

Land Use Background Report (Draft)
Trout Lake Watershed Study and Management Plan

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1.0 Introduction

Trout Lake is a special and important feature for North Bay and East Ferris residents.

For the purposes of this report, 'Trout Lake' includes the lake itself, major inflowing streams and lands within 300 metres of Trout Lake and its major inflowing streams.

Trout Lake defines the image and character of both communities. Trout Lake serves as the eastern growth boundary for a portion of the urban area of North Bay. It is surrounded by mostly private patent lands, much of which has been developed. The relationship between this development and water quality in Trout Lake is very important.

Trout Lake is known for its high water quality. The lake is the source of drinking water for many people including urban residents of North Bay that receive municipal water services, as well as rural residents in both communities that have private water services.

Trout Lake is rare and globally significant. The lake provides low nutrient concentrations and high-quality lake trout habitat in the form of deep cold water with elevated dissolved oxygen concentrations and supports a naturally re-producing lake trout population. According to the Ontario Ministry of Northern Development, Mine, Natural Resources and Forestry, approximately one percent of Ontario's lakes contain lake trout. However, this small number of lakes represents about a quarter of all lake trout lakes in the world.

Trout Lake has important recreational values. People that live on and visit the lake come to relax, swim, boat, canoe, cross country ski, snowshoe and snowmobile. This recreational value is key to North Bay and East Ferris remaining healthy communities moving forward in the future.

For many years, the City of North Bay (North Bay), Municipality of East Ferris (East Ferris), North Bay Mattawa Conservation Authority (NBMCA) and their public agency and community partners have monitored water quality conditions and trends in Trout Lake and, based on this scientific understanding, have used their legislative authorities, including the land use planning authority under the *Planning Act* and other legislation to guide development along the shoreline and within defined areas of the shoreline to ensure that development proceeded in a sustainable manner.

North Bay, East Ferris and the NBMCA retained J.L. Richards & Associates Ltd. (JLR) and Hutchinson Environmental Sciences Ltd. (HESL) to prepare a Watershed Study and Management Plan for Trout Lake (study and plan). The study and plan represent the next step in the sustainable development and management of Trout Lake, one that is rooted in an understanding of science based lake management and complementary local land use planning policies, standards and processes.

This Background Report is the first of several reports that will be developed as part of the study and plan. This report includes five further sections, as follows:

- Section 2 describes the study area for this assignment;
- Section 3 describes the existing land use characteristics within the study area;
- Section 4 describes the land use planning framework applicable to the study and plan; and,
- Section 5 provides conclusions and next steps.

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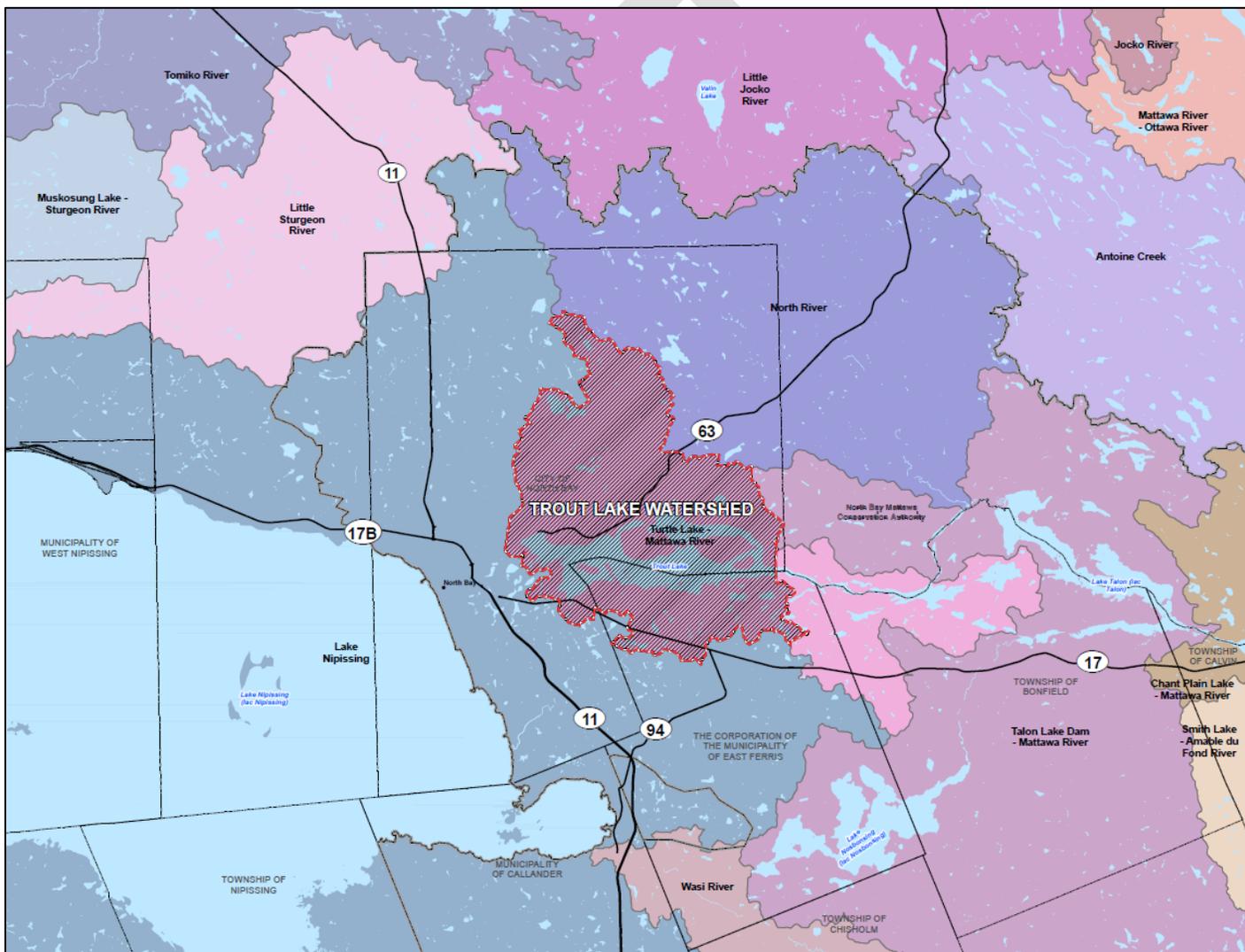
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Future reports will speak to issues, opportunities and constraints and recommended future policy directions.

2.0 Trout Lake Land Use Study Area

The study area for this assignment lies within the Trout Lake Subwatershed, one of twenty sub-watersheds that fall within the jurisdiction of the NBMCA. The boundaries of the Trout Lake Subwatershed are illustrated in Figure 1.

Figure 1. Trout Lake Subwatershed



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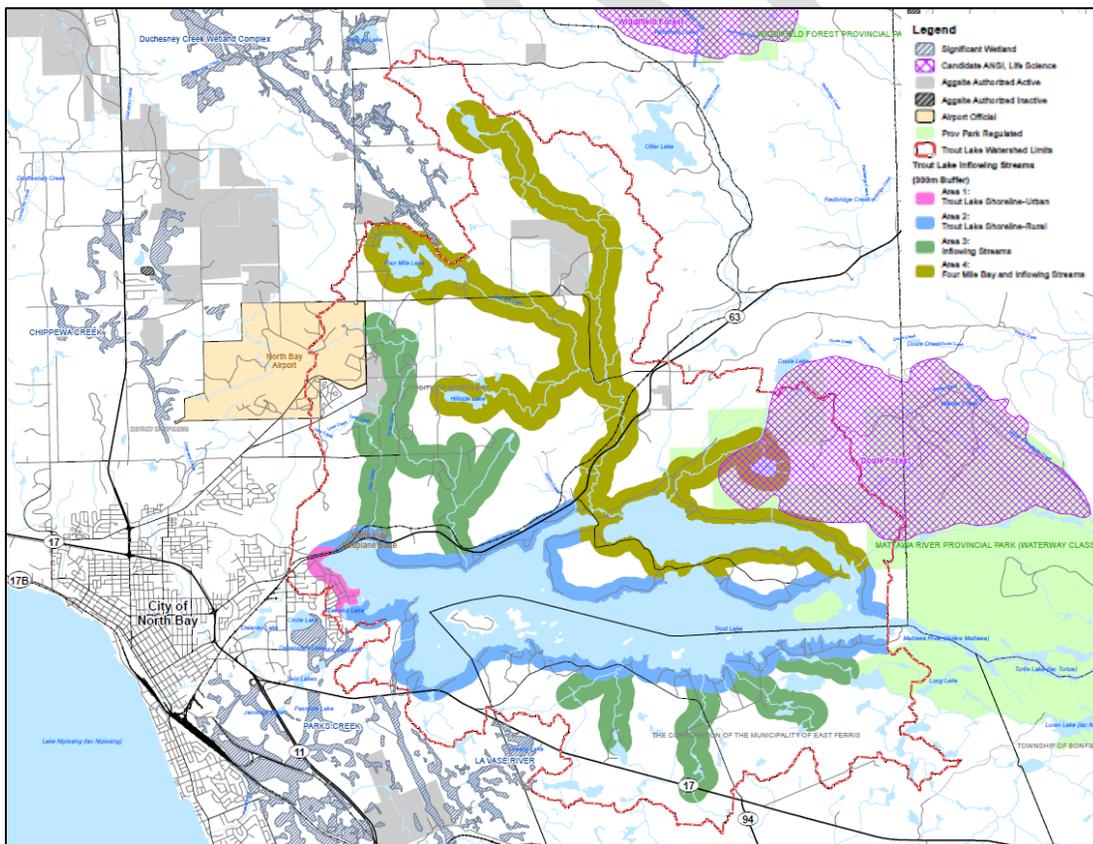
Recognizing that all lands within the subwatershed are connected to Trout Lake, either through surface water or ground water, North Bay, East Ferris and the NBMCA have adopted a holistic definition of Trout Lake, one that includes all major inflowing streams and lands within 300 metres of Trout Lake and its major inflowing streams that have the highest potential to influence water quality in the lake.

The study and plan maintains this holistic perspective. For the purposes of the study and plan Trout Lake refers to Trout Lake; all major inflowing streams (i.e. Lees Creek, Doran Creek, Four Mile Creek (including Four Mile and Hillside Lakes) and the un-named creek that drain a portion of the Mattawa River Provincial Park and High Lake), islands within the lake and lands within 300 metres of the Trout Lake shoreline and the major inflowing streams. The 300 metre buffer is being used as a “starting point” for the study and plan, given its basis in existing Official Plan policy.

Trout Lake represents a large geographic area where various development characteristics (i.e. rural v. urban) occur, impacting their potential influence on the quality of Trout Lake. To better understand the study area the following sub-areas have been identified:

- Area 1: Trout Lake Shoreline – Urban
- Area 2: Trout Lake Shoreline – Rural
- Area 3: Major Inflowing Streams
- Area 4: Four Mile Bay and Major Inflowing Streams

Figure 2. Study Area Boundaries



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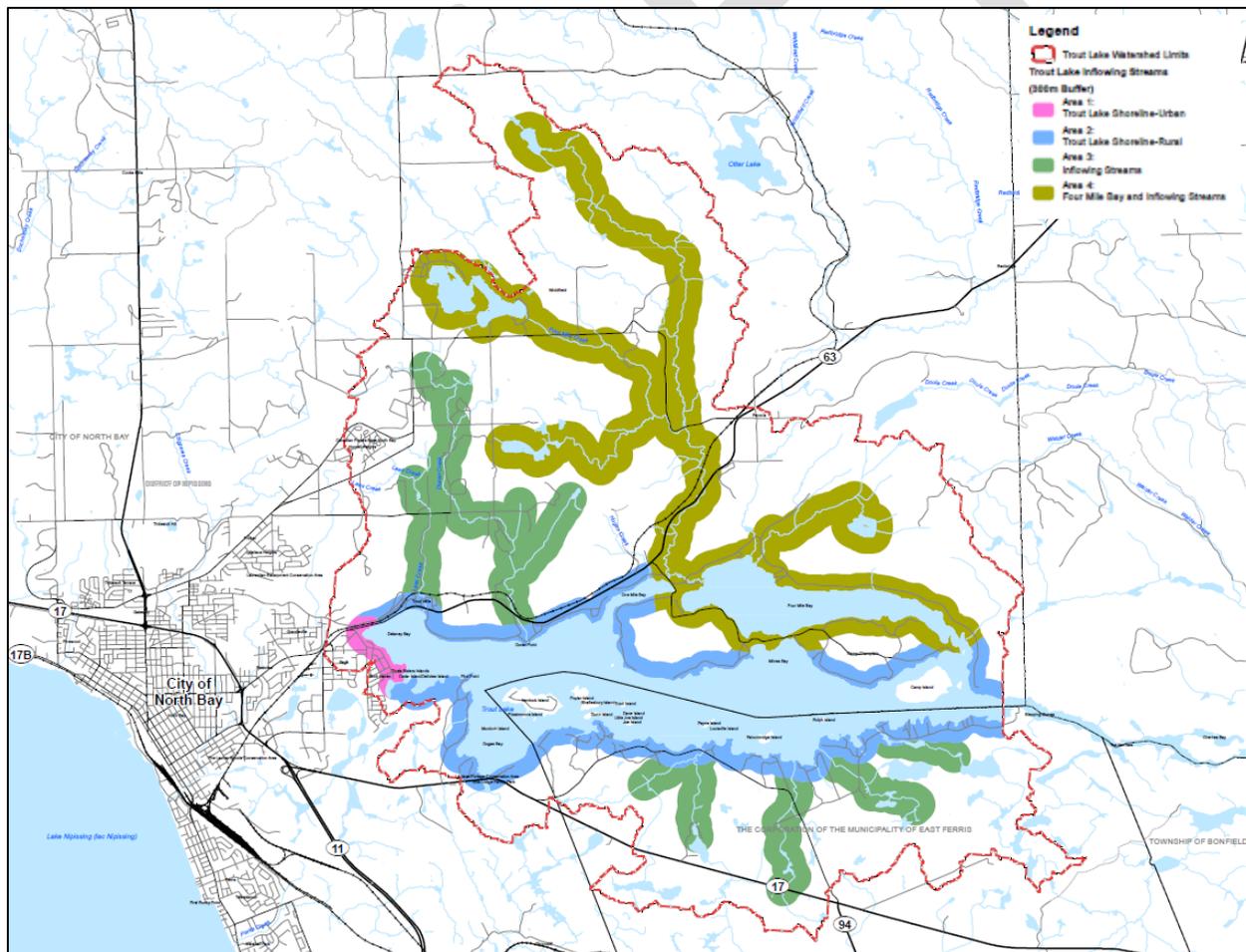
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3.0 Study Area Land Use Planning Characteristics

3.1 Trout Lake

Trout Lake is located on the Canadian Shield in the Trout Lake Subwatershed, part of the Upper Ottawa-Kipawa Watershed. Trout Lake is approximately 1,887 hectares in area and includes almost 72 kilometres of shoreline. Trout Lake is comprised of two basins: Four Mile Bay (approximately 27 metres deep); and the Main Basin (approximately 63 metres deep). Four Mile Lake is the main inflow into Trout Lake and flows into the Four Mile Bay Basin. Lees Creek flows into Delaney Bay. Doran's Creek flows into Trout Lake at Doran's Point. The un-named creek that flows from the Mattawa River Provincial Park also flows into Four Mile Bay. Five major inflowing streams have been identified in the Municipality of East Ferris which flow into the Trout Lake main basin. Trout Lake outflows into the Mattawa River, which in turn, connects to the Ottawa River system. The lake features a large peninsula and several islands, with Camp Island being the largest. These features are illustrated in Figure 3.

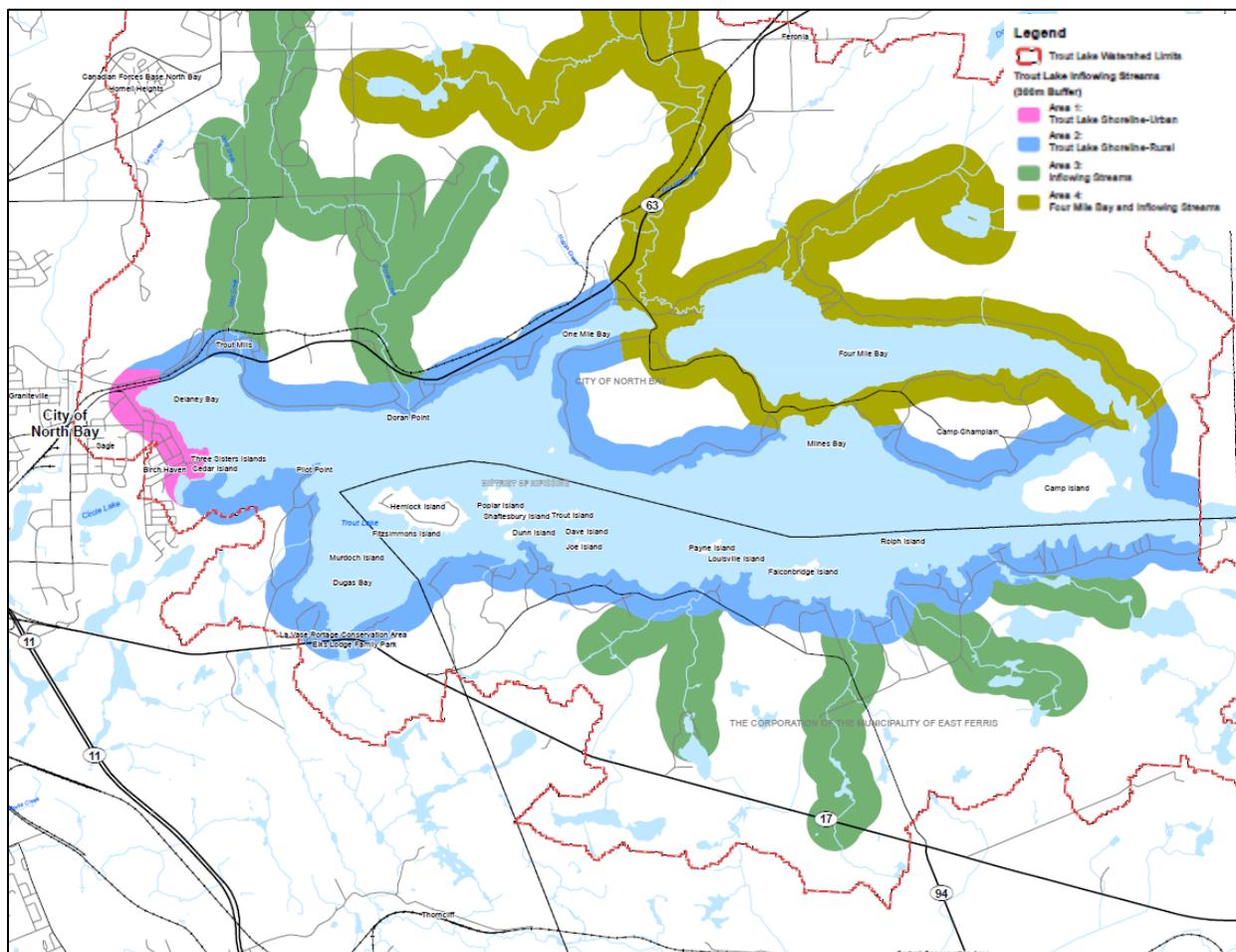
Figure 3. Study Area Key Features



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Figure 3b. Study Area Key Features-Trout Lake



3.2 Terrain and Topography

According to the Provincial *Northern Ontario Engineering Geological Terrain Study on the North Bay Area (1980)*, the North Bay area is underlain by Precambrian rocks that are more than 2.5 million years old. These rocks have been strongly metamorphosed, folded and then intruded by igneous rocks. The area is covered by a discontinuous veneer of ground moraine till deposited as glacial ice advanced to the southwest. During de-glaciation, quaternary deposits were formed across North Bay, including the study area. The north side of the study area include morainal and glaciofluvial deposits, with areas of organic deposits. The south side of the lake includes some glaciolacustrine deposits.

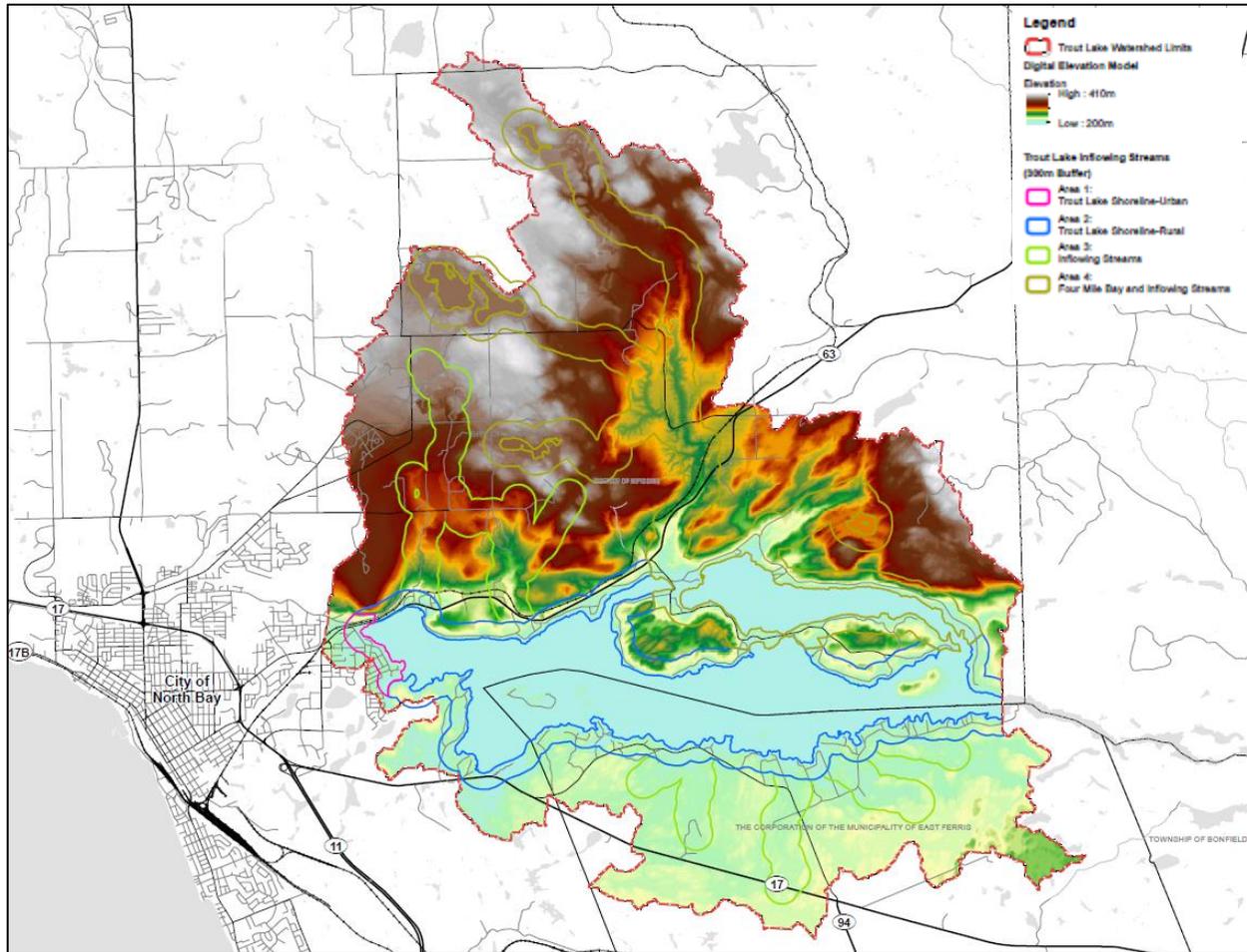
The study area topography is varied. The north side of the study area includes the most varied terrain, with elevations ranging from approximately 195 m asl to 475 m asl. The North Bay Escarpment, runs through the north side of the study area on a east west axis. North Bay's Official Plan defines and protects the escarpment from development. In the south side of the study area,

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elevations are relatively less varied ranging from approximately 195 m asl to a high of approximately 240 m asl.

Figure 4. Study Area Terrain and Topography



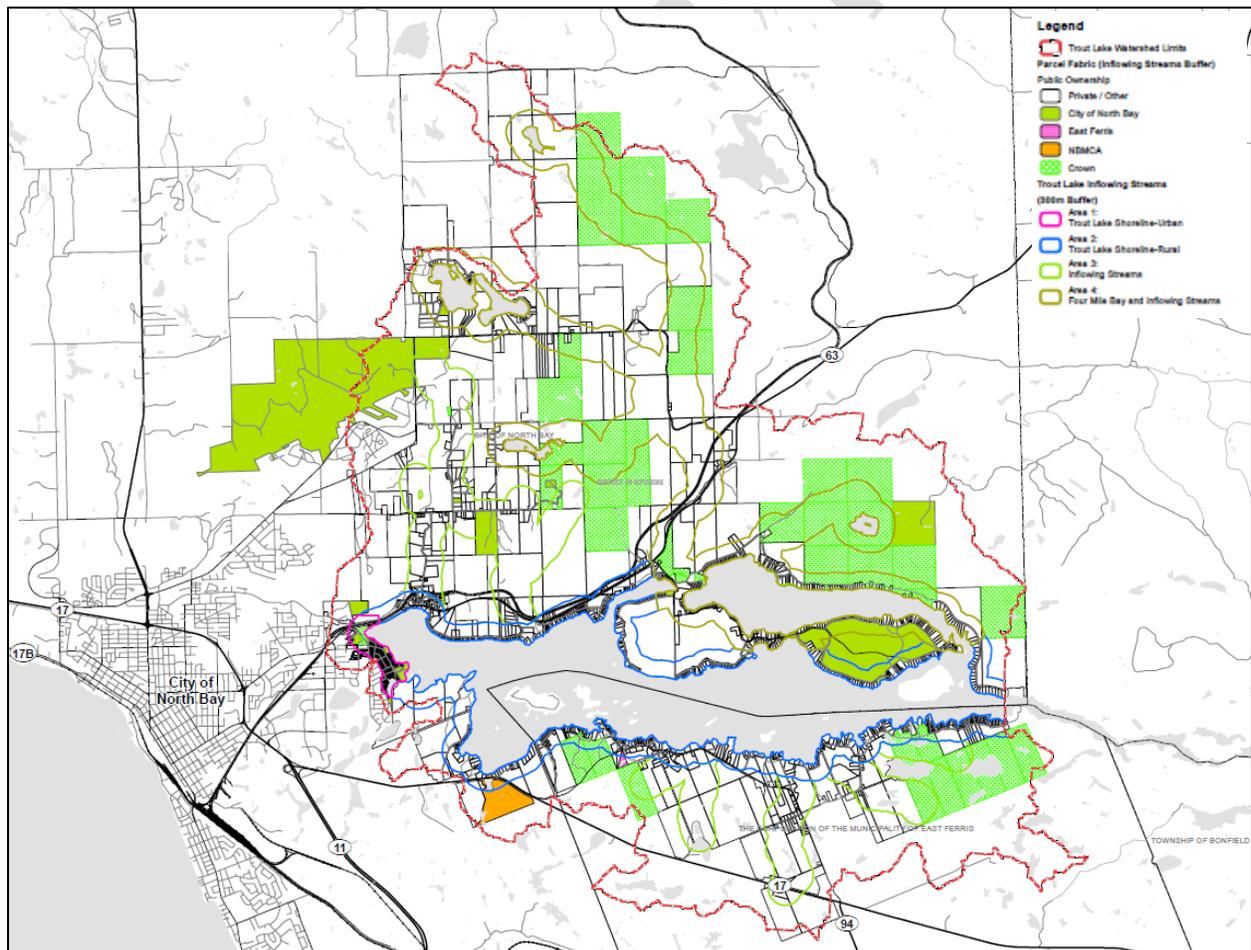
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3.3 Land Ownership

The lands within the study area include a mix of private and public ownership. In terms of parcels, the majority of parcels in the study area are privately owned (96 percent). Approximately 2 percent of the parcels in the study area are owned by North Bay and East Ferris. The remaining 2 percent of parcels are owned by the Crown, including lands along the north and east shore of Four Mile Bay, Camp Island and lands along the south shore of Trout Lake and Mattawa River. In terms of land area, 66 percent of land in the study area is privately owned, 11 percent is municipally-owned, 22 percent is crown-owned and 0.5 percent is NBMCA owned. The pattern of land ownership is illustrated in Figure 5.

Figure 5. Study Area Pattern of Development



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3.3.1 Area 1: Trout Lake Shoreline – Urban

The majority of land within Area 1 are under private ownership. Within Area 1 there are approximately four (4) parcels owned by the City of North Bay. These publicly owned lots include Birchhaven Cove Park, Olmstead Beach, Armstrong Park, and the City of North Bay Waterworks Pump House. The remaining lots are privately owned. There is also one parcel of Crown Land on the north end of the Urban boundary just south of Highway 63.

3.3.2 Area 2: Trout Lake Shoreline – Rural

Area 2 involves the rural shoreline of Trout Lake. The vast majority of land is privately owned. There are about three parcels on the northern side of Trout Lake which are owned by the City of North Bay, as well as Camp Champlain (Peninsula, Shorewood, Regal) which is partially located in Area 4. 1 lot located on the southern side of Centennial Crescent is owned by the Municipality of East Ferris, as well as one lot on the northern side of MacPhersal Drive just to the west of Durrell Road. This parcel does not have direct frontage on Trout Lake. Two parcels of land on the southern Shore of Trout Lake about 1 kilometre west of East Ferris are owned by the NBMCA (Elks Lodge #25 Family Park Conservation Area and La Vase Portages Conservation Area). Towards the western and eastern edge of East Ferris there is Crown Land.

3.3.3 Area 3: Major Inflowing Streams

Similar to Areas 1 and 2 most of the land within Area 3 is privately owned. For the Inflowing Streams on the Northern side of Trout Lake there are about four parcels owned by the City of North Bay. There is also some Crown Land adjacent to the inflowing streams in North Bay. Crown Land is also present adjacent to the inflowing streams on the eastern and western sides of East Ferris, though still minimal in comparison to the privately owned parcels.

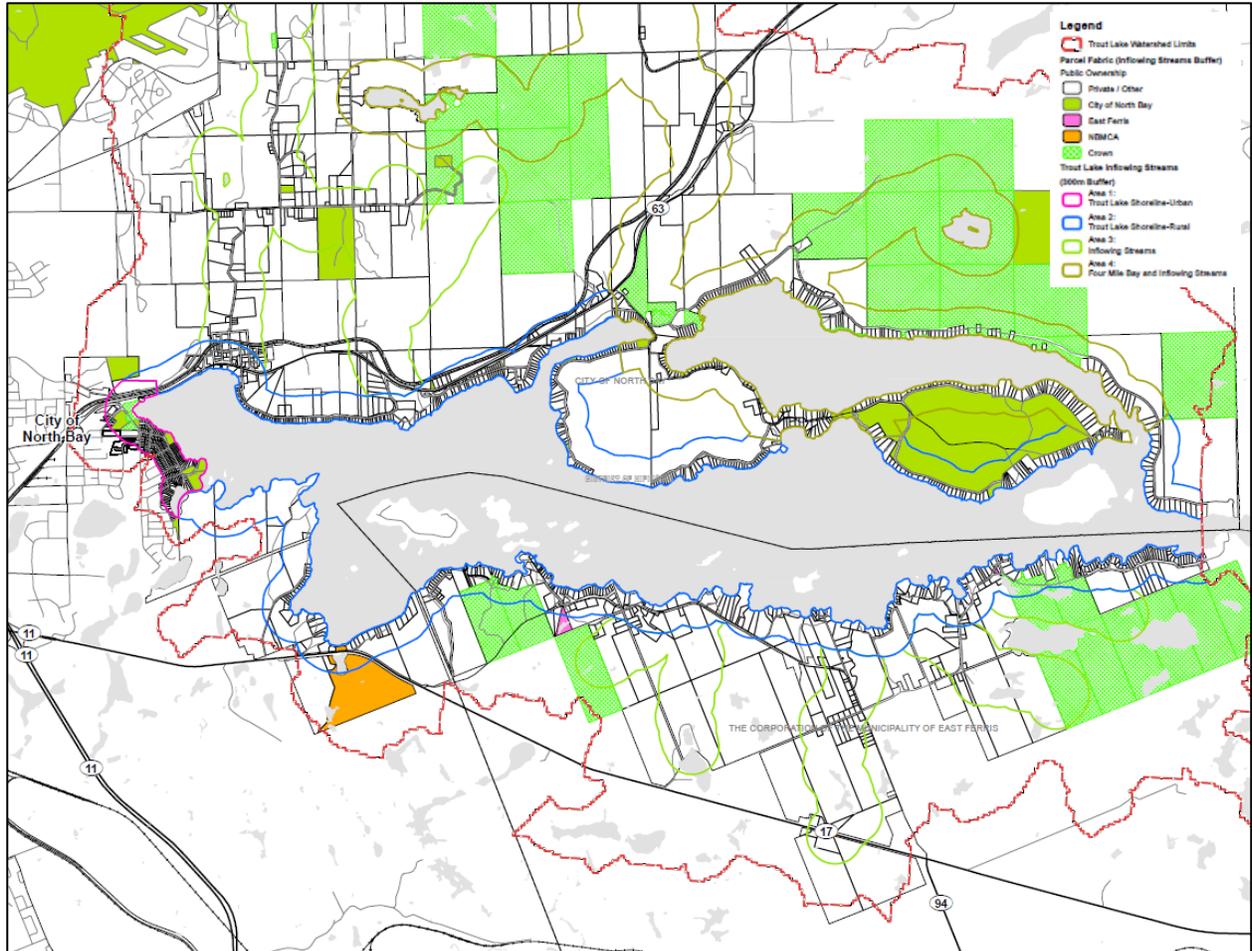
3.3.4 Area 4: Four Mile Bay and Major Inflowing Streams

While most of Area 4 is privately owned, there are large sections of land owned by the City of North Bay and Crown Land. On Camp Champlain the lands immediately abutting Four Mile Bay are privately owned, which the interior of the island is owned by the City of North Bay. There is also some land owned by the City of North Bay fronting on the southwestern shore of Four Mile Lake, as well as some land owned by the City of North Bay on the eastern edge of the eastern Four Mile Bay inflowing stream. Large parcels of Crown Land are present by Hillside Lake throughout the Inflowing Streams buffer areas and along the eastern side of Four Mile Bay.

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Figure 5b. Study Area Pattern of Development-Trout Lake



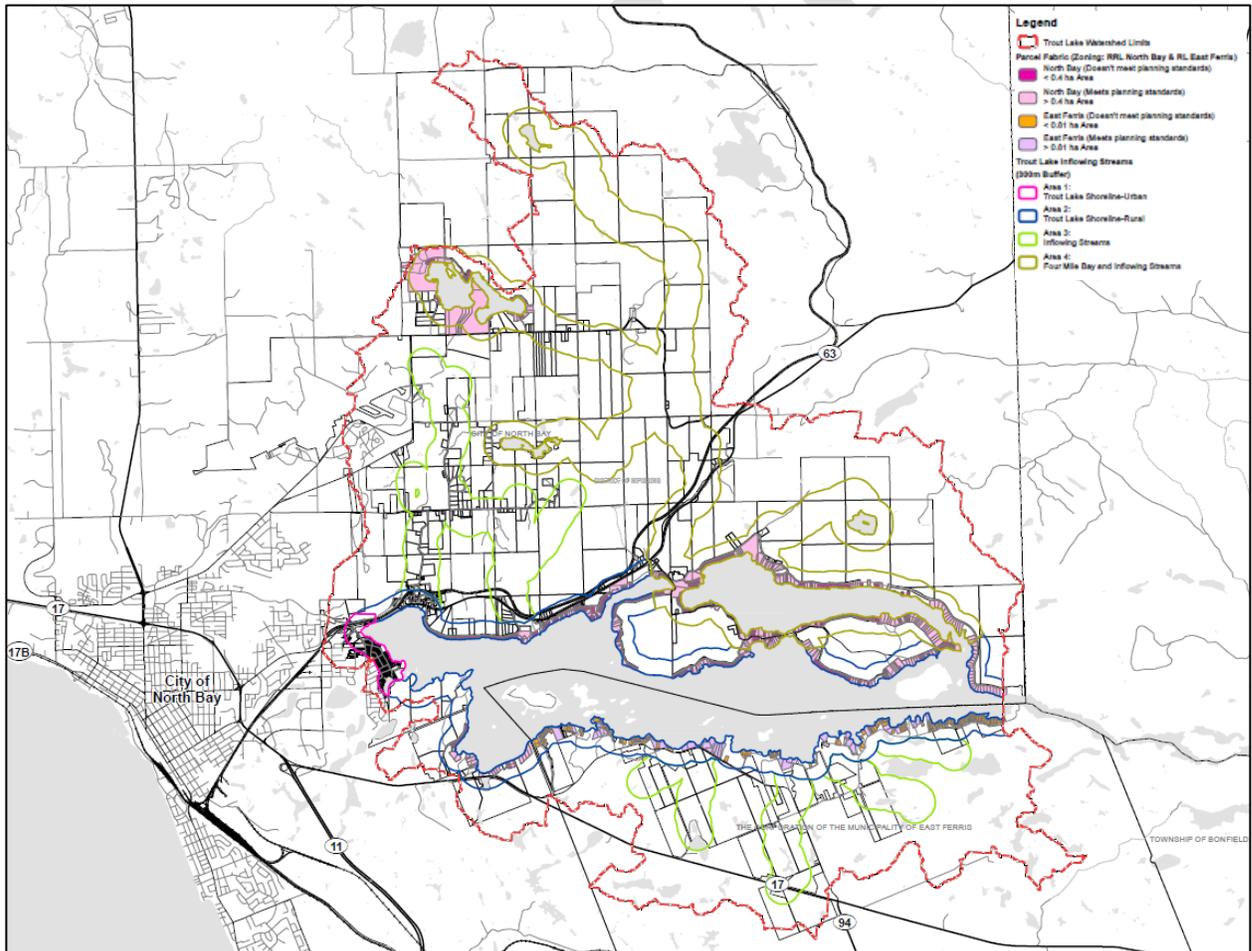
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3.4 Lot Fabric

The existing lot fabric within the study area includes a range of lot sizes and lot frontages (water frontage). Lot sizes range from a minimum of 3 square meters to 265,382 square metres. The average lot size is approximately 23,784 square metres. Shoreline frontages range from a minimum of 3 metres to 453 metres. The average shoreline frontage is about 57 metres. Figure 6 illustrates the existing lot fabric for the lands zoned Rural Residential Lakefront in North Bay and Lakefront Residential in East Ferris. Lots are shaded according to their ability to meet the minimum lot size standards for these lands, as called for in North Bay's Official Plan (0.4 ha) and East Ferris' Official Plan (0.81 ha). Approximately 30 percent of the existing lots along the shoreline meet the current minimum lot area standards.

Figure 6. Study Area Lot Fabric



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3.4.1 Area 1: Trout Lake Shoreline – Urban

Lot sizes in Area 1 range from a minimum of 281 square metres to 170,592 square metres. The average lot size is about 10,926 square metres. Shoreline frontages range from a minimum of 6 m to 796 metres. The average shoreline frontage is approximately 17 metres.

3.4.2 Area 2: Trout Lake Shoreline – Rural

Lot sizes in Area 2 range from a minimum of 3 square metres to 1,806,158 square metres. The average lot size is about 25,833 square metres. Shoreline frontages range from a minimum of 3 to 2,024 metres. The average shoreline frontage is approximately 64 metres.

3.4.3 Area 3: Major Inflowing Streams

Lot sizes in Area 3 range from a minimum of 16 square metres to 5,708,866 square metres. The average lot size is about 117,501 square metres. Shoreline frontages range from a minimum of 15 to 857 metres. The average shoreline frontage is approximately 79.48 metres.

3.4.4 Area 4: Four Mile Bay and Major Inflowing Streams

Lot sizes in Area 4 range from a minimum of 100 square metres to 1,806,158 square metres. The average lot size is about 90,177 square metres. Shoreline frontages range from a minimum of 12 to 2024 metres. The average shoreline frontage is approximately 99.78 metres.

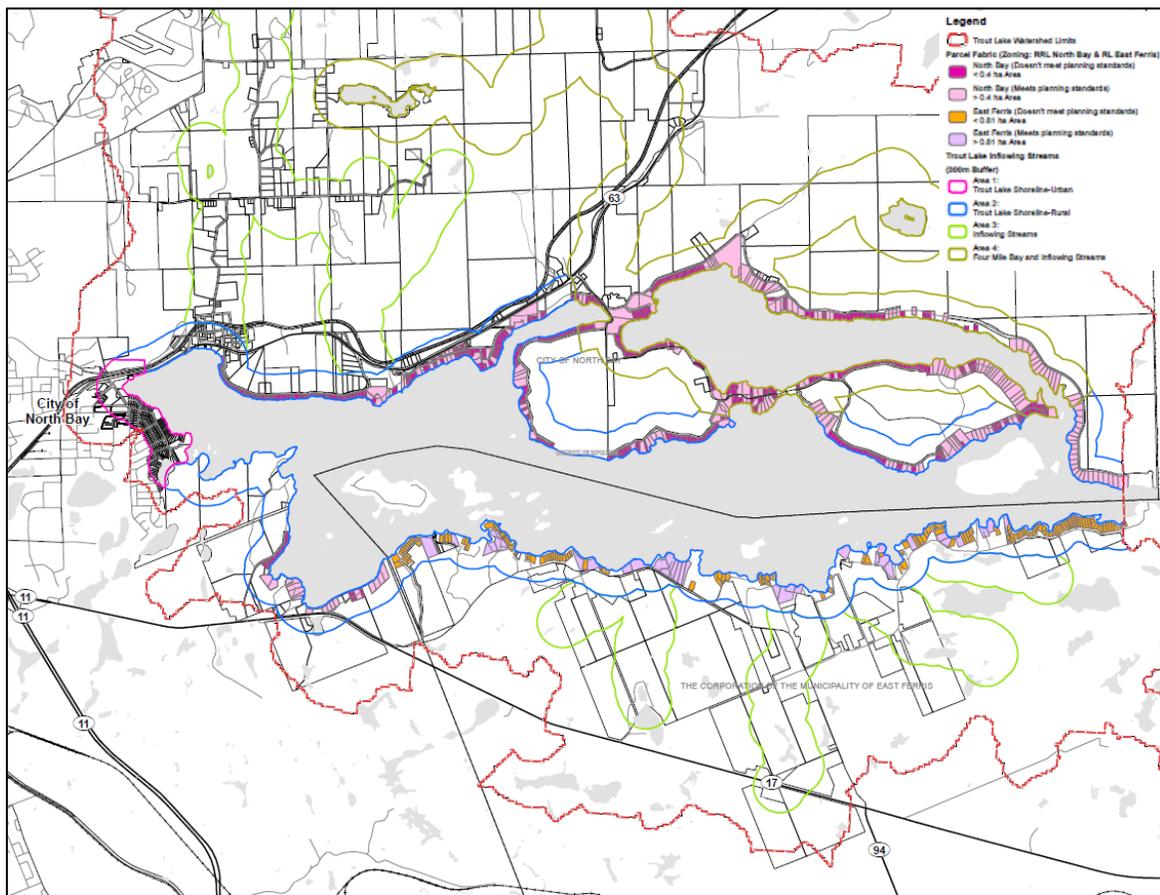
3.4.5 Additional Comments

It should be noted that some lots are located in more than one subarea and have been included in each subarea calculations respectfully, impacting the data presented above. This will be explored further in the Existing Conditions, Issues, Opportunities and Constraints Report. Conformity to the Zoning by-law will also be examined in the following report.

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Figure 6b. Study Area Lot Fabric-Trout Lake



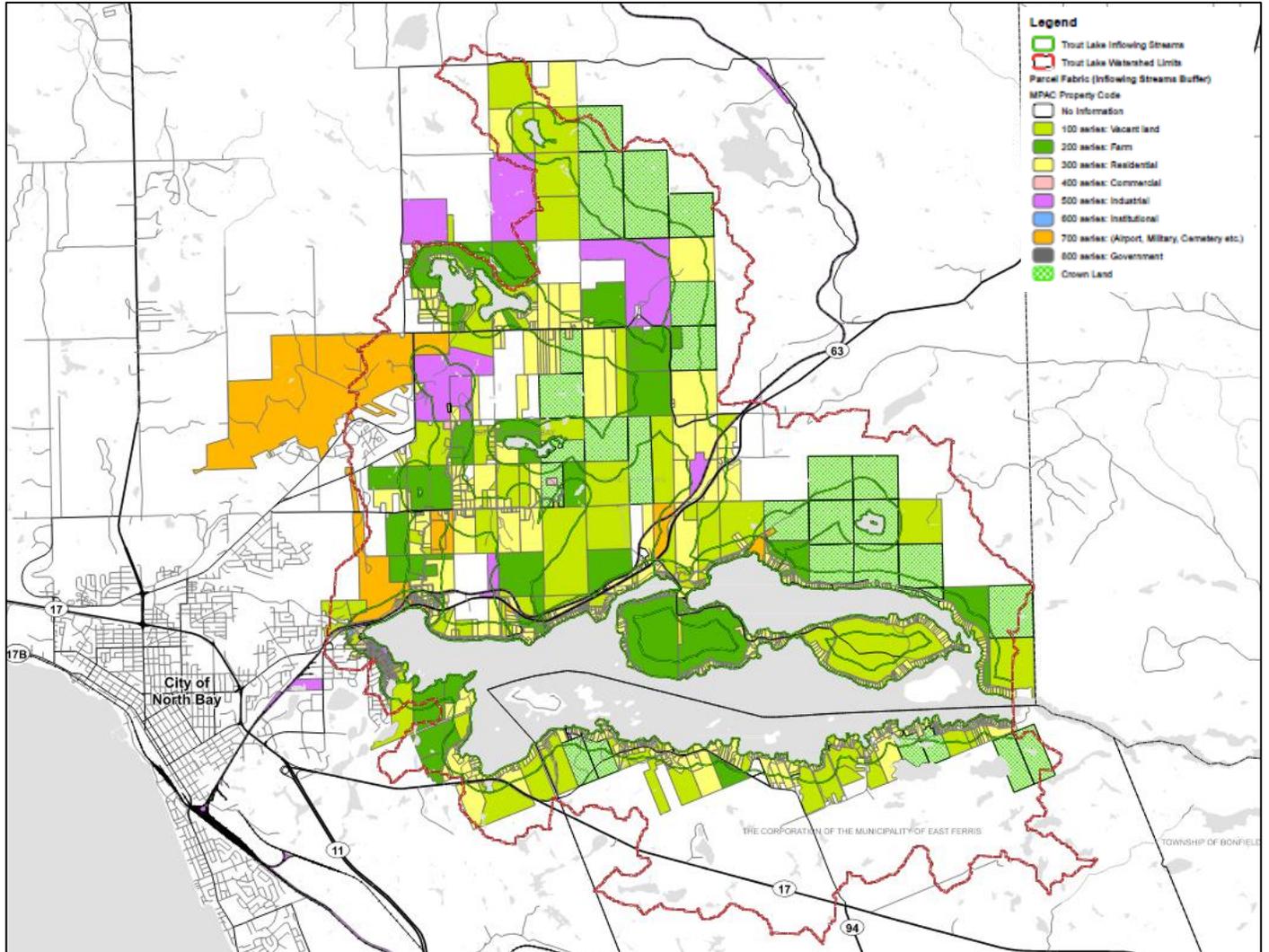
3.5 Land Uses

Land uses within the study area include a mix of uses. According to MPAC and using land areas, approximately 23 percent of the study area is residential, 15 percent is farm (managed forests falls under MPAC code 200 Series – Farm. See <https://www.mpac.ca/en/PropertyTypes/FindYourPropertyType/Propertycodes>), 8 percent is industrial, 9 percent is airport/military/cemetery, 21 percent is crown land and 23 percent is vacant. The existing pattern of land uses is illustrated in Figure 7.

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Figure 7. Study Area Land Uses



3.5.1 Area 1: Trout Lake Shoreline – Urban

Within the Area 1 the predominant land use is residential. One parcel of each industrial, institutional, crown and vacant land respectively were identified along with a few commercial parcels.

3.5.2 Area 2: Trout Lake Shoreline – Rural

Similar to Area 1 the majority of lots are residential, including lots with frontage on Trout Lake. Vacant land and Farm land have also been identified throughout Area 2. One parcel with an Industrial MPAC code was identified in the Municipality of East Ferris. This lot is partially located within Area 3. Some Crown land has been

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identified in Area 2 most of which is located on the southern shore of Trout Lake within the Municipality of East Ferris. Some Airport, Military, Cemetery...etc. which apply to airports, military, cemetery type uses have been identified scattered throughout Area 1.

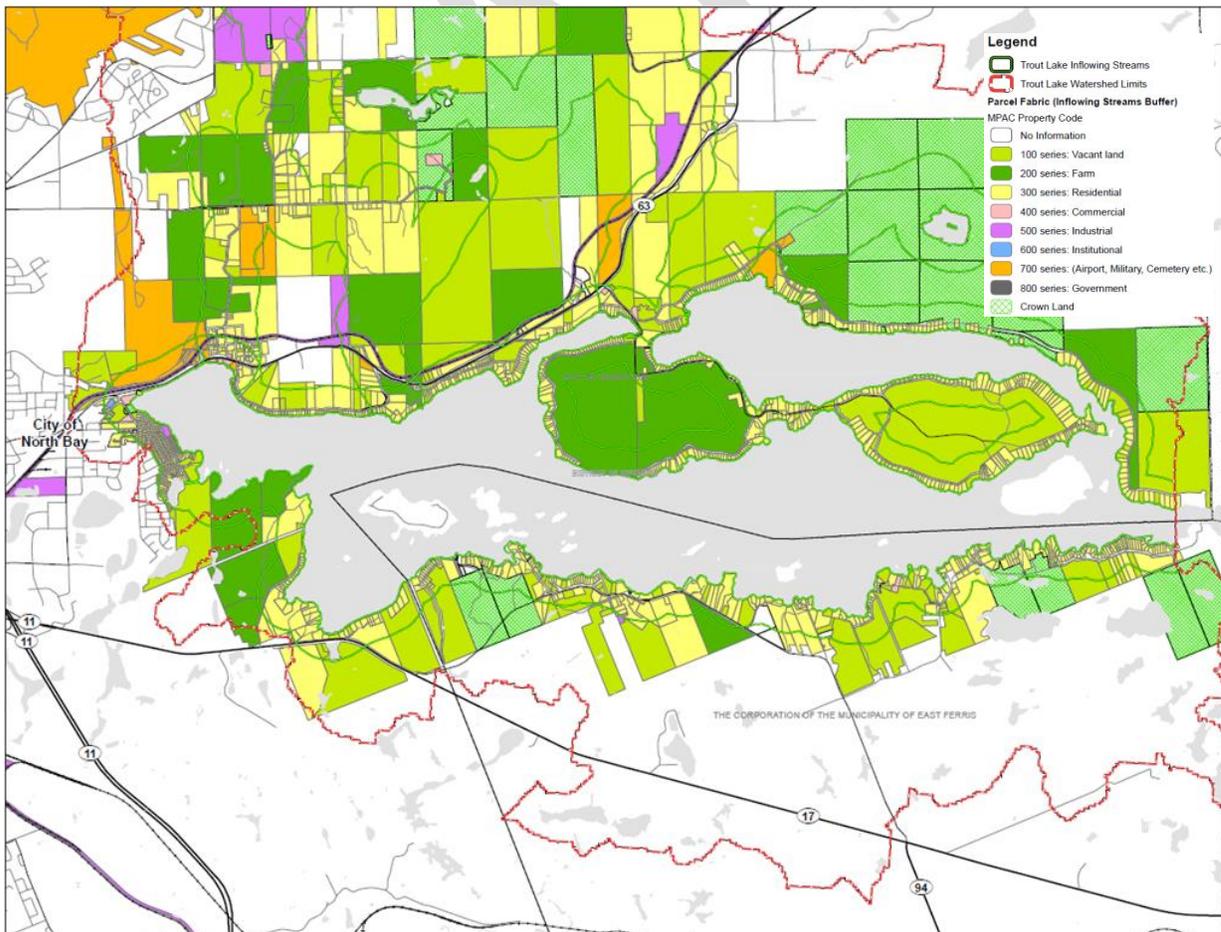
3.5.3 Area 3: Major Inflowing Streams

Area 3 contains mostly residential and vacant land. The inflowing streams along the northern side of Trout Lake also contain some larger parcels of Farm land and crown land. There is some industrial land scattered throughout Area 3, mostly within the northern inflowing streams, as well as some airport, military, cemetery...etc. lands. The inflowing streams on the southern side of Trout Lake contain mostly residential and vacant land, with some Farm land and Crown land.

3.5.4 Area 4: Four Mile Bay and Major Inflowing Streams

For lots with frontage on Trout Lake the predominant land use is residential. For lots along the Four Mile Bay inflowing streams there is a mix of Crown land, vacant land, residential land, and farmland with some airport, military, cemetery...etc. land scattered throughout.

Figure 7b. Study Area Land Uses-Trout Lake



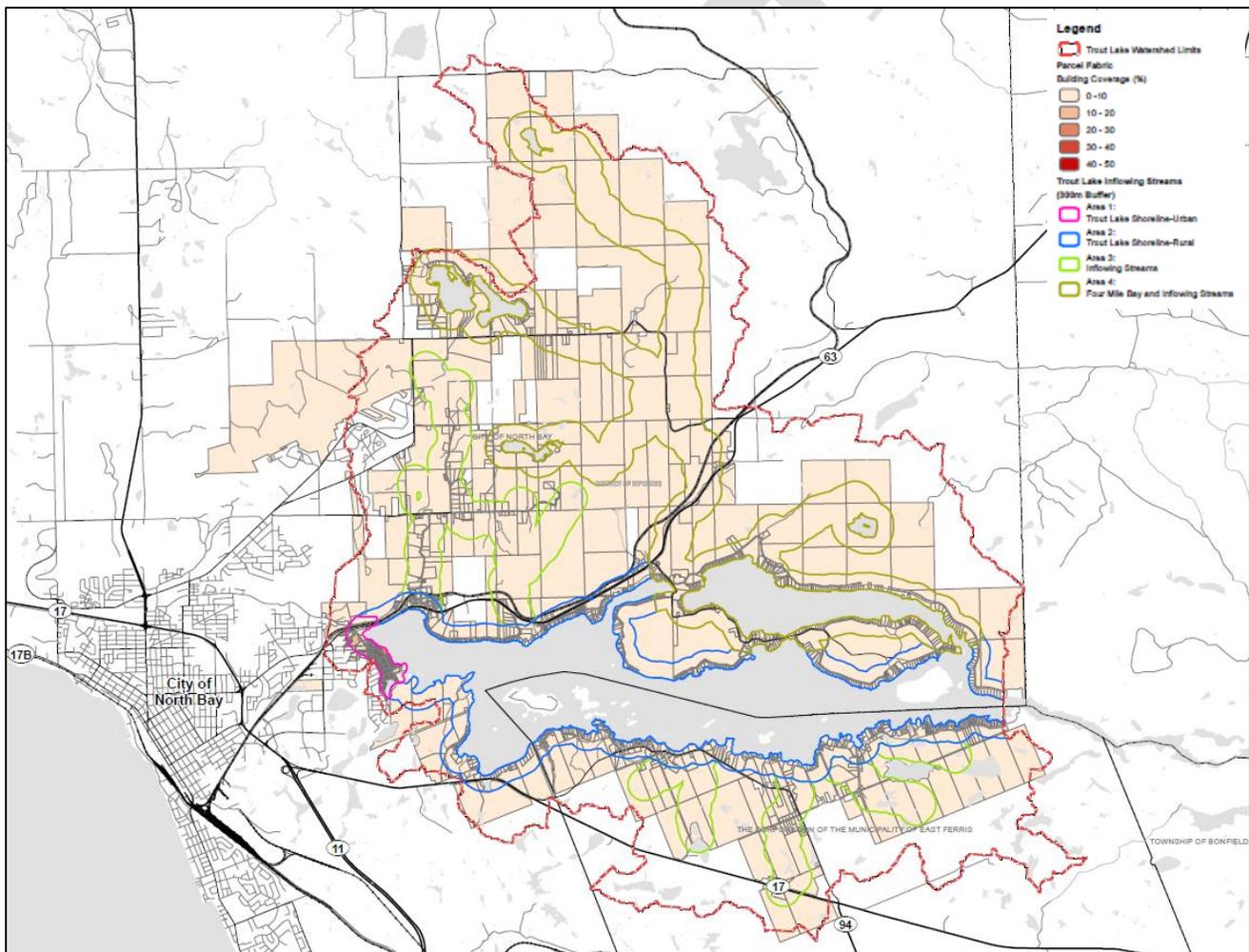
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3.6 Lot coverage

Land uses within the study area display varied built forms. The predominant residential building type are single detached residential structures, be they permanent or seasonal residential. Lot coverage in the study area (the sum of the footprints of all buildings and structures on a lot divided by the lot area) is relatively low. The majority of lots in the study area have a lot coverage ranging between 0 to 10 percent (80 percent in North Bay, 97 percent in East Ferris). The pattern of lot coverage in the study area is illustrated in Figure 8 below. As displayed in Figure 8 below, generally the lots with a higher lot coverage are located within the City of North Bay Urban Settlement Area.

Figure 8. Study Area Lot Coverage



3.6.1 Area 1: Trout Lake Shoreline – Urban

A range of lot coverages are present in Area 1. Most lots have a lot coverage of 10-20% and 20-30%. There are some lots with 10-20% and 30-40% lot coverage, and few with 40-50%. The lots within this area are zoned differently from the majority of the study area as they are situated in an urban setting. Based on the

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City of North Bay Zoning By-law these lots are mostly zoned Residential First Density which permits a maximum lot coverage of 39% (42% for corner lots).

3.6.2 Area 2: Trout Lake Shoreline – Rural

The majority of lots within Area 2 have a lot coverage of 0-10%. Some lots with a lot coverages of 20-30% have been identified, all of which have direct frontage on Trout Lake. Along the northern shoreline of Trout Lake a few lots have lot coverages in the 30-40% and 40-50% range. These lots all have direct frontage on Trout Lake.

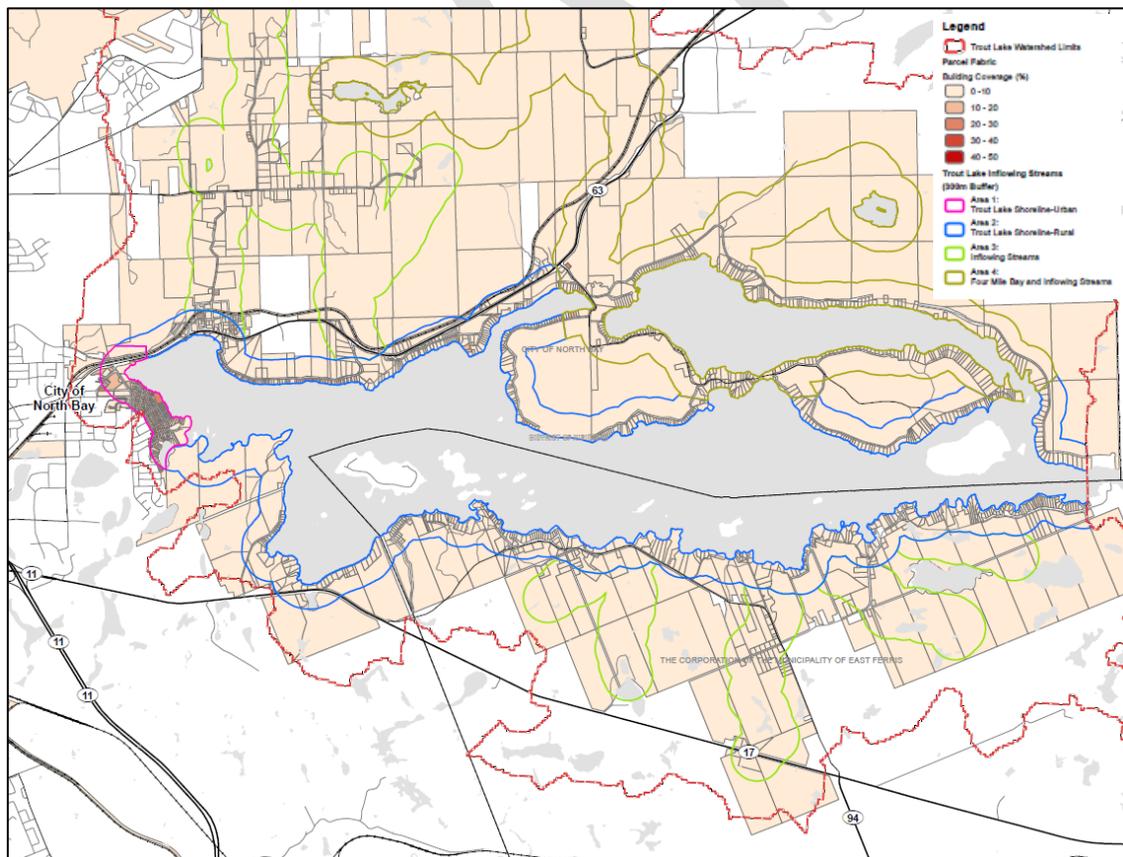
3.6.3 Area 3: Major Inflowing Streams

The vast majority of lands within Area 3 have lot coverages within the 0-10% range. A few lots with 20-30% lot coverages are present. These lots appear to be used for residential purposes.

3.6.4 Area 4: Four Mile Bay and Major Inflowing Streams

Like area 3 the vast majority of lots within Area 4 have lot coverages within the 0-10% range. A small handful of lots have been identified with a lot coverage of 10-20%, all of which appear to have direct frontage on Trout Lake.

Figure 8b. Study Area Lot Coverage-Trout Lake



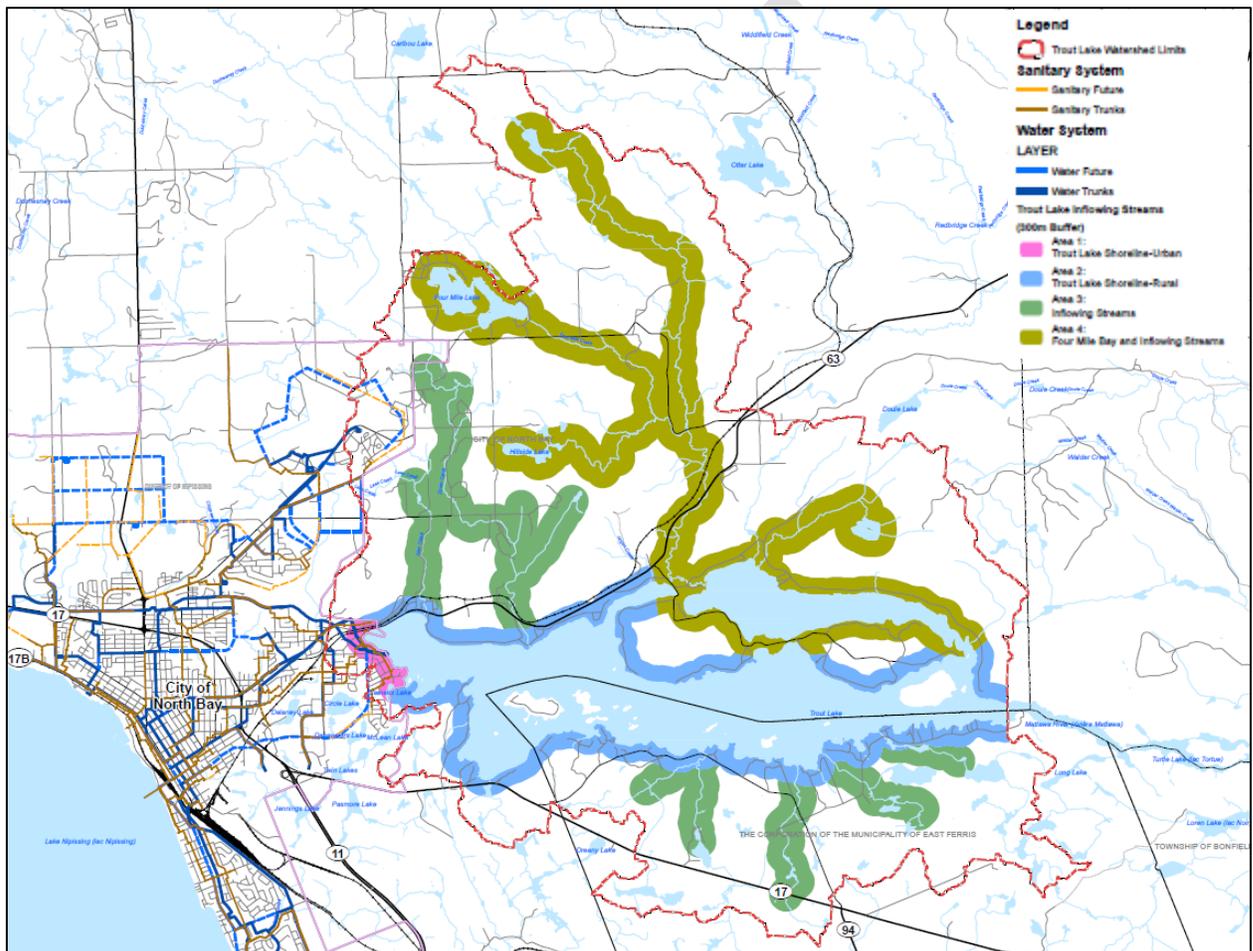
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3.7 Water and Sewage Services

The majority of the study area (Areas 2,3 and 4) is served by individual water and individual sewage systems. The exception to this statement is the westernmost portion of the study area that is located within the City of North Bay's Urban Settlement Area (Area 1), as defined in the Official Plan as most lots are serviced by municipal services.

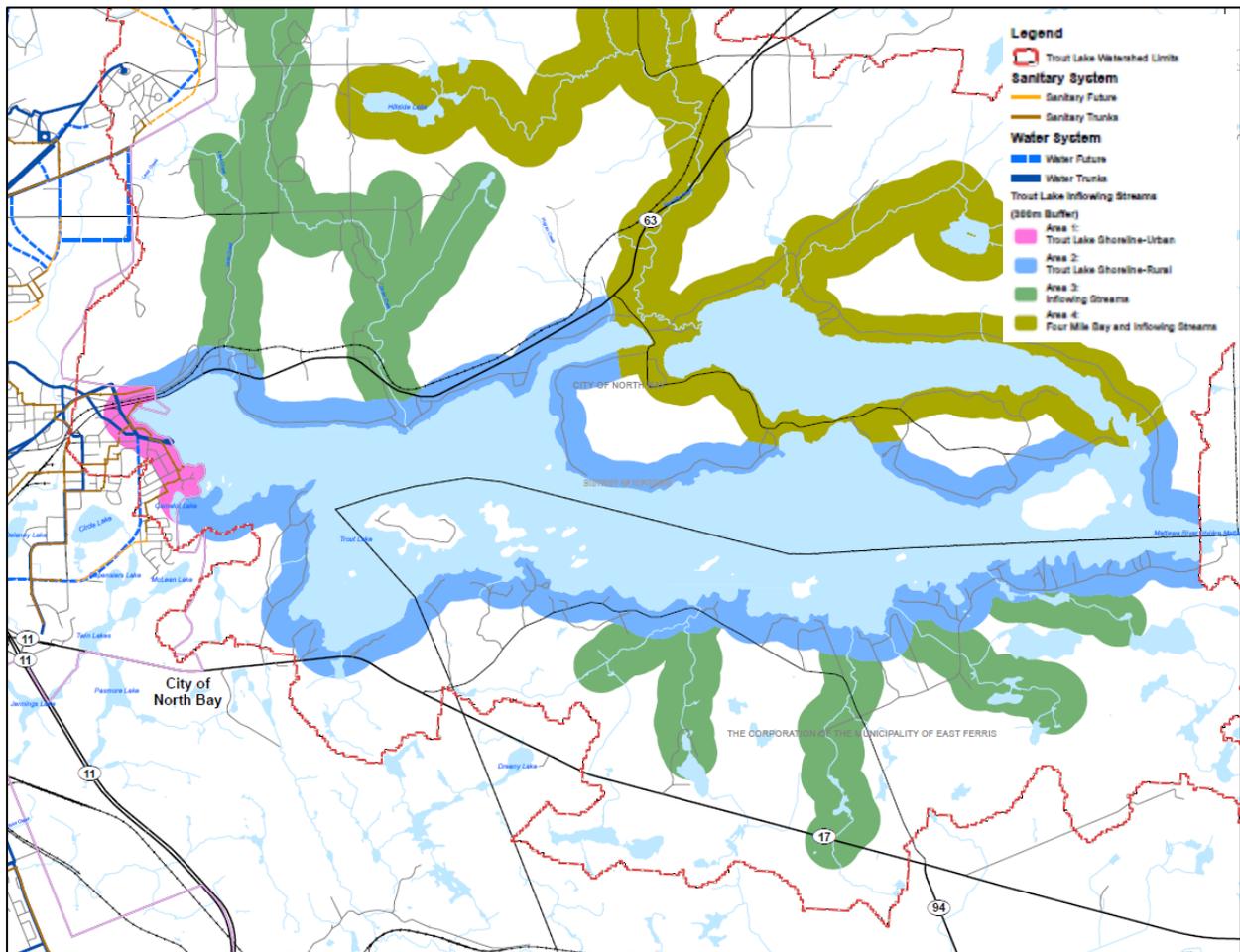
Figure 9. Study Area Water and Sewage Services



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Figure 9b. Study Area Water and Sewage Services-Trout Lake



4.0 Study Area Existing Land Use Planning Framework

The land use planning framework in Ontario has evolved and matured over the years as new information has become available and as society's expectations of land use planning has changed.

The same is true of the land use planning framework to guide development on and adjacent to Trout Lake. Over the years, the land use planning framework has evolved as new information has become available and as resident's appreciation of the many important roles that Trout Lake plays have expanded and strengthened.

This section briefly summarizes some of the key developments in the evolution of Trout Lake's land use planning framework over the years and summarizes the existing, in effect framework that is used to guide development on and adjacent to Trout Lake, its major in-flowing streams and its islands.

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4.1 A brief history of land use planning for Trout Lake

In 1990, North Bay Council adopted Official Plan Amendment No. 60 (OPA 60). OPA 60 froze new vacant lot creation for the un-serviced shoreline of Trout Lake for a period of five years to expire on December 31, 1996.

In 1997, North Bay Council recommended that a further five-year new lot creation freeze be implemented.

Ontario Municipal Board (now Ontario Land Tribunal) Decision PL010326 incorporated new policies with the Official Plan that permitted Minimal Impact Lot Creation where the total phosphorous impact of the development is equivalent to a single lot in a standard development and where it can be demonstrated through phosphorus removal septic technology or surface drainage design that the development will have the same phosphorous output as a single lot in a standard development. Through this decision it was determined that there was capacity for a total of 43 new lots to be created. Of these 43 lots, 23 were permitted in North Bay and 20 were permitted in East Ferris.

In 2009, North Bay Council adopted a new Official Plan, which brought in the land use policy framework described below.

4.2 The current land use planning framework

The land use planning framework for land use planning on and adjacent to Trout Lake is formed by the *Planning Act*, the *Provincial Policy Statement (2020)*, the *Growth Plan for Northern Ontario*, the Official Plans for the City of North Bay and the Municipality of East Ferris, the Zoning By-laws for the two municipalities, the North Bay-Mattawa Source Protection Plan, and the NBMCA's other regulatory tools.

4.2.1 Planning Act.

The *Planning Act* (Act) is passed by the Legislative Assembly of Ontario. It establishes the framework for municipal land use planning across the province.

The purposes of the Act are, in part, “... *to promote sustainable economic development in a healthy natural environment within the policy and by the means provided under this Act; to provide for a land use planning system led by provincial policy; to integrate matters of provincial and municipal planning decisions; ... to encourage co-operation and co-ordination among various interests; to recognize the decision-making authority and accountability of municipal councils in planning.*” (s.1.1).

Consistent with these purposes, the Act sets out various matters of provincial interest that a municipality “shall have regard to” in the carrying out of their responsibilities under the Act. In the context of the study and plan, these include: *the protection of ecological systems, including natural areas, features and functions; ... the conservation and management of natural resources; ... the supply ... and conservation of ... water; the adequate provision ... of ... sewage and water services; the orderly development of safe and healthy communities; the protection of the financial and economic well-being of the Province and its municipalities; the co-ordination of planning activities of public bodies; the resolution of planning conflicts involving public and private interests;*

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the appropriate location of growth and development; the promotion of development that is designed to be sustainable. (s. 2 a,c,e,f,h,l,m,n,p and q).

These interests are important. North Bay and East Ferris' Official Plans have been reviewed and approved by the Province of Ontario and has therefore met these legislative tests. We will revisit these interests later in the study and plan process as we formulate and recommend policy and regulatory enhancements for North Bay and East Ferris Council's consideration to continue to ensure sustainable development occurs on and adjacent to Trout Lake.

4.2.2 The Provincial Policy Statement 2020

The Provincial Policy Statement 2020 (PPS) is issued under Section 3 of the Act and came into effect on May 1, 2020. The PPS provides policy direction on matters of provincial interest related to land use planning and development. Section 3 of the Act requires that decisions affecting planning matters shall "be consistent with" the PPS.

Under Section 1.1.1 a), c), h) and i) of the PPS, healthy, liveable and safe communities are sustained by promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long term; avoiding development and land use patterns which may cause environmental or public health and safety concerns; promoting development and land use patterns that conserve biodiversity; and preparing for the regional and local impacts of climate change.

Section 1.1.5.2 permits resource based recreational uses (including recreational dwellings) and residential development (including lot creation) that is locally appropriate on rural lands within municipalities such as the majority of the study area, subject to the other policies of the PPS.

The PPS encourages a coordinated, integrated and comprehensive approach when dealing with planning matters such as managing water, ecosystems, shoreline, and watersheds within municipalities, other orders of government, agencies and boards. Section 1.2.2 provides that planning authorities shall engage with Indigenous communities and coordinate on land use planning matters.

Section 1.6.6.1 provides that planning for sewage and water services shall ensure that these systems are provided in a manner that can be sustained by the water resources upon which such services rely, prepares for the impacts of a changing climate, is feasible and financially viable over their lifecycle, and protect human health and safety and the natural environment. Further this section promotes water conservation and water use efficiency and to integrate servicing and land use considerations at all stages of the planning process.

Sections 1.6.6.2, 1.6.6.3, 1.6.6.4 and 1.6.6.5 provide direction for the hierarchy of sewage and water servicing. The PPS acknowledge that municipal sewage services and water services are the preferred form of servicing, specifically for settlement areas. However, where these municipal services are not available, planned or feasible private communal sewage and water services are the preferred form of servicing for multi-unit/lot development. Individual on-site sewage services and water services may be used provided site conditions are suitable with no-negative impacts for the long-term. Communities are encouraged to assess the long-term impacts of individual on-site sewage services and individual on-site water services on the environmental health and character of the rural settlement areas. The PPS provides that partial servicing shall only be permitted where they are necessary to address failed individual on-site sewage services and

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individual on-site water services in existing development; or within settlement areas, to allow for infilling and minor rounding out of existing development on partial services provided that site conditions are suitable for the long-term provisions of such services with no negative impacts. It should be noted that Section 1.6.6.6 of the PPS allows planning authorities to permit lot creation where there is confirmation of sufficient reserve sewage system capacity and reserve water system capacity within municipal sewage service and municipal water services or private communal sewage and private communal water services.

Section 2.1 speaks to natural heritage, calling for the long-term protection of natural features and areas and recognizing not only the *diversity, but connectivity of natural features in an area and the long-term ecological function and biodiversity of natural heritage systems should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.*

Section 2.2.1 directs planning authorities to protect, improve or restore the quality and quantity of water by:

- a) *using the watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development;*
- b) *minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts;*
- c) *evaluating and preparing for the impacts of a changing climate to water resource systems at the watershed level;*
- d) *identifying water resource systems consisting of ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas, which are necessary for the ecological and hydrological integrity of the watershed;*
- e) *maintaining linkages and related functions among ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas;*
- f) *implementing necessary restrictions on development and site alteration to:*
 - a. *protect all municipal drinking water supplies and designated vulnerable areas; and*
 - b. *protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features and their hydrologic functions*
- g) *planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality;*
- h) *ensuring consideration of environmental lake capacity, where applicable; and*
- i) *ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.*

The North Bay and East Ferris Official Plan were developed prior to the PPS coming into effect. Similar to the matters of provincial interest described above, we will revisit these policies later in the study and plan process as we develop and recommend policy and regulatory enhancements.

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4.2.3 Growth Plan for Northern Ontario

The Growth Plan for Northern Ontario (Growth Plan) is prepared under the legislative authority of the *Places to Grow Act*. It applies to the Northern Ontario Growth Plan Area, which includes the study area. Municipal decisions on land use planning matters must conform to/not conflict with the Growth Plan.

Section 6.2.2. states that natural resource management and stewardship practices will occur within a framework that recognizes and responds to evolving environmental, economic and social values, and science-based knowledge and information, which allows for the introduction of new practices, technologies and management approaches, traditional knowledge, and locally and regionally responsive approaches.

Section 6.3.2 encourages municipalities to contribute to the protection of surface and ground water features. Section 6.4.1 states that planning and decision-making by municipalities should consider opportunities for fostering a culture of conservation and demonstrating environmental leadership by adopting sustainability practices.

These policies will be considered in later stages of the study and plan as we develop and recommend policy and regulatory changes to the Trout Lake land use planning framework.

4.2.4 Official Plans

4.2.4.1 The City of North Bay Official Plan

The City of North Bay Official Plan (North Bay OP) was adopted by Council on September 8th, 2009, modified and approved with modifications by the Ministry of Municipal Affairs and Housing on December 11th, 2011 and came into effect on January 6, 2012. The North Bay OP is currently being reviewed to ensure its regard matters of provincial interest in the Act, consistency with the PPS and conformity to the Growth Plan. This study and plan is being undertaken concurrently with, but separately from, this review process.

The North Bay OP contains specific policies regarding the Trout Lake Watershed. These policies work to protect the watershed by managing existing and directing any future development or activities which may threaten the drinking water to more suitable locations, and to minimize disturbance of shoreline ecosystems functions. The North Bay OP also implements policies that have been established in the North Bay-Mattawa Source Protection Plan.

Lands abutting Trout Lake and its inflowing streams contain a range of land use designations. The lands in Area 1 are located within the North Bay Settlement Area Boundary where growth and development is directed and where municipal services are available. The lands in Area 2, 3 and 4 situated in North Bay is located in the Rural Area. The land located within the settlement boundary is mostly designated residential, with some open space, institutional and arterial commercial. The land within the rural area is mostly designated Lakefront Residential, and Rural with some open space and estate development designations as well. These designations are illustrated in Figures 10 and 11.

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Figure 10. Extract from City of North Bay Official Plan Schedule A 'Settlement Area'

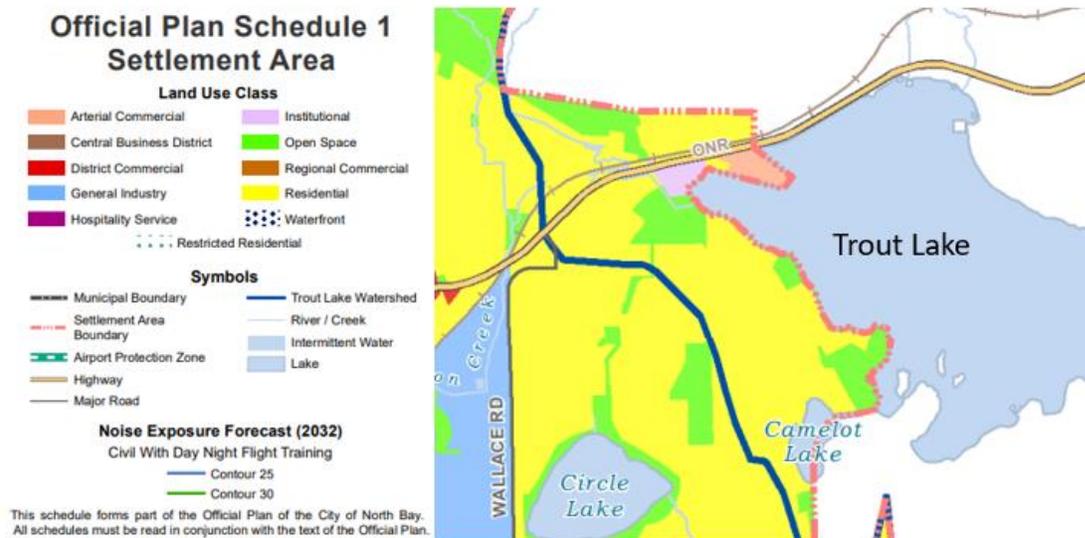
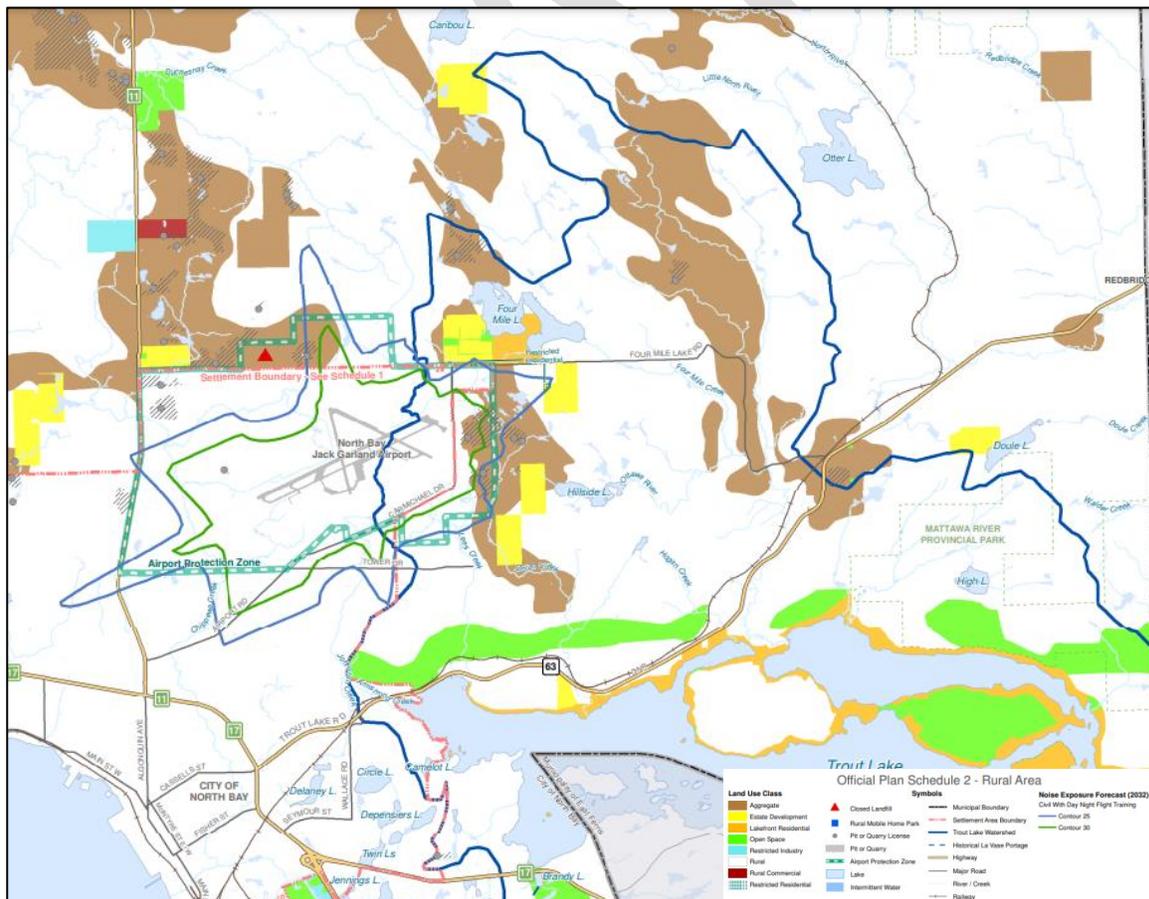


Figure 11. Extract from City of North Bay Official Plan Schedule 2 'Rural Area'



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Section 3.5 provides specific policy direction for the lands located within the Trout Lake Watershed. Sections 3.5.1, 3.5.2, 3.5.4, 3.5.5 and 3.5.6 recognize the importance of Trout Lake as the sole source of drinking water for the City of North Bay and shoreline residents. Lands within the Trout Lake Watershed are connected to Trout Lake by surface and ground water drainage, as such, all uses within this area can directly or indirectly impact Trout Lake. With this in mind, to ensure safe drinking water an emphasis is placed on having a multi-barrier approach involving the development and enforcement of effective lake and watershed assessments, protection policies and programs. In addition to this, participation from public agencies and individual stakeholders such as property owners is essential to manage human activities which affect drinking water sources. A coordinated approach to lake management is essential to ensure that serious water quality deterioration does not occur as a result of not adhering to development controls, but rather development and policies which facilitate the overall improvement to water quality are in effect.

It is ultimately the intent of the North Bay OP policies to strictly control or limit the forms of development and location of development along the Trout Lake shoreline, including backlot development, development on islands and inflowing streams.

Section 3.5.11, and 3.5.12 specifically apply to the identified Area 3 where residential development on lots fronting Trout Lake is restricted to permanent or seasonal residential dwellings, local parks and playgrounds in rural area on lands designated "Lakefront Residential". Should new multi-lot residential development with frontage on Trout Lake be permitted, they would be restricted to the rural area on lots designated Lakefront Residential. Residential development along Trout Lake is required to occur through a Plan of Subdivision on lots with frontage on a year-round-maintained road. It is important to note that under section 3.5.15 that the creation of new lots which front Trout Lake or an inflowing stream are generally prohibited. If permitted these lots require larger setbacks, the removal of natural vegetation will be discouraged, and appropriate Storm Water Management policies must be enforced.

In efforts to manage the water quality of Trout Lake, development is restricted along the shoreline. The North Bay OP has stated in Section 3.5.15 (a) that completed *studies indicate that there is already enough lots or parcels of record with frontage on Trout Lake and on streams flowing into Trout Lake to seriously impair the existing water quality of Trout Lake if full waterfront development occurs by way of conventional means and planning policies.*

The creation of new un-serviced lots along the Trout Lake shoreline (Area 2), One Mile Bay and the Four Mile Bay basins (Area 4), and major inflowing streams and watercourses (Area 3) flowing into Trout Lake as identified by North Bay-Mattawa Conservation Authority (NBMCA) is highly restricted and is generally prohibited. This includes lands within 300 metres of the One Mile Bay and Four Mile Bay basins, and major inflowing streams and watercourses flowing into Trout Lake which may be deemed second tier or backlot.

While the serviced urban residential lots in Area 1 are not subject to the same restrictions, to contribute to the protection of Trout Lake the North Bay OP requires serviced urban residential lots to incorporate maximum building setback distances for development or re development from the shoreline and maintain and preserve natural vegetation. For the purposes of this policy, section 3.5.15 (f) defines "non-impact lots" as being lots or parcels of record in excess of 300 metres from trout Lake as identified by NBMCA. *Secondary dwelling units are not permitted within 300 metres of the un-serviced portion of Trout Lake shoreline or major inflowing streams.*

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Under Section 3.5.17 in order to preserve and protect the shoreline of Trout Lake development should be set back 30 metres from the Trout Lake shoreline (Area 1, 2 and 4) or any inflowing stream Area 3 and 4). Section 3.5.18 and 3.5.19 promote preserving and enhancing the natural shoreline vegetative community within 15 metres immediately abutting the shoreline as natural shoreline and stream bank provide several benefits to water quality such as uptake of nutrients, the entrapment of nutrients contained in runoff, prevention of shoreline and stream bank erosion and the provision of shade and cover for aquatic life.

The North Bay OP also directs Council to limit density of development to reduce the impact on Trout Lake. Under Section 3.5.20 sixteen (16) residential or seasonal residential lots fronting Trout Lake in the rural area (Area 2, 3 and 4) per kilometre of lake frontage or 2.5 lots per hectare is permitted. When assessing a minor variance which would result in the development or redevelopment of an existing lot or parcel of record, under Section 3.5.21(e) three of the following six criteria should be met:

1. a minimum frontage of 61 metres;
2. a minimum lot area of four-tenths of a hectare (0.4 ha);
3. a minimum setback for new habitable buildings and all sub-surface septic systems of 30 meters;
4. all habitable buildings are connected to municipal sanitary sewer services;
5. all habitable buildings are incorporated into a mandatory annual septic tank pump out program
6. filing of a suitable Site Plan to illustrate either maintenance of the shoreline vegetable buffer zone or a replanting and rehabilitation scheme or the shoreline vegetative buffer zone.

As per section 3.5.21(g) where three of the six criteria listed above cannot be met, Council or its designate may consider an Application for Minor Variance provided the applicant can demonstrate that the Minor Variance would result in redevelopment of an existing lot or parcel of record in a manner that would provide net improvement to water quality. This is demonstrated through appropriate justification studies completed by a qualified professional.

As Trout Lake is the primary source of drinking water for the City of North Bay Schedule 3B Drinking Water policies have been developed for the Intake Protection Zone (IPZ). Schedule 3B Drinking Water Vulnerable Areas identifies areas of vulnerability for drinking water sources including the Intake Protection Zone. Delaney Bay is designated IPZ-1, lands west of Delaney Bay and the southerly reach of Lees Creek are designated IPZ-2, while the balance of the Trout Lake shoreline (including islands) and major inflowing streams are designated IPZ-3. Section 4.12.1.1 provides that any development, site alteration and proposed land uses related to agricultural uses are prohibited on all lands within the Intake Protection Zone One (IPZ-1). Section 4.12.1.3 requires that all lands located within the vulnerable area identified on Schedule 3B shall be subject to Site Plan Control.

4.2.4.2 Municipality of East Ferris Official Plan

The Municipality of East Ferris Official Plan (East Ferris OP) was adopted by Council on September 8, 2015, modified and approved with modifications by the Ministry of Municipal Affairs and Housing on March 29, 2016 and came into effect on April 25, 2016.

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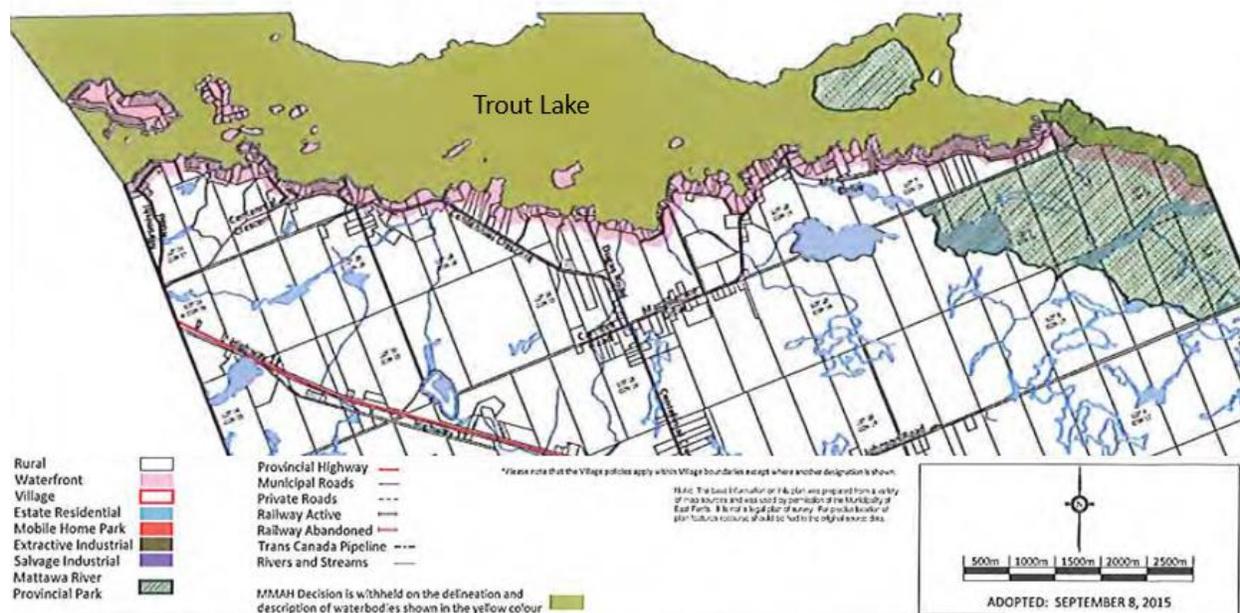
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As part of their decision-making process, the Ministry of Municipal Affairs and Housing has withheld its approval of Section 5.3.3 Waterfront-Residential, 5.3.5. Waterfront – Commercial and 5.3.7 – Lake Specific Protection Policy (which applies to Trout Lake and Lake Nosbonsing), Section 6.2.7. Shoreline Alteration.

At the time of the writing of this report, the Ministry of Municipal Affairs and Housing has not yet issued a decision on these policies. We understand from East Ferris staff that a decision on the withheld policies is forthcoming. This report describes East Ferris Council’s adopted and in-effect land use framework for Trout Lake, without distinguishing between the two statuses, except as noted above. We recognize that the Ministry of Municipal Affairs and Housing may modify these policies and approve them, as modified. If this occurs, we will address the updated policies later in the plan and study process.

The Municipality of East Ferris Official Plan (East Ferris OP) has established specific policies to protect and guide appropriate development within the Trout Lake Watershed. Recognizing the increasing demand for year-round outdoor recreational activities, shoreline development and need to protect the water quality of Trout Lake the East Ferris OP provides a policy framework to protect water quality and ensure that ecosystem planning is a key component of the decision-making process.

Figure 12. Extract from Municipality of East Ferris Official Plan Schedule A ‘Land Use Designations’



Lands located in Area 2 within the Trout Lake Shoreline, as well as land extending back 150 m from the major inflowing streams in Area 4 within the Municipality of East Ferris designated Waterfront by the as per Schedule A ‘Land Use Designations’ of the Municipality of East Ferris Official Plan. Section 5.3.1 states that lands extending inland 150 metres from any standing

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waterbody greater than 8 hectares in area or substantive river or waterbody fall under the Waterfront designation. Development along Trout Lake historically has been residential and recreational development. In recent years, most development is redevelopment rather than new development. The intention of the East Ferris OP is to limit new development along Trout Lake. Second residential units are not permitted in the Waterfront designation.

Section 5.3.4.1 notes that new residential subdivision/condominium development should be designed to avoid the complete development of the shoreline with a single row (tier) of lots. *Where the developer is unable to provide direct access to the Waterfront and deed shore land for public open space purposes, as part of the 5% park land conveyance, Council shall assess the possible impact of the proposal on existing facilities in the area.*

Section 5.3.4.2 outlines the following criteria that must be demonstrated when considering residential shoreline development:

- a) the need for the proposed development based on the housing supply and demand;
- b) the physical suitability of the land;
- c) lake development capacity;
- d) compatibility with the surrounding area;
- e) minimum lot area of 1 hectare (2.47 ac) with a minimum lot frontage of 60 metres (196.85 feet);
- f) appropriate servicing (Section 4.19 of OP);
- g) Direct frontage on a year round publicly maintained road, or boat docking for island development;
- h) Regard for the Lake Specific Protection Policies set out in Section 5.3.7 of the OP

Section 5.3.4.3 permits single lot development for seasonal or permanent residential uses provided the minimum lot size is 0.81 hectares (2 acres) with 60 metres (196.85 feet) of frontage. Additional requirements outlines in the East Ferris OP may apply.

In terms of public recreational uses in the waterfront designation they are permitted provided they do not provide for seasonal or permanent residential uses (Section 5.3.4.6). They shall also provide adequate public access to the water, adequate parking and access from a public road, be compatible with adjacent land uses and be appropriate lot size and frontage for the intended use.

Section 5.3.7.1.2(c) of the East Ferris OP also describes Council's intent to establish water quality objective for Trout Lake to determine where additional development along the shoreline should not be permitted. The objective shall consist of water quality level for phosphorus and dissolved oxygen. In 1999 a previous water quality study was completed which resulted in the permission of approximately 20 lots to be created along the Trout Lake shoreline, or inflowing watercourse shoreline. Schedule D of the East Ferris OP has shown the Trout Lake Watershed as an overlay designation to provide additional level of protection to these areas.

Development considerations for proposals within the Trout Lake watershed must be consistent with the following provisions established in the OP:

- a) Water quality
- b) Monitoring
- c) Lot Creation Quota

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- d) Lot Size and Frontage
- e) Setbacks
- f) Non-Residential Uses
- g) Phosphorus Removal Technology
- h) Consents
- i) Plans of Subdivision and Condominium
- j) Vegetative Buffer
- k) Management Controls

Section 5.3.8.1 and 5.3.8.2 acknowledges that through zoning the waterfront policies will be implemented, and that all lands within the Waterfront Designation will be subject to Site Plan Control. Section 5.3.8.2 also establishes a natural vegetative buffer requirement of 15 metres for any instance where a site plan control agreement is required. That said, Section 6.2.6 states that the building setback for lots abutting water is 30 metres (98.4 feet) from the Surveyed Normal Water's Edge, except for shoreline structures.

Section 5.3.8.3 recognizes that through periodic pumping out of septic tanks to remove solids, potential impact to the water quality of Trout Lake from private sewage disposal systems can be reduced. Additionally, Council intends to require lots with frontage on Trout Lake or an inflowing stream be pumped out regularly through a Municipal Act by-law.

There is some land within Area 2 and 4 beyond the 150-metre setback of the Trout Lake shoreline and major inflowing stream that is designated Rural in Schedule A 'Land Use Designations' of the Municipality of East Ferris Official Plan.

Section 5.2.1 outlines a range of permitted uses within the Rural designation which include low density residential, commercial, institutional, public service facilities, and farm and non-farm development which complies with the Minimum Distance Separation Formulae. Development within the Rural designation are predominantly serviced by on-site water and sewage disposal systems. The intent is to maintain very low density settlement pattern.

Section 5.2.4.3 establishes a minimum residential lot area of 0.81 hectare with a minimum lot frontage of 60 metres. Section 5.2.10 provides that the Zoning by-law will place lands within the Rural Designation in a range of zones which conform to the policies of the Official Plan. Through the zoning by-law appropriate standards regarding the scale of rural development (i.e. lot size, lot coverage...etc.) will be established.

4.2.5 Zoning By-laws

4.2.5.1 The City of North Bay Zoning By-law (2015-30)

The Corporation of the City of North Bay By-Law No. 2015-30 Comprehensive Zoning By-law (North Bay ZBL) was adopted by City Council and came into effect in 2015

The North Bay ZBL assigns eight zone categories to the lands within the study area, as follows:

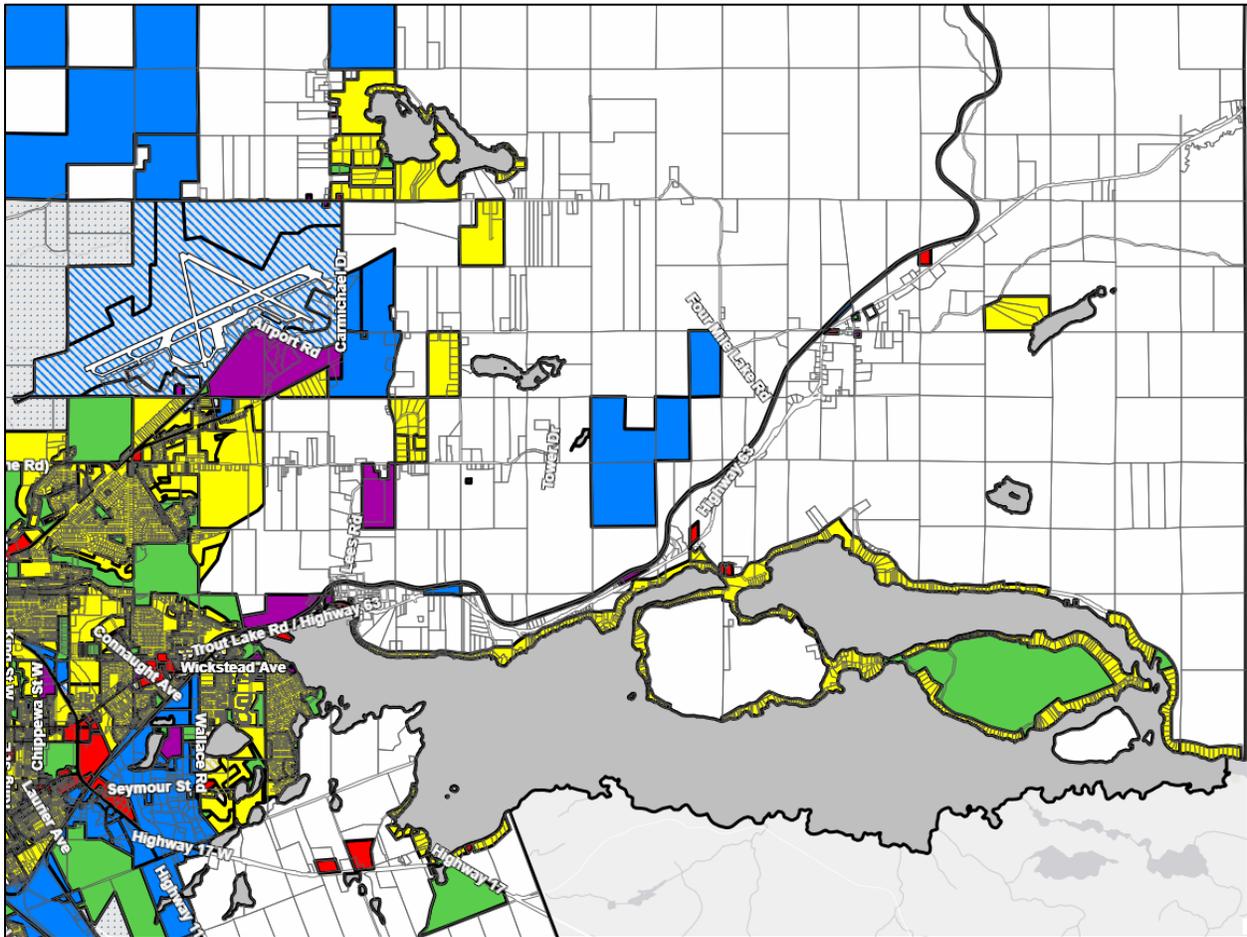
1. Residential First Density (R1)
2. Parkland (P)
3. Institutional (N)

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4. Rural General (A)
5. Rural Residential Estate (RRE)
6. Rural Residential Lakefront (RRL)
7. Rural Commercial (RC)
8. Rural Marine Commercial (RMC)

Figure 13 Extract from City of North Bay Interactive Zoning Map



Within Area 1 the majority of land is zoned R1. Outside of the urban settlement area, the majority of land within the study area are zoned Rural General (A), Rural Residential Estate (RRE) and Rural Residential Lakefront (RRL). The lands are also subject to a site plan overlay. This section of the report focuses on the above-four predominant zone categories and the site plan overlay.

Section 5 of the North Bay ZBL identified the following permitted uses within the R1 zone: single-detached dwelling, group home type 1, accessory bed and breakfast, accessory home based business, parks and playgrounds, accessory day nursery and institutional uses.

Section 10 of the North Bay ZBL establishes the uses that are permitted in the A, RRE and RRL zones, together with associated development standards. A single detached dwelling is a

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permitted use in all four zones, subject to the development standards outlined in Table 1 below. A note to readers. The standards provided for the A zone are for single detached dwellings on Trout Lake. Generally speaking, these standards require that a single detached dwelling and accessory structures be setback 30 metres from the shoreline of Trout Lake and major inflowing streams. For lands zoned A and RRL a 15 metre vegetative buffer is also required.

Table 1.
Development Standards for Single Detached Dwellings in the A, RRE and RRL Zones

Zone Category	Min. Lot Area (ha)	Max Lot Coverage (%)	Frontage (m)	Front Yard Setback (m)	Side Yard Setback (m)	Rear Yard Setback	Max. Height (m)
A	0.4	10% ¹	60 ²	30	6	12	10.5
RRE	1.2	5%	60	15	15	15	10.5
RRL	0.4	10% ¹	60 ²	30	6 ³	12 ³	10.5
R1	0.054	39% ⁴	18	6	1.2 ⁵	10.5 ⁶	2.5

1. Max lot coverage includes main building and accessory structure, but not sewage disposal system
2. A 15 m vegetative buffer zone shall be maintained for lots fronting Trout Lake and major watercourses flowing into Trout Lake.
3. If the lot has a shoreline on another side in addition to the front yard the setback shall be 30 m
4. 42% for corner lots
5. 3m for exterior side yard setbacks
6. On a corner lot the rear yard setback shall be 7.6m

Section 3.6, 3.7, 3.8 and 3.9 of the By-law speak to existing buildings not conforming to a permitted use in the zone, existing buildings having less than the minimum lot or setback requirements, existing undersized lots and existing setback conformity. Generally speaking, each of these sections is designed to afford flexibility to existing uses, buildings, structures or lots that existed before the by-law came into effect, granting rights of extensions, enlargement and development subject to certain conditions in each instance. Notably, each of these sections state that the provisions in each respective section do not apply to properties in the rural area, along the un-serviced shoreline of Trout Lake or to lands with frontage on a watercourse flowing into Trout Lake, or properties that are within a dept of one lot deep or 46 m from the Trout Lake shoreline, whichever is greater.

Section 3.20.2.3 prohibits a secondary dwelling unit within a dwelling unit or an accessory building on un-serviced properties within 300 metres of Trout Lake and major inflowing streams.

Section 3.21 provides provisions for accessory buildings, uses or structured for lake or river front properties. These provisions include a limit to the floor area (10 m² for all lots except those within the RMC zone) and maximum height of 3m above grade. It also requires that the building, use or structure be located above the Canadian Geodetic Datum floor elevation of 202.69m for the Trout Lake Watershed. This section further requires a 15m buffer zone from the water if the accessory building or structure is constructed in the front yard.

Section 3.31 speaks to sewage disposal systems along the Trout Lake Shoreline. A 30m setback, measured from the closest distribution pipe of the septic system to the shoreline of Trout Lake or any major inflowing stream is required.

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Section 3.33.1 notes that any lands abutting the shores of Trout Lake which are below the Canadian Geodetic Datum elevation of 202.69m above sea level are classified as Floodplain and Erosion (O2).

Section 3.50 speaks to the site plan control overlay. Generally speaking, this section requires that any new development that is subject to the overlay requires site plan control approval, prior to construction, subject to the standards outlined in the section

4.2.5.2 The Municipality of East Ferris Zoning By-law (No. 1576)

The Municipality of East Ferris is in the process of preparing a new comprehensive Zoning By-law. Until this By-law is finalized, adopted by Council and comes into effect, the provisions of The Municipality of East Ferris By-law No. 1576 (East Ferris ZBL) remain in force and effect and apply to the study area.

The East Ferris ZBL establishes a Lakefront Residential (RL) Zone. The RL zone permits lakefront dwellings and seasonal dwellings. This zone requires a minimum lot area of 0.6 ha and minimum lot frontage of 45m. It also establishes a minimum 20m setback from the established high-water mark of navigable water.

4.2.6 Other tools

4.2.6.1 North Bay-Mattawa Source Protection Area Source Protection Plan

The North Bay-Mattawa Source Protection Area Source Protection Plan (NBMSPP) is issued under the authority of the *Clean Water Act*, was approved on March 5, 2015 and came into effect on July 1, 2015.

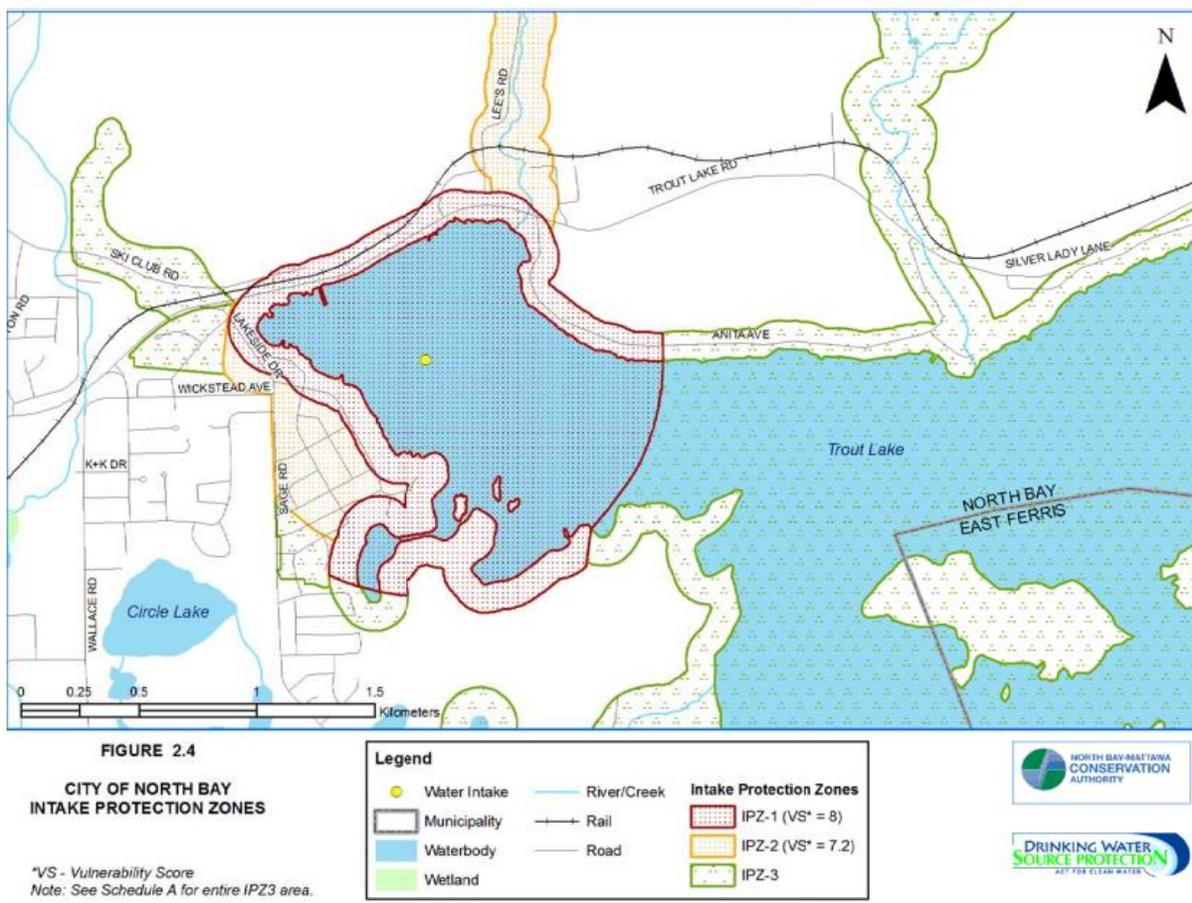
The NBMSPP identifies significant drinking water threats for several drinking water systems within the jurisdiction of the NBMCA, including the Trout Lake drinking water system.

The NBMSPP defines three Intake Protection Zones (IPZ) for the Trout Lake drinking water system, based on the degree of risk to the system. These IPZ's are illustrated in Figure 13. The NBMSPP states that given the depth of the water intake for the Trout Lake drinking water system, the vulnerability of the intake to drinking water threats was low. The NBMSPP goes on to state that, at the discretion of the Source Protection Committee, a policy was written to address the low to moderate threat relating to the transportation of hazardous substances. These include the land use prohibition on nutrient handling and storage, livestock activity and waste disposal sites.

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Figure 13. Excerpt from the NBMSPP showing the Trout Lake IPZ's



4.2.6.2 Section 28 of the Conservation Authorities Act

The Conservation Authorities Act (CA Act) was passed by the Legislative Assembly of Ontario. The purpose of the CA Act is to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario (s.0.1).

Section 28 of the CA Act provides the NBMCA with the legislative authority to regulate activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland. This section also provides the NBMCA the ability to regulate development activities in hazardous lands, wetlands, river or stream valleys, areas that are adjacent or close to the shoreline of an inland lake and that may be affected by flooding or erosion.

Ontario Regulation 177/06 *North Bay-Mattawa Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* further articulates how the NBMCA is to exercise its legislative authority within its area of jurisdiction and its regulated area. Much of the study area falls within the NBMCA regulated area.

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Similar to other Conservation Authorities, the NBMCA utilizes a permitting system to regulate development within its regulated area. The scope of activities that may require a permit include the placement or excavation of fill, the expansion, replacement or construction of a new permanent or seasonal dwelling, the construction of accessory structures, landscaping and installation of culverts. The NBMCA regulated area permitting process complements the planning goals, objectives and policies established for the Trout Lake study area by North Bay and East Ferris.

4.2.6.3 Septic System Planning, Installation and Management

Residential, seasonal, or commercial properties that do not connect to municipal services use an on-site sewage system. Permits for these systems within the NBMCA area are issued by the NBMCA to ensure that the septic systems being installed are in compliance with Part 8 of the Ontario Building Code (OBC).

An on-site sewage permit may be required for:

- Constructing a new home or cottage
- Building an addition with additional bedrooms and/or adding plumbing fixtures
- Installing an outhouse, leaching (grey water) pit or holding tank
- Replacing the bed or tank of your existing on-site sewage system
- Demolishing an on-site sewage system
- Building or expanding a commercial/industrial facility with a daily design flow of less than 10,000 litres per day

As part of the permit process, screening of the application is completed to ensure compliance with the OBC and other applicable legislation, policies and regulations such as the North Bay ZBL and East Ferris ZBL. Inspections are also completed prior to issuing a permit, after the permit has been issued when construction has begun and when construction and grading is complete.

Septic systems can have significant effects on both human health and the health of the environment should they malfunction. For that reason, inspections are completed. The NBMCA has a voluntary Trout Lake Septic Re-inspection Program to ensure all septic systems to ensure proper use of the system and that the septic system is in good condition. North Bay and East Ferris have also implemented pump-out programs. North Bay requires that all lots with septic systems that front Trout Lake or are on a natural watercourse which leads to Trout Lake be pumped-out at least once every 3 years for permanent residences and once every 5 years for seasonal residences. Proof of pump-out is required no more than 30 days after pump-out and before September 30th of every third year or fifth year if the lot is deemed a seasonal property. East Ferris has established a pump-out by-law which also requires septic systems to be pumped out once every 3 years for permanent residences and once every 5 years for seasonal residences. Certificates of compliance to certify the pump-out are provided once demonstrated that the septic system has been pumped-out to the satisfaction of the Pump-out By-law. The timeframes have been established to prevent septic systems from exceeding their holding capacity.

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5.0 Conclusions

This Background Report is the first of several reports that will be developed to create the new Trout Lake Watershed Study and Management Plan. This report defines the Trout Lake Study Area describes existing land use planning characteristics in the study area, as well as the in effect land use planning framework that guides and controls development within the study area. Future reports will speak to land use planning issues, opportunities and constraints in the study area and recommend changes to the in-effect land use planning framework to ensure development within the study area is sustainable.

This section summarizes the key observations made throughout this report.

1. For the purposes of the study and plan Trout Lake refers to Trout Lake; all major inflowing streams (i.e. Lees Creek, Doran Creek, Four Mile Creek (including Four Mile and Hillside Lakes) and the un-named creek that drain a portion of the Mattawa River Provincial Park and High Lake), islands within the lake and lands within 300 metres of the Trout Lake shoreline and the major inflowing streams.
2. Trout Lake is located on the Canadian Shield in the Trout Lake Subwatershed, part of the Upper Ottawa-Kipawa Watershed. Trout Lake is approximately 1,887 hectares in area and includes almost 72 kilometres of shoreline. Trout Lake is comprised of two basins: Four Mile Bay (approximately 27 metres deep); and the Main Basin (approximately 63 metres deep). Four Mile Lake is the main inflow into Trout Lake and flows into the Four Mile Bay Basin. Lees Creek flows into Delaney Bay. Doran's Creek flows into Trout Lake at Doran's Point. The un-named creek that flows from the Mattawa River Provincial Park also flows into Four Mile Bay. Trout Lake outflows into the Mattawa River, which in turn, connects to the Ottawa River system.
3. The study area topography is varied. The north side of the study area includes the most varied terrain, with elevations ranging from approximately 195 m asl to 475 m asl. The North Bay Escarpment, runs through the north side of the study area on a east west axis. North Bay's Official Plan defines and protects the escarpment from development. In the south side of the study area, elevations are relatively less varied ranging from approximately 195 m asl to a high of approximately 240 m asl.
4. The lands within the study area include a mix of public and private ownership. Approximately 96 percent of parcels (66% of the land area) in the study area are privately owned.
5. The existing lot fabric in the study area includes a range of lot sizes and lot frontages. The average lot size is 23,784 square metres. The average shoreline lot frontage is 57 metres. In terms of shoreline lots, approximately 30 percent of existing shoreline lots meeting the current minimum lot area standards set by North Bay and East Ferris.
6. Land uses within the study area include a mix of uses. According to MPAC and using land areas, approximately 23 percent of the study area is residential, 15 percent is farm (farm includes managed forests), 8 percent is industrial, 9 percent is airport/military/cemetery, 21 percent is crown land and 23 percent is vacant. The existing pattern of land uses is illustrated in Figure 7.

Land Use Background Report (Draft)

Trout Lake Watershed Study and Management Plan

7. Land uses within the study area display varied built forms. The predominant residential building type are single detached residential structures, be they permanent or seasonal residential. Lot coverage in the study area is relatively low. The majority of lots in the study area have a lot coverage ranging between 0 to 10 percent. It should be noted that the lots with a higher lot coverage are generally those located within the City of North Bay Urban Settlement Area.
8. With the exception of the urban settlement area of North Bay, the study area is not serviced by municipal water or municipal sewage systems.
9. Water quality based land use planning for Trout Lake began approximately 30 years ago. Since that time, municipal land use planning approaches evolved with scientific information on lake water quality.
10. The land use planning framework for land use planning on and adjacent to Trout Lake is formed by the *Planning Act*, the *Provincial Policy Statement (2020)*, the *Growth Plan for Northern Ontario*, the Official Plans for the City of North Bay and the Municipality of East Ferris, the Zoning By-laws for the two municipalities, the North Bay-Mattawa Source Protection Plan, and the NBMCA's other regulatory tools. This framework is intended to limit and control development on Trout Lake and in a broader influence area to ensure that the development does not negatively impact water quality in the lake, given Trout Lake's role as the sole drinking water source for North Bay and habitat for lake trout.

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Trout Lake Watershed Study and Management Plan

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