

6 Value the Environment

6.1 Introduction

Mississauga is located on the shore of Lake Ontario, part of the largest system of freshwater lakes in the world. Mississauga contains watersheds of the Credit River, Etobicoke Creek and other **watercourses** that form part of the Great Lakes drainage basin. Mississauga is partially within the Carolinian Forest Ecoregion, Canada's most biologically diverse ecological region. This region contains Canada's most rare and endangered plants and animals, and is the most threatened ecological region in Ontario.

The City's Strategic Plan identifies "Living Green" as one of the five pillars of the strategic vision for the

city. Living Green involves implementing measures that are sensitive to, and complement, the natural environment. As the city continues to grow, it is imperative that growth does not compromise the natural environment, including the climate. The health of the natural environment is critical to human and economic vitality and the overall well-being of society. It provides the fundamental necessities of life – clean water, air and land and is an essential component of the fabric and character of communities. Further, climate change affects land use policies and transportation choices that can contribute to improving the quality of the environment and lead to developing a sustainable city. These policies are the subject of this chapter.



Figure 6-1: As an environmentally responsible community, Mississauga is committed to environmental protection, conducting its corporate operations in an environmentally responsible manner and promoting awareness of environmental policies, issues and initiatives. Residents and businesses have a large role to play to help protect and enhance the land, air, water and energy resources that are enjoyed by all in the city. (Credit River Valley)

Promoting transit as a form of transportation supported by transit supportive uses, which employ compact design principles, will assist in addressing the issues that are negatively impacting the environment. Other chapters of this Plan address these matters and support the Living Green pillar of the Strategic Plan.

There are many opportunities for all lands within the city to contribute to the health of the natural environment. The Green System in Mississauga, consisting of the Natural Heritage System, the Urban Forest, **Natural Hazard Lands** and Parks and Open Spaces, contributes to a valuable natural environment in the city. These areas provide habitats for flora and fauna to thrive and although not all of these areas are within the Natural Heritage System, they serve to support and connect the Natural Heritage System. These areas also provide locations for residents, employees and visitors to recreate and enjoy nature. The Urban Forest, comprising trees on public and private properties in the city, also contributes to a



Figure 6-2: Mississauga's **natural heritage features** and their ecological functions will be preserved and enhanced, and natural resources managed wisely, so that current and future generations enjoy a healthy and safe environment.

healthy and sustainable city, and should be protected and enhanced where possible.

Water, air and land are essential elements of the environment affected by human activity. Issues such as stormwater, air quality, **contaminated sites**, **waste** generation and noise have a significant impact on the environment and require mitigation and management to reduce their impacts. Sustainably managing land means directing growth to protect and enhance the natural environment, maximize public benefit and contribute to the economy. It means that development is integrated into the community, while **negative impacts** to the Green System, ecological functions and biological diversity are avoided. It also means protecting, enhancing and, where possible, restoring and expanding the Natural Heritage System.

The rehabilitation and development of brownfield sites presents an opportunity to remediate existing contamination and provide opportunities for community improvement. The generation of **waste** and how it is managed is another critical factor in creating a healthy environment. Noise is a common occurrence in an urban environment. Traffic and aircraft noise as well as noise generated by various land use activities needs to be managed and mitigated in order to create a comfortable living and working environment.

6.1.1 Mississauga will:

- a. protect, enhance, restore and expand the Natural Heritage System;
- b. encourage the stewardship and enhancement of other areas within the Green System, particularly where it contributes to the function and linkage of the Natural Heritage System;
- c. protect life and property from natural and human made hazards;
- d. promote pollution prevention, reduction of natural resource consumption and increased use of **renewable energy**;
- e. ensure land use compatibility; and

f. develop monitoring and information/education programs.

6.1.2 Mississauga will promote an **ecosystem approach** to planning.

6.1.3 Mississauga will protect the quality and integrity of its water, air, land and biota for current and future generations.

6.1.4 Mississauga will promote pollution prevention in order to help protect the quality of water, air, and land.

6.1.5 Mississauga will promote education, awareness, community involvement and commitment to community stewardship for the protection and enhancement of the environment.

6.1.6 Mississauga will work with other jurisdictions and levels of government and encourage and support partnerships among the City, industries, businesses and the community to improve air quality, protect and enhance the natural environment, reduce energy use and manage **waste**.

6.1.7 Mississauga will work with other jurisdictions and levels of government, industries, businesses and the community to address climate change mitigation and adaptation, and to build a resilient city.

6.1.8 Sensitive land uses will not be permitted adjacent to existing major facilities such as the airport, transportation corridors, wastewater treatment plants, **waste** sites and industrial and aggregate activities, if adverse effects from these facilities cannot be mitigated.

6.1.9 Sensitive land uses may be considered in proximity to major facilities such as the Airport, transportation corridors, wastewater treatment plants, **waste** sites, industries and aggregate activities only where effective control is provided through appropriate site and building design, buffers and/or separation distances to prevent adverse effects from these facilities.

6.1.10 In accordance with the Provincial Government guidelines, the development proponent will be

required to undertake a feasibility study in those cases where:

- a. a sensitive land use is proposed within the area of influence of a facility that generates contaminant discharges; or
- b. a facility generates contaminated discharges or a proposed facility is likely to generate contaminated discharges.

The study will evaluate the impacts, both before and after any proposed mitigation measures are applied and identify options for mitigation both at the source or elsewhere to the satisfaction of the City and other appropriate approval authorities.

6.1.11 Mississauga will consider the impacts of climate change that may increase risks to the city. Mississauga will develop policies on climate change that will:

- a. promote development and land use patterns that conserve and enhance **biodiversity** and consider the impacts of a changing climate;
- b. promote and protect green infrastructure; and
- c. minimize adverse impacts from a changing climate and consider the ecological benefits provided by nature.

6.1.12 Mississauga will consider the potential impacts of climate change that may increase the risk associated with **natural hazard lands**.



Figure 6-3: Naturalized landscaping with native, non-invasive plants species in the city's employment areas benefits the environment in many ways, such as improving air quality, reducing water consumption and pesticide use, and providing habitat for birds and insects.

6.2 Living Green

To create a sustainable environment, everyone should aspire to “live green”. The integration of green development techniques contribute to the environment in a variety of ways. For example, landscaped areas can be naturalized, trees can be planted, stormwater can be managed on-site and green roofs can be constructed.

Climate change is a daunting issue that requires the collective actions of many. While no individual development or municipality can solve the issue of climate change, it is necessary to consider the environmental impacts of every development proposal and planning decision, and mitigation measures to avoid environmental harm and adapt to changing environmental conditions.

Other chapters of this Plan address creating an urban structure that directs growth to Intensification Areas where compact, mixed use areas will be supported by transit and where walking and cycling will be viable modes of transportation. This is essential to creating an environmentally sustainable city.

This Plan also contains policies regarding the Natural Heritage System. In addition to preserving and enhancing the Natural Heritage System, **stormwater best management practices** for new development can also be employed. Use of green development standards such as Leadership in Energy & Environmental Design (LEED), Green Globes or other customized standards can do much to ensure that new development or existing development is environmentally sustainable.

Individual sites and portions of the public realm can contribute to the health of the environment by incorporating measures such as:

- orienting buildings to be “solar ready” to take advantage of passive heating and cooling;
- connecting to district energy systems;
- using **renewable energy** sources such as solar or geothermal energy;
- managing stormwater runoff using **stormwater best management practices**;
- naturalizing landscapes with native, non-invasive species;
- planting trees;
- installing green roofs or white roofs;
- supporting urban agriculture;
- preventing and reducing pollution; and
- considering the impact of development on sensitive land uses.

6.2.1 Mississauga will strive to be a leader in sustainable development to mitigate, manage and adapt to climate change.

6.2.2 Mississauga will build communities that are environmentally sustainable and encourage sustainable ways of living.

6.2.3 Mississauga will develop a green development strategy to enhance environmental sustainability.

6.2.4 Mississauga may develop incentive programs to encourage green development.

6.2.5 Mississauga encourages the retrofitting of existing buildings and developed sites to be more environmentally sustainable.

6.2.6 Mississauga will encourage naturalized landscaped areas using native, non-invasive species, especially on lands within the Green System.

6.2.7 Mississauga will require development proposals to address the management of stormwater using **stormwater best management practices**.

6.2.8 Mississauga will encourage the use of green technologies and design to assist in minimizing the impacts of development on the health of the environment.

6.2.9 Pollution concerns may affect water, air and land quality. Mississauga will support other levels of government in their efforts to monitor water, air and land quality and where feasible, to establish programs to screen proposals for their impacts in this regard.

6.2.10 Mississauga will support and encourage initiatives and pollution prevention programs to prevent and reduce the causes and impacts of pollution.

6.2.11 A Pollution Prevention Plan must be undertaken for development, which has the potential to generate pollutant discharges to a storm sewer system or to a water body prior to approval. The plan must consider the use of processes, practices, materials or technology that avoids or minimizes the creation of pollutant discharges to a storm sewer system or to a water body. The implementation of the recommended measures will be conditions of approval.

6.2.12 Mississauga will encourage tree planting on public and private lands and will strive to increase the Urban Forest canopy.

system of green spaces. As shown in Figure 6-4 these components are not mutually exclusive.

The Green System is a response to the challenge of achieving a high level of ecological function and connectivity of **natural heritage features** within an urban environment. **Natural heritage features** which are important for their environmental and social values as a legacy of Mississauga's natural landscape are recognized within the Natural Heritage System.

Given the city's urbanized setting, lands with trees and vegetation in parks, valleylands and landscaped open spaces in other components of the Green System are also important for providing connections among **natural heritage features** and contributing to hydrologic and ecological functions. Connections may be direct, as when a city park is situated between two features within the Natural Heritage System, or may be indirect by providing "stepping stones" that allow

6.3 Green System

The Green System makes up almost 23 percent of total land cover in Mississauga and is composed of:

- Natural Heritage System;
- The Urban Forest;
- **Natural Hazard Lands**; and
- Parks and Open Spaces.

The principal components of the Green System, as listed above, are part of a broader urban ecosystem that includes other green infrastructure (e.g., trees on boulevards, landscaping on private property) and should be viewed within the context of a single, inter-related

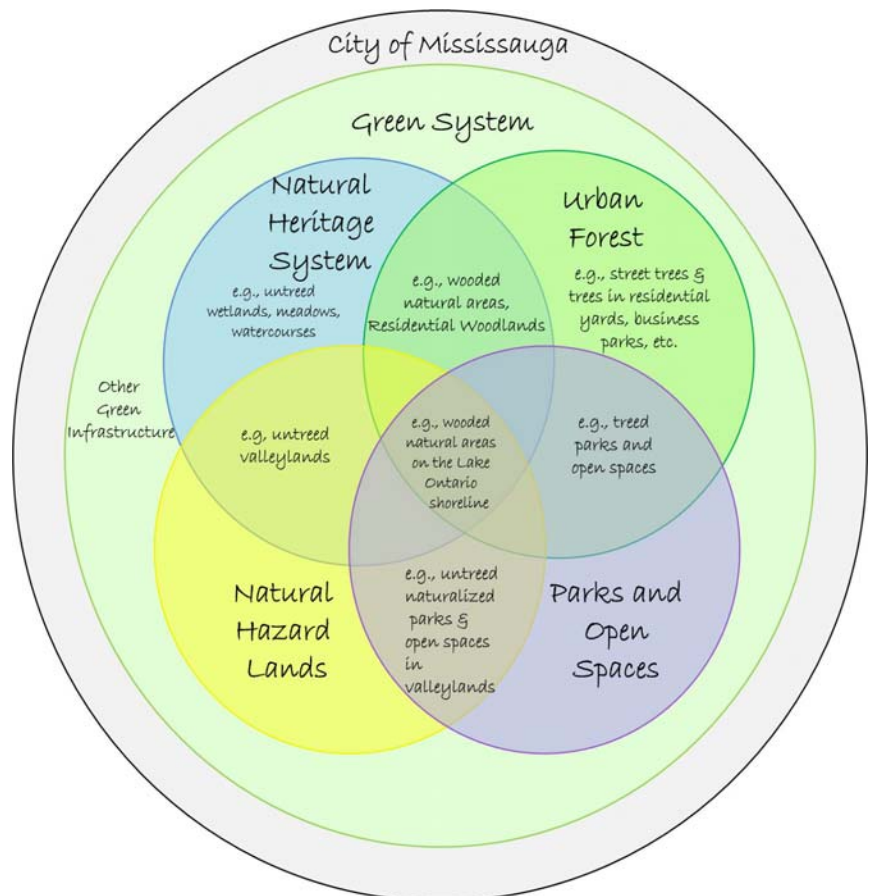


Figure 6-4: The Green System as set out in these components provides opportunities for management, enhancement and stewardship.

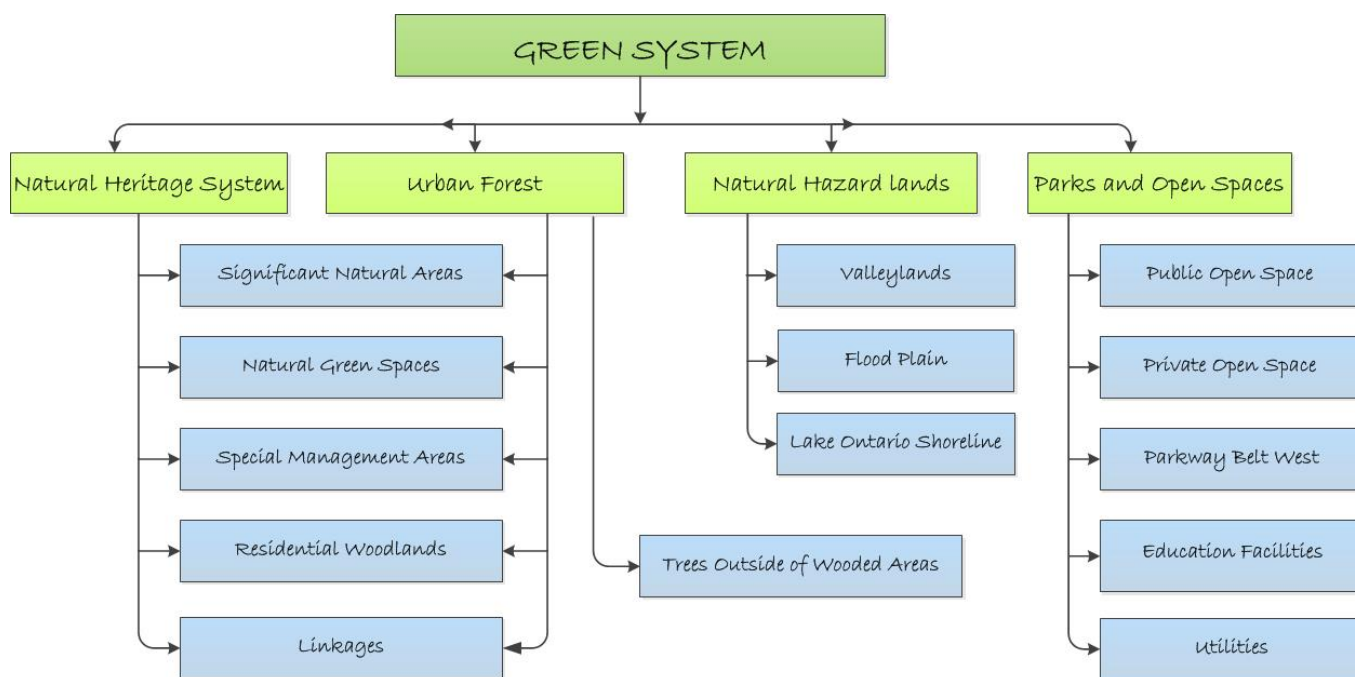


Figure 6-5: The Green System is composed of the Natural Heritage System, Urban Forest, **Natural Hazard Lands** and Parks and Open Spaces.

temporary refuge for species that are moving between features.

Lands within the Natural Heritage System perform an essential ecological function. They sustain **biodiversity** by providing habitat for plants and animals and they clean the air and water. The connectivity of the Natural Heritage System is important for maintaining native vegetation communities and providing corridors for urban wildlife. Preserving and enhancing these lands in their natural state is essential to the overall health and functioning of the natural environment. As such, Mississauga will promote and be proactive in the management of its Natural Heritage System.

The Urban Forest includes all the trees within the City of Mississauga on both public and private lands, within the Natural Heritage System as well as along streets, in parks, in yards and on a wide range of open spaces and other land uses. The Urban Forest, as a whole, contributes to the city's health and the quality of life for those who live, work and play here. As such, the City of Mississauga will promote and be proactive in the sustainable management of its Urban Forest.

Natural Hazard Lands, as shown on Schedule 3: Natural System, are generally associated with **valley**

and watercourse corridors and the Lake Ontario shoreline. These areas are generally unsafe for development due to naturally occurring processes such as flooding and erosion. Although the significant valleylands and the valley and **watercourses** are included and discussed under **Natural Hazard Lands**, they are also Significant Natural Areas and form part of the city's Natural Heritage System.

Watercourse corridors and the Lake Ontario shoreline, including the physical hazards associated with these areas, are critical to the Natural Heritage System due to the ecological functions, including linkage function, that they provide. Of particular concern within **valley and watercourse corridors** is the preservation and enhancement of fish habitat as an indicator of a healthy environment and for leisure activity and tourism. Lands in southern Mississauga serve an important ecological function related to the migration of birds and butterflies.

Parks and Open Spaces within the Green System, as shown on Schedule 4: Parks and Open Spaces, have primary uses such as recreational, educational, cultural and utility services. These lands contain a significant amount of open space such as landscaped areas, lawns and sports fields. These areas have the

potential to be managed in a manner that supports and enhances the Natural Heritage System, particularly by providing linkages between **natural heritage features**.

While the city's Natural Heritage System focuses on the protection of **natural heritage features**, areas and linkages, the conservation authorities may identify additional lands that could assist in the achievement of ecological targets to protect and enhance biological diversity. The City recognizes the value of these lands which are part of the city's broader Green System. Restoration, enhancement, management and stewardship of these additional areas is encouraged where feasible.

6.3.1 Mississauga will give priority to actions that protect, enhance, restore and expand the Green System for the benefit of existing and future generations.

6.3.2 The City will promote the Green System to public and private stakeholders as being integral to protecting the city's **natural heritage features**, particularly its role in providing ecological linkages and ecosystem services.

6.3.3 The City, in partnership with conservation authorities, will seek to initiate a landowner contact program to encourage stewardship on privately-owned lands in the Green System and support partnerships for the naturalization of these lands where feasible.

6.3.4 The City will work with the conservation authorities to encourage restoration, enhancement, stewardship and management of lands identified by conservation authorities as part of their natural heritage systems.

6.3.5 The City will, where feasible, explore and consider opportunities to naturalize City owned lands, particularly where they abut or directly connect areas within the Natural Heritage System.

6.3.6 The City will seek to enhance the connectivity of lands in the Green System by linking features in the Natural Heritage System through management initiatives on public lands and encouragement of stewardship on private lands.

6.3.7 Buffers which are vegetated protection areas that provide a physical separation of development from the limits of **natural heritage features** and **Natural Hazard Lands**, will be provided to perform the following:

- maintenance of slope stability and reduction of erosion on valley slopes;
- attenuation of stormwater runoff;
- reduction of human intrusion into Significant Natural Areas and allowance for predation habits of pets, such as cats and dogs;
- protection of tree root zones to ensure survival of vegetation;
- provision of a safety zone for tree fall next to **woodlands**;
- enhancement of woodland interior and edge areas through native species plantings;
- enhanced wildlife habitat and corridors for wildlife movement; and
- opportunities for passive recreational activities, in appropriate locations.

6.3.8 Buffers shall be determined on a site specific basis as part of an Environmental Impact Study or



Figure 6-6: Mississauga's parks, green spaces, recreation areas and **natural heritage features** make up the majority of the City's Green System. In addition to its recreational use, the BraeBen Golf Course, built on the former Britannia **Landfill** site, provides natural habitat through the design of landscaping and water features.

other similar study, to the satisfaction of the City and appropriate conservation authority.

Natural Heritage System

The Natural Heritage System includes natural areas (e.g., meadows, fish and wildlife habitats), **woodlands**, wetlands and **valley and watercourse corridors**. These areas represent the pre-settlement landscape, remnant parcels of native vegetation and areas that have been restored to a natural state through naturalization or successional growth.

The location and extent of the Natural Heritage System is conceptually illustrated on Schedule 3: Natural System.

Although some **natural heritage features** are of higher quality than others, it is a fundamental premise that the loss of any portion of the system diminishes the entire system.

6.3.9 Mississauga's Natural Heritage System is composed of the following:

- Significant Natural Areas;
- Natural Green Spaces;

- Special Management Areas;
- Residential Woodlands; and
- Linkages.

6.3.10 The exact limit of components of the Natural Heritage System will be determined through site specific studies such as an Environmental Impact Study.

6.3.11 Minor refinements to the boundaries of the Natural Heritage System may occur through Environmental Impact Studies, updates of the Natural Heritage System, or other appropriate studies accepted by the City without amendment to this Plan. Major boundary changes require an amendment to this Plan.

Significant Natural Areas

6.3.12 Significant Natural Areas are areas that meet one or more of the following criteria:

- a. provincially or regional significant life science areas of natural and scientific interest (ANSI);
- b. **environmentally sensitive or significant areas;**



Figure 6-7: Historically, agricultural practices and land development have resulted in displacement and fragmentation of much of the natural environment. The Credit River Valley Corridor is a major component of Mississauga's Natural Heritage System, containing the majority of the City's natural areas.

- c. habitat of threatened species or endangered species;
- d. fish habitat;
- e. **significant wildlife habitat**;
- f. **significant woodlands** are those that meet one or more of the following criteria:
 - **woodlands**, excluding **cultural savannahs**, greater than or equal to four hectares;
 - **woodlands**, excluding **cultural woodlands** and **cultural savannahs**, greater than or equal to two hectares and less than four hectares;
 - any **woodland** greater than 0.5 hectares that:
 - supports old growth trees (greater than or equal to 100 years old);
 - supports a significant linkage function as determined through an Environmental Impact Study approved by the City in consultation with the appropriate conservation authority;
 - is located within 100 metres of another Significant Natural Area supporting a significant ecological relationship between the two features;
 - is located within 30 metres of a watercourse or significant wetland; or
 - supports **significant species or communities**;
- g. **significant wetlands** are one of the following:
 - Provincially **significant coastal wetlands**;
 - Provincially **significant wetlands**;
 - Coastal wetlands;
 - **other wetlands** greater than 0.5 hectares; and

- h. significant valleylands are associated with the main branches, major tributaries and other tributaries and watercourse corridors draining directly to Lake Ontario including the Credit River, Etobicoke Creek, Mimico Creek and Sixteen Mile Creek.

6.3.13 When determining the size of a woodland, areas of **cultural savannahs** and **cultural woodlands** that are confirmed to have significant ecological value that contributes to the integrity and function of the woodland, will be included for the purpose of determining woodland size and included as a Significant Natural Area. This determination will be made through an Environmental Impact Study prepared to the satisfaction of the City and the appropriate conservation authority.

Natural Green Spaces

6.3.14 Natural Green Spaces are areas that meet one or more of the following criteria:

- a. woodlands greater than 0.5 hectares that do not fulfill the requirements of a significant woodland;
- b. wetlands that do not fulfill the requirements of a **significant wetland**;
- c. **watercourses** that do not fulfill the requirements of a significant valleyland, even if they are predominantly engineered; and
- d. all natural areas greater than 0.5 hectares that have vegetation that is uncommon in the city.

Special Management Areas

6.3.15 Special Management Areas are lands adjacent to or near Significant Natural Areas or Natural Green Spaces and will be managed or restored to enhance and support the Significant Natural Area or Natural Green Space.

6.3.16 Where Special Management Areas are on private lands, the City working with the conservation authorities will encourage landowners to promote stewardship and enhancement of their lands.

Residential Woodlands

6.3.17 Residential Woodlands are areas, generally in older residential areas, with large lots that have mature trees forming a fairly continuous canopy and minimal native understorey due to the maintenance of lawns and landscaping.

6.3.18 Lands within Residential Woodlands will be subject to Site Plan Control.

6.3.19 Development proposals and site alteration for lands within a Residential Woodland will have regard for how existing tree canopy and understorey are protected, enhanced, restored and expanded. A site development plan may be required to demonstrate how the following, among other matters, have been addressed:

- a. existing topography and drainage patterns;
- b. maintenance of a high proportion of permeable ground cover to facilitate **ground water recharge**;
- c. habitat for tolerant canopy birds (both in migration and for breeding);
- d. habitat for urban wildlife; and
- e. connections to other elements within the Green System.

6.3.20 Character area policies may identify additional requirements to protect Residential Woodlands.

Linkages

6.3.21 Linkages are those areas that are necessary to maintain **biodiversity** and support ecological functions of Significant Natural Areas and Natural Green Spaces but do not fulfill the criteria of Significant Natural Areas, Natural Green Spaces, Special Management Areas or Residential Woodlands.

6.3.22 Linkages will provide connections between and among other lands within the Green System, particularly the Natural Heritage System and Urban Forest.

Protecting the Natural Heritage System

6.3.23 Mississauga will have regard for the maintenance of the long term ecological integrity of the Natural Heritage System in all decisions.

6.3.24 The Natural Heritage System will be protected, enhanced, restored and expanded through the following measures:

- a. ensuring that development in or adjacent to the Natural Heritage System protects and maintains **natural heritage features** and their ecological functions through such means as tree preservation, appropriate location of building envelopes, grading, landscaping, and parking and amenity area locations;
- b. placing those areas identified for protection, enhancement, restoration and expansion in public ownership, where feasible;
- c. using native plant materials and non-invasive species, and reducing and/or eliminating existing invasive, non-native plant species to improve ecological value and the sustainability of indigenous vegetation, where appropriate;
- d. retaining areas in a natural condition and/or allowing them to regenerate to assume a natural state;
- e. the promotion of stewardship within privately and publicly owned lands within the Natural Heritage System;
- f. controlling activities that may be incompatible with the retention of the Natural Heritage System and associated ecological functions; and
- g. regulation of encroachment into the Natural Heritage System and other public open spaces.

6.3.25 New lots created by land division or units or parcels of tied land (POTLs) created by condominium that will have the effect of fragmenting the ownership of Significant Natural Areas, Natural Green Spaces, Residential Woodlands and buffers will generally be discouraged and will be supported by an Environmental Impact Study.



Figure 6-8: Mississauga promotes and is proactive in the management of its natural heritage areas and the protection of its ecological functions.

6.3.26 Lands identified as or meeting the criteria of a Significant Natural Area, as well as their associated buffers will be designated Greenlands and zoned to ensure their long term protection. Uses will be limited to conservation, flood and/or erosion control, essential infrastructure and passive recreation.

6.3.27 Development and site alteration as permitted in accordance with the Greenlands designation within or adjacent to a Significant Natural Area will not be permitted unless all reasonable alternatives have been considered and any **negative impacts** minimized. Any **negative impact** that cannot be avoided will be mitigated through restoration and enhancement to the greatest extent possible. This will be demonstrated through a study in accordance with the requirements of the *Environmental Assessment Act*. When not subject to the *Environmental Assessment Act*, an Environmental Impact Study will be required.

6.3.28 Notwithstanding the policies of this Plan, development and site alteration will not be permitted in the following areas:

- a. provincially **significant wetlands** or Provincially **significant coastal wetlands** which are or meet the criteria of a Significant Natural Area;
- b. habitat of endangered species and threatened species, except in accordance with Provincial and Federal requirements;

- c. fish habitat, except in accordance with Provincial and Federal requirements; and
- d. Core Areas of the Greenlands System as defined in the Region of Peel Official Plan, except in accordance with Regional requirements.

6.3.29 Development and site alteration on lands adjacent to a Provincially **significant wetland**, Provincially **significant coastal wetland** and habitat of endangered species and threatened species or other Significant Natural Area will require an Environmental Impact Study, demonstrating no **negative impact** to the **natural heritage features** or on their ecological function, to the satisfaction of the City and appropriate conservation authority.

6.3.30 Conservation, education, trails and nature appreciation activities may be allowed in Provincially **significant wetlands** and Provincially **significant coastal wetlands** subject to review and approval by the City and appropriate conservation authority.

6.3.31 Setbacks and buffers adjacent to fish habitat areas will be determined by an Environmental Impact Study, which will conform to approved fisheries management plans.

6.3.32 Development and site alteration will not be permitted within or adjacent to Natural Green Spaces, Linkages and Special Management Areas unless it has been demonstrated that there will be no **negative impact** to the **natural heritage features** and their ecological functions and opportunities for their protection, restoration, enhancement and expansion have been identified. This will be demonstrated through a study in accordance with the requirements of the *Environmental Assessment Act*. When not subject to the *Environmental Assessment Act*, an Environmental Impact Study will be required.

6.3.33 Environmental Impact Studies will delineate the area to be analysed, describe existing physical conditions, identify environmental opportunities and constraints, and evaluate the ecological sensitivity of the area in relation to a proposal. It will also outline measures to protect, enhance, restore and expand the Natural Heritage System and associated ecological

functions. Environmental Impact Studies will be prepared to the satisfaction of the City and appropriate conservation authority.

6.3.34 The requirement for an Environmental Impact Study may be waived at the discretion of the City in consultation with the appropriate conservation authority, subject to the following:

- a. where the impacts of the proposed development or site alteration are expected to be limited in area or scope;
- b. it is determined through a site visit that development will not likely result in **negative impacts** on the **natural heritage feature** or its ecological functions; and
- c. where site specific studies fulfill the requirement of an Environmental Impact Study.

6.3.35 The expansion and connection of the Natural Heritage System will be encouraged. Where appropriate, Significant Natural Areas, Natural Green Spaces, Linkages, Special Management Areas and buffers will be incorporated with public parkland and will be managed in accordance with Natural Heritage System policies.

6.3.36 In Significant Natural Areas and Natural Green Spaces, recreation potential will be restricted to protect the **natural heritage feature** and its ecological function. Formalized passive recreational uses such as trails may be permitted to minimize the impacts of uncontrolled public access.

6.3.37 Mississauga, in consultation with the appropriate conservation authority, will continue to improve the ecological function of **watercourses** and the Lake Ontario shoreline through means such as:

- a. naturalization with native non-invasive plants;
- b. establishment of buffer areas; and

- c. **watercourse** and shoreline restoration and protection, where appropriate.

6.3.38 Privately owned lands in the Natural Heritage System are not intended to be open to the public. Consideration will be given to public acquisition of these areas through the development approval process or through the City's land securement program.

Urban Forest

The Urban Forest means all the trees in the city, including those within and outside of the Natural Heritage System, and on public and private lands, as well as the soils that sustain them.

Trees are a fundamental component of a healthy city and sustainable community. As such, trees are a valuable asset to the city and contribute to community pride and cultural heritage. The Urban Forest within Mississauga consists of 2.1 million trees on both private and public property.

Trees in the urban setting provide environmental, social and economic benefits such as:

- reducing air pollution by removing carbon, dust



Figure 6-9: Natural areas provide habitat for many plants, birds, insects and animals which are important for maintaining biological diversity.

- and airborne particles;
- improving overall air quality;
- reducing urban heat island effect;
- reducing energy needs for cooling and heating;
- assisting in mitigating climate change effects;
- intercepting rainfall to reduce runoff, increase **groundwater recharge** and prevent soil erosion;
- reducing noise pollution;
- creating wildlife habitat;
- enhancing flora and fauna diversity;
- assisting in improving public health; and
- contributing to the quality and character of the urban environment.

6.3.39 The Urban Forest is composed of wooded areas within the Natural Heritage System and individual trees on public and private property.

6.3.40 Natural Heritage System policies are applicable to the Urban Forest. This includes policies regarding Significant Natural Areas, Natural Green Spaces, Linkages, Special Management Areas and Residential Woodlands and all related policies.

6.3.41 The Urban Forest will be protected and managed with the goals of:

- a. maintaining and increasing the city's canopy cover;
- b. improving both species and structural diversity, as well as overall health; and
- c. being more evenly distributed across the city.

6.3.42 Mississauga will protect, enhance, restore and expand the Urban Forest. This will be achieved by the following:

- a. developing and implementing a strategic planting program, specific to distinct geographic areas within the city;

- b. developing and implementing a strategic proactive maintenance program pertaining to trees on public land;
- c. providing sustainable growing environments for trees by allocating adequate soil volumes and landscaped areas during the design of new development and infrastructure projects;
- d. developing and implementing consistent standards for tree protection and planting across the city;
- e. ensuring development and site alteration will not have **negative impacts** on the Urban Forest;
- f. increasing tree canopy coverage and diversity, by planting trees appropriate to the location and avoiding the use of non-native tree and shrub



Figure 6-10: All trees and woodlands make up Mississauga's Urban Forest. Trees and woodlands play an important role in climate moderation, air and water quality, erosion control, providing wildlife habitat and have a significant role in reducing air temperature in the city.

species that are invasive;

- g. regulating the injury and destruction of trees on public and private property;
- h. promoting the management and enhancement of the Urban Forest on public and private property;
- i. providing public education and encouraging stewardship;
- j. providing strategic partnerships with regulatory agencies and others to address invasive non-native species and diseases and other management challenges; and
- k. compliance with by-laws pertaining to tree preservation and protection.

6.3.43 The preservation of trees and woodlots on public and private property that serve to connect and enhance the overall vegetative system and improve wildlife habitat will be encouraged.



Figure 6-11: Mississauga is fortunate to be located on the shore of Lake Ontario, part of the largest system of freshwater lakes in the world. The Great Lakes and their watersheds make up one of Canada's richest and most biologically diverse regions, home to a huge variety of fish, wildlife and plant species.

6.3.44 Development and site alteration will demonstrate that there will be no **negative impacts** to the Urban Forest. An arborist report and tree inventory that demonstrates tree preservation and protection both pre and post construction, and where preservation of some trees is not feasible, identifies

opportunities for replacement, will be prepared to the satisfaction of the City in compliance with the City's tree permit by-law.

6.3.45 Where tree replacement cannot be accommodated on-site, the City may require cash-in-lieu for replacement trees elsewhere or replacement plantings at a location approved by the City.

6.3.46 Mississauga may require ecologically based woodland management plans of a landowner prior to municipal acquisition.

Natural Hazard Lands

The health of the natural environment is intricately tied with conserving the stability and quality of land, soil and water. A priority for development and site alteration is to protect life and property and restore the health and stability of soil and land where it is compromised.

Natural Hazard Lands are generally unsafe and development and site alteration will generally not be permitted due to the naturally occurring processes of erosion and flooding associated with river and stream corridors and the Lake Ontario shoreline. **Natural Hazard Lands**, shown on Schedule 3: Natural System, will be designated Greenlands.

Proper management of the Lake Ontario shoreline, the **watercourses** and their riparian corridors is crucial to ecosystem health and diversity, sustainable living and the protection of human health and safety.

Natural Hazard Lands and buffers will be designated Greenlands and zoned to protect life and property. Uses will be limited to conservation, flood and/or erosion control, essential infrastructure and passive recreation.



Figure 6-12: **Valley and watercourse corridors** such as the Credit River corridor are subject to naturally occurring physical and ecological processes such as flooding and erosion. This can result in conditions that are hazardous to life and property, making these lands unsuitable for development.

Valleylands

Valleylands are shaped and reshaped by natural processes such as flooding and erosion. In general, erosion hazards associated with valleylands include consideration for slope stability and **watercourse** erosion, which are also interrelated with the flood hazard. The degree and frequency with which the physical change occurs in these systems depends on many factors such as extent and type of vegetation present, soil/bedrock type, and the characteristics of the erosion and flood hazards present.

Development adjacent to valleylands and **watercourse** features must incorporate measures to ensure public health and safety; protection of life and property; as well as enhancements and restoration of the Natural Heritage System.

6.3.47 Development and site alteration will not be permitted within erosion hazards associated with

valleyland and **watercourse** features. In addition, development and site alteration must provide appropriate buffer to erosion hazards, as established to the satisfaction of the City and appropriate conservation authority.

6.3.48 Development adjacent to valleyland and **watercourse** features may be required to be supported by detailed slope stability and stream erosion studies, where appropriate.

6.3.49 Development on lands containing a **watercourse** system will be subject to the recommendations of the applicable erosion rehabilitation study where one has been established for that watershed. Where no such recommendations or study are in place, it shall be demonstrated by the proponents of development that the **watercourse** is stable, either with or without the installation of erosion protection works, to the satisfaction of the City and the appropriate conservation authority.

Flood Plain

Lands subject to flooding are a danger to life and property and, as such, development is generally prohibited. However, it is recognized that some historic development has occurred within flood plains and may be subject to special flood plain policy consideration.

6.3.50 Development in flood plains will be subject to the **one-zone concept**, except where a special policy area or **two-zone floodplain management concept** has been approved.

6.3.51 Development and site alteration is generally prohibited on lands subject to flooding.

6.3.52 Where historic development has occurred in the flood plain, minor works may be permitted subject to detailed studies to the satisfaction of the City and appropriate conservation authority.

6.3.53 The construction of buildings or structures permitted in or adjacent to the flood plain will be protected to the elevation of the Regulatory Flood and will not impact upstream or downstream properties. Additional flood protection measures to be implemented relative to individual development applications will be determined by the City and the appropriate conservation authority.

6.3.54 Access for development adjacent to or within the flood plain will be subject to appropriate conservation authority policies and the policies of the City.

6.3.55 In recognition of municipal trans-boundary **watercourses** such as the Credit River and Etobicoke Creek, which are identified in the *Provincial Greenbelt Plan* as external connections, as well as other **watercourses**, emphasis will be placed on partnerships among municipalities and conservation authorities to improve the ecosystem health of the **watercourse** corridors. Stewardship of these systems should improve their ability to function as a greenway given their scale and relationship to Lake Ontario.

Lake Ontario Shoreline

The Lake Ontario shoreline is an integral component of the Green System and is a key Provincial linkage due to the unique ecological functions and habitats it provides. In addition, it has an important role in leisure activity and tourism.

To sustain the health of shoreline and watershed ecosystems, the local physical and ecological functions should be retained in an undisturbed state to the greatest extent possible and, where deemed appropriate, enhanced and restored. Effective natural hazards management and ecological conservation can only occur on a comprehensive shoreline or watershed/**sub-watershed** basis.

6.3.56 Where modifications to the existing Lake Ontario shoreline occur they should contribute to its restoration, the healthy functioning of coastal processes, and include opportunities for the creation and enhancement of aquatic and other wildlife habitat, where appropriate.

6.3.57 Development and site alterations along the Lake Ontario shoreline will be evaluated in the context of their potential impact on the overall physical and ecological functions occurring within the defined shoreline or watershed management area.

6.3.58 Mississauga will encourage the health and integrity of the Lake Ontario shoreline be protected, enhanced and, where possible, restored through development. Any mitigative measures to address natural hazards associated with the Lake Ontario shoreline will protect and enhance ecological functions.

6.3.59 Development and site alteration will not be permitted within Hazardous Lands adjacent to the Lake Ontario shoreline, which are impacted by flooding hazards, erosion hazards and/or dynamic beach hazards, unless it meets the requirements of the appropriate conservation authority and the policies of the City.

6.3.60 Development proposals may be required to incorporate and/or restore **natural heritage features**

including their ecological functions, along the Lake Ontario shoreline.

6.3.61 As a condition of development approval, lands adjacent to the Lake Ontario shoreline may be placed in public ownership for their long term protection. Prior to placing lands in public ownership, the applicant will be required to determine what shoreline protection works are required, if any, and will be required to install such works to the satisfaction of the City, the appropriate conservation authority and other public agencies that have jurisdiction over the Lake Ontario shoreline.

6.3.62 Development and site alteration must comply with the City's Erosion and Sediment Control By-law to the satisfaction of the City and appropriate conservation authority, where applicable.

6.3.63 An Erosion and Sediment Control Study may be required for development and site alteration, where appropriate.

Parks and Open Spaces

Parks and Open Spaces within the Green System include:

Public Open Space

- City parks and trails;
- public golf courses;
- public cemeteries;
- stormwater management facilities;
- conservation;
- recreation; and
- urban agriculture.

Private Open Space

- private parks;
- private golf courses;



Figure 6-13: Jack Darling Park is a public waterfront park located midway between Southdown Road and Mississauga Road. This scenic park provides paths and waterfront trails for pedestrians and cyclists. The park is designed with a number of amenities including picnic areas, comfort stations, a splash pad, tennis courts, open space area, a toboggan hill, playgrounds, beaches, trails, and a footpath that leads to Rattray Marsh, a Provincially significant coastal wetland.

- private cemeteries;
- conservation; and
- urban agriculture.

Parkway Belt West

Educational Facilities

- open space associated with educational facilities
e.g. school yards.

Utilities

- major utility and service corridors; and
- other open space lands in public ownership, e.g.
water reservoirs, pumping stations.

Public parkland is a vital component in the life of residents and contributes to the environmental, social and economic health of the city. City parks contribute to environmental sustainability and strengthen communities by making them more attractive places to live, work and play.

Access to parks allows for regular physical activity, which improves health, reduces the risk of a wide range of diseases and is important to social and mental health. In addition to the benefits of exercise, contact with the natural environment and opportunities for social interaction improves psychological health.

Parks also have a role in creating a complete community and strong economy. The availability of a park system is a factor for residents and businesses concerned about quality of life.

The city has an extensive system of public parks and trails, comprised of over 2 700 hectares of public parkland. Many of these parks are in Neighbourhoods and were acquired as residential areas were developed. In the next phase of the city's development, it will be important to develop parks that are more urban in nature within the Downtown and Uptown Major Node.

Public parkland expresses two distinct parkland functions that occur at various scales and levels of

accessibility: destination parks and community parks. The different park classifications are further described and their locations identified in the Future Directions for Library, Recreation, Parks and Natural Areas Master Plan.

Open space includes such uses as golf courses, cemeteries, private open space and lands associated with community centres, public schools and utility corridors.

These lands have a variety of functions. Some such as golf courses and private open space, provide a recreational function, while others provide social, educational or utility services.

While it is understood that the open space portions of these lands must be maintained in a manner that accommodates their primary function, these lands can make a significant contribution to a healthy environment by employing environmentally sensitive management techniques and practices. Allowing portions of their lands to naturalize, limiting the use of fertilizers and pesticides by utilizing integrated best management practices, planting native trees and shrubs, and maximizing land area with pervious

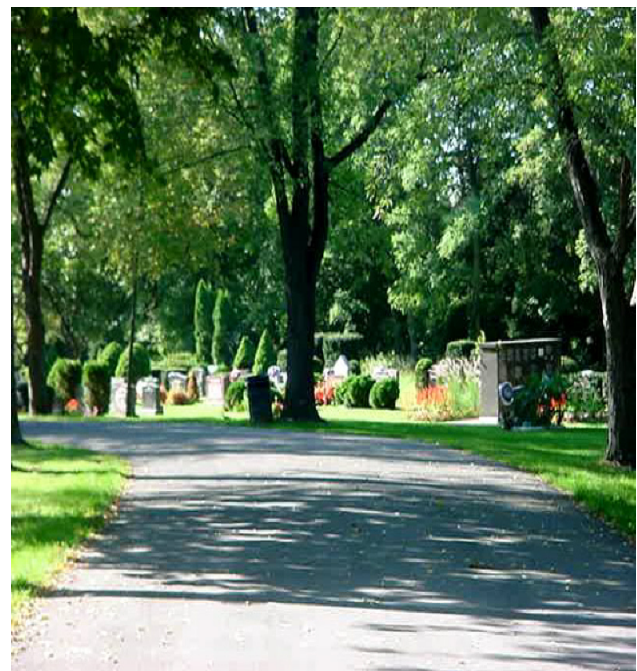


Figure 6-14: Cemeteries are permitted within Public Open Space and Private Open Space. Cemeteries are serene places for remembrance. Some cemeteries also include passive amenities such as sitting areas and trails. (Streetsville Public Cemetery)

surfaces, are some methods that provide environmental benefits.

6.3.64 Mississauga will value and wisely manage its parkland and open spaces.

6.3.65 Mississauga will own, lease, operate, maintain and administer public parkland and facilities to meet the recreational, cultural, educational and social needs of residents.

6.3.66 Public parkland will be designed to allow access for a variety of complementary activities through interconnections of pathways, a multi-use recreational trail and the public parkland network; and to provide a safe and accessible environment through development of clear sightlines, openness and visible entrances that can be achieved by maximizing street frontages, where possible.

6.3.67 Public parkland will contain unstructured or landscaped areas for sedentary uses, where possible.

6.3.68 Parks should generally be accessible for residents within 800 metres of their dwelling and be located as centrally as possible within a residential area.

6.3.69 The minimum city wide parkland provision is 1.2 hectares per 1 000 population.

6.3.70 A park containing major recreational and sport facilities serving an area greater than Mississauga,



Figure 6-15: Mississauga has more than 480 parks and **woodlands**, these include parks for active recreational uses, while others include naturalized areas that are to be preserved and enhanced. Open spaces are fundamental to the Green System as they provide not only a recreational use but also social, educational and utility services. (Lake Aquitaine)

may be established.

6.3.71 The provision of recreational facilities within destination parks and community parks will be responsive to identifiable needs and in general conformity with the guidelines contained in the Future Directions for Library, Recreation, Parks and Natural Areas Master Plan.

6.3.72 Where possible, destination type parks should provide a higher level of accessibility to persons with disabilities.

6.3.73 In addition to the parkland identified on Schedules 4: Parks and Open Spaces and 10: Land Use Designations, additional public parkland may be acquired through the processing of development applications or through purchase.

6.3.74 Land conveyed to Mississauga for use as public parkland and/or Greenlands will be in a condition that is acceptable to the city.

6.3.75 Mississauga will negotiate with the appropriate authorities for the use of rights-of-way to accommodate public open space uses.

6.3.76 Public parkland may incorporate components of the Natural Heritage System to provide opportunities for enjoyment, appreciation and protection of nature.

6.3.77 Natural areas acquired by Mississauga will be designated in accordance with the policies of this Plan. Recreational activities will be restricted to protect the ecological viability of these areas.

6.3.78 Where Public Open Space contains or abuts the Natural Heritage System, the policies for the Natural Heritage System will apply.

6.3.79 The potential for Public Open Space areas to expand or connect the Natural Heritage System will be encouraged to ensure that sensitive areas, particularly **woodlands**, are maintained and enhanced.

6.3.80 Stormwater retention and stormwater quality ponds are generally not appropriate uses for public parkland. In some instances however, overland flow and stormwater facilities may be accommodated in public parkland.

6.3.81 Wherever possible, significant treed areas throughout Mississauga will be incorporated into the Public Open Space network. Where appropriate, these areas will be retained in a natural condition or be permitted to regenerate to assume a natural state. Active recreation will be restricted to lands that have been specifically acquired and developed for such purposes.

6.3.82 Mississauga recognizes the Lake Ontario waterfront as a vibrant area of lake dependent and lake enhanced activities, with natural habitat areas protected, enhanced and restored and heritage resources incorporated. Through land acquisition, capital works and the review of proposals, Mississauga will endeavour to ensure this vision is realized.

6.3.83 Mississauga will encourage open space landowners to employ **stormwater best management practices** and planting of native non-invasive species.

6.3.84 Cemeteries will be permitted in Public Open Space and Private Open Space designations and will be subject to the following:

- a. as cemeteries constitute an open space use, consideration will be given to using public cemeteries for passive open space purposes. However, cemeteries that are privately owned are not intended to be open to the public;
- b. cemeteries and related facilities will be located to minimize conflict with existing and future land use and transportation; and
- c. cemeteries will recognize, reflect and integrate all natural and cultural heritage resources within and/or adjacent to cemetery property.

6.3.85 Where lands are designated Private Open Space, it is not intended that they be free and open to the general public nor that they will be necessarily acquired by the City or any other public agency. Consideration will be given however, to public acquisition of these lands through the development approval process or through the City's land securement program.

6.3.86 The development of private parks may be permitted subject to the following conditions being met:

- a. adequate access;
- b. compatibility with adjacent uses;
- c. protection, enhancement and restoration of the Natural Heritage System; and
- d. an approved site plan, where applicable.

6.4 Water

Many Ontarians, including the residents and businesses in Mississauga, depend on Lake Ontario for a safe and reliable source of drinking water. In addition, the Lake Ontario waterfront provides recreational opportunities for both residents of Mississauga and visitors.

Only one percent of the water in the Great Lakes Basin is renewed annually through rainfall and snowmelt. Therefore, it is imperative to conserve water use and to protect the quantity and quality of surface and groundwater resources.

6.4.1 Water Conservation

Water is a valuable resource. Water conservation measures will ensure present and future generations have access to a safe and abundant water supply, which will sustain life and ensure economic prosperity.

6.4.1.1 Mississauga will work with the Region of Peel and the conservation authorities to promote conservation of water use through education and promotion initiatives, and through the development of policies, where appropriate.

6.4.1.2 Water conservation measures will be implemented in development.

6.4.1.3 A water conservation plan will be required for development proposing a large use of municipally

treated and supplied water. The Plan will consider alternatives to the use of water and evaluate mitigation measures to reduce the use of water, where technically feasible.

6.4.2 Stormwater and Drainage

Stormwater management continues to evolve from a philosophy of providing drainage and protection from flooding, to recognizing and attempting to mitigate the impacts of urbanization on water quality and **watercourse** erosion, to a more current recognition of stormwater as a resource and the importance of implementing preventative approaches to stormwater management by minimizing runoff through **stormwater best management practices**.

The effective management of stormwater is vital in protecting life, property, infrastructure and the natural environment. The safe conveyance of storm flows, minimization of flood risks, enhancement of water quality, reduction of erosion and improvement of natural features and aquatic life and habitat will be a priority. Efforts will be made to preserve the natural hydrologic cycle using **stormwater best management practices**. Stormwater management facilities may be part of the Green System.

6.4.2.1 Mississauga will use a water balance approach in the management of stormwater by encouraging and supporting measures and activities that reduce stormwater runoff, improve water quality, promote evapotranspiration and infiltration, and reduce erosion using **stormwater best management practices**.

6.4.2.2 Mississauga will require that development applications be supported by stormwater best management practices in accordance with relevant plans, studies, development standards and policies. Additional measures may be specified by the City based on known concerns related to storm sewer capacity, pollution prevention, flood risk and erosion, and protection of the city's Natural Heritage System, including its ecological function. **Stormwater best management practices** must be approved by the city, appropriate conservation authority and Provincial Government, where applicable.

6.4.2.3 The location and design of surface drainage and stormwater management facilities will respect the Natural Heritage System and will include naturalization to the satisfaction of the City and the appropriate conservation authority.

6.4.2.4 Surface drainage and stormwater management facilities will be installed for the safety of residents and to protect infrastructure and property.

6.4.2.5 The design of storm drainage and stormwater management facilities will consider interim and ultimate development conditions.

6.4.2.6 The design of stormwater management facilities and **surface drainage facilities** must conform to City standards, policies and guidelines. A buffer may be required as determined by the City.

6.4.2.7 At-source controls should be provided to reduce the need for new stormwater infrastructure. All efforts to this effect should be guided by the appropriate environmental agencies, according to all Provincial Government, Regional Government and municipal policies, guidelines and regulations.



Figure 6-16: The drainage for the parking area at Riverwood Park has been designed to mimic natural ecological functions such as water infiltration and purification. The runoff from this bio-swale outlets to a small wetland feature on the park site.

6.4.2.8 Protective measures should be developed and implemented, in consultation with the appropriate conservation authority and Provincial Government, for significant **ground water recharge** and discharge areas, where appropriate.

6.4.2.9 The design of storm drainage and stormwater management facilities will enhance the natural and visual landscape and ecological functions and provide recreational opportunities, if appropriate.

6.5 Air Quality

Clean air is critical to human and environmental health. The most effective strategies to ensure air quality are to encourage and achieve complete communities with a compact urban form, including alternative modes of transportation such as walking, cycling and transit and ensuring the compatibility of land uses. It is equally important to protect, enhance and restore the Natural Heritage System and Urban Forest, which all assist in capturing carbon emissions, reducing the heat island effect and providing overall air quality benefits.

6.5.1 To improve air quality, Mississauga will:

- a. promote the use of alternative modes of transportation such as transit, cycling and walking;
- b. give preference to compact, mixed use and transit oriented development that reduces car dependency;
- c. direct growth to Intensification Areas;
- d. encourage a balance of housing and jobs that provide opportunities for shorter commutes and **active transportation** modes; and
- e. protect, enhance, restore and expand the Natural Heritage System.

6.5.2 Mississauga recommends that the Ministry of Environment establish higher regulatory standards than are currently used by the Ministry, including establishing standards for emissions not currently

regulated, and take into account the cumulative effects of emissions, and background pollutant concentrations prior to approving applications for Certificates of Approval.

6.5.3 Mississauga will promote building and site design that minimizes vehicular idling, energy consumption and maximizes the use of **renewable energy** and vegetative cover.

6.5.4 Appropriate techniques to mitigate odour and dust will be encouraged to be incorporated in development.

6.5.5 When determining land use compatibility, regard will be given to odours, air particulates, noise and other contaminants, which may impact adjacent or nearby land uses and natural areas. Incompatible land uses such as sensitive land uses and those uses that are sources of noise, odour and dust will be separated and/or the nuisances will be mitigated, so they do not interfere with each other.

6.5.6 Development proposals for a crematorium may be considered subject to the following:

- air, noise, dust, odour and other fugitive emissions will be appropriately mitigated at the source in accordance with Provincial requirements;
- permitted land uses which may be subject to adverse effects arising from the proposed crematorium use are not located within the area of influence of the proposed crematorium as determined by appropriate studies acceptable to the City;
- there is no impact to the permitted land uses, planned function or viability of the surrounding lands;
- the proposed crematorium is not located within a multi-unit building;
- the scattering or interment of human remains is not permitted, except in cemeteries;
- the development is appropriately screened from adjacent uses and the public realm; and

- the site is appropriately buffered and landscaped.

6.6 Soil Conservation

Soil is vulnerable to erosion by wind and water, particularly during the construction process. Erosion affects water resources by reducing water quality and the condition of aquatic habitat through siltation. Reduced water quality in rivers, creeks and Lake Ontario also affects recreational opportunities such as fishing. Erosion can also damage vegetation by exposing roots, which assist in stabilizing soils. Loss of vegetation compromises the Natural Heritage System and Urban Forest. Eroded soils compromise the functionality of key infrastructure such as sewers and ditches, thereby increasing the frequency and severity of flooding. In addition, soil erosion, due to wind, causes dust and particulate matter, which affects human health.

Appropriate measures associated with development must be taken to safeguard public safety, protect property, enhance recreational opportunities and prevent damage to the environment due to erosion.

6.6.1 Proponents of development and site alteration will ensure there are no risks to life, safety, health, property and ecosystem health associated with soil



Figure 6-17: Erosion can result in serious danger to property, people, water resources, vegetation and infrastructure. Adherence to development standards and policies reduces these dangers and protects life and property.

erosion.

6.6.2. Proposals for development and site alteration will incorporate appropriate buffers adjacent to **watercourses**, Natural areas and parks to protect against soil erosion and sediment impacts.

6.6.3 Topsoil will be protected by regulating and controlling construction, design and maintenance activities or any activity resulting in site alteration.

6.6.4 Maintaining vegetation to protect against erosion and degradation of topsoil will be required unless authorized by the City.

6.7 Brownfield Sites

The rehabilitation of brownfield sites supports the economic prosperity of the city, reduces the environmental risk posed by these properties and enhances the community in which they are located.

6.7.1 To ensure that **contaminated sites** are identified and appropriately addressed by the proponent of development, the following will be required:

- a. the owners of lands proposed for development will submit information as required by the City to identify the potential for contamination;
- b. landowners will consider all potential sources of contamination such as disposal of **waste** materials, raw material storage, residue left in containers, maintenance activities and spills and may also include contamination from adjacent commercial properties, such as, gas bars, motor vehicle service stations, motor vehicle repair garages and dry-cleaning facilities;



Figure 6-18: As Mississauga matures and builds out the last of its greenfields, brownfields will become a major component of future development. An example of a successful brownfield development is the former St. Lawrence Starch plant (originally established in 1889) located in Port Credit.

- c. the development approval or approval of amendments to this Plan for known or potentially **contaminated sites** will be deferred until the proponent of development undertakes a study assessing the potential for contamination in accordance with the Provincial Government regulations and standards and City policies; and
- d. if the study indicates potential for soil or ground water contamination, an assessment of the soil and groundwater conditions will be required. If contamination is confirmed, a remedial action plan in accordance with Provincial Government regulations and standards appropriately addressing **contaminated sites** will be required. Recommendations contained within the plan will be implemented by way of conditions to development approval.

6.7.2 If a **contaminated site** cannot be remediated to the land use designation shown on Schedule 10: Land Use Designations, the land use designation will be reviewed based on the remediation plan and an alternative appropriate land use designation may be considered.

6.7.3 Policies regarding **contaminated sites** should not be construed as a commitment by the City to identify all **contaminated sites**; rather they should be regarded as an effort by the City to responsibly obtain and utilize available information as part of the planning process.

6.7.4 Mississauga will actively promote the redevelopment and clean up, if necessary, of brownfield sites.

6.7.5 Mississauga will encourage the Provincial and Federal Governments to provide legislation and financial incentives that will facilitate the redevelopment of brownfield sites.

6.8 Human-Made Hazards

Human-made hazards may have potential adverse impacts on public safety and property and occur when sites have not been properly rehabilitated. They are generally associated with oil, gas and salt hazards and former mineral aggregate and petroleum resource operations.

6.8.1 Development will be directed away from human-made hazards. Development may be permitted only if rehabilitation or mitigation of known or suspected hazards has been completed.

6.9 Waste Management

Waste management is the responsibility of everyone - government, industries, businesses, communities, and individuals at both the regional and city level. Effectively managing, collecting and disposing of **waste** facilitates human and environmental health.

The efficient use of materials and resources and minimizing **waste** generation through reduction, reuse and recycling is critical to the success of an integrated solid **waste** management system. In addition, the provision of **waste** disposal and treatment facilities is part of **waste** management.

The Region is responsible for the collection, processing, transfer and safe disposal of **waste** generated by residential uses. The collection and transportation of non-residential **waste** to **waste** disposal facilities operated by the Region is the responsibility of non-residential users.

6.9.1 Mississauga will manage **waste** in a sustainable way.

6.9.2 Mississauga will support and promote reduction, reuse and recycling of **waste** in private and public sector operations.

6.9.3 Mississauga will establish site design standards that allow adequate flexibility in **waste** handling for development proposals. Standards will address a range of **waste** management options including on-site material separation, multiple **waste** streams and composting.

6.9.4 Mississauga will promote the reduction of **waste** generated through construction.

6.9.5 **Waste transfer stations, waste processing stations** and composting facilities are permitted in Business Employment and Industrial areas subject to meeting the following criteria:



Figure 6-19: Recycling has become a part of our daily living. Promoting the reduction, reuse and recycling of **waste** is a priority in Mississauga.

- a. The location and operation of **waste transfer stations, waste processing stations** and composting facilities must comply with all Municipal, Regional and Provincial Government requirements including, where applicable, certification under the *Environmental Protection Act*; and
- b. The sites for such facilities will be located, planned, designed, operated and maintained in such a way as to:
 - ensure compatibility with adjacent, existing and future land uses;
 - reduce environmental impact, within applicable standards; and
 - mitigate dust, odour, health and safety concerns, noise, and visual impacts, within applicable standards.

6.9.6 Restrictions are placed on the development of closed **landfill** sites and the adjacent lands of closed sites. Closed **landfill** sites have limited capability to support certain land uses and development will be restricted where such activity would constitute a hazard to human or ecosystem health. The size and extent of a **landfill's** influence area is dependent on many factors and is determined by site specific and detailed studies prepared by the applicant of development proposed within the potential influence

area. These studies will be prepared to the specifications of the Provincial Government. Where no information is available on the influence area of the site, Provincial Government standards identify a 500 metre radius surrounding the **waste** cell for assessing potential impacts from the **waste** site.

6.9.7 Within a period of 25 years or less, development on lands formerly used for the disposal of **waste**, requires approval of the Provincial Government.

6.10 Noise

Although ambient noise levels are part of living in an urban environment, excessive noise levels can adversely impact quality of life and, in extreme circumstances, public health. The most common source of noise complaints in Mississauga is from aircraft and motorized vehicles on highways and local roadways. Rail and industrial activities are also a source of noise in the city.

Sound barriers should be avoided wherever possible and feasible. Where sound cannot be mitigated at its source, noise abatement measures such as appropriate site planning, spatial separation and

building design techniques are preferred, wherever possible.

As the city continues to develop and intensify, particularly with mixed uses, noise will continue to be of concern. Special attention must be given to land use compatibility and the incorporation of noise attenuation methods.

The applicable Provincial Government environmental noise guideline for sound level limits is the Environmental Noise Guideline, Publication NPC-300 or its successor.

6.10.1 Stationary Noise

Natural gas pumping stations, roof top cooling units and a wide variety of industrial processes are all examples of stationary noise sources. Due to the unique nature of this type of noise, it can be difficult to mitigate through the use of sound barriers. Instead, consideration must be given to appropriate land use planning and building design techniques when locating sensitive land uses in the vicinity of stationary noise sources. Conversely, existing and proposed noise sources near residential and other sensitive uses should incorporate mitigation measures at the source.

Outdoors and Plane of Window Sound Level Limits – Stationary Sources, Steady and Varying Sound				
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Outdoor Points of Reception				
Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	55
19:00 – 23:00	50	45	40	55
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Plane of Window of Noise Sensitive Spaces				
Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	60
19:00 – 23:00	50	50	40	60
23:00 – 07:00	45	45	40	55
* Leq – The A-weighted sound level of a steady sound carrying the same total energy in the specified time period as the observed fluctuating sound. ** dBA – The A-weighted sound pressure level. Noise measured in decibels weighted to express loudness as perceived by human hearing.				

Figure 6-20: Outdoors and Plane of Window Sound Level Limits – Stationary Sources, Steady and Varying Sound (adapted from Environmental Noise Guideline, Publication NPC-300)

Outdoors Sound Level Limits – Stationary Sources, Impulsive Sound					
Exclusion Limit Values for Impulsive Sound Level (L_{LM}, dBAI) *					
Outdoor Points of Reception					
Time of Day	Actual Number of Impulses in Period of One-Hour	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 23:00	9 or more	50	50	45	55
	7 to 8	55	55	50	60
	5 to 6	60	60	55	65
	4	65	65	60	70
	3	70	70	65	75
	2	75	75	70	80
	1	80	80	75	85
* L_{LM} – Logarithmic Mean Impulse Sound Level dBAI – The A-weighted sound pressure level of an impulsive sound measured with a sound level metre set to “impulse” response.					
Figure 6-21: Outdoors Sound Level Limits – Stationary Sources, Impulsive Sound (adapted from Environmental Noise Guideline, Publication NPC-300)					

Plane of Window Sound Level Limits – Stationary Sources, Impulsive Sound				
Exclusion Limit Values for Impulsive Sound Level (L_{LM}, dBAI)				
Plane of Window – Noise Sensitive Spaces (Day/Night)				
Actual Number of Impulses in Period of One-Hour	Class 1 Area (0700-23:00)/ (23:00-07:00)	Class 2 Area (0700-23:00)/ (23:00-07:00)	Class 3 Area (07:00-19:00)/ (19:00-0:700)	Class 4 Area (0700-23:00)/ (23:00-07:00)
9 or more	50/45	50/45	45/40	60/55
7 to 8	55/50	55/50	50/45	65/60
5 to 6	60/55	60/55	55/50	70/65
4	65/60	65/60	60/55	75/70
3	70/65	70/65	65/60	80/75
2	75/70	75/70	70/65	85/80
1	80/75	80/75	75/70	90/85
* L_{LM} – Logarithmic Mean Impulse Sound Level dBAI – The A-weighted sound pressure level of an impulsive sound measured with a sound level metre set to “impulse” response.				
Figure 6-22: Plane of Window Sound Level Limits – Stationary Sources, Impulsive Sound (adapted from Environmental Noise Guideline, Publication NPC-300)				

6.10.1.1 In order to discourage the encroachment of sensitive land uses on existing industrial noise sources, **a feasibility and/or detailed noise impact study** will be submitted prior to approval of development in proximity to an existing industrial noise source. This will identify options for mitigation at the source and at the proposed development site.

6.10.1.2 Industrial, commercial or utility development will not be permitted where the noise transmitted to existing or proposed residential areas, or other noise sensitive use, exceeds the mitigated outdoor and plane of window noise criteria established by the applicable Provincial Government environmental noise guideline.

6.10.1.3 The sound levels anticipated on the site of a proposed development will be established on the basis of the predictable worst case noise impact from the stationary source(s) in accordance with the applicable Provincial Government environmental noise guideline.

6.10.1.4 Development that includes outdoor passive recreation areas will generally not be permitted in locations where the mitigated outdoor noise levels are forecast to exceed the limits specified by the applicable Provincial Government environmental noise guideline.

6.10.1.5 Development with a residential component such as dwellings, or any development that includes bedrooms, sleeping quarters or reading rooms and other noise sensitive uses that will be subject to high levels of noise from a stationary noise source, will only be permitted if noise mitigation measures are implemented at the source of the noise or if the development contains mitigative measures which will result in noise levels that comply with the limits specified by the applicable Provincial Government environmental noise guideline.

6.10.1.6 The use of the Class 4 area classification, as specified in the applicable Provincial Government environmental noise guideline, is at the City's discretion. The introduction of a Class 4 area will require Council approval.

- a. The use of Class 4 will only be considered where it can be demonstrated that:
 - the development proposal is for a new noise sensitive land use in proximity to an existing, lawfully established stationary noise source;
 - the development proposal for a new noise sensitive use does not impair the long term viability and operation of an employment use;
 - it is in the strategic interest of the City, furthers the objectives of Mississauga Official Plan and supports community building goals; and
 - all possible measures of noise attenuation have been assessed for both the proposed development site and the stationary noise source, including, but not limited to, building design and siting options for the proposed new noise sensitive use;
- b. Notwithstanding the above conditions, the use of Class 4 will receive more favourable consideration if the stationary noise source is a temporary situation and it is expected that the stationary noise source will be removed through future redevelopment; and
- c. Mississauga will require that prospective purchasers be notified that the building is located in a Class 4 area and informed of any agreements as may be required for noise mitigation. A noise warning clause shall be included in agreements that are registered on title, including condominium disclosure statements and declarations.

6.10.2 Aircraft Noise

There are areas of Mississauga that are subject to high levels of aircraft noise. As a result, policies are required that set out the restrictions on development within the areas subject to high levels of aircraft noise. The policies of this Plan are based on a six runway configuration of the Airport.

Lands within the Airport Operating Area as identified on Map 6-1 are currently developed for a variety of uses including residential, industrial and office. For the

purposes of this section, development in this area consists of redevelopment and infill.

6.10.2.1 Land uses located at or above the corresponding 1996 **noise exposure projection (NEP)/2000 noise exposure forecast (NEF) composite noise contour** as determined by the Federal Government, will require a noise study as a condition of development. The noise study is to be undertaken by a licensed professional engineer with acoustical expertise in accordance with the applicable Provincial Government environmental noise guideline to the satisfaction of the City prior to development approval to determine appropriate acoustic design criteria.

6.10.2.2 Mississauga will require tenants and purchasers to be notified when a proposed development is located at the **noise exposure projection (NEP)/noise exposure forecast (NEF) composite noise contour** of 25 and above.

6.10.2.3 A noise warning clause will be included in agreements that are registered on title, including condominium disclosure statements and declarations.

6.10.2.4 Residential and other sensitive land uses within the Airport Operating Area will not be permitted as a principal or an accessory use with the following exceptions:

- a. lands identified as "Exception Area", as shown on Map 6-1; and
- b. daycare facilities accessory to an employment use in the Corporate Centre Character Areas known as Gateway Corporate and Airport Corporate, on lands located below the 35 **noise exposure projection (NEP)/noise exposure forecast (NEF) composite noise contour**.

Noise Classification	Definition
Class 1 area (urban areas)	Means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum".
Class 2 area (suburban areas)	Means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 areas: <ul style="list-style-type: none"> • Sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours); and • Low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours).
Class 3 area (rural areas)	Means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as: a small community; agricultural area; a rural recreational area such as a cottage or a resort area; or a wilderness area.
Class 4 area (intensification areas)	Means an area or specific site that would otherwise be defined as Class 1 or 2 and which: <ul style="list-style-type: none"> • Is an area intended for development with new noise sensitive land use(s) that are not yet built; • Is in proximity to existing, lawfully established stationary source(s); and • Has formal confirmation from the land use planning authority with the Class 4 area classification which is determined during the land use planning process. <p>Additionally, areas with existing noise sensitive land use(s) cannot be classified as Class 4 areas.</p>

Figure 6-23: Noise Classification Areas (adapted from Environmental Noise Guideline, Publication NPC-300)

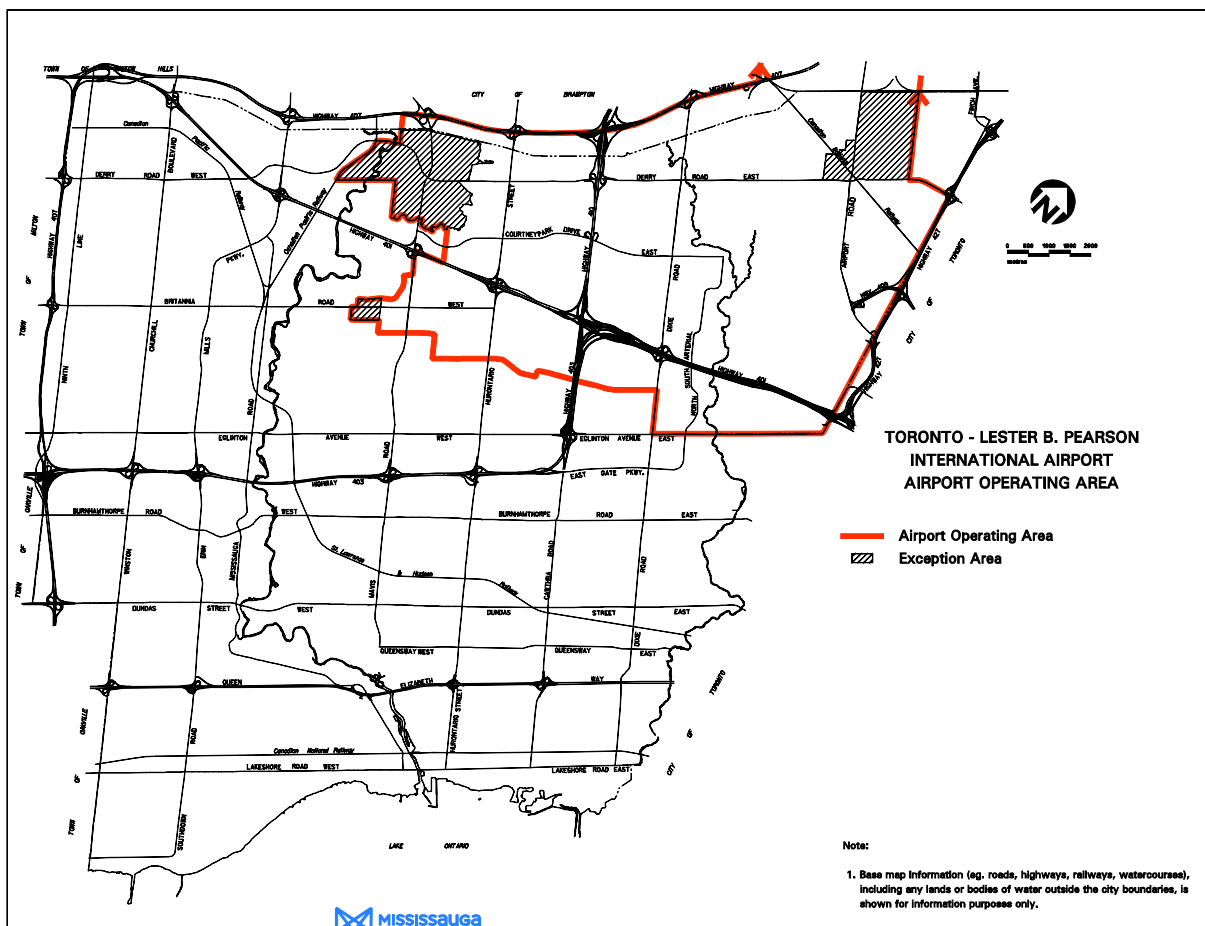


Figure 6-24: Although the Airport contributes to the city's strong economy, some communities are directly affected by the sound levels emitted by the airplanes.

6.10.2.5 Development applications for sensitive land uses including new residential dwellings, with the exception of replacement detached and semidetached

dwellings, for lands where permitted within the Airport Operating Area, may be processed for approval provided that all of the following are satisfied:

- a. a **feasibility noise impact study** will be submitted as part of a complete development application to verify that mitigated indoor and outdoor noise levels would not exceed the sound level limits established by the applicable Provincial Government environmental noise guideline;
- b. a **detailed noise impact study** will be required prior to final development application approval;
- c. appropriate conditions relating to noise mitigation that are consistent with the findings of the **detailed noise impact study**, are included in the final approval; and
- d. an **Aircraft Noise Warning Agreement** between the City of Mississauga, the Greater Toronto Airports Authority (or its successor) and the Developer, are included in the approval.



Map 6-1: Airport Operating and Exception Area

LAND USE ₂	Noise Exposure Projection (NEP)/Noise Exposure Forecast (NEF) Composite Noise Contour ₁		
	25 - <30	30 - <35	35 or Greater
Residential Public and private schools Daycare facilities ³ Libraries Place of religious assembly Cemeteries Theatres - Outdoor Auditoria Hospitals Nursing Homes Community Centres	Noise Study Required		
Hotels Motels Retail or service commercial Office Athletic fields Stadiums Theatres - Indoor		Noise Study Required	
Park and picnic areas Playgrounds Tennis Courts Industrial Laboratories Arena ⁴			Noise Study Required
1. Reference Figure 6-26 2. Land uses extracted from Transport Canada’s TP1247 – Aviation – Land Use in the Vicinity of Aerodromes, 9th Edition 3. Land use not specifically identified within TP1247 4. Land use not specifically identified within TP1247			

Figure 6-25: Noise Study Requirements for Aircraft Noise

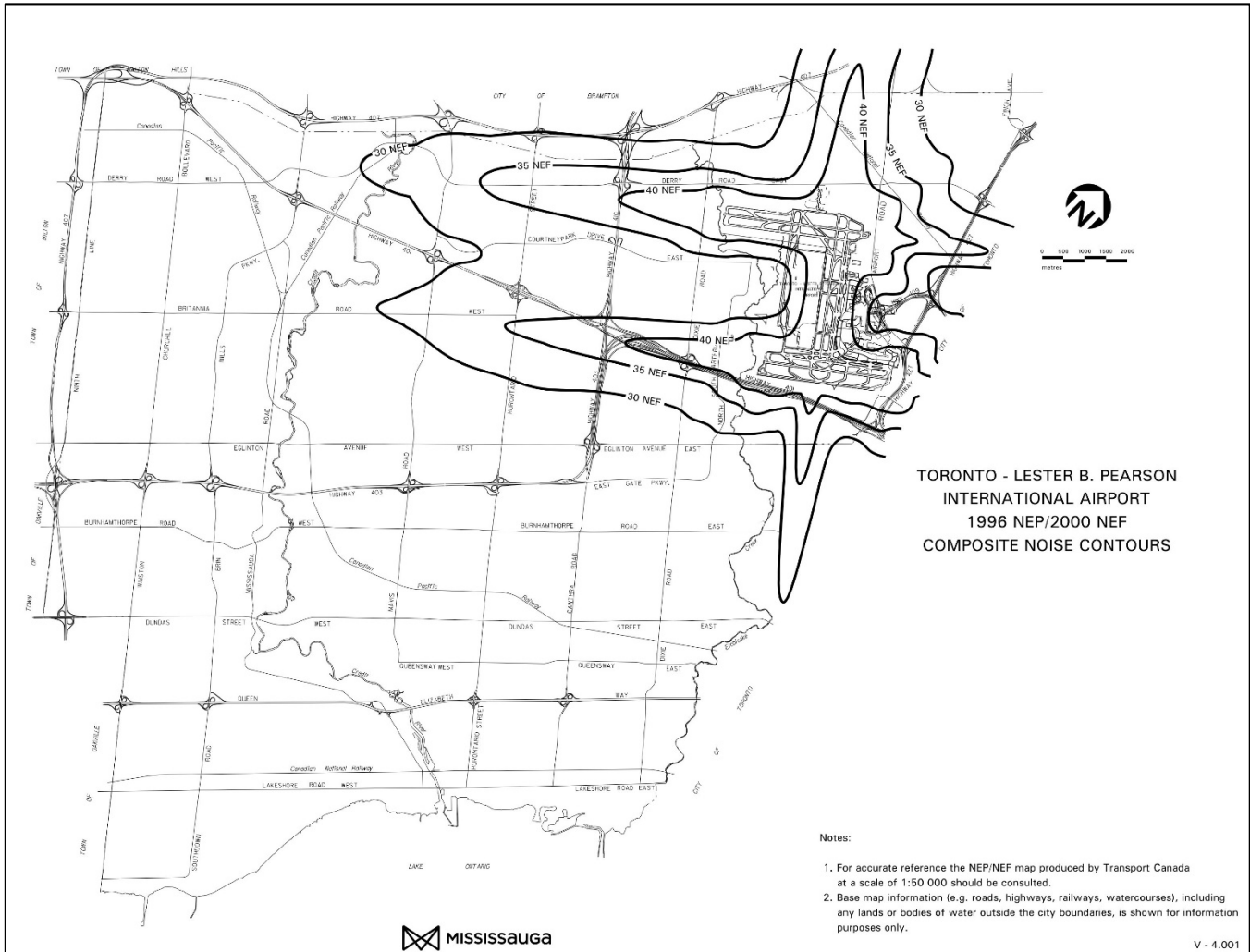


Figure 6-26: 1996 NEP/2000 NEF Composite Noise Contours

6.10.3 Road Noise

As intensification occurs in the Downtown, Major Nodes, Community Nodes and along **Corridors**, road noise will increasingly be of concern. Careful attention must be paid to site planning and building design techniques to mitigate noise levels consistent with an urban environment.

6.10.3.1 Where residential and other land uses sensitive to noise are proposed in close proximity to Provincial Highways, it may be necessary to mitigate noise impact, in part, by way of building and site design. A **feasibility noise impact study** will be submitted prior to approval in principle of such land uses located within 50 m of arterial and major collector rights-of-way and within 100 m of a Provincial Highway right-of-way, or as required by the City or Region.

6.10.3.2 Residential development or development that includes outdoor living areas will not be permitted in locations where the mitigated outdoor noise levels are forecast to exceed limits specified by the applicable Provincial Government environmental noise

guideline. A **detailed noise impact study** will be required to demonstrate that every effort has been made to achieve the sound level limits specified by the applicable Provincial Government environmental noise guideline, for an outdoor living area (55 **dBA** or less). Only in cases where the required noise attenuation measures are not feasible for technical, economic, aesthetic or administrative reasons would excess noise above the limit (55 **dBA**) be acceptable, with a warning clause to prospective purchasers, consistent with the applicable Provincial Government environmental noise guideline. In these situations, any excess noise above the limit will not be acceptable if it exceeds 60 **dBA**.

6.10.3.3 Development with a residential component such as dwellings, or any development which includes bedrooms, sleeping quarters, living rooms or reading rooms which will be subject to high levels of traffic noise, will only be permitted if it includes structural features which result in interior noise levels that comply with the indoor standards specified by the applicable Provincial Government environmental noise guideline.

Outdoor and Indoor Sound Level Limits – Road and Rail			
Type of Space	Time Period	Equivalent Sound Level <i>L_{eq}</i> * (Time Period) (dBA) **	
		Road	Rail
Outdoor Living Areas (OLA)	0700 – 23:00, 16 hours	55	55
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	0700 – 23:00, 16 hours	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycares)	23:00 – 7:00, 8 hours	45	40
Sleeping quarters	0700 – 23:00, 16 hours	45	40
	23:00 – 7:00, 8 hours	40	35
Sleeping quarters of hotels/motels	23:00 – 7:00, 8 hours	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	23:00 – 7:00, 8 hours	40	35
General offices, reception areas, retail stores, etc.	0700 – 23:00, 16 hours	50	45
Nursing/retirement homes, theatres, places of religious assembly, libraries	0700 – 23:00, 16 hours	45	40
Individual or semi-private offices, conferences rooms, reading rooms, etc.	0700 – 23:00, 16 hours	45	40
* <i>L_{eq}</i> – The A-weighted sound level of a steady sound carrying the same total energy in the specified time period as the observed fluctuating sound.			
** dBA – The A-weighted sound pressure level. Noise measured in decibels weighted to express loudness as perceived by human hearing.			

Figure 6-27: Outdoor and Indoor Sound Level Limits – Road and Rail (adapted from Environmental Noise Guideline, Publication NPC-300)

6.10.3.4 Where residential and other land uses sensitive to noise are proposed within 500 m of a freeway, 250 m of a provincial highway or 100 m from other roads, development proponents will be required to submit detailed noise studies delineating mitigative noise measures required to meet Provincial Government and Region of Peel noise guidelines. The recommendations of the approved reports are to be implemented as conditions of development.

6.10.3.5 Where the acoustical analysis indicates that anticipated sound levels in the outdoor living area would exceed the outdoor sound level limits stipulated by the applicable Provincial Government environmental noise guideline by up to five **dBA**, Mississauga will require tenants and purchasers to be notified of such. Notice will also be required when road noise necessitates central air conditioning or the provision for central air conditioning to achieve the indoor noise levels limits stipulated by the Provincial Government environmental noise guideline.

6.10.3.6 A **feasibility** and/or **detailed noise impact study** prepared to analyze the impacts of road noise on a development are to incorporate the ultimate Annual Average Daily Traffic (AADT) for the road.

6.10.3.7 As a condition of approval of development applications, notice will be given by the developer to the purchasers and tenants of existing and potential impacts of the right-of-way and the maintenance of the required abatement measures.

6.10.4 Rail Noise, Safety and Vibration

Railways in urban areas require particular consideration not only because of the high levels of noise they generate, but also because of ground borne vibration. Safety is also a concern as intensification occurs in the vicinity of railway tracks. In addition, the encouragement of active modes of transportation will require consideration of cyclist and pedestrian safety in conjunction with railway operations.

6.10.4.1 Where residential and other land uses sensitive to noise are proposed in close proximity to rail lines, it may be necessary to mitigate noise impact, in part by way of the building and site design. Residential development or any development that includes outdoor living areas will generally not be permitted in locations where the mitigated outdoor noise levels are forecast to exceed the limits specified by the applicable Provincial Government environmental noise guideline. A **feasibility** and/or **detailed noise impact study** will be required to demonstrate that every effort has been made to achieve the sound level limits specified by the applicable Provincial Government environmental noise guideline, for an outdoor living area (55 **dBA** or less). Only in cases where the required noise attenuation measures are not feasible for technical, economic, aesthetic or administrative reasons would excess noise above the limit (55 **dBA**) be acceptable, with a warning clause to prospective purchasers, consistent with the applicable Provincial Government environmental noise guideline. In these situations, any excess noise above the limit will not be acceptable if it exceeds 60 **dBA**.



Figure 6-28: Railways, while a vital part of transportation system and economy, can pose noise, vibration and safety concerns.

6.10.4.2 Development with a residential component such as dwellings, or any development which includes bedrooms, sleeping quarters, living rooms, reading rooms and other noise sensitive uses which will be subject to high levels of railroad noise, will only be permitted if it includes structural features that result in interior noise levels that comply with the indoor standards specified by the applicable Provincial Government environmental noise guideline.

6.10.4.3 Mississauga will require that the owner/developer engage a qualified noise consultant to undertake an analysis of noise and vibration and recommend abatement measures as necessary to meet Provincial and Region of Peel Guidelines, industry best practices and the requirements of the applicable rail company, to the satisfaction of the City, where sensitive land uses and other noise or vibration sensitive development that includes sleeping quarters, reading rooms and offices, are proposed within:

- 1000 m of a Freight Rail Yard for noise;
- 300 m of a Principal Main Rail Line for noise;
- 250 m of a Secondary Main Line for noise;
- 150 m of a Principal Branch Line for noise;
- 75 m of a Secondary Branch Line for noise;
- 75 m of a Spur Line for noise; and
- 75 m of a rail yard and all rail lines for vibration.

6.10.4.4 Mississauga will require tenants and purchasers to be notified where the analysis indicates that anticipated sound levels in the outdoor living area would exceed the outdoor sound level limits stipulated by the applicable Provincial Government environmental noise guideline by up to five **dBA**. Notice will also be required when rail noise necessitates central air conditioning or the provision for central air conditioning to achieve the indoor noise level limits stipulated by the applicable Provincial Government environmental noise guideline.

6.10.4.5 As a condition of approval of development applications, notice will be given by the developer to purchasers and tenants of existing and potential

impacts of rail use and operations and the maintenance of the required abatement measures.

6.10.4.6 Development applications for dwellings, significant additions thereto and places of public assembly, will incorporate an appropriate safety setback as necessary to meet industry best practices and the requirements of the applicable rail company, to the satisfaction of the City, which takes into account safety barriers (e.g. berms, walls), topography, intervening structures and the surrounding pattern of development.

6.10.4.7 Through development applications, the incorporation of security fencing to prevent trespassing on the railway right-of-way may be required.