victoria park
MASTER PLAN

Final Report

For	Town of Truro
Project #	131247.00
Date	15/08/2014

CBCL LIMITED
Consulting Engineers

Acknowledgments

The Consulting Team would like to thank the many community members and organizations who contributed to this process by providing written feedback, attending public meetings and participating in interviews, to develop the vision of an improved Victoria Park.

In particular, we would like to thank the members of the Victoria Park Management Plan Committee and Truro Town Council for their dedication, passion and enthusiasm for the Park and this process.

Project partners

This project was initiated by the Town of Truro with generous financial support from the Nova Scotia Department of Health & Wellness. The project was directed by the Victoria Park Management Plan Committee:

- Brian Kinsman (Co-chair/Councillor)
- Terry Hunt (Co-chair)
- Danny Joseph (Councillor)
- Doug MacKenzie (Town of Truro Staff)
- Jim Langille (Town of Truro Staff)
- Rob Carreau (Truro Parks, Recreation & Culture Committee)
- Allen Darby (Citizen Appointee)
- Dave Dickie (Citizen Appointee)
- Keltie Jones (Citizen Appointee)
- Chris MacDougall (Citizen Appointee)
- Allison MacLean (Citizen Appointee)
- Kenda MacLellan (Citizen Appointee)
- Rod MacLennan (Citizen Appointee)

Consulting team

This report was prepared by CBCL Limited, in association with TM Solutions.

CBCL Limited:
- Gordon Smith
- Bruce Mans
- Melissa Douglas
- Daniel Bryce
- Ian Bryson
- Justin Forbes

TM Solutions:
- Tom McGuire

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Consulting Engineers

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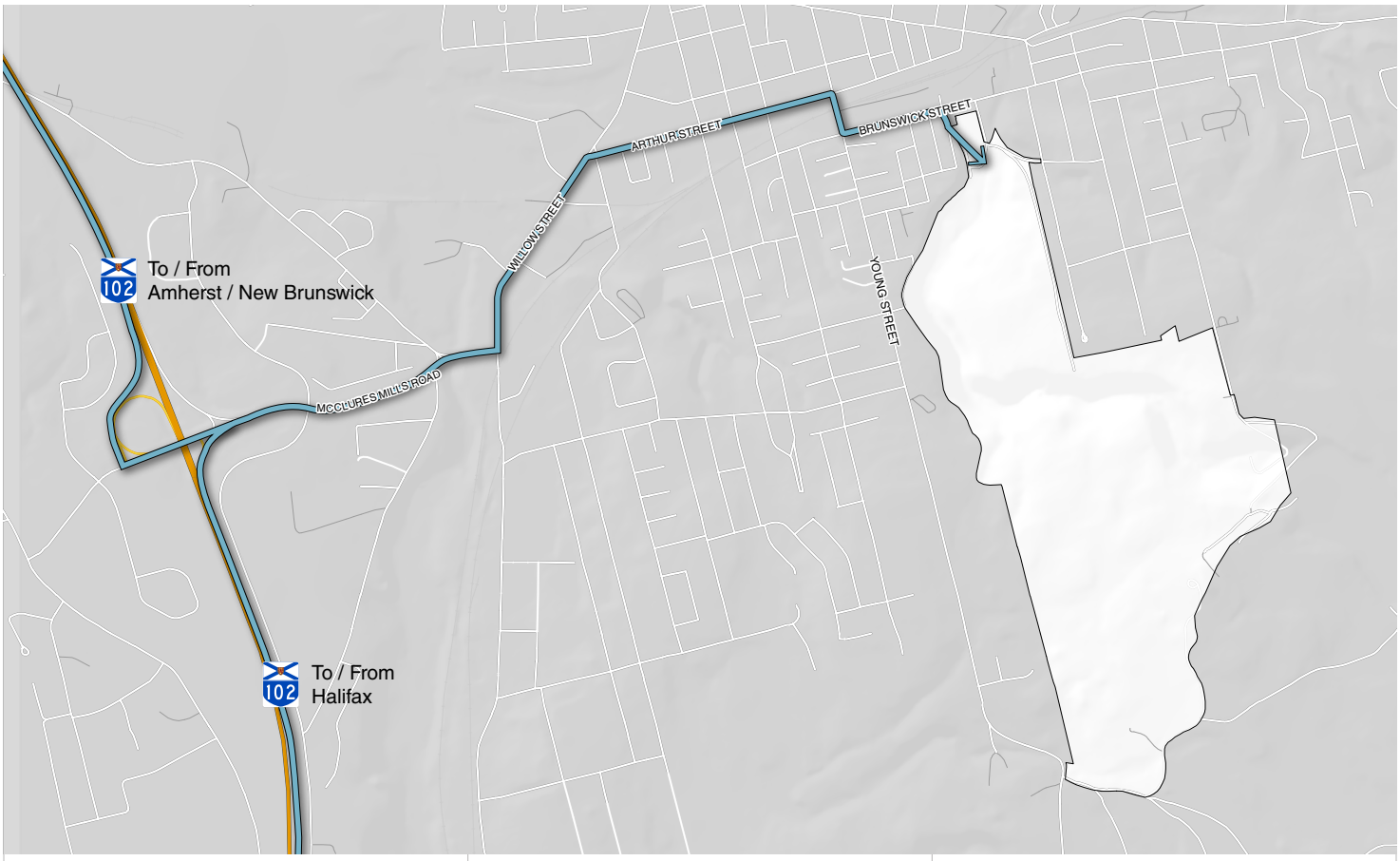
Introduction

About Victoria Park and this project.



1.1 About the Park

Victoria Park has been widely considered as one of the premier municipal parks in Atlantic Canada since its official opening on July 5, 1888. The 160-hectare park boasts incredible natural features, including a dramatic steep-sided gorge, ancient river channels carved into 360-million year old geologic formations, beautiful cascading waterfalls, and a stately old-growth forest containing 250-year old Eastern Hemlocks. It was the desire to protect these unique natural features that led to the creation of Victoria Park in 1887.

In the following years, a handful of generous philanthropists and dedicated residents of Truro began to develop an array of whimsical Victorian features and amenities to enhance and complement the natural beauty of the Park. A variety of recreational facilities were also constructed in the park to serve the residents of Truro.

Today, this combination of natural experiences, cultural history and facility-based recreational opportunities provides year-round enjoyment for residents and visitors alike.

1.2 Regional Context

The Park is located in the heart of the Town of Truro, bounded by Young Street to the west, Brunswick Street to the north, Burnyeat Street to the east, and an access road to the water treatment plant to the south. The main entrance to the Park is located on Brunswick Street and Park Road and, despite being situated only a few hundred metres away from the Downtown, it is disconnected by a wide rail corridor, creating a physical and perceived barrier between the two areas.

The Town owns approximately 1,880 hectares of land adjoining the park, a majority of which is managed as part of Truro's water supply area, located east of the park. The reservoir is contained by an earthworks dam with outflow feeding into Lepper Brook. This watercourse flows through the heart of the park and over the eons has carved the deep gorge. The brook also has many important ecological values, supporting a variety of aquatic and riparian flora and fauna. The remainder of the adjoining Town-owned land consists of the former land-fill site south of the Park.

The Park is approximately a one hour drive, or 100 kilometres from downtown Halifax, only ten minutes from Highway 102 and about fifteen minutes from Highway 104.

1.3 About the Project

Despite being established over 125 years ago, Victoria Park has never had a comprehensive Master Plan. Although various Councils and staff have done an excellent job in managing the Park to ensure core values are respected, there is a growing realization that a more strategic, proactive and long-term approach to park management is required to systematically address challenges and opportunities.

Challenges include increased residential development adjacent to the park, proposals for internal development and use that some may view as inconsistent with traditional park uses and values, concerns over forest fire prevention/ suppression, loss of ecological integrity and diminished visitor experiences. Opportunities include an enhanced role for outdoor education, an expanded park boundary, and increased efforts to improve complementary management of Victoria Park and the Town's watershed lands. Thus, the completion of a comprehensive Park Master Plan is seen as essential to ensure that Victoria Park remains a vital and much-appreciated part of Truro in perpetuity.

1.4 Report Organization

This report is organized into four sections:

Throughout the report, maps and graphics are used as frequently as possible in order to make the document accessible and user-friendly.

The **Analysis** section includes information on the development history, geophysical make-up, ecology, built environment, existing uses and activities and the current park management and procedures. This section also includes the results of stakeholder interviews and public consultation, concluding with a Strengths Weaknesses Opportunities Threats Trends (SWOTT) Analysis summarizing the key findings.

The results of the analysis section are used to create the **Master Plan**. This section is divided into four sub-sections;

1. Core Park Values and Guiding Principles.
A list of four Core Park Values and six Guiding Principles have been drafted based on public feedback and analysis and are used as a reference and guiding mechanism for the recommendations and management practices that are suggested in the remainder of the report.

2. Land Use Management Plan.
This section defines appropriate uses in various sections of the Park. General Park-wide policies are recommended and a Land Use Zoning Map is proposed which provides more specific information on the appropriate uses that are permitted in specific areas of the Park. This section also recognizes the cultural heritage of the features in the park and offers guidelines for their preservations and enhancement and the development of new elements.

3. Resource Management Plan.
The beauty of the natural environment is the most important asset of Victoria Park. It was the reason for the formation of the park and is the basis for the continued popularity of the park up to the present day. The diversity of the ecological and geological environment require specific resource management policies for specific areas. In this section, an Environmental Management Zoning Map is proposed which subdivides the Park into eco-sites based on a classification developed by the Department of Natural Resources. Each eco-site is described and environmental sensitivities are identified, and policies are proposed that will ensure that the unique natural successional characteristics of each area are maintained.

4.Park Development Concepts.
The Park is generally in good condition as it is. Nevertheless, a handful of physical design concepts in certain areas are proposed in this section that will optimize certain areas of the Park and explore new opportunities that are exciting, but more importantly, appropriate for Victoria Park.

The final section addresses the **Implementation** of the plan. It includes matters regarding the administration of the plan and development regulations, alternative governance models, marketing and promotion of the Park, plan review and amendment procedures, costing and phasing, and any other additional operational advice.

An **Appendices** section contains other supplementary information that has been used throughout the Master Plan process.

2

Analysis

Assessing the social & physical attributes of the Park.

2.1 History

Victoria Park today offers an unparalleled combination of a unique and charming Victorian cultural landscape dispersed amidst a breathtaking natural setting. Geophysical processes have been influencing the shape and natural character of the parkland, and cultural and human aspects of the Park have been evolving for years.

The Mi'kmaq people have lived in the area for thousands of years and there are records of them camping in the Truro area in the 1700's and 1800's. It is very likely they were aware of the falls and gorge that are now located within the park.

In 1689, the Acadians formed the settlement of Cobequid at the site of the present-day Truro. By 1748 there were 142 families in the district. Tradition has it that at least one Acadian homestead was situated in what is now Victoria Park.

While these groups left little imprint on the landscape within the current park boundaries, significant alterations began to occur after the arrival of English-speaking settlers in the 1760s.

The first significant development to impact the Park was the establishment of the Truro water supply. In 1875, the Town of Truro acquired land from the Intercolonial Railway and, in 1883, built Tremaine Dam, a small wooden structure approximately 750 metres east of the current dam. The wooden dam was replaced by an earthen dam in 1898 to raise the water level to 83 metres and in 1940, the dam was raised a further five metres. The latest addition, a water treatment facility, was built in 1991 when the dam was raised again to its current level.

1875
Truro buys water supply from Intercolonial Railway.

1883
Wooden Tremaine dam was built on Lepper Brook.

July 5, 1888
Victoria Park Officially opens with Sir Adams G. Archibald (former Lt. Governor of NS) as board chair and James D. Ross as Park Manager.

1891
An agricultural fair draws hundreds of visitors to Victoria Park and trails are established giving access to other areas of the park

1906
Jacob's Ladder is built and the Hanging Garden, a terraced area of local flora at the top of Muir's Ascent is created.

1875 1880 1885 1890 1895 1900 1905

Victorian Roots

1887
Susan Waddell Stevens donates 100,000 m² of land on Lepper Brook gorge for the purpose of a public Park.

July 3, 1887
Park created with six additional donations of land. Named in honour of Queen Victoria's golden jubilee.

1895
Playground created.

1901
Board of Trustees incorporates the Park.

Victorian Roots

The Park itself had its beginning in 1887 when Susan Waddell Stevens donated ten hectares of land on Lepper Brook for the purpose of a public Park. On July 3, 1887, the Park was named in honour of Queen Victoria's golden jubilee and officially opened to the public on July 5, 1888 with six more donations of land creating a community park of over 100 hectares. Sir Adams G. Archibald, former Lt. Governor of Nova Scotia, was elected as the Chairman of the Park Board of Trustees and James D. Ross became the Park Manager.

In 1891, an agricultural fair was held at a Pavilion that once stood where the present day pump house sits. The event brought hundreds of visitors from all over Nova Scotia and even out of province. This is when many of the trails and elevated boardwalks were completed giving access to unique features of the park including: the Cathedral Dell picnic area, the Holy Well, the Wishing Well, the Forest Graveyard, the Devil's Pulpit, the Irresistible Engagement Seat and the Lily Cauldron. Some of these features have since disappeared or have taken up new names (for example, the Lily Cauldron is now commonly known as the Witches Cauldron), but many have remained as popular destinations for visitors.

In the early 1900s, Victoria Park became a popular destination for day-trippers from other towns and urban centers. Often during the summer months, train loads of visitors would make their way from Halifax to Truro to spend a Sunday picnicking and hiking the trails of Victoria Park. The Park was renowned nationwide, as indicated by the Canadian Trade Review. It stated that "indeed it can be confidently asserted that nowhere else on this continent, at all events in close proximity to town, are so many remarkable and varied attractions crowded into an equal space".

In 1901, the Victoria Park Board of Trustees incorporated the Park and another significant phase of cultural development began. A path and observation gallery was built for Waddell Falls and the Hanging Garden, a terraced area of local flora, were created. Recreational facilities, such as a baseball diamond and a playground, were also added. Jacob's Ladder, a 175-step staircase, was constructed in 1906. A small picnic area known today as Picnic Dell was also established at the base of Jacob's Ladder. Eventually, a boardwalk path linking Joseph Howe and Waddell Falls with the Waddell Cairn was built in 1908.

1908
Path created linking Joseph Howe Falls and Waddell Falls and the Waddell Cairn was established.

War and Depression

1910 1915 1920 1925 1930 1935 1940

1913
Park bylaws prohibiting private businesses and protecting wildlife are written.

1906
Original baseball field created.

1940
Reservoir created with new earthen dam.

War/Depression
The following decades saw limited development within the Park. In 1913, the first Park bylaws were established which prohibited private businesses in the Park and protected wildlife. Other than this and a few trail renewal projects, the Park remained largely as it was.

Urban Park Development
After the Second World War, Victoria Park reemerged as a priority in the Town. The style of development, as was typical throughout North America at the time, shifted from building quirky Victorian attractions and providing access to nature to building urban recreational facilities. In 1952, the Kinsmen play area was built with swings and other playground equipment. Modern facilities such as the swimming pool were built in 1959 with the support of community groups such as the Kinsmen, Kinettes, Lions Club and YMCA. Four tennis courts were built by the Truro Tennis Club in the 1970's and the J. Arch Fraser bandshell was constructed in the 1980s in memory of the conductor of the Truro Citizens band from 1913-1947.

The park has a variety of paths that have been established since the 1950s, including Hemlock Trail, Lewis Road Trail and Vibert Trail. The Kinsmen Club established the latter trail in the 1970s, dedicated to the memory of Dr. Jim Vibert, a prominent Truro surgeon.

1950s
Campground is open

1952
Kinsmen Playground is built

1967
Policy created closing the park to non-camping public between 11pm and 6am.

1970
Kinsmen Club builds the Dr. Jim Vibert Trail in the memory of the Truro Surgeon

1972
Board of Trustees closes the park to camping

1950 1955 1960 1965 1970 1975 1980

Urban Park Development

1955-1959
Restoration of trails and natural environment in the Upper Park is undertaken.

1959
Outdoor swimming pool facility built through a joint effort of the Kinsmen, Kinettes, Lions and YMCA.

Not all park uses have been received with open arms by the community of Truro. In the 1950s, the Park was opened for camping. The spot was so popular that it drew visitors from all over the Maritimes and even the Eastern United States. This became controversial in 1967 when policy was created closing the park to the non-camping public between 11pm and 6am. In 1972, in response to public demand, the Board of Trustees closed the park to camping.

In the early 1970's, at the request of the Victoria Park Trustee's members of the Westmount Park Garden Club who organized assistance from engineers and landscape designers undertook the development of a concept plan for the redesign of the area from the park entrance to the south end of the picnic shelter. The plan recognized a balance between the preservation of the natural beauty of the park with the need for the provision of recreational facilities.

Maintenance and Upgrades

Following the successful addition of recreational facilities between 1940 and 1980, and the renewal of the Victorian amenities that remained from the early 1900s, development in Victoria Park has subsided. The focus has shifted to maintaining and/or upgrading existing amenities and conserving the natural environment. The playground and baseball diamond saw major upgrades in 1994 and 2000, when washroom facilities and two new playground structures were installed, partly funded by the Truro Kinsmen. The tennis courts were resurfaced and two new courts added in 2013. A water spray park was built in 1998, a joint effort between the Kinsmen and Truro Parks Recreation and Culture Department.

In the last 50 years, a great deal of development has occurred on the fringes of Victoria Park - Burnyeat Street, Centennial Drive, and the south ends of Wood and Young streets. While the appeal of living close to such a beautiful location is great, some of this attraction threatens park values.

Established over 125 ago, it is incredible that the park has lasted so long, thrived and met the needs of the community without a guiding document. It is a testament to the community and those who have been its caretakers that Victoria Park is as beautiful, ecologically vibrant and culturally and socially significant as ever.

1980
J. Arch Fraser Bandshell built in remembrance of the Truro Citizens Band conductor.

1994
The Town and Kinsmen rebuild playground and washrooms.

2000
Two new playground structures are installed.

2013
Tennis courts resurfaced and two new full-size courts added.

1985 1990 1995 2000 2005 2010 2015

Maintenance & Upgrades

1998
Water spray park built as joint effort between Kinsmen and the Town.

2004
Truro Junior High is built on the edge of the park.

2.2 Geophysical

2.2.1 Geology

The landscape of Victoria Park is a reflection of the area's significant geological past. The park's terrain is underlain by two groups of bedrock: the red sandstones and shales of the Horton Group and the pale red sandstones and conglomerates belonging to the Wolfville Formation. Both groups have had a significant influence on the features that characterize the park's landscape, particularly the steeply-inclined cliffs and the valley of Lepper Brook.

The 360 million year old rocks of the Horton Group are believed to be originally deposited as sediments in a river valley. Evidence of these ancient rivers in Victoria Park can be found in the cliffs and bedrock of Lepper Brook. The Horton Group materials which form the cliffs also offer indication of 320 million year old mountain-building, evidenced by the tilting of rocks originally deposited in horizontal beds. The gorge and waterfalls have been created by the erosion of the red sandstone and shales of the Horton Group.

The pale red sandstones and conglomerates of the Wolfville formation are the second group of bedrock that underlies the park. 220 million years ago, desert like conditions of the Triassic Period deposited the Wolfville Formation material. At this time, a gorge was carved in the already 140 million year old formations of the Horton Group and then filled in by sand and gravel of the now Wolfville Formation. Later, glacial erosion exposed the ancient valley. Lepper Brook now flows through part of the valley formed over 220 million years ago.

2.2.2 Terrain

The 160 hectare park has a varied topography rising by nearly 100 metres from north to south. The highest point of elevation is located in the southern periphery of the Park near the former landfill site, which is situated at 120 metres above sea level. From this point the land slopes down until it reaches the water supply reservoir, contained by an earth works dam at approximately 98 metres above sea level.

A reservoir outfall feeds water overflow into the Lepper Brook gorge at approximately 70 metres above sea level. Lepper Brook has over time carved a steep sided gorge as it meanders north. After several waterfalls, the level of the brook descends fifty metres to the 20 metre mark near the north entrance of the Park.

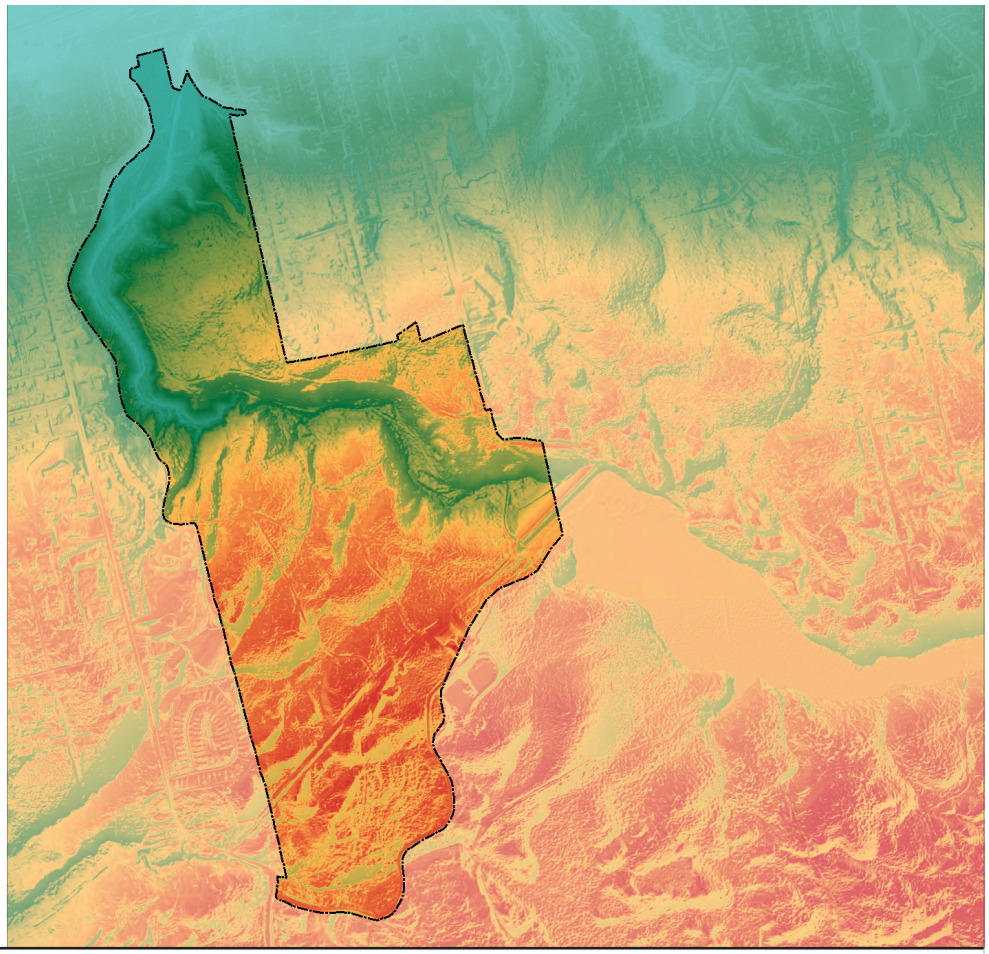
Slopes are very steep along the gorge embankments, ranging from 25% to 80%. Plateaus above the gorge have flatter areas with slopes under 10% and the Lower Park area at the northern entrance is generally flat with slopes less than 4%.

Generally, slopes under 4% appear flat, and are useable for a variety of activity, including sports fields, parking, picnic areas, etc. However, slopes under 1% do not drain well unless they are paved and carefully finished. Slopes between 4% and 10% are easy grades, suitable for movement and informal activity. The generally acceptable slope for persons in a wheelchair is 5%, with occasional increases up to 12.5% for short spans of a few metres. A significant effort is required to climb or descend slopes over 10%.

It is more expensive to erect a building on slopes over 10%, since more complicated foundations and more difficult utility connections are required. A 17% slope approaches the maximum that an ordinary loaded vehicle can climb, for any sustained period and the normal limit of climb for pedestrians is 20 to 25% without resorting to stairs.

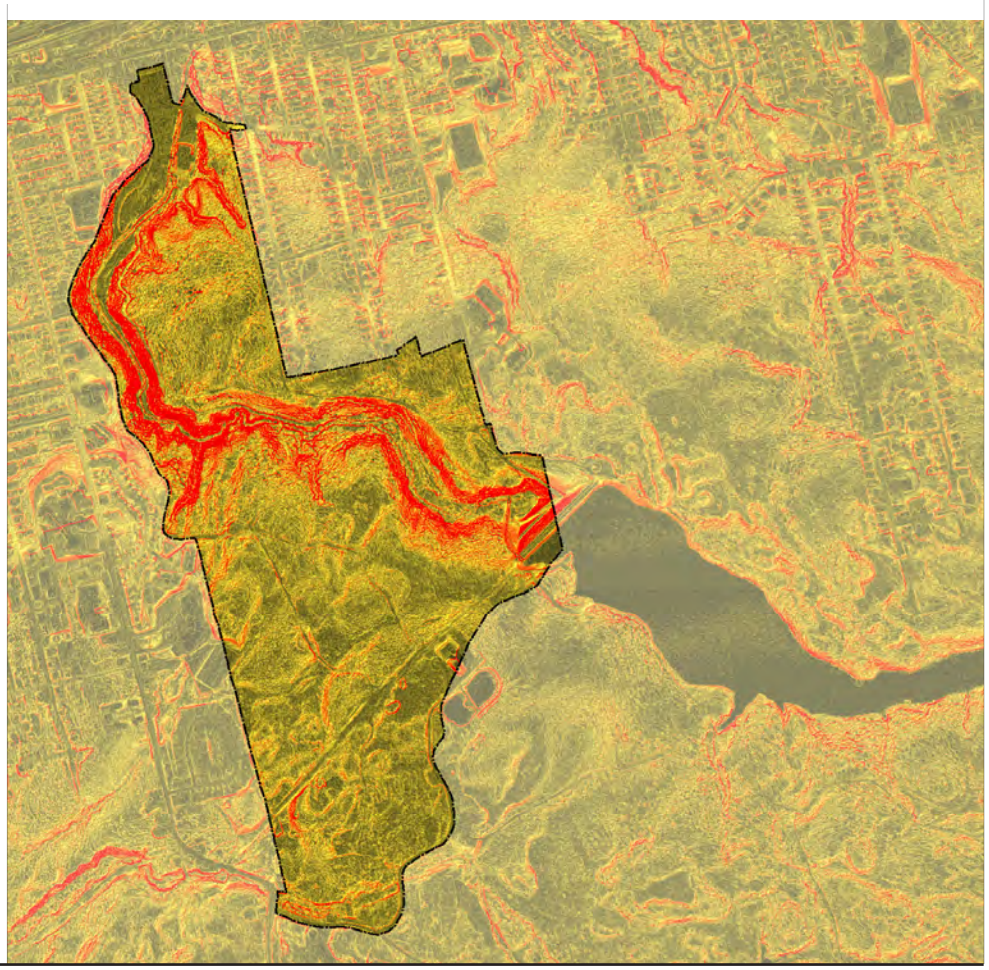
Elevation

Victoria Park has a varied topography rising by nearly 100 metres from north to south.



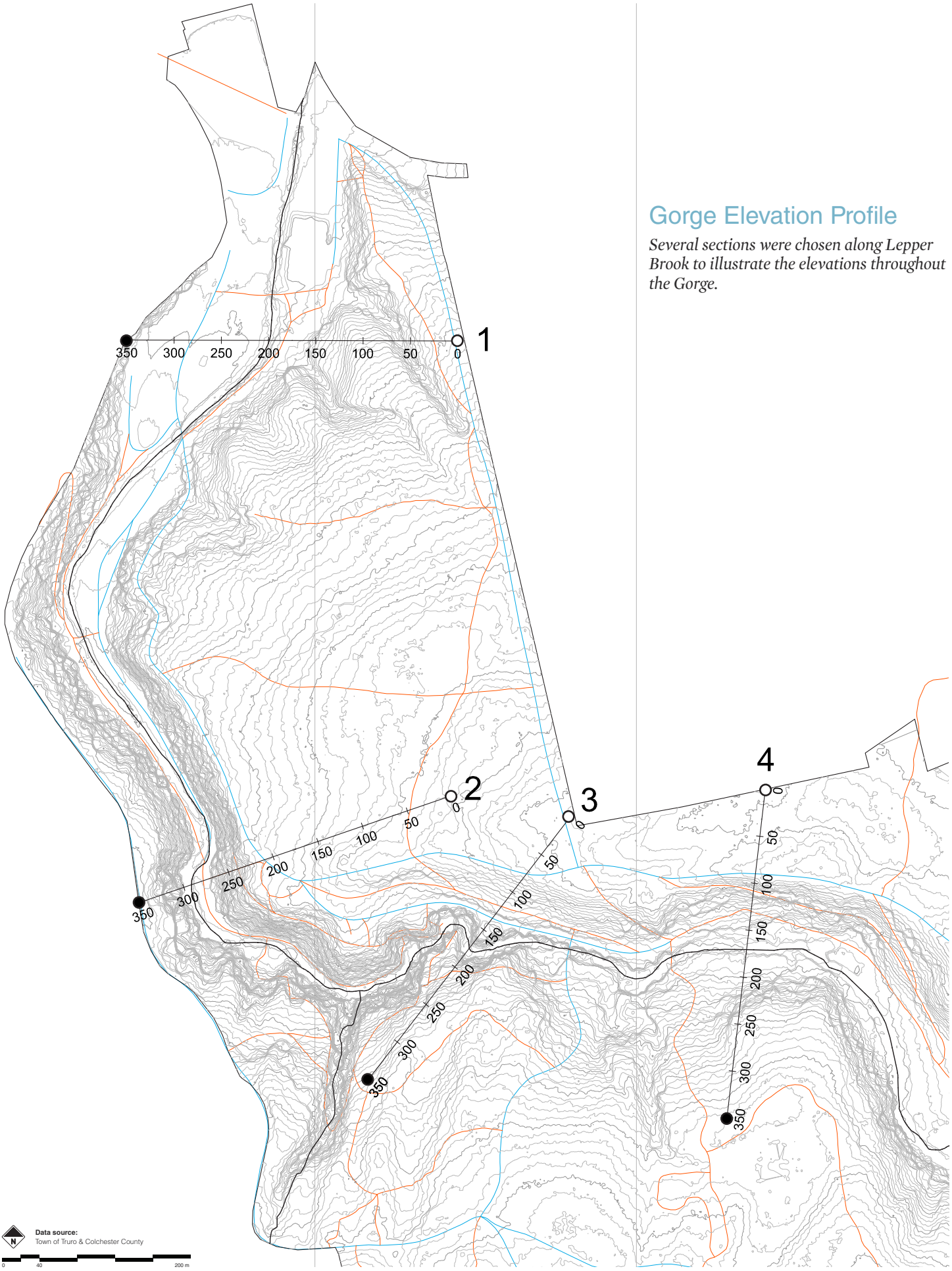
Slope Percentage

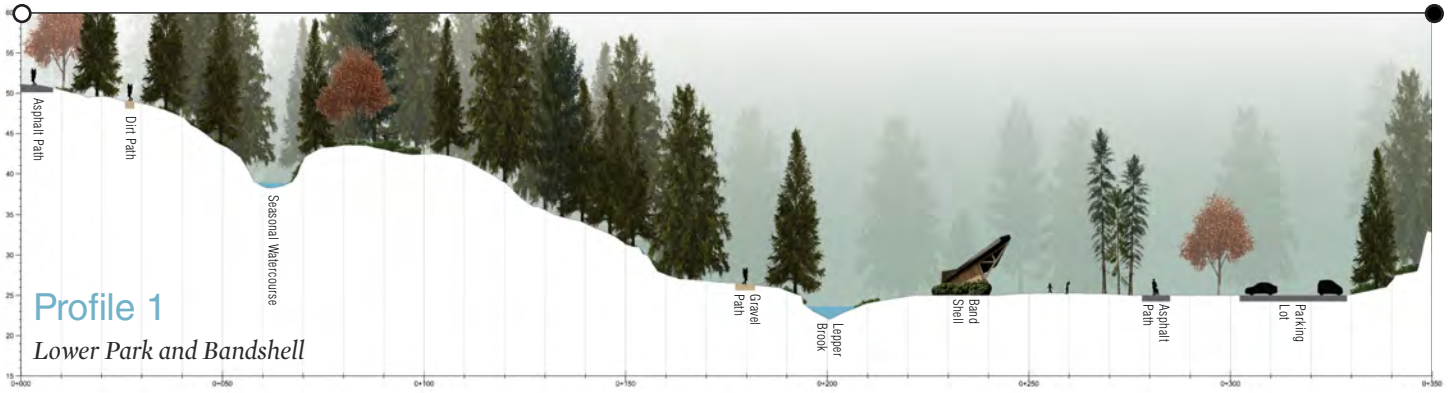
Slopes are very steep along the gorge embankments, ranging from 25% to 80%.



Gorge Elevation Profile

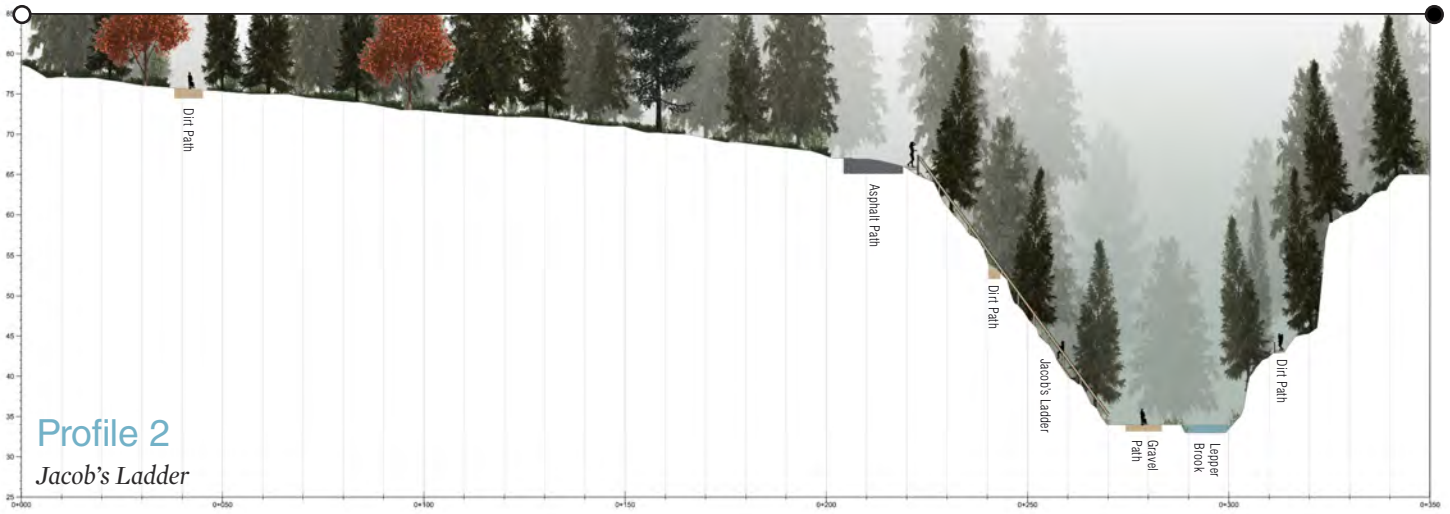
Several sections were chosen along Lepper Brook to illustrate the elevations throughout the Gorge.





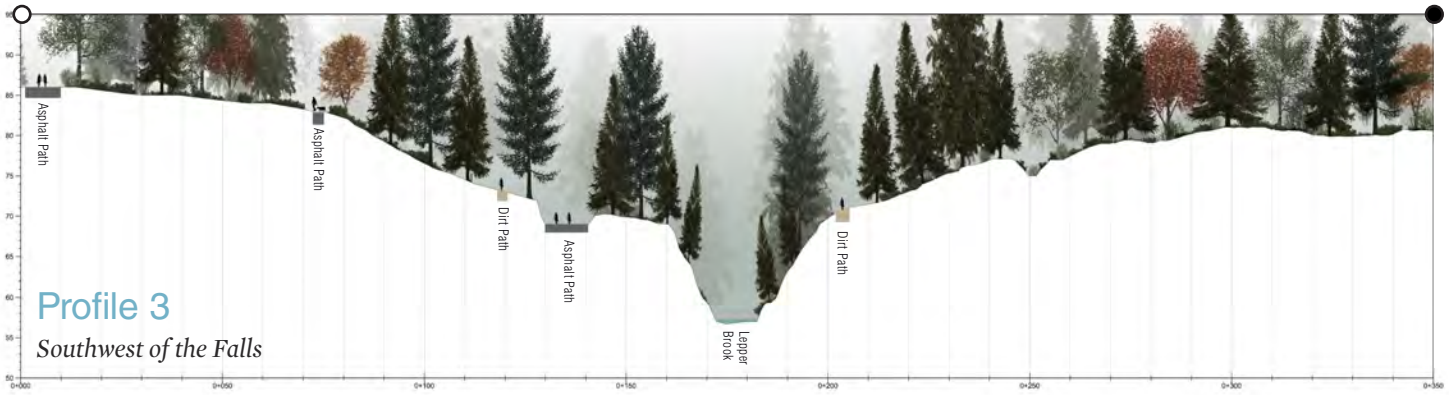
Profile 1

Lower Park and Bandshell



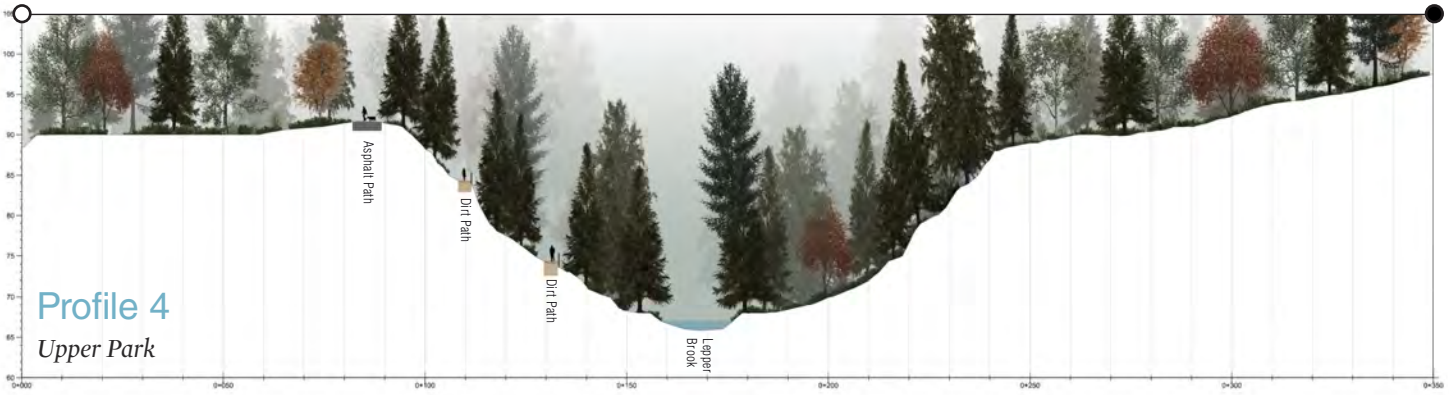
Profile 2

Jacob's Ladder



Profile 3

Southwest of the Falls



Profile 4

Upper Park

2.2.3 Hydrology

Watershed
The Lepper Brook watershed is 1,621 hectares, including all Town owned land that drains into the Lepper Brook Reservoir. It is protected by the Municipally designated E5 – Environmental Protection (Watershed) zone. The Town of Truro is attempting to maintain the integrity of the water supply by purchasing lands within the watershed owned by others, including Colchester County. Currently, forty-three percent of the watershed is owned by the Town.

While ownership of the lands within the watershed is the most effective means of preventing uses that could negatively affect water quality, protecting the watershed with a mixture of land use controls over private lands and inter-municipal cooperation allows some control over activities or development that may degrade water quality.

Water supply
The Town of Truro established a water supply reservoir at the current location in 1898. The earthen dam with a water level 83.3m above sea level (ASL) was raised in 1991 to 97.5m ASL. The man-made lake is 1500m long, 22m deep and covers 78 hectares. The reservoir can hold over 2.14 million cubic metres and can produce more than 470 cubic metres of water every hour. The Lepper Brook pumping station draws water from a depth of 21m and delivers it to the water treatment plant. The overflow chute for the dam in Lepper Brook controls the flows as it makes it way through the park.

Lepper Brook
Lepper Brook winds its way from the south eastern edge of the park descending over 50m to the northern tip. The water has carved a path through the bedrock and created the dramatic features of the park, including two waterfalls, Joseph Howe and Waddell Falls. The brook, which originates upstream of the reservoir, was damned to create the impoundment. The brook exits the Truro reservoir approximately 70m ASL. Once it leaves the boundaries of the park, Lepper Brook skirts the downtown before emptying into Salmon River just above sea level.

Traditionally, the brook has been seen as a place to direct stormwater flows when developing the surrounding areas and there are a number of stormwater pipes and ditches that empty into the brook. This infrastructure is importing extreme peak flows into the park from the surrounding urban areas and the increased water quantities and velocities are causing erosion, disruption of natural drainage flows, and introduces pollutants in the park which affects Lepper Brook and the life forms it supports.

The preservation of Lepper Brook as a healthy, functioning wetland ecosystem will help reduce flooding and peak flows downstream and its conservation and restoration will also protect and recover the biodiversity of plants and associated wildlife in the park.

Subsurface Hydrology
The subsurface of Victoria Park consists of two foundational geologies; The Horton Group and the WolfviIle Formation. The Horton Group of rocks contains well compacted sandstone and conglomerate beds that can store large amounts of groundwater. However, this may vary considerably because of the distribution of numerous faults caused by tectonic uplift.

The WolfviIle Formation consists of well sorted sediments and provides high bedrock hydrostratigraphy. The water-bearing sandstone and conglomerate beds of this formation are usually confined by overlying beds of shale and/or siltstone, and exposures in lowland areas frequently exhibit seepage. These sandstones and conglomerates are generally weakly cemented and loosely consolidated thus allowing the movement of water through intergranular pore spaces, with a smaller portion flowing through poorly developed joint systems and along bedding plane fractures. Strong evidence of the “softness” of the sandstone beds is indicated by the high incidence of collapse from hydrostatic stresses on open cliff faces.

Overlaying the bedrock formations in much of the park are glacio-fluvial deposits. These are by far the highest water-bearing materials with transmissibility and storage coefficients 100 times greater than aquifers in the Wolfville Formation.

Pipe from reservoir impedes flow creating a pool.

2.2.4 Climate

The climate in Truro is influenced primarily by its proximity to the Minas Basin coast and, to a lesser degree, the Cobequid highlands.

Annual temperatures

Summers are generally mild to warm and winters are slightly colder than the rest of Nova Scotia. Temperatures drop to an average of -7°C in January and increase to an average of 18°C in July.

Victoria Park is located in Plant Hardiness Zone 5b, which is the second coldest zone in the province after Zone 5a. Plant hardiness zones measure winter conditions, as perennial plant varieties are classed based on the lowest temperatures they can handle before they die. Hardiness Zone 5b features low temperatures between -26.1°C and -23.3°C.

Precipitation

The Truro area receives a steady amount of precipitation throughout the year, but is slightly drier than other coastal locations in the province. The average annual precipitation level in Truro is about 1200mm, compared to the 1500mm typically received throughout the Atlantic coastal region.

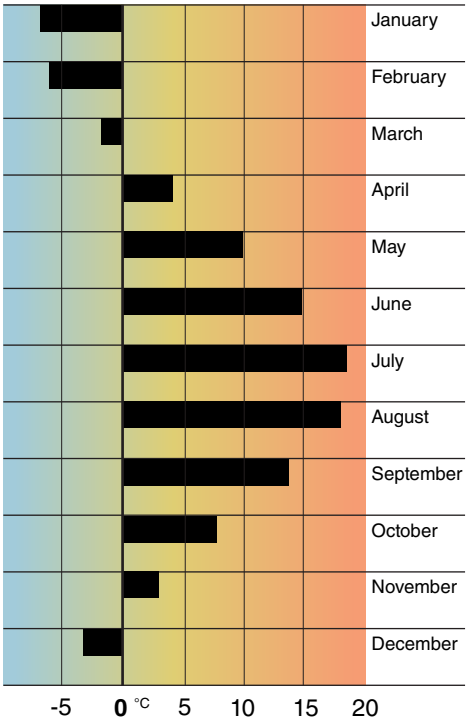
Winter months feature higher precipitation levels than summer months, with snow as common as rain. Snow cover is quite prevalent throughout the winter: there is an average minimum snow cover of one centimetre for almost 90 days in a year, and a ten centimetre minimum for 53 days. With so many days of snow cover it is no surprise that cross country skiing and snowshoeing are popular pastimes in the Park.

Wind

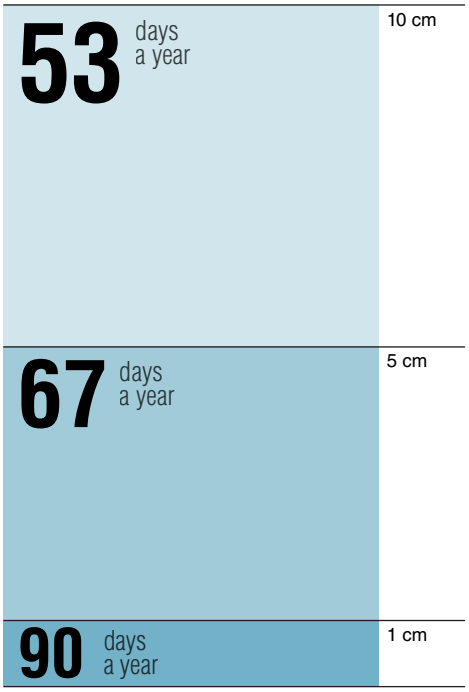
Throughout the year, the prevailing wind direction is from the west off Minas Basin. Strong, cold squalls from the north are common in February and contribute to low extreme temperature events. Southerly and southeasterly gusts occur during March and April, and again in September.

Solar Exposure

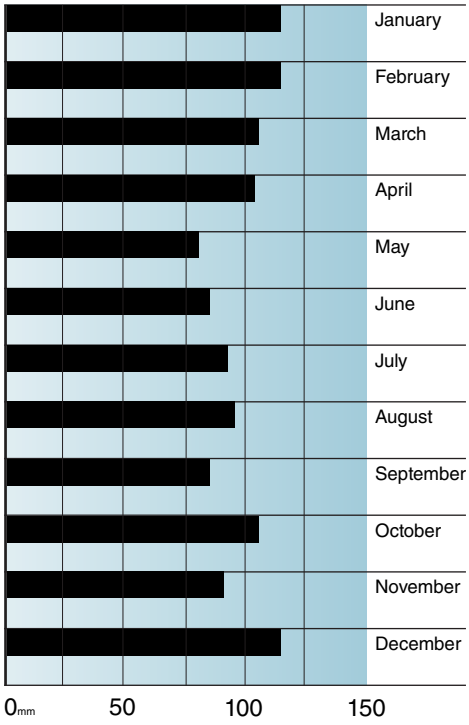
The majority of the park has a north facing orientation, with the exception of the steep sided banks on the north and northwestern sides of the gorge and near the water supply reservoir. This makes the park environment ideal for plants that thrive in shade.



Annual Average Temperatures



Days with Snow Cover



Annual Average Precipitation

2.2.5 Plants & Animals

Victoria Park is part of the Acadian Forest region that encompasses Nova Scotia, New Brunswick, and Prince Edward Island. The Acadian Forest is known for its diversity, complexity, and uniqueness. It contains a balanced blend of southern hardwoods and northern boreal softwoods. (Simpson, Unknown). This forest type is defined by native species of eastern white pine, red spruce, sugar maple, yellow birch, American beech and eastern hemlock.

As noted in the Vegetation Inventory and Interpretive Potentials of Victoria Park (1993), this forest habitat, once common throughout Nova Scotia, has been extensively logged for its valuable timber. The spruce, hemlock, pine climax forest habitat found in Victoria Park is extremely rare in Nova Scotia and includes the oldest living organism in Nova Scotia, the white pine and some of the hemlock in the park have been dated at over 200 years old.

Over 50% of the park is covered with mature to old growth softwood forest habitats and the rest is comprised of areas that have been logged to combat an infestation of bark-beetle, some pine plantations, and old fields. Without human disturbance a mature, dynamic, multi-aged forest will develop. Small-scale natural disturbances (i.e. wind, natural deterioration, and fire) allow openings in a dense canopy for sunlight to reach the forest floor and provide for new growth. Forest replacing disturbances (i.e. extreme fires, severe windstorms, and endemic insect outbreaks) occur in much less frequent 100 year intervals.

Natural disturbances form the tree, stand and landscape structure. The timing, frequency and intensity of these events will determine stand conditions and continuity. For example, a mild storm, causing a few trees to blow down in a mature forest would open gaps in the canopy and allow established species to regenerate below, while maintaining the overall character of the community.

Alternatively, a forest fire that burnt through a stand, removing vegetation but leaving the soil intact would trigger the start of a new community. The succession would begin with herbaceous vegetation, followed by a shrub dominated stand, a young early successional forest, and an established even aged forest. As mid to late successional species come to dominate the overstory, the early successional species face senescence. The early stages of an old growth forest appears when small scale disturbances cause the overstory to break-up, allowing for regeneration on the forest floor.

A mature Acadian Forest, like that in Victoria Park, is rare in Nova Scotia with less than 1% of the Province's forests comprised of trees over 100 years old. Prior to European settlement more than 50% of the province was comprised of old growth forests. Anthropogenic activity has transformed most of the forests to young, even-aged stands, dominated by short-lived, early successional species (i.e. trembling aspen, large-tooth aspen, gray birch, white birch, white spruce, tamarack, and balsam fir). Many stands lack diversity, making the forest less resilient to disturbances and decreasing the habitat suitability for many wildlife species (NSNT, 2000).

Forest integrity can be defined by tree species variety, multi-age classes, complex stand and forest floor structure, and abundant coarse woody material. Successional

old-growth forests are “a self-perpetuating forest community that has reached a dynamic steady state... in the absence of silvicultural treatments. The dominant vegetation is considered to be climax with all age classes present” (McEvoy, 2000). The Lepper Brook gorge is an important riparian area supporting a diversity of aquatic and terrestrial life.

Park Vegetation

The forest structure varies as one negotiates the trails of Victoria Park. Mature forests with dense canopies and no regeneration in the understory are adjacent to multi-aged forests with trees varying in height and girth and a more open canopy allowing sunlight to reach patches of regeneration below.

Many areas in the northern portion of the park and along the hillslopes of the ravine are comprised of mature and multi-aged stands, some displaying old growth forest characteristics. Stately eastern hemlocks and red spruce dominate, with a scattering of yellow and white birch, red and sugar maple and white ash.

In the central and southern portion of the park, forests range from young to mature, the topography becomes less severe, drainage decreases and wetlands begin to emerge. Wetlands in the low lying areas are interconnected through the flow of water above and below ground. Red spruce in particular is a dominant species along with red maple, and white and yellow birch with scattered intolerant hardwoods. Red pine, white pine, Scots pine, and red spruce plantations are scattered throughout the landscape. A large portion of land along the southern boundary is bare of trees and dominated by woody shrubs.

Tree Species - Frequent Occurrence

Eastern Hemlock
Tsuga canadensis

- Native coniferous tree
- Prefers cool moist areas
- Shade tolerant
- Grows up to 30m tall
- Heartwood light orange-yellow
- Branches slender and flexible, spreading horizontally from the trunk, drooping at the end

Red Spruce
Picea rubens

- Native coniferous tree
- Prefers cool moist sites such as north-facing slopes
- Grows up to 25m tall
- Reddish-brown, becoming reddish-black with age
- Branches 3 m long with a flat appearance, sloping downward
- Tips abruptly upturned

Common Occurrence

Balsam Fir
Abies balsamea

- Native coniferous tree
- Grows in a variety of soils and climates
- Grows up to 25m tall
- Greyish when young, becoming brownish with age
- Regular crown and gradually tapers to a spire-like top

Red Pine
Picea rubens

- Native coniferous tree
- Sand plains, rock outcrops, and sites where soil fertility is low
- Shade intolerant
- Grows up to 25m tall
- Reddish to pinkish bark
- Lower branches spreading horizontally or drooping, with the foliage crowded at tips

Jack Pine
Pinus banksiana

- Native coniferous tree
- Prefers coarse sands, shallow soils, and rock out-crops, permafrost
- Grows up to 20m tall
- Reddish-brown to grey when young, becoming dark brown
- Tapered trunk with ascending and arching branches

Yellow Birch
Betula alleghaniensis

- Native deciduous tree
- Prefers rich, moist soils
- Mostly shade tolerant
- Grows up to 25m tall
- Shiny reddish-brown when young, becoming dull yellow/ bronze with age
- Branches large, wide-spreading, with drooping tips

Red Maple
Acer rubrum

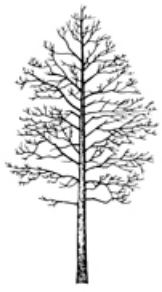
- Native deciduous tree
- Thrives on a variety of soils and sites
- Grows up to 25m tall
- Light grey when young, becoming dark greyish-brown
- Divides near the ground into a few ascending limbs
- Branches widely diverging and ascending

White Birch
Betula papyrifera

- Native deciduous tree
- Grows in a wide variety of soils
- Not shade tolerant
- Grows up to 25m tall
- Dark red or black becoming reddish-brown then bright creamy white
- Narrowly oval, open with ascending branches

Sugar Maple
Acer saccharum

- Native deciduous tree
- Prefers deep, fertile, moist, well-drained soils
- Tolerates heavy shade
- Grows up to 35m tall
- Grey bark, becoming dark grey
- Often branch-free for two-thirds or more of its height
- Narrow, round-topped



Trembling Aspen
Populus tremuloides

- Native deciduous tree
- Prefers sheltered sites
- Grows up to 25m tall
- Pale green bark to almost white when young, becoming darker
- Short, rounded crown

Other Tree Species

Softwoods:

- Scots pine (Pinus sylvestris)
- Tamarack (Larix laricina)
- Black spruce (Picea mariana)
- White spruce (Picea glauca)

Hardwoods:

- Gray birch (Betula populifolia)
- Striped maple (Acer pensylvanicum)
- Mountain maple (Acer spicatum)
- Large-tooth aspen (Populus grandidentata)
- White ash (Fraxinus americana)
- Red oak (Quercus rubra)
- Pin cherry (Prunus pensylvanica)
- American beech (Fagus grandifolia).

Classification of vegetation types, soil types and ecosites was completed to develop a better understanding of the ecosystems in Victoria Park. Through a desktop analysis of the site, taking into account drainage, topography, and vegetation, multiple survey points were selected. Using methodologies and classifications provided by the Nova Scotia Department of Natural Resources, Renewable Resources Branch, ecosystem information regarding successional dynamics, key ecological features, hazard ratings (i.e. compaction, rutting, erosion) and disturbance regimes become clear for Victoria Park (Neily, 2010).

Dr. Hill's report on the botany of the park (2014) indicates that historical records list the following seven species of rare and uncommon plants in Victoria Park:

- Tall Hairy Groovebur;
- Burnt Sedge;
- Early Coralroot Orchid;
- Scouring Rush;
- Dwarf Scouring Rush;
- Robinson's Hawkweed; and
- Pale Green Orchid.

Dr. Hill's report also noted a number of exotic invasives which, if left unmanaged, may have serious impacts on park if not already.

Wildlife

Victoria Park has a variety of ecosystems, many of which are important in supporting habitats for a variety of wildlife. White-tailed deer (Odocoileus virginianus), snowshoe hare (Lepus americanus), eastern coyote (Canis latrans var.), red squirrel (Sciurus vulgaris), American mink (Neovison vison), fishers (Martes pennanti), pileated woodpeckers (Dryocopus pileatus), hairy woodpeckers (Picoides villosus), red fox (Vulpes vulpes), olive-side flycatchers (Contopus cooperi), eastern wood peewee (Contopus virens), brook trout (Salvelinus fontinalis), and small mammals such as voles and mice are present in the park.

It is also suspected that flying squirrels (Glaucomys sabrinus), barred owls (Strix varia), black bears (Ursus americanus), and northern goshawks (Accipiter gentilis) may also dwell within the area. The combination of old-growth forests with mid- and early-successional forests provides the habitat diversity necessary to the breeding and overwintering populations of these animals.

The abundance of standing dead wood and large woody debris associated with old-growth and late successional forests is of vital importance to many species as nesting sites, food sources, and cover from predators. The pileated and hairy woodpeckers drill into rotten standing and downed wood to get at insects for food and create nest holes (Cornell Lab of Ornithology, 2013). The pileated woodpecker's distinctive rectangular-shaped holes offer crucial shelter to many species including swifts, owls, ducks, bats, and martens (2013).

Often other birds will also use a woodpecker's excavated hole to scavenge for insects left behind. Large cavities in old trees provide nesting sites for barred owls, whose nests can be large as 8 feet deep (2013). Barred owls may continue to use the same nest for years on end. Fishers and flying squirrels also require older, cavity-bearing trees to build their den. They also often seek shelter in hollow trees and logs. During the winter months, they rely on warmth and protection hollow trees provide to protect themselves from the elements (Defenders of Wildlife, 2013; NHPT, 2013). Snags are of vital importance to the olive-sided flycatcher as it aids in the capture of flying insects, its main food source (Cornell Lab of Ornithology, 2013).

Natural disturbances resulting in the abundance of downed woody debris, snags, and the expansion of shrub growth provide habitat for flycatchers, white-tailed deer, eastern coyote, and snow-shoe hare. The snowshoe hare seeks the cover for shelter and as a source of food (Environment Canada, 2013). Eastern coyotes prefer these edge-type habitats as they provide cover and an abundance of prey. The presence of cleared-areas and snags after natural disturbances allow easy hunting for the olive-sided flycatcher.

Around watercourses, downed woody vegetation is of great importance to fish and water-based mammals. Brook trout depend upon undercut banks and fallen woody debris to provide cool, shaded areas to hide from predators. Fallen branches and logs can create cool, deep pools, provide sources of turbulence to oxygenate the waters, and create pocket waters for fish to rest in moving water. Downed vegetation also provides nutrients into the stream, stabilizes watercourse edges from erosion, and provides perches for amphibians (Stevens, 1997). The highly aquatic mink will dig its den in the river bank or find a hollow log nearby (NHPT, 2013).

2.3 Built Area

2.3.1 Parking & Access

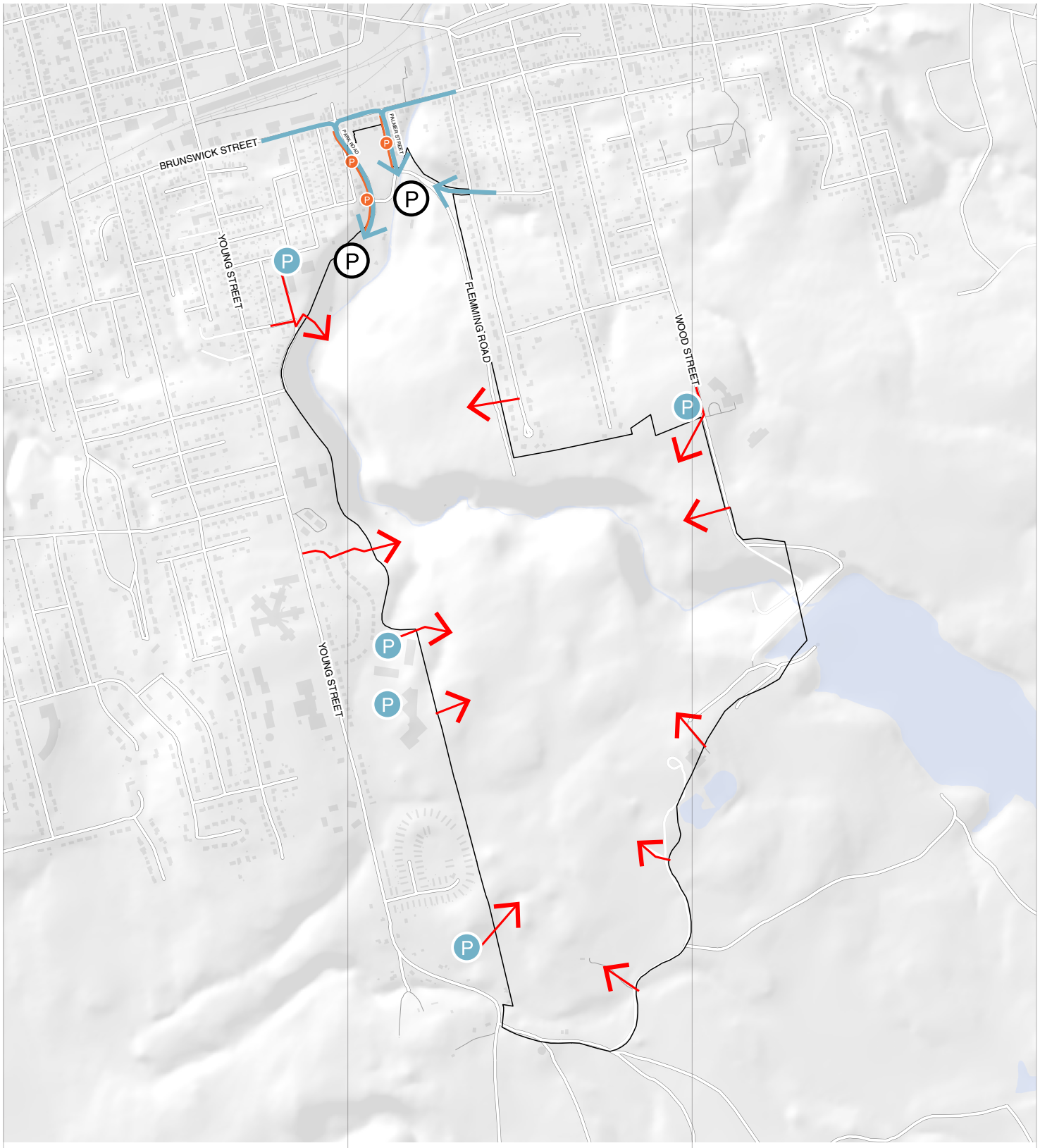
The main access to Victoria Park is provided from the north at Park Road and Old Flemming Road Trail. Secondary access exists from Wood Street to the east, Young Street to the south-west and an unpaved access road to the water treatment plant and dam at the south-eastern edge of the park. There are also numerous foot paths that connect to the perimeter of the park and surrounding residential neighbourhoods.

There are two main surface parking lots in Victoria Park. One is located off Park Road to the west of the playground and band shell and the other is accessed from Adam Street and is north of the outdoor pool. Other small secondary parking areas exists at the top of Wood Street to the east of the park, on Lewis Road to the west and at the end of the water treatment plant access road off of Young Street near the southern end of the park. Further parking is available at Truro Junior High on the weekends.

a	*b*
c	*d*
e	*f*
g	*h*

Parking Areas

a) Pool parking lot
b) Main Park lot
c) On-street parking along Park Road
d) On-street parking along Palmer Road
e) Small lot and access point on Wood Street
f) Off-site parking at Parks and Rec building
g) Pedestrian access point to Vibert Trail t
h) Pedestrian access point by the Wood Street



Access Points & Parking Areas

The majority of parking is available at the park entrance, however, several small formal and informal lots surround the park at various locations.

Legend:

- On-Site Parking Lot
- Off-Site Parking Lot
- On-Street Parking
- Main Vehicular Access
- Pedestrian Access

Data source:
Town of Truro & Colchester County

0 100 500 m

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2.3.2 Buildings & Facilities

The following is a description and visual assessment of the buildings and recreational facilities located throughout the Lower Park.

Victoria Park Pool
The swimming pool can be accessed by entering through a white stucco 176 m^2 building with a blue corrugated steel roof, which houses an office, admission booth and change rooms.

The swimming pool includes a waterslide, a diving board, water cannons and sprinklers, six swimming lanes and some shallow wading pools for young children. Poolside amenities include benches, storage cubbies and two wooden gazebos.

Rebuilt in 2004, the pool and building are both in good condition and do not require any significant upgrades, expansions or improvements. One of the gazebos has a blue corrugated steel roof which has discoloured due to solar exposure.

Baseball Diamond
The baseball diamond includes the ball field, two concrete block dugouts that are painted brown, a scoreboard and a small wooden stand of bleachers featuring three rows of benches. The surrounding chain link fence is old, rusted and in a state of disrepair. The dugout structures are old and the wooden bleachers could use an upgrade and expansion. According to the Town, the ballpark has been underused in recent years.

Victoria Park Pool

Baseball diamonds

Tennis courts

Playground

Tennis Courts

The tennis courts feature six recently repaved courts. As a result, the facility is in excellent condition and will not need upgrades anytime soon. The facility is operated by the Truro Tennis Club in cooperation with the Parks and Recreation Department and the Town of Truro and requires an annual membership which includes lessons.

Kinsmen Club Playground

The playground area is surrounded by a four foot high chain link fence to the north and west and the Lepper Brook watercourse to the east. The area is divided into a grassy area to the north and a gravel area to the south. The gravel area features two relatively new prefabricated plastic play structures and a swing set with four swings. The grassy area features four teeter-totters and another swing set. Benches are located throughout the area. The new prefabricated play structures are in good condition, however the swings are aging and will need to be replaced soon.

Safety concerns have prompted the removal of teeter-totters from most municipal parks in the country. The transition between the grassy and gravel areas is indistinct and messy, as gravel spills over onto the grass. A delineating feature, such as planting beds or wooden landscaping ties, will improve the aesthetics of the park and reduce ongoing maintenance.

Splash pad

A splash pad near the canteen includes several in-ground sprinklers and spray equipment.

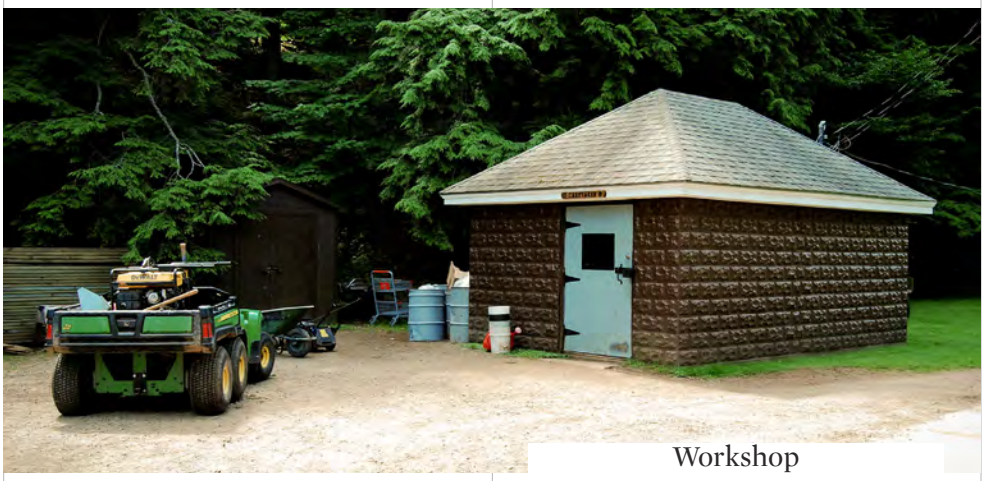
Canteen/Public Washroom
The canteen building is a 120 m² wooden structure with horizontal and diagonal wooden clapboard cladding. The interior of the canteen building includes space for a small kitchen / sales counter and public washrooms for men and women. The Canteen is open from 11am to 5pm during the summer months. Several picnic tables with umbrellas are located beside the canteen. The building generally appears well kept and tidy.

Workshop
A small 32 m² building constructed out of glossy brown concrete blocks is used by Park staff and the Caretaker for storing tools and materials. Park equipment, including a handful of Gator Utility Vehicles are parked outside the building with, construction materials often piled neatly nearby. A small wooden shed is also located next to the concrete building.

Washrooms
A small washroom facility is located just south of the workshop.

Truro Police Service building
The Truro Police Service operates a small, 15 m² building located near the bandstand. The small building is a textured concrete block structure that has been painted a dark glossy brown similar to other buildings in the Park.


Canteen


Workshop


Washrooms

Police building

Old pump station

Band Shell

Picnic Shelter

Former washrooms

Pump station

The old and now defunct pump station is the last enclosed building in the lower Park. The building is now used as storage and is boarded up and painted brown. The building is in very poor condition and, given its limited usefulness, should be removed. Utility lines leading into the building should also be removed.

J. Arch Fraser Band Shell

The band shell is a 100 m^2 concrete structure built in the early 1980s. The wooden shell is supported by a thick concrete base and two large cantilevered steel trusses. The rear of the band shell is cladded with painted wooden clapboard. For a thirty year old open-air building, the band shell has aged particularly well and appears to be in good condition.

Picnic Shelter

A large shelter by the main parking lot provides an area for barbequing, surfaces for food preparation, seating and tables.

Former Washrooms

A small building is located on the parking lot at the end of Park Road. This building was once used as a public washroom facility, but is now used for additional storage.

Archibald Memorial

In memory of Sir Adam G. Archibald, a small stone and wooded sheltered bench was created next to the Band Shell. Drinking water fountains were once operational on either side of the shelter but no longer work.

2.3.3 Park Furniture

Victoria Park, being as old as it is, does not have a consistent aesthetic for its park furniture. Rather, different materials and aesthetics were employed that were indicative of their time.

Benches & Seating
Benches are plentiful throughout the Park, but range greatly in form and appearance. Different base structures, painted colours or finishes and seating arrangements result in a somewhat disorderly appearance, particularly in the Lower Park. Some benches feature memorial plaques on them.

Garbage bins
Garbage bins are provided throughout the Lower Park and are placed at trailheads and along popular trails. Grey open-head steel drums are used as garbage bins which are typically lined with clear 55 gallon bags. There are no recycling or organic waste receptacles in the Park.

Picnic Tables
Several green wooden picnic tables are provided by the parking area and the bandshell.

a	*b*
c	*d*
e	*f*
	g

Assortment of furniture

a) Green wooden bench
b) Red wooden bench on steel supports
c) Red wooden bench
d) Green wooden bench on single steel post
e) Backless brown wooden bench
f) Green wooden picnic table
g) Grey open-head steel drum

Signs

A variety of non-uniform wayfinding, interpretive and regulatory signs are utilized throughout the Park and have been installed on an ad-hoc basis. As a result, most signs feature a lack of aesthetic consistency, old age and degraded conditions.

Planters and Garden Beds

Approximately half a dozen rectangular wooden planters are located in the Lower Park – some are used primarily as decorative features, while others also function as barriers to vehicular traffic. These types of planters are portable if access is required for special events. There are few garden beds in the Lower Park.

a	*b*	
c	*d*	
e	*f*	
g	*h*	*i*

Various signs and planters

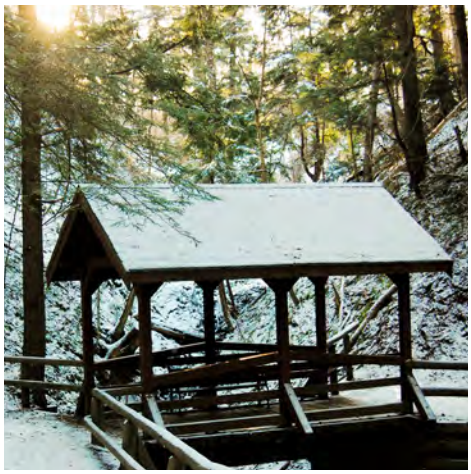
a) Hand carved wooden directional sign
b) Hand carved wooden identification sign
c) Blue interpretive sign panel
d) Park Map sign panel showing its age
e) Directional sign to Vibert Trail
f) Entrance sign by tennis courts
g) Identification sign for Jacob's Ladder
h) Garden bed near the swimming pool
i) Portable planters used to restrict vehicle access

Lighting

There are very few light fixtures within the Park. An overhead electrical utility line runs through the Lower Park providing power for the canteen, police hut, bandshell, caretaker's workshed, and the old pump station. The utility lines are mostly used to provide lighting for the interior of these buildings and not to provide exterior nighttime lighting.

Shelters / Gazebos

A number of Victorian era structures have recently been rebuilt or renovated within the gorge area of the Park and, as a result, are in very good condition. They are all post-and-beam wooden structures built on a concrete foundation. The gazebo near the entrance to the gorge features an old slate roof which was salvaged from a nearby building that was demolished.



a | b
c | d
e

Lighting and shelters

a) Conventional street lighting standards are the only type of lighting available in the Park
b) Utility poles are erected throughout the Park to power interior lighting for buildings
c) Covered bridge
d) Gazebo
e) Shelter near Joe Howe Falls

2.3.4 Trail Network

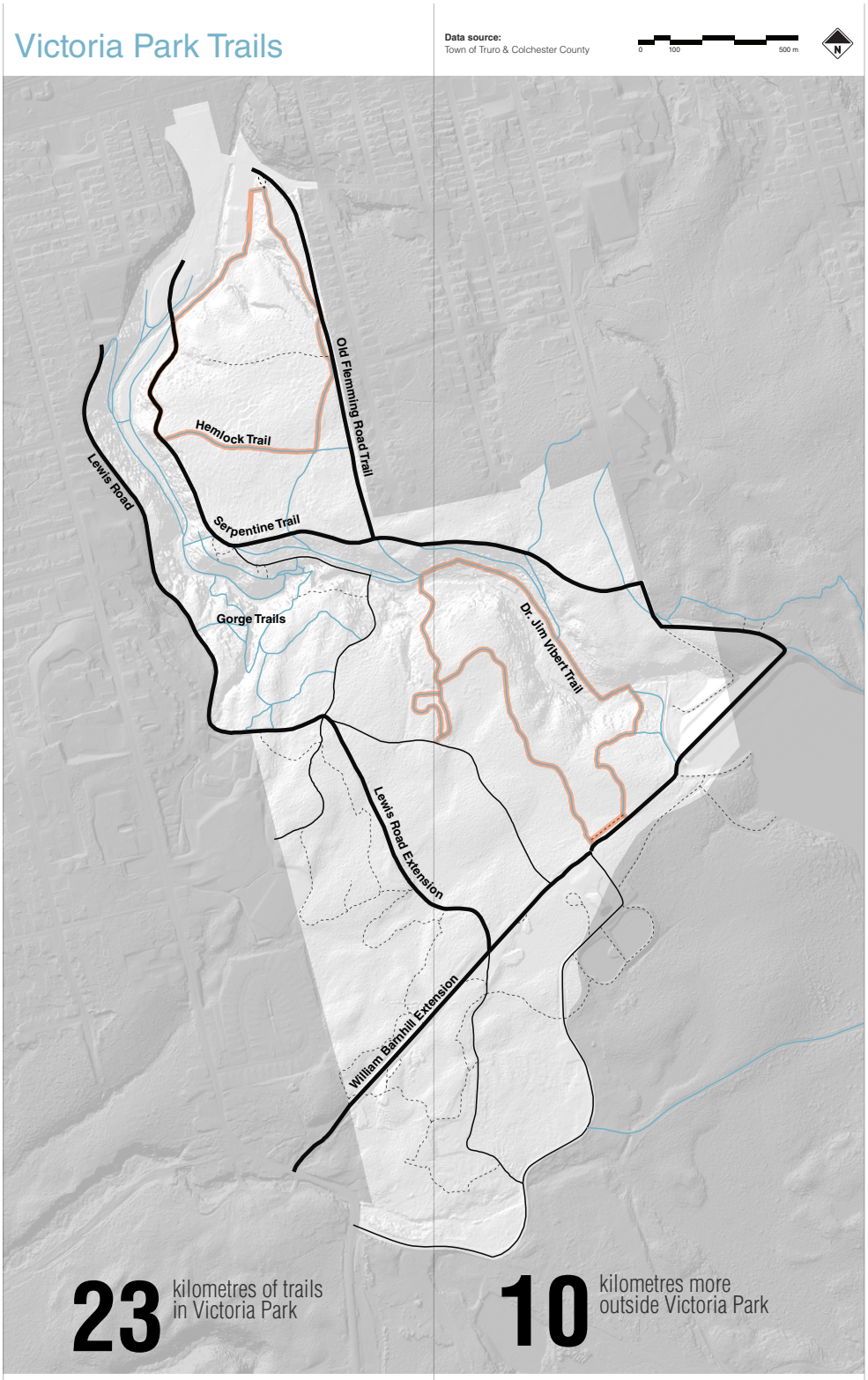
Excluding sidewalks, there are over 23 kilometres of trails within the Park boundary and an additional 10 kilometers outside the Park in the watershed area. Trail surfaces consist of a variety of material, including asphalt, crushed gravel, crusher dust, and wooden planks on bridges, staircases and boardwalks. In general, the trail network offers excellent coverage throughout the Park, but due to the extreme changes in elevation, offers limited access for visitors with restricted mobility.

There are four general trail categories in the park: Asphalt Access Roads, Gravel Access Roads, Primary Trails and Secondary Trails. Asphalt Access Roads and Gravel Access Roads are trails that were once former roadways but are no longer used by public motor vehicles. They generally have gentle to medium slopes with widths exceeding two meters. The third category is defined by extensive built infrastructure including boardwalks, bridges and staircases. There are a variety of slopes from gentle to extremely steep and the pathways consist of crushed gravel, crusher dust, dirt and wooden planks. The fourth category is essentially side trails and has far fewer infrastructure upgrades. It includes a variety of grades and is mostly dirt with some gravel sections. The following is a list of Access Roads and Primary Trails with descriptions.

Serpentine Trail is a gently-sloped asphalt-surfaced trail beginning near the band shell and connecting to the parking area on Wood Street.

Hemlock Trail is a trail loop that circles the Hemlock plateau in the northeast area of the Park. It features a mixture of surface types and connects to Old Flemming Road Trail and Serpentine Trail at various points.

The **Gorge Trails** are primary trails of packed earth, crushed gravel, crusher dust and extensive wooden boardwalks and stairs. They run from the gazebo up the gorge past Joseph Howe and Waddell falls connecting to trails above the gorge and include off-shoots to the Wishing Well and Nymphs Grotto. These paths are a mix of steep and narrow staircases with limited accessibility and sections with boardwalks and trails.



Dr. Jim Vibert Trail is a trail loop in the Upper Park with a one relatively steep section. It consists of a number of loops that connect with the Gorge Trails above the water falls, and Serpentine Trail.

Old Flemming Road Trail is a gently sloped asphalt trail running from Adams Street to the top of the ridge above the gorge at Serpentine Trail. The surface is generally in poor condition.

Lewis Road is a gravel trail that enters into the Upper Park from Fairview Drive and connects with the William Barnhill Extension.

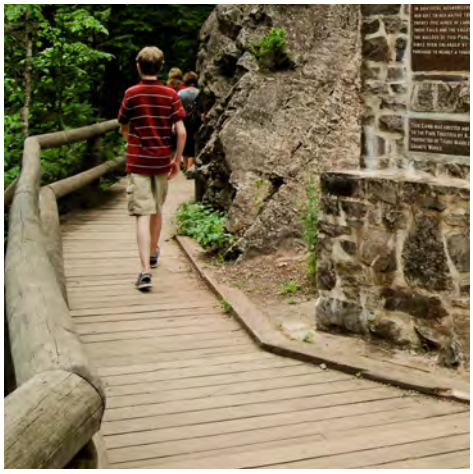
William Barnhill Extension is a gravel and dirt access road that intersects the southern end of the park. It begins at a parking area on Young Street, runs past the water treatment plant and the dam and connects with the top of Wood Street.

Trail Infrastructure:

Boardwalks
Hundreds of metres of the Victoria Park trail network are wooden boardwalks that cantilever off the side of the gorge wall and wind their way up the Lepper Brook valley. The rounded railings are peeled.

Staircases
Due to the extreme elevation changes imposed by the Lepper Brook gorge, there are numerous wooden staircases located throughout the trail network. Among these staircases is Jacob's Ladder, a dramatic 185-step staircase that ascends the east side of the gorge.

Culverts
In order to minimize the negative effect of trails on water drainage and the natural watersheds, various types of culverts have been installed, including concrete, PVC and wooden piping.



a
b d
c
e

Trail Infrastructure

a) Dr. Jim Vibert Trail
b) Cantilevered boardwalk by Waddell Cairn
c) Boardwalk staircase wrapping around the Gorge wall
d) Jacob's Ladder
e) A wooden culvert system

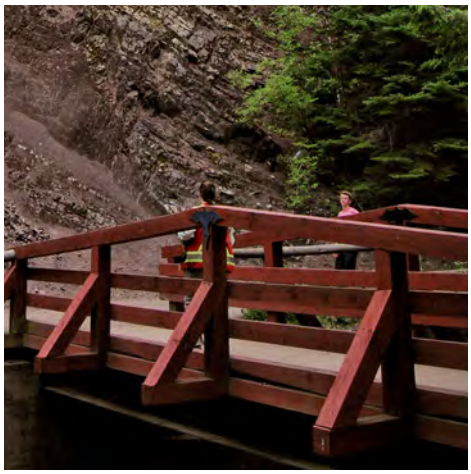
Bridges

There are almost a dozen bridges that provide crossings over Lepper Brook within the Park boundary. Each bridge ranges in structural capacity and aesthetic appearance, however, most use pressure treated wood for decking and railings.

Trail Banks and Retaining Walls

The Lepper Brook watercourse is contained by natural embankments for most of its length, however, several artificial retaining walls have been built to prevent erosion and protect surrounding road and trail infrastructure. Generally, a solid concrete retaining wall structure is used on the outer concave banks of the watercourse where the erosional force is greatest, whereas smaller, more attractive dry stone piles have been used for some inner banks.

In many instances, the concrete retaining wall is showing signs of stress from hydrostatic pressure. This occurs when soil on one side of the wall becomes waterlogged and puts horizontal pressure on the wall. Usually, weep holes are installed in retaining walls to allow the soil to drain. In some cases, the concrete wall is cracking or crumbling and will likely eventually collapse if preventative measures are not taken.



a	*b*
c	*d*
e	*f*
g	

Trail Infrastructure

a) Vehicle bridge along Adams Street
b) Wooden bridge by baseball diamond
c) Wooden pedestrian bridge built on stone foundation by the Falls
d) Wooden pedestrian bridge built on concrete foundation in the Lower Park
e) Red wooden pedestrian bridge
f) Dry stone retaining wall by Lepper Brook
g) Collapsing concrete retaining wall

2.4 Uses & Activities

Victoria Park has a wide range of uses and activities that draw visitors and residents year round. The beautiful natural environment and interesting cultural heritage aspects of the trails, stairs, and buildings / follies draws sightseers, photographers, birdwatchers, geology buffs, heritage enthusiasts, avid hikers, and those that are looking for a close encounter with nature.

The trails that wind their way through the hemlock forest and near Lepper Brook are used for walking, running, and cycling. In winter, the trails are popular routes for cross-country skiing and snowshoeing. During the summer, the pool and waterspray park are important attractions along with the tennis courts and baseball field. These facilities in addition to the playground draw many families to the lower park. There are cultural activities at the J. Arch Fraser band shell including concerts and plays and a number of locations throughout the park are used for picnics and social events.

Special events in the park include Canada Day celebrations, the Easter egg hunt, and the new Shakespeare in Victoria Park festival. Other activities include guided nature walks, mid-summer movie nights and club and association meetings and events such as Truro Tennis Club competitions, Boys and Girls Club orienteering days and Hub Cycle Spokebender Cycling Club monthly rides.

There are a number of races held in Victoria Park including: the Why Wait Resolution Run, Abominable Snowshoe Ski Run Multisport Event, Mother's Day Duathalon, Victoria Park Splash and Dash, VP Challenge Race, Humongously Hilly 10km Trail Race, Truro Kid's Triathlon, Halloween Fun Run and Victoria's Secret Mountain Bike Race.

The park trails also connect to a network of single-track biking trails and jogging/walking trails around the reservoir and watershed area.

2.5 Management & Governance

Given that there appears to be no current organizational chart that shows the role of Truro's Parks, Recreation & Culture Department or the Parks, Recreation & Culture Committee in the management of Victoria Park, the following chart was developed to provide an understanding of the management structure for the Park.

Truro's Victoria Park has a community-based governance model that brings elected representatives together with community members to form the Truro Parks, Recreation, and Culture Committee.
This Committee is an advisory body to Town Council and works closely with the Town's Parks, Recreation and Culture Department, the latter having administrative responsibility for Victoria Park.

Trust accounts that have been set up for the Park as a result of bequeath are managed by Truro's Parks, Recreation & Culture department. This is noteworthy for a number of reasons, among them, Victoria Park`s demonstrated ability to attract funding even as an asset belonging to the Municipality.

The current governance model sets the management, oversight, and maintenance of Victoria Park under the direct supervision of the Parks, Culture, and Recreation Department, under the day-to-day supervision of the Director.

The Director of Parks, Recreation, and Culture currently reports to the CAO and, through the CAO, to the Mayor and Council. The Director also takes advice from the Parks, Recreation and Culture Committee.

The flexibility of the structure, and the commitment of the community and council to the Park, is exemplified through the special committee for this current study, struck for the purpose of developing a park master plan to guide future planning, development and operation of Victoria Park.

What stands out as unique among the comparables is the involvement of the "Recreation Committee" at the oversight level. While this committee is involved in the management of all assets under the authority of the Parks, Recreation, and Culture department, it provides the opportunity for public intercessions in question about Victoria Park.

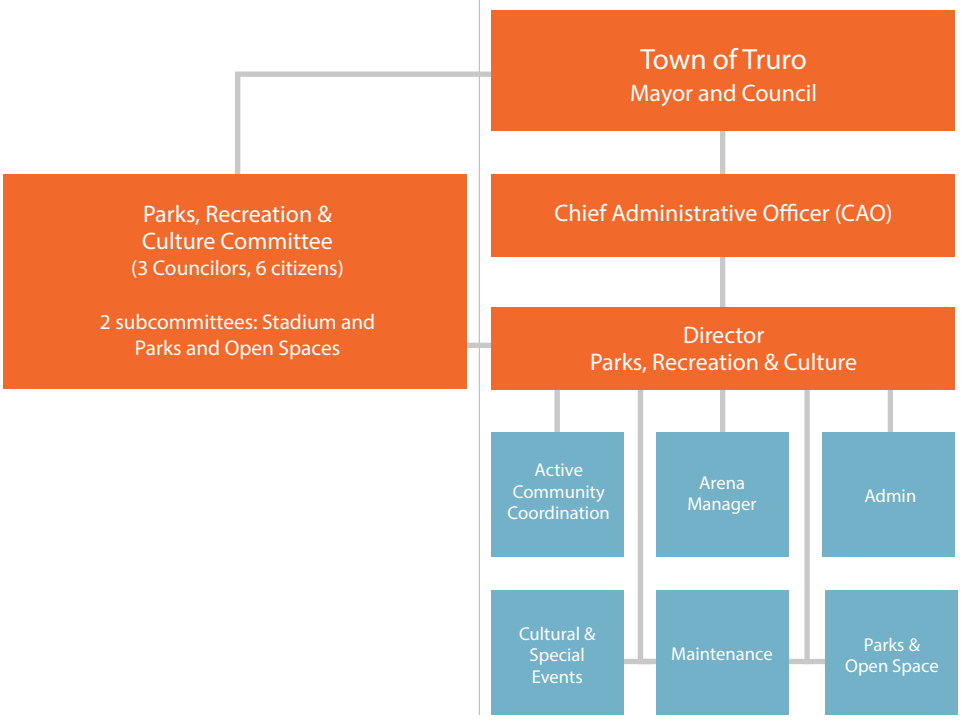
As a result of this committee structure, and the fact that a special committee was able to be struck to guide this study, the consulting team feels that the current governance model is a good one.

In many cases, public commentary on park management / activities is limited to sessions of council that provide for public intercessions at specific points in the overall agenda.

As a result, the elected/community representation of the PR&CC is an asset for the Victoria Park as well as other community assets.

Still, one of the directions arising from the public process was the notion of greater autonomy and self-governance, if not dedicated governance, for Victoria Park.

Victoria Park Governance Model



2.6 Public Input

On November 5th, 2013, CBCL ran a public consultation session at the Truro Fire Hall to gain a better understanding of what the community used the Park for and how they wanted to see the park in the future. The turnout was excellent with around a hundred participants and the variety of input was insightful and inspiring, underlining the passion that locals had for the Park.

Truro Daily News

Public meeting focuses on future plans for Victoria Park

Published on November 05, 2013

Published on November 05, 2013
About 100 people attended a public meeting on Tuesday night about the future uses of Victoria Park. Monique Chiasson - Truro Daily News

UPDATED 9 P.M.

TRURO – More accessibility, better signage and more recreational opportunities are things that would improve Victoria Park, say area residents.

Herald News

Victoria Park users share ideas for its future

The event included interaction with informative panels (see Appendix A), a short presentation and a design workshop. A presentation was made on the history of the park, both to provide information about past uses and to inspire the subsequent discussion by highlighting some of the unique and special aspects of Victoria Park.

For the workshop, participants were asked to sit around tables in groups of five or six. The community was then asked two questions:

1) How do you use the park today?
2) How would you like to use the park in the future?

Each table was invited to contribute six consensus-based responses for the first question and submit them to the consulting team. They were then asked to move to another table and sit with a different group of people where they had to decide upon six more consensus-based answers for the second question. The answers were then organized into themes on a large panel at the front of the room.

The word cloud on the following page summarizes the various suggestions that were received for the second question. The physical size of each word corresponds to the frequency of each suggestion. “Maintain” and “Signage” were the most frequent suggestions. Overall, preservation of the park was very important to the community, which was shown in recommendations for erosion protection, fire suppression, reintroduction of native species, and the obtaining of heritage designation. Unique responses for “Signage” included interpretive signs with information on historical monuments, plants, geology and the cultural significance of areas in the park and more maps with safety locations. Turning the Shakespeare

in Victoria Park event into an annual festival to attract tourists and the idea of creating packages for hotels, bed and breakfasts and restaurants, in conjunction with tickets to see live outdoor plays and concerts were unique promotional ideas.

For "Trails and Maintenance", responses involved finding a way to prevent issues with users through an approved trail management strategy, creating off-leash dog trails and single track bike paths, educating the public on encroachment, and maintaining the natural integrity of the woods by not extending the trails. Other ideas dealt with access, such as increasing parking, creating a better pedestrian route to the downtown business district and building paths for the physically challenged to the popular waterfalls, making parking areas safer for pedestrians and having an up-to-date emergency access and evacuation plan. Other ideas were more focused on deteriorating or insufficient infrastructure, such as aging facilities, benches and rest areas, lack of bathrooms in the upper park and lighting along the main paths.

Innovative ideas included silent concerts, educational tours and Quick Response [QR] codes on signs throughout the park linking to multilingual information. A welcome centre where visitors could access brochures and other information on the natural and cultural heritage of the park was also a popular notion. Certain distinctive ideas were for larger projects like a suspension bridge across the gorge, an eco-campground, additional sports fields and a bike-skills park.

Expansion of the Park into the watershed, allowing canoe and kayak access to the reservoir and maintaining single-track bike routes around the lake were other suggestions. Many members of the community that attended the consultation view the watershed and the Park as one contiguous parcel and feel that the two properties should be managed as one.

A draft report was published online in early June 2014. On June 11th and 18th, public consultation sessions were hosted at the Colchester Legion Stadium to afford the public with an opportunity to provide input to the draft report. Approximately 20 people were in attendance each evening. The meeting began with a presentation of the draft report and was followed by an open question and answer period. The draft report was also posted online for two weeks

Public Input Word Cloud

The graphic summarizes the various suggestions that were received for the second question. The physical size of each word corresponds to the frequency of each suggestion.

2.7 SWOTT Analysis

A SWOTT (Strengths, Weaknesses, Opportunities, Threat, and Trends) Analysis is a planning tool that is used to uncover the perceived strengths, weaknesses, opportunities, and threats of Victoria Park. **Strengths** and **Weaknesses** are things over which the Town of Truro or Victoria Park management have some degree of control and thus can make changes to improve the situation. **Opportunities** and **Threats** are external factors that are not in control of the Park or the Parks, Recreation, & Culture Committee and, as a result, it will need to develop strategies to take advantage of opportunities or have plans to counteract the threats.

Within this type of analysis, it is also useful to think about **trends** – what directions do things seem to be going? This additional thinking will help the process be more future-oriented and allow the consideration of potential actions that can be taken right now to move Victoria Park in the proper direction.

This SWOT analysis is the result of public consultation, meetings, interviews, desktop research, site visits and professional assessments by the study team.

Strengths

- Natural beauty
- Cultural history and Victorian era features
- Variety of year-round active uses including biking, running, walking, skiing and snowshoeing
- Family-oriented social and cultural activities like plays, concerts and picnics
- A variety of options for structured recreation, such as baseball, tennis, swimming and children's playground
- A wide range of opportunities for unstructured recreation, such as walking, hiking, mountain biking, yoga, cross-country skiing, etc.
- Secluded locations of peace and quiet
- An extensive and well maintained trail network
- Wildlife encounters
- Proximity to the downtown of Truro
- Committed and ambitious leadership from the Town and Parks Management Committee
- Very capable, dedicated and knowledgeable maintenance staff who are passionate about the Park
- Extremely passionate and involved local residents who are committed to protecting and promoting the Park
- Geographic proximity to major provincial highways and the largest population base (HRM) in Atlantic Canada
- Marketability

Weaknesses

- Lack of interpretive services
- Lack of a marketing/promotion strategy and limited website
- Inconsistent and aging wayfinding and identification signs
- No off-leash dog areas
- Poor emergency access and no formal evacuation plan
- Perceived lack of parking
- No public washrooms in Upper Park
- Steep slopes and elevations, while critical to the character of the Park, result in a difficult terrain to navigate for visitors with limited mobility
- Aging infrastructure
- No comprehensive ecologically-based forest management plan
- Park furniture is aging and inconsistent in form and placement
- Railway corridor creates a mental and physical barrier between the Park and the Downtown
- The Park does not have a strong street presence and, as a result, is difficult to find
- No comprehensive plan to manage the heritage assets and integrity of either the built features or the natural heritage
- Disappearance of a number of engaging and whimsical historical features: some architectural; others intangible in nature

Opportunities

- Expand Park to include Town owned land in the watershed
- Education
- Tie Park to Downtown with better direct access
- Interpretive kiosk with geologic, historic and ecologic information
- Capitalize on the marketing potential of the Park to generate revenue streams by promoting the Park as a destination
- Rebuild historic features such as the Irresistible Engagement Seat , the Leap Year Engagement Seat and the Rejuvenating Pew
- Road signs directing people to the park from the highway
- Work with community groups to establish and regulate infrastructure for additional (and compatible) uses, such as mountain biking
- Obtain municipal heritage designation for Park
- Enhance the Park brand and initiate a marketing program to promote it as a premier attraction in Nova Scotia
- Canada 150 celebration and associated funding for community projects
- Potential to connect Truro, through Victoria Park, to a proposed Trans Canada Trail connector route between Pictou County and Halifax

Threats

- Erosion around gorge and along trails
- Forest fires
- Invasive Species
- Dam failure
- Future development around the edges of the park and watershed could negatively impact visitor experience and the natural habitat
- Incompatible land use in and around the park
- Climate change could disrupt the ecology of the park or cause severe storms destroying natural beauty and built infrastructure
- Increased popularity could cause strain on maintenance and preservation
- It will be difficult to replace retiring Park managers and staff
- The trap of conforming to contemporary ideas of what a park should be like
- Indifference and ignorance of how and why the park came to be

Trends

- Aging population in Nova Scotia will affect who uses the park and their general mobility and ability to access certain parts of the park
- Globally, more people are interested in ecological tourism
- The social trend of health, wellness and happiness is on the rise
- Governments have been increasingly working with the private sector in order to create and maintain public services
- Rapid technological innovation has created a smart, mobile world that is able to access information anywhere at anytime
- Younger generations think and learn in images and their use of pictures in communication differs from older generations.
- As Truro and area continues to develop around the park, the intrinsic natural values of Victoria Park will increase
- The creation / marketing of unique and authentic places and experiences

3

Master Plan

Management & Development
Concepts for Victoria Park

3.1 Core Park Values & Guiding Principles

The ultimate goal of this project is to produce a Master Plan for Victoria Park that accurately identifies the significant core values of its users. Four Core Values are presented which attempt to summarize the passionate input received from the public during the consultation stage.

Supplementing these four core values are six guiding principles that are used to provide recommendations and policies that reflect the core values. These guiding principles will ensure that Victoria Park is the best it can be for all users.

3.1.1 Park Values

Natural Environment

The deep gorge, cascading waterfalls, wading pools and old growth Hemlock forest are the incredible natural features that have been attracting visitors to Victoria Park throughout its history.

Protect and enhance the ecological and geological integrity of the Park.

Cultural Heritage

Visitors in the later part of the nineteenth century recognized the integrity of the site and began building a unique Victorian cultural landscape that is incomparable to any other historic site in the region.

Preserve and restore Victorian cultural landscape and ensure its historical features are properly interpreted.

Education

The Park has an abundance of riches in terms of educational opportunities associated with earth sciences, plant growth and succession, wildlife habitat, personal health and fitness, Victorian culture and history, early park builders, municipal infrastructure, and much more.

Take advantage of the educational opportunities that exist to both promote learning and self-discovery and to further enhance appreciation of Victoria Park.

Health and Fitness

Victoria Park has long been used for health and fitness and as a place of refuge and spiritual well-being. Residents from the Town and visitors from beyond come to enjoy the vast array of recreational opportunities that are available from sports fields and playgrounds to swimming and hiking or to quietly reflect in nature's solitude.

Recognize the important role of the Park in promoting physical and mental health by balancing opportunities for active/passive recreation with areas of reflection.

3.1.2 Guiding Principles

Aesthetics

It is the beauty of the natural environment and the orderly Victorian cultural landscape that attracts so many visitors and users to the Park every year.

Maintain a high standard of aesthetic quality and consistency as park infrastructure and amenities are added, enhanced or upgraded.

Accessibility

The dramatic topography and dense forests of the Park are important character-defining elements, but also create navigation and accessibility issues. This is particularly true for visitors with limited mobility, such as seniors, folks in wheelchairs, young children, and so on. It is essential that **all** visitors be able to safely enjoy the Park as much as possible.

Ensure future development and maintenance of the Park provides access and ease of navigation for park users of all ages and abilities.

Safety and Security

Victoria Park is big, so it can be easy for users to get disoriented or lost along its extensive, curvilinear trail network. Furthermore, the natural environment presents risks and potential hazards that can influence perceived and actual safety.

Monitor and mitigate any potential safety hazards or concerns and ensure optimal wayfinding and security throughout the Park.

Protection

Extraordinary places inherently attract development. Different types of development have occurred in areas around the Park boundary. It is important to ensure that external development doesn't inadvertently affect the Park in a negative way.

Provide solutions to reduce the negative impacts of external development and human activity.

Promotion

Currently, Victoria Park is a hidden gem that is loved by locals. However, it is a special place that deserves to be shared and celebrated beyond the Town boundary.

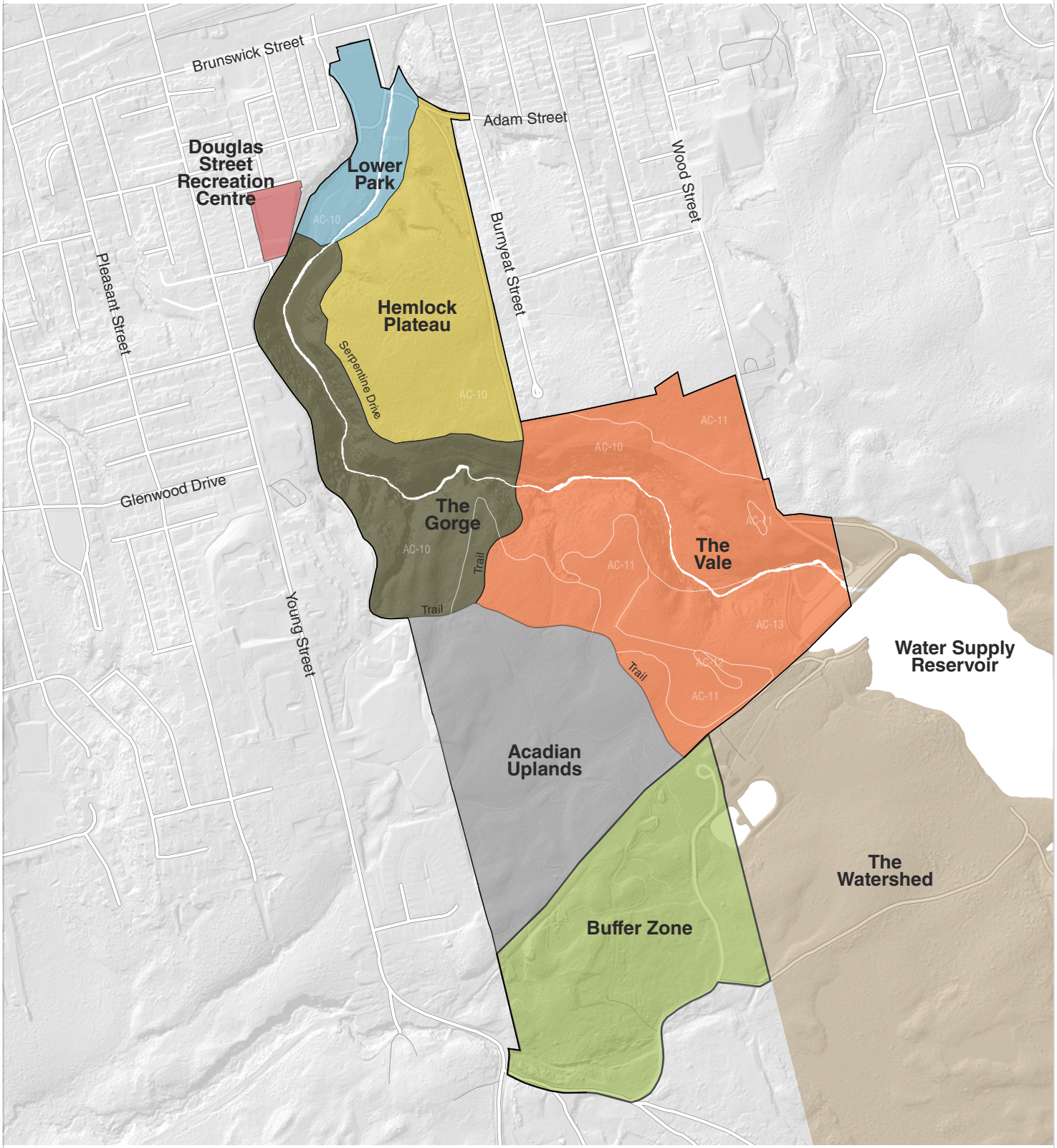
Provide appropriate strategies to share and celebrate the hidden treasure of Victoria Park with the region.

Continuity

Victoria Park has a unique and enduring character that has been thoroughly enjoyed by locals for an impressive variety of uses and activity and is a pleasant surprise for visitors.

Keep the Park's intrinsic character intact.

3.2 Land Use Management Plan



Victoria Park
Land Use Zoning Map

- Lower Park
- The Gorge
- Hemlock Plateau
- Acadian Uplands
- The Vale

Future Land Use Zones:

- Douglas St. Rec Centre
- The Watershed
- Buffer Zone

Data source:
Town of Truro & Colchester County

0 100 500 m

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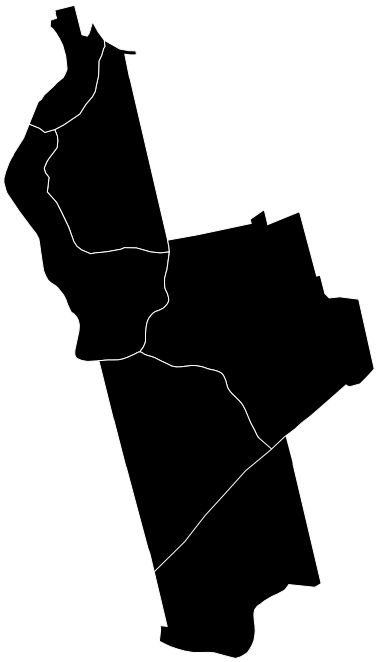
3.2.1 Park-Wide Policies



Victoria Park is composed of a number of landscapes from the open Lower Park area through the Gorge to the Uplands. Each of these areas has a different look and feel, have unique values, and attracts different uses. Consequently, each area also has unique management requirements. Therefore, for land use management purposes, the park has been divided into different zones reflecting the location, the landscape and existing and potential uses, and the psychological presence (i.e. meaning in people's minds) of the zones.

These zones are for land use management purposes; zones and policies for ecological management are provided in Section 3.3. The land use management approaches for the zones are on a continuum from highly managed to lesser managed in the following order:

- generally, the Lower Park is a highly managed area focusing on organized recreational activities;
- the Gorge is also a managed area, but within the context of a unique natural area that has the ability to support a moderately intensive level of passive recreational activities;
- the Hemlock Plateau is a slightly less managed area that supports a fairly intensive level of passive recreational activities; and
- the Vale and the Acadian Uplands are left in a more natural state with a focus on lower density passive recreational activities.

While general policies that apply to the whole park are described below, specific policies related to the physical infrastructure and appropriate uses for individual zones are described in the following subsections.

Policies:

Managing Land Use:
Based on their location, characteristics and levels of management, different zones can support different types and intensities of use. Installation of infrastructure and ongoing management practices for each zone should be in keeping with the characteristic of the zone. For example, the development of elaborate infrastructure is more appropriate in the Lower Park, as opposed to The Vale, in which the dominant natural landscape is susceptible to environmental degradation through erosion. The permitted uses and policies in each zone reflect this principle. In general, the Park managers and the proposed Friends of Victoria Park public liaison group should work with park users and visitors to ensure they understand and adhere park policies such as on and off-leash areas for dog walkers and staying on the designated trails for cyclists and joggers.

Aesthetics:
People love the park because it is a beautiful place. Therefore, any features that are installed in the park should enhance the aesthetics of their location. Guidelines for the look and feel of the features and furniture are provided in

the zoning descriptions. Generally, features should transition from a Victorian vernacular in the Lower Park to a more rustic nature in the upper areas of the park like the Vale or Acadian Uplands.

Universal Accessibility:
The principle of universal accessibility is based on the concept of creating an obstacle-free environment for everyone, regardless of their physical capability. While this approach considers the needs of people living with impairments, its full purpose is to create an environment accessible to everyone regardless of age and ability. As noted in the previous section on Core Park Values, while it may not be possible for all users to access all parts of the Park, it is essential that visitors be able to safely enjoy the Park. Future development and maintenance of the Park should provide ease of navigation and rational access for park users of all ages and abilities.

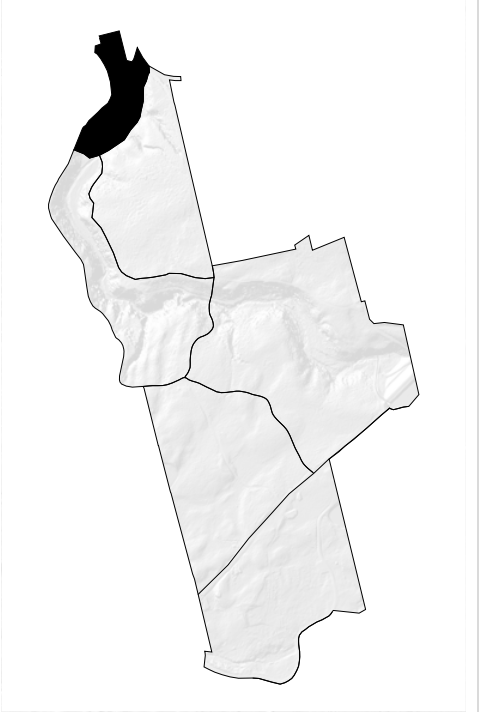
Safety measures (including CPTED principles):
Crime Prevention Through Environmental Design (CPTED) does not inherently stop crime from occurring, but creates an environment that will discourage vandalism and other criminal activity. This includes providing unobstructed views of potential crime hotspots such as parking areas and creating a sense of recurrent activity in key areas. The idea is that the likelihood of offenses occurring decreases if the chance of being caught in a criminal act is increased. Lighting will be provided in appropriate parts of the park and signs will be posted indicating that interior / wilderness portions of the park are not lit.

Park administration should continue to work with the police and fire department to develop emergency preparedness plans. However, it should be recognized that the park is predominantly a natural area including some back-country wilderness, and that the provision of full access for emergency vehicles such as fire trucks and ambulances throughout the entirety of the Park is not appropriate. If it is felt necessary for liability purposes, a message could be integrated with trailhead signs indicating that the park contains remote areas where fire and ambulances services are not available and that people should consider this issue before entering these areas.

Protection and Restoration of Cultural and Historic Park Features:
The Town recently conducted a study of the cultural resources of Victoria Park (Vineberg and Fulton, 2013). Among the findings of this report was the reality that many of these resources are slowly eroding or have already disappeared altogether. All historic features must be properly maintained and protected. Whenever possible, features that have disappeared from the Park should be restored. More prescriptive policies are outlined in the following land use management zones.

3.2.2 Lower Park – Intensive Active and Passive Recreation Zone

Approximate Area: 8.7 Hectares



Intent

This zone serves as the primary entrance into the park and is an area of intensive use. As the primary arrival point for the Park, the area should look like an entrance. It should have clearly delineated circulation for motorists, cyclists, and pedestrians. It should introduce visitors to other zones and features within the Park and provide clear direction on how to get to those locations. It should provide a positive experience of transitioning between the developed portions of the Town and the more natural parts of the Park. In setting the tone for the visitors' Park experience, and supporting the overall theme, all furniture and elements should have a Victorian look and feel.

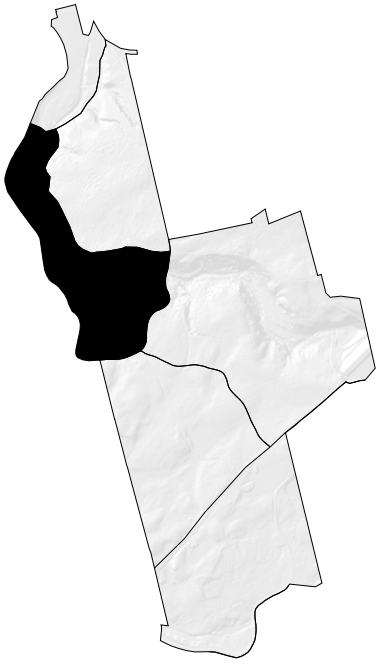
As an area of concentrated use, it is appropriate for the Lower Park to be highly manicured and intensively programmed. Buildings and hard landscape elements can dominate the experience of users and it is appropriate to have hard materials such as railings, paved paths, mowed grass, non-native plant species, a variety of buildings, parking, etc.

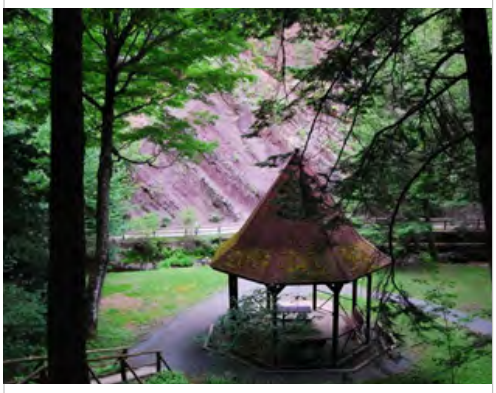
Permitted Uses

- Passive and active recreational activities, such as tennis, swimming, baseball, lawn sports, cross-country skiing, hiking, walking and other non-obstructive activities;
- Cyclists are to use Serpentine and Old Flemming Road Trails to gain access into other areas of the Park where mountain biking and general cycling are permitted;
- Park events and festivals around the band shell area;
- Picnicking, barbecuing and outdoor dining;
- Interpretive uses and services;
- Snacks and confectionery at the Canteen; and
- Parking.

Policies

- The zone should focus on access and active pedestrian uses;
- The zone should be completely universally accessible;
- Major paths within the zone should be paved. Minor paths can be crusher dust;
- All site furniture should be consistent in appearance, have a Victorian look and feel, and should be a prominent feature of the area;
- Landscape elements should be situated and designed by a professional landscape architect;
- If there is a desire to provide additional large structures in the Park, they should be located in this zone. Memorials, monuments and other remembrance features may be placed in this zone;
- The area should be well-lit and conform to CPTED principles;
- This zone should contain prominent signage directing people to other features of the site;
- Clearly delineated paths directing cyclists and higher-speed trail users to upper portions of the park should be provided to separate these users from leisure-oriented users, small children and seniors; and
- Dogs must be kept on a leash. This should be clearly signed as an on-leash area and maps should indicate this information.





3.2.3 The Gorge - Intensive Passive Recreation and Cultural Heritage Zone

Approximate Area: 22.8 Hectares

Intent

This zone is an intensively used area that provides access to the most spectacular cultural and natural features of the Park.

As an area that allows people to access the natural beauty of the park, the "natural" forested landscape is balanced by the insertion of manicured elements like pathways, railings, benches, follies, etc. that provide a somewhat "scripted" experience of the Park.

As an intensively used area, it is appropriate to have hard materials such as paved paths and railings to handle heavy use and limit impacts on the natural portions of the area. The path isn't universally accessible and will likely never be with the paved portion ending at the foot of Jacobs' Ladder. The only potential route for persons in a wheelchair to see the falls is via the asphalt road that runs parallel to the Brook on the ridge above. Even then, the construction of an observation deck and selective clearing of vegetation will be required to provide a clear view of the Falls. As a transition between the highly manicured Lower Park and the natural Upper Park areas, Victorian Era furniture and landscape elements are appropriate.

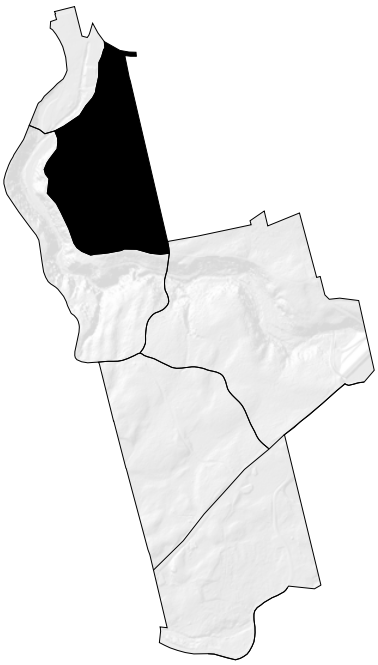
Permitted Uses

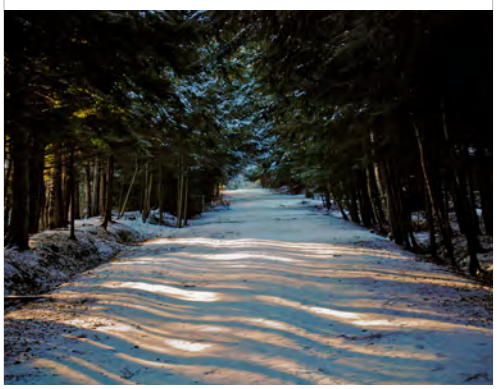
- Passive recreational activities, such as hiking, walking and, where possible, cross-country skiing and snowshoeing;
- Sightseeing, photography and other artistic activity;
- Interpretive uses and services, including guided tours; and
- Picnicking in designated picnic areas only (ie; gazebos, benches, shelters, etc.).

Policies

- Area should be pedestrian dominated with slow speed limits for bikes;
- The transition from the Lower Park area should be clean and free of inappropriate buildings, overhead electrical and communication wires and other urban intrusions;
- No new buildings are permitted in this zone unless they replace existing historic buildings and are consistent with the original in terms of style, scale and materials used;
- Historic and cultural resources that have disappeared from the Gorge should be eventually replaced as opportunities to do so arise. Such resources include the following, as outlined in the Victoria Park Cultural Resources Study (Vineberg and Fulton, 2013):
  - The Irresistible Engagement Seat - This engagement seat was built in the late 1880s and was located along the western side of Lepper Brook in an isolated and secluded area overlooking the old Picnic Dell. According to legend, when a woman sat on the seat she could not say no to a "sufficiently persistent man" that was proposing marriage. A rebuilt seat would "restore the charm of the site, provide an amusing attraction for tourists, and create a romantic destination

for courting couples" (2013).
    - The Leap Year Engagement Seat - This was another engagement seat (also built in the late 1880s) located on the edge of Gorge leading up to the Wishing Well. It was built out of a fallen hemlock and, according to legend, had the opposite effect of the Irresistible Engagement Seat (when a man sat on the seat he could not say no to a "modest, self-respecting woman"). A new seat could be created out of the next sizable hemlock that may fall naturally over the next decade or so.
    - The Rejuvenating Pew - This prominent feature was a seat constructed in the late 1800s at the base of the Joe Howe Falls. The Pew was rebuilt several times, most recently in the late 1950s, until it disappeared from the Park altogether. "Replicating the Rejuvenating Pew would restore the historic appearance of the site, preserve the Victorian interpretation and charm of the sire, strengthen the Park's link with Joseph Howe, and provide an attraction for tourists" (2013).
- Paths should be surfaced with a minimum of crusher dust and have railings as appropriate that are consistent with historic-style railings that exist elsewhere;
- Reinstate historic names and titles for culturally important areas within the Gorge, such as Nymph's Grotto, Natura Regina, Der Teufels Kanzel.
- Boardwalks and stairways are appropriate, as long as they are designed to be in keeping with existing similar features;
- Any required maintenance or replacements of historic stairs and railings must be reproduced using similar materials and techniques;
- No additional non-native species should be planted in the area and as the non-native plants die, they should only be replaced with native species;
- No parking should be permitted; and
- Dogs must be kept on a leash. It is important that on-leash and off-leash areas be clearly signed in the park and indicated on any maps of the park.





3.2.4 Hemlock Plateau – Passive Recreation Transition Zone

Approximate Area: 23.6 Hectares

Intent

As a complementary zone adjacent to the Gorge and the Lower Park the area provides a transition from the urban edge of the park. The focus of this zone is on passive recreation such as strolling and leisurely cycling.

In the zone, it should feel as if the "natural" forested landscape dominates and hard landscape elements are subservient.

A mix of asphalt and stone-dust (or crusher run) trail surfaces is suitable. Railings are appropriate in required areas but should not be a continuous feature.

Permitted Uses

- Passive recreational activities, such as hiking, walking, running, biking, and, where possible, cross-country skiing; and
- Interpretive uses and services, including guided tours.

Policies

- Pedestrians should have the right of way on trails in this zone. While cyclists can use the paths, they should travel at a leisurely pace. Higher speed and off road cyclists should be directed to the Acadian Uplands;
- No buildings should be constructed in the zone;
- Benches and site furniture in the zone should be rustic;
- Paths in the area should be stone-dust (crusher run) defined paths apart from currently paved routes such as Old Flemming Road Trail;
- Any required maintenance or replacements of historic stairs and railings must use similar materials and techniques;
- No non-native tree or shrub species should be planted; and
- Dogs must be kept on-leash. This should be clearly signed as an on-leash area and maps should indicate this information.

3.2.5 The Vale – Pedestrian-Focused Wildland Recreation Zone

Approximate Area: 44.7 Hectares

Intent

In this more remote zone of the park, the "natural" forested landscape should dominate and very limited hard landscape elements should be provided.

The focus of the zone is on longer more intensive walking and recreational cycling, jogging, etc.

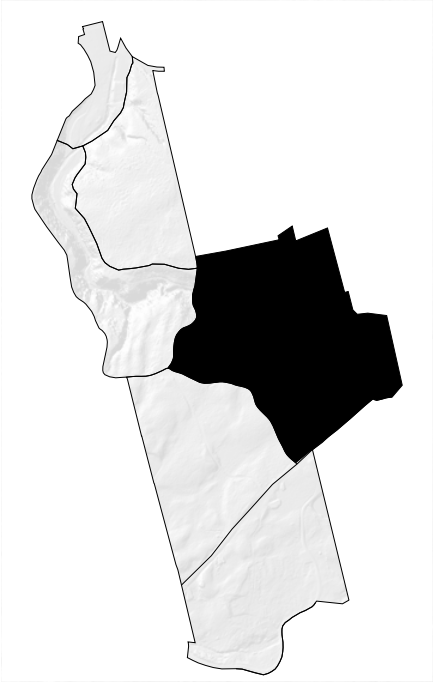
The trail network should be comprised primarily of stone-dust and gravel paths with railings limited to areas where absolutely necessary. Only Rustic site furniture should be provided but in limited quantities.

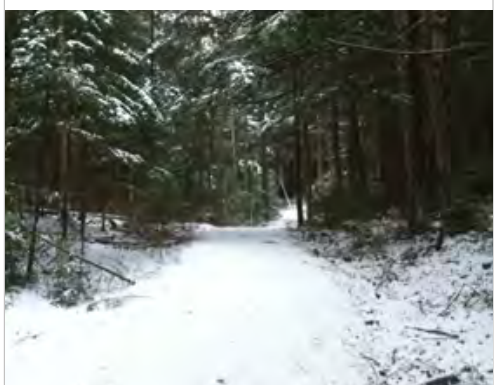
Permitted Uses

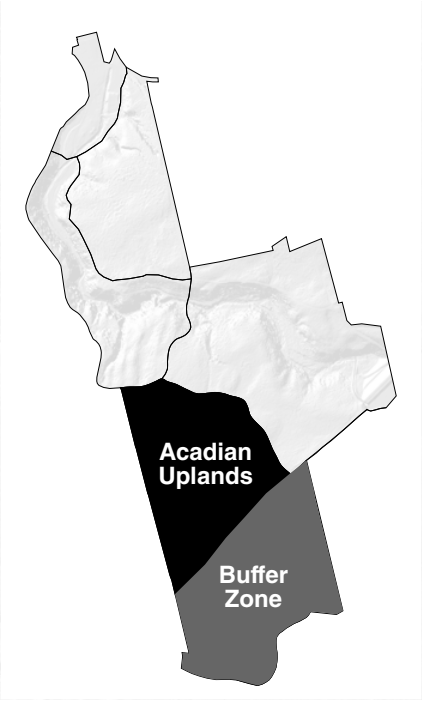
- Passive recreational activities, such as hiking, walking, biking and, where possible, cross-country skiing; and
- Interpretive uses and services, including guided tours.

Policies

- Higher speed uses are appropriate in the area and pedestrians should give right of way to other users like cyclists and runners;
- Trails in the area should be stone-dust (or crusher run) defined paths.
- Benches and site furniture in the zone should be rustic;
- No non-native planting should be installed;
- No buildings should be erected in the zone;
- Any required maintenance or replacements of historic stairs and railings must use similar materials and techniques;
- Dogs must be kept on-leash; this should be clearly signed as an on-leash area and maps should indicate this information.; and
- Parking should only be provided in the existing lot on Wood Street or roadside on Wood Street. No additional parking lots should be provided.







3.2.6 Acadian Uplands –Active Wildland Recreation Zone and Buffer Zone

Approximate Area: Acadian Uplands - 30.1 Hectares; Buffer Zone - 30.2 Hectares

Intent

While The Acadia Uplands Zone is located within the Park and the Buffer Zone is outside the park boundary, the intent and permitted uses of the two areas are the same.

This zone is appropriate for more consumptive uses where the landscape will experience some "wear and tear". However, there are some ecologically sensitive wetland areas in this zone which park roads and trails should avoid.

Higher speed active recreational uses such as single track mountain biking are appropriate in this zone. These intensive types of uses will dominate with pedestrians giving right of way to other users.

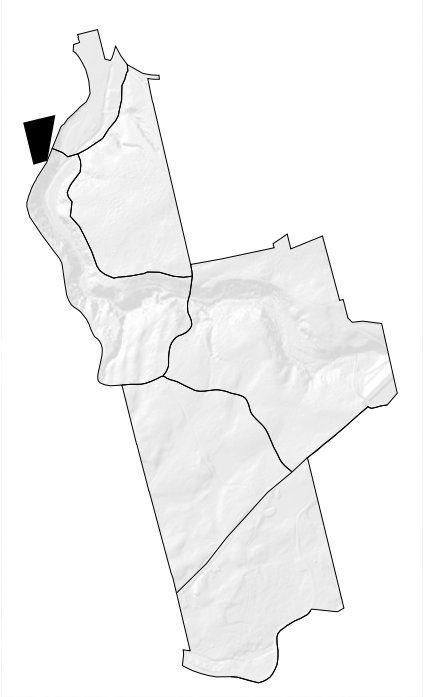
Permitted Uses

- Mountain biking infrastructure and services;
- Passive recreational activities, such as hiking, walking, biking, and, where possible, cross-country skiing and snowshoeing;
- Interpretive uses and services, including guided tours; and
- Municipal infrastructure facilities (ie; water treatment plant and dam infrastructure).

Policies

- It is appropriate for some users (like mountain bikers) in discussion with the Parks, Recreation and Culture Department to alter the area to suit their desired uses. However, impacts should be monitored to ensure the uses in this area do not have significant negative impacts;
- Cleared areas should be re-forested;
- No non-native species should be planted;
- Paths should be unpaved natural soils or gravel with the possible use of wooden boardwalks for particularly sensitive wetland areas
- No site furniture should be provided;
- Dogs may be allowed off-leash in this area, however, it is important that on-leash and off-leash areas be clearly signed in the park and indicated on any maps of the park;
- Railings should only be installed if absolutely necessary;
- The parking area at the William Barnhill Entrance should be formalized and weekend use of the Truro Junior High parking lot should continue and be allowed; and
- No additional parking areas should be provided.

3.2.7 Future: Douglas Street Recreation Centre – Town of Truro Recreation Administration



Intent

The Douglas Street Recreation Centre, adjacent to the Lower Park zone, is a natural extension of the Park. With a large gymnasium, boardroom, and meeting rooms of various sizes, the site provides an excellent opportunity to extend the recreational activities provided by the Park and strengthen the relationship between the two sites. The Town of Truro's Department of Parks, Recreation and Culture have been utilizing the centre for its offices, while also offering facility rentals to different community groups and organizations. The Centre also offers cross-country skis and snowshoes on loan. The Douglas Street Recreation Centre should be integrated into the Park so that the two facilities can continue to build on each other's complimentary uses and activities and thrive on the synergy generated by each other.

Permitted Uses

The existing uses that occur in the building and on the site should continue. A wide variety of uses and activities are permitted at the Douglas Street Recreation Center including:

- Fitness classes, including yoga, meditation, Zumba, 55+ women's classes;
- Meeting spaces for church groups, community groups, clubs, and local artists;
- Dance lessons, music classes, and concerts;
- Outdoor education with focus on the park; and
- Equipment loans.

Policies

- The zone should be naturalized;
- The Recreation Centre and connecting area should look like an entrance and contain signage and wayfinding material directing people to the Lower Park;
- The Parks connection to the Recreation Center should be reinforced to provide improved access to the Lower Park;
- The connecting area should be well-lit and incorporate CPTED principles;
- Additional development of buildings in the area is acceptable;
- Any changes must be ecologically sensitive and should improve conditions in the existing park by limiting stormwater and pollutant flows;
- The zone could take on development that would otherwise occur within the existing park to reduce development pressure;
- The area could be a demonstration site for environmentally sensitive landscaping techniques; and
- Recreational programming could be coordinated with the Centre so that participants can benefits from outdoor recreation offered by the Park.

3.2.8 Future Zone: The Watershed – Source Water Protection and Wildland Recreation Zone

Intent

The area to the east of Victoria Park is Town-owned land on which the Town's source water reservoir is located. Given the necessity of maintaining the area in a relatively undisturbed, pristine state, the watershed lands provide an excellent opportunity to extend the open space activities provided by the Park. The Town's Parks, Recreation and Culture Department and Public Works Department have done an excellent job of coordinating efforts to allow the development of a shared use trail in the watershed area.

In order to better position the Park as a major asset within the Town and as a feature to promote the Town to visitors, it is recommended that the watershed area be added to the Park. Having an open space of this size is an impressive achievement for a community of Truro's size and this information could be used to attract more visitors to the Town.

Town-owned land to be included in the proposed zone is shown on the map to the right. It is understood that the Town has a policy of acquiring privately held land in the watershed as it becomes available. It is recommended that lands west of Harmony Road be included in the Watershed Zone as obtained.

The addition of the watershed to the park would essentially create another zone in which protection of the reservoir's water quality is the primary concern and recreational activities that do not negatively affect this management and operational priority are welcome. The Director of Public Works will continue to be the senior staff person with responsibility for managing the lands within this zone. Compatible recreation uses in this zone are considered positive uses, allowing "eyes and ears" in the area to assist in maintaining and monitoring a healthy environment.

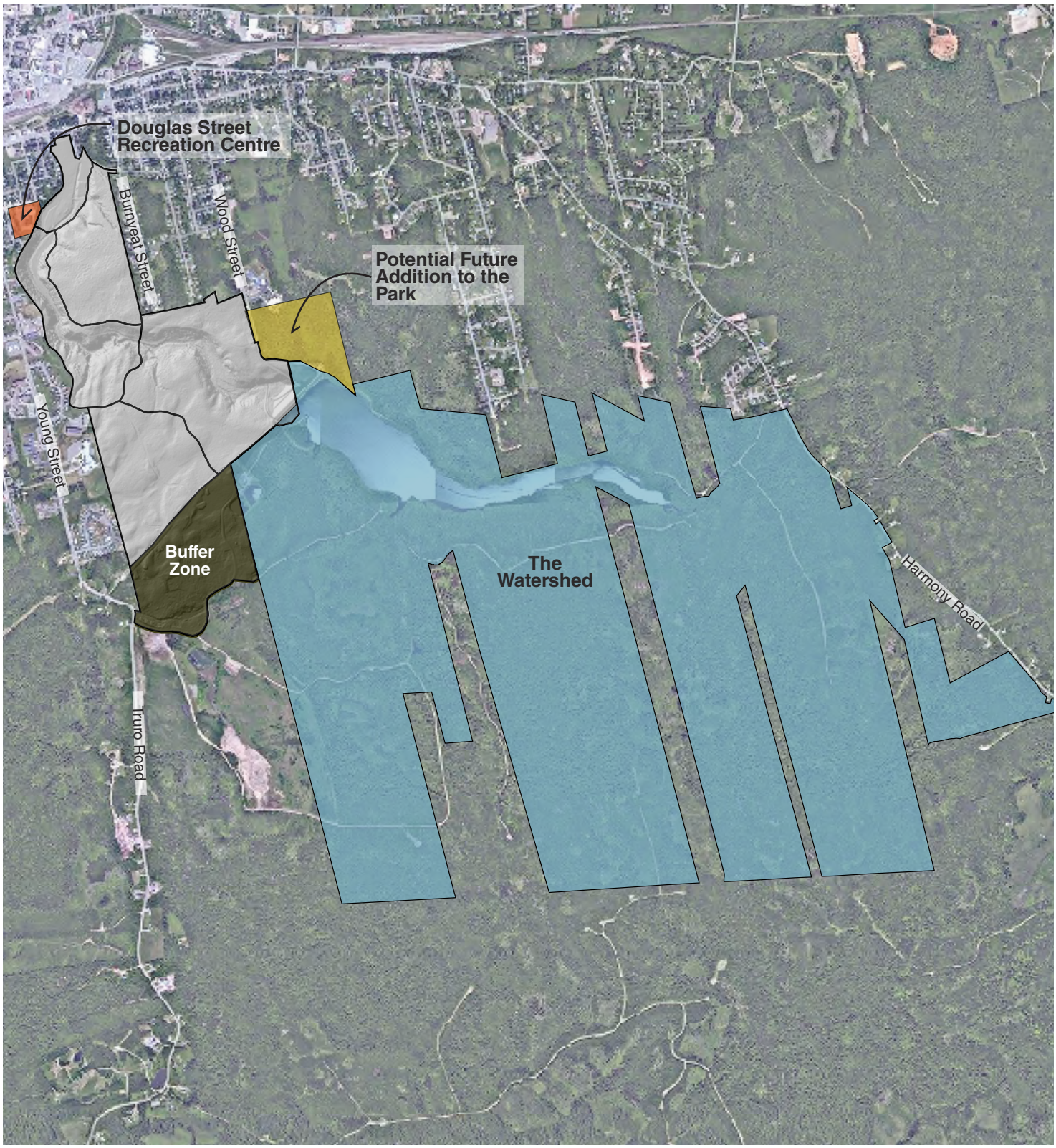
Permitted Uses

- Passive recreational activities, such as hiking, walking, cross-country skiing and snowshoeing;
- Off-road cycling is limited to designated trails located well away from the water shed; and
- Sightseeing, photography and other artistic activity.
- On-leash and poop-and-scoop dog walking area. Signs should be posted indicating that this is a water supply area for the Town and emphasizing the importance of the poop-and-scoop policy and that pets should not be allowed to swim in the water.

Policies

- Biking should only be allowed on designated trails as agreed with the Manager of the watershed area;
- The Town-owned land that the proposed zone is situated on extends beyond the area needing protection. Therefore, an official boundary for the southern portion of the zone will need to be determined; and
- The Source Water Protection and Passive Recreation Zone will require an ecosite management zone analysis (similar to the analysis undertaken for zones within the existing park) to enable appropriate ecological management.

3.2.8 Park Expansion



Victoria Park
Opportunities for Expansion

- Existing Park Zones
- The Watershed
- Buffer Zone
- Potential Addition to the Park
- Douglas Street Recreation Centre

Data source:
Town of Truro & Colchester County

0 250 1000 m

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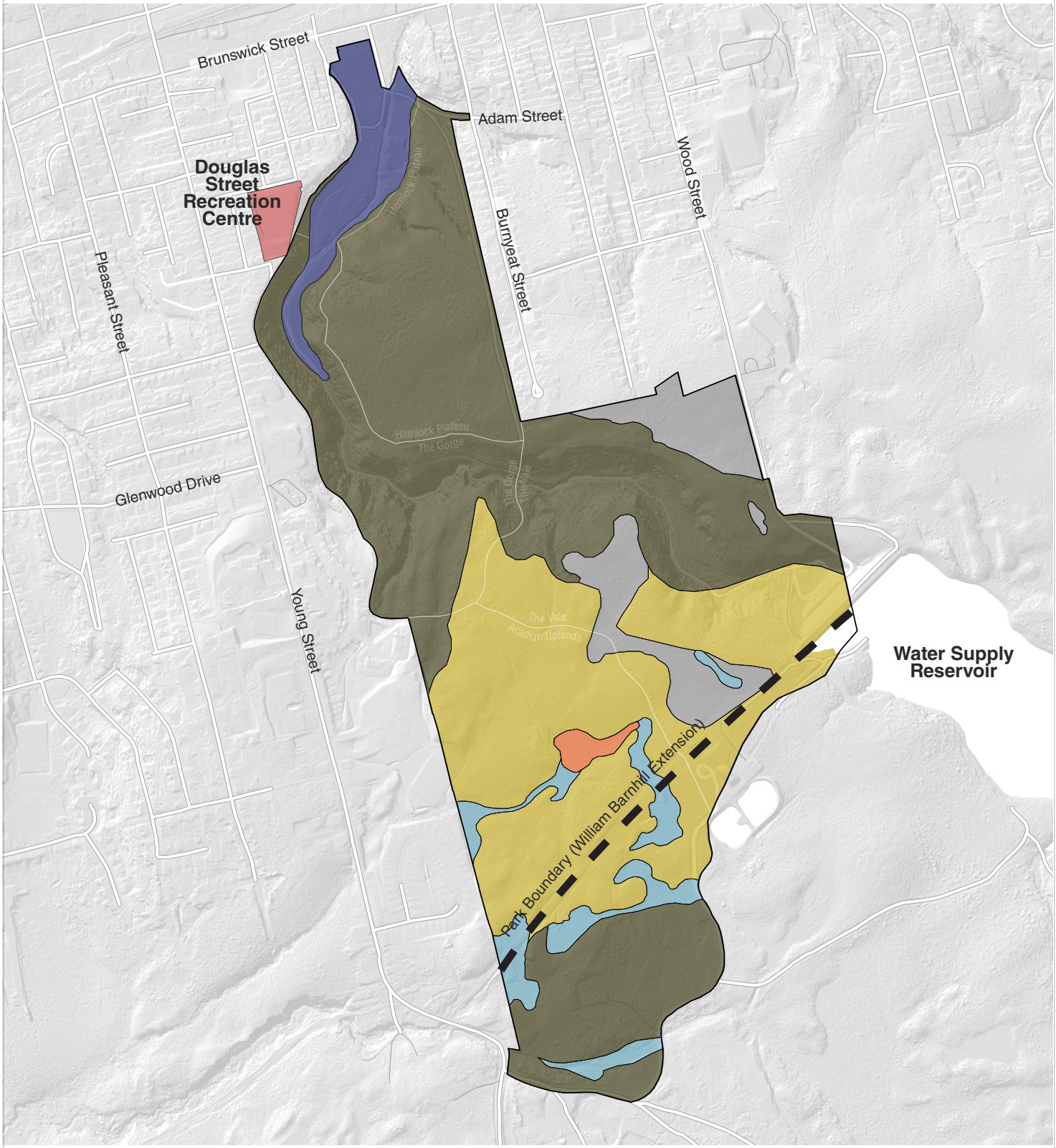
3.3 Environmental Resource Management Plan



Victoria Park
Environmental Resource Ecosite Management Units Map

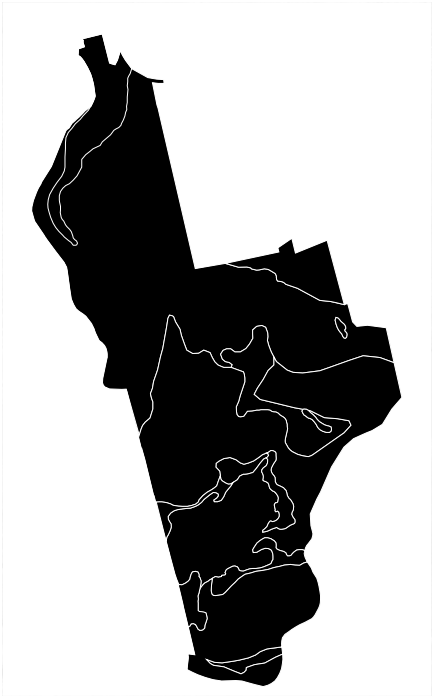
Legend:

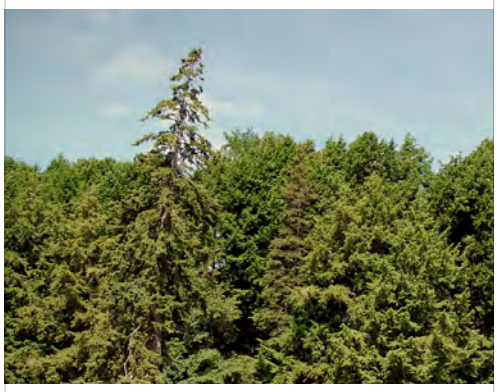
- **AC-08** Wet – Poor / Spruce – Fir – Red Maple
- **AC-10** Fresh – Medium / Red Spruce – Hemlock
- **AC-11** Moist – Medium / Red Spruce – Yellow Birch
- **AC-12** Wet – Medium / Red Maple – White Ash – Fir
- **AC-13** Fresh – Rich / Sugar Maple – Beech
- **Lepper Brook Floodplain**

Data source: Town of Truro & Colchester County

0 100 500 m

N





3.3.1 Park-Wide Ecological Sensitivities & Policies

Ecological integrity is defined by Parks Canada as "…. a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes."

The focus of this study was to determine the ecological integrity of Victoria Park and to develop an ecosite map based on like characteristics (i.e. drainage, topography, nutrient availability, successional patterns, and soils) in order to provide baseline management recommendations for site specific areas. Forest types and soils surveyed in the field were able to provide important information regarding the capabilities and key ecological characteristics of the landscape, successional patterns, and areas that could be sensitive to impacts. Issues regarding ecological integrity became evident during the field program which included the lack of coarse woody material, the degradation of riparian buffers, impacts to wetlands by trails and roads, and erosion. In conjunction with this study, a botanical survey developed and implemented by Dr. Nick Hill was also completed for Victoria Park (Hill, 2014).

Dr. Hill was able to provide vital information regarding invasive species, rare or uncommon species and additional details regarding impacts to wetlands within the park. Both field programs came to similar conclusions regarding ecological issues.

The following environmental resource management area framework and policy recommendations were primarily derived from the Nova Scotia Department of Natural Resources (NSDNR) Forest Ecosystem Classification for Nova Scotia (2010) manual. This comprehensive manual provides keys and detailed descriptions of vegetation types, soil types, and associated ecosites. This manual is a fundamental ecological planning tool that is integral in the ecosystem centred, Integrated Resource Management strategy for the province of Nova Scotia (Stewart, Unknown).

"Integrated Resource Management (IRM) planning promotes synergy between the management of multiple values, and encourages the modification of forestry practises for use as efficient tools to meet other management objectives (e.g. conservation, habitat)". – Nova Scotia Department of Natural Resources

NSDNR's framework is developed for landscape level analysis and planning but also provides ecological information at the stand level which allows users to make development site specific recommendations. This foundational knowledge is an essential component to sustainable and ecologically based management (Neily, 2010). The vegetation type descriptions highlight species dominance, successional characteristics and dynamics (how the forest type will develop as it ages or after a disturbance), important ecological features, disturbance regimes, and common soil conditions. The soil type descriptions highlight textures, drainage patterns,

nutrient availability, associated forest types, and risks regarding erosion, rutting, compaction, and frost heave. The ecosite descriptions are based on groups of vegetation and soil types and provide important information regarding moisture and nutrient regimes, distinctive climax forest communities, and disturbance and succession patterns. There are 28 ecosites identified in the province of Nova Scotia; 17 are in the Acadian group (AC-#) and 11 in the Maritime Boreal group (MB-#) (Neily, 2010). This report uses the same coding structure to allow park manager's to refer to the NSDNR document for additional information and to utilize similar language that is widely accepted in the province of Nova Scotia.

Riparian Zones: Lepper Brook and Unnamed Tributaries

The importance of maintaining the integrity of watercourses and riparian buffer zones throughout the landscape is critical for the maintenance of clean drinking water, flood and erosion protection, groundwater recharge, wildlife habitat, and recreational activities. Opportunities exist in the Park to restore the quality and function of Lepper Brook, and also to provide public education on the significance of restoration.



Current and Potential Issues:

- Areas with minimal or no riparian buffers and landscaping
  - There are a number of areas throughout the park where watercourses are minimally protected by vegetated buffers. Vegetated buffers not only guard against pollutants and excessive nutrient entering the watercourse; they also provide structural stabilization to riparian zones, effectively decreasing the risk of erosion and sedimentation into the watercourse. A riparian buffer also regulates the water temperature during summer days. In the absence of vegetated buffers, watercourses become more susceptible to these pressures.
  - Downed woody vegetation from the riparian zone is of great importance to fish and water-based mammals. Fallen woody material such as branches and logs can create cool, shaded areas for fish species to hide from predators. These can also provide sources of turbulence, which in turn both oxygenates the water and creates pockets for fish to rest within moving water. Downed vegetation also provides nutrients to the stream, stabilizes watercourse edges from erosion, and provides perches for amphibians.

- Impervious surfaces and storm water runoff
  - With the increase of impervious surfaces, water absorption into the ground is restricted. During rainfall events, water flows rapidly across these surfaces, potentially carrying pollutants (i.e. gasoline, oil) or sediment directly into the adjacent water bodies. The expedited flow of surface water across impervious surfaces can also increase the potential for bank erosion; especially water that is discharging at a high velocity from a point-source. These events can be detrimental to the habitat suitability for fish, invertebrates, and amphibians.
  - Runoff from impervious surfaces, such as the adjacent parking lot near the pool, can increase watercourse temperature, a parameter that influences the presence of some fish species (e.g., brook trout). Run-off from surrounding communities and roads may potentially contain road salt, fertilizers, pesticides and organic waste. These are often driven into waterways, causing undesirable shifts in water parameters. Certain fish species are especially sensitive to shifts in pH, temperature, and dissolved oxygen (EPA, 2014).

- Stream Alterations
  - Straightened channels and re-enforced walls constructed from concrete or stone are observable along Lepper

brook near Jacob's ladder and continuing north to the main entrance of the park. Any alterations that include straightening, shortening, diverting, widening or narrowing of a natural channel can inadvertently cause in-stream velocity to increase, reduce the ability to absorb flood damage, increase the risk of erosion of the stream bed and banks, increase the risk of downstream flooding, and decrease habitat suitability for existing flora and fauna communities (US EPA, 2005). Re-establishing natural stream features (i.e. riffles, pools) can alleviate these risks.

Mitigation Measures:

- Establish buffer zones around all watercourses and drainage corridors within Victoria Park. Under the Wildlife Habitat and Watercourse Protection Regulations for Nova Scotia (Section 40 of the Forests Act), a minimum buffer of 20 m is established. With a watercourse adjacent to steep slopes greater than 20%, an additional 1 m per 2% slope increase is added (to a maximum of 60 m).
- Where possible, re-establish a buffer by planting native shrubs and trees. Select native species that are suited to the local climate, can provide habitat to wildlife, and will increase bank stability.
- When building new trails, roads, or parking lots within the riparian zone use materials such as crusher dust, gravels, pervious pavement or permeable pavers to allow water to penetrate the ground, thereby filtering any pollutants prior to entering the groundwater.
- Reduce or eliminate the use of fertilizers or pesticides within the park, and be conscious of weather conditions (rain events) in the time surrounding the application of these products.
- Reshape stream channels or create natural features (i.e. pools, riffles, meanders) using digger logs and rock deflectors in altered areas of the watercourse. A digger log recreates the effects of a natural fallen tree lying in the stream. It creates fast flowing water up-steam, and slow moving, deep pools downstream. A series of deflectors will creating a more sinuous or meandering flow pattern. These features can improve fish habitat and alleviate erosion issues. (Clean Nova Scotia, 2013)
- Community Involvement: Perform a baseline fish habitat and water quality survey using an accepted methodology prior to any restoration projects; then, for 3-5 consecutive years, use the same methodologies to monitor for any changes (Lewis, 2009). Lepper brook is also impacted by development outside the park as it flows to Salmon River. It would be pertinent to collect data through this section to compare the upstream conditions to the downstream conditions. There's a collaborative opportunity between the town and the community to make improvements to Lepper Brook and other watercourses in the town as well as provide an educational environment regarding the importance of clean water.

Steep Slopes and Fine Soils

Victoria Park has a number of areas with slopes in excess of 50%, mostly along Lepper brook. Areas become progressively more susceptible to erosion with slopes in excess of 10% and these problematic areas are only compounded by the fine textured soil that is found in most of Victoria Park. Fine textured soils are more easily displaced by raindrops and runoff. Steep slopes are faced with a higher rate of runoff which can be particularly noticeable after high intensity rainstorm. The erosion process can be exacerbated if there is minimal to no organic matter, disturbed or exposed soil, compaction (low permeability of water), or minimal to no vegetation present (Ritter, 2012).

Current and Potential Issues:

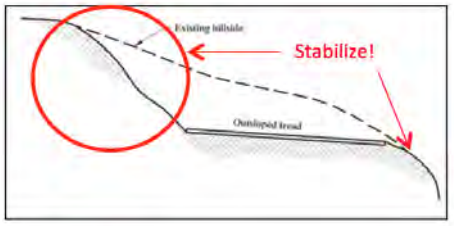
- Cutting and Removal of Vegetation
  - The tree, shrub, and ground vegetation layers are important elements in areas with steep slopes and fine soils. The rooting structures provide structure to the soil (restrains soil movements), the layers of foliage help to reduce the force of raindrops striking the forest floor, roots and woody debris make the soil more permeable to water, and the vegetation will help moderate soil saturation through evapotranspiration. These functions will reduce the speed of which water flows along the surface and decrease the risk of erosion (Kamber, 1990).

- Dead woody material improves soil structure and stability. Soil with more organic material (humus) has an increased ability to hold water which serves to decrease the amount of surface water runoff and erosion. Downed logs and branches are also a source of friction for water moving downstream, thereby decreasing the velocity and decreasing the risk of erosion.

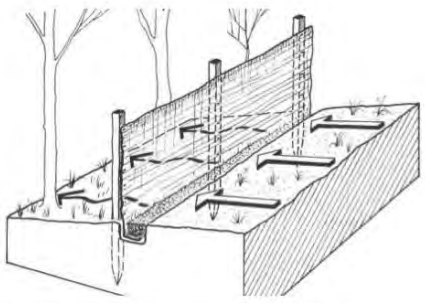
- Erosion and Compaction
  - Steep slopes equate to a higher rate of water velocity moving downhill. Water doesn't have the same opportunities to infiltrate the soil on a hill slope as it does on flat surface. The infiltration rate can further decrease if the storage capacity for the soil is maxed out, or if there has been a particularly long dry spell. If there are locations where there is minimal vegetation, compacted surfaces, disturbed soils, or funneled stormwater (i.e. culverts), the risk of erosion will increase.
  - Trails, and along the sides of trails and stair-steps will see the most traffic and be the most compacted. Switchbacks trails are often designed to ease a biker's or hiker's travels up steeper slopes, but they often lure people to create shortcuts between the parallel trails. Excessive use of these shortcuts can damage current vegetation, and increase compaction. Hard compacted soils will not be permeable to water, and will increase the rate of runoff. It is important to minimize these areas, especially along steep slopes. It is very important that Park management and the proposed Friends of Victoria Park public liaison group work closely with cyclists and runners to encourage them to stay on designated trails to avoid exposing additional areas to potential compaction and erosion.
- Rain Events
  - Most of the soils found along areas of steep slopes have a moderate risk for compaction, and high risk for erosion on steep slopes (>10%) based on NSDNR's Soil Type information. After a significant rain event, these areas would shift to an even more elevated risk level (i.e., high to very high).

Mitigation Measures:

- Do not remove vegetation along slopes that are greater than 10% and leave all downed woody material on the forest floor to assist in soil stability and reduce runoff velocity.
- Maintain vegetation along the edges of trails. If there are areas along trails with thick shrubs or dense branches and the park wants to improve the viewshed or aesthetics, limb vegetation opposed to full stem removal.
- Minimize new construction of trails in areas that have steep slopes. When constructing new infrastructure that requires cutting and filling, reduce the amount of disturbed soil. Stabilize disturbed soil immediately by seeding planting, applying mulch, building retaining walls, applying geotextile materials especially prior to rain events.
- When constructing new trail networks, minimize the use of switchbacks. Install railings along the edge of the trail inhibit people from creating shortcuts along switchbacks.
- Assess trails annually, especially trails that intersect with areas with ecological sensitivities to ensure there are no issues with erosion in Lepper brook near Jacob's ladder and continuing north to the main entrance of the park. Any alterations that include straightening, shortening, diverting, widening or narrowing of a natural channel can inadvertently cause in-stream velocity to increase, reduce the ability to absorb flood damage, increase the risk of erosion of the stream bed and banks, increase the risk of downstream flooding, and decrease habitat suitability for existing flora and fauna communities (US EPA, 2005). Re-establishing natural stream features (i.e. riffles, pools) can alleviate these risks.



Hesselbarth, 2007



(Illustration from Maine Forest Service)

Wetlands and Drainage Corridors

The topography becomes progressively less dramatic south of Lepper Brook with pockets of tree and shrub wetlands becoming evident. Wetlands are defined as an area that is saturated or inundated with water for a minimum two week consecutive period during the growing season that creates conditions favourable to hydrophytic vegetation, and hydric soil development. Wetlands perform many important functions that are not only beneficial to humans, but for a number of different ecosystems. Flood control, runoff and erosion reduction, filtration of organic waste, bacteria, and excess nutrients from surface water, carbon sequestration, and habitat provisions for flora and fauna are a few of the key functions of a wetland. Wetland loss or degradation is a loss in the ability to perform these functions and a loss in biodiversity. The wetland policy for Nova Scotia has four key objectives; manage human activities in or near wetlands and ensure no net loss in area, promote wetland preservation and public awareness of the importance of wetland functions, promote long-term net gain of wetland types that have been subject to historical loss, and to encourage the use of buffers to maintain the integrity of these ecosystems (NSE, 2011).

Current and Potential Issues:

- Impacts to Hydrology
  - The water treatment plant access road intersects with a wetland and its drainage corridor, flowing in a northerly direction towards another existing wetland (hardwood swamp). The culvert was installed too high (perched), restricting the flow to the northern portion and effectively causing it to be drained [Hill, 2013].
  - There are occurrences of trails intersecting with wetlands in the Park. Presence of culverts is unknown. Reduction in hydrology can alter the plant communities and degrade the habitat suitability for wetland dwelling species such as herptiles.

- Impacts to Native Vegetation, and Ingress of Invasive Species
  - If the hydrologic processes are affected or there's an influx of road and trail networks near wetlands (disturbance), there's a risk of altering the present plant communities and allowing the infiltration of exotic, invasive plant species. Species that not only have the ability to naturalize in a new location but thrive and displace native plant species.
  - Glossy buckthorn (Rhamnus frangula), originating in Europe, is an invasive woody plant in Nova Scotia. It is a tenacious species that frequents wetlands and regularly out-competes our native species for growing space. Glossy buckthorn is considered to be one of the biggest risks to biodiversity in Nova Scotia [Tardif-Woolgar, 2009] and it has been located during a plant inventory in Victoria Park [Hill, 2013].

- Additional Infrastructure – Trail Network
  - Frequent foot and bicycle traffic can cause soil compaction, displacement, and erosion. These impacts are often exacerbated in wetlands due to soil type or increased moisture conditions. These impacts can not only affect the visual aesthetics, but could impact wetland hydrology and therefor plant communities.

Mitigation Measures:

- Establish a buffer around all wetland boundaries (minimum of 20 m).
- Maintain all vegetation, snags, and downed woody material within wetland and wetland buffer. These are important features for the integrity of the wetland, but also for species that frequent wetlands (e.g. Olive-sided flycatchers).
- Annually assess any new and existing culverts installed in a wetland, watercourse, or drainage corridor to ensure that there are no obstructions to flow (i.e. debris blockages of inlet or outlet, perched culverts, submerged culverts, crushed culverts) and that there is no evidence of scouring or erosion. Inspections should also be conducted after significant rain events.

- When constructing new trails, avoid wetlands. If no alternative, consider constructing elevated wooden walkways or bridges within wetlands and wetland buffers to reduce compaction and rutting risk. Include signage along trails encouraging hikers or mountain bikers to refrain from leaving the trails.
- Establish a long-term management plan to remove glossy buckthorn within wetlands. This will assist in the preservation of native and uncommon species such as early coralroot found by Dr. Nick Hill. Methods of removal used by the Town of Annapolis Royal included pulling plants by hand, utilizing a weed wrench, or girdling larger stems. Re-establish native species.
- Develop an aggressive approach to the abolishment of invasive exotic species within Victoria Park by creating and implementing an invasive vegetation management plan for the park. Isolate areas of known invasive species identified in Dr. Nick Hill's botany report. Restrict new infrastructure development in these areas until the invasive plant has been eradicated. This will help confine the spread of the invasive species to new locations. Removal of certain species that are well established can be labour and time intensive but their removal will protect the native plant communities. The use of volunteers could assist with this program.

Rare or Uncommon Species

Dr. Nick Hill discovered five notable plant species in Victoria Park that are classified as rare or uncommon in the province of Nova Scotia; *Agrimonia gryposepala* (tall hairy groovebur), *Platanthera flava* (Southern rein-orchid), *Corallorhiza trifida* (early coralroot), *Equisetum scirpoides* (dwarf scouring rush), and *Hieracium robinsonii* (Robinson's hawkweed). *P. flava (S1/S2)* and *H. robinsonii (S2)* are classified rare and may be vulnerable to extirpation. A. gryposepala, C. trifida, and E. scirpoides are classified as S3 which are defined as uncommon or found only in a restricted range (ACCDC, 2014). P. flava was located just outside Victoria Park's boundary line in a previously impacted bog near the new school. Although it is not within the bounds of the park, a wetland that is within the boundary is predicted to be hydrologically connected to the bog fostering the orchid. H. robinsonii can be found along rock crevices and cliffs, cobble shores, and along watercourses. A. *gryposepala* prefer thickets, margins of rich woods, and slopes. [Roland, 1969].

Animal species for note that have been identified in the past include the Olive-sided flycatcher (*Contopus cooperi*), and fisher (*Martes pennanti*). Olive-sided flycatchers can often be found along forest edges and openings and wetlands. They have a preference for perching on the tops of tall trees and snags for foraging purposes (MTRI, 2008). This species is classified as threatened under *COSEWIC* (*Committee of the Status of Endangered Wildlife in Canada*), *SARA* (*Species at Risk Act*), and *NS ESA* (*Nova Scotia Endangered Species Act*). Fisher are uncommon to rare in Nova Scotia (S2) even after successful re-introductions in the past. They prefer mixed multi-aged forests with suitable denning locations such as hollow trees and logs.

Mitigation Measures:

- Identify the existing locations of the rare plant species from Dr. Nick Hill's report. Do not construct new infrastructure in these areas. Classify the habitat type they reside in and avoid any new activities in these habitat types.
- When planning for new infrastructure, conduct a more detailed vegetation and soil survey following NSDNR's Forest Ecosystem Classification manual to confirm ecosite identification. If there are ecological sensitivities, either adjust the location of the infrastructure or implement mitigations to minimize impacts.
- Add signage asking the public to keep on existing trails to avoid impacting rare flora.
- Retain dead standing trees (snags) especially ones with cavities for denning opportunities or for perching unless there is a risk to public safety. Do not remove or partition downed trees. No not attempt to fill cavities in trees. Not only does this restrict wildlife from using these trees for denning purposes, but it also could hold moisture which creates a more favourable environment for wood decaying fungi.
- Establish 20 m buffers (minimum) around wetlands and watercourses. Do not remove vegetation (living or dead) from wetlands, buffers, or riparian zones. Minimize new infrastructure in these zones.
- Protect the mature to old-growth, multi-aged forest stand structures. Do not remove any vegetation in these areas. Leave all dead standing and fallen trees unless there is an immediate risk to public safety.

Snags and Dead Woody Material

Dead woody material serves many important functions in a forest ecosystem. It is a part of the natural nutrient cycling process, promotes natural forest regeneration, creates a more diverse habitat for many wildlife species, provides physical stability against erosion, and retains considerable moisture during dry periods [Bartels, 2014]. Dead standing trees provide a plethora of opportunities for foraging, nesting, and denning for various wildlife species. Leaving dead woody material is integral to the health and diversity of forests. The abundance of dead woody material will fluctuate over time, and will vary depending on forest type and age, forest productivity (nutrient rich vs. nutrient poor), or disturbance regime (Neily, 2010).

Current and Potential Issues:

- Removal of dead woody material
    - Many observations were made throughout Victoria Park of tree stumps cut by a chainsaw with no residual woody material evident on the forest floor. There were other occurrences of felled trees that were cut up into multiple smaller pieces. Removing these structures will negatively affect the forest functions and reduce habitat suitability for plants, fungi, mammals, birds, reptiles, amphibians and invertebrates.

Mitigation Measures:

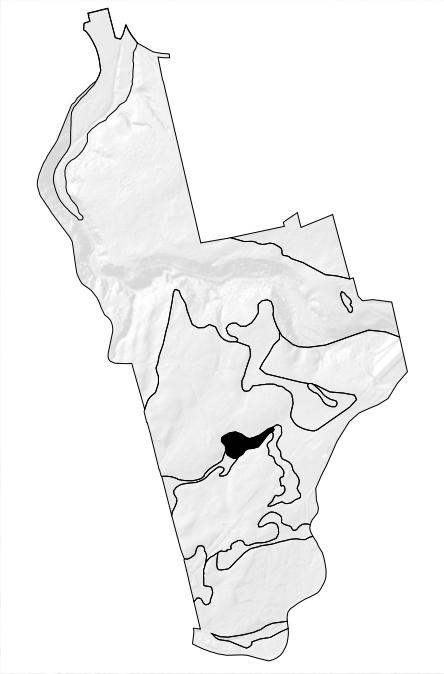
- Do not cut down cavity trees, structurally unsound trees or snags (dead standing trees), or remove coarse woody material (CWD) from the forest floor unless there is an inherent risk to park visitor safety. Consult with an arborist regarding the structural integrity of living cavity trees in areas with high traffic to determine risk. Nova Scotia Department of Natural Resource provides average volume amounts of CWD in all mature forest types (derived from provincial inventories) and survey methodologies to estimate these values in the Forest Ecosystem Classification for Nova Scotia manual. Surveying Victoria Park and determining which areas and which forest types are deficient of CWD due to past removal practise would be beneficial, especially if CWD from areas that exceed these reported volumes could be transferred. Please note that transferring CWD should be done with caution, volumes provided are estimates and should not be done in ecologically sensitive areas.
- Leave all dead standing trees (snags) and living cavity trees unless they poses an immediate risk to an individual's health (i.e., along active trails).
- Provide information to the public on the importance of these features and also about the dangers of them. Inform the public to be conscious of walking directly below a snag or attempting to push one down.
- If a dead or structurally compromised living tree poses a risk to a person's health, directionally fall the tree away from the trail but leave the woody material where it lies. Avoid partitioning the stems of felled trees whenever possible.
- Leave all downed woody material on the forest floor, along steep slopes, and in riparian zones.
- Be conscious of high fuel loads along trails and roads. The majority of fires in Nova Scotia are human caused (i.e. smoking, campfires, arson). Of the 352 fires in 2012, only 6 were caused naturally via lightning (NSDNR, 2012). If there is an abundance of small woody debris, slash, or brush (fine surface fuels) along trails or roads that have high traffic, consider moving this vegetation further into the forest or removing it entirely if there is an

abundance of coarse woody material.

- Generate coarse woody material guidelines or standards for the park (See Gurney reference for full document). Conduct coarse woody material surveys throughout the park using standardized methodologies from NSDNR to determine diversity of species, size and distribution and areas that have insufficient levels of coarse woody debris. If coarse woody material levels exceed levels that are reported in NSDNR's FEC manual and provincial inventory plots, coarse woody material would be transferred to areas where levels are too low (Gurney, 2014).
- If park management decides to intensively manage the park in a manner that will alter the current forest stand conditions through harvesting, implementing silvicultural techniques, thinning, or extensive planting to achieve certain criteria, a more in depth forest inventory and management plan is required.

Overall Park Policies

- Annually assess any new and existing culverts installed in a wetland, watercourse, or drainage corridor to ensure that there are no obstructions to flow (i.e. debris blockages of inlet or outlet, perched culverts, submerged culverts, crushed culverts) and that there is no evidence of scouring or erosion. Inspections should also be conducted after significant rain events.
- When planning for new infrastructure, conduct a more detailed vegetation and soil survey following NSDNR's Forest Ecosystem Classification manual to confirm ecosite identification. If there are ecological sensitivities, either adjust the location of the infrastructure or implement mitigations to minimize impacts.
- Survey trails annually, especially trails that intersect with areas with ecological sensitivities to ensure there are no issues with erosion or rutting. Any new trail infrastructure will be monitored regularly, particularly after rain events and prior to vegetation establishment to ensure there are no issues with erosion or rutting. Trails along steep slopes need to be vegetated on the uphill and downhill side for stabilization.
- Develop an aggressive approach to the abolishment of invasive exotic species within Victoria Park by creating and implementing an invasive vegetation management plan for the park. Isolate areas of known invasive species identified in Dr. Nick Hill's botany report. Restrict new infrastructure development in these areas until the invasive plant has been eradicated. This will help confine the spread of the invasive species to new locations. Removal of certain species that are well established can be labour and time extensive but their removal will protect the native plant communities.
- Create a minimum 20 m buffer zone around all wetlands, watercourses, and drainage corridors.
- Plant only native Acadian forest tree and shrub species. Confirm forest and soil type and profusion of shade prior to planting to determine appropriateness of species selection.
- Do not cut down cavity trees, structurally unsound trees or snags (dead standing trees), or remove CWD from the forest floor unless there is an inherent risk to park visitor safety. Nova Scotia Department of Natural Resource provides average volume amounts of CWD in all mature forest types (derived from provincial inventories) and survey methodologies to estimate these values in the Forest Ecosystem Classification for Nova Scotia manual. Surveying Victoria Park and determining which areas and which forest types are deficient of CWD due to past removal practise would be beneficial, especially if CWD from areas that exceed these reported volumes could be transferred. Please note that transferring CWD should be done with caution, volumes provided are estimates and should not be done in ecologically sensitive areas.
- If there are areas along trails with thick shrubs or dense branches and the park wants to improve the viewshed or aesthetics, limb vegetation opposed to full stem removal.
- If park management decides to intensively manage the park in a manner that will alter the current forest stand conditions through harvesting, implementing silvicultural techniques, thinning, or extensive planting to achieve certain criteria, a more in-depth forest inventory and management plan is required.
- Promote and foster a community group for Victoria Park. An active group of volunteers that take pride in Victoria Park enjoys all the amenities that it offers and would like participate in the management of the park, would be resourceful. Depending on skillsets or interests, people could help with the exotic invasive species program, conduct water quality monitoring, assist in planting programs, report issues within the park, assist in garbage collection, or give guided tours.



3.3.2
AC-08 Wet – Poor Spruce – Fir – Red Maple

Approximate Area: 3.5 Hectares

Description:

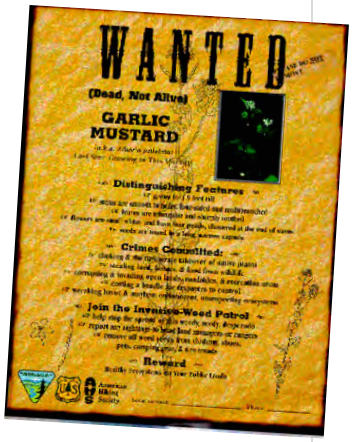
The boundaries of small wetland in the south-central portion of the park provide the only location of Ecosite AC-08 surveyed in Victoria Park. This wetland is defined by young red maple, gray, and wet organic soil. This forest type is commonly found in Nova Scotia in basins or depressions. This ecosite is generally nutrient poor to medium, supporting various species such as red or black spruce, eastern hemlock, tamarack, balsam fir, and red maple and a diverse shrub layer. Due to the limiting factors of nutrient availability and soil saturation, the current forest type will likely persist, but could transition to a more red spruce, red maple dominated stand. Senescence (the stage between biological maturity to mortality), wind throw, and fluctuating water tables are the main sources of natural disturbances (Neily, 2010).

This Ecosite is very saturated due to its topographic position and from the influence of the wetland south of the water treatment plant access road. This southern wetland drains downhill through a wet hardwood forest, into this shrub swamp. Due to the excessive saturation and organic composition of the soil, this wetland is very susceptible to rutting; therefore it is important to restrict recreational activities within this area.

A previous study conducted by Dr. Nick Hill discovered the prevalence of glossy buckthorn (Rhamnus frangula) in this area. It is a hardy, invasive species that can infiltrate areas and out-compete native vegetation. Invasive species are a threat to biodiversity and this particular one was classified as one of the most threatening alien invasive in Nova Scotia (Tardif-Woolgar, 2009).

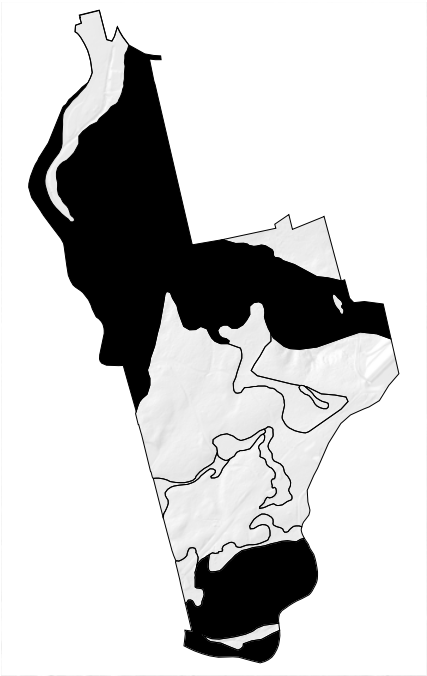
Policies:

- Restrict recreational activities within the boundaries to avoid rutting damage. Do not construct additional trail networks in the wetland or wetland buffer.
- Establish a minimum 20 m buffer around the wetland. Do not remove any vegetation from this ecosite management unit, including dead standing or dead woody debris unless a risk to safety. This does not include glossy buckthorn.
- An existing trail runs along the edge of the wetland, providing opportunities for park visitors to observe one of the park's wetlands. An interpretive panel could be included describing the importance of wetlands.
- Ensure that no existing trails are negatively affecting the wetland hydrology. Determine whether or not a culvert has been installed and whether it is properly placed and sized. Any blockages should be removed from the culvert.
- Generate a management plan to extinguish Glossy Buckthorn and control the spread to other areas in the park. Removing glossy buckthorn can be labour intensive depending on the extent of spread and establishment. Creating a community group to get the public involved in the removal of this invasive would beneficial. For example, the Friends of Taylor Head Provincial Park and the Friends of McNabs Island Society (non-profit societies) work with NSDNR in making these areas a more enjoyable experience for visitors by providing guided tours and events, performing maintenance during off season hours, and providing annual beach clean-ups. Provide a "WANTED: Dead Not Alive" poster describing Glossy Buckthorn characteristics and who to contact if discovered in other areas of the park.



3.3.3
AC-10 Fresh – Medium / Red Spruce – Hemlock

Approximate Area: 75 Hectares



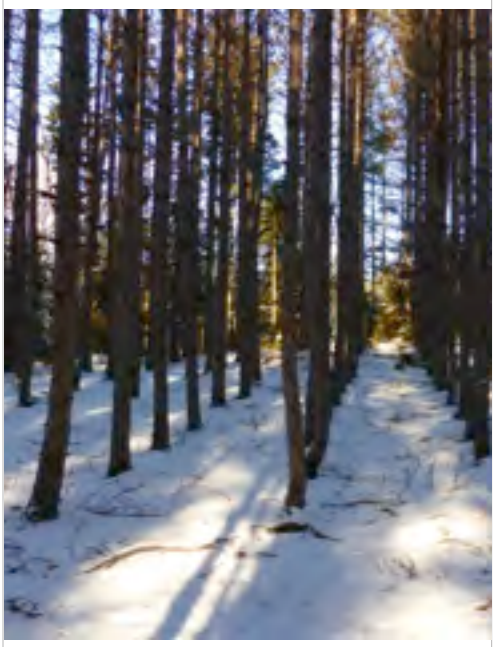
Description:

The portion of this ecosite located north of Lepper Brook is defined by mature to multi-aged, late-successional climatic climax forests that are dominated by eastern hemlock, red spruce, and balsam fir with dispersed eastern white pine, sugar maple and yellow birch. This forest type can be even-aged but often develop multi-aged, old growth characteristics due to infrequent stand replacing disturbances. Natural mortality and the occasional uprooted tree create a gap dynamic development stage and allow for old growth forests to maintain their condition. Gap dynamics is defined by small scale disturbances that open patches in the forest canopy, allowing for the development of regeneration or the release of existing regeneration creating a dynamic state of mortality and rejuvenation. These forest types often provide large diameter cavity trees, snags, and coarse woody material, affording habitat for many different wildlife species (Neily, 2010). An old growth forest is a complex, balanced relationship between the trees (living and dead), shrubs, ground vegetation, soil, mycorrhizal fungi, and the animals that depend on all these elements (NSNT, 2000). Multi-aged mixed wood forests are essential to ecological sustainability by being more resilient to insects, forest fires, diseases, and changes in climate.

The most unique feature in this ecosite is the old growth hemlock forest, with hemlocks over 200 years of age, and the mature to early old growth mixed wood forests that bound the impressive geological feature that is the Lepper Brook gorge. NSDNR completed a comprehensive Ecological Landscape Analysis for the Central Uplands Ecodistrict of which Victoria Park is a part. As part of this analysis, any rare, uncommon and threatened species, sites and habitats are mapped in order to implement special management practices to conserve their uniqueness (NSDNR, 2008). The Lepper Brook gorge and the forests displaying old growth characteristics were highlighted as a rare element in the landscape analysis. This site is not only unique to the park, but is unique to the province as well.

There are portions of this ecosite that are dense, immature to mature, even-aged stands of red spruce and balsam fir with little vegetation in the understory. This forest condition is called the stem exclusion or self-thinning phase. As these trees mature, there is an increase in competition for space and light as well as an increase in tree mortality as the weaker, more suppressed trees die. This long term process will eventually begin to create canopy openings and allow for regeneration of new trees. There will be an increase in coarse woody material on the forest floor and the shrub and ground vegetation layer will become more defined. These newly established trees will eventually reach the overstory and join the relics from the previous stand leading to an early old growth stand condition.

The AC-10 ecosite, south of the water treatment plant access road, appears



completely different from the same ecosite in the northern portion of the park. The natural condition has been greatly altered over time as areas have been cleared and harvested for timber, red pine and eastern white pine plantations have been erected, and garbage has been dumped. Many of the plantations were densely planted and not thinned, effectively causing crown dieback (particularly in the red pine plantations). A monoculture lacks diversity and is more susceptible to disturbances particularly when it comes to pathogens or pests. As the trees vie for growing space, there will be in an increase in mortality, with neighbouring species such as red spruce and balsam fir manifesting in the understory.

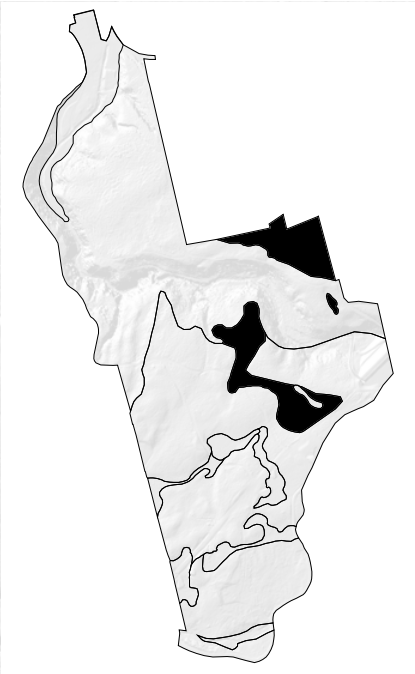
The most predominant soil type found in this ecosite in both the northern and southern section is a fresh, fine to medium textured soil. There are moderate risks of compaction, and erosion, but the risks become much greater when there are steep slopes (>11%) and after rain events. It is important to leave areas with slopes greater than 11% with vegetation intact and ensure organics (coarse woody material) are left on the forest floor (Neily, 2010).

Policies:

- Compile a more detailed site specific forest management plan to address the unnatural state of the southern portion of this ecosite (i.e. plantations, cleared area). There are two options for this location; allow the site to follow natural succession patterns as detailed in the FEC, which will develop into a stand condition similar to what is found within other locations in the ecosite or expedite this process by formulating a planting program using native Acadian tree species. The management plan will be able to determine species appropriateness based on site conditions (i.e. light, nutrients, and drainage), density and spacing requirements, and need for site preparation (i.e. scarification). The management plan can address the pros and con's (i.e. time, costs) to both options so park managers can make a decision based on current goals and objectives.
- Maintain cavity trees, dead standing trees, and downed woody material. These features are an integral part of an old growth forest condition, and the lack of these features is apparent in many locations, particularly in the old growth hemlock stand to the north. There is a lack of understory regeneration in the old growth hemlock stand, and more dead woody material on the forest floor could provide a growing medium for seedlings. See Ecological Sensitivities Section Regarding the Handling of Downed Woody Material.
- Incorporate additional options to the proposed forest management plan noted above to address forested slopes and biologically mature, coniferous dominated stands with minimal to no understory development. Integrating a more pronounced hardwood component or expediting advanced regeneration in the biologically mature and overmature coniferous stands (i.e. pure old growth hemlock stand) could lessen the risk of windthrow since hardwoods tend to be more windfirm than their coniferous counterparts and reduce the effects of a stand replacing disturbance (i.e. insects, windthrow) by having advanced regeneration.
- Maintain stability along the slopes of the ravine surrounding Lepper

Brook. Impacts to the soil structure by removing vegetation or building new trail infrastructure could result in soil erosion. It is essential to maintain the tree, shrub, ground vegetation layers, and dead woody material. If constructing new trails along these steep slopes results in the disturbance of soils (from cutting into the slope), ensure the soil is immediately stabilized. See Ecological Sensitivities Section for Dealing with Steep Slopes and Fine Soils.

- Lepper Brook and many drainage corridors are found within this ecosite. Re-establish a buffer around the watercourse near the main park entrance and maintain vegetation while limiting activities and new infrastructure in buffer zones. See Ecological Sensitivities section for the Handling of Riparian Zones.
- Determine plausibility of re-routing or building structures to reduce peak flows from the stormwater runoff from Lewis road (west of park) and Flemming road (east of park). The existing infrastructure is causing issues with erosion due to increased water velocity, and is directing pollutants from the neighbouring communities directly into Lepper Brook.
- Garlic mustard (Alliaria petiolata) was discovered during the botany survey along the forested slopes west of Lepper Brook. Implement a management plan to remove this invasive exotic immediately. As mentioned in ecosite AC-08, a progressive approach to removing this invasive species should be taken.



3.3.4
AC-11 Moist – Medium / Red Spruce – Yellow Birch

Approximate Area: 13.2 Hectares

Description:

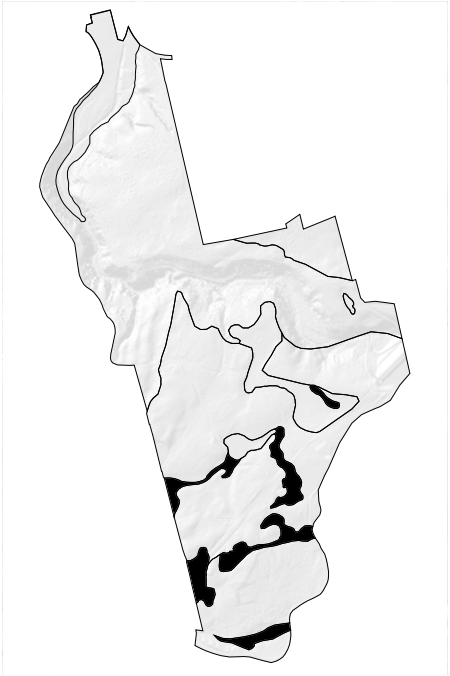
This ecosite management unit is composed primarily of dense, immature, even-aged stands of red spruce, balsam bird, red maple and white birch (to varying degrees). The presence of red maple and white birch are a sign of a recent disturbance such as harvesting or windthrow. Over time, as the forest matures in the absence of a stand replacing disturbance, the current forest type will begin to shift towards a more un-even aged stand structure with a higher proportion of later successional species (red spruce, eastern hemlock, and yellow birch). Stand replacing disturbances such as fire or windthrow are infrequent in these areas, but could potentially occur. The primary soil type in the ecosite is classified as moist, fine to medium textured. There is high risk of compaction, rutting, and erosion in this ecosite (Neily, 2010). The soil type in the ecosite has a high risk of disturbance due to soil moisture, and these factors will be aggravated during and after rain events. There are small pockets of wetlands within this ecosite and particular management considerations should be made in these areas.

Policies:

- Establish a minimum 20 m buffer zone around the wetland boundaries. Do not remove vegetation, dead standing or dead woody material from this ecosite management unit unless there is a risk to safety.
- Ensure that none of the existing trails that are built within the wetlands are impeding the hydrology. Determine whether or not a culvert has been installed and whether it is properly placed and sized. Any blockages should be removed from the culvert.
- If the hydrologic flow is being constrained, immediate action should be taken to remove the impediment and either re-route the trail or install a proper culvert or bridge.
- When constructing new trails, do not build through the wetlands. The wetlands within this ecosite are relatively small and can be avoided. Any new disturbance within the wetlands can potentially cause a shift in flora and fauna communities and can open the door to the invasion of exotic species.
- Avoid constructing new infrastructure during the wet seasons (spring/ fall) and during or after a rain event to avoid impacts to soils. Minimize soil disturbance and conserve vegetation along the trails. This will maintain soil structure and reduce the risk of erosion.
- Glossy Buckthorn was identified during the botany survey in a wetland south of Burnyeat Street. As mentioned in ecosite Ac-08, a progressive approach to removing this invasive species should be taken. Compiling a management plan that outlines impacted areas and methods of control for all invasive species is crucial to the deceleration of their spread.

3.3.5
AC-12 Wet – Medium / Red Maple – White Ash – Fir

Approximate Area: 9.1 Hectares

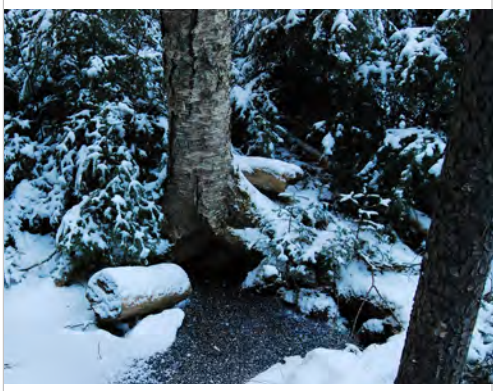


Description:

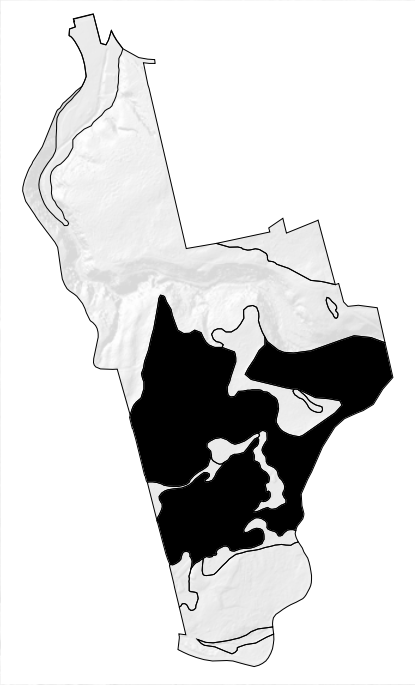
This ecosite is comprised of wet coniferous and wet deciduous forests. The wet coniferous forests are dominated by immature red spruce with occurrences of balsam fir and red maple. Small to intermediate scale disturbances such as tree senescence (the stage between biological maturity to mortality) or windthrow are not uncommon, creating an uneven aged stand structure. The wet deciduous forests primarily consist of mature red maple, yellow birch, white birch, and occurrences of red spruce. Uprooted trees are common due to poor rooting potential under saturated conditions. These sites are all associated with low to middle topographic positions, high water tables, and watercourses in Victoria Park. The medium to rich soil is very moist, often more excessive during the spring and falls months. The soil is very susceptible to compaction, rutting, and erosion (Neily, 2010). This ecosite has been impacted over the years through infrastructure development and forest operations (i.e. roads, trails, infilling, thinning, harvesting). Restoration opportunities are present in areas of this ecosite particularly pertaining to the water treatment plant access road which is negatively affecting the hydrology of wetlands.

Policies:

- Remove infill from wetland in the south-western area of the water treatment plant access road. This will increase the wetland area by approximately 600 m² and restore a portion of it back to its original state.
- Restore hydrological connection between wetlands intersected by the water treatment plant access road. The current culvert is placed too high and is effectively holding water back south of the water treatment plant access road (which may be the cause of tree and shrub mortality along the upland/wetland fringe). It is increasing the saturation on one side, and decreasing the saturation of the other, effecting plant communities in a negative way on both sides. Either install a bridge or re-install the culvert with appropriate invert levels.
- These ecosites are associated with wetlands and/or riparian zones. Establish a minimum 20 m buffer zone. Do not remove vegetation, dead standing or dead woody material from this ecosite management unit unless there is a risk to safety.
- Restrict or minimize recreational activities in these ecosites areas and buffers to reduce risk of compaction, rutting, erosion. Constructing new trails in the adjacent upland areas is preferable. Minimize soil disturbance and impacts to vegetation during construction to maintain bank stabilization and lower the risk of erosion.
- If constructing new trails within the boundaries of this ecosite or ecosite buffers, ensure low impact walkways/boardwalks are used. Constructing an elevated platform or a walkway with gaps between boards will allow more light to penetrate the ground. This will decrease the effect of completely shading out existing vegetation.
- There are two areas of ponded water that could provide great habitat for many amphibians (possibly year-round). These areas can provide educational opportunities for the public about the importance of ponds/vernal pools through guided tours. Both are reasonably close to existing trails.



Source: Muzz Landscape Architects and Design



3.3.6
AC-13 Fresh – Rich / Sugar Maple – Beech

Approximate Area: 49.3 Hectares

Description:

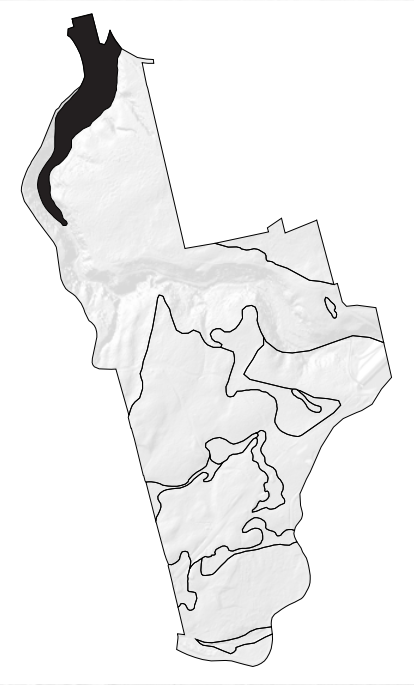
This ecosite contains a variety of forest community types and development stages. They range from immature to early old growth, from mixed wood stands composed of eastern hemlock, yellow birch, and sugar maple, to red spruce dominated stands with minor occurrences of eastern hemlock and red maple, to tolerant hardwood stands with sugar maple, red maple, ironwood and yellow birch. Evidence of more recent disturbance is observed in the central and southern portion of this ecosite. These stands are younger and more uniform in development, and there are patches of pure red spruce and red pine plantations.

The majority of the natural forest communities contain species that are mid to late successional and are established through infrequent disturbance regimes such as windthrow or injury from insect or diseases. As some of the younger stands mature, they could potential transition to uneven-aged forest types similar to what is seen in the northern portion of the park (i.e. hemlock, spruce, and yellow birch dominated). The distinguishing feature of the fine to medium textured soils is its nutrient richness and fertility which can be seen in the plant communities present in the undisturbed locations (i.e. ironwood, sugar maple, hobblebush and jack-in-the-pulpit). Hazards risks from soil compaction, rutting, and erosion are generally moderate to low except in areas with steep slopes (>11%).

Policies:

- Incorporate options in the proposed forest management plan (as noted in ecosite AC 10) to manage the red spruce and red pine plantations. A pure monoculture of red spruce forest or red pine forest could be more susceptible to large scale disturbances, particularly insects (i.e. brown spruce longhorn beetle) and diseases (i.e. sirococcus shoot blight). As noted in AC 10, these stands will transition to a more natural forest condition through natural succession but the process can be expedited using silvicultural techniques that can be outlined in a forest management plan.
- The section of the ecosite that follows Lepper Brook near the water treatment plant contains slopes greater than 15% with pockets of seeps coming from the hillslope. This particular area should be preserved in its natural state. No further construction of infrastructure should be made along the hillslopes to prevent issues with erosion and sedimentation of the watercourse. See Ecological Sensitivities section for Dealing with Riparian Zones and Steep Slopes.
- This ecosite has a more abundant level of coarse woody material present in some areas when compared to ecosite AC-10. If there is an abundance of coarse woody material in a location that is adjacent to high traffic trails and there is a concern for increased fuel loads (increase forest fire risk), then transporting the excess stems to areas with insufficient levels of coarse woody material could be an option (Gurney, 2014). Nova Scotia

Department of Natural Resources provides estimates for coarse woody material volumes for the various forest types (i.e. tolerant hardwood, mixed wood, spruce-pine) and methodologies on how to survey coarse woody material (Neily, 2010). If a forest stand type's coarse woody material volume exceeds what was measured and reported in provincial inventory plots, then it could be appropriate to reduce fuel loads by removing some of the coarse woody material, and relocating it to an area that has insufficient amounts of coarse woody material. Removal and placement of coarse woody material should not be undertaken in areas that are considered ecologically sensitive (i.e. along steep slopes, wetlands, watercourses, rare or uncommon species).




Source: US State of Maine

3.3.7
Lepper Brook Floodplain
Approximate Area: 9.9 Hectares

Description:

The Lepper Brook floodplain area is contained within the northern portion of the park, confined by steep slopes to the eastern and western limits of the park. This low lying area, undoubtedly once comprised of typical floodplain species such as white ash, sugar maple, yellow birch, American elm, ironwood, red maple, ostrich fern, sensitive fern, meadow-rue, beaked hazelnut, alternate-leaved dogwood, and jack-in-the-pulpit, is now a fragment of its former state. This area, now intensively managed for aesthetics and recreation, contains roads, parking areas, tennis courts, a baseball field, a swimming pool, a play area, an amphitheater, picnic areas, trails, maintained sod and planted exotics.

Based on the residual floodplain species that still occur near Lepper Brook and along the edges of the floodplain, this area was likely dominated by sugar maple and white ash with American elm, yellow birch, and ironwood interspersed throughout. There would have been a diverse shrub and herbaceous understory and, with the rich soils that are characteristic of floodplains, could have hosted a number of rare species. Like many other floodplains throughout the province, the area has been altered from its natural condition.

Policies:

- Establish a minimum 20 m buffer zone around Lepper Brook and re-vegetate this area with native floodplain tree, shrub, and herbaceous species. Do not remove vegetation, dead standing or dead woody material from this zone or within the watercourse unless there is a risk to safety. See Park-Wide Ecological Sensitivities and Policies for Riparian Zones.
- Re-route or reduce the number and area of trails and footpaths that will be within the buffer zone. Trails within the buffer zones should be comprised of pervious materials.
- Reshape Lepper Brook or create natural features (i.e. pools, riffles, meanders) within altered sections using digger logs and rock deflectors in altered areas of the watercourse. These features can improve fish habitat and alleviate erosion issues. (Clean Nova Scotia, 2013)
- Only plant native species within the buffer zone. Develop a strategy to remove exotic and invasive species that encroach.

3.4 Park Development Concepts

3.4.1 Graphic Identity

Victoria Park has a distinct physical character that is highly recognizable. Despite this, the Park has never had a similarly distinct graphic aesthetic to identify or market itself. Over time, a range of wordmarks, logos, and colour palettes have been used for marketing and promotional material, signs, and buildings (see below).

The consistent use of colours, wordmarks and imagery will help the Park establish a graphic identity that corresponds with its strong physical identity. Recognizing this, the Truro Planning and Development department has recently developed a logo and slogan package aimed at improving recognizability and visitor experiences (see below).

The logo is a simple, lower-case, sans-serif workmark using the Am Sans typeface. The wordmark is accompanied by a short slogan - Explore Truro's Nature - a simple and straight forward descriptor that captures the essence of the Park. A combination of five complementary colours are also offered to provide further consistency.

Action Items:

- Use wordmark on all Park items and materials, such as entrance signs, wayfinding signs, building identification signs, marketing/ promotional materials, etc.
- Develop a short Graphics Standards Manual using the new wordmark and colour palette so that graphics are consistent in all future Victoria Park materials.

The Victoria Park identity has gone through several iterations in the past.

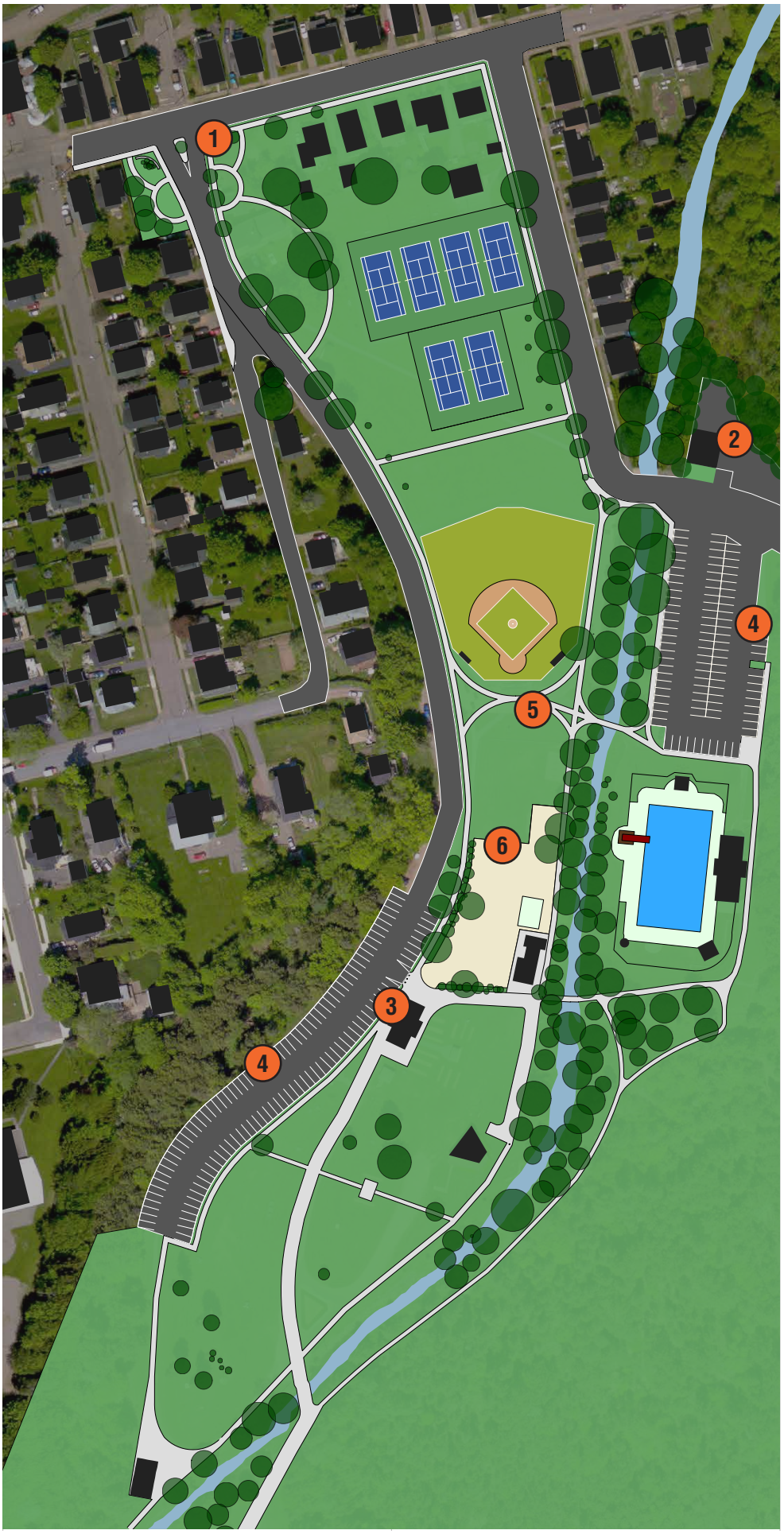
A new graphic identity and colour palette for the Park.

3.4.2 Lower Park Development

The Lower Park area is the front door and lobby of the entire Park. It is the focal point for development, recreational facilities, park amenities, and buildings. Because of the high degree of concentration in this area, it is important to utilize available space as efficiently as possible. Currently, the area is well organized and well kept. However, a handful of modest interventions can help optimize the area even more.

Such improvements include:

1. New Entrance
2. New Work Yard
3. New Interpretive/Orientation Kiosk
4. Improved Parking Lots
5. Optimized Path Network
6. Revitalized Playground Area



Existing Park Entrance

1. Entrance

The main entrance is somewhat subdued and easily missed for visitors who are new to the Park. The only entrance feature is a small parklet that has been built on the southwest corner of Park Road and Brunswick Street, which features a curved stone wall with a Victoria Park sign affixed to it. Over time, a more grand and appropriate entrance could be achieved by eventually acquiring properties at the southeast corner of Park Street and Brunswick Street.

This would provide the opportunity to mirror the existing parklet on the other side of Park Road to create a better physical and visual connection into the Park. It will also permit the entrance road to be wider and more welcoming to visitors. A welcome sign could also be erected on a small island at the intersection. Furthermore, the introduction of ornamental lamp posts with Park banners along the east side of Park Road would provide a much improved sense of arrival.

Action Items:

- Investigate the feasibility of purchasing properties on the corner of Brunswick and Park;
- Install Victoria Park banners along Park Road to improve sense of arrival.

2. New Work Yard

Currently, maintenance staff operates out of a small 350 m^2 building alongside the main trail into the Park. This building is both too small from an operational point of view and unattractive in a key area of the Park. Furthermore, since the building requires electricity, utility poles have been erected through the Park to connect to the building. A new, larger maintenance building would provide the additional storage and workspace for staff and allow for the removal of the existing workshop and associated utilities.

An ideal location for the new structure would be on the north side of Adam Street across from the parking lot. This would still allow easy access into the Park while removing the need to have maintenance vehicles and construction materials left along trails. It would also allow for the construction of a larger and more secure park works yard and building. The area could accommodate five large parking stalls for school or charter busses bringing students or tourists to the Park. In order to accommodate the Public Works Yard and parking area, additional land may need to be acquired from adjacent private landowners.

Action Items:

- Begin discussing the needs and requirements of existing Park staff for a new work shed and storage yard;
- Hire an architect to design and engineer the new building; and
- Remove old work building and associated utilities.

Park Entrance with improvements

Site plan of new work yard

3. New Interpretive Kiosk

One of the major strengths of Victoria Park is the vast array of educational opportunities that exist, ranging from ecological and geological to historical and cultural topics. Thus, it seems appropriate that Victoria Park include a small, sheltered interpretive kiosk.

The kiosk would welcome visitors to the Park, and would include interpretive panels, maps, and welcome information. In order to fit in with core values of the Park, the architectural style of such a building must be consistent with its surroundings.

A good source of inspiration could come from the existing Band Shell which has an appropriate modern and rustic appearance.

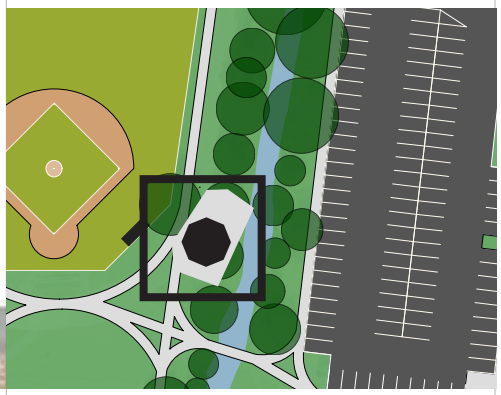
The interpretive kiosk should be located in a key area and be visible from the main access road and close to the main parking lot. When visitors see the structure they will inherently feel a sense of arrival. Therefore, the best location for the interpretive kiosk would be next to the main parking lot near the band shell. The kiosk will be an ideal place for Park users to visit first to get acquainted with the Park and begin to build a mental image of the route they would like to take.

Action Items:

- Determine the types of information to display on the interpretive panels.

Shape/Form:
Inspired by octagonal gazebos, the interpretive kiosk reflect its Victorian setting with a subtle modern touch.

Panels:
Eight panels will wrap around the main support post and will display maps, park information and interpretive elements.



Preliminary Concept for a Victoria Park Interpretation Kiosk

4. Improved Parking Lots

The main parking lot is currently in acceptable condition. In five to ten years, however, it will likely need to be resurfaced. At this point, sensible modification can be made to the area; the following alterations can be made to improve capacity above the current 50 vehicles and increase traffic circulation efficiency:

- Realign the perimeter of the lot to make it more symmetrical and reduce unusable space (ie: individual stalls should be 6m long and the middle access lane should be 8m wide for a total lot width of 20m);
- Resurface the lot with asphalt and paint stall lines to maximize vehicle capacity; and
- Extend the lot north by 20m to accommodate more stalls increasing capacity to 110 vehicles.
- The swimming pool lot is in need of immediate repaving and painting. Without delineated parking stalls, the lot currently accommodates approximately 75 vehicles. Resurfacing the lot with asphalt and introducing painted stall lines will increase capacity on this lot to 97 stalls. Permeable paving should be considered to reduce negative environmental effects on Lepper Brook.

5. Optimized Path Network

Within the Lower Park there are an array of truncated roads, sidewalk remnants and redundant pathways. In some cases, pathways have inadequate surfaces, poor delineation or are overly wide. Despite this, the pathways are generally in acceptable condition and are not in need of immediate intervention. However, over time, as pathways require maintenance or upgrades, they should be replaced with a more streamlined and direct pathway network.

The recommended pathway network consists of an interconnected network of 2m wide concrete or brick paved pathways. A new service lane will offer vehicular access to the interpretive centre and to the bandshell, replacing the old road that extends along the main trail and loops back behind the stage. The old service lane will be removed or reduced to a 2m wide paved pathway.

Some trailheads in the park are well defined like the Hemlock Trail loop; however, other trails that meander up the gorge and enter into the heart of the park don't have a clear starting point. Establishing a signed trailhead at all entrances would invite exploration and help delineate zone boundaries and associated uses.

Existing Pool Parking Lot

5. Revitalized Play Area

The chain-link fencing around the playground should be re-imagined. Although it is in decent condition, it has a negative visual impact on the character of the play area. The fence could be replaced by simple landscaping hedges and shrubs, which would provide a physical separation and buffer from the road, and have a more positive aesthetic contribution to the Park. Alternatively, attractive hedges and shrubs could be planted around the base of the fence to reduce it's negative visual impact.

The playground area itself is divided into a grassy space to the north and a gravel space to the south. The transition between the grassy and gravel areas is indistinct and messy, as gravel spills over onto the grass. A delineating feature, such as wooden landscaping ties will improve the aesthetics and delineation of the play area and reduce ongoing maintenance.

The new prefabricated play structures are in good condition, however the swings are aging and will need to be replaced soon and safety concerns have prompted the removal of teeter-totters from most municipal parks in the country.

Naturalized play equipment would be an excellent and cost effective way of improving and updating the playground and will fit well within the natural character of the Park. Naturalized play equipment mimics real landscapes with some strategic enhancements. This can include grass covered hills with slides embedded in them, large boulders and logs for climbing and sand pits for creative play. Sculptural installations that kids can interact with and low-slung slack-line balancing cables are low-cost playground pieces that have proved successful at other locations.

Other Improvements

With the introduction of the new work yard and potential interpretive centre, other existing buildings on site will become redundant and should be removed.

Other buildings should be re-evaluated or amalgamated into new proposed structures:

- The picnic pavilion should remain but should be the final standing building before entering the gorge trail network.
- The old pump house should be removed as soon as possible.
- The workshop building should be removed upon completion of the new work yard area.
- The former washrooms just north of the picnic pavillion, which is currently being used for storage, should be also removed upon the completion of the new work yard area.
- The Douglas Street Recreation Centre could be better integrated with the Park by improved signage linking the two facilities and by providing additional opportunities for interior activities (such as a warming area for cross-country skiing).

The baseball diamond is an important feature of the Park. It is currently looking a bit tired and upgrades are required to the boundary fence and the dugouts. As a historical structure in the Park, it is recommended that the

baseball diamond be refurbished in a "Victorian" manner. This will preserve its use, but also enhance it as a historical feature of the Park. Is is also recommended that the diamond be better programmed to support the development of minor league baseball in the area.

Landscaping Guidelines

The Lower Park currently features an attractive mix of native and non-native tree and shrub species. Generally native species surround the perimeter of the Lower Park and begin the transition into the forested areas. Within the Lower Park, exotic species such as Norway Spruce, Nootka Cypress, Burberry, English Oak, Linden, Basswood, Weeping Cedars, and others have been planted, which are typical of Victorian style gardens and parks.

Other appropriate species that could be included within the Lower Park are as follows:

- Wisteria
- Climbing jasmine
- Lawsons cypress
- Geraniums
- Petunias
- Dahlias
- Cotoneaster
- Rhododendrons
- Magnolias
- Camellias
- Spotted laurel, etc

Lawns should be regularly mowed and well maintained and garden or shrub beds should have a well defined edge with an adequate toplayer of bark mulch.

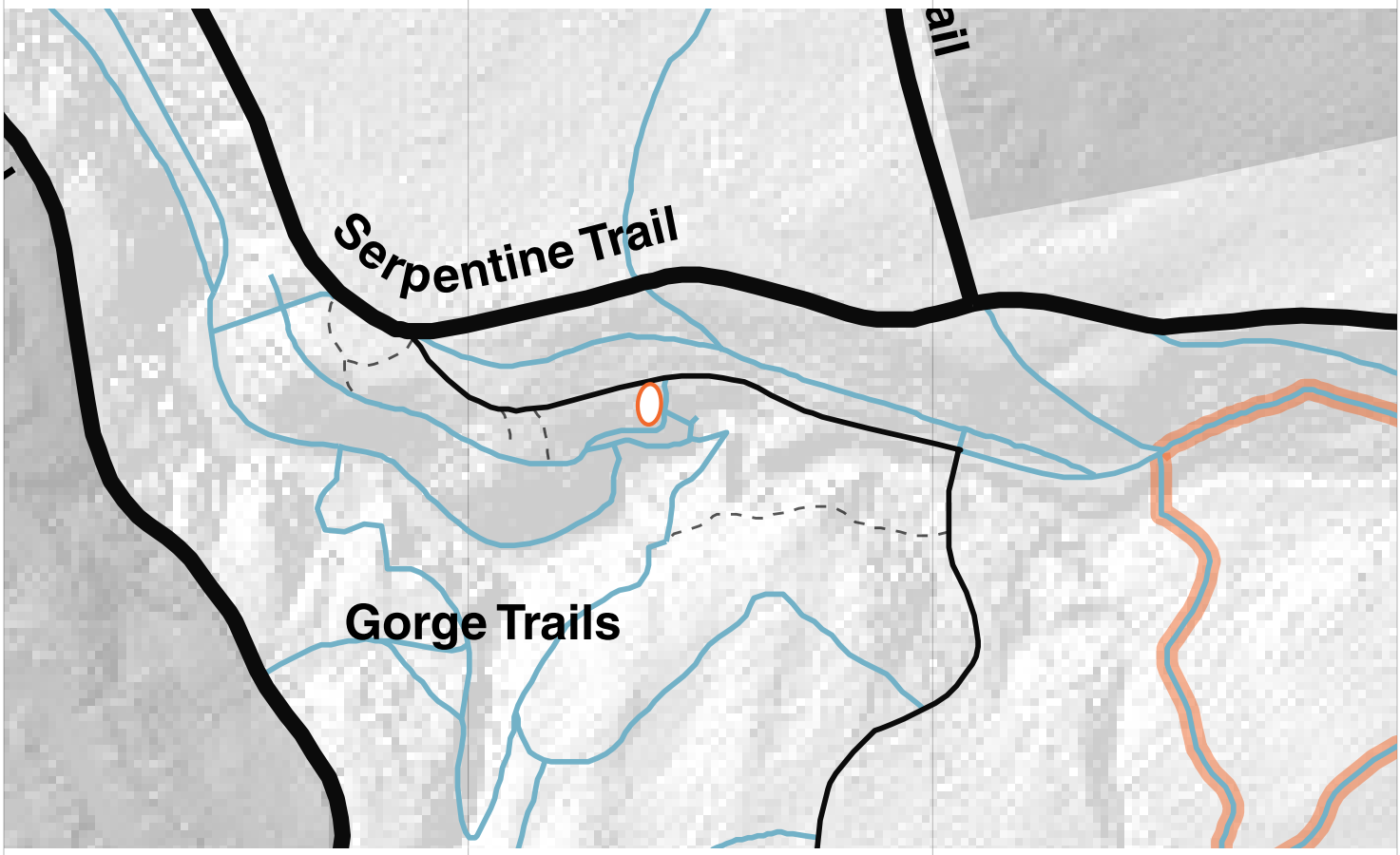
Landscaping

a) Climbing jasmine
b) Cotoneaster
c) Wisteria
d) Lawson's Cypress
e) Proper garden bed edging

3.4.3 The Falls Observation Deck

Currently, there is no convenient route for people in a wheel chair or with limited mobility to access and enjoy the Falls. The main route that runs along Lepper Brook is accessible up until Jacob's Ladder before it converts into a more challenging route, featuring steep inclines, rough surfaces and narrow right-of-ways. An alternative and more accessible option is Serpentine Trail, which runs parallel to Lepper Brook along the top slope of the gorge and has a smooth asphalt surface, wide right-of-way and favourable slopes. Serpentine Trail forks into two separate trails just after Jacob's Ladder. Both forks feature similar conditions, with the fork that bends towards the south providing access to the the gorge, but without any great views.

There is an area where, with some moderate vegetation removal and the construction of a low-impact observation deck, visitors with restricted mobility can enjoy views overlooking the two waterfalls and the gorge.



Potential Site for Observation Deck

Observation Deck

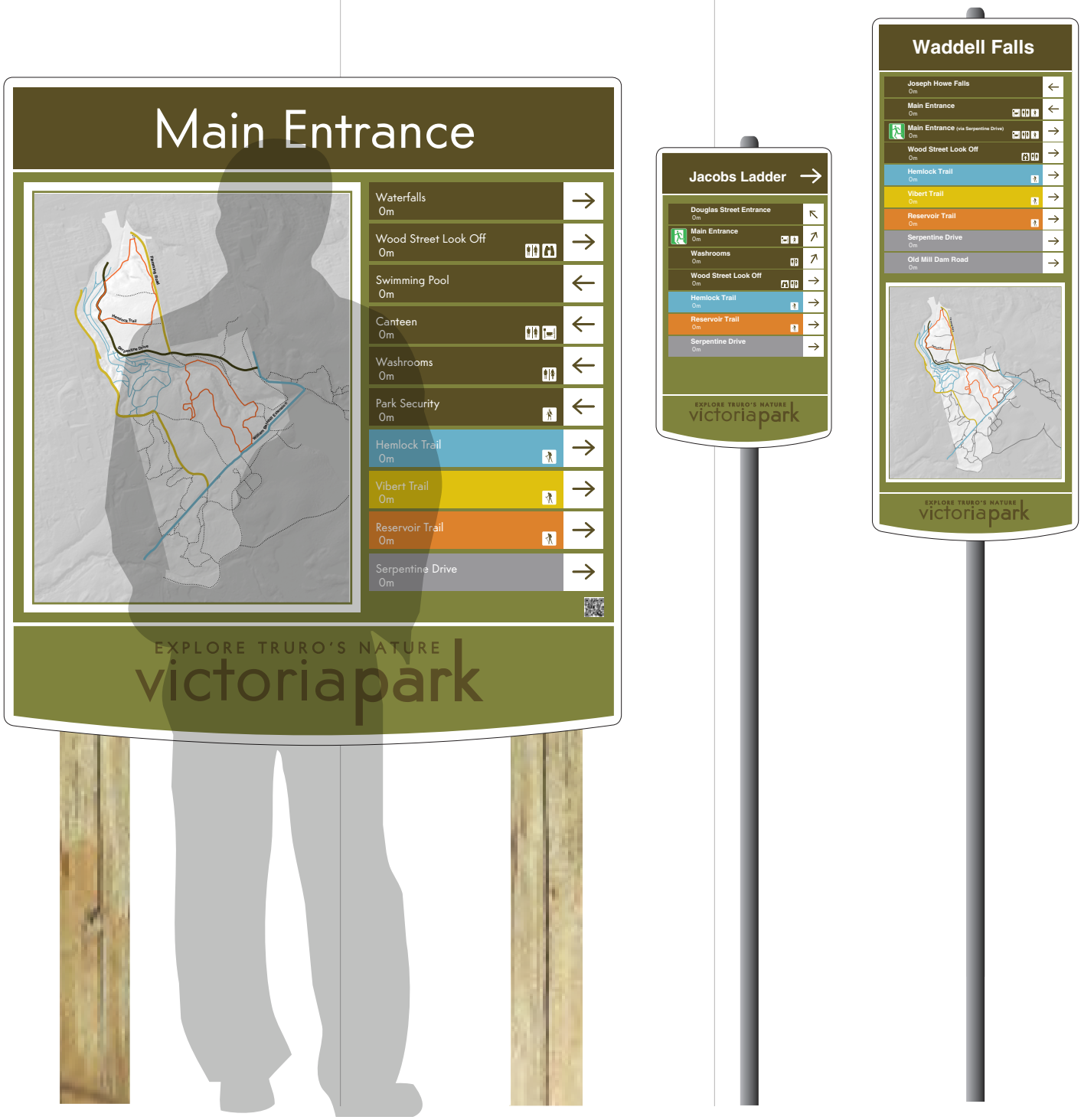
3.4.4 Signage & Wayfinding

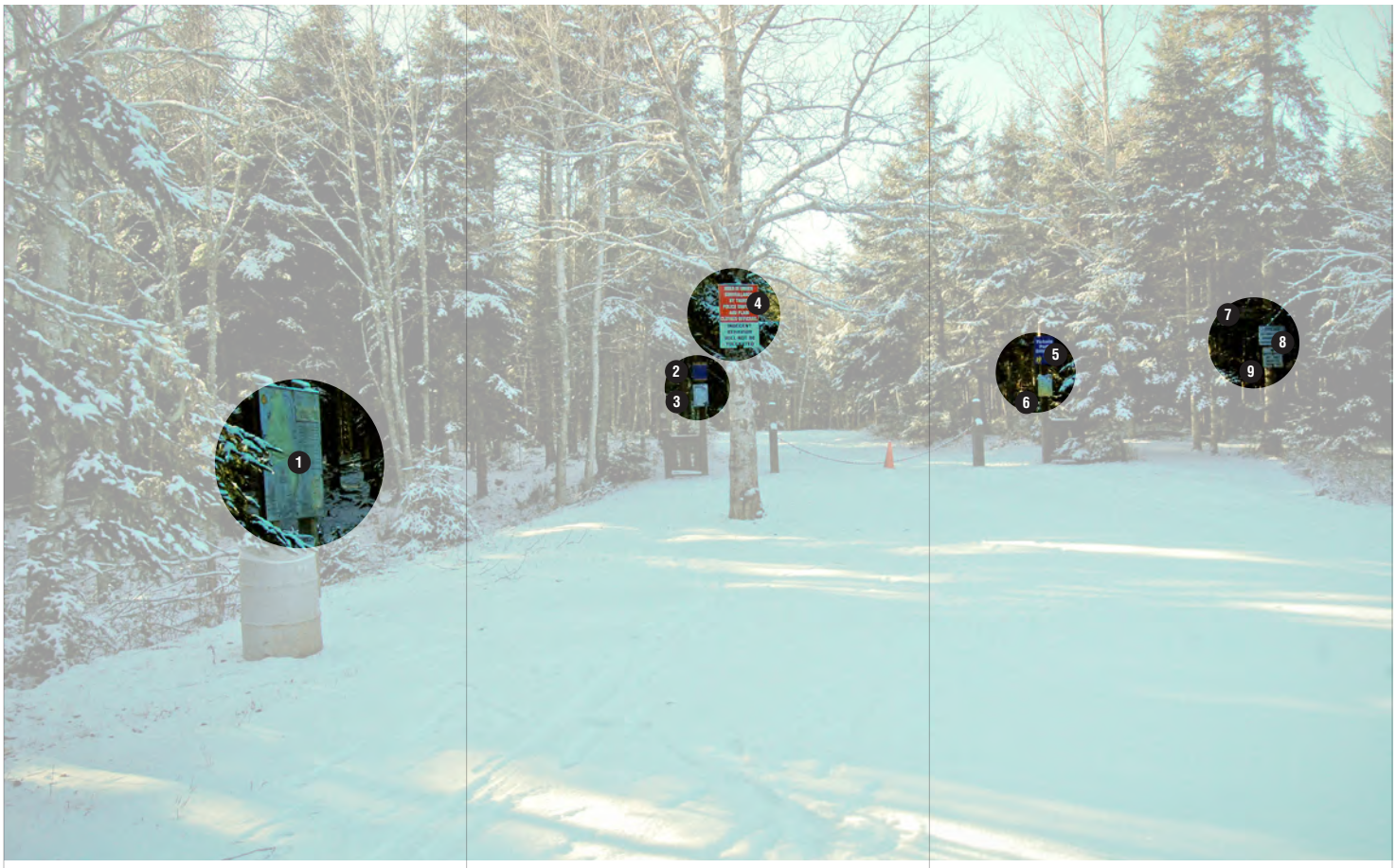
The Town of Truro Planning Department has developed an excellent wayfinding system concept design with clear and aesthetically pleasing signage that should be implemented. It is strongly recommended that this concept be adopted by Council and implemented as soon as possible.

Wayfinding Concept

The Town of Truro Planning Department wayfinding concept will help improve visitor orientation and Park security.

** Map image is placeholder only*





Some of the entrances to the Park are cluttered with signage. At one entrance off Wood Street there are nine separate signs made of different materials attached to trees, fences and posts (see photo above). Most of the messages on the signs are necessary, but consolidation would help with aesthetics and legibility. In some cases the information could be included on the wayfinding signs proposed by the Truro Planning Department, while in other cases a separate sign may be necessary. If a second sign is required, it should follow the same design guidelines as the wayfinding signs.

Secondary Entrance Sign

Amalgamating regulatory information onto one sign will improve clarity and reduce visual sign clutter.

Other Wayfinding Tools

Other suggestions to improve wayfinding would be to create paper maps of the Park that are identical to the maps used on the wayfinding signs. This would ensure that consistency and clarity are maintained. The accompanying paper map could include even more detailed information about trails and attractions in the Park. Electronic and online maps should also be as consistent as possible with one another.

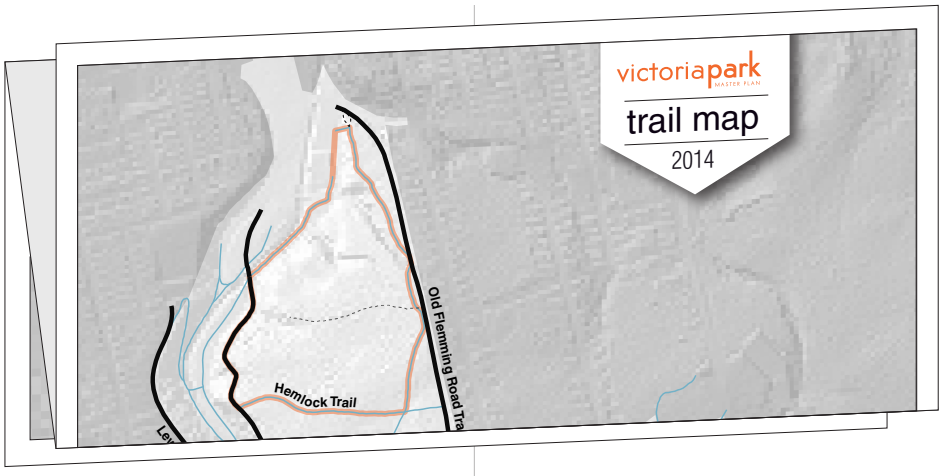
To counteract the perception that there is insufficient parking for the Park, specific signs should be created or information added to larger park signs indicating where parking is available.

Off-Site Directional Signs

The existing Victoria Park off-site directional signs look outdated and are deteriorating with age. Furthermore, they are not consistent with the new graphic design standards outlined in Section 3.4.1.

Updating the old signs with new simple panels (see right) that are consistent with the Victoria Park colour palette and brand will improve recognition and clarity. These panels can be mounted on existing utility poles or added to street name poles.

Visitorship to Victoria Park can be bolstered by improving advertising along Highway 102. Currently, the exit signs on Highway 102 make no mention of Victoria Park as an attraction. The Town should work with the Department of Transportation and Infrastructure Renewal to investigate the feasibility of replacing the standard exit signs with branded signs that market Victoria Park as a major tourism attraction for Truro. The sign should use attractive graphics that convey the beauty of the Park to help lure in potential visitors.



Off-Site Wayfinding Signs

New signage as illustrated below offer a simple but effective update to the current aging signs (left)

3.4.5 Interpretation

Interpretive signs are an excellent method of creating a greater connection between the visitor and the Park. With so many educational opportunities throughout the Park, an interpretive program is essential. As noted in earlier sections, it may even warrant the creation of a dedicated interpretive centre in the Lower Park. Whether or not this occurs, it will always be important to have on-site interpretive panels that will help visitors engage and learn about Park features in specific geographic locations.

The intent of the panels should be to concisely convey geospecific information with a minimal visual impact. Quite often, interpretive panels can be too large with an overabundance of information. Large panels often have a negative visual impact in areas by blocking views or consuming a visual landscape. Cramming too much information on a panel can also cause "information overload" for potential users (causing them to ignore panels altogether).

The proposed interpretive program revolves around five themes; geology, ecology, health & fitness, town infrastructure, and history/culture. It uses a combination of panel sizes that bear a similar resemblance to the Park wayfinding signs and embrace the Park brand. Through colour coordination users can quickly identify the theme of the panel making self-guided tours easier.

Three different panel sizes are proposed:

- Small: 12" wide x 18" high
- Medium: 24" wide x 18" high
- Large: 36" wide x 24" high

geology

Examples:

- Landforms: The Influence of Ice and Water
- The Evolution of Victoria Park
- Exposed bedrock

health & fitness

Examples:

- Nature as a Tonic
- Jacob's Ladder: How many calories will you burn by climbing it?
- Cross-Country Skiing: Try it!

ecology

Examples:

- Forest Succession
- The Hemlocks
- Plants and Undergrowth
- Lepper Brook as a habitat

town infrastructure

Examples:

- the Lepper Brook watershed and water treatment process

history/culture

Examples:

- Contributors to the Park
- Descriptions of Victorian features such as Jacob's Ladder, the Holy Well, Nymph's Grotto, etc.
- Explanations of their meaning, significance, and cultural associations

Interpretive Themes

The proposed Victoria Park interpretive program revolves around five major themes of education.

Examples of Potential Panels

Title: Vibert Trail
Size: 12” x 18” (Small)
Theme: Health and Fitness
Site: Vibert Trail head

Content:

- The Kinsmen Club established this trail in the late 1970s as a safe place to exercise.
- It was dedicated to Dr. James Vibert, a prominent Truro surgeon who had been killed while jogging in August 1977.
- The trail had construction challenges due to steep terrain and the gorge.
- Two bridges and a diversion to prevent flooding had to be created.
- The result is a picturesque course for jogging, walking and cross-country skiing.

Title: The Wolfville Formation
Size: 24” x 18” (Medium)
Theme: Geology
Site: by Picnic Pavilion

Content:

- During the Triassic Period a valley was eroded and then filled with compacted sand and gravel.
- These orange-red sandstones and conglomerates were originally laid down in a desert environment. Much later a new valley was formed by glaciation and water erosion exposing the ancient deposits.
- Lepper Brook flows out of the narrow valley into a broad floodplain. From this spot it is possible to see the valley walls, flat flood plain and creek channel.
- This formation is usually confined by overlying beds of shale and siltstone.

Title: Lepper Brook Reservoir
Size: 36” x 24” (Large)
Theme: Municipal Infrastructure
Site: by the Water Pump/Dam

Content:

- The Lepper Brook impoundment is the main water source for Truro and is fed by a 1,621 hectare watershed. The man-made lake is 1.5km long, 22m deep and covers 78 hectares. It can hold over 2.14 million cubic meters water.
- The pumping station sits in the lake drawing water from 21 meters below the surface with three vertical turbine pumps that have a total pumping capacity of 3.5 cubic meters per second.
- The pumping station delivers lake water to the water treatment plant that processes 2.5 million gallons of water per day.

Interpretive Panel

A proposed “small-size” interpretive panel along Vibert Trail. The small size will have a reduced impact on visual quality of the Park.

Title: The Holy Well
Size: 36” x 24” (Large/Triptych)
Theme: Geology
Ecology
Culture/History
Site: by the Holy Well

Content:

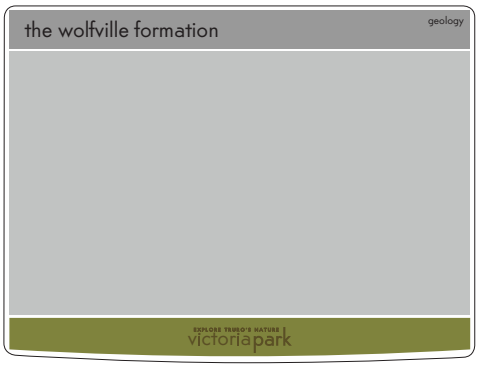
- The large exposure on the side of the gorge shows continuous layers of shale from one side of the cliff to the other. These deposits were laid down as mud in a stream valley and over millions of years compacted into shale rock. The layers were then tilted as the mountain building processes occurred creating tightly spaced parallel fractures in the rock.
- The forest includes a variety of tree species, ranging from Hemlock to Spruce and Pine to Birch and Maple.
- The Holy Well was likely established by residents of Bible Hill and was based on the Bible Hill Holy Well where early pioneers would baptise their children.

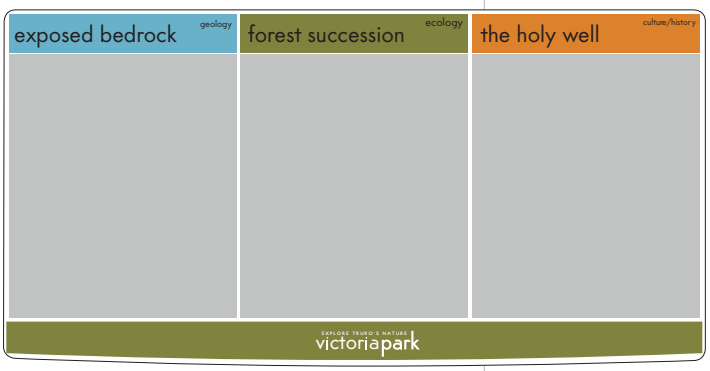
Other Educational Opportunities

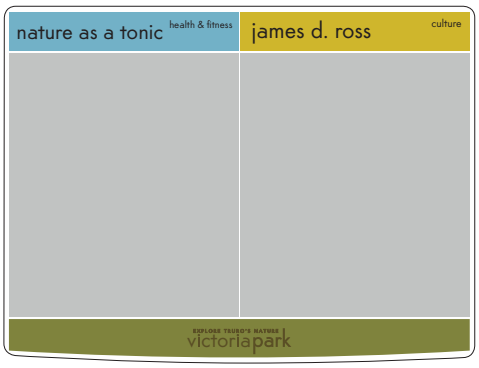
Pamphlets:
Some pamphlets already exist such as the Walking Tour of Rocks, Minerals and Land Forms brochure created by the Nova Scotia Department of Mines and Energy in 1987. These brochures could be updated and reproduced to include the new Park graphic standards and any new information. Further pamphlets with maps highlighting important sites could be created for each of the themes (i.e. ecology, health/fitness, history/culture, etc.) and would supplement the interpretive panels.

Georeferenced audio tour:
Creating a podcast or audio track that visitors could download from the Park website before they arrived would be an excellent way to provide convenient and low-cost guided tours. The audio tours could be created by experts in various fields (i.e. geology) and be organized thematically (i.e. ecology, history/culture, etc.). They can also be georeferenced so visitors can use GPS enabled devices (common with most smartphones) to make sure they are at the location indicated in the audio tour. The audio tour is a way to give in-depth information on subjects that would be difficult to cover in a brochure or on an interpretive panel.

Guided tours:
As beneficial as interpretive signage and brochures are to visitors, having a guided tour by someone who is knowledgeable about the park allows visitors to connect on a more intimate level. Though regular tours would have a diversity of general information on history, ecology and geology, special theme specific tours with experts on local birds or vegetation could be provided on a less frequent basis.

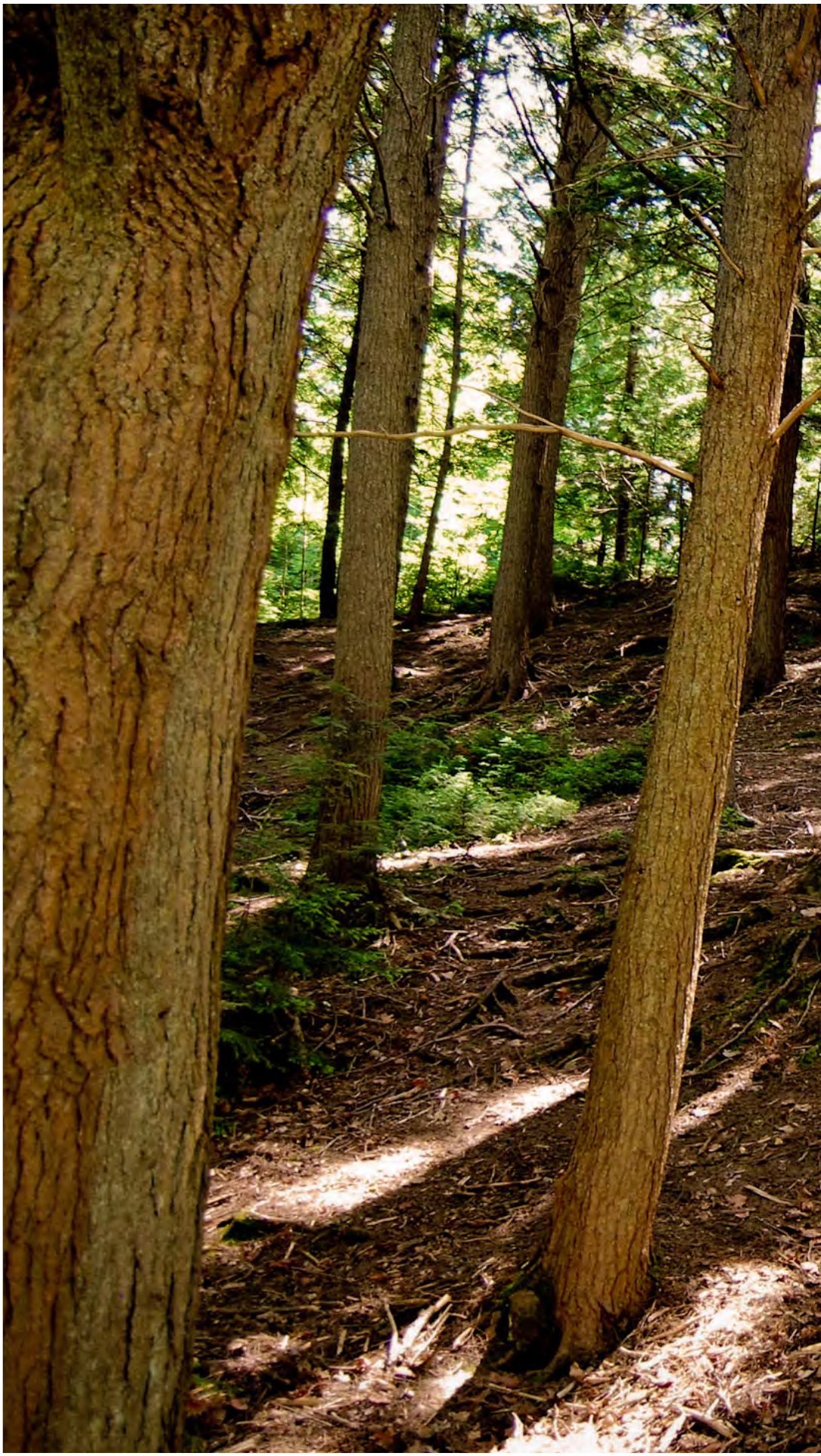






Interpretive Panel Sizes

Various sizes and layouts of interpretive panel template.



4

Implementation

How to enable the policies and concepts of the Master Plan.

Victoria Park has been well-managed without having a management plan in place, which is a testament to the importance of the Park to Town residents and the care taken by the Town administration and park managers. Even the recent debate over the appropriateness of allowing the development of a zip line in the Park shows that the management of the park is relatively transparent and that the Town administration and park managers are open to responding to public opinion.

4.1 Establishment of A Friends of Victoria Park Group

To enhance communications and to help harness additional human and financial resources for the care of the park, it is recommended that a Victoria Park Public Liaison / Advisory Group (e.g. a Friends of Victoria Park) be established to assist with implementation, provide an avenue for public input into decisions regarding the Park and enable fundraising, marketing, and branding for the park.. The Park is near and dear to many residents and they want to have an opportunity to have a say in what goes on in the Park and to assist with its operations and maintenance.

The Friends of Victoria Park Group should include representatives from local businesses and local residents with a strong interest in the Park, who can help guide the implementation of the Master Plan.

The establishment of such a group will formalize the long history of public involvement giving greater voice to the community and will be a means to enable both formal and informal feedback about Park-related decisions. Informal discussions between the group and Park managers on a regular basis could alert managers when some decisions might need to be exposed to a wider public scrutiny. The Friends of Victoria Park Group could assist in these efforts as well by being a vehicle for hosting public forums to engage the public in decisions about the Park.

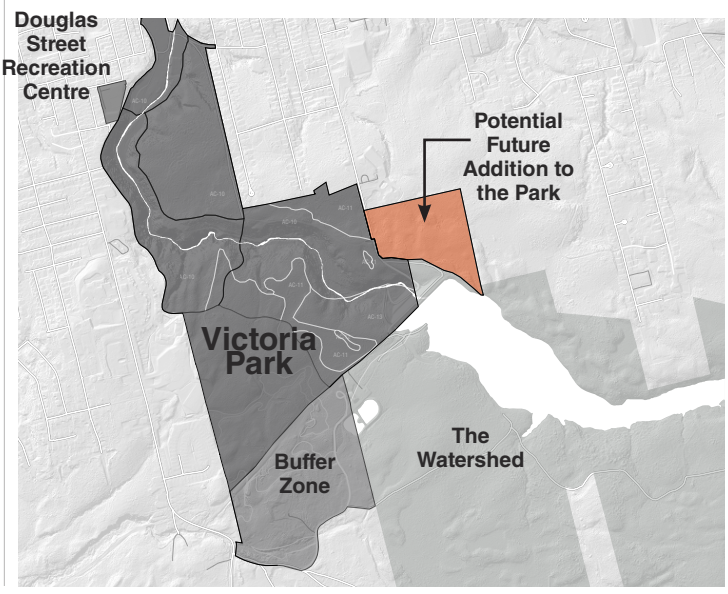
The establishment of this group creates additional potential to leverage the Victoria Park brand as an asset for the Town of Truro, albeit with more flexibility as a `Friends of Victoria Park` rather than a Department of the Town. The group could engage in fundraising for specific projects and initiatives, general operations and maintenance, or financial support for hiring of staff to assist with works, promotion, and tours. Opportunities for promotion and fundraising for the Park are discussed in the marketing and promotion section of this report. Depending on skillsets or interests, people could help with the exotic invasive species program, conduct water quality monitoring, assist in planting programs, report issues within the park, assist in garbage collection, or give guided tours, removing some of the workload from staff.

The following section, describing potential enhancements of the governance structure for the park provides information on integration of the Friends of Victoria Park Group into the overall management of the Park.

4.2 Park Expansion

The addition of the Watershed Zone represents a significant expansion of the recreational lands associated with Victoria Park. There are additional crown lands that could be included to further expand the open space and the recreational potential of the Park. One particular parcel is the southern half of the provincially owned land at the top of Wood Street (see figure below).

The addition of these lands would also serve to increase the buffer for the water supply in this area of the watershed. There are additional crown lands that are contiguous with the Watershed Zone. It could be desirable to include these lands within the zone, providing additional recreational opportunities and protection of the Town's source water supply. It is recommended that the Town review these lands and enter into discussions with the Province regarding their availability for inclusion in the Watershed Zone.

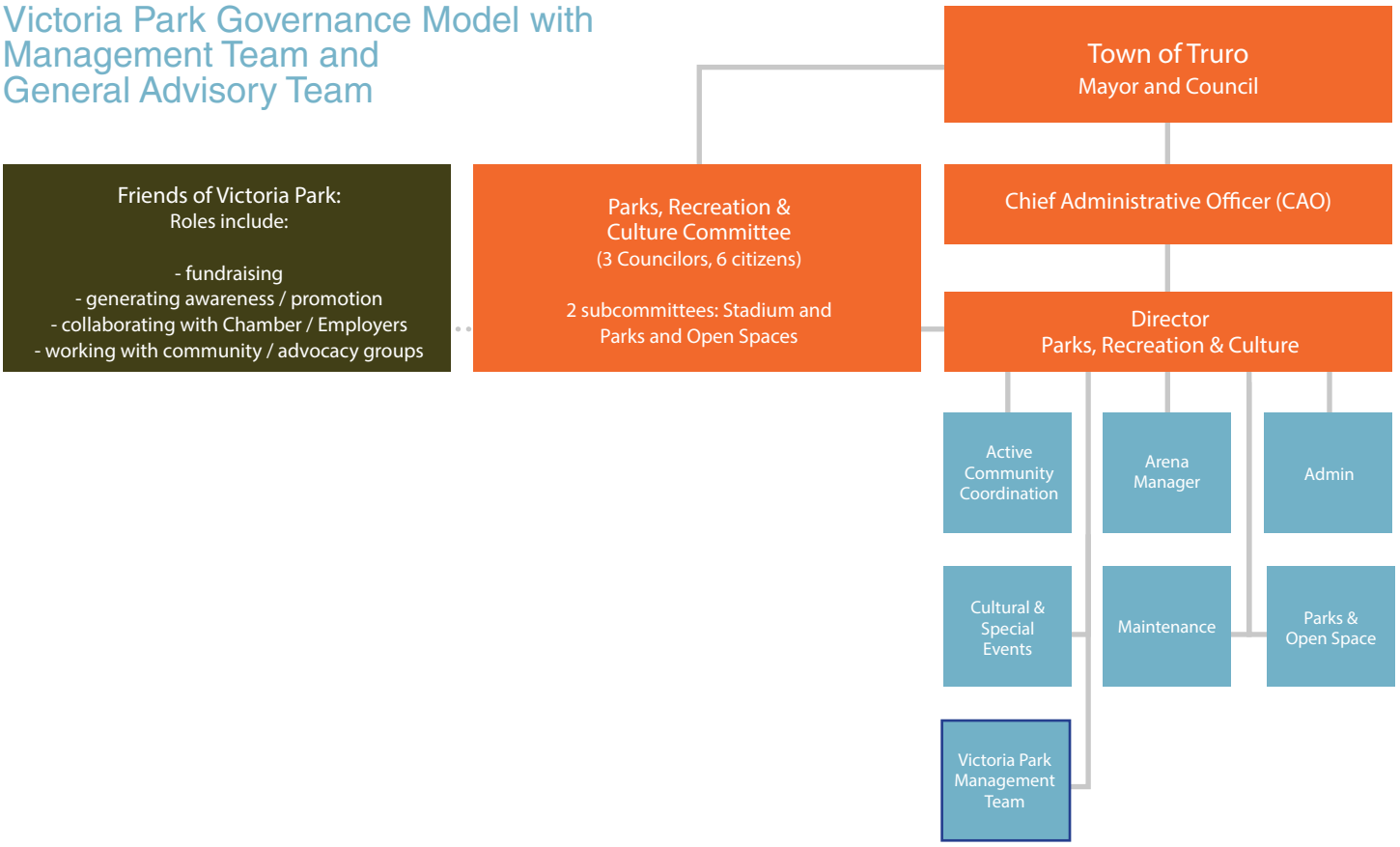


4.3 Governance Structures

The following option seeks to increase the robustness of the Park management structure and to improve opportunities related to fundraising for the park. However, there is nothing about the current governance model that emerges as deficient and, based on comparables, Truro's approach seems quite robust and inclusive of community input.

While the current governance system appears to work very well for the Park, there are a number of advantages to approaching Victoria Park with a slightly different governance model; one that would allow, perhaps, the most prominent park in the Town's system a more unique operational model.

Victoria Park Governance Model with Management Team and General Advisory Team



The main differences in the existing structure and the proposed stricture are summarized in the following table:

Current Model:	***Proposed Model:*** ***With Friends of Victoria Park and Park Specific Management Team***
• No Public Liaison / Advisory Group (Friends of Victoria Park) or Park Specific Management Team	• Management Group, focused on the implementation of the master plan and day-to-day decision making regarding operations and management of the Park • Friends of Victoria Park, focused on awareness, promotion, fundraising, etc. and advising at the Director level

• Bylaws are set by Council	• As with Current Model
• Governance and related decisions are the responsibility of Town administration	• As with Current Model but with input to the Director from the Friends of Victoria Park related to governance and alteration of installation of major features
• Town Council is seen as directly accountable for decisions related to the Park	• The Director, with the support of the Victoria Park Management Team is responsible and accountable for the overall implementation of the master plan and the park management. This approach would remove some of the workload from Council and staff
• The Park Sub-Foreman, as an individual, manages the day to day operations and maintenance and most infrastructure improvements	• The Park Sub-Foreman continues to make decisions related to the day to day operations and maintenance • The Victoria Park Management Team is responsible and accountable for decisions related to infrastructure improvements that support implementation of the master plan
• Event related activity is decided at council based on recommendations from the Director of Parks, Recreation and Culture and the Parks, Recreation and Culture Committee	• As with Current Model, with additional considered input from the Friends of Victoria Park
• Opportunity for public input at Council meetings and via the Parks, Recreation and Culture Committee	• As with Current Model, but with additional opportunities for input on a more frequent basis through the Friends of Victoria Park, which should reduce the number of issues that come before Council in a contentious manner

• Ad hoc communications by Park management with other Town departments	• The Victoria Park Management Team should initiate regular formal communications with other Town departments such as:
	  • Economic Development
	  • Event Attractions
	  • Planning & Heritage
	  • Police
	  • Public Works
	  • Tourism
	  • Urban Beautification & Forestry
	• To enable the Park to be used to promote the community while preserving its natural, cultural and recreational assets

As with the current model, the Park would continue to be overseen by the Director of Parks, Recreation and Culture. Under the authority and responsibility of the Director of Parks, Recreation and Culture, daily operations would be undertaken by the park sub-foreman. Within the Department of Parks, Recreation and Culture, a Victoria Park Management Team (Green box) would be established and staff would comprise the Town's Director of Parks, Recreation and Culture and the dedicated Victoria Park Sub Foreman along with the Town Planner, the Town Engineer and the Urban Forester. Under the authority and responsibility of the Director of Parks, Recreation and Culture, this management team would oversee work together to review larger decisions related to management of the park and the implementation of this Master Plan.

The Friends of Victoria Park would have two main functions:

1. To act as a two way conduit for communications between the Town and the public regarding park management and operational decisions. The Friends of Victoria Park could assist the Town in obtaining public feedback when significant changes to park management or operations are contemplated and could act as a means for ideas from the public to be brought to the attention of the Park Management Team. The Friends of Victoria Park should have a finger on the pulse of the community and be able to offer the Park Management Team informal advice on an as needed basis.
2. To assist with fundraising for the park. As a third-party group, the Friends of Victoria Park might be able to tap resources that are unavailable to the Town or to make a more persuasive case for donations.

With the inclusion of community members at the Parks, Recreation and Culture Committee level, Victoria Park already boasts a public input that many other comparables do not. The goal here then becomes creating a team to focus on management, fundraising and promotion that is Victoria Park focused.

The Friends of Victoria Park would have a mandate that is clearly specific to Victoria Park; supporting the master plan implementation and the Park`s long-term sustainability. At the time of this writing, terms of reference for the Parks, Recreation & Culture Committee were not available; going forward, these terms need to be clarified before the role of the Friends of Victoria Park is finalized.

With these management tools in place, day-to-day and operating level decisions that can have a profound impact on the Park should receive regular scrutiny, ensuring that all activities support the Master Plan's intent to preserve the natural and cultural heritage aspects of the Park while enhancing its recreational value.

The Town and Park administration should continue to reach out to the Dalhousie Faculty of Agriculture located in Truro. The professors and students represent a deep wealth of knowledge and experience that could assist with management of the Park. In addition, the involvement of students in research and other projects in Victoria Park exposes them to the Park and this experience could help create a pool of interested young professionals who might fill positions related to the Park as they become available. The Park administration and the Friends of Victoria Park could consider offering internships that would address particular needs of the Park, while providing students with practical experience.

4.4 Marketing and Promotion

The Town of Truro has some truly unique characteristics that should be considered as the Municipality contemplates recreational and park / open space planning in Victoria Park for today and the future.

Like many smaller communities across Canada, and even more pronounced in communities throughout Atlantic Canada, Truro is facing an aging and declining population trend.

Province wide, neither projected net migration nor natural regeneration of population will forestall the population decline that will be accompanied by an increasing average age.

This trend has implications for recreation planning for the existing population. Older cohorts have very different recreational needs relative to younger cohorts.

Families with younger children tend to demand more organized sporting opportunities, and of course facilities required to host these opportunities, while older cohorts are tend to focus on less formal or more self-directed fitness opportunities and recreation such as walking / running.

As older cohorts continue to age, however, trails that had been used for walking must be able to accommodate those with mobility issues.

Flex-use parks and recreation opportunities become more important in the context of an aging demographic that 'build' recreation infrastructure.

Truro is also a "hub" and seasonally it witnesses a growth in population, mainly during the summer months as visitors stop and stay in the region.

Although recreation and park planning should be more focused on the taxpaying residents who support the investment, Victoria Park is without question an attraction to visitors as well as residents; one that arguably is a 12-month of the year draw to in-province travellers and day-trippers in particular.

Seasonal and short-term visitors are more likely to enjoy open spaces, trails, and features that are accessible throughout the day and offer use options that require little or no advanced planning: a walk in the park.

Other communities across Atlantic Canada are making efforts to attract retirees back to their homes: Stephenville, NL, Cape Breton, and PEI provide some recent examples, all employing a strategy to draw expatriates to retire back in their home communities. The 'pitch': the draw of relatively inexpensive real estate, low cost of living, considerable natural beauty, and high-quality of life has been used to attract former residents as well as to recruit newcomers to the region. In a global economy where people can literally live anywhere and, at the same time, work anywhere in the world, often a community's competitive currency is the elements that comprise the quality of life that is offered by that community. The quality and the flexibility of park and open space is an important part of the equation when it comes to newcomer attraction.

Truro is also a place where multi-residential development has been created and is being planned or contemplated, adding to the Towns' capacity to cater to retirees, as well as younger residents who are coming to the community for work or education.

Collectively, this means that the blend of recreational and park / open space offerings of Victoria Park need to be planned in the context of what is important to the populations of Truro today, the potential benefit of the park to support recruit of newcomers and former residents to move to and settle in Truro, as well as the value of the park for visitors to the area.

These trends in park and recreation investment are also well aligned with the focus on healthy living. In contrast to team sport and more formal recreation options, the financial barriers to trail use are virtually non-existent. This is critically important in the consideration of the health and vitality of our senior aged population, many of whom are on fixed income and / or live on incomes that would not allow them afford a gym membership, for example.

Similar discussions are taking place across Canada in communities where park and recreation investment planning is being considered in the context of matching the needs and demands of an older population, while balancing the role of the offerings in attracting new residents, and instilling an principle of succession planning so that investments and development made today to not adversely impact future generations who will likely have different park service needs from today.

In these regions, current planning and investment is being matched to current demand, with more and more emphasis on multi-modal use trails and spaces that have the flexibility to accommodate a variety of recreation and physical activity needs and mobility limitations, rather than single-purpose/use facilities and infrastructure.

In general, there are several important trends that should be considered:

- Physical inactivity is associated with an increased risk of type 2 diabetes, obesity, coronary heart disease, cancer and osteoporosis, which can lead to decreased quality of life and premature death.
- 56% of Canadian adults 20 years and older are considered physically inactive.
- Canada's Physical activity guide to Healthy Active Living for adults recommends those aged 25 to 55 should achieve 60 minutes of activity every day, or at least 30 minutes 4 days per week if the activity is of moderate to vigorous intensity.
- People living in Atlantic Provinces are the least likely to be classified as "at least moderately active" than those from western Canada.
- Males are more likely than females to be physically active.
- Older adults are less likely to be active than younger adults.
- Those with higher education are more likely to be

classified as at least moderately active
- Those with higher incomes are more likely to be classified as at least moderately active
- Adults who are single are more likely to be classified as at least moderately active than those that live as a couple.
- The economic burden of physical inactivity in Canada was estimated at $5.3 billion (2001).
- Students who participate in school sports are less likely to drop out of school and tend to have higher educational aspirations.
- Increased participation in physical education is associated with improved classroom behaviour, as well as increased enthusiasm toward school and school work, and
- Physical activity is associated with improved behaviour and cognitive functioning in youth with attention-deficit disorders and problems controlling impulsive actions.

4.4.1 Market Trends

To help gage the potential for visitor-centered service offerings, at least in terms of the visitor market for non-resident travelers, current data available from the Economic and Rural Development and Tourism, Tourism Division's Research was examined. For the past 10 years, the total non-resident visitation to Nova Scotia has fluctuated between 2 to 2.2 million people. More recent years show this trend dropping to a ten year low of 2.08 million. Figure 1 (see next page) shows the "estimated number of visitors who came to Nova Scotia by road or air and stayed for at least one night." (Source: NS Economic & Rural Development & Tourism). Since 2008, however, the trend has been positive (data for 2011 & 2012 was not available at the time of this writing).

How these visitors reach Nova Scotia is an important consideration for tourism related opportunities in the region. The Scotia Prince provided passenger and vehicular service between Portland, Maine, and Yarmouth, Nova Scotia, until the end of the 2004 sailing season. Yet, despite the closure of this service, automobile visitation is increasing – important for Northumberland Shore region and the potential impact on traffic though the area (see Figure 2, next page).

The volume of non-resident road traffic and the significant shares which would pass though Truro, together with resident vehicle traffic, represents one of the most significant potentials of Victoria Park to leverage vehicle stops and increase spending in the local community. Currently, there is no highway signage for the Park that will pull traffic from the highway. While this potential is high, without onsite revenue earnings that contribute to the parks bottom line, the benefits accrue only to the area merchants who, gain through increased visitor spending caused by retention and increased length of stay.

4.4.2 Potentials for Earned Revenues

There are a number of potential enhancements that can be pursued to increase the direct earnings potential of Victoria Park, and / or the earning potential of the local area who may then contribute to the operations of the part either through funding (e.g., through a Friends of Victoria Park) or more traditionally, through tax dollars collected by the Town for such services.

From the perspective of identifying opportunities for increased potential of generating earned revenues through Victoria Park, the overwhelming consensus among the stakeholders was one of caution. Virtually nobody interviewed through this project wanted to risk adversely impacting the Park with uses that would generate revenue at the cost of the Park's ecology or more aesthetic characteristics.

Opportunities for earned revenues that emerged, either though the consultation or through a review of comparables, included:

Fundraising Initiatives: The Park has already established itself as worthy of gift giving, with an existing trust. Mechanisms to accept donations could be improved through acceptance of payments online, regular collections of coin drops in the wishing well (or a token exchange for wishing-well with the sale of bio-friendly tokens that break down and do not have to be retrieved); naming a step on Jacob's Ladder; dedications of plantings/reforestation and other park infrastructure (name / dedicate a tree to a family member), among other opportunities. Applications should be submitted to special funds such as those that may be set up to celebrate Canada's 150th anniversary.

Development of Programming: Collecting admissions or fees for participation in various activities throughout the Park, such as guided tours, kid's camp days, senior's picnic, etc.

Gift Shops Sales: including Park branded merchandise, cuttings/plantings of trees/plants seeded from those in the park (some certification/guarantee of authenticity), retail sales of items that park visitors may need: towels,

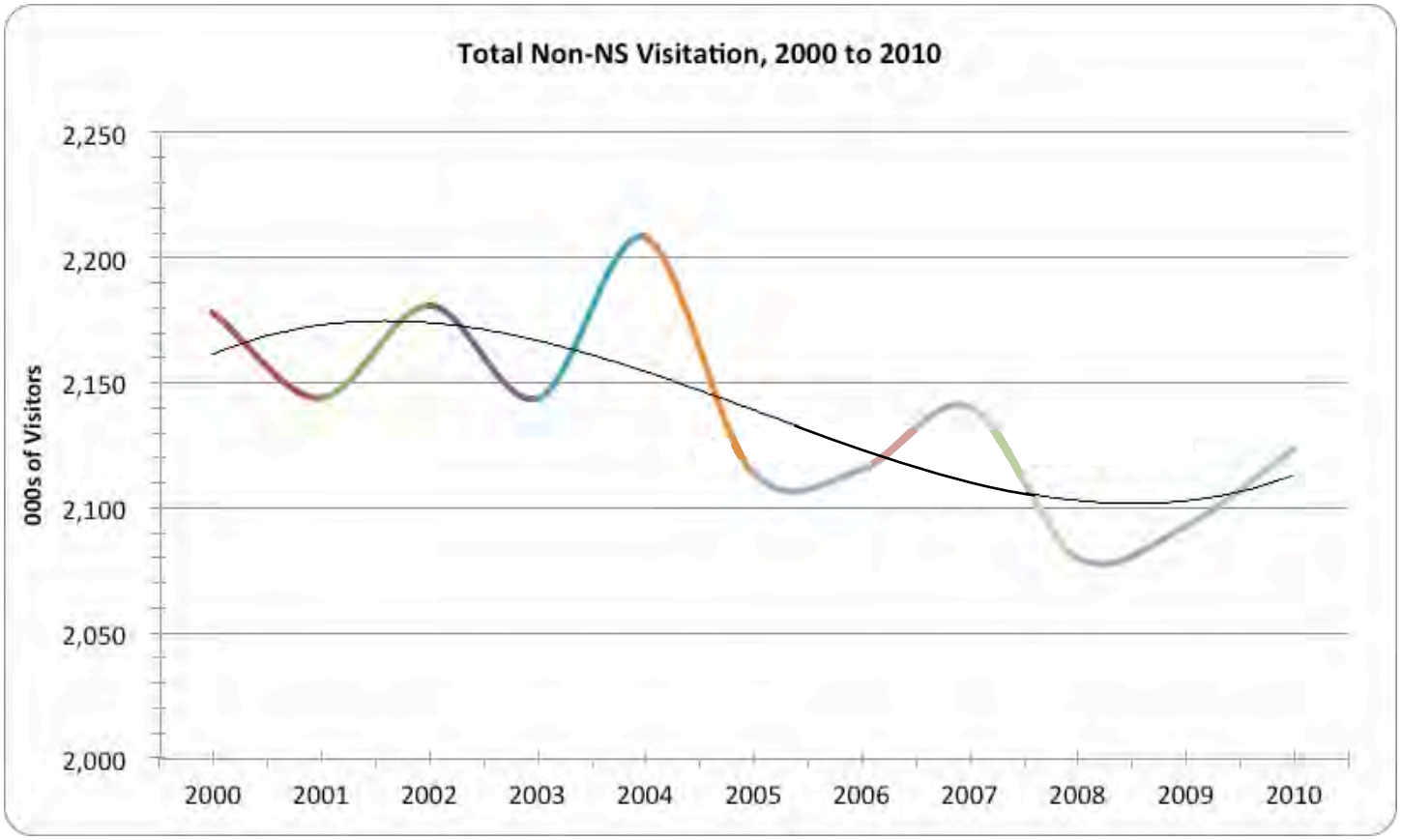


Figure 1 – Total Non-NS Visitation, 2000 to 2010

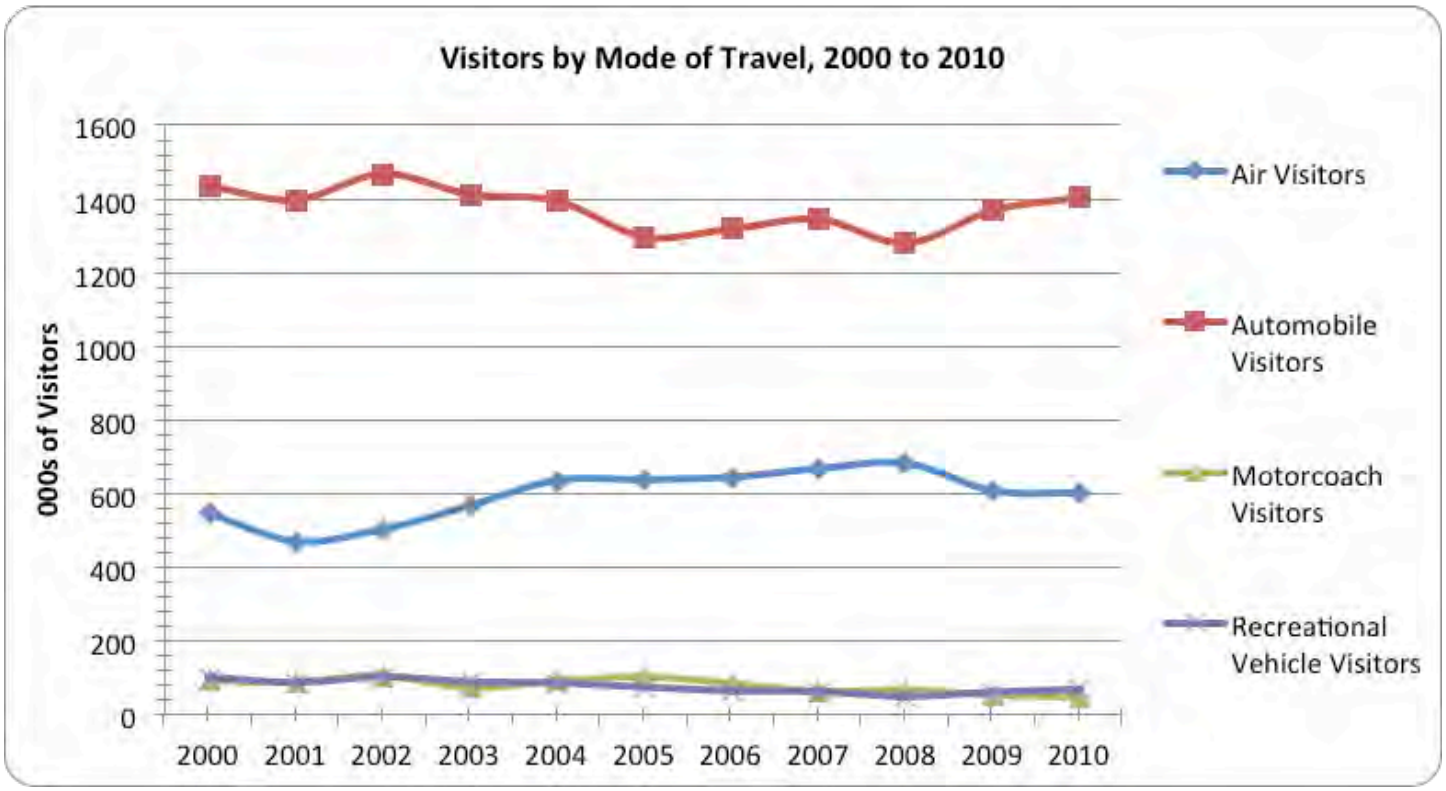


Figure 2 – Visitors by Mode of Travel, 2000 to 2010

batteries, chargers, diapers, and other items that get wet from unplanned dips in the pool.

Among the less passive uses, or those uses that are more land intensive, noted in other parks include:

- Frisbee golf;
- Forest canopy walk – wire lines and bridges (appropriately located);
- Suspension bridge across the ravine (e.g., Capilano Suspension Bridge Park);
- Outdoor hockey rink;
- lease of kiosk or parking area for various vendors (e.g., cross country/snowshoe/ice cleat rentals);
- Installations of tennis courts, horseshoes, Lawn bowling, etc.; and
- Zipline (temporary or permanent) appropriately located, among other uses.

Based on input received from the public, Park management, and the steering committee for this project, this plan does not support commercial uses of park, other than those that would be ancillary to an approved use, for example, a hot dog stand for Canada Day events.

What emerges as unique to Victoria Park, in terms of earned revenue potential, it the ability to leverage the Park's status as being well-known among Town residents and non-residents alike, and its status as a destination for day-trippers from HRM and other surrounding communities, as well as a stopping place for both in-province and non-resident travelers to Nova Scotia.

This presents a merchandising opportunity wherein the Park licenses the use of its logo and brand for use on t-shirts, stickers, sweaters, and such items that are then sold in area stores so that a proceed of the sale helps fund the park. The items could be offered by shops in the Downtown core or merchants elsewhere in Truro, as part of a visible campaign in support of the Park, with a portion of proceeds to the park.

A Park Visitor Survey and / or a downtown customer survey could help provide metrics for Park administrators to measure both the merchandising potential. As well, on a going-forward basis, a periodic survey could help Park administrators measure the value of the park in drawing visitors to the area and the nature of the local spending that is related to their visits to the park.

This needs to be monitored and understood and a regular intercept survey that asks people about their shopping habits, their origin, and the impact of the Park causing these people to spend in Truro will be helpful to the implementation of this strategy.

4.4.3 Awareness and Park Promotion Actions

As noted elsewhere in the report, and strongly highlighted throughout the consultation process, the Town of Truro has, in Victoria Park, a truly unique asset offering a spectrum of experiential opportunities that would be difficult to capture in a single image, tagline, theme, or message.

The difficulty is illustrated by considering that are many cultures that visit and live in this region who would not immediately recognize messages that provided a categorization of the Park based exclusively on the Victorian features and amenities that exist.

On the other hand, they may more easily and immediately understand, value, and appreciate that the Park affords them an opportunity to see 250-year old Eastern Hemlocks set along the steep hills of a gorge cut by the river below.

Clearly, there are many other themes and experiences offered by Victoria Park that can be highlighted as well: the ecology, plant life, seasonality of the foliage, the varied terrains, and from a physical point of view, the varied levels of trail intensities that can be enjoyed by a wide range of ages, modes and abilities, among other themes.

In addition to the stature, condition, age, and history of Victoria Park, the diversity of the experiences it offers are, in fact, another important dimension to the uniqueness of the Park.

Choosing succinct messages, themes, and images that encompasses this uniqueness and diversity, in a way that aligns with today's streams of instant communications, will be a creative challenge for those tasked with further developing a winning strategy around awareness and park promotion.

A more effective online presence would support this effort, in tandem with revisiting Park branding.

Accordingly, we offer the following direction.

Municipal Heritage Designation:
The Town should consider designating the Park as a municipal heritage site, recognizing the importance of the Park to the history and the current quality of life of the Town.

Website Design and Implementation:
Once funding is obtained to further develop the web site (ideally in conjunction with any other web work the Town may be planning), a web site developer could be engaged to build and maintain a dedicated Victoria Park web site based on the approved concept, including functioning social media tools (See below). Once the web site is launched, it could begin to be populated with information for park users as well as links to other Town services and visitor opportunities. Note that, at the time of this writing, the URL www.victoriapark.ca appears to be available for purchase.

Brand Development Toolkit:
The existing branding of the Park could be enhanced with the development of a branding toolkit. Components of the toolkit would include:

- Expand the concept: There are a number of themes that can be reflected by Victoria Park and included in any further refinement of the brand and logo. A complementary set of themes needs to be agreed to within the overall concept.
- Logo options – A comprehensive logo development process could help brand the park with an iconic logo.
- Web site concept – A preliminary hierarchy and design layout for the web site could be prepared, allowing the Town to determine how it wanted to manage the online presence of the Park, currently a page within the Town's web site. The concept would be used to build the website in a further stage, once development money became available.
- Social media concepts – As part of the web planning, social media concepts and hierarchies could be mapped out. At the very simplest, determining which existing platforms to post the "Victoria Park hashtag or flag" would be a start. Determining a plan roll out and social media management would also be needed, including a social media policy that could help guide future use of social media as it relates to the Park.
- Marketing/media concepts – sample advertisements, posters, billboards, etc. would be tested in support of the brand identity. Markets would need to be confirmed and cost estimates developed for placement, where most effective.

Media Implementation:
Implementation of media placements and advertising using any new Victoria Park brand materials would take place strategically, on an as-needed basis.

Brand Refinement Process:
The brand refinement process will involve consultation and design work around the brand. Work will need to involve the Town and Park stakeholders. Initial tasks would include:

- Preparing RFPs and requesting proposals from marketing/media firms capable of doing the work
- Contracting a firm with experience in marketing, media development and branding, along with sub-consultants who can provide signage, façade and web design expertise.
- Assembling a stakeholder group or committee that represents the downtown, tourism and Town interests.
- Having the consultants undertake a survey/research in advance of the workshop. Surveys may be developed and completed in advance of the workshop, to ensure that the most information is available before launching the creative process.
- Developing park user profiles.
- Consultants undertaking a workshop with stakeholders to further develop branding approach in a manner that respects the Park.

Encouraging Park-based festivals throughout the year:
Christmas shopping opportunities marketed to target market areas (esp. Halifax) that feature activities in the Park could be managed by a coordinator role within Parks and Recreation.

4.5 Opinion of Probable Costs and Phasing

This report describes an overall management plan for the land uses and the ecological management of Victoria Park. The following opinion of probable costs summarizes the capital improvements and additional management, operations and maintenance activities proposed in the plan. The table also provides a relative indication of their priority for implementation. The prioritization is based on the relative ease of implementation and cost versus the potential benefit the improvement brings. High profile projects with a relatively low cost can be implemented sooner building momentum for other higher cost, more complex improvements that will require some time for fundraising and further study to determine the appropriate approach.

The improvements are broken down into short, medium and long term projects. It is anticipated that short term projects can be implemented within three years, medium term projects within four to seven years and long term in eight-plus years.

Short Term

Location	Action	Quantity	Units	Unit Cost	Cost	Comment
Operations	Promote and foster a community group for Victoria Park				Staff Time only	ongoing through all terms
Operations	Create maps of park suitable for paper copies, trailhead signs and website	1	lump sum	$10,000	$10,000	
Operations	Improve website	1	lump sum	$15,000	$15,000	
Operations	Undertake branding design	1	lump sum	$25,000	$25,000	
Operations	Work with mountain biking community to develop and maintain appropriate routes, infrastructure, and education programs to manage environmental impacts of off-road biking				Staff Time only	ongoing through all terms
Operations (Study)	Develop Graphics Standards Manual using wordmark and colour palette	1	lump sum	$10,000	$10,000	
Overall Park	Implement Town of Truro Planning Department wayfinding system	1	lump sum	$15,000	$15,000	per year, ongoing through all terms
Operations (Study)	Develop detailed interpretive plan outlining themes, all sign panels and locations, and interpretive programming	1	lump sum	$50,000	$50,000	ongoing through all terms
Overall Park	Implement interpretive sign installation	1	lump sum	$15,000	$15,000	per year, ongoing through all terms
Operations	Implement interpretive programming	1	lump sum	$15,000	$15,000	per year, ongoing through all terms
The Gorge	Remove unnecessary overhead wires from Lower Park into the Gorge	320	metres	$50	$16,000	
Overall Park	Implement understory planting, reforestation and planting to aid succession as appropriate	1	lump sum	$15,000	$15,000	per year, ongoing through all terms
Ecosite AC-10	Maintain stability along slopes of ravine surrounding Lepper Brook	1	lump sum	$2,500	$2,500	per year, ongoing through all terms
Ecosite AC-10	Design a buffer around watercourse near the main park entrance	1	lump sum	$10,000	$10,000	
Ecosite AC-11 (Study)	Evaluate trails within wetlands and ensure that none are impeding the hydrology. Determine constraint of hydrologic flow, take immediate action.				Staff Time only	ongoing through short and medium terms
Lower Park (Study)	Obtain land and design new works yard (estimate does not include cost of obtaining land)	1	lump sum	$75,000	$75,000	
Lower Park	Deign and install interpretive kiosk	1	lump sum	$25,000	$25,000	
Off-Site	Update old signs with new simple panels	10	each	$1,500	$15,000	
Overall Park	Establish signed trailheads at all entrances	1	lump sum	$10,000	$10,000	per year, ongoing through short and medium terms
Operations	Establish monitoring program to ensure use, operations, and maintenance are being implemented in a manner consistent with overall park goals and specific management practices for each zone				Staff Time only	ongoing through all terms
Overall Park	Monitor new trails after each significant rain event until vegetation is well-established and implement maintenance procedures to control erosion and rutting. Repairs as needed.	1	lump sum	$2,000	$2,000	per year, ongoing through all terms

Operations	Survey trails annually and implement maintenance procedures to control erosion and rutting	1	lump sum	$2,000	$2,000	per year, ongoing through all terms
Operations	Annually assess culverts installed in park to ensure that there are no obstructions to flow and that there is no evidence of scoring or erosion. Repairs as needed.	1	lump sum	$5,000	$5,000	per year, ongoing through all terms
Operations	Inspect newly installed culverts after each significant rain event for two years following their installation. Repairs as needed.	1	lump sum	$2,000	$2,000	per year, ongoing through all terms
Operations	Do not replace site furniture when it wears out in Acadian Uplands				$0	ongoing through all terms
Operations	Create an invasive vegetation management plan for the park	1	lump sum	$10,000	$10,000	
Overall Park	Implement an invasive vegetation management plan for the park			Staff Time with volunteer support		ongoing through all terms
Overall Park	Create a 20m buffer (minimum) around all wetlands, watercourses, and drainage corridors				$0	
Overall Park	Survey Victoria Park and determine which areas and forest types are deficient of coarse woody material	1	lump sum	$20,000	$20,000	
Operations	Educate public about zoning with the park and acceptable uses in each zone			Staff Time with volunteer support		ongoing through all terms
Overall Park (Study)	Develop specific park operations manual for staff that describes appropriate maintenance practices and design principles for installations	1	lump sum	$40,000	$40,000	
Lower Park	Investigate the feasibility of purchasing properties on the corner of Brunswick and Park.				Staff Time	
Ecosite AC-12	Educational programming about the importance of ponds/vernal pools through guided tours			Staff Time with volunteer support		ongoing through all terms
Operations	Conduct detailed soil and vegetation survey when planning for new infrastructure to ensure that installations area sensitive to the natural conditions of the site			Staff time or part of RFP for works		ongoing through all terms
Operations	Work with NS Department of Transportation and Infrastructure Renewal to install Victoria Park signs on Highway 104	2	lump sum	$25,000	$50,000	

Medium Term

Location	Action	Quantity	Units	Unit Cost	Cost	Comment
Ecosite AC-10	Install a buffer around watercourse near the main park entrance as designed in short term	1	lump sum	$50,000	$50,000	
Ecosite AC-12	Remove infill from wetland in south-western area of the water treatment plant	1	lump sum	$10,000	$10,000	
Ecosite AC-12	Restore hydrological connection between wetlands intersected by the water treatment plant access road	1	lump sum	$20,000	$20,000	
Lower Park	Build new works yard	1	lump sum	$750,000	$750,000	
Lower Park	Install ornamental lamp posts and Victoria Park banners along Park Road	1	lump sum	$128,000	$128,000	
Lower Park	Revitalize play area (separation, replacing aging infrastructure, naturalize play equipment)	1	lump sum	$50,000	$50,000	
Lower Park	Demolish Truro Police Service building	1	lump sum	$10,000	$10,000	
Lower Park	Remove old pump house when new work yard is complete	1	lump sum	$15,000	$15,000	
Lower Park	Remove workshop building and utilities when new work yard is complete	1	lump sum	$15,000	$15,000	
Lower Park	Repave and stripe swimming pool lot	3200	m2	$40	$128,000	
Ecosite AC-08	Determine whether or not a culvert has been installed in or connected to the wetland and if it is properly placed and sized	1	lump sum		Staff Time	
Lower Park	If land on the corner of Brunswick and Park is obtained, design and implement entrance improvements.	1	lump sum	$200,000	$200,000	
Overall Park (Study)	If park management decides to intensively manage the park in a manner that will alter the current forest stand conditions, a more in depth forest inventory and management plan should be completed.	1	lump sum	$100,000	$100,000	
The Gorge	Recreate the Irresistible Engagement Seat, the Leap Year Engagement Seat and the Rejuvenation Pew	3	each	$10,000	$30,000	

Long Term						
Location	**Action**	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Comment**
Lower Park	Upgrade main parking lot	1	lump sum	$157,250	$157,250	
Lower Park	Construct new service lane and path; remove old service lane	1	lump sum	$45,000	$45,000	
Ecosite AC-10 (Study)	Determine plausibility and cost of re-routing stormwater so that runoff from surrounding neighbourhoods does not enter park	1	lump sum	$75,000	$75,000	
The Gorge	Install look-off above Falls	1	lump sum	$500,000	$500,000	

This opinion of probable costs is for comparative purposes only. It is presented on the basis of experience, qualifications, and best judgement. It has been prepared in accordance with acceptable principles and practices. Sudden market trend changes, non-competitive bidding situations, unforeseen labour and material adjustments and the like are beyond the control of CBCL Limited. We cannot warrant or guarantee that actual costs will not vary significantly from the opinion provided.

These costs are in 2014 dollars. Opinions of probable cost for capital projects are for construction only and do not allow for contingencies (typically 25% at this stage) and engineering fees (typically 10%).

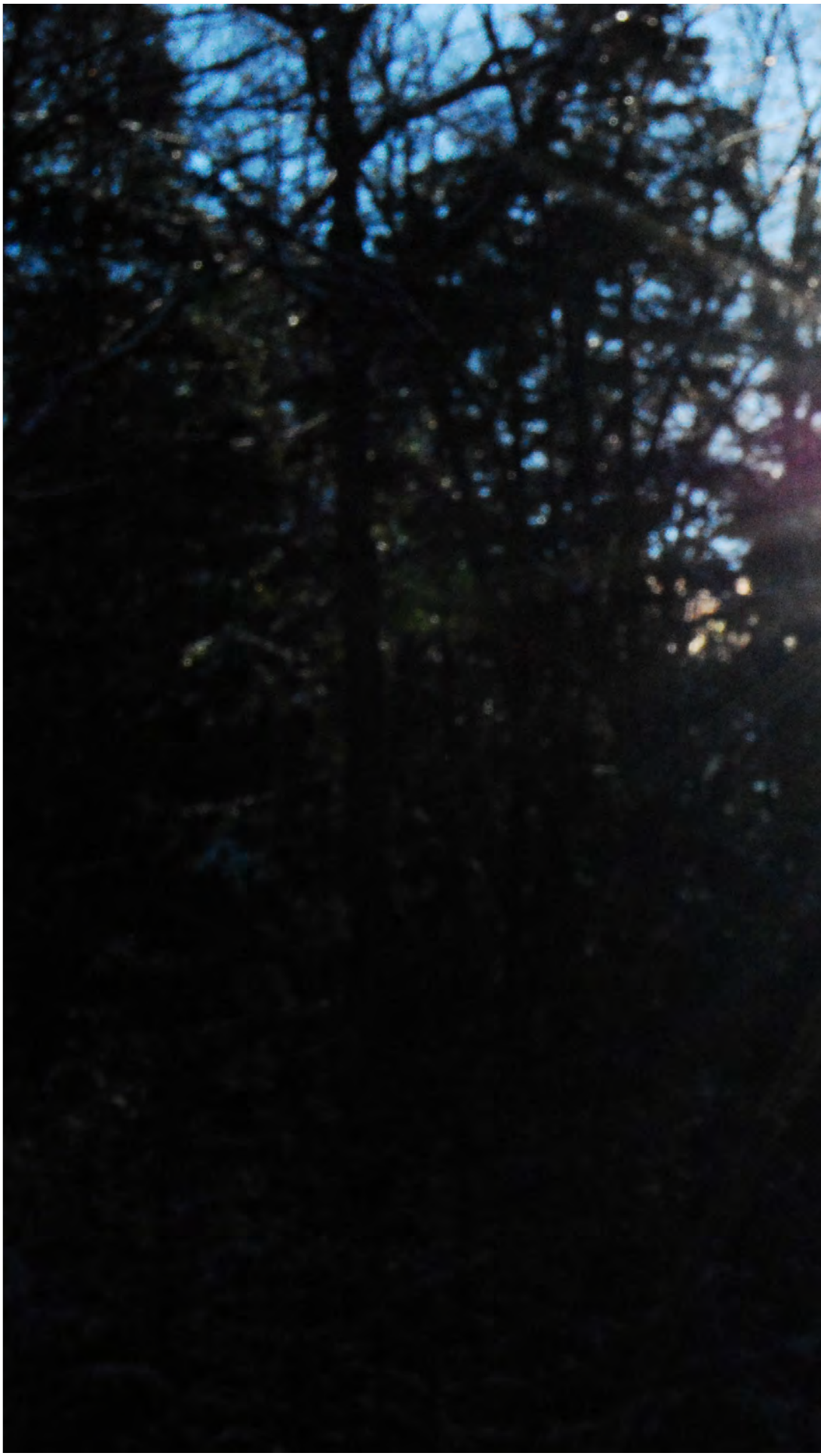
4.6 Periodic Review of the Master Plan

This document should receive a major review every 10 years at least to ensure that it remains relevant to the operations of the Park and the desires of the Town administration and residents. As part of this review, the ecosite management methods should be updated to ensure that they are responding to current pests and other conditions that may evolve due to climate change and other conditions.

A

Appendices

The stuff we couldn't fit into the report.



5.1 Appendix A - Comparables

We looked at several parks that offered examples and practices that may help inform the overall direction for Victoria Park. These were selected in consultation with the Committee and were chosen because of their alignment with one or more features of Victoria Park, such as:

- Proximity to an urban population,
- Unique natural feature of the park (e.g., old growth wooded area, trail system, unique landscape or geological feature, etc),
- Municipal ownership or broad community representation within the governance structure,
- Use of branding, among other reasons.

Selected for consideration were:

- Pippy Park, St. John's Newfoundland
- Shubie Park, HRM, Dartmouth, Nova Scotia,
- Capilano Suspension Bridge Park, Vancouver, BC
- Hemlock Ravine Park, HRM, Bedford, Nova Scotia,
- Agricultural Research Station Nature Trail (Ravine Trail), Kentville, Nova Scotia,
- Odell Park, Fredericton, New Brunswick

Authors of this report have visited and are familiar with all of these parks.

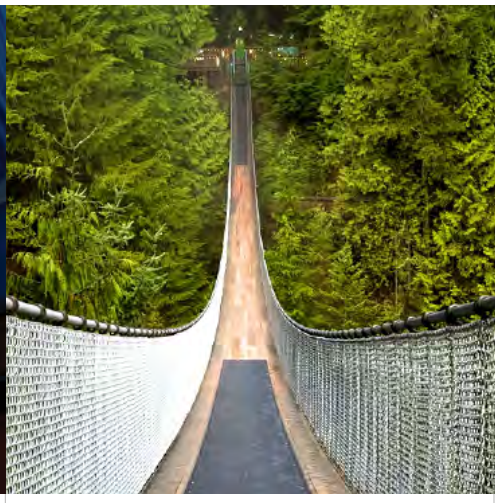
5.1.1 Pippy Park

Pippy Park is a large multi-use 3,400 acre park is located within the City of St. John's and beside an urban landscape. Historically, part of the site had been the location of a number of farms, including as many as 400 farms that comprised the Freshwater Valley. The park includes the last remaining farm of the Freshwater Valley, dating back to 1819, which is the subject of a current study to explore the potential to develop the farm into an interpretive site. In addition to the trail system, the park includes:

- a campground of 216 sites within the city,
- 2 golf courses (18-hole and 9-hole),
- mini golf,
- walking and skiing trails (day use, year-round),
- 3 banquet/meeting halls for special event and conference use, and
- a Fluvarium that caters to school trips and tourist uses year-round

The park lands are also the location for Memorial University, several provincial government offices, as well as several residences and smaller community gardens, including Memorial University's botanical gardens. Of the 3,400 acres that comprise the Pippy Park lands, ownership is mixed. Some of the land is city-owned, and some is owned by the Crown, and by Memorial University.

The governance structure of Pippy Park includes the City of St. John's as a partner with the C.A. Pippy Park Commission. The C.A. Pippy Park Commission is a semi-autonomous Crown Corporation under the laws of the Province of Newfoundland and Labrador. The C.A. Pippy Park Commission consists of an eight-member Board, most of whom are appointed by the Lieutenant-Governor in Council, representing the Provincial Government, Memorial University, City of St. John's, Pippy Family, and Pippy Park Landowners. The Commission has broad powers under the Park Act to implement a master plan and accordingly regulate land use within Pippy Park.



5.1.2 Shubie Park and Campground

Shubie Park and Campground is a campground and RV park operated within the Halifax Regional Municipality (HRM). The campground is located within the former city of Dartmouth, Nova Scotia, and includes 67 serviced sites, 33 unserviced sites, as well as Yurts – a form of onsite accommodation available for nightly rentals.

The campground is located within a 40-acre urban park that includes walking trails, canals of the former Shubenacadie Canal system (that once linked the Halifax Harbour to the Bay of Fundy), as well as the Fairbanks Centre, an interpretive centre devoted to the history of the area and the canal system. The Fairbanks Centre includes a model of the canal lock and various displays, as well as meeting room facilities. The trail system also forms part of the Trans-Canada Trail. The Park includes the shore areas of Lake Micmac and Lake Charles.

The campground is located on the shores of Lake Charles, within the Shubie Park lands. The campground is owned and maintained by the municipality, however the park is privately managed. The camp grounds services include:

- Supervised beach area—day use visitors (seasonal),
- Tennis & volleyball court, baseball diamond—day use visitors (including child & adult sports teams) (seasonal),
- Playground & family area—day use visitors (especially families),
- Hiking & biking trails & fishing—day use visitors and overnight campers,
- Off-leash dog area—primarily local day use visitors & their pets,
- Canteen,
- Summer sports facilities: tennis & volleyball courts, baseball diamond, and
- Day use: supervised beach; fishing; hiking trails; within walking distance of historic Shubenacadie Canal locks.

Amenities for overnight campers, including washrooms and showers, outdoor shelter and barbecues, laundry room, disposal station, store, canteen, internet access and 24-hour security. The campground is located in Dartmouth, adjacent to Highway 118 and is accessible via Metro Transit. The campground is operated seasonally from May to October, however hikers and cross country skiers make use of the campground and its connections to Shubie Park over the winter season.

5.1.3 Capilano Suspension Bridge Park

Capilano Suspension Bridge Park is a well-known and well used Park in North Vancouver. Privately owned and operated, the Park attracts tens of thousands of visitors every year. In operations since about 1889, the Park has become a tourist destination with fee-based admissions, and preferential pricing for BC residents. The park features;

- the iconic suspension bridge,
- Treetops Adventure (first venue of its kind in North America),
- Rain forest ecotours,
- Gardens,
- Nature trails,
- A collection of totem poles (made on-site in view of visitors),
- Park exhibits (park's history, ecology, etc,),
- Cliff Walk (suspended arched bridge over the canyon),
- Gift shop, and
- Dining options (Capilano Coffee Company Café)

The Park uses the suspension bridge in its logo and branding, and caters to a broad spectrum of visitors, including tourists and school trips, bridge builders, as well as students and hobbyists who are interested in the ecology of the area.

5.1.4 Other Comparables

From the perspective of scale and current uses Hemlock Ravine Park, HRM, Bedford, Nova Scotia, the Agricultural Research Station Nature Trail (Ravine Trail), Kentville, Nova Scotia, and Odell Park, Fredericton, New Brunswick share more in common with Victoria Park than the previous examples.

- Odell Park is a well-know 400 acre park set in an urban centre and features a duck pond, deer pen, arboretum, botanical garden and walking trails and a multi-purpose visitor centre.
- Hemlock Ravine Park is a 185 acre park located between the communities of Bedford and Halifax within the Halifax Regional Municipality. Part of the Prince's Lodge (an estate that Prince Edward, Duke of Kent occupied), the park features an iconic heart-shaped duck pond, trails, and interpretive signage.
- Ravine Trail is tucked away behind the Agricultural Research Station in Kentville, NS. This park seems known only to the local community. It features over 10 kilometres of trails through a mix of boreal forest and hardwoods that lead to two look-off points.

Odell Park and Hemlock Ravine Park Hemlook are municipally owned, managed, and maintained, and charge no fees for to personal use of the park and trails. Ravine Trail is free to access as well, although its ownership and management is unknown to us at the time of this writing

5.1.5 Summary

On balance, the comparables suggest the following elements for governance.

- The existence of an oversight body is essential for the park's maintenance, preservation, and operation, as well as park planning and promotion. For those that are not privately run, Governance approaches include:
  - Council level governance,
  - Committee of Council,
  - Council Members and Council Appointed Community members,
  - Council Members and Community Appointed Community members, and
  - Contract management of all or some features of the park operations.
- Horizontal collaboration between and among municipal departments is essential and, for municipally operated parks, takes place within and among:
  - Parks and Recreation,
  - Economic Development (Town, RDZ, Province),
  - Event Attraction/Planning,
  - Police/Fire/Safety,
  - Public Works,
  - Tourism,
  - Urban beautification & forestry, among others.
- Day-to-day operations is varied and can include direct operations by a Park Manager/ Superintendent, with support staff, volunteers/volunteer coordination, and often includes liaison and working relationships with staff involved in programming, typically through Parks and Recreation.

5.2 Appendix B - References

ACCDC, 2014. Atlantic Canada Conservation Data Centre. http://www.accdc.com/Data/ranks.html#subdefini

Bartels, R., Dell, R., Knight, R. 2014. Dead and Down Woody Material. USDA: Forest Service. http://www.fs.usda.gov/detail/r6/landmanagement/resourcemanagement/?cid=fsbdev2_026700

Clean Nova Scotia (http://clean.ns.ca/)

Hesselbarth, W., Vachowski, B., Davies, M., Trail Contruction and Maintenance Notebook. 2007. U.S. Department of Transportation: Federal Highway Administration. 0723-2806-MTCD

Hill, N. 2013. Verbal Communication with Dr.Hill regarding wetlands and flora in Victoria Park.

Kamber Engineering. 1990. Sediment and Erosion Control, An Inventory of Current Practises. Prepared for U.S. Environmental Protection Agency, Office of Water Enforcement and Permits, Washington, D.C.:

Lewis, D., Lennox, M., Nossaman, S. 2009. Developing a Monitoring Program for Riparian Revegetation Projects. University of California: Division of Agriculture and Natural Resources. Publication 8363.

MTRI, 2008. Species at Risk in Nova Scotia – Identification and Information Guide. Mersey Tobiatic Research Institute.

Neily,P., Keys, K., Quigley, E., Basquill, S., Stewart, B. 2010. Forest Ecosystem Classifcation for Nova Scotia. Part 1: Vegetation Types, Part 2: Soil Types, Part 3: Ecosites. Nova Scotia Department of Natural Resources, Renewable Resources Branch. 2013-1.

Nova Scotia Department of Natural Resources (NSDNR). 2012. Nova Scotia Wildlife Statisitics. http://novascotia.ca/natr/forestprotection/wildfire/stats/2012gen.asp

Nova Scotia Environment (NSE). 2011. Nova Scotia Wetland Conservation Policy. https://www.novascotia.ca/nse/wetland/conservation.policy.asp

Nova Scotia Nature Trust (NSNT). 2000. Old Growth Forests: A Fact Sheet on the State of Old Growth Forests in Nova Scotia.

Nova Scotia Tourism Agency. http://www.novascotia.ca/econ/tourism/research/facts-figures/key-tourism-indicators.asp

Ritter, J. 2012. Soil Erosion – Causes and Effects FACTSHEET. Ontario Ministry of Agriculture and Food (OMAFRA). Order No. 87-040.

Roland, A.E. and Smith, E.C. 1969. The Flora of Nova Scotia. Nova Scotia Museum, Halifax, Nova Scotia.

Smith, D., Larson, B.,Kelty, M., The Practise of Silviculture: Applied Forest Ecology. 9th Edition. John Wiley & Sons Inc

Tardif-Woolgar, M. 2009. Monsters in the Marsh! Project Report: Removing Glossy Buckthorn from Annapolis Royal Marsh. Clean Annapolis River Project.

The Nature Conservancy. 2014. Journey with Nature: Garlic Mustard. http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/indiana/journeywithnature/garlic-mustard.xml

U.S. Environmental Protection Agency (EPA). http://water.epa.gov/

US EPA: http://www.epa.gov/rgytgrnj/wetlands/pdf/ChannelizationFS04-Final.pdf

Vineberg and Fulton, 2013. Victoria Park Cultural Resources Study.

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