

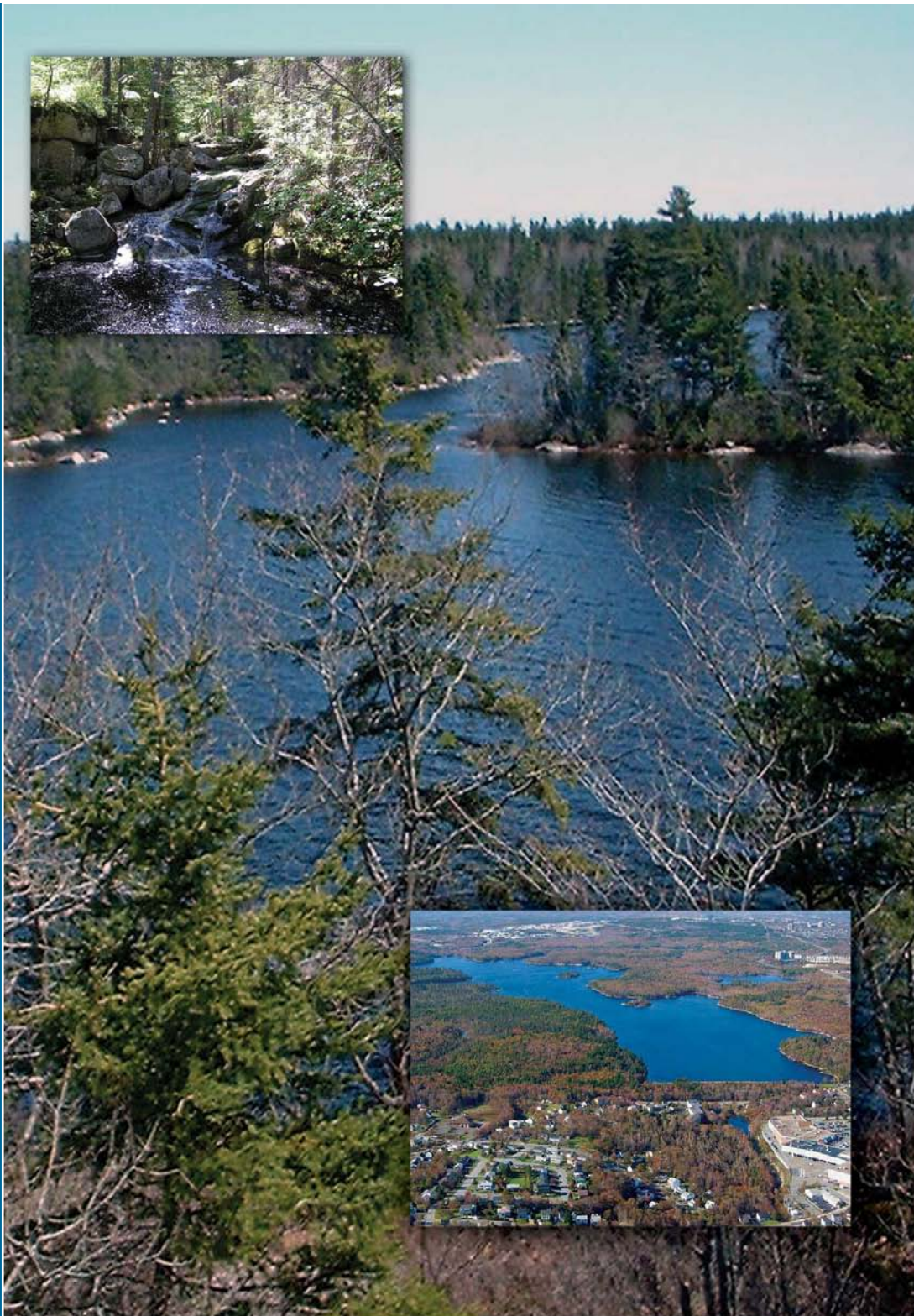


DRAFT Management Plan

Long Lake Provincial Park

*Executive Summary
Introduction
Vision
Park Values
Park Objectives
Park Classification
Zoning
Ecological Landscape Classification
Managing for Ecological Integrity
Park Concept Plan
Operational Policies
Special Management Issues
Implementation Strategy
Plan Review*

June 2008



DRAFT PARK MANAGEMENT PLAN

LONG LAKE PROVINCIAL PARK

Halifax Regional Municipality

**Nova Scotia Department of Natural Resources
and
Long Lake Provincial Park Association**

June 12, 2008

TABLE OF CONTENTS

| | |
|--|-----------|
| 1.0 EXECUTIVE SUMMARY | 1 |
| 2.0 INTRODUCTION | 2 |
| 3.0 VISION | 4 |
| Vision | 4 |
| 4.0 PARK VALUES | 4 |
| Natural Heritage | 4 |
| Cultural Heritage | 6 |
| Outdoor Recreation | 6 |
| Outdoor Education | 7 |
| Tourism | 7 |
| 5.0 PARK OBJECTIVES | 7 |
| Protection | 7 |
| Outdoor Recreation | 8 |
| Heritage Appreciation | 8 |
| Tourism | 8 |
| 6.0 PARK CLASSIFICATION | 9 |
| 7.0 PARK ZONING | 9 |
| Environmental Protection Zone | 9 |
| Resource Conservation Zone | 10 |
| Recreational Development Zone | 10 |
| 8.0 ECOLOGICAL LANDSCAPE CLASSIFICATION | 10 |
| 9.0 MANAGING FOR ECOLOGICAL INTEGRITY | 11 |
| 10.0 PARK CONCEPT | 12 |
| Park Development | 12 |
| Public Access | 13 |
| Accessibility | 14 |
| Trail System | 14 |
| Trail Standards | 16 |
| Trail Development Priorities | 17 |
| McIntosh Run | 17 |
| Information, Interpretation and Outdoor Education | 18 |

| | |
|--|-----------|
| Visitor Services | 18 |
| 11.0 OPERATIONS POLICIES | 18 |
| Cultural Heritage | 19 |
| Dams | 19 |
| Water Quality | 19 |
| Geocache | 20 |
| Enforcement | 20 |
| Community Involvement | 20 |
| Off Highway Vehicles | 20 |
| Dog Walking | 20 |
| Fire Management | 21 |
| Special Events | 21 |
| 12.0 SPECIAL MANAGEMENT ISSUES | 21 |
| Park Boundary | 21 |
| Active Transportation | 22 |
| Waste Removal | 22 |
| 13.0 IMPLEMENTATION STRATEGY | 22 |
| Implementation - Phase I | 23 |
| Implementation - Phase II | 24 |
| Implementation - Phase III | 24 |
| 14.0 PLAN REVIEW | 24 |
| 15.0 FIGURES | 24 |
| FIGURE 1 LOCATION MAP | 25 |
| FIGURE 2 ORIENTATION MAP | 26 |
| FIGURE 3 PARK ZONING | 27 |
| FIGURE 4 DEVELOPMENT CONCEPT | 28 |
| FIGURE 5 PARK ELEMENTS | 29 |

1.0 EXECUTIVE SUMMARY

Located in the Harrietsfield - Goodwood area of Halifax Regional Municipality, the 2,095 hectare Long Lake Provincial Park contains a relatively natural landscape which includes three lakes, a diversity of natural habitats and cultural features and provides opportunities for a range of nature-based outdoor recreation experiences. The property was designated under the Parks Act in 1984 and is managed by the Nova Scotia Department of Natural Resources (DNR). Although protected by legislation for almost twenty-five years, no facilities or services have been provided, public use has not been encouraged and DNR has had a limited management presence.

Despite the lack of facilities or services, public use of Long Lake Provincial Park has increased significantly in the past ten to fifteen years, particularly in areas surrounding Long Lake. With this growing use have come increasing demands for the provision of facilities and services as well as an enhanced management presence. This largely unmanaged public use has also resulted in park values being compromised, particularly through the establishment of a large number of *ad hoc* trails, the lack of maintenance on those trails and a number of undesirable uses which occur on an ongoing basis.

To address these issues, the Long Lake Provincial Park Association expressed a desire to work with DNR to develop a park management plan. The intent of the plan is to provide a vision for Long Lake Provincial Park and a policy framework to guide park management over the next 10-15 years. It also identifies the actions necessary to support that vision. To that end, this management plan has been developed as a collaborative effort by the Association and DNR.

The plan identifies five principal management objectives:

- to preserve the park's natural and cultural heritage values
- to provide opportunities for outdoor recreation that are compatible with the emphasis placed on protecting the park's natural setting
- to enhance public understanding and appreciation of park values
- to provide facilities and services to enhance visitor enjoyment and park management
- to ensure public access, safety, and use

This plan achieves its objectives through several means, including application of the Parks Act and associated Regulations, management of the property as a Natural Environment Park as defined by the Regulations, zoning much of the property as Resource Conservation Zone to underscore the emphasis placed on conservation, monitoring impacts of public use, and other management measures, Departmental policies, and guidelines as are appropriate.

Emphasis will be placed on interpreting the park's diverse natural and cultural heritage values. These efforts may include development of an information brochure, on-site interpretive signage and special event programming. Opportunities for outdoor recreation will largely be associated with activities supported by a proposed system of hiking and walking trails. Opportunities to partner with

Halifax Regional Municipality in implementing their Active Transportation Plan within Long Lake Provincial Park will be explored.

Facilities and services will be limited to the provision of public parking and pedestrian access, an inter-connected system of trails, a small picnic/open space area, and carry-in access to Long Lake for canoes/kayaks and interpretive/orientation information. In recognition of the park's classification as a Natural Environment Park, where possible facilities and services will be located on the park periphery or on adjoining non-park lands to minimize impacts on park values. The trail system has been designed to a standard that will reduce its impact on park values. As a result, bicycle use will be limited to the proposed Multi-purpose Trail. Motorized vehicles will not be permitted on park trails except for approved emergency response or park management.

Operational strategies will be developed to address issues such as maintenance of dams on Long and Spruce Hill lakes, enforcing park regulations, maintaining three known graveyards within the park, permitting geocaching, addressing illegal activities within the park, ensuring public safety and dealing with requests for special events. Special management strategies will be developed to address outstanding issues such as how Long Lake Provincial Park fits into HRM's Active Transportation program, maintaining a high standard of water quality within park lakes, and requirements for additional land and/or land agreements with adjoining property owners.

This management plan focuses on the northern portion of Long Lake Provincial Park, largely north of the Old St. Margarets Bay Road. It is this section of park where most of the current visitor use is concentrated, a majority of the management issues occur and where facilities and services are proposed. More detailed planning for the southern portion of the park will occur at a later date in part because some management options need to be considered in the context of a joint planning exercise for both Long Lake Provincial Park and the adjoining Terence Bay Wilderness Area. The latter is administered by the Nova Scotia Department of Environment and at the time of writing this park management plan they had not yet commenced a similar exercise for the Wilderness Area.

2.0 INTRODUCTION

Long Lake Provincial Park is situated in the Harrietsfield-Goodwood area of Halifax Regional Municipality, on the southwestern boundary of the former City of Halifax (Figure 1). In 1981, the 2,095 hectare (5,177 acre) former Halifax Watershed property was acquired by the Province and assigned to the Department of Natural Resources (DNR) for management as a provincial park. Long Lake Provincial Park was subsequently designated under the Provincial Parks Act in 1984.

The significance of Long Lake Provincial Park derives from its three high quality fresh water lakes, its relatively natural state, and its proximity to a large urban population. Despite its relatively small size, Long Lake Provincial Park is one of a number of provincial parks in Nova Scotia established for the protection of natural areas and representative natural landscapes. While protection of the park's inherent natural and cultural values is of paramount importance, this area of forests, lakes and streams also provides opportunities for a range of complementary outdoor recreation activities

including hiking, swimming, canoeing and kayaking and fishing, as well as outdoor education and nature appreciation. The park also provides a connection to the Terence Bay Wilderness Area, a 4,447 ha (11,000 acre) adjoining protected area managed by the Nova Scotia Department of Environment.

Although no facilities or services are currently offered, and DNR has a limited management presence, the park is popular with a wide range of user groups. This popularity is largely a result of a small parking lot constructed by Halifax Regional Municipality on adjoining lands just off the St. Margarets Bay Road as well as growing residential development adjacent to the park.

Public use of Long Lake Provincial Park has been largely unstructured and has been focused on and around Long Lake. Trails for fisherman and hikers have been developed on an *ad hoc* basis over the years and these were greatly expanded by mountain bikers beginning around 1994. The park is also designated as an emergency watershed for use by Halifax Regional Water Commission. A Nova Scotia Power transmission line is located just inside the park along Northwest Arm Drive.

A number of other parks and protected areas are situated nearby, including Terrence Bay Wilderness Area, Blue Mountain - Birch Coves Lakes Candidate Wilderness Area, Crystal Crescent (Pennant Point) Provincial Park, McNabs and Lawlor Islands Provincial Park, Cole Harbour - Lawrencetown Coastal Heritage Provincial Park, West Dover Provincial Park Reserve, Blind Bay Provincial Park Reserve, Waverley-Salmon River-Long Lake Wilderness Area, HRM's Western Commons, and the Bayers Lake-Timberlea Rail-Trail (Bluff Trail).

There is ongoing interest in maintaining a green-belt and developing trails along McIntosh Run, the outflow of Long Lake, which extends to Herring Cove. The park is also in close proximity to Kidston Lake barrens which was identified in the 1970s as a potential International Biological Programme (IBP) site due to the presence of the greenland sandwort (a provincial Yellow (sensitive) species).

The purpose of this management plan is to define a vision and management philosophy that will guide management decisions for Long Lake Provincial Park over the next 15 to 20 years. In addition, the plan identifies the actions necessary to support that vision and philosophy.

The management plan is based on the Department's legislative mandate under the Provincial Parks Act and Regulations, its Provincial Parks Policy, other Provincial and Departmental policies and guidelines, and municipal planning requirements, together with the park's heritage and outdoor recreation values. The term "heritage values", as used throughout this document, encompasses both cultural and natural environmental heritage.

3.0 VISION

The foundation of this park management plan rests on the park vision, a brief statement that presents the broad long-term direction for the park. This vision describes the park management philosophy and what the park will be like in the future.

Vision

Long Lake Provincial Park will ensure the long-term protection of important natural and cultural heritage values while providing opportunities for compatible outdoor recreation and nature-based education. The park will serve as a regional, near-urban day-use park emphasizing high-quality front-and backcountry hiking experiences as well as other forms of extensive recreation. The provision of facilities and services will be restricted to a level which will maintain the park's heritage values but still allow the public to enjoy and appreciate the park's natural setting. Park development will occur in areas of the park identified by the management plan as appropriate for the provision of facilities and services.

4.0 PARK VALUES

Long Lake Provincial Park contains a range of park values that are based on the property's natural and cultural heritage features and the opportunities they provide for nature-based outdoor recreation activities, education and tourism.

Natural Heritage

Bedrock Geology

The bedrock which underlies Long Lake Provincial park is plutonic granite from the South Mountain Batholith, the largest single mass of plutonic granite in the Appalachian Region of eastern North America. This massive 350-375 million year-old pluton extends in an arc from Halifax to Yarmouth, covering an area of 10,000 square kilometres.

The Herring Cove fault is a major bedrock fault that extends from Herring Cove through Long Lake to the Timberlea area. At the northwest end of the lake, the fault can be seen and was probably a factor in the formation and shape of Long Lake itself. Other geological features in the park include joints, aplite/pegmatite dykes, quartz veins and greisens, all of which have a strong northwest orientation.

Surficial Geology

Long Lake Provincial Park clearly illustrates the influence of the Wisconsin ice age on the area's geomorphological features. The Wisconsin age was the last of four phases during the Pleistocene

Period which ended about 10,000 years ago. The north-south, or northeast-southwest, lineation of the park's lakes and drumlins is consistent with the direction of this last glacial movement and a reminder of the magnitude of the impact of ice movement on the formation of the park landscape.

The glaciers left behind an unconsolidated mantle of sediment varying in thickness and form over the entire park. This veneer of glacial deposits ranges from exposed bedrock in the Spruce Hill Lake area, to a till mantle averaging about three metres deep over much of the remainder of the park, to scattered Lawrencetown drumlins which could be as much as 20 metres deep. The till usually reflects the character of the underlying bedrock. Since the park's bedrock is granite, a highly resistant rock, the till is characteristically thin over higher ground with a high proportion of stone content.

Topography

The park's topography is primarily bedrock-controlled resulting in a generally uniform elevation which steadily increases in a westerly direction. The elevation of Long Lake and surrounding hills are 63 metres and 84 metres, respectively, while the elevations of Spruce Hill Lake and surrounding area are 110 metres and 130 metres, respectively. The broad top hill in the centre of the park reaches an elevation of 114 metres.

Despite its generally uniform elevation, the park contains a variety and diversity of landscape patterns and habitats.

Hydrology

Long Lake, Spruce Hill Lake and Withrod Lake, and their attendant watersheds, constitute a significant aesthetic and aquatic recreational resource for the Halifax-Dartmouth Metropolitan Area. Long Lake has a surface area of 154 hectares and a maximum depth of 30 metres. Spruce Hill Lake is 102 hectares in size and has a maximum depth of 12 metres. Withrod Lake and Narrow Lake are 12 and 6 hectares in size, respectively. The latter two have not been surveyed for water depth. Long Lake Provincial Park also includes at least three small ponds and a fen.

Formed by glacial processes over ten thousand years ago, and altered by man over the past 150 years, the lakes are deep sided with rocky shores. Spruce Hill Lake and Long Lake are classified as oligotrophic, meaning low productivity, characteristic of most lakes in Nova Scotia located on resistant metamorphic rocks. The watersheds of all three lakes contain poorly drained areas with slow meandering streams and small ponds. Their drainage patterns, and especially that of Long Lake, are intricate and it is often difficult to determine precisely where one watershed ends and the next begins.

While both Spruce Hill Lake and Long Lake are relatively large ecosystems, they remain sensitive to environmental impacts. Their physical characteristics and chemical composition suggest a delicate balance between good water quality and a tendency to eutrophication.

Long Lake was created in the mid-1800s when a wooden dam was built at the McIntosh Run outlet of Beaver Lake, raising the water level eight metres. The higher water levels of Beaver Lake inundated nearby Cocked Hat Lake, forming one new water body that was named Long Lake. For many years this new lake served as the main water supply for Halifax.

Due to growing demands for water, in 1867 a dam was built on Spruce Lake and the higher water level flooded nearby Fosses Hill Lake. This new water body was named Spruce Hill Lake, which was connected by pipeline to Long Lake.

Fauna

Long Lake Park is home to a wide range of bird and animal species. Its variety of natural habitats, in an otherwise urbanized area, are particularly important for song and meadow birds. The park also provides habitat for rabbits, porcupines, and a wide range of other rodents. Another rodent, the beaver, has long been resident in the park and constantly affects its landscape.

White tailed deer and coyotes are resident in the park, and visiting bears and moose have also been sighted on occasion. The Department of Natural Resources has determined that on mainland Nova Scotia the moose is at risk of extirpation or extinction. Halifax Regional Municipality has identified the park as a wildlife corridor in their Regional Plan.

Cultural Heritage

For many years, the area that now constitutes Long Lake Provincial Park was extensively impacted by human use. The park has been a source of gravel and rock, with old quarries still evident north of Long Lake. Families lived on the land. Some of it was farmed, and the Old St. Margarets Bay Road (now a trail) still crosses the park. Several small graveyards associated with old farm properties are also located within the park.

Prior to becoming a provincial park, for many years this area served as the water supply for the City of Halifax. The structures and works of the water facilities within the park are of historic interest. In addition, the dams and sluice gates continue to play an important role by controlling water levels on Long and Spruce Hill lakes. During the war the military constructed defensive positions within what is now Long Lake Provincial Park to protect the city's water supply. In addition, Long Lake Provincial Park has a long history of recreational use, including hunting, fishing and trapping.

Outdoor Recreation

The park's diverse landscapes and habitats in a near-urban setting provide opportunities for a range of nature-based outdoor recreation pursuits. Long Lake provides opportunities for wildlife viewing, hiking, walking, geocaching, cross country skiing, non-motorized boating (i.e. carry-in canoeing and kayaking), as well as fishing and unsupervised swimming.

HRM has also recently adopted an Active Transportation Plan to facilitate increased non-motorized travel. St. Margarets Bay Road and Prospect Road, both of which are adjacent to the park, are currently designated as Primary Bike Routes. The Old Sambro Road is a popular cycling route as part of the loop from Halifax to Sambro and return.

Outdoor Education

Long Lake Provincial Park includes a variety of heritage values that could form the basis of an outdoor education program. The many habitats, and the diversity of flora and fauna they support, provide opportunities for an exciting nature-based outdoor education program in the natural history of the local region. In addition, the park's long history of settlement and use - farming, logging, quarrying, and use as a municipal water supply - can be interpreted for park visitors.

Tourism

While Long Lake Provincial Park will cater primarily to residents of the Halifax-Dartmouth region, the park also complements regional and provincial tourism objectives by providing visitors with high-quality opportunities for nature-based outdoor recreation and education.

5.0 PARK OBJECTIVES

The primary management objectives for Long Lake Provincial Park focus on protecting natural and cultural heritage values, including: natural processes, ecological functions, and selected cultural sites; maintaining or restoring biodiversity; providing opportunities for compatible forms of outdoor recreation; and developing opportunities for interpretive and outdoor education.

Management of Long Lake Provincial Park will contribute to the achievement of Nova Scotia provincial park objectives of protection, outdoor recreation, heritage appreciation and tourism. Long Lake Provincial Park will also contribute to the commitment of the Province's Environmental Goals and Sustainable Prosperity Act to legally protect 12 percent of Nova Scotia's land mass by 2015.

Protection

To protect important natural and cultural elements and values of Long Lake Provincial Park.

Park management will place particular emphasis on protecting both representative and rare ecosystems as well as cultural heritage values and wildlife habitat that are significant in a local, regional or provincial context.

Outdoor Recreation

To provide a variety of high-quality passive outdoor recreation opportunities within Long Lake Provincial Park, including hiking, canoeing/kayaking, lake access and nature appreciation.

The park will be managed to provide for high-quality outdoor recreation activities such as hiking, walking, viewing, nature appreciation, photography, kayaking and canoeing, where those activities do not compromise the ecological integrity of the park's natural values.

As part of the Department of Natural Resources' commitment to maintaining ecological integrity, the planning, design, and construction of park trails and infrastructure will incorporate sustainable development strategies and environmental protection measures. Key aspects of this ecologically sustainable design approach include limited new park development, a requirement that new infrastructure support park goals and objectives, and the use of existing facilities and trail alignments where possible.

Heritage Appreciation

To provide opportunities for exploration, education, and appreciation of the park's heritage values through interpretive, information, and education programs.

Heritage appreciation programs will emphasize significant natural and cultural heritage features and themes relating to conservation, geology and landscape development, flora, fauna, and human settlement and use.

Three broad interpretive themes - Natural History, Cultural Heritage and Parks and Protected Areas - have been identified for Long Lake Provincial Park. These, in turn, include a number of sub-themes that warrant special emphasis.

These themes help highlight the important role that the park's evolving landscape (defined in the broadest terms to include physical, social, and historical) continues to play in the lives of HRM residents. The themes, and their many components, also celebrate the park's underlying characteristic as a relatively natural area that provide opportunities for interpretation and outdoor education programs as well as outdoor recreation activities.

Tourism

To provide Nova Scotians and out-of-province visitors with opportunities to discover, experience, and enjoy Long Lake Provincial Park.

The park will be managed to serve both Nova Scotians and out-of-province visitors. In addition, it will complement and enhance regional tourism infrastructure, opportunities and strategies, in particular those that emphasize natural heritage themes. Roads adjacent to the park in the Spryfield area lie on city bus routes, making the park a suitable urban tourist destination.

6.0 PARK CLASSIFICATION

Long Lake Provincial Park, by virtue of its outstanding natural and cultural heritage values, will be managed as a “Natural Environment Park” as defined by the Provincial Parks Regulations. A natural environment park incorporates representative natural landscapes with outstanding recreational opportunities. This classification emphasizes the protection and conservation of natural and cultural heritage features. Outdoor recreational use and infrastructure development will occur within the context of maintaining the natural character and quality of the environment.

In keeping with its classification as a Natural Environment Park, Long Lake Provincial Park will also be assigned a World Conservation Union / IUCN classification of *Category II*: a protected area managed primarily for ecosystem protection and recreation. *Category II* properties are primarily managed to protect the ecological integrity of one or more ecosystems; exclude exploitation or habitation inimical to the purpose of designation; and, provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

7.0 PARK ZONING

Park zoning allocates park lands and waters on the basis of the importance attached to their protection as heritage resources and to their capability and suitability for recreational use and associated facility and service development. Zoning defines the degree of protection, conservation, and development that may occur within respective park areas. The Provincial Parks Regulations establish three park zones: Environmental Protection, Resource Conservation, and Recreational Development. The first two are protection oriented, while the third allows for more intensive development and use.

All three zones will be used at Long Lake Provincial Park (Figure 3).

Environmental Protection Zone

The Environmental Protection Zone includes an area that is highly sensitive or contains significant natural or historic resources that require protection. Within this zone, interpretive, educational and scientific activities are permitted where they do not conflict with the underlying protection objectives.

One area, a wetland complex located just south of Long Lake, has been included within an Environmental Protection Zone due to its relatively pristine condition and ecological sensitivity. Other areas (e.g. graveyards) within the park may be equally significant or sensitive but due to their small size they have been included within a resource conservation zone. They will be treated as special management areas within that zone, with activities appropriate to an Environmental Protection Zone being permitted.

Resource Conservation Zone

The Resource Conservation Zone includes those areas of the park containing significant natural, cultural, and recreational features and landscapes that require a high standard of conservation. This zone permits activities and land uses that do not conflict with or compromise the inherent natural character and aesthetic qualities of the park.

The Resource Conservation Zone also incorporates and protects small, scattered sites with unusual flora as well as culturally significant sites and features that do not warrant specific designation within an Environmental Protection Zone due to the limited landbase involved. Planning for any activities or land uses within the Resource Conservation Zone must consider the full range of protection options as the priority.

Almost the entire park will be included in the Resource Conservation Zone.

Recreational Development Zone

A Recreational Development Zone includes an area of a park that is capable of supporting the development of facilities and services associated with outdoor recreation activities and more intensive visitor use. This zone is used to focus park facilities and services, as well as public use, within the most appropriate park areas without compromising protection-oriented values of the park.

Recreation Development Zones will be limited to the new parking node proposed for the Old Sambro Road and a small area immediately north of the Long Lake dam. The former will include provisions for parking and information/orientation signage. The latter will include a small area for picnicking and passive uses. Located in proximity to a Metro Transit bus stop, this area will also serve as a park access point.

The existing parking lot on St. Margarets Bay Road and the proposed parking area adjacent to Exhibition Park are located outside the park on lands that are neither owned or administered by the Department of Natural Resources. As a result, they are not subject to the provisions of this management plan. Nevertheless, in association with this management plan, DNR will be proactive in initiating discussions that relate to park access with adjacent public land owners.

8.0 ECOLOGICAL LANDSCAPE CLASSIFICATION

The Department of Natural Resources uses an Ecological Land Classification (ELC) system to group geographic areas based on similar ecological criteria, including both biotic and abiotic components.¹ Nova Scotia has been divided into 39 ecodistricts that have been judged distinctive on the basis of

¹ . Ecological Land Classification for Nova Scotia. Vol. 1 – Mapping Nova Scotia's Terrestrial Ecosystems. Report DNR 2003-2. N.S. Department of Natural Resources, 2003.

broad-scale elevation, macro climate as influenced by elevation, coastal proximity, geology and landforms. Ecodistricts are generally mapped at a 1:250,000 scale and are used by DNR to evaluate ecological representivity. Ecological representivity is important in parks and protected areas planning as a measure of the extent to which those areas encompass ecological variety or biodiversity.

Long Lake occurs in the South Mountain Ecodistrict - a large granitic batholith. Several ecosystem types occur within the bounds of the park. Imperfectly drained, coarse textured hummocky terrain dominates the park, especially in the central and southern sections. Along the north and southwest sides of Long Lake are found the well drained, coarse textured hummocky terrain ecosystem. Several scattered units of the well drained, fine textured drumlinoid hills are found throughout. A small section of the well drained, coarse textured hills ecosystem surrounds Narrow Lake.

At the broad sub-continental scale, the majority of the vegetation within Long Lake Provincial Park belongs to the climatic climax coniferous forests of the Acadian Forest Region. The dominant species within this forest type include red spruce, eastern hemlock, white pine, and red oak (SHPO complex). However, as a result of past disturbance the park is dominated by early successional and early developmental stages of the SHPO forest type, as well as examples of boreal edaphic forest types. There are 21 forested vegetation alliances (ecological designation for a forest stand) within the park's boundary.

Barrens and semi-barrens are encountered in the central and western sections of the park. Several old fields and old-field white spruce stands (an anthropogenic forest) are also located in the central portion of the park. A few of the old fields have been planted with red pine, much of which is decadent.

9.0 MANAGING FOR ECOLOGICAL INTEGRITY

Long Lake Provincial Park will be managed as a natural environment park, so protection of the property's ecological integrity is of paramount concern. Ecological integrity is a measure of the condition of biodiversity in a given area. Biodiversity is also the fundamental indicator of ecological health. Retaining or enhancing the ecological integrity of both terrestrial and aquatic ecosystems will be an important consideration in all park management decisions.

With respect to a park, ecological integrity refers to a condition that is determined to be characteristic of its natural region and likely to persist. Persistent elements include abiotic components, the composition and abundance of native species and biological communities, rates of change and supporting processes.

In a more practical sense, a system will be considered to have integrity if:

- its structure and function are intact;
- its native components and processes are likely to persist;

- human use and facilities are compatible with the park ecosystem's finite capacity to sustain use in type, amount and timing.

Ecological integrity means that native species are present at viable levels and the ecological processes are present to support the continued viability of those species.

Ecological integrity must be maintained to ensure the sustainability of both the natural environment and the human uses of the park. In doing so, values such as water quality and the beauty of the landscape will also be preserved. The scientific monitoring needed to retain ecological integrity will also provide research opportunities that will enhance the park's educational and interpretive values.

Monitoring the impact of visitor use will enable management decisions that permit visitor enjoyment while maintaining ecological integrity. As part of its efforts to manage visitor use, the Department will monitor visitor impacts.

10.0 PARK CONCEPT

The park management plan provides a framework for the conservation of broad park values, the protection and preservation of significant and sensitive park features, and the provision of opportunities for compatible, nature-based, recreational and educational activities, as well as associated facilities and services.

Opportunities and issues addressed by the park management plan incorporate a review of background materials, field work, consultations with the Long Lake Provincial Park Association, and comments received during several public information sessions.

Park Development

Park development provides the facilities, infrastructure and appropriate opportunities necessary to ensure appreciation and enjoyment of the park. In light of the classification of the property as a Natural Environment Park, and the consequent emphasis on the protection of park values, the Department of Natural Resources and its partners will provide only limited facilities and services within Long Lake Provincial Park (Figure 4). The focus of park development is to provide facilities and services that support day-use activities. This plan therefore includes provision for the following facilities and services: parking and trail-head access, orientation and interpretation information, a network of trails for hiking, walking, viewing and limited cycling, canoe and kayak access to Long Lake, and a small picnic area.

Due to the lack of a suitable natural swimming area, and the high cost to develop a man-made area, formal swimming opportunities will not be provided. Opportunities for camping will not be provided. Wherever possible, facilities and services will be located on the periphery of the park. All infrastructure development must support park goals and objectives.

Proposed development may be canceled or modified, and visitor uses restricted or prohibited, where it is determined that the impacts are inconsistent with the intent of the park management plan. Existing park infrastructure (e.g. trails, parking areas) will also be examined to determine whether it is consistent with the intent of the management plan.

The focus of the development concept is on the northern portion of the park. This area is in close proximity to residential neighbourhoods, has a number of existing access points and has traditionally received the highest levels of use. The southern part of the park, generally south of the Old St. Margarets Bay Road, has not been extensively used in the past. A separate planning exercise will be conducted at a later date to prepare a park development concept for this area of Long Lake Provincial Park.

Public Access

Public access will be provided at several clearly defined locations. One or more of these entry locations will be accessible from the public transit system. For the most part, these entry points will be located north of the Old St. Margarets Bay Road. Where appropriate, park entrances and associated trails will connect with HRM's regional trail and active transportation systems. Access points will be sited and designed to minimize their impacts on park values.

The following entry points will be provided (Figure 4):

Vehicular access:

- St. Margarets Bay Road - existing HRM car parking lot.
- Exhibition Park - located on provincial lands administered by Trade Centre Limited, a provincial Crown corporation.
- Old Sambro Road - in proximity to the junction of the Old Sambro Road and the former park entry road.

Of the three proposed parking areas noted above, the first two are located on non-park lands. This will help minimize the impact of park development and use on park values. The use of these lands is conditional on an agreement being reached with the property owners.

Pedestrian access:

- Cowie Hill Road at Northwest Arm Drive
- Osborne Street at Northwest Arm Drive
- Walter Havill Drive at Northwest Arm Drive
- Old Sambro Road bus stop - opposite Schnare Street

These access points will connect to a system of trails within Long Lake Provincial Park.

Canoe/Kayak Access

Canoe/kayak access to Long Lake will be provided through a carry-in opportunity from the existing parking lot on St. Margarets Bay Road. The distance is approximately 300 metres. Some shoreline modification may be required to provide suitable lake access and to minimize the potential for environmental problems.

The proposed planning efforts for the south end of Long Lake Provincial Park will examine opportunities to provide public access to Spruce Hill Lake. The current lack of suitable parking is a major constraint to public access.

Accessibility

The needs of the physically challenged will be considered in decisions affecting public access and use of Long Lake Provincial Park. Where practical and feasible, access for disabled people will be considered where site conditions permit. Within the park, rest spots will be located on main trails. As a minimum, in proximity to some public access points, portions of trails will be constructed to a standard that meets the requirements of people with special needs.

Trail System

Background

An extensive network of *ad hoc* trails exists throughout much of Long Lake Provincial Park. The greatest concentration of trails are found in the immediate vicinity of Long Lake, especially on the north side of the lake. Other trails follow the former water pipeline between Spruce Hill Lake and Long Lake, and separate trails connect the Harrietsfield and Goodwood areas to the vicinity of Spruce Hill Lake. In almost every case, these trails have been developed without permission, with no overall trail system plan in mind, and with little or no regard to ecological principles. In addition, they are not constructed to recognized standards and are not maintained. As a result, the existing network of trails within Long Lake pose environmental and public safety concerns.

This management plan recognizes that a properly designed and constructed system of trails can provide opportunities for outdoor recreational pursuits which are also compatible with objectives for environmental protection, nature-based education and the encouragement of active and healthy lifestyles. To that end, this plan proposes a trail system that embodies the following principles:

- environmentally sustainable
- constructed to accepted standards
- provides opportunities for quality nature-based outdoor recreation
- provides access to interpretive and educational opportunities
- encourages an active and healthy life-style
- provides connectivity to adjacent and surrounding communities
- accommodates, where possible, the needs of people with various abilities

- is non-motorized only
- minimizes conflicts among different user groups
- where appropriate, connects to the larger regional trail system

Figure 4 provides a conceptual trail plan for the northern portion of Long Lake Provincial Park. The concept proposes five separate, but interconnecting, trail systems and a sixth system that is largely independent of park trails. These trails total approximately 30.0 kilometres in length.

1. **Hardwood Hills Trail** - extends along the north side of Long Lake from the HRM parking lot to an area west of Withrod Lake. This area is characterized by hummocky terrain with exposed bedrock and steep-sided relief in several locations. The forest cover is dominated by stands of hardwood and mixedwood.

The Hardwood Hills Trail includes one pedestrian and one vehicular access point, one small looped trail, a canoe / kayak access point to Long Lake and several viewing areas. This trail will be designed to a hiking trail standard.²

2. **Lakeview Trail** - extends along the north side of Long Lake from a point west of Withrod Lake to the dam. The terrain is hummocky but the relief is less pronounced than on the Hardwood Hills Trail. The forest cover is dominated by stands of hardwood and mixedwood.

The Lakeview Trail includes three pedestrian access points, several viewing areas and a small picnic area. This trail will be designed to a hiking trail standard.

3. **Ridgeline Trail** - crosses the dam at the head of Long Lake and then circles a bog and fen (wetland) complex. The terrain is hummocky but immediately east of the fen is a drumlin complex. The vegetation is predominantly softwood but on the drumlins it is mixedwood. A portion of this trail utilizes the Old St. Margarets Bay Road and also connects to the proposed new parking area off Old Sambro Road. This trail will be designed as a walking trail.

4. **Farmland Trail** - focuses on the Umlah farm where much of the former agricultural fields have reverted to forest. This area is generally hummocky but the proposed trail alignment crosses several low drumlins. The forest cover is predominantly softwood but scattered mixedwood and hardwood stands are found on better drained soils. This trail connects to proposed access points at Exhibition Park and the Old Sambro Road parking area, as well as the Ridgeline and Falls trails on either side. This trail will be designed as a walking trail.³

² Hiking Trail - 1.0 - 1.5 metre tread width with a built soil tread on well-drained areas and Class "A" gravel or wetland structures where poorly drained areas must be crossed. Suitable for hiking and walking.

³ Walking Trail - 2.0 - 2.5 metre tread width with a compacted granular trail tread. Suitable for hiking and walking.

5. **Falls Trail** - connects to the existing HRM parking lot on St. Margarets Bay Road and the proposed parking area at Exhibition Park. The main attraction of this trail is a small waterfall on the south side of Long Lake. The terrain is hummocky and features both mixedwood and softwood forest. This trail will be designed as a walking trail.
6. **Multi-Use Trail** - HRM has recently adopted an Active Transportation Plan to encourage non-motorized travel. St. Margarets Bay Road and Prospect Road, both of which border the park, are currently designated as Primary Bike Routes. These routes are intended to move fairly large volumes of bicycle “commuter” traffic at relatively high speeds. HRM has expressed an interest in exploring opportunities to relocate all or a portion of this Primary Bike Route within the park. The Department has agreed to give preliminary consideration to that request. Whether or not this is desirable from a park perspective will depend on a number of factors, especially the potential impact on park values and park users.

If constructed, the multi-use trail would be located on the park’s periphery and constructed to a multi-use standard.⁴ The Active Transportation Plan also identified Long Lake Provincial Park as a Preliminary Off-Road Bicycle Candidate Route. With the exception of the Multi-use Trail, however, this management plan does not encourage bicycle use within the park.

A number of *ad hoc* trails throughout the park will be eliminated as the proposed trail system is developed. Closure of these trails will address safety and environmental concerns. In some cases trail closures may require follow-up with respect to remediation work. In particular, the pipeline trail between Long Lake and Spruce Hill Lake is badly eroded and often has running or standing water. Although a portion of the trail is usable if upgraded, other sections require remediation to avoid long-term environmental problems.

Trail Standards

In developing a system of inter-connected trails, different construction standards may be applied to different trail segments. The use of different standards often reflects the expected types and/or levels of use, the physical condition of the trail alignment, the sensitivity of surrounding values and/or an attempt to provide distinctive experiences for trail users. It is important that trails are developed to an appropriate standard in order to reduce ongoing trail maintenance costs.

It is anticipated that over time the proposed trails surrounding Long Lake will be well-used. Trails on the south side of the lake will be constructed to a Walking Trail standard (approximately 2.0 - 2.5 metres wide with a compacted granular tread) to accommodate that level of use. On the north side of the lake, and particularly the more rugged Hardwood Hills Trail, it would be difficult and costly to develop trails to the Walking Trail standard. As a result, trails to the north of Long Lake will be constructed to a Hiking Trail standard (1.0 - 1.5 metres in width with a built soil tread).

⁴ Multi-Use Trail - 2.5 metre compacted granular trail tread with 600 mm shoulder suitable for hiking, walking and cycling.

If constructed, the proposed Multi-Use Trail would be built with a compacted granular tread approximately 2.5 metres in width and having 600 mm shoulders.

Long Lake Provincial Park is to be managed as a Natural Environment Park. Therefore, with the exception of Multi-purpose trails, proposed trails have been designed to be narrower to minimize impacts on the park's heritage values. Consequently, except for the Multi-purpose Trails, bicycles will not be permitted on park trails.

Trail Development Priorities

Trail development will occur as resources permit. The following trail development phases are arranged in order of priority.

Phase One - construction of the Hardwood Hill and Lakeview trails. This will involve the closure, consolidation and/or redevelopment of many existing trails on the north side of Long Lake. Many of these do not meet current standards and are not desirable from a park planning perspective.

Phase Two - construction of a portion of the Ridgeline, Farmland and Falls trails. Each of these trails are designed as a loop. As the priority is to deliver a continuous trail system around Long Lake, initially only those segments of the three trails that complete that loop will be constructed.

Phase Three - completion of the “looped” portion of the Ridgeline, Farmland and Falls trails.

Phase Four - completion of parking and trail head access points at Exhibition Park and Old Sambro Road.

Phase Five - Completion of the multi-purpose trail (subject to determination of the appropriateness of the trail and establishment of a formal partnership with HRM).

McIntosh Run

There has been ongoing community interest in the development of a “McIntosh Run” trail which follows the waterway downstream of the Long Lake dam to Herring Cove, parts of which have been constructed. While this proposed trail lies outside Long Lake Provincial Park, the park management plan supports the idea in principle. The McIntosh Run trail would connect Long Lake Provincial Park to the Atlantic coast. There is also therefore an opportunity to connect the provincial park with Herring Cove provincial park reserve which overlooks the entrance to Halifax Harbour.

Information, Interpretation and Outdoor Education

An interpretive program focusing on self-directed opportunities will be developed to facilitate visitor understanding, appreciation, and exploration of the park and to support park management practices. The interpretive program may utilize brochures, on-site interpretive panels, publications, self-guided

trails, and special-event programming, such as tours sponsored by the Long Lake Provincial Park Association or offered through the Department's Parks are for People program.

The information program will be provided by the Department of Natural Resources. Park promotion will be done with due consideration for the need to protect the park's heritage values and to sustain a quality visitor experience. The park will not be promoted to the extent that its capacity to handle visitors in an ecologically sustainable manner is exceeded.

Sites chosen for environmental education and nature tourism programs will be selected only after it is determined that limited visitation can occur without disturbing the site's heritage values. These sites will be monitored to determine the impact of visitation levels and to identify appropriate mitigative measures if impacts become undesirable.

Visitor Services

The primary focus of the management plan is on the protection of the park's natural and cultural heritage values and the provision of complementary day-use opportunities for nature-based outdoor recreation. A basic level of visitor services is proposed to include a high quality trail system, visitor access nodes (parking and orientation), a carry-in opportunity for canoe and kayak access to Long Lake and, possibly, public washrooms. The trail system will be designed for pedestrians. Where feasible, trails will accommodate the needs of people with various abilities.

11.0 OPERATIONS POLICIES

A park operating plan will be prepared to provide the necessary information required to operate the park on a day-to-day basis. In addition to addressing the operation policies that follow, the park operating plan will include such topics as budget, staffing, public health and safety, maintenance schedules and enforcement.

The park operating plan will identify requirements necessary to operate Long Lake Provincial Park (1) as per the Development Concept and, (2) on an interim basis prior to park development occurring.

Cultural Heritage

Several cultural heritage sites and features are scattered throughout the park. Heritage resource management efforts will focus primarily on the maintenance of the dams and protection of the graveyards. While limited management intervention may occur at additional sites, the majority of heritage sites will not be actively managed except for public safety reasons. Regardless of the degree of active management, all heritage sites will be protected by the Provincial Parks Act and provisions of this management plan.

There are at least three small graveyards within Long Lake Provincial park. One, the so-called Marriott Cemetery, includes at least two graves dated 1904 and 1909. The second is the so-called Purcell's cemetery containing six to ten graves. The third is that of a single grave of John Umlah.

DNR will monitor the sites to ensure they are not subject to inappropriate uses and that they do not become overgrown.

Dams

There are two dams within Long Lake Provincial Park - one on Spruce Hill Lake and the other on Long Lake. Both were constructed in the mid-to-late 1800s when the lakes served as the primary water supply for Halifax and area.

Under authority of the Water Act (administered by DEL), DNR is licensed until 2010 to maintain the dams and control water levels on Long Lake and Spruce Hill Lake for the primary purpose of recreational use. As a condition of this licence, DNR must (1) carry out regular dam safety inspections to ensure they remain structurally sound; and (2) be capable of operating the Long Lake dam and lake level for downstream flood control purposes. In addition, although intended primarily for recreational use, Long Lake may be used during emergency situations by the Halifax Water Commission as a backup water supply .

In fulfilling its licence obligations, the Department undertakes regular inspections and dam maintenance and repairs. An emergency preparedness plan has been completed. It is intended that lake levels will be maintained at their current elevations, however these levels may have to be adjusted pending the outcome of ongoing structural assessments of the dams.

Water Quality

In recent years there has been significant residential and industrial development in the vicinity of Long Lake Provincial Park. Recognizing that adjoining land uses could have serious impacts on water quality within the park, the Department of Natural Resources will work with HRM and other partners to ensure that water quality within the park remains as pristine as possible.

Geocache

Approximately thirteen geocaches are located within Long Lake Provincial Park at the time of writing. When conducted properly, geocaching is an appropriate activity within most provincial parks. Geocache sites will be identified within Long Lake Provincial Park and those not properly located will be removed. New geocache sites must meet the requirements of the Department's Geocaching Policy.

Enforcement

Situated in close proximity to a major urban environment, with its anticipated higher use levels and associated management issues, it is expected that Long Lake Provincial Park will require a level of enforcement that is higher than that which may normally be expected of a natural environment park. To that end, DNR will prepare an enforcement plan that focuses on protecting park values and managing park users. DNR will also work with HRM police to ensure park objectives and public safety objectives are achieved.

Community Involvement

An important element in the development and operation of Long Lake Provincial Park will be the involvement and participation of neighbouring communities and other stakeholders. Education and cooperation will be two of the keys to minimizing conflicts between park users and reducing damage to the park. DNR will work with the Long Lake Provincial Park Association, community groups and stakeholders to promote the wise and sustainable use of the park.

Off Highway Vehicles

Off highway vehicles have caused significant environmental degradation in certain areas of the park. In addition, the use of motorized vehicles is not consistent with the Provincial Parks Act or park management objectives, especially the emphasis on protection and non-motorized travel. Consequently, except for park management and emergency purposes, off highway vehicles will not be permitted in the park.

Dog Walking

The Provincial Park Regulations (Section 24) require dogs in provincial parks to be on a leash and under the control of its owner at all times. This provision is intended to minimize (1) potential negative impacts on wildlife; (2) conflicts (both real and perceived) with non-dog owners; (3) conflicts between off-leash dogs; (4) the amount of dog excrement left in the park (currently a major problem in certain areas), and, fecal contamination of park waters.

In an effort to protect the park's natural attributes, including wildlife and water quality, and to minimize potential problems with off-leash dogs, the Department will undertake an educational program to inform the public about the leash requirements. When necessary, provisions of the Parks Regulations which require all dogs to be on leash will be enforced. The Department will also support the efforts of HRM to establish off-leash dog parks on municipally-owned lands.

Fire Management

As part of fire suppression efforts, a fire ban will be enforced throughout the park. All uncontrolled fires will be aggressively fought.

Special Events

Provincial park policy and regulations currently allows special events by permit. Before granting a special event permit for Long Lake Provincial Park, proposed activities will be screened for compliance with the park management plan and assessed for potential impacts. Only those events which are consistent with the intent of the management plan will be considered.

12.0 SPECIAL MANAGEMENT ISSUES

The park management plan also includes special management strategies to address specific issues or activities that may be of particular concern or which require additional clarification as outlined below.

Park Boundary

Park management would benefit from an enlarged park boundary or agreements with adjoining landowners.

The existing parking lot on St. Margarets Bay Road, which currently serves as the main park entrance, is situated on Halifax Water Commission lands and is managed by HRM. In addition, the Commission also owns a relatively narrow strip of land between St. Margarets Bay Road and the park. The opportunity to expand the park boundary northward to St. Margarets Bay Road should be explored.

Exhibition Park is owned by the Province and managed by Trade Centre Limited, a provincial Crown corporation. The proposed parking area and public access node located on Exhibition Park lands is recommended to remain with Exhibition Park. However, a portion of the Exhibition Park property extends well into Long Lake Provincial Park. This extension includes an old road which provides an attractive trail connection from the parking areas at Exhibition Park to Long Lake Provincial Park. In addition, the extension may constrain future park planning efforts and public use opportunities. Efforts should be made to either acquire this extension or enter into a formal agreement with Trade Centre Limited to permit public access and use associated with Long Lake Provincial Park.

In partnership with the Department of Environment, adjoining private lands bordering a portion of Narrow Lake and all of Round Lake should be acquired. This would incorporate both lakes within the park and consolidate the boundary with the Terence Bay Wilderness Area. It would also encompass the balance of the old farmland over-looking Spruce Hill Lake.

Privately-owned lands are located immediately north of Spruce Hill Lake. This property should be evaluated to determine whether there is merit in acquiring some or all of it for park purposes.

The park boundary will be clearly marked and appropriate signage erected as a means to inform the public of the extent of the park and, more particularly, where provisions of the Parks Act and Regulations are enforceable.

Active Transportation

HRM's Active Transportation Plan attempts to promote non-motorized travel. The plan identifies St. Margarets Bay Road and Prospect Road, both of which are adjacent to the park, as Primary Bike Routes. The plan also identifies Long Lake Provincial Park as a Preliminary Off-Road Bicycle Candidate Route.

In principle, this plan supports the objectives of the Active Transportation Plan with respect to the development of a Multi-purpose trail around the park periphery. Further work is required, however, to determine the appropriateness of the Multi-purpose Trail within Long Lake Provincial Park.

Waste Removal

There are several sites within the park where refuse has accumulated over the years. Efforts to remove this material will be initiated and may include partnering with interested community groups and organizations.

13.0 IMPLEMENTATION STRATEGY

This park management plan will be implemented in three phases. The pace of implementation will depend on available resources. The Parks and Recreation Division of the Department of Natural Resources will play a lead role in facilitating implementation of this plan, while other potential partners may play a leadership role in implementing specific projects.

Before implementing park development, mechanisms will be put in place to monitor visitor impacts on the park's heritage values. This monitoring will be used to help in designing visitor management strategies.

The goal of park development is to establish an operational park that provides at least a basic level of visitor facilities and services and is managed to ensure visitor safety and the protection of park values. Until Long Lake Provincial Park is operational, the Department will ensure interim management and operational decisions are consistent with this plan.

Although the plan has a 20-year time frame, it will be reviewed every 5 years or as otherwise required. In this way, adjustments can be made should conditions change substantially, or if significant new information becomes available.

Implementation - Phase I

Phase I of park development is intended to address key public safety issues, ensure protection of park values, acquire the resources necessary to implement park development and establish formal arrangements to use adjoining lands for park purposes.

1. Identify and mitigate potential public safety hazards (e.g. damaged trees adjacent to public use areas, fall hazards).
2. Establish ecological and cultural benchmarks and implement a monitoring program to determine park visitor impacts.
3. Identify levels of support (funding, staffing, etc.) adequate to address ongoing issues, including asset and visitor management and service delivery, in each of the Implementation phases.
4. Enter into an agreement with Trade Centre Ltd to permit the development of a parking area and trail head access at Exhibition Park to provide public access to Long Lake Provincial Park.
5. Initiate negotiations with Trade Centre Ltd. to acquire a portion of Exhibition Park that extends into Long Lake Provincial Park.
6. Enter into an agreement with HRM to ensure management of their car parking lot on St. Margarets Bay Road is consistent with the park management plan.
7. Develop an enforcement plan.
8. Implement an operational strategy for the two dams.
9. In partnership with DEL and HRM, investigate opportunities to acquire additional lands for park purposes, especially at the south end of the park.

Implementation - Phase II

Phase II is intended to initiate delivery of facilities and services (access, orientation and information, trails, etc.). Implementation will depend on availability of resources. Before implementation, all development proposals will be reviewed to ensure that they are consistent with the intent of the management plan.

1. Initiate a phased development of the hiking and walking trails (see page 17 for order of priority) and associated facilities and services.

2. Develop the picnic area.
3. Develop the following park orientation information:
 - a park brochure
 - an orientation kiosk and associated information at vehicular access points
 - orientation signage at key pedestrian access points

Implementation - Phase III

Phase III of park development is intended to look at requirements to proceed to the next level of park development.

1. Initiate planning for the south end of Long Lake Provincial Park, including consultations with DEL to ensure management of Long Lake Provincial Park and Terence Bay Wilderness Area compliment one another.

14.0 PLAN REVIEW

The vision and objectives of this plan are intended to guide the management of Long Lake Provincial Park for the next 20 years. The Department of Natural Resources will undertake a review of the park management plan every five years, or sooner if required. In considering any significant deviation from this plan, the Department will provide opportunity for public review and comment.

15.0 FIGURES

FIGURE 1 LOCATION MAP

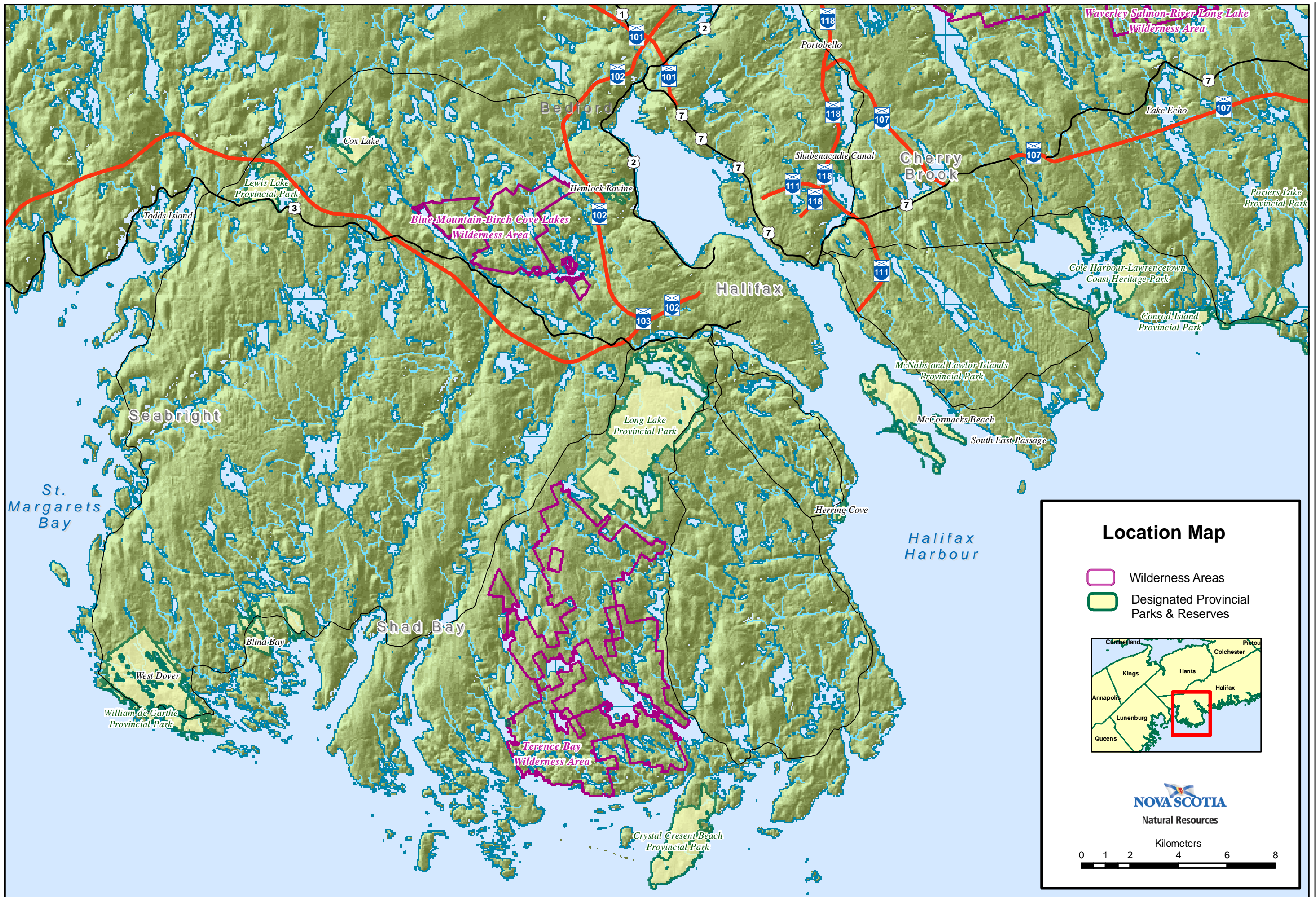
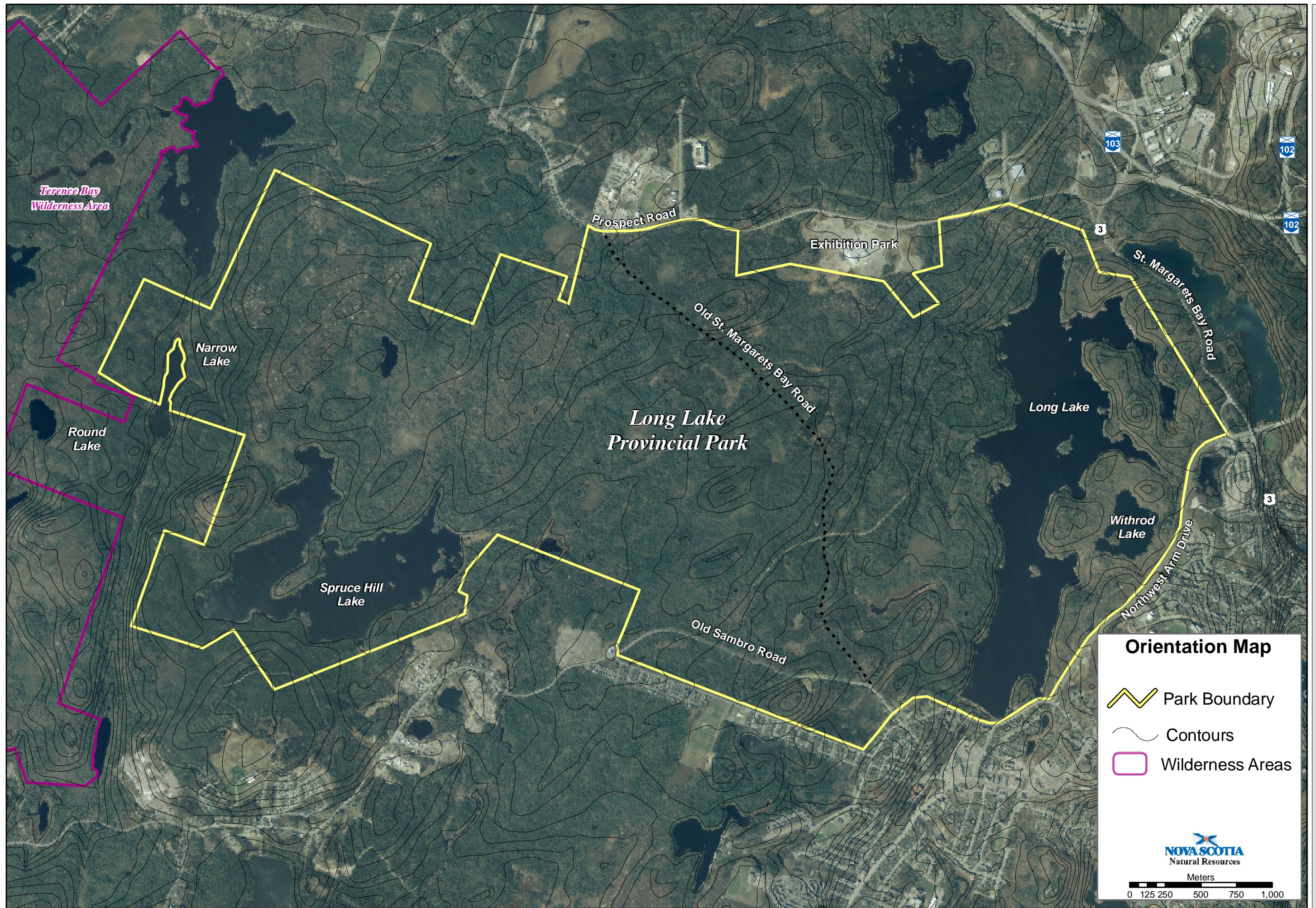


FIGURE 2 ORIENTATION MAP



Long Lake Provincial Park

Figure 2

FIGURE 3 PARK ZONING



Long Lake Provincial Park

Figure 3

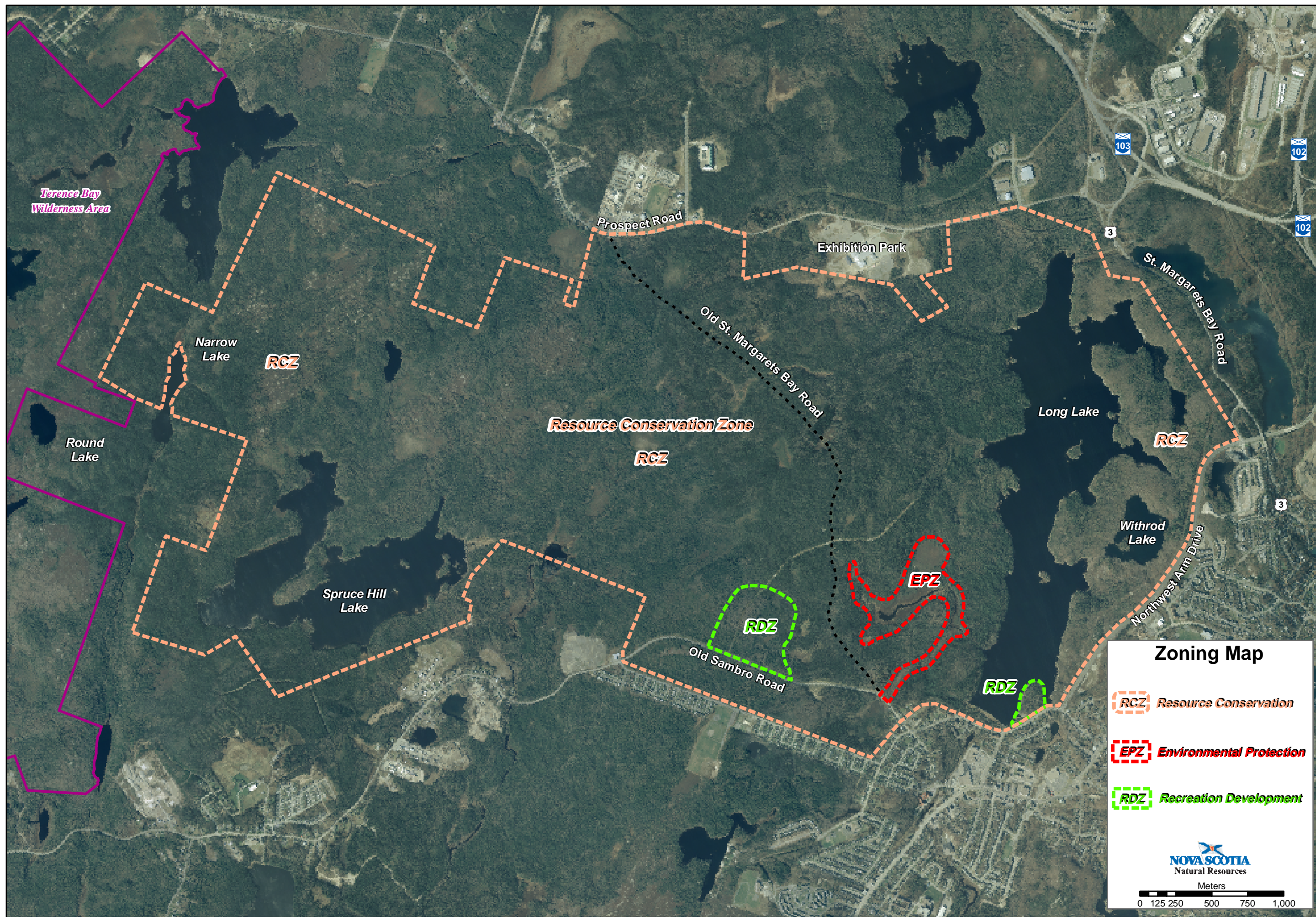


FIGURE 4 DEVELOPMENT CONCEPT



Long Lake Provincial Park

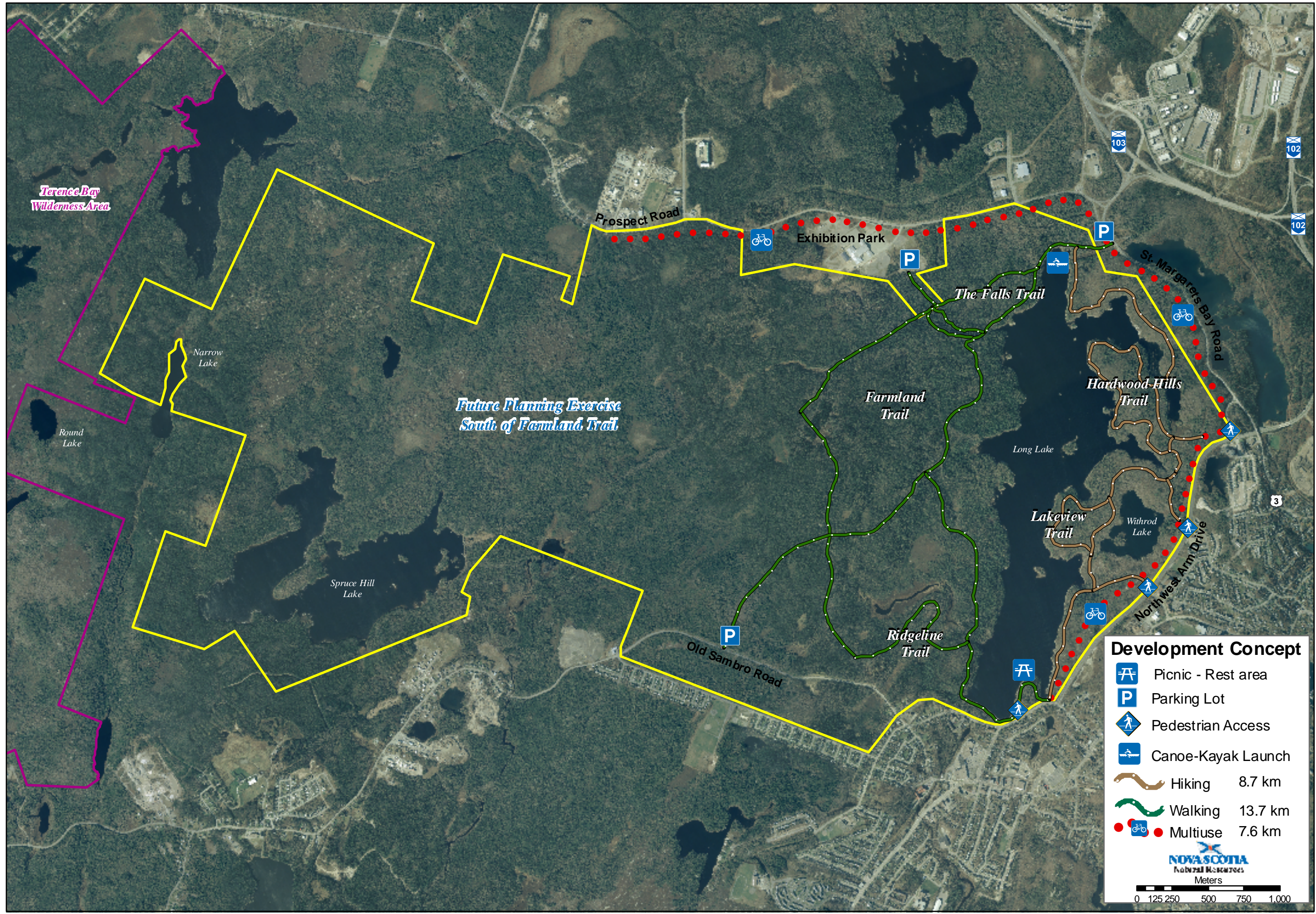


Figure 4

FIGURE 5 PARK ELEMENTS



Long Lake Provincial Park

Figure 5

