







ARSENAL LANDS MASTER PLAN ADDENDUM

INCLUDING MARIE CURTIS PARK WEST

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1.0 INTRODUCTION

The Arsenal Lands is a 15.7-hectare property located south of Lakeshore Road East on the eastern border of the City of Mississauga. In October 1992, Toronto and Region Conservation (TRCA) purchased the property with the intent of expanding Marie Curtis Park to form a 41-hectare waterfront park.

Shortly after the property was purchased, TRCA retained a consulting consortium to undertake a park planning and site remediation study. The purpose of the study was to determine the nature and extent of contaminants on site, identify methods of rehabilitating the lands to permit public use and develop innovative ideas for the incorporation of the site as a major regional attraction on the Lake Ontario waterfront.

The Arsenal Lands Park and Site Remediation Master Plan was released in 1998. The Plan included recommendations for site remediation to achieve park use guidelines and a park concept based on a conservative landscape rehabilitation approach. INTERA was retained by TRCA to implement the remediation plan that was concluded in 2002.

In 2003, with the assistance of a Technical Steering Committee, TRCA identified several issues requiring further assessment and resolution before park development could proceed. The *Arsenal Lands Master Plan Addendum including Marie Curtis Park West* was prepared to provide a clear direction for the park and ensure that the overall park concept reflects the current site conditions and the needs of the community.

2.0 EXISTING CONDITIONS

The Arsenal Lands were formerly used for industrial purposes, most notably as a manufacturing site for small arms during the Second World War. Site remediation was undertaken between 1998 and 2002, and included extensive soil excavation that presented the opportunity to create new landforms and improve the natural integrity of the site.

A diversity of habitats are represented at the Arsenal Lands and Marie Curtis Park West including beach, woodland, wetland, meadow and riparian habitats. This habitat diversity gives rise to the presence of numerous notable flora and fauna species.

The Waterfront Trail and the Etobicoke Creek Multi-use Recreational Trail connect the Arsenal Lands and Marie Curtis Park West with surrounding greenspaces. There is also a network of informal trails throughout these parks. Site services within the Arsenal Lands were decommissioned during the site remediation process, however a number of facilities exist within Marie Curtis Park West.

3.0 MASTER PLAN ADDENDUM

The Master Plan Addendum is consistent with the goals and objectives of the original Master Plan released in 1998. The Addendum reinforces the original intent of the partners to form a regional waterfront park that offers recreation opportunities for Mississauga and Toronto residents. The park plan is inspired by the unique natural and historical features of the parkland and is intended to be conceptual. The exact size and location of the proposed park features will be determined during the detailed design process that will involve further public consultation.

The Addendum builds on the original Master Plan by offering not only trails and picnicking venues but also complimentary park facilities to make the park experience more enjoyable and attractive to potential users. These complimentary facilities include a new play area, a splash pad, washrooms, and a "leash-free" area for dog owners. The additional park facilities have been selected to meet public demand and have been sited to help deter inappropriate park use in underused areas. The Addendum outlines the plans to preserve historic features, protect and enhance natural heritage resources, and develop new park features and amenities.

4.0 DESIGN GUILDINES

The use of new technologies and materials will be explored to create an environmentally friendly park. The focus will be on the park's unique natural features. These natural features will dictate the precise siting of park infrastructure and facilities during the detailed design process.

5.0 MANAGEMENT PLAN

Under the umbrella of TRCA's management agreement with the City of Mississauga, municipal staff will carry out the day-to-day operations of the park. The City of Mississauga has a comprehensive system of best environmental management policies in place to direct the overall maintenance of these lands. To ensure that the park operations are consistent with the recommendations of the Addendum, an overall management approach has been developed.

6.0 PUBLIC CONSULTATION

Public consultation was undertaken by TRCA in 2005 and included a questionnaire asking potential park users to identify recreational activities and park amenities that they felt should be available at the Arsenal Lands. Of all the recreation activities offered, hiking/walking, picnicking and children's play were identified as key priorities. Of the park amenities offered, washrooms, seating and drinking fountains were identified as key priorities.

7.0 APPROVALS

Adoption of the Master Plan Addendum will be subject to the approval of TRCA, Mississauga Council, Toronto Council and Region of Peel Council. Additional approvals may be required for implementation of individual components of the Addendum, particularly those that may affect lands adjacent to Lake Ontario or Etobicoke Creek.

8.0 IMPLEMENTATION

Master Plan implementation will involve construction of the main park infrastructure and associated servicing, which includes trails, roads, parking lots and washrooms. Peripheral items such as landscaping and habitat improvements will be implemented based on funding availability.

9.0 CAPITAL COSTS

The capital costs for park development are estimated at \$3,000,000 for the Arsenal Lands and \$1,000,000 for Marie Curtis Park West (based on 2005 dollars).

10.0 FUNDING

Park development will be funded through savings from the initial site remediation budget and through TRCA, City of Toronto and City of Mississauga capital budgets. Fundraising will also be undertaken by TRCA to offset park development costs.

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1.0 INTRODUCTION

The Arsenal Lands is a 15.7-hectare property located south of Lakeshore Road East on the eastern border of the City of Mississauga. In October 1992, Toronto and Region Conservation (TRCA) purchased the property with the intent of expanding Marie Curtis Park to form a 41-hectare, waterfront park. The land purchase was made possible through a joint collaboration involving City of Toronto, Region of Peel, City of Mississauga and the Province of Ontario. As part of the agreement of purchase, TRCA and the former landowner (Canada Post) each contributed \$2.5 million to remediate the site.

Shortly after the property was purchased, TRCA retained a consulting consortium (consisting of Hough Woodland Naylor Dance Leinster, Raven Beck Environmental Limited, Duke Engineering and Services Inc., Angus Environmental Ltd., Michael Michalski Associates and DS Lea Associates) to undertake a park planning and site remediation study. The purpose of this study was to determine the nature and extent of contaminants on the site, identify methods of rehabilitating the lands to permit public use, and develop innovative ideas for the incorporation of the site as a major regional attraction on the Lake Ontario waterfront. The consultant team reported to a Technical Steering Committee consisting of staff from TRCA, the City of Toronto, the City of Mississauga and the Region of Peel to ensure that the interests of the public and participating agencies were addressed.

The consulting consortium released the first in a series of three newsletters in May 1995. Approximately 1,000 community stakeholders, including more than 100 interest groups, received the newsletters. Two public open houses were also held to discuss the development of the Master Plan and receive public input in 1995. The results of the public consultation were utilized to direct the site remediation approach and design of the park concept.

The Arsenal Lands Park and Site Remediation Master Plan was released in 1998. The Plan included recommendations for site remediation to achieve the park use guidelines established by the Province, a long-term monitoring plan and a park concept based on a conservative landscape rehabilitation approach. The focus of the Plan was the rehabilitation of the Arsenal Lands property

and the provision of minimal park facilities. The Plan also made recommendations to integrate the Arsenal Lands with the Waterfront Trail and Marie Curtis Park.

In September 1998, the Authority provided direction to implement the site remediation plan. Toronto and Region Conservation proceeded to retain INTERA (formerly Duke Engineering and Services) to coordinate remediation of the site, which involved the removal of more than 70,000 tonnes of soil from the site and construction of a containment facility for low-level radioactive waste. The site was remediated at a cost savings of \$1,615,982. Canada Post agreed with TRCA to contribute half of the savings from the site remediation budget to finance park development and the implementation of an environmental monitoring program. The environmental monitoring program was initiated in 2001 to monitor surface water, groundwater, gamma radiation and radon gas. In 2002, TRCA submitted the Record of Site Condition for the Arsenal Lands property, completed by INTERA Engineering Ltd. The acknowledged Record of Site Condition was received from the Ontario Ministry of the Environment (MOE) Halton Peel District Office on November 13, 2002.

In the spring of 2003, TRCA reconvened a meeting of the Technical Steering Committee to review the progress made during the site remediation phase and to revisit the original Master Plan. This Technical Steering Committee included City of Toronto, City of Mississauga, Region of Peel and TRCA. The Steering Committee identified several issues that required further assessment and



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Figure 1. Location of the Arsenal Lands.

resolution before park development could proceed. Some of these issues included:

- Change in site conditions.
- Current needs of the community.
- Need for a long-term park program and management strategy.
- Safety concerns associated with inappropriate park use in remote areas.
- Potential user conflict associated with the proposed layout of the access road.
- Park facilities to service demand for corporate and large group picnics.
- Park features to draw regional users.

These issues provided the rationale for TRCA to spearhead the development of a Master Plan Addendum.

1.1 PURPOSE OF THE ADDENDUM

The Arsenal Lands Master Plan Addendum including Marie Curtis Park West is an update of The Arsenal Lands Park and Site Remediation Master Plan (1998). The purpose of the Addendum is to provide an overall plan, which: reflects the current site conditions, meets the needs of regional and local park



Figure 2. Current park boundaries, jurisdiction and land ownership.

users, addresses potential and existing safety concerns, and provides specific recommendations to direct park management and operation. Consistent with the 1998 Master Plan, the Addendum integrates the Arsenal Lands with Marie Curtis Park. The scope of the Addendum however is more clearly defined to include specific recommendations for the Arsenal Lands property and the portion of Marie Curtis Park located on the west side of Etobicoke Creek (referred to as Marie Curtis Park West).

The portion of Marie Curtis Park located to the east of Etobicoke Creek will be the subject of a future park planning process, with the intent that this parkland will continue to be operated by the City of Toronto to support local recreational use. The City of Toronto and TRCA will prepare a Master Plan Update for Marie Curtis Park East, ensuring that recreational uses and activities are coordinated between the parks. This Master Plan Update will include further public consultation and require council approval.

1.2 CONTEXT OF THE ADDENDUM

The development of the Arsenal Lands and Marie Curtis Park West is a partnership project of City of Toronto, City of Mississauga, TRCA and Region of Peel. As the property owner, TRCA has taken the lead in developing the Master Plan Addendum. The mandate of TRCA and the project partners is reflected in the Addendum.

1.2.1 TORONTO AND REGION CONSERVATION

At meeting #3/91 on May 3, 1991, TRCA staff were directed by the Authority to proceed with the acquisition and upon closing the transaction, coordinate a detailed planning study with Toronto, Peel, Mississauga, the province and individuals and groups with interest in the site. On September 25, 1998, at Authority Meeting #8/98, staff were directed to implement the site remediation plan as per the *Arsenal Lands Site Remediation Plan* and *Park Master Plan* and that this Plan be circulated to the partners for comment and approval.

1.2.1.1 TOWARDS A LIVING CITY REGION

Toronto and Region Conservation is committed to community partnerships with all sectors of society, to encourage environmental stewardship and build on innovative thinking about environmental health, social responsibility and sustainable economies.

Toronto and Region Conservation's vision of a Living City Region has four objectives:

◆ Healthy rivers and shorelines — To restore the integrity and health of the region's rivers and waters from the headwaters in the Oak Ridges Moraine, throughout each of the nine watersheds in TRCA's jurisdiction, to the Toronto waterfront on Lake Ontario.

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- Regional biodiversity To protect and restore a regional system of natural areas that provide habitat for plant and animal species, improve air quality and provide opportunities for the enjoyment of nature.
- Sustainable communities To facilitate broad community understanding, dialogue and action toward integrated approaches to sustainable living and city building that improve the quality of life for residents, businesses and nature.
- ◆ Business excellence To produce continuous improvement in the development and delivery of all programs through creative partnerships, diverse funding sources, and careful auditing of outcomes and effectiveness.

1.2.1.2 LAKE ONTARIO WATERFRONT DEVELOPMENT PROGRAM

Toronto and Region Conservation's Lake Ontario Waterfront Development Program (1980) recognizes the Lake Ontario shoreline as one of the major natural resources of the region. The major areas of concern related to this program are conservation, restoration, development and management of waterfront resources and the protection and management of important natural habitats. The *Lake Ontario Waterfront Development Program* objectives include:

- Acquiring land for open space.
- Incorporating public recreational use.
- Linking waterfront open space with river valley corridors.
- Creating fishing opportunities via habitat enhancement.
- Providing safe harbourage for the boating public.
- Preserving lower valley marsh areas.
- Co-operating with agencies undertaking waterfront planning and development.
- Furthering research of lake processes.
- Co-operating with agencies concerned with improving the water quality of Lake Ontario.

This Program identified Marie Curtis Park as a major regional waterfront park and recommended the purchase of the Arsenal Lands for the purpose of park expansion.

1.2.1.3 SHORELINE MANAGEMENT PROGRAM

Toronto and Region Conservation's *Shoreline Management Program* (1980) is a comprehensive approach to shoreline management which respects the natural attributes of the Lake Ontario waterfront. This program recognizes the development pressures arising out of the public's interest to live on the waterfront. The focus of the program is on preventing the potential hazard to development located in areas vulnerable to the effects of flooding and erosion. Understanding the need for some shoreline modifications in order to minimize the loss of property, various alternative shoreline management measures are outlined to ensure that the appropriate treatment is used

to balance natural coastal processes with public demand for open space and intensive waterfront development.

1.2.1.4 TORONTO WATERFRONT AQUATIC HABITAT RESTORATION STRATEGY

The *Toronto Waterfront Aquatic Habitat Restoration Strategy* (2003) was developed by TRCA to ensure that the revitalization of the waterfront incorporates improvements to aquatic habitats as an integral part of creating a more livable and sustainable waterfront. The overall goal of the Strategy is "to maximize the potential ecological integrity of the Toronto waterfront." This Strategy identifies the potential for self-sustaining aquatic communities in open coast, sheltered embayments, coastal wetlands and estuaries. It also identifies limiting factors and evaluates opportunities to protect and enhance near-shore habitats. Finally, the Strategy offers an implementation plan and framework to restore aquatic habitats on the Toronto waterfront.

The Strategy identifies several recommendations for the Etobicoke Creek estuary and adjacent waterfront. Within the Etobicoke Creek estuary, the Strategy suggests that structural habitat be reintroduced and that riparian vegetation be restored to reflect historic conditions. On the shoreline, the Strategy recommends that offshore points and shoals, and a wetland be constructed to improve habitat for desirable fish species.

1.2.1.5 TERRESTRIAL NATURAL HERITAGE SYSTEM STRATEGY (TNHSS)

Toronto and Region Conservation's *Terrestrial Natural Heritage System Strategy* (2006) was designed to enhance biodiversity and the quality of life for residents by seeking to increase the amount of forest and wetland habitats. It uses a science-based analytical tool, based on ecological criteria to identify an expanded and targeted land base for inclusion in a terrestrial natural heritage system. The Strategy was designed for the entire TRCA jurisdiction as terrestrial systems and their interactions span watershed boundaries. The target system relates to the terrestrial component of the natural heritage system. Although increases in natural cover benefits many other system components, such as promoting natural water budget, the target terrestrial natural heritage system was designed using terrestrial ecological criteria. The Strategy contains a number of strategic directions including proposed land use planning policies, land management, stewardship and education opportunities, and long-term monitoring. For the Etobicoke Creek watershed, the Strategy has set a goal of at least 11per cent natural cover, composed of forest and wetland habitats.

The Arsenal Lands and Marie Curtis Park West are identified as part of the targeted natural heritage system. The Strategy offers specific recommendations for public lands that are identified as part of the target system. The recommendations for public land management, pertinent to this site include:

- Complete management plans for all TRCA-owned lands within the target system.
- Develop natural heritage restoration plans for all lands that are potential natural cover.
- Where municipalities manage TRCA-owned lands, TRCA will work with them to ensure the management agreement is in accordance with the Strategy.
- Provide opportunities for appropriate passive recreation within the target system.

1.2.1.6 VALLEY AND STREAM CORRIDOR MANAGEMENT PROGRAM

The *Valley and Stream Corridor Management Program* (1994) is a guideline document developed by TRCA to direct landuse activities and development within valley and stream corridors. This program acknowledges the need for risk management related to flooding, erosion and slope instability, while ensuring that future environmental degradation is prevented and natural areas are restored.

This program includes policies and criteria that govern any change to existing resource-based uses of valley and stream corridors, relevant to Marie Curtis Park West. The Program also offers recommendations for the rehabilitation of valley and stream corridors that will help direct short and long-term resource planning activities.

1.2.1.7 ETOBICOKE CREEK FISHERIES MANAGEMENT PLAN

The *Etobicoke Creek Fisheries Management Plan* (2003) was developed by TRCA to enable work in partnership with other agencies, non-government organizations and the public, to protect and enhance aquatic habitats within the watershed. The Fish Management Plan is a watershed resource document that provides background information about the fish community and the physical conditions, sets management direction for the future, and provides direction for the development and implementation of rehabilitation projects and monitoring needs. The Plan will also be used as a tool in the planning and permitting process relevant to Marie Curtis Park West.

1.2.1.8 GREENING OUR WATERSHEDS

In 1999, TRCA created the Etobicoke and Mimico Creeks Watersheds Task Force with the mandate to develop an ecosystem-based management strategy to help restore Etobicoke and Mimico creeks. Planners, biologists, engineers, heritage preservationists, naturalists, municipal-elected representatives and watershed residents, were represented in this multi-stakeholder group. In 2002, the Etobicoke and Mimico Creeks Watershed Plan, entitled *Greening Our Watersheds* was released. This Plan was written to assist the people who can make a difference in the watersheds, including residents, community, business and environmental advocates and leaders, educators, elected

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representatives and staff at the federal, provincial, regional and local levels of government. The Plan details objectives, targets and actions for the revitalization of Etobicoke and Mimico creeks watersheds. This Plan will be updated in 2007, 2013 and 2026, and report cards will be prepared every three years.

In 2006 the first Report Card for the Etobicoke and Mimico creeks watersheds was prepared to assess the state of the watersheds. The Report Card provided a summary of progress made towards meeting the goal and objectives for the watersheds and identified future targets for 25 indicators of watershed health. A number of watershed priorities identified within this report are of relevance to the future development and operation of the Arsenal Lands and Marie Curtis Park West. This includes the following targets that have been set for 2025:

- The overall extent of natural cover within the watershed will be increased from 5.47 per cent to 11 per cent.
- The quality of terrestrial natural heritage within the watershed will be ranked as good or fair.
- The overall quality of aquatic habitats within the watershed will be maintained.
- Overall riparian cover will be increased from 38.55 per cent to 75 per cent.

1.2.1.9 STATE OF THE ENVIRONMENT REPORT

In December 1998, TRCA completed *State of the Environment Report: Etobicoke and Mimico Creeks* to support the development of a watershed management strategy. Utilizing an ecosystem approach, the Report characterizes the environmental, social and economic conditions of the watersheds. The Report describes key environmental issues including changes in ground- and surface-water volumes and flows; flooding and erosion; lack of stormwater control; loss of forests, tributaries and wetlands; reduced flora and fauna diversity, and degraded air quality. Some of the social and economic issues outlined in the Report include loss of archaeological sites; loss of heritage sites and resources; disconnected green open spaces and trail systems; future development pressure in the headwaters of Etobicoke Creek; development of infill and brownfield sites; lack of sustainable funding sources, and constrained legislation and planning tools.

This report provides baseline environmental information relevant to the park planning process for the Arsenal Lands and Marie Curtis Park West.

1.2.2 CITY OF TORONTO

The Municipality of Metropolitan Toronto at its meeting held August 12 and 13, 1992, authorized funding to complete the acquisition of the Arsenal Lands and directed staff to participate in the detailed park planning with TRCA, Peel and Mississauga, including arrangements for the

development, operation and maintenance of the site. This funding was conditional upon the restrictions on use of such property for passive open space and parkland, ancillary uses only.

1.2.2.1 TORONTO OFFICIAL PLAN

The City of Toronto published the *Toronto Official Plan* in November 2002. Among the objectives outlined in the Plan, the city recognizes the importance of clean air, land and water, green spaces, a diversity of recreational opportunities and a spectacular waterfront. The vision of the Plan is to create a safe and attractive city that includes clean air, land and water; green spaces; a wealth of recreational opportunities and a spectacular waterfront. The foundation of the Plan is built on diversity and opportunities, beauty, connectivity, and leadership and stewardship.

The Plan includes several policies relevant to green spaces and the waterfront, the public realm, and parks and open spaces that have been considered as part of the Master Plan process.

1.2.2.2 OUR COMMON GROUNDS

Our Common Grounds was approved as the Strategic Plan for City of Toronto, Parks and Recreation in 2004. The Plan identifies the interest of the City of Toronto in enhancing the quality of life in the city, through Parks and Recreation's commitment to environmental stewardship, development of children and youth, and promotion of lifelong activity for all residents. The vision set forth in the plan is that Toronto will come to be known as "The City within a Park." Parks and Recreation will achieve this vision by bringing together diverse communities, providing a wide variety of leisure and recreation opportunities, and ensuring that parks are beautiful, clean, safe and accessible, and meet the needs of the community.

1.2.2.3 BLUE FLAG PROGRAM

The *Blue Flag Program* is an internationally recognized eco-labelling program administered by the Foundation for Environmental Education in Denmark. This internationally recognized program awards blue flags to communities committed to maintaining high standards for water quality, safety, beach maintenance and environmental education and outreach. On June 30, 2005, the City of Toronto, in partnership with Environmental Defence Canada, became the first municipality in North America to be recognized by the *Blue Flag Program*. Four Toronto beaches including Cherry Beach, Hanlan's Point, Wards Island and Woodbine Beaches join the more than 2,400 beaches and marinas in 33 countries with the Blue Flag designation. The beach at Marie Curtis Park West has also been targeted by the City of Toronto as a potential candidate for the *Blue Flag Program*. Through the program, the city hopes to increase awareness and action where Toronto's beaches and water pollution are concerned.

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1.2.2.4 WET WEATHER FLOW MANAGEMENT MASTER PLAN

Toronto Council approved the *Wet Weather Flow Management Master Plan* (known as Toronto's Water Pollution Solution) in July 2003. The goal of the Master Plan is to develop a strategy to reduce and ultimately eliminate the adverse effects of wet weather flow (runoff generated by rain and snowfall). To reverse the effects of wet weather flow, the Plan sets out to accomplish 13 objectives under four major categories including:

- Water quality
- ◆ Water quantity
- Sewer systems
- Natural areas and wildlife

To achieve these objectives, a 25-year plan was developed to outline the programs and projects that, together, provide a solution for stormwater pollution. A key component of this Plan is raising public awareness about the issue by encouraging resident participation in community-based programs that help deal with stormwater pollution (e.g., downspout disconnection). The benefits of the Plan include:

- Clean waterfront beaches that are healthy for swimming.
- Eliminating discharges from combined sewer overflows.
- Basement flooding protection.
- Protecting city infrastructure from stream erosion;.
- Restoring degraded local streams.
- Improving stream water quality.
- Reducing algae growth along the waterfronts and in streams.
- Restoring aquatic habitat.

1.2.2.5 TORONTO BIKE PLAN

The *Toronto Bike Plan* establishes a vision for cycling in Toronto. The Bike Plan is a 10-year strategy designed to create a bicycle-friendly environment that encourages the use of bicycles for everyday transportation and enjoyment. The two primary goals of the Bike Plan are to double the number of bike trips by 2011 and to decrease bicycle collisions and injuries. The Plan sets out integrated principles, objectives and recommendations regarding safety, education and promotional programs, as well as cycling-related infrastructure, including a comprehensive bikeway network.

The proposed bikeway network within the vicinity of Marie Curtis Park West and the Arsenal Lands includes expansion of the bike lanes along Lake Shore Boulevard West between Browns Line and the Etobicoke Creek Multi-use Recreational Trail, as well as a northward expansion of Etobicoke Creek

Multi-use Recreational Trail, between the Gardiner Expressway and The Queensway. The Bike Plan also recommends seamless connections across municipal boundaries.

1.2.3 CITY OF MISSISSAUGA

On March 9, 1992, Mississauga Council passed a resolution allocating funds from the Major Parkland account within the General Municipal Development Reserve Fund to complete the acquisition of the Arsenal Lands property.

1.2.3.1 MISSISSAUGA PLAN

The *Mississauga Plan* (Official Plan) for the City of Mississauga Planning Area was modified and approved by the Region of Peel on May 5, 2003. The Plan sets forth the policies and schedules for the City of Mississauga to be implemented over 20 years. The Plan establishes the means for Mississauga to identify and protect natural areas, to provide an open space network, and to create an accessible waterfront that offers compatible activities and enhanced heritage resources.

The Plan identifies a number of policies relevant to the planning of the Arsenal Lands/Marie Curtis Park West. The Arsenal Lands are designated as City Park within the City of Mississauga. The Plan identifies lands in the City Park designation as part of the Mississauga Plan Opens Space System. Within this designation, the goal for open spaces is to provide a range of recreation activities (active and passive) that are responsive to identified city-wide needs, while having regard for natural features and functions. The Plan also suggests that City Parks should provide a safe environment and be designed to allow opportunities for groups, families and individuals.

The Plan recognizes the importance of protecting and maintaining a significant natural heritage system. Schedule 3 of the Mississauga Plan identifies Marie Curtis Park West and the southern extent of the Arsenal Lands as part of the natural heritage system. As such, the Plan promotes an ecosystem approach to planning, as well as proactive management and protection of natural areas and features. The Plan also recommends that natural areas be incorporated into public parkland and their recreation potential is restricted to protect viability.

1.2.3.2 MISSISSAUGA WATERFRONT PLAN

Council endorsed the *Mississauga Waterfront Plan* in 1993 as a guide for the review of the city's Official Plan, development proposals, acquisition for waterfront access or lands and partnerships. This Plan identifies the need for continuous public access on the waterfront, natural places along the shoreline and an improved appearance of the shoreline. The planning concepts contained within this Plan defined waterfront spaces that offer different opportunities for waterfront activities and experiences. The Plan documents that the Metro Toronto and Region Conservation

Authority purchased the Arsenal Lands from Canada Post in cooperation with the City of Mississauga, the Region of Peel and Metro Toronto in 1992. Further, it summarizes that the concept for these lands was to expand Marie Curtis Park by incorporating the purchased lands to create a civic facility or tourist attraction and to preserve the natural sand beach.

1.2.3.3 MISSISSAUGA WATERFRONT PARKS STRATEGY

The City of Mississauga is conducting a *Waterfront Parks Strategy* to explore the enhancement, creation and maintenance of sustainable, desirable, and unique waterfront recreational opportunities and public spaces that recognize Lake Ontario as an invaluable natural and cultural resource. When completed, the *Waterfront Parks Strategy* will provide the city with an overall plan for waterfront parks, as well as detailed concept plans for five specific park sites — Park 389 (informally known as "Fusion"), Lakeside Park, JC Saddington Park, Marina Park and Port Credit Memorial West Park, and an implementation plan. In the draft overall plan prepared to date, Arsenal Lands is seen as a Gateway Park, given its location at the city's border, its large size in conjunction with the adjacent Marie Curtis Park and proposed range of recreational activities. The overall plan will be under review by council and the public, and subsequently finalized early in 2007.

1.2.3.4 FUTURE DIRECTIONS

On June 23, 2004, City Council provided their endorsement for the updated Future Directions for Recreation & Parks to help guide the provision for leisure facilities and services in both the short- and long-term. Future Directions is supported by extensive background research, topic-specific studies, a household survey, the findings of 11 public meetings, focus group sessions, and a thorough review by the community and staff. The public consultation process revealed the public indicated strong support for more open space and expansion of passive, nature-oriented recreation. Public feedback also indicated that the majority of residents prefer that more parkland be maintained as treed areas and trails, as opposed to developed into more sports fields.

Some of the main recommendations of *Future Directions* relevant to the planning of the Arsenal Lands/Marie Curtis Park West include:

- Emphasis on parks offering beautiful scenery and trails to promote an active-living lifestyle among the aging population.
- Incorporation of large-sized play equipment for waterfront destinations.
- Provision of additional spray pads.
- Investigation of possible venues for outdoor festivals sites along the waterfront.
- Development of extreme sport facilities in response to increasing popularity.

1.2.4 REGION OF PEEL

Regional Council passed resolution 92-73-1 on February 27, 1992. This resolution authorized a general levy for the acquisition of the Arsenal Lands with the understanding that the ultimate development of the site will be for major open space and auxiliary supporting purposes, and purposes that will be consistent with the *Regional Open Space Strategy* once established. It states that if the region determines that use or development of any part of the site under the Master Plan is not consistent with regional open space uses, then the region may seek recovery of Peel's portion of the land acquisition costs, any Master Plan costs and all debt-servicing costs.

1.2.4.1 REGION OF PEEL OFFICIAL PLAN

The Region of Peel Official Plan is the Regional Council's long-term policy framework for decision-making. The Plan sets the regional context for detailed planning by protecting the environment, managing resources, directing growth, and setting the basis for providing Regional services in an efficient and effective manner. The purpose of the Plan is to provide direction for future planning activities and for public and private initiatives aimed at improving the existing physical environment. The Plan outlines priorities of the region, which includes ensuring that future growth of population, and employment in Peel is anticipated and planned for and those existing and future finances and services are provided in an effective and efficient manner.

The Plan identifies the region's natural environment goal is to ensure a healthy, resilient and self-sustaining natural environment. Regional policies outlined in the Plan recognize the interactions between local ecosystems and large environmental systems, like Lake Ontario. The Plan also includes a Greenlands System to extend across the entire region. This Greenlands System is intended to protect, restore and, where possible, connect key natural features and functions such as wetlands, woodlands, ravines, and habitats of threatened and endangered species. The Plan seeks opportunities to enhance the Greenlands System in Peel by restoring and enhancing degraded components of the natural environment. Etobicoke Creek is designated as a Core Area of the Greenlands System in Peel, as per Policy 2.3.26 of the Regional Official Plan.

The Plan recognizes the contribution of natural features, open spaces and parklands to the overall structure of the region and the opportunities for active and passive recreation. Portions of the natural features, such as the Lake Ontario waterfront and river valleys, are also identified as important in providing regional scale recreational opportunities for people from beyond the boundaries of Peel. Policy 3.5.1.1 identifies the region's primary interest is ecologically appropriate areas of the natural environment that serve the passive recreation and open space needs of the residents of Peel. The Region of Peel describes passive recreation as "characterized by low-intensity outdoor pastimes, such as hiking, picnicking and bird watching, requiring minimal modification of the land surface and relatively few, if any, buildings." While active recreation is "characterized by the need for special facilities, such as golf courses, tennis courts and recreation theme parks, which require large-scale modification of the land surface, often accompanied by the introduction of buildings and structures."

1.2.5 PROVINCE OF ONTARIO

The Province of Ontario approved the purchase of the Arsenal Lands property for the development of "passive use" facilities only with the understanding that the province assumes no liability with respect to the property or any environmental claim, current or future. Financial support was contributed to the project in the form of a conveyance of land to the City of Mississauga, for nominal consideration in exchange that Mississauga contributes \$9 million to TRCA for the land purchase.

1.2.5.1 PROVINCIAL POLICY STATEMENT

The new Provincial Policy Statement came into effect on March 1, 2005, coinciding with Section 2 of the Strong Communities, which requires that planning decisions on applications be consistent with new policies. The Provincial Policy Statement is issued under the authority of Section 3 of the *Planning Act*. It provides direction on matters of provincial interest related to landuse planning and development, and promotes the provincial "policy-led" planning system.

The Provincial Policy Statement recognizes the complex inter-relationships among economic, environmental, and social factors in planning and embodies good planning principles. It includes enhanced policies on key issues that affect communities, including efficient use and management of land, and protection of the environment. Several policies are relevant to the planning of the Arsenal Lands and Marie Curtis Park West.

Policy 1.5.1 suggests that healthy, active communities should be promoted by: providing for a full range of equitable distribution of publicly-accessible-built and natural setting for recreation, including facilities, parklands, open space areas, trails and, where practical, water-based resources, and providing opportunities for public access to shorelines.

Policy 2.1.2 suggests that the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surfaces water features and groundwater features. In addition, Policy 2.1.3.a suggests that development and site alteration shall not be permitted in significant habitat of endangered species and threatened species.

Policy 3.1.1.a suggests that development shall generally be directed to areas outside of hazardous lands adjacent to shorelines of the Great Lakes–St. Lawrence River Systems due to flooding and erosion hazards and/or dynamic beach hazards.

1.2.6 LAKEVIEW GENERATING STATION

In April 2005, the Lakeview Generating Station closed after 43 years in operation as a 300,000-kilowatt, thermal-electric plant. Currently, there is no decision on the future use of the station.

Presently in "safe shutdown" state, components of the facility (including the silos, stacks, equipment, coal, and ash storage area, turbine bay building and powerhouse building) are being decommissioned in compliance with all government regulations and permits. It is expected that the decommissioning of the Lakeview Generating Station will have an improved effect on air quality in the area because pollutant emissions associated with coal-fired generation, such as sulphur dioxide and nitrogen oxide, will no longer be present.

1.2.7 LAKEVIEW WASTEWATER TREATMENT FACILITY

The Lakeview Wastewater Treatment Facility is located on the west side of the Arsenal Lands. This plant processes 392,000 cubic metres of wastewater from homes and businesses in Bolton, Caledon East, Brampton and the eastern parts of Mississauga daily. The treatment facility is located on the west side of Applewood Creek and is separated from the Arsenal Lands by a forested buffer. These buffer lands are owned by the Region of Peel to maintain the security of the treatment facility. The Ontario Clean Water Association (OCWA) operates the treatment facility. The buffer lands adjacent to the Arsenal Lands and Marie Curtis Park West are fenced and have OCWA-identifying signage.



2.0 EXISTING CONDITIONS

The Arsenal Lands are located south of Lakeshore Road East in the City of Mississauga. The Arsenal Lands and Marie Curtis Park West together comprise a 31-hectare parcel of land. These lands are drained by two creeks that flow into Lake Ontario. Applewood Creek borders the west side of the Arsenal Lands and Etobicoke Creek is situated on the east side of Marie Curtis Park West. The Arsenal Lands, formerly used for industrial purposes, have undergone extensive site



Figure 3. The Arsenal Lands and Marie Curtis Park West park boundary.

remediation. There are several natural features on the site that were created or restored during the site remediation process. These features make important connections with the significant natural heritage features surrounding the site.

2.1 SITE REMEDIATION

The Arsenal Lands were long used for a variety of manufacturing activities. The land was originally developed by the Department of National Defense as a small arms and munitions manufacturing facility during the Second World War. In 1990, TRCA performed an environmental audit of the Arsenal Lands to determine the nature and extent of contamination associated with the prior land uses. Testing identified the presence of PCBs, metals, petroleum compounds, volatile organic compounds and combustible gases in 19 areas of the site. Two of these areas of contamination were successfully remediated during the process of building demolition. The remaining areas of contamination were addressed as part of an overall site remediation plan prepared by INTERA (formerly known as Duke Engineering and Services) in 1998. INTERA was retained by TRCA to not only develop this plan, but to oversee the site remediation activities in co-operation with TRCA staff.

On October 19, 1998, TRCA initiated the site remediation process in accordance with the Ministry of Environment's *Guidelines for Use at Contaminated Sites in Ontario* (MOE, 1996 — revised February 1997). Toronto and Region Conservation employed four subcontractors to remove over 72,044 tonnes of contaminated soil from the site. On-site screening of soils was also performed to remove particles and debris in an effort to lower metal concentrations and segregate cobbles and rubble prior to shipping the soil for disposal.

Extensive soil testing was conducted to direct the site remediation process. In one specific area of the site, low-level radioactive soils were identified. The Low-Level Radioactive Waste Management Office (LLRWMO) supervised the construction of an on-site containment facility to store the soil taken from this area. This containment facility is referred to as a consolidation mound. The Canadian Nuclear Safety Commission, in compliance with the Nuclear Safety and Control Act, licensed the consolidation mound on December 5, 2005. Perimetre fencing was erected in 2006 to restrict public access.

In October 2001, TRCA awarded a contract to Conestoga–Rovers & Associates (CRA) to complete a turn-key operation involving the removal of 1,962 tonnes of contaminated soil from the final remaining area of contamination. Although a Site-specific Risk Assessment was partially completed for this area, the process was abandoned in lieu of off-site disposal of the contaminated soil, thereby concluding the remediation process. The acknowledged Record of Site Condition dated November 8, 2002 was received from the Ministry of Environment Halton Peel District Office on November 13, 2002.

Since 2001, TRCA has been implementing a monitoring program to ensure that the site remains in a condition that does not pose an unacceptable risk. This monitoring program has included periodic sampling of soil, groundwater, surface water, sediment and vegetation. In May 2006, Terraprobe provided a summary of monitoring results to TRCA spanning 2001to 2005. The report concluded that generally ground and surface water quality trends across the site had been established and



Figure 4. Location of the consolidation mound.

recommended that the program be discontinued based on the results. However, the report identified that ground water results for Volatile Organic Compounds on the southwest boundary of the site required further subsurface investigation to determine whether further work or remedial actions are necessary. The recommended subsurface investigation was completed, confirming that the impacted groundwater is limited in extent and that the quality of groundwater does not pose a hazard to human health or the local environment.

The site remediation process required extensive soil excavation, which presented the opportunity to create new landforms and improve the natural integrity of the site. As such, two new wetland features and a connecting system of drainage swales were created during this phase of work. An existing woodland pond was also enhanced and woody debris and rubble were utilized to construct snake hibernacula. Following remediation, native vegetation was planted to stabilize the site and prevent soil erosion.

2.2 NATURAL HERITAGE

A diversity of habitats are represented at the Arsenal Lands and Marie Curtis Park West including beach, woodland, wetland, meadow and riparian habitats. In 2003, TRCA undertook a natural

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heritage survey of these lands. This information was compiled with the data collected in 1995 as part of the original master planning process (see Appendix A).

One of the most significant findings that resulted from the 2003 natural heritage survey was the identification of a healthy local population of Northern Leopard Frogs (*Rana pipiens*). The presence of this species is considered unique based on the urban landuse that surrounds the site. Northern Leopard Frogs were recorded breeding in two of the wetlands that were constructed during the site remediation process and in the woodland pond situated along the northern edge of the woodlot.

Another important feature identified during the 2003 survey is the woodlot that lies to the south of the Arsenal Lands. The woodlot contains mature specimens of Carolinian tree and ground flora species that are considered Species of Concern within TRCA's jurisdiction. This would include such species as Shagbark Hickory (*Carya ovata*), Butternut (*Juglans cinerea*), Glaucous Honeysuckle (*Glaucous honeysuckle*), Wood Anemone (*Anemone quinquefolia*), Wild Geranium (*Geranium maculatum*) and Witch Hazel (*Hamamelis virginiana*). Forests that exhibit southerly Carolinian woodland features are becoming increasingly rare within southern Ontario.

The extensive meadow habitat found within the Arsenal Lands and Marie Curtis Park West currently serves as an important stop-over for hundreds of migrating Monarch butterflies (*Danaus plexippus*). Goldenrods (*Solidago sp*) and asters (*Aster sp*) are found in large numbers throughout this habitat. These plants offer nectar during the Monarch's southward migration between August and



Figure 5. Monarch butterflies feeding on asters during fall migration.

mid-October. This food source is critical, as large fat reserves are required to sustain the butterflies throughout the winter and early spring when nectar is not available. The Monarch is designated as a Species of Special Concern and protected under Schedule 1 of the federal *Species at Risk Act*.

2.3 ETOBICOKE CREEK

The Lower Etobicoke Creek subwatershed is urbanized, with just over three quarters of its area consisting of commercial, industrial and residential land uses. The remaining area consists of parkland, valleylands and open green space. There is no longer any agricultural land found in this subwatershed. The Lower Etobicoke Creek subwatershed has small sections of mature riparian cover that offer the watercourse limited buffering from surrounding land use impacts.

The Lower Etobicoke Creek subwatershed shows evidence that flow magnitudes and velocities are too high, and are degrading the physical structure of the watercourse. The watercourse is "peaky" with fast-rising and receding waters after rain events, owing to the smaller tributaries having been piped and/or channelized, and the many stormwater outlets along its banks. As well, in the main branch of the subwatershed, some banks have been hardened, several in-stream barriers block upstream movement of aquatic species, and numerous storm sewer outfalls are potential impairments to the fish community. Winter ice flows and road salt also influence the health of the aquatic ecosystem.

The benthic invertebrate communities found within the Lower Etobicoke Creek subwatershed are mainly comprised of species typical of slow-flowing, organically enriched, warm-water streams. The low diversity of species found within this section of Etobicoke Creek is indicative of severe organic pollution, poor diversity in substrate and problems with the overall stream hydrology.

The Lower Etobicoke Creek fish community also demonstrates the degraded ecological condition of the watercourse. The fishery is a tolerant warm-water community that exhibits very limited species diversity, again an indication of poor ecological integrity (see Appendix B). It is largely dominated by minnow species that can tolerate high nutrient and sediment loads, and which can survive high thermal variation events. Historic sampling shows a diverse population with ecologically sensitive species, such as Redside Dace (*Clinostomus elongates*) and Rainbow Darter (*Clinostomus elongates*). Twenty-eight historic species once recorded in this part of the creek have not been found in recent years. In 2001, only 17 fish species were found in the Lower Etobicoke Creek subwatershed. The Lower Etobicoke Creek subwatershed appears to lack piscivores, resulting in an unhealthy trophic structure. There is also a general lack of abundance of fish, and diversity of fish species found, due in part to the poor water quality in this highly urbanized subwatershed.

2.4 CULTURAL HERITAGE

The Arsenal Lands and Marie Curtis Park West were originally part of the extended territory of the native Mississauga people. These lands were sold to the British Crown in 1805 and were granted to Colonel Samuel Smith on August 11, 1806. A map dated also in this year identifies Lakeshore Road

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East in its current day alignment. The route of the "old" Lakeshore Road, known as the "Road to York," is located through the south limits of the Arsenal Lands and was likely used by native peoples. Applewood Creek is shown as a tributary of Etobicoke Creek, with the two creek mouths converging to form a large coastal wetland. Dixie Road is also identified in this early mapping. However, rather than terminating at Lakeshore Road, the road extends to the shores of Lake Ontario. In subsequent maps, this configuration of Dixie Road is depicted up until 1880.

Colonel Samuel Smith was born in Long Island, New York in 1756. Throughout the Revolutionary War, Smith served with the Queen's Rangers. At the end of the war, his lands were confiscated and he came to reside at Niagara until successfully petitioning for land on Etobicoke Creek. During his time in Niagara, Smith married Jane Isabella Clarke. After settling on Etobicoke Creek, Smith served as administrator of the Province from 1817 to 1818 and in 1820.

Following Colonel Samuel Smith's death in 1826, his land remained within his family for a few years and then was subdivided, and changed hands numerous times. Until early 1900 this land was used primarily for mixed agricultural purposes by both landowners and tenant farmers. The lands immediate to the Lake Ontario shoreline and mouth of Etobicoke Creek were then subdivided for summer cottages, while the City and District Land Company acquired the land known as the Arsenal Lands for military purposes.



Figure 6. The Arsenal Lands in 1949.

Shortly after this purchase, the land was sold to His Majesty King George V as "The Toronto Barracks Site." After sitting vacant for a number of years, it was developed to manufacture and test small arms by the Department of National Defense during the Second World War. The buildings that were situated on the site during this period are depicted in Figure 6. A company called Small Arms Limited ran a factory on the property until 1946. Various other companies as identified in Appendix C later used this factory. The Arsenal Lands property was included in the City of Mississauga's inventory of cultural landscapes in 2003. This inventory identifies the significance of the site's historical developments.

In 1954, Hurricane Hazel devastated the mouth of Etobicoke Creek. In all, 700 residents were relocated from the flood-ravaged area. The local government requested that the provincial and federal governments purchase properties and clear 164 homes to make way for a new park. This parkland was named after Reeve Marie Curtis in recognition of her role in the formation of a regional parkland system in Metro Toronto. Marie Curtis was the first Reeve of Long Branch and one of the first members of Metro Council.

2.5 TRAILS

Two main trail systems connect the Arsenal Lands and Marie Curtis Park West with the surrounding regional network of greenspace. The Waterfront Trail is the largest of the two trail systems, following the shore of Lake Ontario for 740 kilometres between Niagara-on-the-Lake to Brockville. West of the Arsenal Lands, the Mississauga section of the Waterfront Trail is continuous and paved. To the east of Marie Curtis Park West, the Etobicoke section of the Waterfront Trail mainly follows quiet residential streets; however, a two-kilometre section between Royal York Road and Park Lawn Road is located along Lake Shore Boulevard West.

To the east of the Arsenal Lands and Marie Curtis Park West, the Waterfront Trail connects with the Etobicoke Creek Multi-use Recreational Trail. This trail runs along the east side of Etobicoke Creek from Lake Ontario to just south of the Queen Elizabeth Way for a total of 2.5 kilometres. The Etobicoke Creek Multi-use Recreational Trail connects with neighbourhood streets via Etobicoke Valley Park and Enfield Park.

Trails are highly valued recreational assets that promote an active-living lifestyle. Trail improvements and expansion are considered a priority to ensure that high community participation in walking and cycling can continue to be supported. Long-term plans for the Etobicoke Creek Multi-use Recreational Trail include northward expansion of the trail, between the Gardiner Expressway and The Queensway, as well as new trail connections through Mississauga and Brampton. The bikeway network identified in the Toronto Bike Plan also proposes future westward expansion of the bike lanes currently located along Lake Shore Boulevard West. Implementation of this plan will see the bike lanes extended from Browns Line to the Etobicoke Creek Multi-use Recreational Trail. The City of Toronto and the City of Mississauga are also committed to working in partnership to ensure that these bike lanes in future will carry on westward into Mississauga along Lakeshore Road East.



Figure 7. Regional Trail connections.

A series of informal trails currently exists throughout much of the Arsenal Lands and Marie Curtis Park West. These trails have caused soil compaction, eliminated natural vegetation, and introduced invasive species. This damage is particularly evident in the south portion of the woodlot, where the extensive trail network has introduced Japanese Knotweed (*Polygonum cuspidatum*) and destroyed much of the natural understorey.

2.6 SITE SERVICING AND INFRASTRUCTURE

Services located within the Arsenal Lands were decommissioned during the site remediation process. Services to the site terminate at a junction box located at the foot of Deta Road, on the south side of Lakeshore Road East.

Existing facilities within Marie Curtis Park West include parking for 216 vehicles, a public boat launch and pedestrian bridge over Etobicoke Creek. A municipal water main is located along the west side of Etobicoke Creek.

2.7 DEMOGRAPHICS

Demographic information was compiled from the communities of Mineola, Lakeview, Port Credit and Long Branch in order to develop a wide range of recreational opportunities within the Arsenal Lands and Marie Curtis Park West that will be relevant to the surrounding communities. The level of household income revealed that the range of wage classes within the community is relatively proportionate. Of all households in the neighbourhood, 50 per cent are categorized as families with children less than 14 years of age. Eighty per cent of local households identify English as their first language. Of the remaining 20 per cent of households Polish, Italian, Portugese or Ukranian is considered the mother tongue.

Future trends indicate that the service area population is expected to increase by about six per cent to approximately 90,000 by 2031. The age composition for this area will also see a shift, representative of our aging population. The number of youth is projected to decline, while the number of residents over 55 will triple over the next three decades.

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3.0 MASTER PLAN ADDENDUM

The Master Plan Addendum is consistent with the goals and objectives of *The Arsenal Lands Park and Site Remediation Master Plan* released in 1998. The Addendum reinforces the original intent of the partners to form a regional waterfront park. This is accomplished by integrating the Arsenal Lands with the west side of Marie Curtis Park and through an enhancement of the proposed park amenities to suit the park's regional scale. Given the park's proximity to the border of Mississauga and Toronto, the park will function as a "Gateway Park" that will service residents from both municipalities.

The Addendum provides further information about the current site conditions, planning recommendations, demographics, community needs and public interests. This information was used to update the overall concept for the park and to develop recommendations for future park operations. The revised park concept, builds on the original Master Plan by offering not only trails and picnicking venues but also complimentary park facilities to make the park experience more enjoyable and attractive to regional users. These complimentary facilities have been selected to meet public demand and have been sited to help deter inappropriate park use in underused areas. The Addendum also outlines the plans to preserve and interpret the unique historic and natural heritage features located within the park, reflecting the partners' commitment to environmental sustainability and public recreation.

The park plan is inspired by the unique natural and historical features of the Arsenal Lands and Marie Curtis Park West (see Figure 8). The plan is intended to be conceptual. The exact size and location of the proposed park features will be determined during detailed design. Further discussions with the public and potential user groups will help direct the detailed design process to ensure that the park meets the needs of the community.

3.1 GUIDING PRINCIPLES

During the original master planning process for the Arsenal Lands, a comprehensive list of goals and objectives were established to direct the future park development and operation

(see Table 1). Several of these goals and objectives were achieved during the site remediation process. The remaining goals and objectives became the guiding principles of the Addendum.

Table 1. Goals and objectives summary.

Goal	Create a healthy, safe park environment.	
	Clean-up soil conditions to parkland guidelines.	
Objectives	Improve access, visibility and sight lines through remote areas, encourage community awareness, provide activities to increase usership in off-peak times.	
Goal	Establish a unique park identity.	
	Retain water tower as landmark, visible from Lakeshore Road and the Waterfront Trail.	
	Create a rich landscape setting that integrates with surrounding diversity of habitats.	
Objectives	Add interest and diversity into the park plan during site remediation, e.g., the creation of new landforms in conjunction with excavation and capping proposals.	
	Tell the historical and anecdotal storylines of the site and Lake Ontario waterfront in an informal, exploratory way (Aboriginal roots, Col. Samuel Smith, war munitions supply).	
	Promote educational and interpretive opportunities presented through site remediation.	
Goal	Restore natural systems.	
	Protect the existing woodlots, wetlands and natural regeneration areas.	
Objectives	Improve landscape quality and habitats through landscape restoration.	
	Use environmentally "friendly" materials in park design.	
Goal	Enhance existing recreational activities.	
	Integrate the Arsenal Lands, Marie Curtis Park and the Waterfront Trail; and provide for regional, city and community recreational needs.	
	Create new natural features into a system of 'greenways' for visual, ecological, recreational and educational benefits (e.g., wetlands, meadows and woodlands).	
Objectives	Provide facilities that complement and enhance existing passive waterfront recreation uses (e.g., trails, beach activities, fishing, nature observation, picnicking).	
	Increase opportunities for year-round use of the park.	
	Build long-term flexibility into the plan to accommodate the site remediation process, the evolution of the landscape and changing economic/recreational demands.	
Goal	Improve access and urban frontage.	
	Create a safe, 'pedestrianized' frontage and park presence along Lakeshore Road East.	
	Improve and enhance views to the lake.	
Objectives	Promote the park as a 'gateway' to Mississauga/Toronto along Lakeshore Road East.	
Objectives	Consolidate vehicular access and entry points into park for visibility and safety.	
	Ensure that pedestrian entry points are accommodated from all directions.	
	Improve recreational access to beach.	

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3.2 SUMMARY OF CHANGES TO THE MASTER PLAN

In the spirit of the original Master Plan, park facilities and infrastructure are integrated with the unique natural features of the site. As such, considerable areas of the parkland are reserved for habitat protection or enhancement. With the intention of encouraging greater use of the park to create a safe and vibrant park environment, several new park features have been added to the Plan. The Addendum builds on the original Plan by offering not only trails and picnicking venues but also complimentary park facilities to make the park experience more enjoyable and attractive to potential park users. These complimentary facilities include a new play area, a splash pad and washrooms.

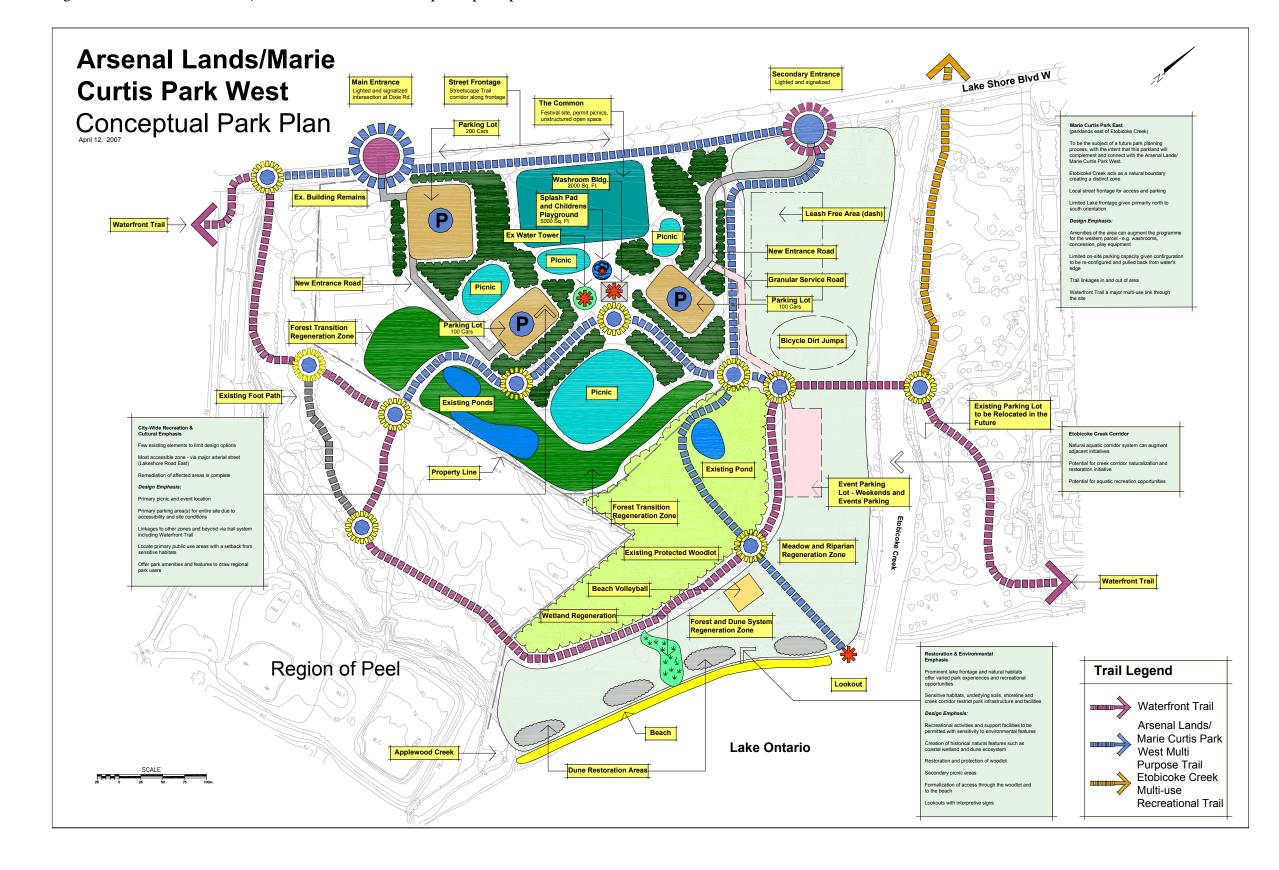
To ensure that the park appeals to a broad range of users, space has also been allocated for a "leash-free" area for dog owners and future recreational facilities such as beach volleyball courts. The locations of these park amenities have been selected with regard for sensitive habitats, as well as the need to activate underused areas to deter inappropriate park use. These facilities will be developed in response to community demand and further public consultation.

The changes to the original Master Plan concept are as follows:

- The major points of access to the park, as well as the supporting system of interior roadways and parking lots have been redesigned to prevent user conflicts and to create more usable space within the park.
- Permitted group picnic facilities have been expanded in response to the increased demand.
- A new restroom and shelter area has been identified to service the large number of picnickers that will use the Arsenal Lands property.
- A new splash pad has been included to offset the use at Lakefront Promenade splash pad, which currently exceeds its designed capacity.
- A unique play area has been added to the concept to draw regional park users.
- Space has been designated for waterfront recreation that is considered compatible with the site conditions and public demand such as beach volleyball.
- Space has been designated for development of bicycle dirt jumps in the interest of protecting an area of the existing woodlot that is currently being damaged by unauthorized bicycle moto-cross (BMX) use.
- Space has been designated for a future "leash-free" area for dog owners to prevent user conflicts.
- Public use areas have been repositioned to allow for buffers around sensitive habitats.

Feedback received during the public consultation process undertaken in 2005 has prompted the City of Toronto to consider improvements to the east side of Marie Curtis Park. These improvements include a designated space to facilitate future expansion of the City of Toronto's Community Garden Program, and refurbishment of the Beach Centre, washroom buildings and other park infrastructure. As these improvements are considered outside the scope of the *Arsenal Lands Master Plan Addendum including Marie Curtis Park West*, the City of Toronto and TRCA are proceeding with a Master Plan Update for the east side of Marie Curtis Park which will outline future improvements and park modifications. This Master Plan Update will include further public consultation and require council approval.

Figure 8: The Arsenal Lands/Marie Curtis West conceptual park plan.



3.3 ART AND CULTURAL HERITAGE FEATURES

A comprehensive review of the cultural heritage features prepared by TRCA staff in 2003 will be utilized to explain the history of the site to park users. This information will form the foundation of an interpretive signage program that will be developed during the detailed design phase. The goal of this interpretive signage will be to relay the historical and anecdotal storylines of the site and the broader Lake Ontario waterfront in an informal and exploratory fashion. Historic photographs and maps will be used to depict the evolution of the site. Some of the themes that will be explored include the site's Aboriginal roots, Colonel Samuel Smith and the Queen's Rangers, war munitions manufacturing, military training, the Long Branch Rifle Range and the cottagers who once had summer homes along the banks of Etobicoke Creek.

The water tower located at the Arsenal Lands has been on the site since 1941, having survived Hurricane Hazel and many years of changing land use. Consistent with the original Master Plan, the water tower will be preserved to act as a landmark to achieve a strong park identity and to reflect the historic industrial use of the site. The updated conceptual plan identifies the water tower as a focal point for activity in the park. It becomes a meeting place where people will engage in recreational pastimes or socialize with neighbours.

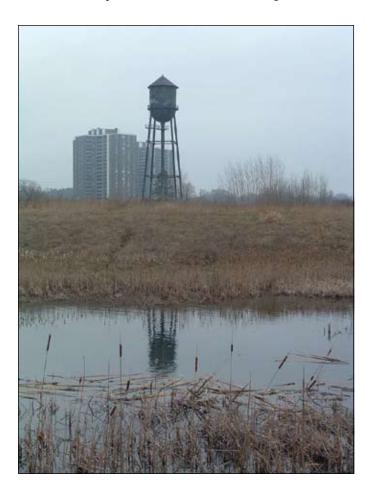


Figure 9. The Arsenal Lands water tower, built in 1941.

The opportunity to incorporate temporary or permanent art installations into the park will be explored during the detailed design process. Art will add to the vibrancy of the park setting and will help create or emphasize focal points within the park. The types of art that may be incorporated into the park include fountains, lighting, murals, banners, mosaics, built forms or sculptures.

3.4 NATURAL HERITAGE PROTECTION AND ENHANCEMENT

Terrestrial natural heritage information for the parkland was used to determine the appropriate areas for natural heritage protection and enhancement. Existing vegetation communities and fauna species were scored and ranked to identify areas sensitive to human encroachment. Species are ranked based on local distribution or local (L) ranks. These L ranks are in some ways similar to the provincial (S) and global (G) ranks that are assigned to vegetation communities, flora and fauna, but consider ecological criteria, as well as abundance. The TRCA ranks range from L1 to L5. Generally, L1 to L3 species or vegetation communities are of regional conservation concern (within TRCA's jurisdiction).

Ten species ranked L3 have been recorded during recent surveys of the Arsenal Lands and Marie Curtis Park. An additional 15 species ranked L4 are found within or on the lands surrounding the Arsenal Lands. The locations of all L-ranked species are depicted in Figure 10. The park concept has been designed to ensure that park development does not occur in areas where these species are present or where there is potential for further colonization of these significant vegetation communities.

As discussed in Section 2.22, the natural heritage survey undertaken by TRCA in 2003 identified a healthy breeding population of Northern Leopard Frog. This species exhibits a high degree of mobility, habitually ranging over wide areas of adjacent upland habitat. The upland habitat plays a critical role in enhancing both the foraging capability of the species, as well as, ensuring genetic variation within the population. The dependence upon adjacent upland habitat however can also lead to the species' downfall if the protective natural cover is removed.

Research conducted throughout the Great Lakes Region has resulted in the development of a guideline for the width of natural vegetation required around all wetlands in order to maintain wetland function that is referred to as an Ecological Function Zone (EFZ). Environment Canada's Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern (1998) suggests 240 metres of adjacent habitat be maintained as herbaceous or woody natural cover. Such a guideline would help protect the function of the wetlands at the Arsenal Lands; however, the urban context of this site dictates a somewhat smaller EFZ.

It is important that the EFZ not be confused with a buffer. While the EFZ is actually required for allowing the natural system to function, a buffer is recommended as an effective strategy for mitigating the negative influences of the adjacent land use. In a completely natural landscape, the EFZ would be sufficient to maintain the function of the wetlands by providing the required foraging and dispersal opportunities for the associated fauna. However, in an urban setting additional negative impacts need to be considered.



Figure 10. Recommended Ecological Function Zone and 50 metre wetland buffer.

To protect the population of frogs it is necessary to maintain the upland habitat that connects the woodland pond and the two wetlands. An area of continuous natural vegetation cover to the north of the forest will act as an EFZ, while a buffer of 50-metres around each of the wetlands and the pond will prevent encroachment of trails and roads into this area of sensitivity. The recommended EFZ and 50-metre buffer are outlined in Figure 10. Measures implemented to protect the site's Northern Leopard Frog population will also protect vital wetland functions and effectively maintain habitat required by several other wildlife species of interest. Some of the other species found at this location that are expected to benefit from the establishment of the EFZ and 50-metre buffer include American Toad (*Bufo americanus*), Willow Flycatcher (*Empidonax traillii*), Savannah Sparrow (*Passerculus sandwichensis*), Bobolink (*Dolichonyx orzyivorus*) and Common Yellowthroat (*Geothypsis trichas*).

3.4.1 FOREST

Improving the quality of the existing forest habitat will have important repercussions for migrant songbirds that use this site as a stop-over/staging area during their spring and fall migrations. Recommended improvements to the existing woodland habitat include controlling access and an invasive species management program to protect sensitive ground layer flora and natural forest

regeneration. These two measures will ensure the success of long-term forest regeneration and improve migratory songbird habitat.

The existing woodland will be reserved for wildlife habitat and nature appreciation. Active uses, such as mountain biking and bicycle moto-cross use, will be discouraged in the existing woodlot and in areas zoned for forest regeneration. To improve the health and biodiversity of the existing and developing forest areas, management techniques will promote canopy closure, and the establishment of high density, multi-layered vegetation communities. This will help to promote the re-establishment of native species and impede the development of invasive, exotic species.

The community heavily uses unfenced portions of the existing woodlot, as is apparent by the lack of forest understorey. In many areas, physical damage to plants and soil compaction have inhibited forest regeneration. In the south-west section of the woodlot, cycling enthusiasts have created an informal trail system, complete with dirt jumps. In order to minimize the impact of public use, trails will be consolidated or relocated away from areas of sensitivity such as wet, low-lying areas and core habitats. Space has been designated specifically for development of bicycle dirt jumps for cyclist use, outside of the sensitive woodlot area, within Marie Curtis Park West. Trail planning will allow dead or dying trees to be retained by restricting hazard tree removal to areas affected by trail corridors.

Areas of the woodlot that have been open to public use have high densities of Garlic Mustard (*Alliaria petiolata*) and Japanese Knotweed that compromise the integrity of the woodlot. To improve the health of the existing woodlot, invasive species removal will be required. These invasive species will be replaced with native understorey plantings to achieve greater species diversity and speed up the process of natural regeneration. Tree species suitable for understory planting include Silver Maple (*Acer saccharinum*), Black Cherry (Prunus serotina), Yellow Birch (*Betula alleghaniensis*), American Beech (*Fagus grandifolia*), White Spruce (*Picea glauca*) and White Pine (*Pinus strobus*).

Increasing the size of a woodlot will promote the creation of interior habitat that is critical to species sensitive to the intrusion of non-native species such as Garlic Mustard and parasitic species like the Brown-headed Cowbird. Key areas adjacent to the existing woodlot will be planted to promote the development of interior habitat. Planting in these areas will reduce the negative impact of forest fragmentation. Trees and shrubs will be selected for their value to wildlife and for their ability to thrive on the forest edge. These species may include:

Trembling Aspen (*Populus tremuloides*), Silver Maple, Red Oak (*Quercus rubra*), White Oak (*Quercus alba*), Bur Oak (*Quercus macrocarpa*), Balsam Poplar (*Populus balsamifera*), Basswood (*Tilia americana*), Pin Cherry (*Prunus pensylvanica*), Choke Cherry (*Prunus virginiana*), Staghorn Sumac (*Rhus typhina*), Black Elderberry (*Sambucus canadensis*), Nannyberry (*Viburnum lentago*), Red Osier Dogwood (*Cornus stolonifera*), and Serviceberry (*Amelanchier sp*). Plantings will be grouped in clumps and patches along the edge of the forest to increase habitat value and to mimic natural succession.

Large open areas currently exist within the former Arsenal Lands and parts of Marie Curtis Park West that have been targeted for reforestation. Many of these open areas will be planted with early successional tree species to promote natural succession. Successional tree species such as Trembling Aspen, Balsam Poplar, White Birch (*Betula papyrifera*) and Silver Maple, which are

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favoured for their rapid growth, will be planted dense in 10-metre x 10-metre patches. In a relatively short period, these trees will provide shade and shelter for park users, enhance the aesthetics of the park and provide refuge for wildlife.

In these and other forest regeneration areas, rapid healthy forest development will be encouraged by selective thinning. Trees growing too closely together, as well as diseased or non-native species will be removed during maintenance operations to reduce competition for water, nutrients and sunlight. This will maximize forest growth. Forest thinning will begin as soon as the trees in a stand are between 10 and 25 centimetres in diametre at breast height. Downed trees will be left on the forest floor to improve the structural habitat conditions of the reforested areas of the park.

3.4.2 BEACH

There are very few natural sand beaches that occur on the northwestern portion of the Lake Ontario shoreline. The "park" concept recognizes both the natural and recreational value of the waterfront. The beaches at Marie Curtis Park West present one of the few opportunities to maintain a coastal/beach ecosystem. With the exception of trails and viewing areas, no park development will be permitted on the beach.

The park concept identifies that the upper portion of the beach will be protected and enhanced to promote colonization of native beach species. This portion of the beach will be specifically targeted to promote the development of a beach community ecosystem characterized by native grasses



Figure 11. Example of backshore dune restoration planned for Marie Curtis Park West.

and shrubs. Species that have been extirpated from the site but still occur naturally in similar local habitats (e.g., Toronto Islands) will be re-introduced to recreate a natural dune ecosystem. This will include Eastern Cottonwood (*Populus deltoides*), Wormwood (*Artemisia campestris*), Smooth Rose (*Rosa blanda*), Pasture Rose (*Rosa Carolina*), Missouri Willow (*Salix eriocephala*), Heart-leaf Willow (*Salix cordata*), Sandbar Willow (*Salix exigua*), Milkweed (*Asclepias syriaca*), Canada Anemone (*Anemone canadensis*), Bushy Cinquefoil (*Potentilla paradoxa*), Cordgrass (*Spartina pectinata*), Marram Grass (*Ammophila breviligulata*), Nut-grass (*Cyperus schweinitzii*) and Canada Blue-joint (*Calamagrostis canadensis*). Formalized beach trails and low post-and-rope barriers will be used to restrict public access to ensure restoration activities are successful.

3.4.3 MEADOWS

Marie Curtis Park West is largely reserved for meadow habitat. Park facilities in this area will be limited to bicycling and pedestrian trails and potentially a "leash-free" area for dog owners. Significant meadow habitats within the Arsenal Lands will also be protected, the most critical of which will include the area that buffers the woodland pond and wetlands. Designated "meadow" habitats may be enhanced to create butterfly-breeding habitat by introducing host species such as milkweed (*Asclepias sp*). Other potential enhancements may include the installation of nesting boxes to encourage resident populations of songbirds such as Tree Swallows (*Tachycineta bicolor*) or the construction of snake hibernaculums.



Figure 12. Meadows will be managed to provide habitat for species such as butterflies.

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The meadows will be maintained as natural grassland ecosystems, with few trees and shrubs to provide open areas for passive recreation and to maintain vistas. Mowing within the identified meadow habitats will be restricted to protect the existing habitat function for resident and migratory populations of butterflies and grassland birds such as Bobolink and Savannah Sparrow. Maintenance will be essential to preserve the ecological function of the meadow habitats. This may include seasonal mowing to a height of 10 to 15-centimetres or prescribed burns to mimic the natural disturbances to which meadow plants are adapted and to prevent the colonization of weeds and woody species. A spring burning or mowing regime is preferential as it allows seed heads to remain as a winter food source for wildlife and encourages dispersion of the plants.

3.4.4 ESTUARY HABITAT

Historically, in-stream habitat in lower Etobicoke Creek would have been more diverse and the hydrologic condition and overall water quality would not have been as impaired. Before large-scale fish habitat projects can proceed, the overall hydrology of the system must be improved. This will

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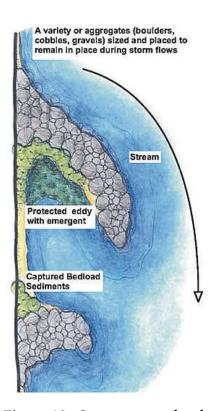


Figure 13. Stone estuary hooks are proposed to improve instream fish habitat.

likely happen through larger initiatives such as the *Toronto Wet Weather Flow Management Master Plan*, and through the creation of new stormwater ponds, stormwater retrofits and the use of green infrastructure. For example, oil-and-grit separators are to be installed by the City of Toronto on both sides of the creek, south of Lakeshore Road. The reduction of chemical and other contaminants to the watercourse also need to be addressed through education, stewardship activities and spills prevention planning which target landowners, industries and commercial operations that are likely to affect the aquatic system.

In-water and riparian habitat rehabilitation will improve the overall ecological function of the Etobicoke Creek estuary. The *Toronto Waterfront Aquatic Habitat Restoration Strategy* identifies several restoration techniques that include bio-engineering to replace traditional erosion control features and in-stream habitat improvements such as the creation of estuary hooks. Estuary hooks constructed adjacent to the vertical sea wall at the mouth of Etobicoke Creek to create sheltered backwaters will offer staging areas for fish during high-flow conditions, as well as increase opportunities for feeding and spawning.

3.4.5 RIPARIAN RESTORATION

The majority of Etobicoke Creek has been altered to prevent or repair erosion. Riparian restoration will be undertaken to improve both the aesthetic and habitat function at the water's edge of the creek. Simply planting streamside vegetation will result in many benefits to the Etobicoke Creek estuary. The vegetation will stabilize the riverbank, provide in-stream cover for fish, improve water quality and provide habitat for a variety of wildlife species. As per the recommendations for riparian vegetation enhancement outlined in the *Etobicoke Creek Fish Management Plan*, TRCA will aim to achieve 100 per cent natural vegetation cover along the stream bank, with 75 per cent woody component.

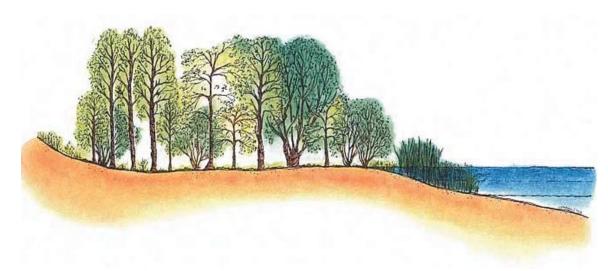


Figure 14. Extensive streamside planting will improve water quality and habitat.

3.4.6 COASTAL WETLAND

Coastal wetlands and their adjacent riparian areas are extremely productive systems that support a great diversity of fish and wildlife habitats. Coastal wetlands play an essential role in mitigating the erosive effects of lake and river fluctuations, improving water quality, and providing excellent recreation and educational opportunities. Within the Greater Toronto Area, most of this habitat has been lost or degraded by urban development.

Historic aerial photography and mapping depicts a large coastal wetland and barrier beach system at the mouth of Etobicoke Creek prior to 1956. The park concept attempts to address this loss of historic wetland habitat through the creation of a new wetland that will provide riverine and coastal fish species opportunities to spawn, rear young, feed and mature. This area will act as a source habitat from which fish can disperse to establish new populations within Etobicoke Creek or other areas of the Lake Ontario waterfront. The wetland design will also create habitat for other wildlife species such as frogs, turtles and songbirds.

During the detailed design process, opportunities to create small isolated ponds or wetlands in forested and floodplain areas will also be investigated. Isolated habitat ponds are best created in naturally occurring terrestrial depressions in both upland and lowland areas. These habitats can be created through simple grade manipulations, and small excavations that capture and hold overland drainage for the majority of the growing season. Wetland projects located within the floodplain are likely to retain water throughout the growing season. These small aquatic features will improve breeding habitat for amphibians that are sensitive to predation.

3.5 PARK FEATURES

Demographic information compiled in support of the Addendum was used to determine the recreational needs and preferences of potential user groups. The available literature on this subject identifies that Canadians of Anglo-European descent are more likely to value time alone, preferring nature-based, individualistic recreation activities such as walking, hiking and biking. These groups also participate in outdoor recreation activities for exercise, fitness, and fun. Research available on the preferences of "new" Canadians of East and South Asia indicates a preference for organized picnics, barbeques and social gatherings. These activities are focused around community and the extended family, and they reinforce cultural values, social interaction, language and religion.

The City of Mississauga's recently completed *Future Directions for Recreation & Parks* report also revealed strong public support for the creation of more open space and expansion of passive, nature-oriented recreation opportunities. This report also showed public preference for parklands that are maintained as treed areas and trails as opposed to developed into more sports fields. Local recreational preferences indicated widespread participation by residents in such activities as walking, swimming and cycling. Recreational use of splash pads was also found to be popular among local youth, however emerging interest was found in extreme sports and adventure opportunities.

Specific recommendations outlined in *Future Directions* that were found compatible with the site included the following:

- Expansion of multi-use, off-road trails through parks.
- Provision of leash-free zones in response to public demand.
- Creation of unorganized and spontaneous leisure opportunities for youth.
- Creation of more open space that supports passive, nature-oriented recreation.
- Creation of new spray pads in destination parks.
- Construction of large-sized play equipment in destination parks.

The park features incorporated into the revised park concept reflect the need to offer a diversity of recreational activities that will engage park users of all ages and abilities. The concept also designates space for existing uses within the park such as dog walking to prevent potential user conflicts. Siting of the planned park features takes into consideration existing park uses and reflects consideration for the need to protect and expand the existing natural system. The need to activate use of remote areas of the site was also considered to improve the overall safety of the park.

3.5.1 THE COMMON

There are currently no designated special events sites within the City of Mississauga, and few that service the City of Toronto. The number of large-scale events is increasing within both municipalities, particularly those that engage ethnic communities. As there are few suitable venues for these festivals, they currently have the affect of displacing other activities and burdening existing infrastructure. The City of Mississauga has therefore identified the need to investigate possible venues for outdoor festival sites to meet city-wide demand.

The Common will function as a maintained open space that will serve as a community event site for large picnics or festivals. The City of Mississauga will determine the capacity and requirements for any group proposing a community event or outdoor festival at this site. During those times when The Common is not booked for a large event it will function as an informal recreational space for activities such as frisbee or kite-flying. The Common will be planted with turf grasses and cut on a relatively frequent basis, as dictated by the use of the site.



Figure 15. The Common will provide open space for events or informal recreation.

3.5.2 PLAY AREA

A new family-oriented play space has been identified for the Arsenal Lands to provide an opportunity for children and youth to learn about the cultural and natural heritage of the site in a fun and interactive fashion. Unlike the traditional playground equipment found on the east side of

Marie Curtis Park, this new play space will offer an educational and interactive play experience. The play area will incorporate natural elements with sculptures, built structures and landforms to create a unique and engaging space.

3.5.3 SPLASH PAD

Splash pads are currently featured in many regional parks throughout Toronto and Mississauga. Unlike other recreational water features such as wading or swimming pools, splash pads can be used for an extended period of use (May to September) and require less supervision due to the lack of standing water. Splash pads also appeal to a broader range of age groups than wading pools. At Lakefront Promenade, located just west of the Arsenal Lands, the splash pad facility is so popular that the design capacity is often exceeded.

A splash pad has been added to the park concept in response to the demand for such facilities and to draw regional park users. The splash pad has been located centrally to complement the new children's play area and add to the appeal of the Arsenal Lands as a family recreational destination. Consistent with the play area, the splash pad will be designed to reflect the cultural and natural heritage themes that are unique to this site. An excellent example of this approach is illustrated at Forest Glen in Mississauga, where a wetland-theme has been used in the design of the park's splash pad.



Figure 16. Wetland-themed splash pad at Forest Glen in Mississauga.

3.5.4 WATERFRONT RECREATION

The park concept recognizes the importance of providing both physical and visual access to the waterfront. Formalized beach trails and waterfront viewing areas are proposed to encourage park users to take advantage of this unique asset. The trails and viewing areas will ensure that the beach is accessible to all park users by providing surfaces suitable for strollers and wheelchairs. The trails will also direct park users through sensitive backshore dune habitats to ensure restoration activities are successful.

The park concept allows for a diversity of activities to take place on the waterfront that are compatible with the site conditions and encourage positive use. The waterfront will not only provide a place for quiet reflection and small family picnics, but a place for more active pursuits such as canoeing, kayaking, para-sailing and wind surfing. Space on the waterfront has also been specifically designated for the purpose of beach volleyball, which may be considered to provide much needed training and playing space for this growing sport.

There are currently over a dozen volleyball leagues established in Mississauga and the west end of Toronto that offer residents the opportunity to play the sport at both amateur and professional levels. Four beach volleyball facilities are located on the central Toronto waterfront, however no such facilities on the western Toronto or Mississauga waterfront.

The creation of such a facility would require the creation of a sand court measuring 16 x 8 metres, surrounded by six-metre free zone from the side and end lines (for a regulation-sized court). The number of courts constructed and ancillary features would be determined through further discussions with potential user groups.

The beach at Marie Curtis Park West has been targeted by the City of Toronto as a potential candidate for the Blue Flag Program. In order for a beach to qualify to fly a Blue Flag the beach must meet standards for water quality, environmental management, environmental education programs, safety, and services. Some of the improvements that would be required at the beach include signs that provide information on natural areas, beach regulations, and up-to-date information on bathing water quality; litter and recycling bins; and lifeguard stations with adequate safety and first aid equipment and access to a telephone. The beach, as well as, supporting facilities and equipment would also have to be maintained to the standards of the Program. This would include daily beach cleaning to remove debris and garbage.

Historical water quality trends have shown variable results at this beach location. In the future, if water quality results consistently meet the provincial guidelines for swimming, the City of Toronto will investigate opportunities to work in partnership with the City of Mississauga to provide the enhanced facilities, maintenance and services required to qualify for this program subject to Mississauga's city-wide parks operations standards and overall policy direction related to the provision of beach swimming.

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3.5.5 PICNICS AREAS

The demand for group picnics in both the City of Mississauga and the City of Toronto currently exceed the available space. In the City of Mississauga alone, it is estimated that 200,000 residents take advantage of municipal park picnic areas each year. In both cities, permits are required for groups larger than 25 people. The park concept allows for the creation of several designated spaces for group picnics to ensure that both municipalities can better meet the current demand. Informal picnic areas will also be available throughout the park for smaller gatherings.

The final siting and design of the designated picnic areas will take into consideration the space requirements for varying sizes of groups, site conditions and sensitive ecological areas. These picnic areas will also be located within close proximity to parking, washrooms and primary activity areas. Designated picnic areas will be maintained frequently during peak summer operations and require a permit for use.

3.5.6 DESIGNATED LEASH-FREE AREA

By-laws enforced by Mississauga and Toronto require dogs to be kept leashed unless within a designated 'leash-free' area. Designated leash-free areas provide a secure area where dogs can socialize and exercise off-leash. Both the City of Toronto and the City of Mississauga have established a network of leash-free areas. There are Leash-free Zones in six Mississauga parks; two that operate near the Arsenal Lands/Marie Curtis Park West include Jack Darling Park (Lake Shore Boulevard and Lorne Park Road) and Etobicoke Valley Park (Dundas Street and Southcreek Road). Within the City of Toronto there are 29 designated leash-free areas. Don Russell Memorial Park located near Birmingham Street at Faustina Drive is the closest leash-free area to the Arsenal Lands and Marie Curtis Park West.

The designation of a leash-free area has two distinct advantages, the first being that of safety. Dog walkers provide a consistent base of park patrons that will utilize the park year round. This consistency of use creates a sense of safety for park users. Secondly, by designating a portion of the park for this specific use, it is hoped that conflicts between dog walkers and other park users can be avoided.

To prevent interference with other park uses the leash-free area will be confined to a fenced in area and posted with signage, indicating on- and off-leash areas, hours of off-leash times, as well as stoop-and-scoop regulations and fines. While in the leash-free area, park users will be required to adhere to the following rules:

- Carry a leash while the dog is running at large within the designated area.
- Immediately leash the dog if it shows aggressiveness towards people or other dogs.

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• Ensure that the dog does not leave the designated area while off leash.

- Ensure that the dog, while running free in the designated area, is under voice control and within visual sight at all times.
- Ensure that the dog does not constitute a danger to other park users or is reasonably likely to frighten other park users.
- Adhere to stoop-and-scoop regulations.

The park concept identifies a location within Marie Curtis Park West as the future leash-free area. Using the model adopted by the City of Mississauga, the identified leash-free area will be a self-policing park environment that is run and maintained by the user group. In order for the leash-free area to be designated dog owners using the park must form a group with a minimum of 15 members who agree to:

- Provide "dog-watch" eyes and ears on the park to identify and help educate irresponsible pet owners.
- Organize park clean-ups at a minimum of four times per year.
- Repair areas damaged by dogs.
- Consult with Public Health Animal Services for municipal code enforcement when required.

3.5.7 FISHING AND STREAMSIDE ACCESS

Recreational angling is popular at several locations throughout the Etobicoke Creek watershed including Marie Curtis Park. Toronto and Region Conservation, in partnership with the Ministry of Natural Resources is interested in increasing urban fishing opportunities on public lands. The *Etobicoke Creek Fisheries Management Plan* identifies the importance of providing safe shoreline access for anglers along the banks of Etobicoke Creek within Marie Curtis Park. To address this need a streamside trail and several ledge-rock fishing nodes will be constructed along Etobicoke Creek. These streamside access points will be sited to offer scenic views of the creek and will contemplate seating and signage, allowing park users to enjoy a moment of quiet reflection or nature appreciation.

3.5.8 BICYCLE DIRT JUMPS

The interest in extreme sports and adventure opportunities continues to increase in popularity. In response to public demand and in the interest of relocating the unauthorized BMX course constructed in the woodlot, the park concept designates space within Marie Curtis Park West for the development of bicycle dirt jumps. This designated park space will be designed in consultation with youth and user groups to offer dirt-surface biking activities. Such a facility will offer unstructured and spontaneous leisure opportunities for local youth and young adults.

3.6 PARK AMENITIES

3.6.1 TRAILS

The overall trail concept targets the problems associated with the existing informal system of trails. In order to develop a successful trail system the new park concept focuses on maximizing accessibility while minimizing, or all together avoiding, conflicts with the sensitive habitats of the site. This includes several new trail connections between the park and the existing regional trail system, as well as a system of new interior park trails.

Approximately 1.7 kilometres of new trails are proposed to link the Arsenal Lands with the waterfront, the Waterfront Trail and Marie Curtis Park. When completed, this trail system will consolidate informal trails, to minimize soil compaction and the impact on natural vegetation. The trails will be sited to direct traffic away from sensitive habitats. Strategic trail siting will also lead park users to points of interest and the best vantage points within the park to encourage appreciation for the unique features of this site. Once constructed, barriers such as downed trees or split rail fences may be used to prevent trail users from wandering off the path.

Across the frontage of the Arsenal Lands and Marie Curtis Park West, a new multi-use trail system is proposed on the south side of Lakeshore Road East. This trail system will provide pedestrians and cyclists with access to the park. It will also provide commuting cyclists with a more direct route along Lakeshore, and connections to the westbound Waterfront Trail and the northbound Etobicoke Creek Multi-use Recreational Trail.

Through a partnership between the City of Mississauga and the City of Toronto the park will also be eventually connected to an expanded network of east- and west-bound commuter bike lanes along Lakeshore Road East, Mississauga and Lake Shore Boulevard West, Toronto. This bike lane network currently terminates on Lake Shore Boulevard West at Browns Line. As part of the implementation of the Toronto Bike Plan, the bike lanes will be extended from Browns Line to the Etobicoke Creek Multi-use Recreational Trail, the City of Toronto will then work in partnership with the City of Mississauga to facilitate expansion of the bike lanes, westward into Mississauga along Lakeshore Road East.

3.6.2 WASHROOMS

A new washroom facility will be centrally located in the Arsenal Lands to service the group picnic areas, splash pad and children's play area. This facility will also provide storage for park equipment. Integrated on the exterior of the building will be an information kiosk and interpretive display space. The building may also be designed to offer shelter for inclement weather and/or shade structures. The building will be designed and sited with consideration for the surrounding environment, as outlined in Section 4.

3.6.3 BOAT LAUNCH

A public boat launch is located on the west side of Marie Curtis Park at the mouth of Etobicoke Creek. Due to the location, sediment and debris carried downstream by the creek are deposited in the launch ramps. The launch services few boaters and is primarily used to launch jet skis. Ongoing dredging and debris removal is required to ensure that the boat launch facilities remain serviceable. Due to the environmental and financial implications of maintaining the boat launch at this location, the boat launch will be decommissioned. No further provisions for boat launching or mooring are contemplated elsewhere in the park. In future boaters will be directed to the available facilities located at Lakefront Promenade Park located approximately two kilometres west of the park.

3.6.4 PARK FURNITURE

Park furnishings such as picnic tables, seating, garbage receptacles and bike racks will be limited primarily to the central-use area associated with the group picnic areas and childrens' play area. Benches and garbage receptacles will also be strategically placed at trail intersections and primary viewing areas. Residents may donate benches to commemorate a loved one through the City of Mississauga (see Memorials).

3.6.5 MEMORIALS

A commemorative program will be established for the park to provide members of the public with a means to recognize and honour others through a lasting tribute. Memorials within the park will consist of trees or benches purchased on behalf of a resident or organization to commemorate a special individual or group, which will benefit the park and the community as a whole. City staff will work with the contributor, in consultation with the contributor's ward councillor, to determine an appropriate location for the tree or bench. Contributors may also purchase a commemorative plaque to identify the memorial.

3.6.6 PARK ACCESS

The revised park concept restricts vehicular access to the periphery of the major use areas to ensure the safety of park users. Vehicular access will be provided via two main park entrances located at controlled intersections along Lakeshore Road East. The westerly of these two park entrances will be located at Dixie Road, while the easterly entrance will be located at the signalized intersection east of Deta Road. The easterly access road will follow the border of Marie Curtis Park West and the Arsenal Lands to replace the existing Marie Curtis Park West access road that is prone to differential settling. By relocating this existing road further west, the ongoing maintenance problem will be alleviated without compromising the access to this section of the park. As per the Ontario Building Code, provisions will also be made for emergency service vehicle access routes to all park buildings (e.g., washroom building).

Landscaping and signs will be used at the entrances to improve the park presence along Lakeshore Road East. The park entrances will also be tied into a formalized trail connection across the frontage of the park to provide pedestrians cyclists with safe access to the park. Three additional pedestrian entry points are included in the park concept which link to the Waterfront Trail and the Etobicoke Creek Multi-use Recreational Trail.

3.6.7 PARKING

The revised park concept makes provisions for approximately 520 parking spaces. One large parking lot at the west entrance to the park will provide parking for 200 vehicles. This lot will provide parking for large group picnics or special events and make allowances for overflow parking. Two smaller 100 space parking lots will be located in the interior of the Arsenal Lands, flanking the main centre of activity located at the water tower. Parking lot capacity and final siting will be revised during the detailed design process based on further assessment of site conditions and projected needs.

In keeping with TRCA's *Valley and Stream Corridor Management Program* which recommends a minimum setback of 30 metres from the edge of the creek, the two parking lots located within Marie Curtis Park West will be consolidated into one lot with an appropriate set back from Etobicoke Creek and the waterfront. This lot will offer parking for approximately 120 cars and service park patrons utilizing the waterfront. The allowance for parking is roughly half of what is currently offered based on the results of a parking utilization survey that indicated that only half of the available parking is typically used during peak use. This lot will be open seasonally, during peak hours of operation. As this area of the park is prone to differential, settling the access road and parking surface will be constructed with flexible materials capable of withstanding settling.

3.6.8 PUBLIC TRANSIT

Public transit to the Arsenal Lands and Marie Curtis Park West is serviced by the City of Mississauga. Dixie Road Route 5 and 5B and Lakeshore Road East Route 23 make three stops along the park frontage. Stop 0443 is located at the western park entrance at Dixie Road; stop 0444 is located at the eastern entrance, opposite Deta Road; and stop 0445 is located on the west side of Etobicoke Creek.

Mississauga Transit continues along Lake Shore Boulevard West to the Long Branch GO Station. As Toronto's service terminates at the Long Branch GO Station, Toronto transit users are required to pay an additional fare to travel westward to the Arsenal Lands or walk the short distance to the park. A \$0.50 transfer is required with a valid GO ticket. GTA Weekly Passes are also available, which cover service between Mississauga and Toronto. Toronto Transit to the Long Branch GO Station is serviced by Routes 508, 501, 110A, 110B, 123 and 301.

3.7 SAFETY

The revised park concept attempts to address several safety issues affecting the park by managing vehicular access, eliminating excess parking in low-use areas and increasing park usership through a variety of new park features. The plan creates several natural gathering areas throughout the parkland to promote natural surveillance. Park space has also been designated for specific uses to prevent conflicting activities (e.g., proposed leash-free area).

An overall safety strategy will be developed during the detailed design process to ensure the safe construction and operation of the park. This strategy will be developed with input from the community, local police departments and other emergency service providers (e.g., fire, ambulance) to ensure the safety of park users and the protection of surrounding neighbourhoods.

3.7.1 FENCING

Fencing will be maintained around the protected sections of the woodlot and along western border of the park to maintain the security of the Lakeview Treatment Plant. All other existing fencing will be removed following construction of the park.



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Figure 17. Current and proposed locations of fencing.

3.8 SIGNS

An overall strategy will be developed for interpretive and directional signage throughout the park. This strategy will create a design template and siting plan for signs that will reflect the unique nature of this park.

3.9 EDUCATION AND STEWARDSHIP

The City of Toronto, TRCA and the City of Mississauga all offer community-based stewardship and education programs which allow individuals and groups to learn more about their environment and improve their local parks. The detailed design process will work towards incorporating park features and infrastructure that will support the delivery of education and stewardship activities within the park. This may include providing an interpretive function along the trails through signs or displays designed to relay information about the park's unique natural and cultural heritage. During the detailed design phase of this project, inclusion of a stewardship and education bulletin board will be considered in the event that a stewardship group is established.

There is currently no stewardship group associated with the park, however many community members have indicated their interest in becoming a member of such a group. Toronto and Region Conservation will help to establish a stewardship group to get the community involved in the development and long-term operation of the park. This group would assist with community education and the implementation of special projects.



4.0 DESIGN GUIDELINES

Through careful design, construction and park operation, the parkland will offer a safe, healthy and enjoyable setting in a manner that is environmentally and fiscally responsible. The following site sustainability issues will be considered during the detailed design process:

- Storm water management
- Heat island mitigation
- Reduction of light pollution
- Naturalizing landscapes
- Reconnecting natural corridors
- Protection of animal habitats
- Promotion of non-motorized travel
- Building orientation and design which takes advantage of natural advantages

The focus of this parkland is on its unique combination of natural features. These natural features will dictate the precise siting of park infrastructure and facilities during the detailed design process. The site's natural elements, for example, will provide the colour cues for built structures located throughout the park. Efforts will also be made to ensure that built forms and park elements will add visual interest and compliment the park's natural setting. This will include the incorporation of public art installations.

As the park is located on the border of Mississauga and Toronto, the main frontage of the park along Lakeshore Road should be designed and maintained in a manner that is consistent with the notion of the park being a gateway to both municipalities. Plantings of caliper trees, shrub beds and low free-form berms should be utilized to enhance the landscape along the park boundary to reflect the natural beauty of the park. Plans for the main park frontage must also ensure that sightlines into the park are well planned to create welcoming views and maintain safety.

During construction, methods which eliminate unnecessary site disruption (e.g., excessive grading, blasting and clearing) and resource degradation (e.g., stream siltation, groundwater contamination), minimize job-site waste, and maintain the integrity of natural features and plant communities will be employed. The integrity of natural areas will be maintained by installing temporary fencing to protect existing vegetation during construction. To ensure that local water quality is not impaired during construction, TRCA's *Erosion and Sediment Control Guidelines* will also be utilized.



5.0 MANAGEMENT PLAN

Given the current pressures of urbanization on the quality and quantity of natural cover throughout TRCA's jurisdiction, it is paramount to approach the management of any natural area in a way that addresses that particular site in the larger regional context. To safeguard the natural habitats found within the park, a sound management plan is required.



Figure 18. Designated park management zones.

Through TRCA's management agreement with Mississauga, municipal staff will carry out the day-to-day operation of the park. The City of Mississauga's has a comprehensive system of best environmental management policies in place to direct the overall maintenance of these lands. To ensure that the park operations are consistent with the recommendations of the Addendum, an overall management approach has been developed.

Based on the location of existing natural and cultural heritage features, various management zones have been designated to provide varying levels of protection and to outline compatible intensity of public use (see Figure 18). These management zones include Natural Environment, Primary Restoration, Secondary Restoration, Operations, Public Use and Public Use–Lease, as defined in Table 2. These zones and definitions are based on the Ontario Provincial Parks–Planning and Management Policies, however the recommended land management zoning categories and policies have been modified to more closely address the requirements of the parkland and TRCA.

Table 2. Permitted resource uses by management zone.

Management Zone	Definition	Intensity of use	Example Resource Uses
Natural Environment	Areas which have significant or unique natural features, landforms, species or habitats that require careful management to ensure long-term protection.	None to low	Local and Waterfront Trail, nature viewing, research, education and photography.
Primary Restoration	Priority lands where ecological health and diversity could be enhanced through active environmental restoration.	Low	Trails, nature viewing, research, education, photography and cross-country skiing.
Secondary Restoration	Lands where ecological health and diversity could be enhanced by allowing the processes of natural regeneration to occur.	Low to moderate	Trails, cross-country skiing, dog walking and small family picnics.
Public Use	Areas that have existing or potential for recreational and educational uses, facilities or services. This designation may include areas with suitability to low-, moderate- or high-intensity public uses.	Low to high	Trails, parking and access, beach volleyball, group picnics, special events, leash-free area, play area and splash pad.
Lease Zone	Refers to an area of the property leased by TRCA and which has restricted public access.	Low to high	Considered a "private area", subject to specific lease agreements. Possible resource uses could include recreational activities, private buildings and parking for the leased areas.
Restricted Access Zone	This refers to an area of the property where no public use is allowed.	n/a	Access restricted to TRCA staff only.

For each management zone, a series of recommendations have been developed to guide park operations and uses. These management recommendations are intended to guide the actions of TRCA, and our management partners to ensure that the property will remain a healthy and vital part of the Etobicoke Creek watershed. These recommendations are consistent with the provisions outlined in TRCA's Valley and Stream Corridor Management Program and the watershed management objectives outlined in Greening Our Watersheds. All management activities will be designed and implemented in compliance with federal and provincial legislation such as the Migratory Birds Conservation Act, Fisheries Act, Conservation Authorities Act, Planning Act, Public Lands Act, Navigable Waters Protection Act and Ontario Water Resources Act.

5.1 NATURAL ENVIRONMENT

Resource management activities encouraged in this zone include projects designed to protect, enhance or restore natural features, landforms, species or habitats. This includes forest management, fish and wildlife habitat improvement, invasive species management and revegetation activities. All trails should be well sited and barriers or boardwalks utilized to direct traffic through areas of sensitivity. Trails should be maintained to minimize damage and to ensure that invasive species are not spread throughout the area. Regular monitoring of the flora, fauna and overall condition of the ecosystem is recommended to evaluate the effects of the various management activities and public use.

Areas to be maintained as meadow habitat will be moved to a height of 10 to 15 centimetres once every spring or fall to prevent weeds from taking over the site and to mimic the natural disturbances which meadow plants have adapted to. A spring moving regime is preferential as it allows seed heads to remain as a winter food source for wildlife and encourages dispersion of the plants.

5.2 PRIMARY RESTORATION

The Primary Restoration Zones were established through a landscape-level analysis to determine possible additions to, or connections between, areas of existing habitat. Primary Restoration Zones specifically target the lands adjacent to sensitive areas, especially those located close to higher-intensity public uses. Other Primary Restoration areas include those within Public Use Zones that would benefit from additional tree cover.

Resource management activities encouraged in this zone include environmental management projects designed to protect, enhance or restore natural features, landforms, species or habitats. Priority will be given to naturalizing areas that buffer sensitive habitats or which link habitats to allow for species movement, such as connections that allow frog movement between wetlands and meadow and forest habitats. Naturalization plans will be based on the completed terrestrial natural heritage inventory and assessment. Following implementation, these areas will be monitored to measure overall success and presence of indicator species. Successful restoration areas will be rezoned over time and managed as part of the Natural Environment Zone.

5.3 SECONDARY RESTORATION

To determine Secondary Restoration Zones, areas previously used for public activities or areas already regenerating were reviewed. These areas differ from the above-mentioned Primary Restoration Zones in that they area not in key sensitive locations or are less sensitive in nature. The main change in these areas is that maintenance practices will be modified to encourage natural regeneration. Over time, these areas are expected to evolve into a Natural Environment Zone. Monitoring for the presence of invasive exotic species or noxious weeds will be required in these areas. These species will be managed according to municipal best environmental management policies.

5.4 PUBLIC USE

Resource management activities encouraged within the Public Use Zones include environmental management projects designed to protect, enhance or restore natural features, landforms, species or habitats wherever possible, while allowing public access and appropriate intensity public uses. Landscaping will utilize native species or adapted, climate-tolerant plantings to avoid reliance on irrigation and intensive management. Exotic species and noxious weeds within these areas will be managed according to TRCA and municipal best environmental management policies.

5.5 LEASE ZONE

Lease Zones include the grounds and buildings owned by TRCA and rented to a private company or group. Perimeter fencing will be maintained by TRCA to prevent public access.

5.6 RESTRICTED ACCESS ZONE

The Restricted Access Zone identifies an area of the park restricted to TRCA staff only. No public use is permitted in this area of the park.

5.7 CANADA GOOSE MANAGEMENT

A management strategy will be developed to control the population of nuisance Canada geese (Branta canadensis). As this species prefers areas next to water, with unobstructed sight lines, these areas will be minimized by planting native grass, shrub and wildflower species along the beach and banks of Etobicoke Creek. In large public use areas with maintained turf, the grass will be allowed to grow slightly longer, and shrub and planting beds will be utilized to disrupt sight lines. Population growth will also be restricted via TRCA's jurisdiction-wide egg oiling program, as approved by the Canadian Wildlife Service.

5.8 WEST NILE VIRUS

West Nile virus is a mosquito-borne virus that normally cycles between birds and adult mosquitoes. On rare occasions, the virus is spread to humans through the bite of an infected mosquito. This is likely to happen when the virus amplifies in the bird population through an infection cycle of bird-mosquito-bird transmission. The cycle is driven predominantly by mosquitoes that feed exclusively on birds. However, as more and more birds become infected, there is a greater chance that the virus will spill over into the human population through mosquitoes that feed on both birds and mammals.

In 2003, TRCA was asked by the public health units of Peel, Durham, York and the City of Toronto to assist in the monitoring of larval mosquito populations in natural environments. Since this time, TRCA has conducted a yearly monitoring program to characterize the mosquito species of marshes, ponds and woodland pools with the aim of identifying breeding sites for West Nile virus vectors (e.g., *Culex pipiens* and *Culex restuans*). The results from these studies have shown that healthy, functioning wetlands pose little to no risk to the public in terms of breeding high densities of West Nile virus vectors. When high-risk sites are identified, TRCA is committed to assisting in the management of these areas to minimize the risk to humans.



6.0 PUBLIC CONSULTATION

The Addendum provided the opportunity to incorporate input from the community through further consultation. On January 18, 2005, the public were invited to attend an open house to find out more about the future of the Arsenal Lands and to provide comment on the revised park concept. Over 100 members of the public attended the event.

A newsletter and questionnaire were made available to the public on the night of the open house and on TRCA's website. The questionnaire provided the public with a formal opportunity to confirm the direction of park development. Between January 18 and May 27, 2005, TRCA received 68 completed questionnaire responses. Potential park users were asked to identify those recreational activities and park amenities that they felt should be available. The results are as follows:

Recreational activities

- 1 Hiking/walking 82%
- 2 Picnicking 77%
- 3 Children's play 75%
- 4 Bird-watching/nature appreciation 71%
- 5 Water play 68%
- 6 Cycling 66%
- 7 Ice skating 49%
- 8 In-line skating 44%
- 9 Beach volleyball and dog-walking 43%
- 10 Cross-country skiing 40%

Park amenities

- 1 Washrooms 97%
- 2 Seating 87%
- 3 Drinking fountains 81%
- 4 Trails 80%
- 5 Picnic tables 77%
- 6 Disabled waterfront parking -72%
- 7 Wetland-viewing platforms 65%
- 8 Shade structures -63%
- 9 Leash-free area 60%
- 10 Splash pad and picnic shelters 59%
- 11 Waterfront-viewing platforms 56%
- 12 Interpretive signs and BBQs 52%
- 13 Playground and community allotment gardens 40%
- 14 Interior parking 31%
- 15 Beach volleyball courts 25%

Other recommendations

- Snack bar
- ◆ Gazebos
- Bandstand
- Campfire pits
- Lit tennis courts
- Memorial plantings or benches to commemorate a loved one

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- Small waterfall or fountain
- Trashcans and recycling bins
- Drill square for local cadets
- Outdoor swimming pool



7.0 APPROVALS

Toronto and Region Conservation anticipates that approvals may be required for implementation of some components of the park plan, particularly those that may affect lands adjacent to Lake Ontario or Etobicoke Creek. These approvals are as follows:

- Ministry of Natural Resources Work permits may be required under the Public Lands Act to perform in-water works.
- ◆ A permit will be required from TRCA under Ontario Regulation 166/06 for the following:
 - a) Construction, reconstruction, erection or placing of a building or structure of any kind.
 - b) Any change to a building or structure that would have the effect of altering the use or potential use of building or structure, increasing the size of the building or structure or increasing the number of dwelling units in a building or structure.
 - c) Site grading.
 - d) Temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.
- Fisheries and Oceans Canada (DFO) As related to any works in and around water that may result in the harmful alteration, disruption or destruction of fish habitat (HADD), TRCA will secure *Fisheries Act* authorization. Fisheries and Oceans Canada may also determine that an environmental assessment under the *Canadian Environmental Assessment Act* is required.
- ◆ Transport Canada Work in or adjacent to Etobicoke Creek or Lake Ontario may also require review or approval as per the *Navigable Waters Protection Act*.

7.1 ENVIRONMENTAL ASSESSMENT ACT

Section 8 of Regulation 334 under the *Environmental Assessment Act* identifies the exemptions for conservation authorities. An authority (within the meaning of the *Conservation Authorities Act*) is exempt from subsection 5(1) of the Act if the undertaking is solely for the purpose of such

activities as those being proposed at the Arsenal Lands site in support of park development. This would include reforestation, woodlot management, municipal tree placement, and fish and wildlife habitat management.

7.2 REGION OF PEEL

Adoption of the Master Plan Addendum will be subject to the approval of the Region of Peel.

7.3 CITY OF MISSISSAUGA

Adoption of the Master Plan Addendum will be subject to the approval of Mississauga Council.

7.4 CITY OF TORONTO

Adoption of the Master Plan Addendum will be subject to the approval of Toronto Council.

7.5 TORONTO AND REGION CONSERVATION

Adoption of the Master Plan Addendum will be subject to the approval of the Authority.



8.0 IMPLEMENTATION

Upon completion of the detailed design process for the park, implementation of the Master Plan will commence with construction of the main park infrastructure and associated servicing. Trails, roads, parking lots, and washrooms and associated servicing will be the top construction priority. Other park amenities such as the play area and splash pad are also planned during the initial stage of construction. Ancillary park features such as park furniture will be installed following the major park construction. Peripheral items such as landscaping and habitat improvements will be implemented based on funding availability.



9.0 CAPITAL COSTS

Estimates have been developed based on 2005 dollars for the full build-out of the Master Plan Addendum. These cost estimates are summarized in Table 3.

Table 3. Estimates based on conceptual park plan in 2005 dollars.

Project Component	Arsenal Lands	Marie Curtis Park West
Project management	\$230,000	\$70,000
Site preparation	\$60,000	\$20,000
Services/utilities	\$400,000	\$160,000
Trails/roads/parking	\$750,000	\$265,000
Boat launch removal	\$0	\$115,000
Signage	\$50,000	\$20,000
Park amenities	\$1,140,000	\$100,000
Landscaping	\$170,000	\$65,000
Habitat improvements	\$200,000	\$185,000
Total	\$3,000,000	\$1,000,000



10.0 FUNDING

Park development will be funded through savings from the initial site remediation budget and through TRCA, City of Toronto and City of Mississauga capital budgets. Fundraising will also be undertaken by TRCA to offset park development costs. This fundraising will include grants from such sources as Great Lakes Sustainability Fund, the Toronto Remedial Action Plan and TD Friends of the Environment Foundation.



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APPENDICES

Appendix A - Record of Flora and Fauna

Appendix B – Record of Fish Species Found in Lower Etobicoke Creek

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Appendix C - Cultural Heritage

Appendix D - Summary of 2005 Public Comments

Appendix A - Record of Flora and Fauna

Flora

Common Name	Scientific Name	
Manitoba Maple	Acer negundo	
Norway Maple	Acer platanoides	
Red Maple	Acer rubrum	
Silver Maple	Acer saccharinum	
Sugar Maple	Acer sacchaurm	
White Baneberry	Actaea pachypoda	
Agrimony	Agrimonia gryposepala	
Creeping Bent Grass	Agrostis stolonidera	
Garlic Mustard	Alliaria petiolata	
Speckled Alder	Alnus rugosa	
Pearly Everlasting	Anaphalis margaritacea	
Wood Anemone	Anemone quinquefolia	
Thimbleweed	Anemone virginiana	
Spreading Dogbane	Apocynum androsaemifolium	
Sarsaparilla	Aralia nudicaulis	
Great Burdock	Arctium lappa	
Common Burdock	Arctium minus	
Jack-in-the-pulpit	Arisaema triphyllum	
Heart-leaved Aster	Aster cordiflius	
Tall White Aster	Aster lanceolauts	
Large-leaved Aster	Aster macrophyllus	
Aster	Aster sp.	
Yellow Rocket	Barbarea vulgaris	
Yellow Birch	Betula allegheniensis	
White Birch	Betula papyrifera	
Awnless Brome Grass	Bromus inermis	
Creeping Bellflower	Campanula rapunculoides	
Sedge	Carex convoluta	
Sedge	Carex lacustris	
Pennsylvania Sedge	Carex pensylvanica	
Sedge	Carex species	
Blue Beech	Carpinus caroliniana ssp. virginiana	
Shagbark Hickory	Carya ovata	
Enchanter's Nightshade	Circaea lutetiana	
Bull Thistle	Cirsium vulgare	
Canada Thistle	Cirsium arvense	
Alternate-leaved Dogwood	Cornus alternifolia	
Round-leaved Dogwood	Cornus rugosa	
Red-osier Dogwood	Cornus stolonifera	

Beaked Hazel Coplus cornuts Dotted Hawchorn Cristague punctate Orchard Grass Ductylis glomerate Queen Anne's Lace Discrisilla lonicera Bush-honeysuckle Diervilla lonicera Wild Cucumber Echinopysis bloate Beech-drops Epilobium cilatum Beech-drops Epilobium cilatum Sticky Willowherb Epilobium cilatum Field Horsetail Equisetum arvense Philadelphia Flabane Erigeno philadelphiase Vellow Trout Lily Exphronium americanum American beech Fegus grandfolia Woodland Strawberry Fragaria vesca Strawberry Fragaria vesca Strawberry Fragaria vesca Strawberry Fragina vesca Green Ash Frasions americana Green Ash Frasiona pennsylvanica penns Green Ash Frasiona pennsylvanica penns Witch Hazel Hanamelis wriginiana Orange Day Lily Hemerocallis flura Dame's Rocket Hepperis matronalis Witch Hazel Impa	Common Name	Scientific Name
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Black Walnut Juglans nigra European Larch Larix decidua Wild Honeysuckle Lonicera dioica Honeysuckle Lonicera tatarica Honeysuckle Lonicera x bella European Water-horehound Lycopus europaeus Fringed Loosestrife Lysimachia ciliata Moneywort Lysimachia nummularia Purple Loosestrife Lythrum salicaria Canada Mayflower American Ostrich Fern Matteucia struthiopteris Sensitive Fern Onoclea sensibilis Ironwood Hairy Beard-tongue Larix decidua Larix decidua Lonicera dioica Lonicera tatarica Lonicera x bella Lonicera x bella Lycopus europaeus Lysimachia ciliata Lysimachia nummularia Lysimachia nummularia Sensitiva Fern Onoclea sensibilis	Virginia Waterleaf	Hydrophyllum virginianum
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Fringed Loosestrife Lysimachia ciliata Moneywort Lysimachia nummularia Purple Loosestrife Lythrum salicaria Canada Mayflower American Ostrich Fern Matteucia struthiopteris Sensitive Fern Onoclea sensibilis Ironwood Ostrya virginiana Hairy Beard-tongue Lysimachia ciliata Lysimachia ciliata Lythrum salicaria Onoclea sensibia Penstemon hirsutus	Honeysuckle	Lonicera x bella
Moneywort Lysimachia nummularia Purple Loosestrife Lythrum salicaria Canada Mayflower American Ostrich Fern Matteucia struthiopteris Sensitive Fern Onoclea sensibilis Ironwood Ostrya virginiana Hairy Beard-tongue Penstemon hirsutus	European Water-horehound	Lycopus europaeus
Purple Loosestrife Lythrum salicaria Canada Mayflower American Ostrich Fern Matteucia struthiopteris Sensitive Fern Onoclea sensibilis Ironwood Ostrya virginiana Hairy Beard-tongue Lythrum salicaria Mainthemum canadense Onoclea sensibilis Penstemon hirsutus	Fringed Loosestrife	Lysimachia ciliata
Canada Mayflower American Ostrich Fern Matteucia struthiopteris Sensitive Fern Onoclea sensibilis Ironwood Ostrya virginiana Hairy Beard-tongue Penstemon hirsutus	Moneywort	Lysimachia nummularia
American Ostrich Fern Sensitive Fern Onoclea sensibilis Ironwood Ostrya virginiana Hairy Beard-tongue Penstemon hirsutus	Purple Loosestrife	Lythrum salicaria
Sensitive Fern Onoclea sensibilis Ironwood Ostrya virginiana Hairy Beard-tongue Penstemon hirsutus	Canada Mayflower	Maianthemum canadense
Ironwood Ostrya virginiana Hairy Beard-tongue Penstemon hirsutus	American Ostrich Fern	Matteucia struthiopteris
Hairy Beard-tongue Penstemon hirsutus	Sensitive Fern	Onoclea sensibilis
	Ironwood	Ostrya virginiana
White Spruce Picea glauca	Hairy Beard-tongue	Penstemon hirsutus
	White Spruce	Picea glauca

Common Name	Scientific Name
Scots Pine	Pinus sylvestris
Broad-leaved Plantain	Plantago major
Kentucky Bluegrass	Poa pratensis
May-apple	Podophyllum peltatum
Japanese Knotweed	Polygonum cuspidatum
Balsam Poplar	Populus balsamifera ssp. balsamifera
Trembling Aspen	Populus tremuloides
Pondweed	Potamogeton sp.
Rough Cinquefoil	Potentilla recta
White Lettuce	Prenanthes sp
Heal-all	Prunella vulgaris
Wild Black Cherry	Prunus serotina
Chokecherry	Prunus virginiana
Red Oak	Quercus rubra
Tall Buttercup	Ranunculus acris
Common Buckthorn	Rhamnus cathartica
Poison Ivy	Rhus radicans
Staghorn Sumac	Rhus typhina
Wild Black Currant	Ribes americanum
Red Currant	Ribes rubrum
Black Locust	Robinia pseudoacacia
Smooth Wild Rose	Rosa blanda
Japanese Rose	Rosa multiflora
Common Blackberry	Rubus allegheniensis
Red Raspberry	Rubus ideaus melanolasius
Flowering Raspberry	Rubus odoratus
Raspberry	Rubus strigosus
Common Dock	Rumex crispus
Black Willow	Salix nigra
Willow Variety	Salix x rubens
Red-berried Elder	Sambucus racemosa pubens
River Bulrush	Scirpus fluviatilis
False Solomon's Seal	Smilacina racemosa
Bittersweet	Solanum dulcamara
Blue-stem Goldenrod	Solidago caesia
Canada Goldenrod	Solidago canadensis
Zig-zag Goldenrod	Solidago flexicaulis
Early Goldenrod	Solidago juncea
Dandelion	Taraxacum officinale
Meadow Rue	Thalictrum dioicum

Common Name	Scientific Name
White Cedar	Thuja occidentalis
Hedge Parsley	Torilis japonica
Red Clover	Trifolium pratense
Common Trillium	Trillium grandiflorum
Eastern Hemlock	Tsuga canadensis
White Elm	Ulmus americana
European Stinging Nettle	Urtica dioica dioica
Maple-leaved Viburnum	Viburnum acerfolium
Nannyberry	Viburnum lentago
Highbush Cranberry	Viburnum trilobum
Downy Yellow Violet	Viola pubescens
Common Blue Violet	Viola sororia
Riverbank Grape	Vitis riparia
Cocklebur	Xanthium strumarium

Fauna

Common Name	Scientific Name
Cooper's Hawk	Accipiter cooperii
Sharp-shinned Hawk	Accipiter striatus
Spotted Sandpiper	Actitis macularia
Red-winged Blackbird	Agelaius phoeniceus
Wood Duck	Aix sponsa
Mallard	Anas platyrhynchos
Black Duck	Anas rubripes
Great Blue Heron	Ardea herodias
Canada Goose	Branta canadensis
American Toad	Bufo americanus
Red-tailed Hawk	Buteo jamaicensis
Broad-winged Hawk	Buteo platypterus
Coyote	Canis latrans
Northern Cardinal	Cardinalis cardinalis
American Goldfinch	Carduelis tristis
House Finch	Carpodacus mexicanus
Killdeer	Charadrius vociferus
Painted Turtle	Chrysemys picta
Northern Flicker	Colaptes auratus
Rock Dove	Columba livia
American Crow	Corvus brachyrhynchos
Blue Jay	Cyanocitta cristata
Yellow-rumped Warbler	Dendroica coronata

Common Name	Scientific Name	
Bobolink	Dolichonyx oryzivorus	
Gray Catbird	Dumetella carolinensis	
Willow Flycatcher	Empidonax traillii	
Merlin	Falco columbarius	
Peregrine Falcon	Falco peregrinus	
American Kestrel	Falco sparverius	
Common Yellowthroat	Geothlypis trichas	
Barn Swallow	Hirundo rustica	
Dark Eyed Junco	Junco hyemalis	
Herring Gull	Larus argentatus	
Ring-Billed Gull	Larus delawarensis	
Song Sparrow	Melospiza melodia	
Northern Mockingbird	Mimus polyglottos	
Brown-headed Cowbird	Molothrus ater	
White-tailed Deer	Odocoileus virginianus	
Muskrat	Ondatra zibethicus	
Osprey	Pandion haliaetus	
House Sparrow	Passer domesticus	
Savannah Sparrow	Passerculus sandwichens	
Rose-breasted Grosbeak	Pheucticus Iudovicianus	
American Woodcock	Philohela minor	
Black-capped Chickadee	Poecile atricapillus	
Raccoon	Procyon lotor	
Common Grackle	Quiscalus quiscula	
Northern Leopard Frog	Rana pipiens	
Golden-crowned Kinglet	Regulus satrapa	
Grey Squirrel	Sciurus carolinensis	
Lesser Goldfinch	Spinus psaltria	
American Goldfinch	Spinus tristis	
Northern Rough-winged Swallow	Stelgidopteryx serripen	
Northern Brown Snake	Storeria dekayi	
Eastern Meadowlark	Sturnella magna	
European Starling	Sturnus vulgaris	
Eastern Cottontail	Sylvilaus floridanus	
Tree Swallow	Tachycineta bicolor	
Eastern Chipmunk	Tamias striatus	
Garter Snake	Thamnophis sirtalis	
Lesser Yellowlegs	Totanus flavipes	
Greater Yellowlegs	Totanus melanoleucus	
Brown Thrasher	Toxostoma rufum	

Common Name	Scientific Name
House Wren	Troglodytes aedon
American Robin	Turdus migratorius
Eastern Kingbird	Tyrannus tyrannus
Warbling Vireo	Vireo gilvus
Red-eyed Vireo	Vireo olivaceus
Red Fox	Vulpes vulpes
Mourning Dove	Zenaida macroura

Appendix B - Record of Fish Species Found in Lower Etobicoke Creek

Common Name	Historic	2001*	2002*	2003*	2004*
Herring Family					
alewife ¹	•	•		*	
gizzard shad	•		•		
Salmon Family					
coho salmon ¹	•		•		
chinook salmon1	•			*	
rainbow trout ¹					
brown trout ¹	•				
Smelt Family					
rainbow smelt1	•				
Mudminnow Family					
central mudminnow				*	
Sucker Family					
white sucker	•	•	•	*	•
northern hog sucker	•				
shorthead redhorse	•				
Minnow Family					
goldfish ¹	•				
northern redbelly dace4					
redside dace ^{3,6}	•				
lake chub	•				
common carp ¹	•	•		•	
river chub	•				
golden shiner	•	•			
emerald shiner	•	•	•	•	
common shiner	•	•			•
blackchin shiner	•				
blacknose shiner	•				
spottail shiner	•	•	•	•	
rosyface shiner	•				
spotfin shiner		•			
bluntnose minnow	•	•			•
fathead minnow	•				•
blacknose dace	•	•			•
longnose dace	•	•			•
creek chub	•	•			•
pearl dace	•				
central stoneroller					

Common Name	Historic	2001*	2002*	2003*	2004*
Catfish Family					
brown bullhead	•			•	
stonecat ⁵	•				
Freshwater Eel Family					
American eel ⁴	•				
Stickleback Family					
brook stickleback	•				
Trout-Perch Family					
three-spine stickleback	•				
Temperate Bass Family					
white perch ¹	•				
white bass	•				
Sunfish Family					
rock bass	•	•			
green sunfish					
pumpkinseed	•	•		•	•
smallmouth bass	•		•	•	
largemouth bass	•				
Perch Family					
logperch		•			
rainbow darter ⁴	•				
fantail darter	•				
Johnny darter	•	•			•
tessellated darter					•
Drum Family					
freshwater drum	*	•		•	
Sculpin Family					
mottled sculpin	•				
slimy sculpin					

^{*} Due to the limited number of stations, and timing of the surveys, the number of species may be higher

¹ – Introduced species

² – Extirpated species

³ – SARA Schedule 3 – Special Concern Species

⁴ - COSEWIC - Group 2, Intermediate Priority

^{5 -} COSEWIC - Group 3, Lower Priority

^{6 -} COSSARO - Threatened

Appendix C - Cultural Heritage

Timeline

- The first recorded use of the site was a foot trail which was used by the resident Mississauga tribe.
- 1805 The Mississauga people sold or alienated a portion of their lands to the British Crown.
- 1806 Portions of the land were patented to Colonel Samuel Smith in reward for his dedication to the Queen's Rangers.
- Other local lots were subsequently granted to Thomas Lucas who cleared and fenced five acres and built a family home on the property.
- 1810 Lieutenant Governor Francis Gore reserved portions of the land for Valentine Harding and a tinman for London.
- 1817 Colonel Samuel Smith was granted the remainder of the land from the Crown.
- 1843 Colonel Samuel Smith died, deeding Lot 4 to William Allan, administrator of his estate.
 The land was sold to Ann Nelles, daughter of Smith.
- 1846 Lot 4 was sold to Clark Gamble, who deeded the land to Samuel Bois Smith, son of Samuel Smith.
- 1847 A 10-acre parcel was sold by Samuel Bois Smith to Richard Polley.
- Lot 4 was sold to the Halliday Family and farmed.
- 1874 Portions of the land were purchased by the Department of National Defense.
- 1891 Construction began on the Long Branch Rifle Ranges, which were situated between Etobicoke Creek and Aviation Road.
- 1897 Long Branch Rifle Ranges at the current site of the Lakeview Generating Station were established for use by the Queen's Rangers.
- 1900 The water lots were owned by various owners and occupied by summer cottagers.
- 1910 Lands were purchased by His Majesty King George V for the Department of National Defense.
- 1912 The lands were registered as the Toronto Barracks Site.

- 1940 The Department of National Defense posted warnings to trespassers on the Long Branch Rifle Range where 800 men were engage in training exercises from Etobicoke Creek to Lakeview Park.
- 1941 Small Arms Ltd. opened a factory to manufacture rifles and sten guns for the Canadian Army. Local women joined the thousands of Canadian women who worked in factories during the Second World War. Of the 5,300 employees at the plant, 65 per cent were women.
- Other private enterprises utilized the Arsenal Lands such as Antoine Vanities, Adams Hats, Dominion Metal Ware, Shelly Films and Snap-on Tools.
- 1950 The site was allocated to Canadian Arsenals Ltd. and obtained by Public Works Canada.
- 1954 Cottages situated at the mouth of Etobicoke Creek were destroyed by Hurricane Hazel.
- 1957 An openhouse was held to mark the official opening of the Lakeshore Armoury.
- 1965 The last remaining company of militia were relocated to the Brampton Armoury.
- 1981 Canada Post purchased the property for use as a sorting facility.

Record of the Arsenal Lands Property Manufacturing Operations

Company	Years of operation	Activity
Small Arms Ltd.	1941-1946	Manufacturer of rifles and sten guns.
Antoine Vanities	1946-1955	Manufacturer of lighters, compacts, variety cases.
Adams Hats Ltd.	1946-1955	Hat manufacturer.
D. Appleby and Co.	1946-1948	Assembler of public address systems, record players and cabinetry.
Dominion Metal Ware	1946-1955	Manufacturer of sheet metal.
Shelly Films Ltd.	1946-1950	Motion picture production.
Stabilex Ltd.	1946-early 50s	Molded plastics manufacturer.
Snap-on Tools	1947-1955	Hand-tool distributor.
H & R Arms Co. Ltd.	1948-1955	Small arms manufacturer.
Canadian Arsenals Ltd.	1947-early 50s	Small arms manufacturer.

Appendix D - Summary of 2005 Public Comments

History:

- Historical signs or plaques.
- Establish a small museum to tell the history of the area, with old records, photos and paintings, including native Canadian history of the area.
- Incorporate historical tree rows from Meeting Place Concept to represent the old farms.
- Great use of some historic space that is just sitting there at the moment.
- Preserve historical value of the park.

Natural areas:

- Numerous respondents noted the importance of natural habitats.
- Maximize natural areas.
- There are many opportunities for active use in the existing parks. This is a perfect chance for a passive park like Humber Bay Park a true jewel.
- Promote enjoyment of natural areas.
- Create fish habitat in Etobicoke Creek.
- I would like it left in its natural state as much as possible.
- Protect the woodlot.

Off-leash area:

- Only allow dogs in fenced leash-free area.
- Perhaps an off-leash section will keep people from using the whole park as off-leash as they
 do now.
- Dog off-leash area must be large and have natural growth within it, perhaps a fenced trail area?
- ◆ Many leash-free dog owners we need to support this with parking.

Safety/vandalism:

- ◆ Vandalism will be a problem reduce the number of structures.
- Take caution with sight lines for paths.
- Will there be park lighting?
- Is there thought for security items such as cameras, panic buttons?

Trails:

- Arrange for Waterfront Trail to pass on lakeshore edge of existing water treatment facility

 see Oshawa.
- Separate walking paths from roadways.
- Prevent cars from driving on the Waterfront Trail.
- A more direct route for bikers that commute.
- Channel fast cyclists onto a single path through the parks.

- Keep the flow of traffic through the park.
- Extend Etobicoke Creek trail system.
- Move the Waterfront Trail closer to the waterfront.
- Trail north of the QEW.

Washrooms:

- Several respondents stressed the importance of having the washrooms open all year.
- Washrooms near volleyball court/beach area.

Playground:

- Play areas should be located near picnic sites.
- Maintain playground in Marie Curtis Park for people east of park.

Parking:

- No waterfront parking.
- Remove parking in old Marie Curtis Park locals do not need it.
- Get rid of parking at Etobicoke Creek.

Water Tower:

- Six respondents commented that the water tower should be part of the park.
- The water tower is a great calling card for the park.
- Love to see the ugly tower gone.
- Paint water tower.
- I think the water tower should be painted yellow and top made into a happy face to put a smile on someone's face also to specify this is a happy place for all.

Signage:

- Interpret areas with historical significance.
- Advertise consumption advisories for anglers.

Suggestions:

- Like to see a tribute to my father included in the plans. He was Arthur Herbert Richardson, the only chief conservation officer of the Metro Toronto Conservation Authority. This could be in the form of a plaque or even a forest area named in his honour.
- Plan voluntary spring clean-up of beachfront.
- Make community allotment gardens instead of leash-free area.
- Put picnic shelters or shade structures in place, not both.
- Please make the skating rink as large or larger than the Toronto City Hall skating rink, if financially possible.

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- I think it would be great to have additional parkland, but it needs to be a destination with many amenities in order to attract people. It is ideally located.
- Use the success of Jack Darling Park as a model.
- I would like to see a weekly farmers' market staged during the summer and fall seasons to promote locally grown food and to encourage the connection between nature, the environment and our food sources.
- Do not want to see ice cream and hot dog trucks in the park.
- Garbage and recycling bins must be emptied more often.
- Remove fences to allow shoreline access.
- Remove boat launch.
- Do not remove weeping willows on Etobicoke Creek.
- Incorporate structures that can tolerate or deter skateboard use.
- Enhance north side of lakeshore.

General compliments:

- I think it would be great to have additional parkland, but it needs to be a destination with many amenities in order to attract people. It is ideally located.
- I particularly like the combination of family-friendly features and nature appreciation opportunities. Too few parks offer both.
- The plan is good.
- ◆ Great plan just wish it could happen sooner.
- The plan looks great.
- Looks wonderful.
- Community allotment gardens a good idea.

Concerns:

- Lighting used on the billboard in the park.
- Transit connection Lakeshore Toronto/Mississauga.
- Volleyball court placement.
- Limit skateboard use or provide alternatives, e.g., PE Memorial.
- Address goose problem.
- Concern related to timing of construction.
- Maintenance standards.











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