural areas are also located in the Planning Area Boundary at Home Pond and Benton at the outflow of Soulis Pond (ILUC 2017). Existing and proposed agricultural areas are located within the current Municipal Boundary. Crown Lands Division of DMAE has received a proposal for agricultural development to the north of the Town.

The province has limited suitable agricultural land. The Department of Fisheries and Land Resources, Agricultural Land Section is mandated to protect existing and future agricultural lands. The Agricultural Land Section advises that existing agriculture properties and development, including small-scale home gardens, must not be negatively impacted by other activities and allowed to expand where permissible (ILUC 2017).

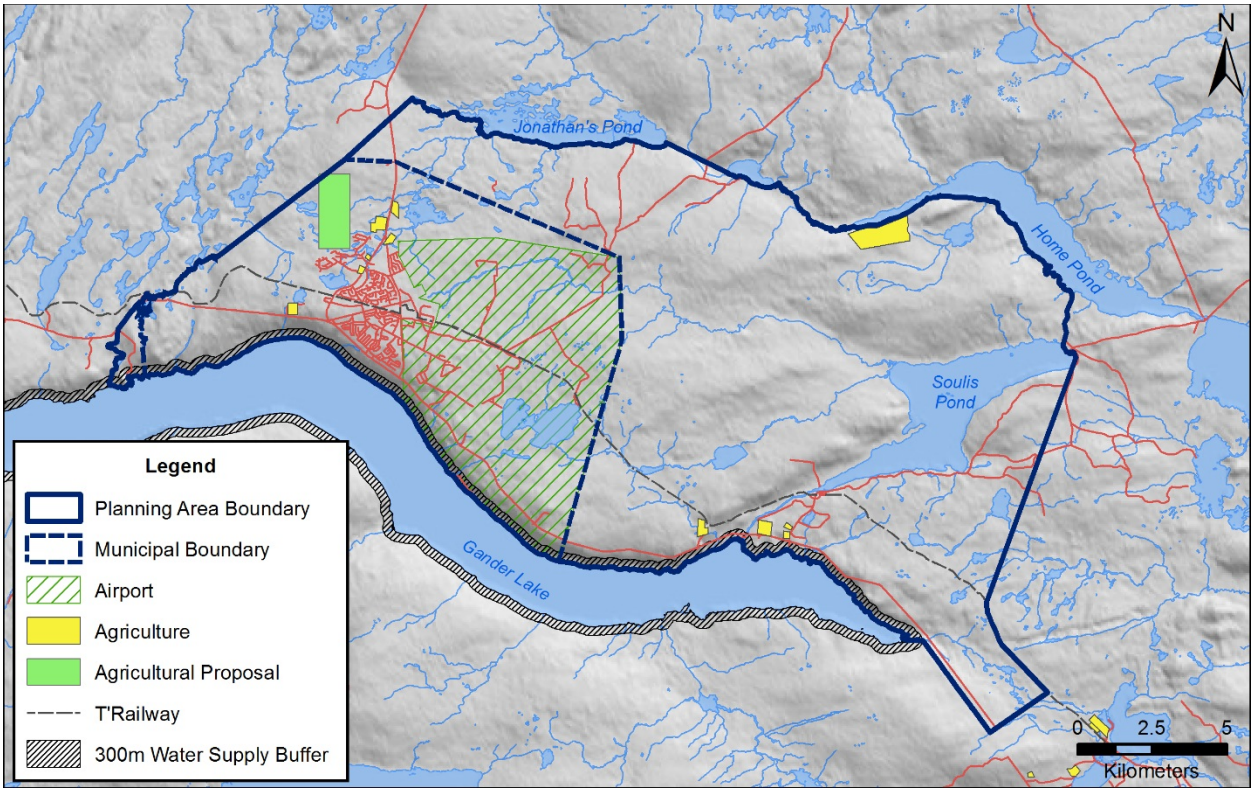


**Figure 4-8 Agricultural Development in the Gander Municipal Planning Area**

## 4.9 Special Policy Area: Gander Bay Road

The Gander Bay Road area is primarily a rural residential area, with some businesses (e.g., plant nursery, motel, RV camping park), which are generally compatible with surrounding residential uses. Future development will be limited due to the presence of sensitive wetland areas, which are part of the Eastern Habitat Joint Venture (EHJV) program. The area is not presently serviced with municipal water and sewer services. Residents have reported no problems with their current on-site systems, and ground water is generally of good quality and quantity.

# 5.0 MUNICIPAL AND REGIONAL INFRASTRUCTURE

Since the last Municipal Plan review, there have been several important changes to the Town of Gander's public infrastructure and services. These include closure of the solid waste disposal site and the upcoming construction of a new sewage treatment plant that will replace the two existing facilities. The following section summarizes current information regarding existing and proposed transportation infrastructure, utilities, protected water supplies, sewage treatment and solid waste management.

## 5.1 Transportation

Gander's road network consists of major arterial roads, residential and commercial/industrial collectors and local streets. Cooper Boulevard and Magee Road are Town streets and where these roads intersect they become Gander Bay Road (Route 330), which is a provincial road.

The Town of Gander has three major arterials, which are the TCH, Cooper Boulevard and Gander Bay Road (Figure 5-1). Magee Road is identified as a minor arterial and eight other roads as collectors (Table 5-1). All other roads are considered local roads and provide access to residential, light industrial and commercial areas.

**Table 5-1 Gander Urban Street Classification**

| Major Arterial | Minor Arterial | Collector |
|---|---|---|
| Trans Canada Highway<br>Cooper Boulevard<br>Gander Bay Road | Magee Road | Airport Boulevard – James Boulevard<br>Bennett Drive<br>Byrd Avenue<br>Edinburgh Avenue<br>Elizabeth Drive<br>Memorial Drive<br>Morgan Drive<br>Rowsell Boulevard |

As Gander has grown, the Town has experienced increased traffic and traffic issues. Traffic on the TCH through Gander has long been an issue as local traffic mixes with highway traffic. Several streets and intersections are noted for issues due to high traffic flow at peak periods. These include Cooper Boulevard, Magee Road, Gander Bay Road and Airport Boulevard and in other areas such as the intersections of the TCH/Magee Road, TCH/Cooper Boulevard, Magee Road/Cooper Boulevard and Roe Avenue/Cooper Boulevard.

Some of Gander's busy streets lack active transportation support such as wide shoulders, sidewalks and public communications about road-sharing to accommodate pedestrians and cyclists, especially school children. The T'Railway provides an off-road link but is not considered safe due to the presence of motorized vehicles such as ATVs and snowmobiles. Gander does not have public transit, which is important for children, seniors and people on low incomes.

To better understand and address traffic issues, the Town had undertaken various traffic studies. In 2013, the Town commissioned a traffic study to analyse traffic and make recommendations for improvements to traffic flow and public safety (exp Services Inc. 2014). Improvements include redesign and redevelpment of the intersections of Cooper Bouulevard with Airport Boulevard and Edinburgh Avenue. The Town is in the planning stage of improvements to pedestrian crossing of Cooper Boulevard from the Eastgate Subdivision.

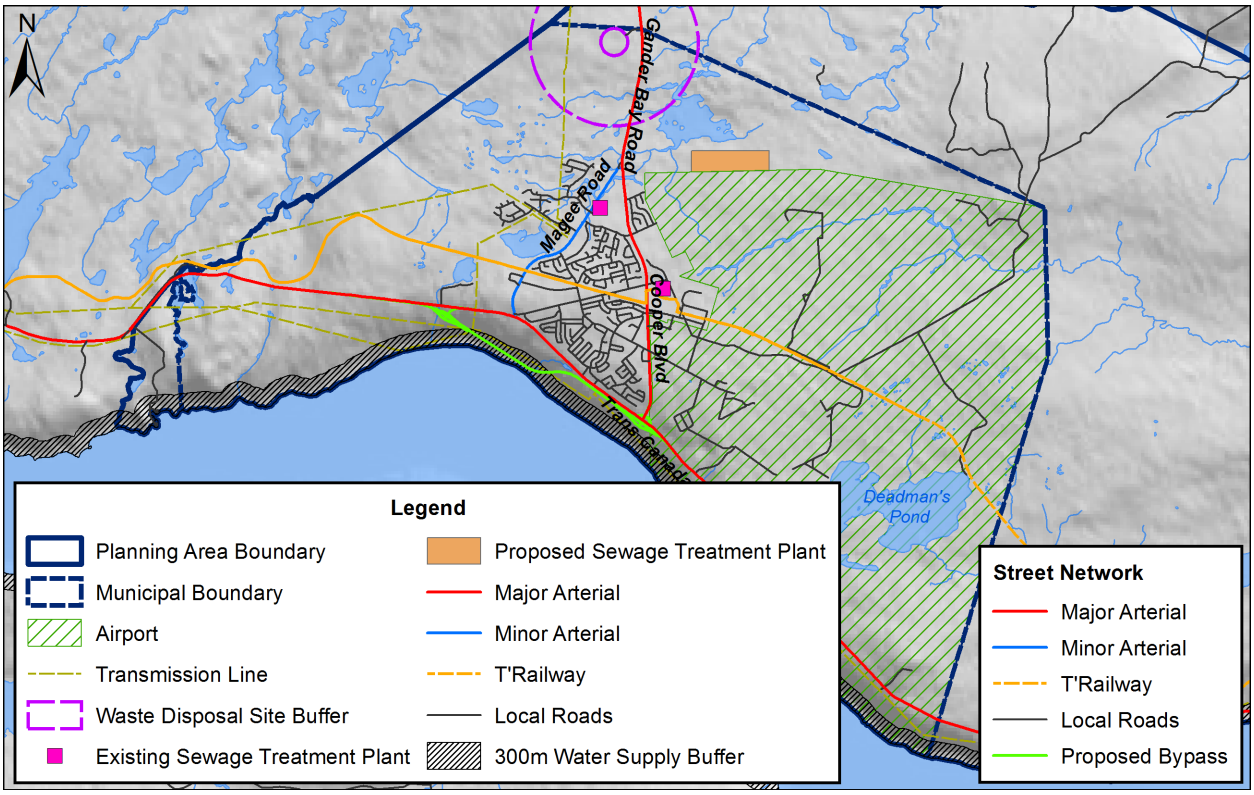


**Figure 5-1 Municipal and Regional Infrastructure in the Gander Municipal Boundary**

### 5.1.1 Trans Canada Highway

As noted, the location of the TCH through Gander poses safety concerns for highway and local traffic. The Department of Transportation and Works has proposed a highway bypass to route through traffic away from the Town to the south between the existing route and Gander Lake. This proposal has met with opposition especially from the businesses located on the TCH who would prefer the existing route be maintained and/or upgraded rather than diverting traffic. The Department has requested that the proposed route be incorporated into the Gander Municipal Plan and that policies and regulations be used to ensure that any new development does not interfere with the identified future route.

## 5.2 Newfoundland Hydro

Newfoundland and Labrador Hydro (Hydro) maintains a transmission line (TL210) through Gander. Hydro advises that to ensure access for maintenance, repairs and upgrades, no buildings or other developments are permitted in transmission line easements. The Town or developer should contact Hydro prior to development approval. Developers are to provide Hydro with easements for electrical services and new development plans showing the electrical service easement (ILUC 2017).

## 5.3 Solid Waste Management

Solid waste collection and treatment services are provided by the Central Newfoundland Waste Management Authority. The regional waste management facility, which is located in Norris Arm North, incudes a modern lined landfill with leachate treatment and a recycling facility. This site has more than enough capacity for current and future needs. The Gander waste disposal site has not been used for municipal solid waste disposal since in 2012. The site is still used for disposal of septage sludge, which is not yet accepted for treatment at the Central Waste facility. The Town also collects leaf and yard waste from a public drop off site and composts the material at the former waste disposal site. Gander has several other waste diversion initiatives including Broadening Horizons beverage container recycling, Scotia Recycling Depot and Central Metals. As only a small portion of the former waste disposal site is in use, there is potential that the much of the land can be made available for development.

The former Gander municipal waste disposal site is located on Gander Bay Road. Since implementation of the Central Newfoundland Waste Management system, the site has not accepted municipally collected solid waste or self-hauled household or business waste. The Town uses the site for composting an unknown quantity of yard waste, which residents drop off at the Town Depot and sewage sludge from the treatment plants as the Norris Arm North landfill does not accept sludge.

The Town is interested in potential development of the former waste disposal site and it is understood that no environmental site investigations have been conducted. The Provincial Department of Municipal Affairs and Environment has identified a 1.5 km radius buffer around the former waste disposal site. The process to remove this buffer is dependent on ownership of the land within the buffer area. If the land is owned by the Province, and the Town of Gander wishes to acquire it, Crown Lands Division would likely require the opinion of a consultant prior to transfer of the land. This would be due to potential liability related to use of the land and the requirements would likely depend the type of development planned for the area (Michielsen 2018). The consultant would take the following into account for an environmental site review:

- Proposed development of surrounding lands (e.g., industrial/residential, potable/non-potable groundwater, building construction)
- Condition of the waste disposal site (e.g., construction details, type of waste disposed, number of years of use)
- Potential contaminants and possibility for migration to other lands leading to potential unacceptable risks and
- Distance from the waste disposal site to the development.

Depending on the outcome of the environmental site review and the recommendations of the consultant, environmental sampling may be required. Such a sampling program may consist of soil and/or groundwater sampling if to determine the nature and extent of any site contamination (Michielsen 2018).

If the land is currently owned by the Town of Gander, a similar environmental review is recommended followed by an environmental site assessment, if warranted based on the findings of the review. Again, the specific environmental review and sampling recommendations would depend on the proposed use of the lands surrounding the former waste disposal site. For example, an industrial development with non-potable groundwater would likely require less evaluation and due diligence than a residential site with potable groundwater or a children's playground (Michielsen 2018).

Given that it is likely that some level of contamination exists in the area, the land that was used to dispose waste would be most suitable for industrial development followed by commercial development. Areas on the periphery, including those within the buffer area, may be suitable for residential or recreational development.

## 5.4 Sewage Collection and Treatment

Currently, Gander has two sewage treatment plants both of which have experienced issues. Tests completed in 2008 indicate that Gander's wastewater treatment systems will not meet the new Federal Regulations for Municipal Wastewater Effluent Quality. Also, due to its population, Gander is classified as medium risk under the Federal Regulations (Penney 2008). In addition, the growth of the Town has also caused some concern with respect to the location of the treatment plants as land has become more valuable for development.

The Beaverwood treatment facility, located near Memorial Drive and Cooper Boulevard, was built in 1987. It is a combined waste/storm water treatment system designed to accommodate high volumes of flow with an overflow for extreme rainfall events. Beaverwood treats water from the residential and commercial sanitary sewer system in the older area of Town including James Paton Memorial Hospital and Gander International Airport. Treated effluent from the Beaverwood facility empties into the freshwater environment through a series of brooks and streams that leads to Soulis Pond to the east end of Gander Lake. This treatment plant operates at an estimated 50% capacity under normal operating conditions but it is not efficient and effective (ADI 2009).

In the northern areas of Gander where most new growth has occurred, sewage flows the Magee Road treatment plant. This facility provides primary and secondary biologic treatment in an aerobic digester. Following chlorination, effluent is released into the headwaters of Peyton's Pond and Whitman's Pond (Penney 2008). The effluent quality is deteriorating, which is an indication that the Magee facility it is near capacity (ADI 2009).

As one sewage treatment plant is inefficient and the other is nearing capacity, the Town is preparing to construct a new, larger sewage treatment facility to treat sewage from the connected areas of the Town. Once the new facility has been developed, the Beaverwood plant will become a lift station with a smaller footprint and the Magee facility will be decommissioned. As these sites will no longer be used for sewage treatment, adjacent land may be investigated for potential development.

The Town can reduce or remove the sewage treatment plant buffers and a similar approach is advised as in the case of the former waste disposal site on Gander Bay Road. It is recommended that an environmental review be conducted including a detailed review of the treatment processes at both facilities to determine potential contaminants of concern and potentially impacted media (i.e., soil and/or groundwater). It is likely that a site visit would be required to review the operation at both plants and to identify any potential for leaks and other environmental effects. If warranted based on the review, an intrusive environmental site assessment would be conducted, details of which would depend on the proposed use of the land following decommissioning. For instance, the level of assessment for an industrial development with non-potable groundwater would likely be less than for a residential site with potable groundwater.

## 5.5 Protected Water Supplies

The Town of Gander Municipal Boundary and Planning Area intersect with the Provincially Protected Water Supply of Gander Lake. Gander Lake provides drinking water to the Town of Gander. The Towns of Glenwood and Appleton receive drinking water from the outflow of Gander Lake. Little Pond, the water supply for the community of Benton, is also encompassed by the Gander Municipal Planning Area. Thus, land use in the Gander could potentially affect the water supply of four communities.

Gander's drinking water supply system consists of a 1.2 metre diameter intake and four pumps that deliver 100 litres per second. The pumping system delivers water to the Water Treatment Plant where it is disinfected with Ozone, filtered and treated with chlorine. The water is then stored in a 6,800 m3 reservoir near the centre of Town before entering the distribution system. The water supply is more than adequate to meet future growth of the Town. With the exception of Gander Bay Road, all built up areas of the Town are serviced with piped water.

### 5.5.1 Watershed Management Plan

A 1996, Watershed Management Plan, prepared for the Water Resources Division, recommended that development be limited near steep slopes on the north side of Gander Lake to prevent erosion of the shoreline and trap soil particles to limit sedimentation of Lake water. To achieve this, the Watershed Management Plan recommended restricted zones including a buffer of 300-500 m from the edge of Gander Lake, a buffer of 100 metres along major tributaries and a buffer of 30-50 m for all waterbodies within the Gander Lake watershed catchment area (Figure 5-2). The Plan also recommends restricted use areas within the buffer zone with controls for type of activity and development method (EDM 1996). The Gander Lake Watershed Management Committee has adopted a buffer of 300 m from the high-water mark as the development buffer.

In addition to water supply protection, adoption of the recommendations of the Watershed Management Plan would conserve the shoreline of Gander Lake for low intensity recreation and tourism purposes and allow low impact development of a scenic area using sensitive techniques that do not jeopardize the water quality of the Lake. All development proposals are referred to the Watershed Management Committee.

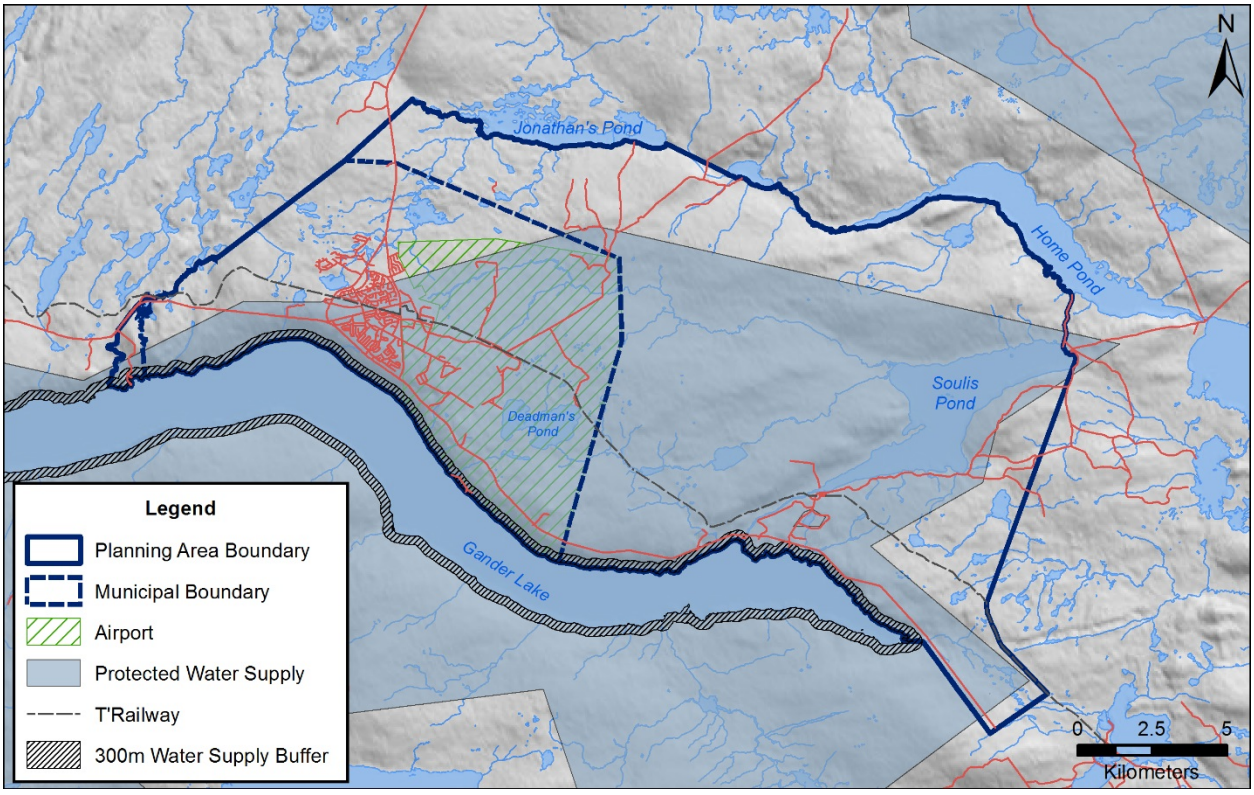


**Figure 5-2 Gander Lake Protected Water Supply**

# 6.0 ENVIRONMENT

This chapter discusses environmental issues and opportunities that may influence the future growth and development of Gander. These environmental matters include aspects of the physical and biological environment, climate and climate change, waterbodies and wetlands and brownfield redevelopment.

## 6.1 Elevation and Slope

Gander is characterized by low topography with a number of large wetland areas. Steep areas are mainly located along Gander Lake (Figure 6-1). Slope has implications for land development. Moderate slopes of 10% to 15% are the easiest and most cost effective to develop. Steep slopes of 20% or above are expensive to develop and may result in erosion and sedimentation. Flatter areas of 10% or less tend to hold water and may be prone to flooding. In addition, flatter areas are most likely to hold wetlands.

## 6.2 Waterbodies and Wetlands

Gander Lake, a dominant landscape feature that measures a maximum length of 50 km and an average width of 2 km, forms the southern boundary of Gander's Municipal Boundary and Planning Area. The Lake, 290 m at its deepest point, is part of the Gander River Basin, which covers an area of 5,310 km2 (EDM 1996; ADI 2009). The Lake is fed primarily by the North West and South West Gander Rivers, which flow into the western portion of the Lake and the only outflow is the Gander River. Other important natural features in Gander include streams and wetlands, which provide a variety of beneficial services for communities:

- Wetlands are important habitat for birds, fish, amphibians and mammals and provide safe areas and movement corridors for wildlife in urban areas.
- Wetlands act as sponges that absorb storm water, reducing excessive runoff and ground saturation, which result in flooding and preventable property damage.
- Wetlands hold storm water thereby reducing the speed and temperature of runoff and preventing soil erosion, resulting in improved water quality in riparian environments
- Wetlands act as natural filters for water that flows through them, and wetland plants take up nutrients and pollutants removing them from water.
- Wetlands hold storm water allowing it to gradually recharge groundwater systems and maintain surface water flow during dry periods.
- Wetlands are carbon sinks that contribute to greenhouse gas reduction and climate change mitigation.
- Wetlands in urban areas provide easy access to nature and wildlife viewing.

Wetland conservation has environmental, social and financial value to municipalities. When wetlands are conserved, they maintain or improve bio-diversity, improve water quality and regulate flooding and drought. They also contribute to environmental and aesthetic quality of the community and provide recreational educational and opportunities (GON 2017).

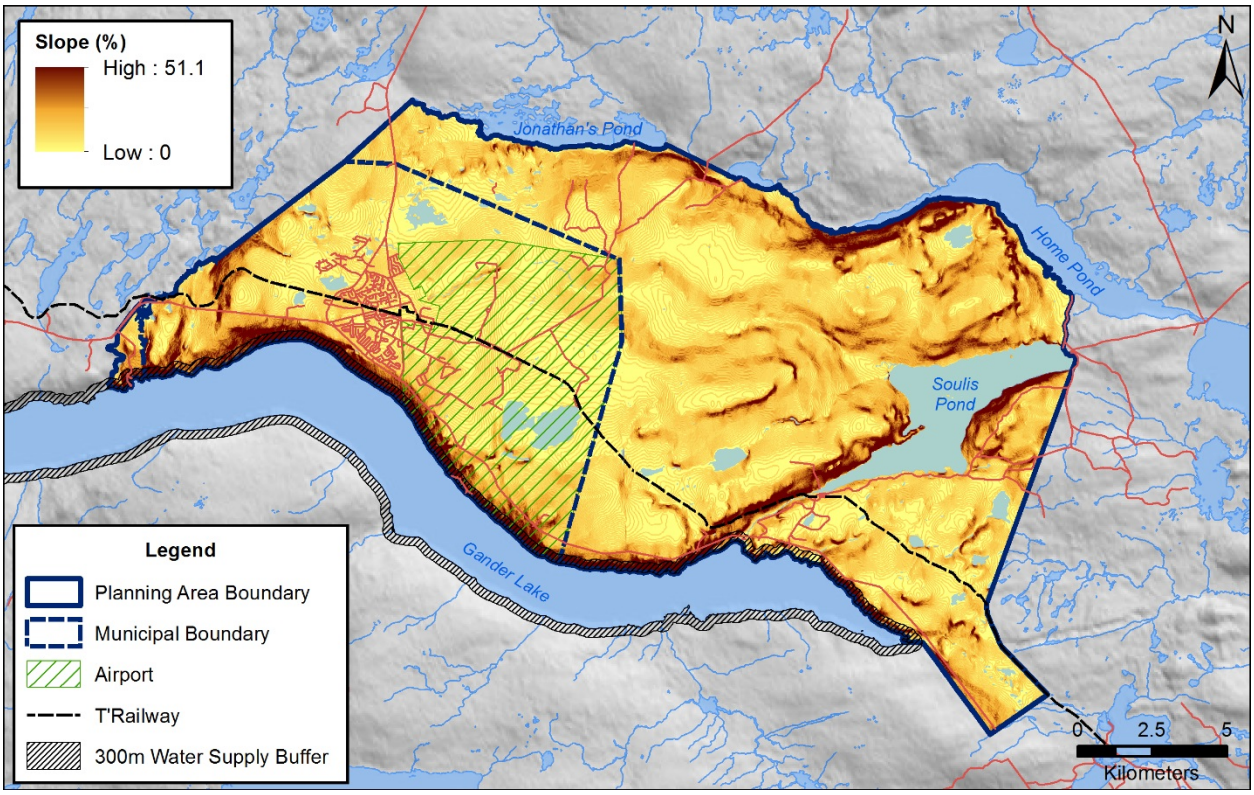


**Figure 6-1 Slope in the Gander Municipal Planning Area**

Gander's waterbodies and wetlands are used by residents for walking, recreational angling and bird watching. Gander has a number of active birdwatchers. Individuals maintain records for sightings in and around Gander. More than 50 different bird species have been recorded at each of Cobb's Pond, the Former Gander Townsite, Joe Batts Pond, Monchy Woods Road, Whitman's Pond, Miller's Waters, Thomas Howe Demonstration Forest, Round Pond, Burner Hill and Home Pond (CLO 2018). Natural areas, such as the Whitman's Pond area, also show evidence of wildlife species such as hare, beaver and moose.

### 6.2.1 Eastern Habitat Joint Venture Municipal Stewardship Agreement

The Town of Gander, along with the LSD of Benton, is partner to a Municipal Stewardship Agreement with the EHJV. The EHJV is one of 21 joint venture initiatives established across North America to help meet the objectives of the North American Waterfowl Management Plan, which was signed by Canada in 1986. The goals of this plan are to protect migratory bird habitat to ensure the survival of, and increase, waterfowl populations. The Province of Newfoundland and Labrador participates in the EHJV through the Wildlife Division of the Department of Municipal Affairs and Environment (EHJV 2018).

In 1993, the Town of Gander signed an agreement with the Wildlife Division to manage wetlands within specified stewardship areas, with technical advice provided by the Wildlife Division (Figure 6-2). The agreement has been revised several times and currently encompasses 2,008-ha of waterfowl habitat in the Town of Gander including identified Habitat Management Units around Northwest Bog, Cobb's Pond, Whitman's Pond, Peyton's Pond and a constructed wetland lagoon (approximately 351 ha) within the LSD of Benton (SAMNL 2017).

A Habitat Management Plan, prepared by the Wildlife Division (currently Department of Fisheries and Land Resources), provides direction for the Town of Gander in planning and managing conservation activities within the Stewardship Zone, including in Habitat Management Units. The plan calls for all Management Units and any future units to be zoned as protected areas in the Municipal Plan in keeping with Section 4 of the Stewardship Agreement signed by the Town (EHJV 1993).

The Wildlife Division requests that the Town consider general wildlife habitat and landscape connectivity in the Municipal Plan Review. This includes maintaining appropriate riparian buffers, which are natural green belts along wetlands and waterbodies (ponds, rivers, creeks etc.). A 30m minimum undisturbed natural vegetated green belt could be a standard requirement when dealing with any type of land use activity; wider green belts are suggested for areas adjacent to salmon river habitat systems (e.g., Soulis Pond, Home Pond) and land uses that could potentially result in harmful substances entering a nearby water system (ILUC 2017).

To maintain landscape connectivity, green belts should be connected to forested areas or other habitat patches to create travel corridors for wildlife species. To maintain natural forested land, the Division suggests that development regulations could incorporate a minimum percentage of forests to be maintained during lot clearing. Vegetation clearing should be conducted outside the May 1 to July 31 breeding period (or earlier as some raptors begin breeding in March) as disturbance can be most detrimental during that sensitive breeding/young-rearing period (ILUC 2017).

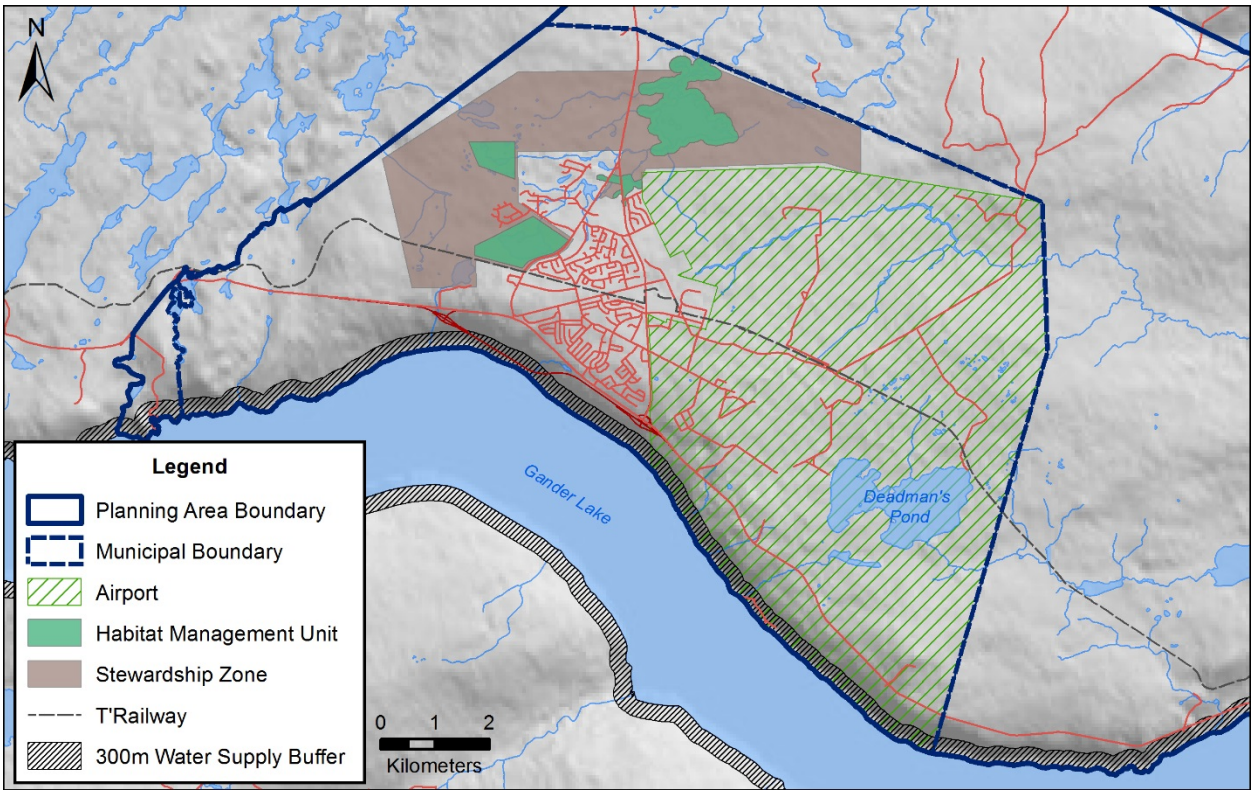


**Figure 6-2 Stewardship Zone and Habitat Management Units in the Gander Municipal Boundary**

## 6.3 Climate and Climate Change

The climate record at Gander International Airport (Environment Canada Station ID 6633 and 50088) contains precipitation records from 1937 to 2018. The data show an increasing trend in the Total Daily Maximum Precipitation of approximately 0.289 mm/yr and greater variability in the most recent years (Figure 6-3). This is consistent with the estimate provided by Environment and Climate Change Canada from their most up to date Intensity Duration Frequency analysis where they incorporated data from 1937 to 2009 (0.27 mm/yr) (ECCC 2018).

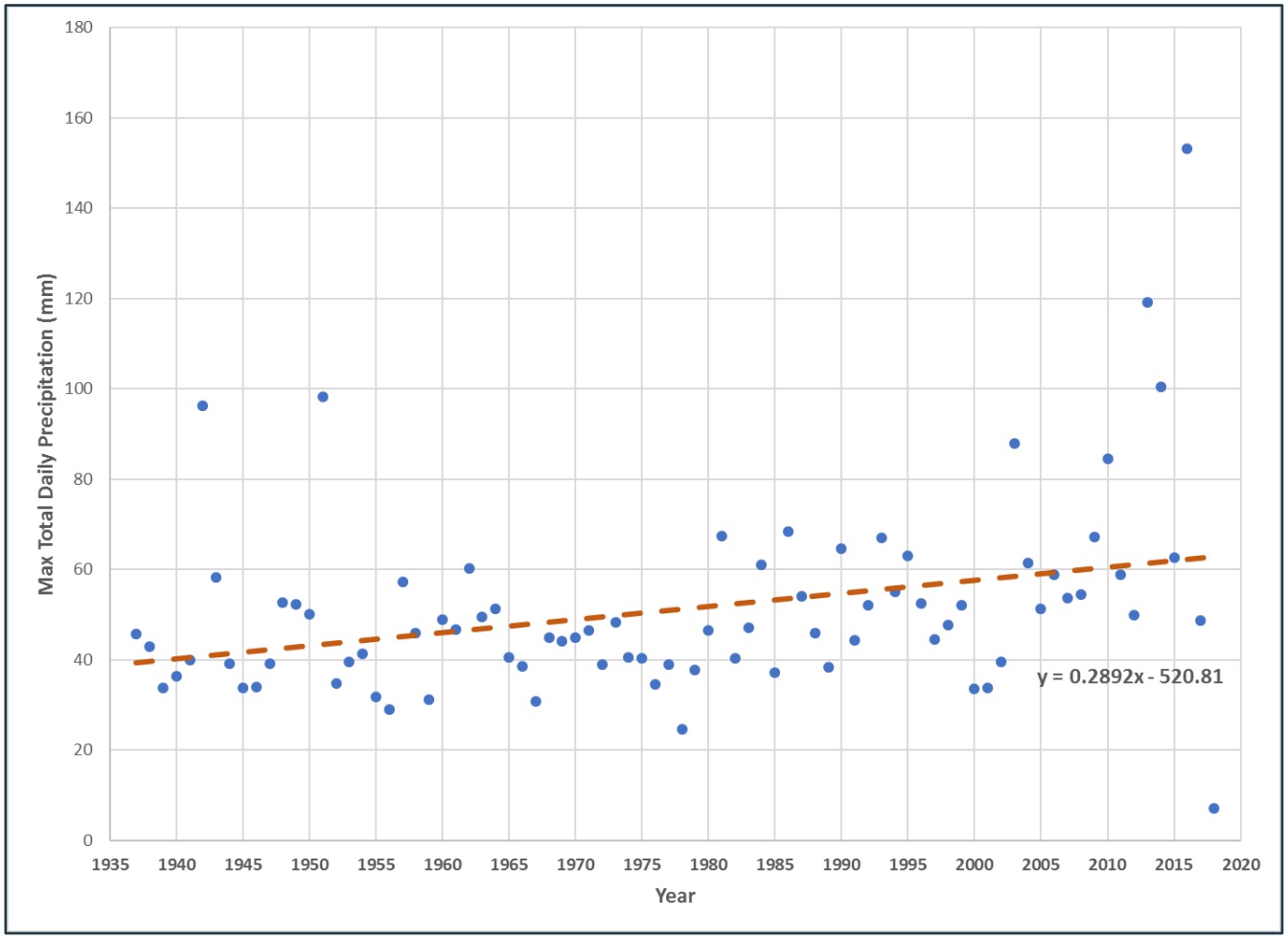


**Figure 6-3 Gander International Airport Maximum Daily Precipitation from 1935 to2018 (ECCC 2018)**

The Department of Municipal Affairs and Environment, Climate Change Branch (CCB) advises that climate change is expected to result in increased precipitation and more frequent extreme weather events that may result in increased flooding, sea surge and coastal erosion. These factors should be considered when allocating land for future developments that are in proximity to rivers, floodplains or coastlines. Gander is an inland community and as such will not be subject to changes to sea level, storm surges and coastal erosion (ILUC 2017).

In 2013, the Government of Newfoundland and Labrador commissioned a study of climate change projections for the period 2038 to 2070. The model projections incorporated data from seven regional climate model (RCM) simulations provided by the North American Regional Climate Change Assessment Project (NARCCAP) and were compared against observations collected by Environment Canada (EC) climate stations in the Province. The conclusions indicate that the provincial climate will become warmer (especially winter temperatures) and wetter (both intensity and duration) and that an increase in rain-on-snow events is likely. The latter could lead to an increased potential for flooding and landslides/avalanches (ILUC 2017).

The Climate Change Branch (CCB) advises that climate change projections suggest that extreme precipitation events will become more intense. For example:

- On a 24-hour basis, a 1-in-100-year storm is expected to bring 142 mm of precipitation by mid-century, an increase from the current climate's 120 mm (18% growth); and
- On a 12-hour basis, a 1-in-100-year storm is expected to bring 104 mm of precipitation by mid-century, an increase from the current climate's 88 mm (18% growth).

Gander has experienced increased flooding (especially during extreme events in 2013, 2014 and 2015), which is caused by a combination of high precipitation, more impervious surfaces and loss of water storage in wetlands that have been filled in for development. The Town has prepared or commissioned various studies to investigate the causes of flooding and make recommendations to prevent future flooding, property damage and risks to public infrastructure. These studies have recommended control of storm water runoff from individual properties and within subdivision developments through means including check dams, detention ponds and underground detention tanks (SNC-Lavalin 2015). The Town of Gander has developed landscape regulations that include retention of storm water on individual properties (Town of Gander 2014).

Alternative climate change adaptation measures also include low-intervention design techniques such as green infrastructure (e.g., bioswales, permeable pavement and stream naturalization), which intercept, absorb and hold storm water. Adaptation also includes proactive measures such as protection of natural systems (e.g., forests and wetlands) that detain storm water as a preferred approach that prevents issues and results in infrastructure cost savings for municipalities. This lower cost option also has environmental and social benefits as it conserves natural areas that can be used for recreation and tourism assets (NRCan 2017).

## Wetland Conservation for Flooding Reduction and Management

Canadian municipalities are becoming increasingly concerned about flooding in urban areas. Flooding events can threaten public health and safety and cause great damage to private properties and public infrastructure. Public and personal costs include emergency response efforts, providing temporary shelter to people displaced by flooding, replacement costs for private property and public infrastructure and increased property insurance. Both provincial and municipal governments are developing policies and programs to address flooding.

A recent University of Waterloo study examined the financial impact of flooding. The study indicates that since 2009, extreme weather-related insurance payouts have exceeded $1 billion per year in Canada. This trend is atypical of pre-2009 claims where total claims were typically below $0.5 billion. The primary cause of these claims was flooding. In the most recent six fiscal years (2010 to 2016), the Government of Canada had spent more on recovery from large-scale natural disasters than in the previous 39 years combined and flooding was the cause of 76 percent of these expenditures (ICAA 2017).

The researchers examined the difference in financial costs resulting from flood damages during severe but realistic storm events (1-in-500-year flood) if wetlands had been intact versus converted to agricultural development. The modelling determined that leaving wetlands intact would have resulted in meaningful financial cost savings in rural and urban areas. At the rural model site, if wetlands had been maintained in a natural state, flood damages would be $8.9 million or $3.5 million (29%) lower than the $12.4 million cost if wetlands had been replaced. For the urban model site, if wetlands had been maintained in a natural state, the cost of flood damages would be $84.5 million, or $51.1 million (38%) lower than $135.6 million cost that would have occurred had wetlands been replaced (ICAA 2017).

# 7.0 FUTURE GROWTH OF THE TOWN OF GANDER

The Town of Gander experienced a total population growth of nearly 18% (1,737 individuals) and the addition of more than 1,000 new dwellings between 2006 and 2016. Gander is anticipating further growth though possibly not as fast-paced as within this recent decade. Available and suitable land is limited within the developed areas of the Town and within the current Municipal Boundary.

## 7.1 Development Constraints

Potential constraints have been identified within the undeveloped areas of Gander's Municipal Boundary and Planning Area (Figure 7-1). These include Gander International Airport, forestry rights, buffers around the former waste disposal site and sewage treatment plants. Sensitive wetland habitats are located near Whitman's Pond and Cottage Development Areas are located on waterbodies including Johnathan's Pond, Boot Pond, Home Pond, Soulis Pond and Deadman's Pond. Potential constraints also include the 300 m water supply protection buffer around Gander Lake along with the existing transmission line and proposed highway by-pass near Gander Lake. Existing agricultural areas are located within the current Municipal Boundary and a development has been proposed for areas to the north of the built-up portion of the Town. Gravel quarries and areas of recognized aggregate resource potential are located within the Municipal Boundary and Planning Area.

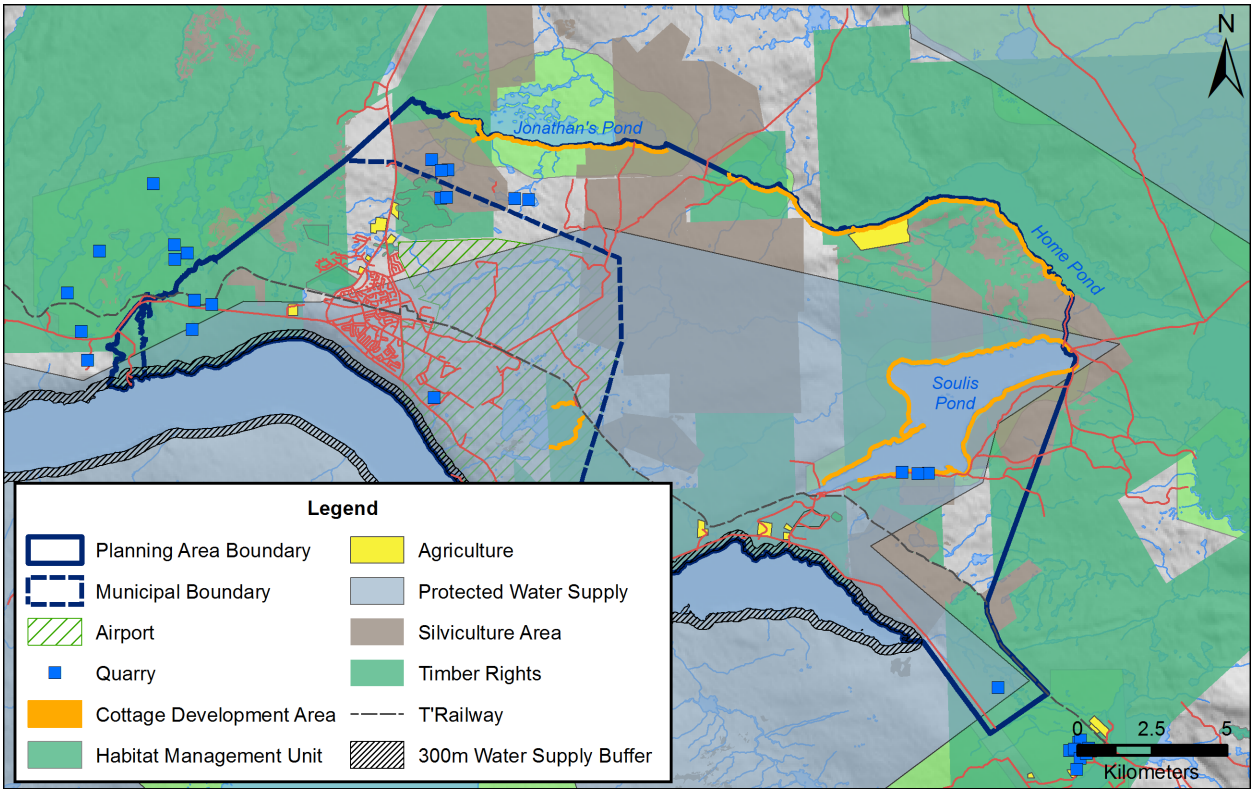


**Figure 7-1 Constraints for Gander Municipal Boundary Expansion**

## 7.2 Expansion of the Municipal Boundary

To accommodate new residential and commercial developments, the Town of Gander is interested in expanding its Municipal Boundary. The process of altering a municipal boundary requires several steps including initiating a discussion with the Department of Municipal Affairs and Environment (DMAE) and altering a municipal boundary is ultimately a decision of provincial Cabinet. Pursuant to section 3 of the Municipalities Act, 1999, the Town must prepare a feasibility report with a recommendation for consideration by DMAE and the Minister. The report should provide analysis not only of the current issues and needs (e.g., suitability for municipal servicing and physical constraints to servicing) of the Town but also any future issues and needs that may result from the boundary expansion.

The Town must engage with stakeholders, including government officials and neighbouring communities that may be affected, to obtain relevant information and to confirm the accuracy of information, data and projections that will be used in the feasibility report. The general public must also be given an opportunity to have input into the process. A public hearing is required as part of the process. Following the public hearing, the Town must consider any comments and concerns for incorporation in the final report.

The final report must discuss alternative approaches and options to the proposal and relative acceptability of each and include a copy of all written comments submitted at the public hearing (or otherwise), a synopsis of the evidence from the public hearing and a copy of any documents or information that have been considered in preparing the feasibility report. The final report must include recommendations to DMAE including a description of the proposed boundary and the effective date of any boundary changes.

## 7.3 Waste Disposal Site and Sewage Treatment Plant Buffers

As discussed in Sections 5.3 and 5.4, the Town can begin the process of removing environmental buffers around the former waste disposal site in accordance with recommendations from the Department of Municipal Affairs and Environment. In addition, the buffers around the sewage treatment facilities may be reduced or removed following a process to ensure public health and safety risks are not likely to result from such changes.

## 7.4 Forestry and Silviculture Areas

As discussed in Section 4.8, the Town can begin discussions with Corner Brook Pulp about negotiation of access to lands where the company holds rights for timber extraction and silviculture. This process will also involve the Department of Natural Resources as the regulator of forestry activity.

## 7.5 Gander International Airport

As discussed in Section 4.5, access to land within the Airport property would involve a long-term process of reversion of Airport property from Transport Canada to the Provincial Government. Once such land becomes the property of Provincial Crown Lands, the Town may gain access to this area. To undertake such a process, the Town must build upon its positive relationship with GIAA to gain the agency's support for release of lands and to together lobby Transport Canada for changes to the Airport property.

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# APPENDIX A: STAKEHOLDER ENGAGEMENT AND PUBLIC CONSULTATION

### Stakeholder Engagement and Public Consultation

During the 2017-2018 Municipal Plan Review process, the consultants organized an engagement program to receive input from stakeholders and the general public. Activities included public open house meetings with exit surveys, a public presentation, an online survey, focus-groups with key stakeholders and meetings with local interest groups and individuals. Meetings were also held with Town Council, the Municipal Plan Review Steering Committee and Town Staff. Interview participants included developers, engineering consultants, Town staff and other interested parties. These activities were used to discuss various development opportunities and planning issues currently affecting the Town of Gander.

### Stakeholder Engagement and Public Consultation Activities

| Date | Activity | Participation |
|---|---|---|
| October 23, 2017 | Business Focus Group | 7 |
| October 23, 2017 | Business Focus Group | 5 |
| October 24, 2017 | Public Open House | 13 |
| October 24, 2017 | Public Meeting | 24 |
| October 24, 2017 | Exit Survey | 6 |
| October 16 to November 13, 2017 | Online Survey | 26 |
| October and November, 2017 | Interviews | 19 |

Consultation opportunities were promoted through the Town of Gander website as well as the Town's Facebook and Twitter accounts. To ensure that as many people as possible were aware of the opportunities to engage in the Municipal Plan Review, notices were also placed in the local newspaper, mailed to 5,600 local addresses and broadcasted using the Town's electronic notice system. In addition, various identified stakeholders were invited to participate in the process.

### SURVEY RESULTS

The results are presented thematically below.

### Residential Development

Based on what was shared in the surveys and at public events, most residents like single family home developments but understand the need for the Municipality to use strategies such as urban density to reduce servicing costs and facilitate the development of a range of housing types to accommodate those with lower incomes as well as the elderly and the disabled. Residents also demonstrated an appreciation for the natural environment, outdoor recreational opportunities and scenic views that are so readily available in Gander.

### Commercial Development

Residents felt that Gander has adequate land for new commercial development in desirable locations. They also felt that the downtown should be revitalized and home-based businesses are important contributors to the economy. Residents expressed concern about empty buildings, the availability of housing lots, more shopping choice and the lack of corner stores in or near residential areas. Some felt that industrial areas such as McCurdy Drive and Carr Crescent are unsightly.

**Recreation Areas**

Residents expressed some dissatisfaction with local playgrounds, walking trails and sports / recreational facilities particularly regarding the needs of the elderly and disabled. They expressed various views on outdoor recreation and most strongly stated a desire for non-motorized trails and longer, more challenging hiking trails in natural areas. Regarding recreational facilities, residents are most interested in a movie theatre, gymnasium, soccer fields, second ice surface and track and field facilities. They felt that it is important to be able to walk or bicycle to destinations around the Town and that Council needs to ensure that good quality land is set aside for open space and recreational opportunities in new developments. Residents also stated that Gander needs more parks and greenspace including at Gander Lake at the former downhill ski site and Little Harbour.

**Transportation**

The majority of respondents stated that they drive a personal vehicle to commute around Gander. Walking and cycling are also popular though safety is a concern. Residents identified traffic issues on the TCH, Cooper Boulevard, Magee Road, Gander Bay Road and Airport Boulevard and in other areas such as the intersections of the TCH and Magee Road, TCH and Cooper Boulevard, Magee Road and Cooper Boulevard and Roe Avenue and Cooper Boulevard. They suggested interventions such as additional traffic lights, roundabouts to facilitate traffic movement, widening Cooper Boulevard to increase the number of lanes and a by-pass for the TCH. Others stated that roads need to be built with wider shoulders and more sidewalks to accommodate pedestrians and cyclists but some stated that trails should be constructed away from roads. Some felt that the Town should have messaging to remind motorists to share the road with others, especially school children. There were some references to public transit especially for seniors. Several advocated for increased policing to discourage speeding.

**Conservation of Natural Areas**

Some residents feel that Council is not doing enough to conserve natural areas and expressed mixed opinions on the importance of storm water impacts. Between 40 and 90 percent of respondents indicated that they value natural areas such as wetlands and waterways, trails, Gander Lake, Cobb's Pond, wildlife and fish habitat, scenic lookouts, Thomas Howe Demonstration Forest, forest land, Little Harbour and steep and sensitive slopes. One of the most common environmental concerns was sewage treatment, including the fact that the new treatment plant will occur at Whitman's Pond (one of the Wetland Stewardship Agreement habitat management units) and that effluent from existing sewage treatment is released in a natural area behind the cemetery.

**Development Practices**

Another common concern is that Council is not remaining firm regarding development practices. Developers have filled in wetlands and removed trees and soil cover when preparing new subdivision areas. Some stated that Council should dictate which land is to be held as greenspace in new neighbourhoods so that the quality of recreational land is ensured within new areas. Some expressed concern for storm water management and urban sprawl, identifying sustainability concepted such as smaller building lots, infilling, denser development and multi-purpose spaces. Some felt that the landscaping standards should be part of the bylaws.

**FOCUS GROUP AND STAKEHOLDER INTERVIEW RESULTS**

Two focus groups were held with local business owners and operators. The results are presented below.

**Economic Development**

The business community identified opportunities and concerns related to economic development. They stated that Gander is doing well economically but that the economy needs to be based on more than retail. The Town needs to work more closely with the aviation industry (e.g., Nav Canada, EVAS, DJ Composites and Gander Airport to realize new opportunities. Some participants felt that the Town needs more land for development and to attract new businesses.

**Development Practices**

There appears to be some confusion about the application of the municipal plan and development regulations and the role and authority of the Municipality. This has likely resulted from inconsistencies in Council's approach to development control, increasing requirements for development, communications issues and the nature of Council being accessible in a small town. In some cases, unresolved disagreements with developers have resulted in residential building lots not being available in specific subdivisions. It was also noted that obtaining Crown land for development from the Province (e.g., agriculture) is a lengthy process.

Some developers feel that the Town's requirements have increased and are at least partially responsible for the increasing costs for new residential building lots. They identified open space conservation requirements and landscaping guidelines as challenging. Some felt that grading plans and legal surveys in the early stages of development are premature and should be required later in the process. Security bonds are of concern to developers, especially where the Town holds deposits until all development requirements are met. It was noted that bonding can become a limitation for smaller developers when seeking financing. Some developers also felt that the Town's oversight is excessive. Developing affordable housing may not be of interest to private developers as profit is limited compared to market housing and stated that affordable housing may have to be achieved through partnerships.

**Commercial Development**

The Town has noted that smaller commercial building lots tend to be in higher demand than industrial lots. The Town is interested in further development of large stores and commissioned a big box development study. It was noted that commercial infill lots exist on Cooper Boulevard but safe access may be an issue. Some business participants indicated a concern with high reliance on retail businesses given trends in retail vs online shopping.

**Institutional Development**

A new school was recently built in Gander. Participants noted that the School Board is considering selling off Gander Academy property, which would become available for another development. The Town will need to identify an area for another school.

**Recreational Facilities and Amenities**

The Town has been working with Central Health to attract and retain medical personnel. Some participants felt that Gander does not offer enough recreational amenities to attract and retain new people. They are concerned about loss of a soccer field and lack of a second ice surface. It was also noted that recreation opportunities and amenities may be important for attracting tourism and convention business.

The Town continues to evaluate potential recreational developments including a new outdoor recreation area, soccer fields, a recreation centre, gymnasium, swimming pool and second ice surface but costs of some facilities

are prohibitive. The Town is concerned about the effects of centralizing recreation facilities and lack of adequate recreation space in individual neighbourhoods. The Town would like to see more connectivity between existing facilities such as the ski club, Cobbs Pond, Thomas Howe Demonstration Forest, the Newfoundland and Labrador T'Railway Provincial Park and Silent Witness Memorial area and trails incorporated into the design of new subdivisions. A group has proposed a mountain bike trail beside Gander Lake. A community group is preparing to develop a long-distance adventure hiking trail from Gander (Silent Witness Memorial site) to Appleton and has concerns about liability related to trail use.

The Town commissioned a study on the feasibility of a new movie theatre. Due to the large technology investment for current theatres, a new theatre would require a larger space to increase revenue but larger buildings and lots have not been available. There are vacant buildings and lots in Gander that could be used but owners have been reluctant to sell.

**Downtown Development**

It was noted during consultation that some businesses (e.g., Bistro on Roe and Scud Runner Brewery) would be well-suited to downtown and help to encourage redevelopment of the downtown area but were unable to obtain suitable space. About 10 years ago, the Town commissioned a downtown redevelopment study, which focussed on upgrading building facades, but many businesses owners that renters and / or landlords are not interested in investing. There are vacant properties in the downtown area.

**Housing Costs**

Gander's economy is made up of high paying sectors (e.g., Nav Canada, Gander Airport, health care and government) and low paying sectors (e.g., commercial, retail and service industry). It was noted that housing costs, including land value, have increased over the past 10 years and that most new residential development has been in high end housing. This has been what the market demands but Gander also needs a variety of options including lower cost housing. Strategies identified to address this need include smaller building lots, infilling, duplexes, row houses, condos and basement apartments. There appears to be interest in mini-homes (pre-fabricated) and one developer is working with a manufacturer to provide them.

**Attraction and Retention of Labour**

Labour availability is an issue for the retail industry. It is difficult for workers to move to Gander as housing costs are high and wages are low. In addition, it is difficult for people living in small communities to commute to Gander for work in a sector that has low wages and part-time work. There are people in Gander on government assistance who would be in a worse economic situation job (e.g., loss of subsidies and benefits) if they took a low paying so some may choose not to work.

Some business participants stated that Gander competes with Grand Falls-Windsor for workers and that housing costs are 56 percent lower in Grand Falls. It was also stated that Grand Falls is more accommodating to businesses and that building permits cost less in Grand Falls.

## APPENDIX B: INTERDEPARTMENTAL LAND USE COMMITTEE PROJECT EVALUATION

**INTERDEPARTMENTAL LAND USE COMMITTEE**
**PROJECT EVALUATION**

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ILUC PROJECT #: 1672
ILUC PROJECT NAME: Municipal Plan Review – Town of Gander
PROPONENT: Department of Municipal Affairs and Environment
DATE DISTRIBUTED: September 18, 2017
ILUC DECISION**:** Approved
DATE OF DECISION: Nov 11, 2017

NO REPLY: DFO, Environmental Assessment Division, Tourism, Transportation

NO CONCERNS: Energy Branch, Environment, Fisheries, Labrador Churchill Project, Natural Areas.

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**PROVINCIAL/FEDERAL GOVERNMENT AND AGENCY**
**CONCERNS AND RECOMMENDATIONS**

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## LANDS

Attached (are) some shape files that are within the Town of Gander's Plan. The Plan currently do not allow for cottage development. I've consulted with the Town of Gander and they are agreeable to these areas attached. The public has enquired on these areas in the past and the areas outlined should provide options of cabin development. They fall within CBPP Timber limits; if the areas are approved, we should make contact with them to go over some options.

Additionally, the Town has expressed interest in expanding their Municipal Boundary. They have not shown the exact dimensions. We are agreeable in theory to this, but it will have to exclude adjacent Cottage Development Plans at Joe Batts Pond – Millers Waters and Smiths Waters.

## WATER RESOURCES

Under the authority of the *Water Resources Act*, SNL2002 cW-4.01 http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm, the Water Resources Management Division (WRMD) http://www.env.gov.nl.ca/env/waterres/index.html is responsible for the management of water resources of the province of Newfoundland and Labrador. The WRMD has programs to protect, enhance, conserve, develop, control, and effectively utilize the water resources of the province.

General for All Responses

Any effluent or runoff leaving the site will be required to conform to the requirements of the *Environmental Control Water and Sewage Regulations*, 2003 http://assembly.nl.ca/Legislation/sr/regulations/rc030065.htm.

Application forms for permits and licences, fee schedules, and guidelines are available at:
http://www.env.gov.nl.ca/env/waterres/regulations/appforms/index.html.

Work near or in a Body of Water

Prior to the start of construction, the proponent must apply for and obtain a permit under the *Water Resources Act,* 2002, specifically Section 48 http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm for any work near or in any body of water (including wetland).
**Contact: Manager, Water Rights, Investigations, and Modelling Section- (709) 729-2295**

Development Adjacent to or Within Protected Public Water Supply Area

Prior to the start of construction, the proponent must apply for and obtain a permit under the *Water Resources Act*, 2002, specifically Section 39 http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm for any proposed development adjacent to or within the Gander Lake/Little Pond Protected Public Water Supply Area servicing the Communities of Gander/Benton. Also, any work adjacent to or within this designated Protected Public Water Supply Area must comply with this Department's Policy for Land and Water Related Developments in Protected Public Water Supply Areas
http://www.env.gov.nl.ca/env/waterres/regulations/policies/water_related.html.
**Contact: Manager, Drinking Water & Wastewater Section - (709) 729-4048**

Other:

- A portion of the protected water supply area for the Town of Gander, Glenwood and Appleton (Gander Lake) is located within the proposed Municipal Planning Area.
- MPA encompasses the LSD of Benton.
- The entire protected water supply area for the LSD of Benton (Little Pond) is located within the proposed Municipal Planning Area.

**Contact: Manager, Drinking Water & Wastewater Section - (709) 729-4048**

## HISTORIC RESOURCES

The Provincial Archaeology Office (PAO) has reviewed the Gander Municipal Planning Area and notes that there are a number of known historic aircraft wrecks located within the boundaries which are protected under the Historic Resources Act. The locations of these wrecks are available from the PAO if you require them.

On the basis of a comprehensive archaeological review and predicative modelling exercise that was conducted in 2007, please be advised that there is also potential for additional historic resources to be encountered within the Planning Area. The PAO, therefore requests that any plans for projects involving ground disturbance, particularly

in the areas along the shorelines of Gander Lake, Soulis Pond, Home Pond, Boot Pond, Deadman's Pond, Whitmans Pond or Jonathan's Pond, be forwarded to this office for review prior to the Town providing approval for commencement of the projects.

## AGRICULTURAL LANDS SECTION

The Agricultural Land Section has reviewed the proposal submitted to ILUC by the Department of Municipal Affairs regarding the Town of Gander's Municipal Plan Review. Attached, (below), for your information is a map containing the most recent information available to the Branch showing all known agricultural land use in the Gander area.

The Section's mandate includes protecting existing and future agricultural activity, small or large scale. Land and soil for agricultural development is limited within this province and its protection is vital. We are satisfied with the current plan provided the following amendments are made. In addition, existing agriculture properties and development must not be negatively impacted and allowed to expand where permissible. This includes properties not identified on the attached map such as small scale home gardens. Some areas to highlight:

Reference to Department of Forest Resources and Agrifoods:

Due to changes in Government Structure, the Agricultural Land Section is no longer apart of the Department of Forest Resources and Agrifoods. All reference to the Department of Forest Resources and Agrifoods which is intended for the Agricultural Land Section should now be identified as either "Department of Fisheries and Land Resources" or "Agricultural Land Section".

Part II, 64 of Development Regulations:

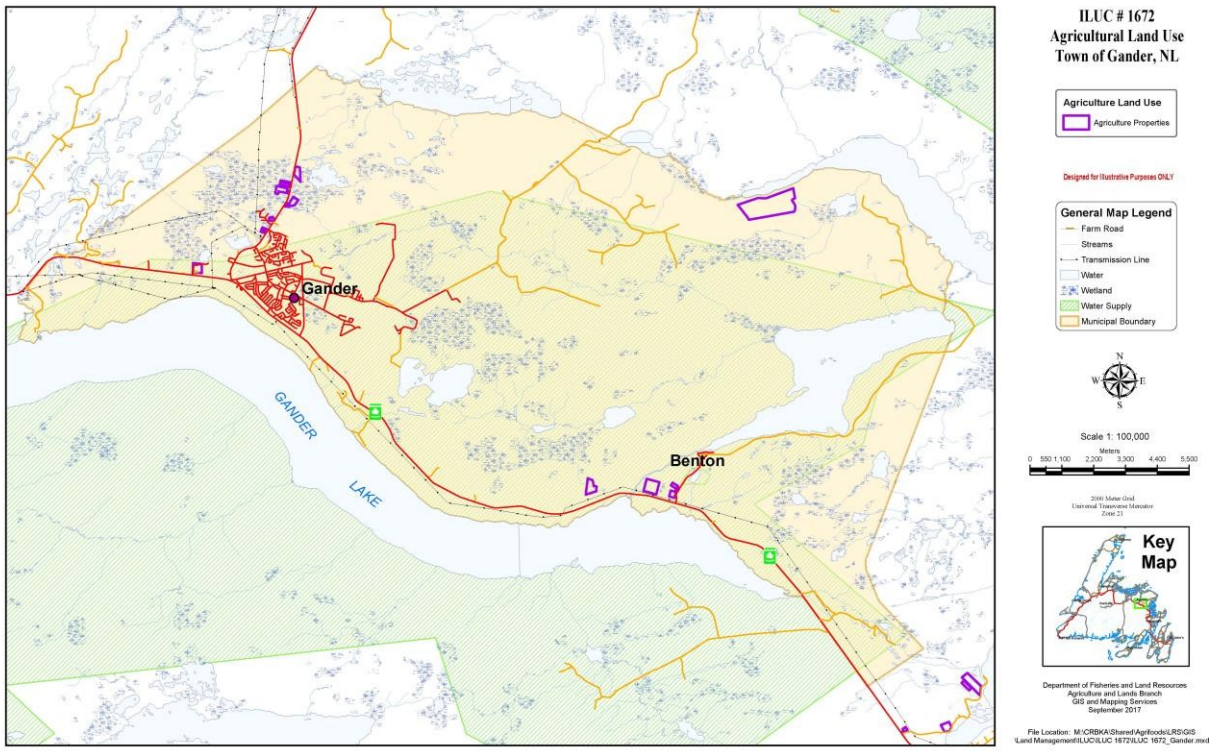
In point 64(b) it states "The structure shall be at least 60 metres from the boundary of the property on which it is to be erected". We are satisfied with the 60 metres however it should be noted that Provincial Guidelines recommend 45 metres.

Schedule A – Definitions:

The definition for "Animal Unit" within the town plan is inconsistent with provincial guidelines and recognized definitions. The Section requires that it be changed to reflect the definitions indicated in the attached documents from the Environmental Farm Practices Guidelines for Livestock and Poultry Producers in Newfoundland & Labrador.

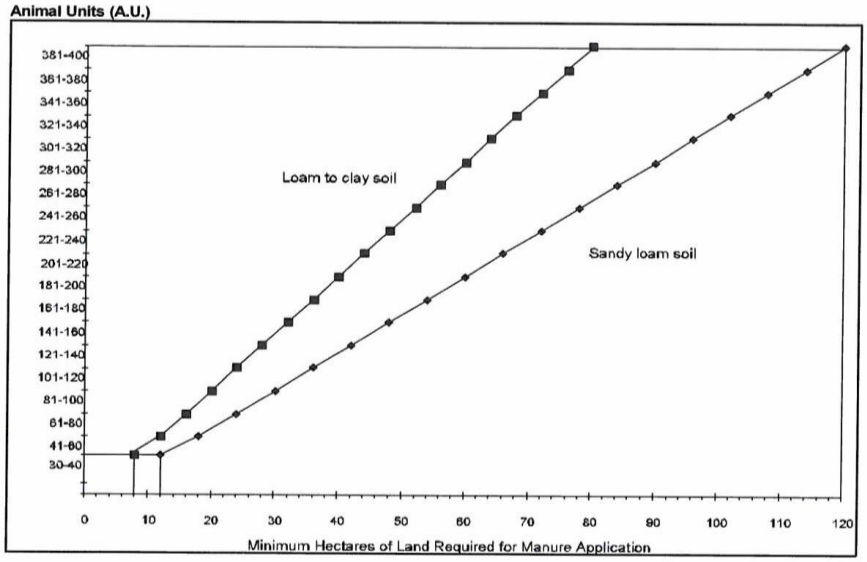
If changes are made to the Municipal Plan, the Section would like to review/provide input on it prior to implementation. Should you have any questions or if you would like to discuss, please do not hesitate to contact Coolene Brake, Land Management Specialist at 637-2896 or cbrake@gov.nl.ca.

# APPENDIX A – Agricultural Land Use



# APPENDIX B

## Recommended Minimum Land Area for Manure Applications




Note: For example, a 10,000 hen layer operation (equal to 40 animal units (AU) since 10,000 ÷ 252 hens/animal unit from Table D.1) would require a minimum of 8 hectares of loam soil or 12 hectares of sandy loam soil. This is calculated by extending a horizontal line from the 30-40 AU point on the vertical axis over to the two heavy lines and then drawing another line downwards to the horizontal axis to 8 and 12 hectares, respectively. This same process can be repeated for any sized operation once the AUs have been determined from Table C.1.

**TABLE C.1**

**Animal Unit Equivalents[1] (A.U.) (C)**

| Type of Livestock | Av. Weight Per animal (kg) | Number of Livestock = 1 AU | Number of A.U. per Livestock |
|---|---|---|---|
| Laying Hens | 1.8 | 252 | 0.00396 |
| Broilers | 0.9 | 500 | 0.0019 |
| Pullets | 1.3 | 350 | 0.0029 |
| Broiler Turkey | 6.5 | 70 | 0.0143 |
| Heavy Turkey | 7.5 | 60 | 0.0165 |
| Heavy Toms | 12.0 | 40 | 0.0264 |

(1) One animal unit is equivalent to 454 kg (1,000 lb.) live weight.

Source: Newfoundland and Labrador Department of Forest Resources and Agrifoods.

TABLE C.1

Animal Unit Equivalents (A.U.)

| Type of Livestock | Av. Weight Per Animal (kg) | Number of Livestock = 1 AU | Number of A.U. per Livestock |
|---|---|---|---|
| Dairy Cows | 545.0-640.0 | 1 | 1.20-1.41 |
| Heifers | 300.0 | 2 | 1.30 (0.66 each) |
| Veal | 91.0 | 5 | 1 (0.20 each) |
| Bulls | 545.0 | 1 | 1.20 |
| Beef Cattle | 360.0 | 2 | 1.60 (0.79 each) |
| Sows (F to F) | 454.0 | 1 | 1 |
| Sows | 150.0 | 3 | 1 (0.33 each) |
| Hogs | 75.0 | 6 | 1 (0.165 each) |
| Boars | 150.0 | 3 | 1 (0.33 each) |
| Sheep (Ewe) | 54.0 | 8 | 1 (0.119 each) |
| Sheep (Lamb) | 27.0 | 16 | 1 (0.059 each) |
| Goats | 64.0 | 7 | 1 (0.141 each) |
| Foxes (w/Litter) | 11.35 | 40 | 1 (0.025 each) |
| Mink | 3.0 | 150 | 1 (0.007 each) |
| Rabbits | 2.27 | 200 | 1 (0.005 each) |

Note: One animal unit is equivalent to 454 kg (1,000 lb) live weight.

Source: Newfoundland and Labrador Department of Forest Resources and Agrifoods.

## CLIMATE CHANGE

Climate change is expected to result in more precipitation and more frequent extreme weather events that may result in increased flooding, sea surge and coastal erosion. These factors should be considered when allocating land for future developments that are in close proximity to a river, floodplain or coastline.

The Climate Change Branch (CCB) suggests that provincial climate change projections for Gander be considered in development stages. These projections suggest that extreme precipitation events will become more intense. For example:

On a 24-hour basis, a 1-in-100 year storm is expected to bring 142 mm of precipitation by mid-century, an increase from the current climate's 120 mm (18% growth); and

On a 12-hour basis, a 1-in-100 year storm is expected to bring 104 mm of precipitation by mid-century, an increase from the current climate's 88 mm (18% growth).

More information on climate data can be provided by contacting Jennifer Forristall-Prim (729-1485) or at the following link: http://www.exec.gov.nl.ca/exec/ccee/publications/idf_curve_2015.pdf on pages C-56 (current climate) and D-6 (projected climate).

The CCB would also like to draw the Town of Gander's attention to recent updates (Section 9.36) of the National Building Code, which now includes energy efficiency requirements for new buildings. The Town must comply with these new energy efficiency requirements for new developments in the municipality.

## MINES

The Mines Branch, Department of Natural Resources, regulates quarrying, mineral exploration, and mining within the province. Quarrying (generally referred to under the term "mineral working(s)" in municipal and planning documents) and mineral exploration are widespread activities throughout the province. Attached map 1 depicts the locations of quarry permits issued in 2017 and areas of recognized aggregate resource potential (i.e., areas recognized as containing, or likely to contain, sand and gravel deposits of suitable size and quality for quarrying) in and near the Town of Gander Municipal Planning Area (MPA). Attached map 2 depicts the locations of mineral licences currently issued and recognized mineral occurrences. While the attached maps give some indication of current quarrying and mineral exploration interest, and the presence of some of the resources that may be the focus of these activities, it is important to keep in mind that quarrying and mineral exploration may be proposed for other locations in the future or new resources discovered.

The Municipal Plan and Development Regulations *shall* adhere to the following:

1. "Mineral exploration (development)" shall be defined as

   > the search for and sampling of minerals or quarry materials where the activity or activities involved meet the definition of "development" under the Urban and Rural Planning Act. "Mineral" and "quarry material" for the purpose of interpreting the definition of mineral exploration (development) are as defined in the provincial Mineral Act and Quarry Materials Act, 1998, respectively. Mineral exploration does not include mining or mineral working (e.g., quarrying). Activities which meet the definition of mineral exploration (development) are to be contrasted with mineral exploration activities that do not meet the definition of development, examples of which typically include traditional prospecting, geochemical sampling surveys (of rock, soil, sediment, water, or vegetation), ground-based and airborne geophysical surveys, and the cutting of survey lines.

2. "Mineral working" shall be defined as

   > an operation consisting of one or more of the following activities: the digging for, excavation, and removal of quarry materials (i.e., quarrying) (may involve blasting), the removal of quarry materials previously excavated, the removal of quarry materials previously deposited on site, the stockpiling of quarry materials, the processing of quarry materials (e.g., crushing, screening, washing), the

production of civil construction materials which use quarry materials in their natural form (e.g., asphalt, concrete), the re-processing of quarry materials including from reclaimed civil construction materials (e.g., reclaimed asphalt, concrete), the production of soil by blending organic materials with quarry materials, or the treatment or remediation of soil. “Quarry material” for the purpose of interpreting the definition of mineral working is as defined in the provincial Quarry Materials Act, 1998. Mineral working does not include mining but may include mineral exploration (development) as a secondary activity. Mineral working does not include the excavation and removal of quarry materials as a by-product of an approved development, however royalties are still due the Crown on quarry materials so removed.

3. “Mining” shall be defined as

   an operation involving the extraction of a mineral for sale and for which a mining lease is required under the provincial Mineral Act administered by the Department of Natural Resources. “Mineral” for the purpose of interpreting the definition of mining is as defined under the Mineral Act. Mining may include, as secondary activities, mineral exploration (development) and mineral working.

4. Mineral working at quarry sites established before a zoning or other planning decision which restricts or disallows mineral working shall be considered a non-conforming use as per section 108 of the Urban and Rural Planning Act, and allowed to continue accordingly.

5. Development Regulations typically establish minimum separation distances or buffers between mineral workings and adjacent uses. Development Regulations shall also contain a statement to the effect that, where a minimum required distance was originally observed when choosing the location of a mineral working, the mineral working shall not be discontinued or impeded where the buffer is reduced to less than the required distance due to encroachment of development towards the mineral working.

6. Quarry materials produced as a by-product of an approved development may be removed from the development site provided that royalties are paid to the province as required by the Quarry Materials Act, 1998. For example, site preparation to construct a building involves removing topsoil, overburden, and possibly rock from the footprint area; these materials may be retained or re-used on the development site (no royalties due) or removed from the site (royalties due). In order to ensure that royalties due the province are paid, it is necessary that the Department of Natural Resources be made aware of approved developments where the removal of quarry materials is taking place or may take place. The Development Regulations shall contain a statement to the effect that "For approved developments where the extraction of quarry materials is occurring or may be expected occur, the Town shall send a copy of the development permit to the Quarry Materials Section, Mineral Lands Division, Department of Natural Resources. Note that quarry materials include but are not limited to aggregate, fill, rock, stone, gravel, sand, clay, borrow material, topsoil, overburden, subsoil, peat."

   The Town may wish to consider having “excavation” as an activity that must be specifically approved for all applicable developments; doing so would provide a clear

criteria for determining when to send a copy of a development permit to the Department of Natural Resources.

7. In the Table of Use Classes, mineral working, mineral exploration (development), and mining shall each be listed as their own, distinct Use Class. The same applies to petroleum exploration and extraction.

The Municipal Plan and Development Regulations *should* adhere to the following:

8. Mineral exploration (development) should at least be a discretionary use in all zones, provided that the work is subject to conditions appropriate to the use zone and which address any other concerns specific to the location.

9. Mineral working should be a permitted use in areas zoned Rural and at least a discretionary use in other relatively undeveloped zones in order to ensure that there is adequate space for quarrying within the Planning Area to meet present and future demand for construction aggregate and fill in the town. The Town should take the presence of any recognized aggregate resources into consideration when making planning decisions affecting these areas (refer to attached map 1). The cost of construction aggregate and fill increases significantly with transportation distance, and this is why it may not be prudent for municipalities to rely on more distant quarries to meet local demand.

Background regulatory information:

Quarrying (the most common type of mineral working) and mineral exploration are already highly regulated activities and the permitting process for each involves the municipality when the proposed activity is located within a municipal planning area; we ask that municipalities take this into account when developing their municipal plans and development regulations. The following are summaries of how quarrying and mineral exploration are regulated in the province:

a) The Mineral Lands Division, Mines Branch, Department of Natural Resources, administers the Quarry Materials Act, 1998, under which quarrying may be approved by the issuance of either a quarry permit or lease. Quarry permits are issued for no longer than one year and are not subject to renewal, though the holder of a quarry permit one year gets the first opportunity to apply for a quarry permit covering the same area next year. Once a quarried area is no longer covered by a quarry permit, then the most recent quarry permit holder is required as a condition of that permit to rehabilitate the site by re-sloping pit sides and placing stockpiled organic materials back over the site. Quarry leases are issued instead of quarry permits where a longer term need has been demonstrated, are issued for a period no longer than 20 years, and require a development and reclamation plan and the posting of financial assurance with the Department of Natural Resources in an amount sufficient to complete the reclamation work outlined in the plan should the company be unable to. Development and closure plans and the amount of financial assurance are reviewed and approved by the department and are required to be kept up to date. All applications for quarry permits and leases for areas located within a municipal planning area are referred to the municipality, in addition to other government agencies, and terms and conditions are drafted to address any specific concerns raised during the referral process. The Mineral Lands Division has three regional quarry compliance officers who carry out inspections

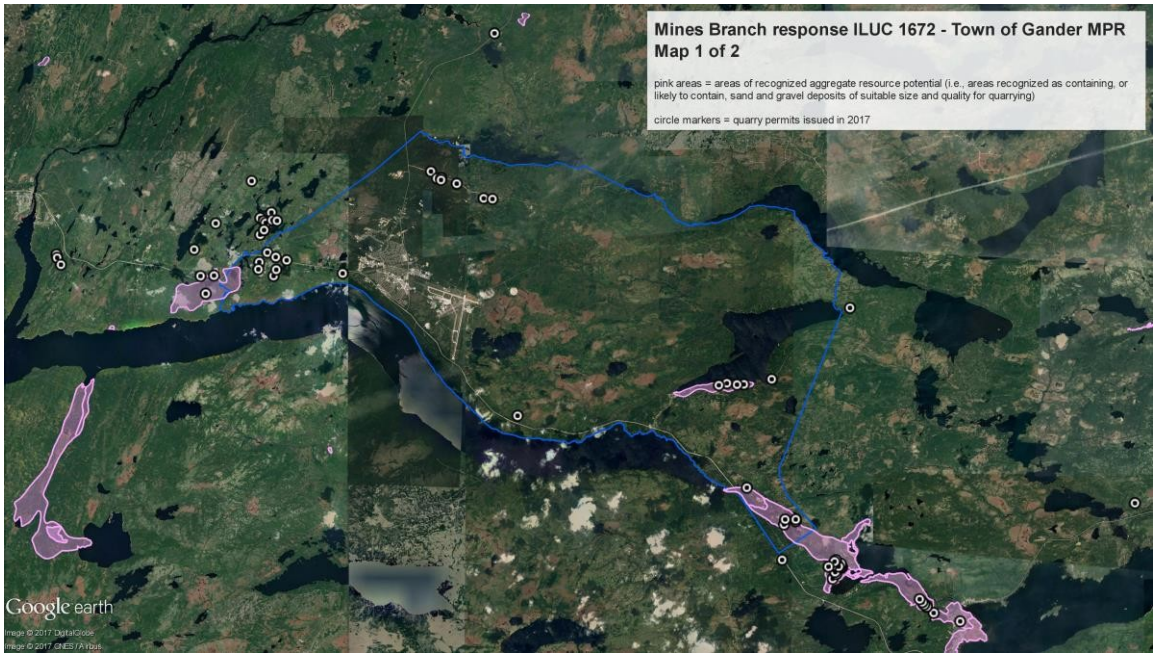
year-round to ensure that the terms and conditions of quarry permits and quarry leases are adhered to, including that rehabilitation, once due, is completed as required. Should a town have concerns about any quarrying activity, whether before or after the issuance of a quarry permit or lease, the town should contact the Mines Branch, Mineral Lands Division in order to have the concerns addressed.

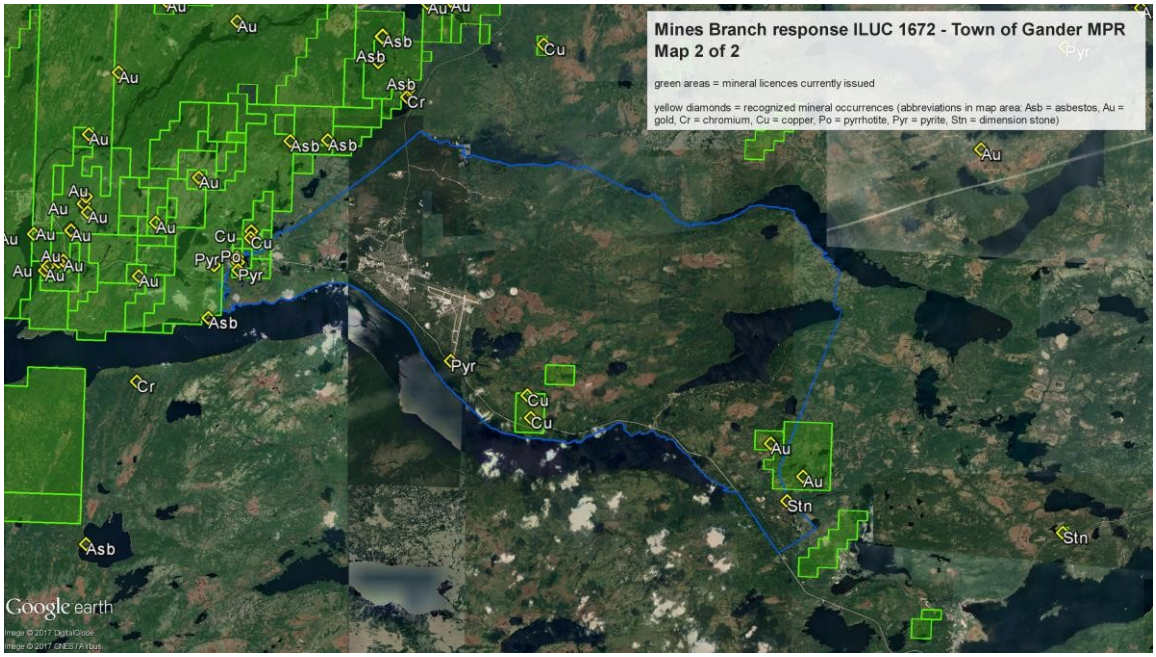
b) The Mineral Lands Division, Mines Branch, Department of Natural Resources, administers the Mineral Act under which mineral licences are issued and within the bounds of which mineral exploration may be approved by the issuance of an "exploration approval". Exploration approvals are generally issued for no longer than one year. Applications for exploration approval involving areas within a municipal planning area and where the activities proposed may involve ground disturbance, wildlife disturbance, water quality impairments, or foreseeable land use conflict, are referred to the municipality (in addition to other government agencies), and terms and conditions are drafted to address any specific concerns raised during the referral process. That being said, basic environmental requirements for mineral exploration are already set out in the Mineral Regulations under the Mineral Act, for example, that all excavated, stripped, and grubbed sites be rehabilitated by backfilling or re-contouring, as appropriate, and then placing stockpiled organic materials back over the site. The Mineral Lands Division conducts inspections year-round to ensure that the Mineral Regulations and the terms and conditions of exploration approvals are adhered to, including that rehabilitation, once due, is completed as required. Should a town have concerns about any mineral exploration activity, whether before or after the issuance of an exploration approval from the Department of Natural Resources to conduct the work, the town should contact the Mines Branch, Mineral Lands Division in order to have the concerns addressed. Mineral exploration activities may include traditional prospecting, geochemical sampling, airborne and ground-based geophysical surveys, line cutting, test pitting, stripping of bedrock, trenching, and diamond drilling, and may be accompanied by the creation of new (temporary) access trails, equipment laydown areas, campsites, or, less commonly, constructed access roads. Exploration for quarry materials (e.g. sand, gravel) is permitted using the same procedure and typically involves the excavation of test pits followed by their immediate rehabilitation.

Questions about any aspect of quarrying, mineral exploration, or mining, or the above comments should be directed to Stephen Hinchey, Land Use and Exploration Monitoring Geologist, Mineral Lands Division, Mines Branch, Department of Natural Resources, at 729-5748 or stephenhinchey@gov.nl.ca.

Information about geological hazards

As part of this response, please find attached a document (.doc) from the Geological Survey of Newfoundland and Labrador providing general advice to inform the municipal planning process on the subject of geological hazards and climate change.




## "MINES" General Comments on Municipal Plan Reviews (cont.)

The following comments are provided as a general statement from the Geological Survey of Newfoundland and Labrador, Department of Natural Resources, as part of the municipal plan review process. Some of the areas of discussion may not apply to the community under review. More details can be provided by contacting:

Martin Batterson, Director
Geological Survey of Newfoundland and Labrador
Phone (709) 729-3419
Email: martinbatterson@gov.nl.ca

Newfoundland and Labrador has a long history of geological disasters with over 290 incidences of geologically-related impacts having been recorded from 150 communities in the province over a 223-year period. There are likely numerous unrecorded events that have occurred in areas currently within municipal boundaries at a time when there was no impact on infrastructure. With community expansion and the pressure for development, these areas may be considered for residential or commercial uses. To assist the municipal planning process in identifying areas of geological hazard, the Geological Survey has begun a project to identify areas at risk of geologically-related events (landslide, rockfall, avalanche, coastal erosion, flooding) within municipalities in the Province (http://www.nr.gov.nl.ca/mines&en/geosurvey/disasters/)

The sections below on flooding, landslide and rockfalls, coastal erosion and climate change should be considered in planning decisions:

**Flooding**
Flooding affects both inland and coastal areas. River flood plains are those areas adjacent to modern rivers that overflow their banks during storm events or as a result of ice jams. Low-lying coastal areas may be inundated by the sea during storm surge events, especially if coastal protection (including beaches) is breached. Areas at river mouths are particularly vulnerable during river flooding during periods of unusually high tide or storm events. Flood risk maps for many areas of the Province have been released by Environment Canada and the Newfoundland Department of Environment and Conservation. These maps indicate historical events and show areas of potential threat from 1:100 year flood events. The responsibility for flooding related issue lies with the Water Resources Division, Department of Environment and Conservation, and they should be consulted on this subject. Historical flood events have been compiled in the Geological Survey's database of geological disasters (http://www.nr.gov.nl.ca/mines&en/geosurvey/disasters/).

**Landslide and rockfall**
Rockfall and landslide are common in Newfoundland. They are commonly triggered by heavy rainfall on steep slopes. Any development at the base of a steep slope should consider rockfall potential.

These are slope processes that involve the downslope movement of material (unconsolidated sediment, bedrock and snow) in response to gravity. The slope angle and sediment characteristics are important factors that influence slope stability. Rockfalls are the downslope movement of boulders, either by free fall, rolling or sliding. These boulders may be dislodged by freeze-thaw activity, erosion beneath the boulder, bedding plane failure or through human activity. Rockfall may also impact a slope below and trigger a landslide. Rockfalls tend to occur repeatedly, forming a talus cone of boulders at the foot of a steep slope. For single-block rock falls, the concept of a 'shadow angle' is well established. The shadow angle is defined by the angle below horizontal formed by the line lying between the apex of the slope subject to rock fall and the extreme position of rock fall debris (boulders). Numerous studies have shown this to be between 22° and 30°.

Landslides involve the downslope movement of unconsolidated material under the influence of gravity, and are capable of producing widespread damage. In Newfoundland and Labrador landslides are commonly triggered by heavy rain or snowmelt, which introduce large quantities of water to the slope. Sediment becomes saturated beyond its shear strength, at which point, movement occurs. This movement may be rapid (*e.g.,* debris flows) or slow (*e.g.,* creep). Historical landslide events have been compiled in the Geological Survey's database of geological disasters (http://www.nr.gov.nl.ca/mines&en/geosurvey/disasters/).

**Avalanches**

Avalanches are another rapid form of slope movement. They generally consist of a combination of snow and ice, but may include sediment, rock, and vegetation. To occur, they require heavy snowfall (either introduced by precipitation or wind), and a steep (30°-50°) slope. The trigger for avalanche is commonly heavy snowfall over a smooth surface, produced from either a rapid fall in temperature in the days preceding the snowfall or from a period of freezing rain or burial of a weak layer in the snow. Alternatively, high winds blowing over a slope may create a cornice which may break off, falling to the slope below and triggering an avalanche. Historical avalanche events have been compiled in the Geological Survey's database of geological disasters (http://www.nr.gov.nl.ca/mines&en/geosurvey/disasters/).

**Coastal erosion**

Large parts of the coastline of Newfoundland and Labrador are composed of cliffs of unconsolidated (non-rock) material. These areas are stable if covered by vegetation, but may erode quickly where exposed to waves. Rates of coastal recession up to 1m per year have been recorded in the province. Bedrock cliffs also erode, albeit at a slower rate.

Although there are Provincial regulations regarding development in relation to the high water mark, in areas of unconsolidated material forming coastal cliffs or unconsolidated sediment on bedrock however, set back from the cliff edge is, in our opinion, a more appropriate measure. Based on an average recession rate of 15 cm per year and a 100 year life span for a structure, **we recommend a setback of at least 30m (twice the average erosion rate times 100 years) from the cliff top to any planned residential or commercial development.** A longer limit should be considered in those areas where more active recession is noted.

The Geological Survey has recently initiated a coastal monitoring program that will provide data on rates of coastal erosion for the Province. For more information on coastal vulnerability contact Melanie Irvine at the Geological Survey (709-729-3489 or melanieirvine@gov.nl.ca).

**Climate Change**

Wave magnitude and the frequency of extreme wave events (including storm surge) may be expected to increase if predictions of global climate change and associated global sea level rise occur. In Newfoundland and Labrador, the crust continues to move, albeit slowly, in response to the last glacial period. Most of the Island of Newfoundland is currently experiencing rising sea level, which will exacerbate the sea level rise as a result of climate change. Over the next century sea level is be expected to rise by over 1 metre in eastern Newfoundland, 80-90cm in western and southern Newfoundland, and less than 70 cm in Labrador; sea-level rise will continue beyond 2099 (http://www.nr.gov.nl.ca/nr/mines/geoscience/publications/currentresearch/2010/batterson_liverman.pdf). Rising sea level will increasingly threaten our coastline and thus planning should restrict development in low-lying areas or those adjacent to cliff edges that may experience

enhanced erosion. The increased risk of coastal erosion may be accentuated by increasing pressures on the coast for residential development. **Based on the potential future impact of sea level rise and storm surge, areas below the present 2 m contour are considered to be highly vulnerable to coastal flooding.** Development within this area should be restricted to ensure that appropriate mitigation measures are employed. These could include coastal protection measures or enhanced engineering standards, although communities may choose to remove these areas from development. Areas above the present 2 m contour may also be at risk from coastal flooding, including storm surge.

The Government of Newfoundland and Labrador (Office of Climate Change and Energy Efficiency) commissioned a study of the projected impacts of climate change in the province for the period 2038-2070. The 2013 report, prepared by Dr. Joel Finnis of Memorial University, incorporated data from 7 regional climate model (RCM) simulations provided by the North American Regional Climate Change Assessment Project (NARCCAP). Model projections were compared against observations collected by Environment Canada (EC) climate stations in the province. With regards to predicted changes in temperature and precipitation the report highlights that the climate will become warmer (especially winter temperatures) and wetter (both intensity and duration) and that an increase in rain-on-snow events is likely. The latter could lead to an increased potential for flooding and landslides/ avalanches. Details of the climate change projections report can be found at: http://www.turnbackthetide.ca/whatsnew/2013/nl_climate_change_projections_summary.pdf

You should be aware that the Geological Survey is introducing a hazard mapping program for the province. Initial work will focus on the north-east Avalon Peninsula (*e.g.,* http://www.nr.gov.nl.ca/nr/mines/geoscience/publications/openfiles/OF_001N-0884.pdf). Maps will be released as they are completed, and mapping will extend to other areas of the province in due course.

As always the Geological Survey is available for discussions on all geologically-related hazard issues, including the potential impacts of, and adaptations to, climate change.

## PARKS DIVISION

The Newfoundland and Labrador T'Railway Provincial Park (T'Railway) runs through the Town of Gander's municipal area boundary and is protected and administered under the authority of the *Provincial Parks Act* and its subordinate regulations by Parks Division.

The *Municipal Plan 2009-2019* references the T'Railway in two locations; *Section 3.10 Open Space* in the introduction and *Section 3.10.2 Park Hierarchy* in bullet #3. Parks Division requests that all references to the T'Railway include the legal name of the park, ***Newfoundland and Labrador T'Railway Provincial Park,*** acknowledging its status as a provincial park.

Parks Division provides these additional comments for consideration during the municipal plan review and development of the planning area boundary for the Town of Gander.

The T'Railway bisects the municipal planning area boundary. Contact Parks Division Headquarters in Corner Brook at trailway@gov.nl.ca or at (709) 637-2040 for specifics on the park boundary width. All persons using the T'Railway must adhere to the *Provincial Parks Act* (*PPA*) and *Provincial Parks Regulations* (*PPR*) which can be viewed online at: http://assembly.nl.ca/Legislation/sr/regulations/rc970091.htm . Please note that under the *PPA* and the *PPR* the following prohibitions are listed:

> 3.(1) A person shall not, except in accordance with a permit for management or scientific purposes, remove, harm, hunt, chase, destroy or cause damage to any object whether animate or inanimate that is contained within the boundaries of a provincial park.
>
> (2) A person shall not introduce to a provincial park a plant or animal species except in accordance with a permit for management or scientific purposes. 2

If access to the T'Railway is required as part of the municipal plan, it should be noted that section 10(e) of the *PPR* prohibits operation of a motor vehicle or a four wheel drive vehicle in the T'Railway except under the authority of a written permit from the minister. Temporary Vehicle Access Permits may be obtained by contacting Parks Division.

A Construction and Use Permit is also required if a site is to be accessed from the T'Railway by any means that will disturb the natural state of the park (e.g., a driveway, road crossing), or if any construction or maintenance is proposed to take place within the T'Railway. Requests should be received six to eight weeks prior to commencement of the project. Contact Parks Division at trailway@gov.nl.ca (709) 637-2040 for more information on how to obtain a permit.

## NL HYDRO

For this referral, Hydro offers the following response:

We must maintain access to our transmission line (TL210) for maintenance, repairs and upgrades. There are to be no buildings or other developments in the Transmission line right of ways. Hydro has developed a strict policy of not approving developments in our Right of ways and we are enforcing our right of ways/easements on a go forward basis. We ask that municipalities do the same.

Hydro will not provide service to facilities, building, etc. in our right of ways and reserves the right to remove any buildings that impede our upgrade, maintenance or repair work. Any costs to remove impediments will be at the owners expense.

For any new developments, Hydro asks that the town or the developer contact us prior to construction so as to identify any issues or conflicts that may arise. Developers need to provide Hydro with easements for electrical services and new development plans should show the easement for electrical service.

Requests for access roads underneath transmission lines must be made to Hydro by contacting our customer services department.

## FORESTRY

There are significant timber resources within the proposed Gander Municipal boundary change that we need to retain the ability to harvest. The attached map shows two current Five Year Plan Commercial blocks (CC05004b and CC05004c, Boot Pond) and three Domestic cutting areas (31 and part of 32 and 39). There are more than 300 domestic cutters utilizing these areas. Additionally, there are other stands and significant road infrastructure indicated as well as silviculture areas not noted on the map that the District needs to maintain access to, considering the current timber supply/low logging opportunity in this district. Accordingly, we should conditionally approve this proposal on the following premises:

- Forestry retains the cutting rights to the current Zone 3 Five- Year Plan domestic and commercial areas that are within the Gander PLAB.
- If there is any forested Crown land to be converted to municipal land use in the future, forestry will require first cutting rights to these areas and shall be consulted in advance of such developments.
- Should Forestry decide to forgo any cutting opportunities associated with municipal land use, the Town will require prior approval from DOEC for areas within the Gander Lake Public Protected Water Supply Area, a cutting permit and an operating permit during fire season for any activity on forested areas. Gambo District to be provided with a copy of Environmental Permit to Operate in PPWSA.
- Any disturbance of silviculture areas should require compensation to the Crown.
- Some of the area contained within the Gander PLAB is on CBPPL limits. The company should be contacted for input.

## WILDLIFE DIVISION

Please find below the Wildlife Division's Comments RE ILUC # 1672.

> The Branch, through its involvement in the Eastern Habitat Joint Venture program, seeks to work with municipalities in the development of municipal plans or municipal plan updates. We are very appreciative of the town's involvement in that program and the success of entering into a Municipal Stewardship Agreement to protect wildlife and conservation values within its boundaries. We continue to provide support and assistance to the town and are pleased to work with council/staff/ consultants when requested. Please contact Jonathan Sharpe at 637-2013 or jonathansharpe@gov.nl.ca.
>
> The Wildlife Division's would also like the municipality to consider general wildlife habitat and landscape connectivity during the next phase of their municipal review plan.

This could include

> maintaining appropriate riparian buffers, which are natural green belts along wetlands and waterbodies (ponds, rivers, creeks etc.). A 30m minimum undisturbed natural vegetated green belt could be a standard requirement when dealing with any type of land use activity; wider green belts are suggested when bordering salmon rivers or for land uses that could include potentially harmful substances entering a nearby water system.

To maintain landscape connectivity, green belts should be connected to forested areas or other habitat patches to create travel corridors for various wildlife species. Development Regulations could incorporate a minimum percentage of forests to be maintained during lot clearing, for example. Vegetation clearing should always be done outside the *May 01 to July 31* period (note that some raptors start breeding in March) as disturbance can be most detrimental during that sensitive breeding/ young rearing period.

**SERVICE NL**

Service NL, Government Service Centre, has reviewed the proposal as outlined above and has no objections.
We would like to advise that any development on the referenced property may require permits and/or approvals from the Government Service Centre. It is advised that prior to the start of any development, the proponent contact the Regional Office of the Government Service Centre, Fraser Mall, 230 Airport Blvd., P.O. Box 2222, Gander, NL, A1V 2N9, Telephone (709) 256-1420, Fax (709) 256-1438 to discuss any relevant permits and or approvals that may be required

**ILUC RECOMMENDATION:**

This ILUC proposal (1672) is approved subject to the Town taking into account the comments made within this summary document when developing and implementing a new Municipal Plan and Development Regulations.

Date: _____

for Richard Carey, Chair
Interdepartmental Land Use Committee