

RECOMMENDED DIRECTIONS REPORT
ENVIRONMENTAL POLICY REVIEW
FOR THE TOWN OF RICHMOND HILL

Prepared for:

Town of Richmond Hill

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EXECUTIVE SUMMARY

The Town of Richmond Hill is currently developing a new Official Plan. In proceeding with the development of the new Official Plan a series of background studies are being conducted. This report forms part of a complete review of Richmond Hill's Environmental Policy and in particular provides recommended directions for Environmental Policy in Richmond Hill.

The Environmental Policy Review has been conducted over the past year through examination of new and existing information, legislation, and policy, and through new research and consultations with Council, residents, stakeholders, and Town staff. Consultation events included the Environmental Policy Review Roundtable held in March 2009, the Environmental Policy Review Open House held in April 2009, and the Official Plan Summit held in May 2009. Through the consultation events, the Richmond Hill community has expressed great support for the adoption of strong environmental policies. The community has consistently advocated a continued "environment first approach" for protection of the natural environment through numerous public meetings, workshops and roundtable sessions as part of the *People Plan* and Official Plan process.

The Environmental Policy Discussion Paper, prepared in January 2009, introduced the Environmental Policy Review and major aspects of the review such as the Greenway System and sustainable development techniques. The purpose of this paper was to prompt and guide the consultation process. In February 2009, a series of OP Guiding Principles were approved by Council to provide clear guidance and direction for the planning policies in the new Official Plan. The core directions for these principles included complete communities, environment, economy, place-making, connectivity and mobility.

The Environmental Policy Review Background Report completed in April 2009 provided research, policy gap analysis, environmental mapping, options and recommendations to achieve long-term protection and enhancement of the features and functions of the Town's urbanizing landscape. In addition, this study identifies sustainable development practices that can be implemented in the new Official Plan.

In July 2009, the Recommended Urban Structure was endorsed by Council to help visualize the physical make-up of the Town over the long-term planning horizon.

Consideration of the overall agency and Town strategic directions have resulted in the development of a primary goal and supporting objectives for the Official Plan's Environmental Policy. These statements have been designed to strategically position the Town's environmental policies to focus on meeting the expectations of stakeholder feedback heard through the *People Plan* process, applying the knowledge of Richmond Hill's current environmental features and health, and implementing Provincial and Regional policy directions. The recommended environmental goal and objectives for the Town's Official Plan are:

Goal: To position the Town as a leader in environmental protection and management by protecting, enhancing, restoring and actively managing the environment through the process of urbanization.

- Objective No 1- Restoration of natural features and functions will be undertaken to improve the existing features within a comprehensive Greenway System for the Town, and enhanced through opportunities to expand and connect natural features and functions and through the use of sustainable development techniques in the settlement area.
- Objective No 2- The Town's Greenway System will become a healthy, well-connected system of core and linkage natural areas where connectivity continues to be enhanced over time by securement of additional linkages through the development process and through stewardship initiatives .
- Objective No. 3- The Town will proactively protect groundwater features and functions including supporting and maintaining natural features through implementation measures that increase, the infiltration of water into the ground, thereby recharging aquifers and improving baseflow to surface water features and through the use of Low Impact Development techniques. These measures will be implemented without negatively impacting upon natural features and functions.

To work towards the recommended Official Plan Environmental Policy Goal and Objectives that respond to stakeholder input, Regional and Provincial directions and the characteristics and health of the current Town environment, the Town should adopt a holistic environmental policy approach. Such an approach will integrate these directions and knowledge with current environmental planning knowledge.

The Town's holistic environmental policy approach will be represented through development of a Town-wide Greenway System that views the Town comprehensively to protect and enhance its natural and built environments through use of a more established natural heritage system approach and through application of currently evolving sustainable development techniques. The Greenway System is the overarching framework for the Town's new environmental policies. This system is envisioned to include all of the features throughout the Town that must be protected under Provincial/Regional policy (such as Species at Risk, ORMCP designations, protection of Lake Simcoe watershed health) along with linkages between these features within and beyond the Town and with abutting stormwater management ponds, parks and other public lands within settlement and rural (or countryside) areas both on and off the ORM. The Greenway System will also compensate for features and functions required for maintenance of healthy water management and landform conservation systems. Sustainable development practices employed throughout the Town will contribute to the System's overall health and support sustainable development policies being implemented at a regional, provincial and national level.

The Greenway System is a framework designed to provide for the protection of and where possible the improvement of the overall health of the natural environment. It provides policy direction on how the natural environment will be protected or improved through the identification and protection of a natural heritage system designed to maintain and improve the size, diversity, connectivity and resilience of the Town's natural areas, and their associated functions and processes. Also, through the use of a variety of naturalization and sustainability techniques the system protects and improves natural attributes such as clean water, clean air and improved microclimate throughout the entire Town. The Greenway System also provides policy direction for providing greater connectivity of natural areas and the associated values within and between built up areas and open space areas of the Town as well as to natural areas in adjacent municipalities.

The elements of the Greenway System are addressed in fourteen distinct yet inter-related components, categorized under three subject areas, as follows:

a) Drivers for the Greenway System, including:

- **Oak Ridges Moraine Conservation Plan** – policy directions and terminology in the ORMCP, as already adopted by the Town through OPA 218, will inform overall development of the Town's Greenway System;
- **The Lake Simcoe Protection Plan Area** – policy directions from the 2009 Plan require protection, improvement or restoration of features that contribute to the ecological health of the Lake Simcoe Watershed.

b) Greenway System components that are Town-wide, including:

- **Ecological Restoration Areas** – areas that have the ability to increase the size, connectivity, health, and resilience of the Greenway System;
- **Species at Risk** – species at risk as identified in the provincial Endangered Species Act or the Federal Species at Risk Act;
- **Ecological Connections to Other Municipalities** - ecological connections between natural areas in the Town and in the adjacent jurisdictions;
- **Water Resources Management System** – Abundance and quality of both surface and groundwater water supplies;
- **Landform Conservation System**- Unique and significant landform features that help define the character of the Town and contribute to the maintenance of essential ecological processes;
- **Tree Protection, and Soil Erosion and Sedimentation Control** - across the entire Town;

- **Sustainable Development Practices** – to increase the amount and quality of vegetation cover, reduce the consumption of natural resources such as energy and water, and reduce waste generation through planning, design, construction, and land management practices;

c) Greenway System components that are specific to land use policies, including:

- **Natural Core Areas** – Areas designated in the Official Plan for the protection and where possible improvement of the size, connectivity, diversity and resilience of natural areas;
- **Natural Linkage Areas-** Areas designated in the Official Plan for the protection and where possible improvement of areas that serve as passageways for the movement of species throughout the Town and between areas identified as Natural Core Areas. This includes stream, lakes and their associated aquatic habitat;
- **Oak Ridges Moraine Countryside Area** – areas designated in the Official Plan for the protection of Open Space lands in the ORM that, through the maintenance of open field habitats and landscapes, support wildlife habitat located in the Natural Core Areas and Natural Linkage Areas of the ORM;
- **Protected Countryside Areas in the Greenbelt Plan-** Areas located in the Natural Heritage System Areas of the Greenbelt Plan within Richmond Hill set aside to maintain and improve the size, connectivity, diversity and resilience of natural areas located in this part of the Town.
- **Key Natural Heritage Features in the Settlement Areas**—Natural areas in the urban envelope where the urban land uses come in contact with the natural areas, features and attributes

Implementation of the recommended holistic environmental policy approach will be largely achieved through the land use planning and development process as prescribed under the Planning Act and the Condominium Act including Official Plan amendments, zoning by-law amendments, subdivision plans, condominium plans, site plans and consents.

A number of available implementation tools have been identified to supplement those of the land use planning process to assist the Town in achieving the objectives of the recommended holistic environmental policy approach outlined in this report. These include:

- a. Policy; examples include:
 - Adoption of the new OP
 - Developing a comprehensive zoning by-law
 - Reviewing the Town’s Sustainable Construction Policy
 - Amendment of the Tree Preservation By-law and the Site Alteration By-law

- b. Supporting studies including:
 - Parks and Municipal Facilities Management Program
 - Municipal Stewardship Programs
- c. Development of guidelines for implementation of environmental policies
- d. Capital projects
- e. Enhancements to Town's Operating Procedures including working with other government organizations and stakeholder groups, as well as inclusion of a monitoring system
- f. Governance through incentives such as:
 - Increased development either onsite or on other properties owned by the developer;
 - Reduced development application and permit fees; and
 - Reduced taxes during the period of project development and approval.

In the development of the implementation section of the new Official Plan, the Town should identify the full range of implementation tools that can be used to implement the recommended holistic environmental policy approach.

The recommended holistic environmental policy approach helps to demonstrate that the Natural Environment is a distinct and essential element in the overall framework for growth and land use change within Richmond Hill.

DEFINITIONS*

Ecological Integrity

Includes hydrological integrity and means the condition of the ecosystem in which,

- (a) The structure, composition and function of the ecosystem is unimpaired by stresses from human activity,
- (b) Natural ecological processes are intact and self sustaining, and
- (c) The ecosystem evolves naturally

Enhancement

Involves modification of a site that has been degraded in some way, to improve the quality of habitat for plants and animals and/or to improve natural functions of the area (i.e. increasing base flow in a stream, increasing water and nutrient retention of soils)

Hydrological Integrity

Means the conditions of ecosystems in which hydrological features and hydrological functions are unimpaired by stresses from human activity

Hydrologically Sensitive Features

Areas that contain significant and/or sensitive hydrological features and functions that are critical to the maintenance and/or improvement of the hydrological integrity of the area. They include permanent and intermittent streams and kettle lakes and their associated riparian lands, springs and seepage areas.

Improvement

Any change in land use or cover that improves the ecological or hydrological integrity of the area including increasing the size, connectivity and diversity of native plants and animals and resilience in the natural areas in or outside the Town.

Key Natural Heritage Features

Areas that contain significant and/or sensitive natural features or functions that are critical to the maintenance of the diversity, health and resilience of the Town's natural heritage. These areas shall include:

- All wetlands identified in the Oak Ridges Moraine Conservation Plan and the Greenbelt Plan;

* The recommended definitions are consistent with Provincial/Regional planning policies and in some cases provide improved protections/enhancements to the environment based on the Town's existing environmental definitions and what we heard through the *People Plan* process.

- All woodlands 2 hectares or larger in size within the Oak Ridges Moraine and the Greenbelt;
- All significant woodlands as identified by the Ministry of Natural Resources or the Conservation Authorities;
- All woodlands identified as Regionally Significant by the Regional Municipality of York;
- All Life Science-Areas of Natural and Scientific Interest;
- Significant habitat of endangered species, threatened species and special concern species;
- Significant valleylands;
- All Environmentally Sensitive Area as identified by the Conservation Authorities; and
- All Kettle Lakes and their associated riparian lands.

Major Development

Means development consisting of,

- a) the creation of four or more lots
- b) the construction of a building or buildings with ground floor area of 500 m² or more, or,
- c) the establishment of a major recreational use requiring large-scale modification of terrain, vegetation or both, including but not limited to a golf course, serviced playing field, serviced campground and ski hills.

Low Intensity Recreation Uses

Recreational uses that require minimal disruption to the surface area and few if any buildings and structures and have minimal effect on the ecological and/or hydrological integrity of an area. They include uses such as non-motorized trail use, nature appreciation, orienteering and accessory uses such as signage, parking, washrooms, fencing and interpretive facilities.

Natural Areas

Any land surface occupied by self-sustaining vegetative cover including woodlands, wetlands, meadows and hedgerows.

Naturalization

The return of self-sustaining natural vegetative cover to a land area.

Negative impacts

As defined in the Provincial Policy Statement 2005

Restoration

The return of a land surface to a condition that would have existed prior to being converted to urban or rural land uses by humans.

Riparian Lands

Lands next to a water body such as flood-prone lands, valley bottoms and valley walls, or any lands accommodating plant species adapted to high water tables occurring next to lakes and streams

Species at Risk

Any plant or animal identified through the provincial Endangered Species Act or the federal Species at Risk Act as being rare, threatened, endangered or vulnerable.

Stream Corridor

A permanent or intermittent stream and its associated riparian lands, which include:

- Streams (both permanent and intermittent) and associated riparian lands including flood plains and valley slopes, defined to the top of valley slope by the Conservation Authority,
- Lands measured 30 metres outward from the meander belt of streams.

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1. INTRODUCTION

1.1 BACKGROUND

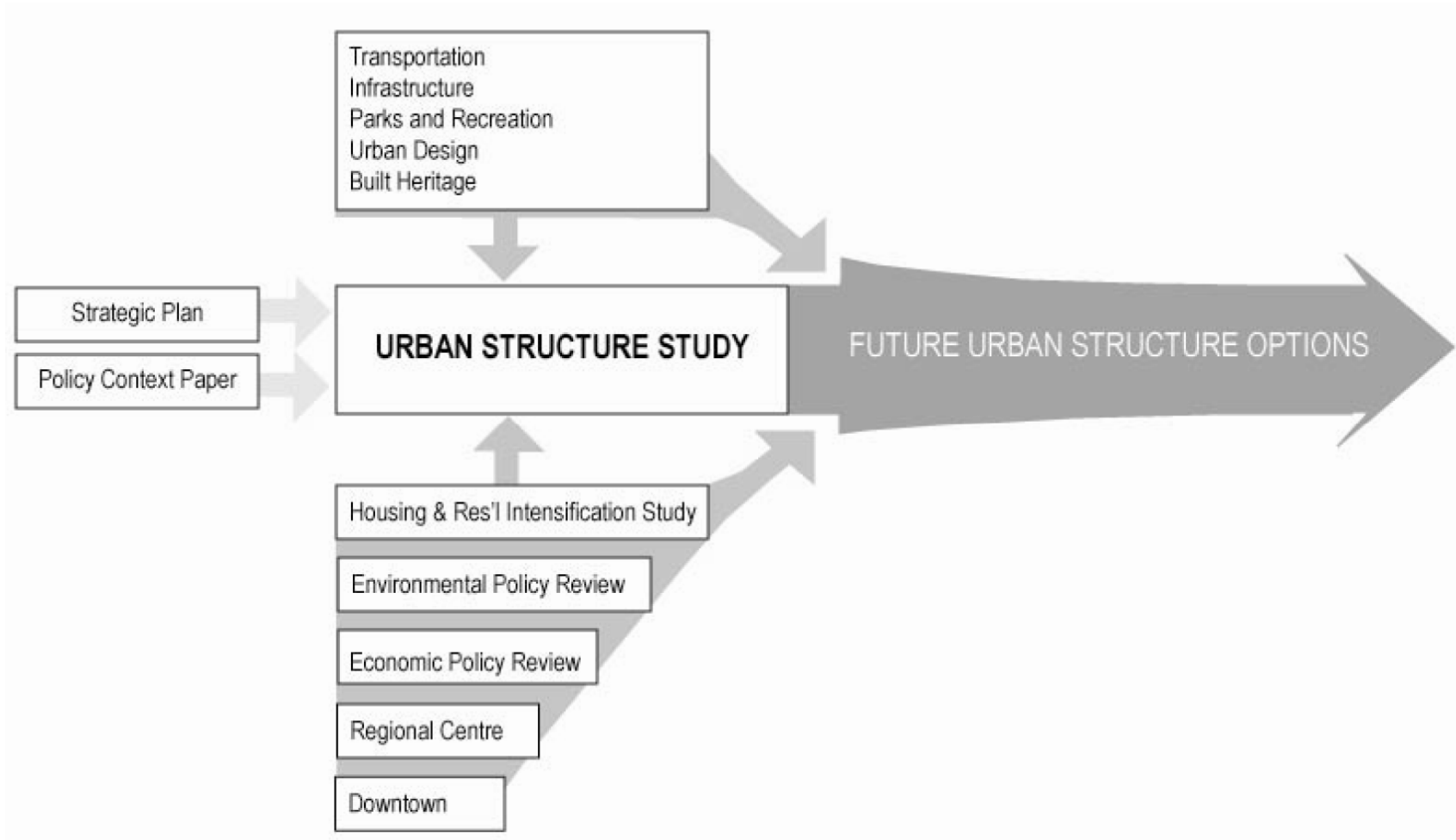
The Town of Richmond Hill (Town) is in the process of developing a new Official Plan. This process will bring the Town's land use policies up to date through:

- Incorporation of new federal, provincial and regional policy and regulatory directions;
- Integration of emerging trends and approaches in environmental planning including identification and protection of Greenway Systems and promotion of sustainability of natural and built environments;
- Accommodation of major new growth in a way that contributes to the environmental, economic and social health of the community; and
- Addressing the needs and aspirations of the community as expressed through a series of public consultation programs.

As part of this process, a series of background studies are being conducted. The Environmental Policy Review is one of these background studies, which provides research, updated mapping, policy review, options and recommendations on environmental protection, as well as innovative ideas on sustainable techniques for new development and redevelopment within the context of the Town's urbanizing landscape.

As shown in Figure 1-1, the environment was examined as one of the background studies contributing to development of the Town's new Official Plan.

FIGURE 1-1 MAJOR COMPONENTS FOR THE DEVELOPMENT OF THE NEW OFFICIAL PLAN



Reference: Town of Richmond Hill (2008)

1.2 WORK TO DATE

SENES completed the Environmental Policy Review over the past year through an examination of new and existing information, legislation, and policy, and through research and consultations with Town staff and residents.

Specifically, the Review is based on an assessment of:

- The Town of Richmond Hill's environmental policies within the existing Official Plan, secondary plans and other Town Policies and By-Laws;
- New information collected on significant and sensitive natural areas, features and functions within the Town of Richmond Hill
- Relevant environmental policy directions from Federal, Provincial, Regional and Conservation Authority legislation, plans and policies, and
- Relevant literature and case studies of sustainability initiatives developed and tested in other jurisdictions around the world.

The *Environmental Policy Review Background Report*, prepared by SENES in April 2009, presents the detailed findings of this investigation.

1.3 CONSULTATION

With Town Staff, SENES has undertaken various consultations to inform key stages of this Environmental Policy Review. Consultation events included the Environmental Policy Review Roundtable held in March 2009, Environmental Policy Review Open House held in April 2009, and the Official Plan Summit held in May 2009.

Through the consultation events, the Richmond Hill community has expressed great support for the adoption of strong environmental policies. The community has consistently advocated the importance of the environment in numerous public meetings, workshops and roundtable sessions as part of the *People Plan* and Official Plan process. The Discussion Paper, prepared in January 2009, introduced the Environmental Policy Review and major aspects of the review such as the Greenway system and waste and energy use reduction strategies.

A particularly relevant and focused session occurred on March 31, 2009 when an Environmental Roundtable was held with environmental stakeholders within the community including interested government agencies. This session confirmed strong support for the Town's proposal to adopt a system-based approach to environmental management that emphasized protection and enhancement of essential natural features and functions located throughout the community. Some of the key points made by the group included the following:

- Strong support for a natural systems based approach to environmental protection and enhancement;
- Need to value and protect the key natural heritage features within the built up areas of the Town as part of the Greenway System;
- Need for strong urban forestry policies;
- Need to make a linkage between the environmental objectives of the Plan and their contribution to addressing climate change concerns;
- Need to make environmental protection a key part of the Town's Park and Open Space policies especially as it relates to the location, design and maintenance of trails;
- Need to maintain natural system connectivity with natural areas within the Town and in adjacent municipalities;
- Need to recognize the connection between floodplain management and environmental protection;
- Need to recognize the important contribution that can be made by stormwater management ponds to natural diversity and health provided that the stormwater management function is maintained;
- Need to emphasize the importance of public education as an important component of environmental management;
- Need to ensure that water management policies reflect the latest approaches and terminology being developed by the Conservation Authorities;
- Need to recognize the important ecological role being played by the open space areas in the Town especially in the Oak Ridges Moraine area;
- Need to include strong policies for protecting species at risk; and
- Need to recognize that urban intensification, as addressed through other components of the Official Plan, can also contribute significantly to a healthy environment.

Another important source of public feedback occurred on May 28, 2009 at the Richmond Hill Official Plan Summit: Multi-Stakeholder and Public Workshop. At this session, participants provided feedback on the holistic environmental policy approach recommended in this report (including the Greenway System, water resource management, landform conservation management, and sustainable development techniques). Participants were generally supportive of the approach and provided comments that sought to build on the recommended approach outlined in this report.

Key suggestions include:

- Need to establish a stronger connection between the natural environment and the community. Trail design that provides public access to natural areas that also protects against natural area degradation was noted as a necessary part of improving these connections;
- Monitoring is needed as an important part of the overall planning process;
- Need for strong stewardship programs to educate the public and help them pursue environmental protection and enhancement on their own. Measures to employ include recognition awards, signage in park areas, financial support for tree planting and disconnection downspouts from stormwater systems;
- Need to pursue opportunities to achieve greater naturalization in stormwater pond design
- Make green roofs and biowalls mandatory,
- Need closer ties with the Conservation Authorities,
- Protect the David Dunlap Observatory lands for their natural values; and
- Recommended sustainable development practices.

1.4 PURPOSE

This report is submitted to the Town of Richmond Hill to recommend direction on how to update the environmental policies of the Official Plan including recommendations for further studies, guidelines, by-laws, partnerships, and use of other such tools for the implementation of the recommended direction. The recommendations follow from the need for the new Official Plan to:

- Incorporate relevant Federal, Provincial, Regional and Conservation Authority legislation, plans and policies;
- Consolidate and update environmental policies into a comprehensive, standardized and organized format; and
- Recommend current and upcoming environmentally sustainable development practices.

2. POLICY REVIEW

This section provides an overview of the results of the Environmental Policy Review establishing the basis for the set of recommendations presented in this report. This review has followed the top-down, bottom-up approach the Town has employed for their integrated OP review process, compiling Provincial and Regional environmental direction (from the top-down) with community input and technical expertise, from the bottom-up.

2.1 EXISTING CONTEXT

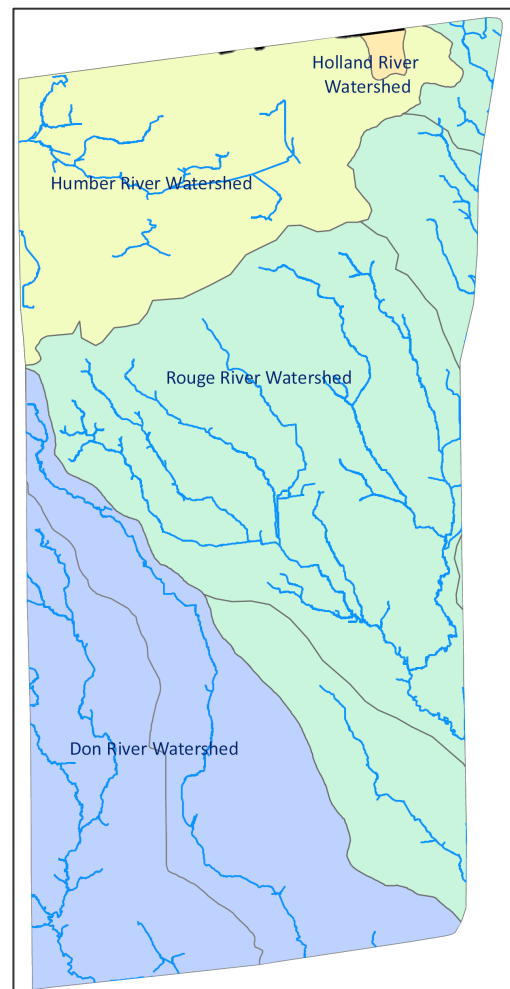
The Town is in a unique position within York Region. The Town is the first municipality in the region that is transforming into a mature, urban landscape in which large open space areas are no longer available to accommodate future growth. With an existing population of about 180,000 the Town will be expected, under the provisions of the *Greater Golden Horseshoe Growth Plan*, to grow to a community of 243,000 people by 2031.

This demand will be accommodated largely within the Town's existing built up area, requiring the establishment of higher levels of urban density in some parts of the Town.

Coupled with this growth pressure is the expectation of Town residents that existing natural ecosystems be protected and enhanced or restored and that efforts to increase the quality of air, water and land resources should occur. Meeting these land base requirements will present the Town with some interesting challenges over the next several decades. The policy direction in this paper is designed to position the Town as a leader in environmental protection and management by formulating a holistic and proactive environmental policy approach that will increasingly strengthen and enhance the health of the community's natural environment over time.

Notwithstanding its largely urban nature, the Town boasts many healthy natural areas such as:

- Large concentrations of forest cover, wetlands and healthy headwater streams and recharge areas located in the Oak Ridges Moraine in the northern half of the Town; and



- Four stream systems, including those of the Don, Humber, Rouge and East Holland Rivers, each with several well-developed valley land systems. These run mainly from north to south through the Town.

It will be possible through the adoption of the policy direction provided in the balance of this report to pursue the goals of creating a vibrant urban community while at the same time protecting and in many areas enhancing the size, diversity, connectivity and resilience of the natural environment as well as generally improving the overall health of the natural environment and proportion of natural cover within the Town.

2.2 CURRENT PLANNING CONTEXT FOR THE TOWN OF RICHMOND HILL

There are existing policies, information and program experiences that the Town of Richmond Hill can draw upon for development of an effective and comprehensive approach to environmental protection and management. These include:

1. **Provincial and Regional Policy Directions** provided through the Provincial Policy Statement, the Greenbelt Plan, the Oak Ridge Moraine Conservation Plan and the Regional Municipality of York Official Plan provides a strong enabling policy basis on which to establish a comprehensive Greenway System, a holistic water management strategy, a landform conservation system and sustainable development practices (as proposed in the draft Regional Official Plan).
2. **Databases and Technical Guidelines** provided by the Ministry of Natural Resources, the Ministry of the Environment the Regional Municipality of York and the Conservation Authorities have been particularly useful to identify natural heritage, hydrological and landform conservation features and functions.
3. **Water Management Strategies** such as watershed plans and groundwater studies being developed by the Conservation Authorities with the support of York Region and the Town were especially useful in characterizing and addressing long term water management needs for the Town.
4. **Town Policies** in the existing Official Plan and secondary plans provide a strong basis upon which to develop a holistic environmental policy approach. Many of the existing natural areas in the municipality are already designated for environmental protection. These areas can easily be integrated into a larger connected greenway system across the entire Town. Secondary plans such as OPA #129 (North-Urban), OPA #138 (Jefferson Planning District), OPA # 218 (Oak Ridges Moraine Plan) and the proposed North Leslie Secondary Plan contain a strong policy precedence and basis for implementation of a broader greenway system across the entire Town and for development of leading edge stormwater management practices.

- 5. An Abundance of Environmental Tools** to implement sustainable development initiatives exist. Due to the global interest and support for governments and society to take stronger action in environmental protection and sustainable development, a large body of literature and case studies on the implementation of sustainability initiatives have become available over the past ten to twenty years. The Town can draw upon this accumulated knowledge to find solutions that fit their natural, built and community systems.

3. RECOMMENDED DIRECTION, GOAL AND OBJECTIVES

3.1 DIRECTIONS

The directions articulated in policy, legislation and guidance materials from the Federal, Provincial and Regional levels, direction established in the current Official Plan and Secondary Plans, and the input received during the public consultation process are summarized into three overall directions that inform the Town's development of environmental policies for the Official Plan, as follows:

1- What the Town must do:

Incorporate and comply with Provincial and Regional directions, and applicable federal directions, through development of Official Plan policies that:

- a.** Protect all significant natural areas, features and functions that are identified through policies and studies conducted by federal/provincial/regional agencies;
- b.** Comply with and meet the intent of all relevant federal, provincial and regional legislation, regulations and policies in the areas of natural heritage, resource management, water management, landform management, species at risk and community sustainability; and,
- c.** Ensure that the more restrictive environmental policies apply.

2- What the Town should continue to do:

- a.** Maintain the strong and evolving environmental directions of the current Official Plan policies and other Town policies and programs in the protection of natural areas on the Oak Ridges Moraine, securement of conservation lands, management of landform and water resources, implementation of best practices, integration of Greenbelt Plan policies, and fostering of partnership and stewardship initiative opportunities with others.
- b.** Engage the public and other stakeholders in collaborative, ongoing management of the natural environment

3- Where the Town has direction to go/provide leadership

The Town can enhance its existing suite of environmental policies and programs by implementing the following directions that have developed through the Town's People Plan process, the resulting new Strategic Plan and current scientific knowledge:

- a.** Adopt an environmental approach that protects natural areas, features and functions in a holistic and comprehensive Town-wide manner;

- b.** Integrate and connect the natural areas of the community with the urban and open space areas of the Town so that natural areas are viewed as an integral part of the overall community. This can be accomplished by such measures as naturalization of roadsides, yards, storm water management ponds and open spaces to create a fully linked system and community education on the resulting system's natural functions;
- c.** Actively improve the health of the natural environment and its associated natural areas, features and functions; and
- d.** Employ new, innovative approaches for management and enhancement of the natural environment and for the promotion of sustainability.

3.2 GUIDING PRINCIPLES

The *People Plan* process identified a vision, strategic goals and guiding principles that will also guide refinement of the Town's Official Plan environmental policies. The Town is envisioned as a place where people come together to build our community. This vision will be achieved through four goals of:

- a.** Stronger Connections, including natural corridors and greenspace,
- b.** Better Choice,
- c.** A More Vibrant Richmond Hill, and
- d.** Wise Management of Resources (less waste of all resources and leadership in environmental and resource management).

There are ten guiding principles for the Official Plan within the themes of Complete Communities, Environment, Economy, Place-making and Connectivity and Mobility. The full set of principles will guide all policies, including environment, within the Plan. The principles adopted by Council in early 2009 are:

Complete Communities

- Create an integrated, vibrant and diverse community that provides a mix of land uses, including a balance of housing, employment, community services, parks and open spaces;
- Direct growth to built-up urban areas with existing infrastructure and services in a network of centres and corridors;

Environment

- Protect and enhance natural environmental systems, functions and resources over the long term;
- Incorporate and promote sustainable development practices and initiatives;

Economy

- Promote economic vitality and provide for a balanced and diverse range of employment opportunities;
- Protect employment areas over the long term;

Place-Making

- Recognize and enhance the inherent and unique aspects of Richmond Hill and create focal points, gateways, experiences and landmarks;
- Strive for design excellence in the public and private realm;

Connectivity and Mobility

- Plan for transit and pedestrian oriented development;
- Promote connectivity, mobility and accessibility within and between neighbourhoods, employment areas, parks and open spaces.

3.3 GOAL AND OBJECTIVES

Consideration of the overall agency and Town strategic directions have resulted in the development of a primary goal and supporting objectives for the Official Plan's Environmental Policy. These statements have been designed to strategically position the Official Plan's environmental policies to focus on meeting the expectations of stakeholder feedback heard through the People Plan process, applying the knowledge of Richmond Hill's current environmental features and health and implementing Provincial and Regional policy directions. The recommended environmental goal and objectives for the Town's Official Plan are:

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improving baseflow to surface water features and through the use of Low Impact Development techniques. These measures will be implemented without negatively impacting upon natural features and functions.

4. BUILDING A HOLISTIC ENVIRONMENTAL POLICY APPROACH

To work towards the recommended Official Plan Environmental Policy Goal and Objectives that respond to stakeholder input, Regional and Provincial directions and the characteristics and health of the current Town environment, the Town should adopt a holistic environmental policy approach. Such an approach will integrate these directions and knowledge with current environmental planning knowledge.

The Town's holistic environmental policy approach will be represented through development of a Town-wide Greenway System that views the Town comprehensively to protect and enhance its natural and built environments through use of a more established natural heritage system approach and through application of currently evolving sustainable development techniques. The Greenway System is the overarching framework for the Town's new environmental policies. This system is envisioned to include all of the features throughout the Town that must be protected under Provincial/Regional policy (such as Species at Risk, ORMCP designations, protection of Lake Simcoe watershed health) along with linkages between these features within and beyond the Town and with abutting stormwater management ponds, parks and other public lands within settlement and rural (or countryside) areas both on and off the ORM. The Greenway System will also compensate for features and functions required for maintenance of healthy water management and landform conservation systems. Sustainable development practices employed throughout the Town will contribute to the System's overall health and support sustainable development policies being implemented at a regional, provincial and national level.

4.1 ESTABLISHING A GREENWAY SYSTEM

The Greenway System is a framework designed to provide for the protection of and where possible the improvement of the overall health of the natural environment. It provides policy direction on how the natural environment will be protected or improved through the identification and protection of a natural heritage system designed to maintain and improve the size, diversity, connectivity and resilience of the Town's natural areas, and their associated functions and processes. Also, through the use of a variety of naturalization and sustainability techniques the system protects and improves natural attributes such as clean water, clean air and improved microclimate throughout the entire Town. The Greenway system also provides policy direction for providing greater connectivity of natural areas and the associated values within and between built up areas and open space areas of the Town as well as to natural areas in adjacent municipalities.

The following points illustrate the characteristics of the proposed holistic Greenway System for the Town. The Greenway System:

- Is comprehensive, dealing with all parts of the Town and all natural areas, features and functions contained therein;
- Identifies three large systems: the Natural Core Areas, the Natural Linkage Areas and the Protected Countryside Areas. Protection and, where possible, enhancement of natural areas, features, functions, and processes are the prime objectives for these areas;
- Provides a policy framework for other Town policies to support the long term sustainability of natural area systems;
- Recognizes the relationship of natural areas throughout the Town and in abutting municipalities and the larger Region as a connected and interrelated whole and not individual or isolated patches of green;
- Recognizes that settlement areas are a part of the Greenway System and addresses how built up areas can contribute to maintaining and where possible improving the overall health, diversity, connectivity and resilience of natural areas;
- Integrates as appropriate the relevant portions of applicable federal, provincial, regional and conservation authority legislation, regulation and policy;
- Considers and integrates all ecosystem based approaches developed by the Region, Conservation Authority and Province, including the Watershed planning system, the Regional Greenlands System and the Conservation Authorities Terrestrial Natural Heritage System.

The Greenway System approach demonstrates that the Natural Environment is a distinct and essential element in the overall framework for growth and land use change within the municipality.

4.2 COMPONENTS OF THE TOWN'S GREENWAY SYSTEM

The elements of the Greenway System have been identified as fourteen distinct yet inter-related components. These components are organized into three categories:

- 1** Components that are driving the development of the Greenway System,
- 2** Components that are Town-wide, and
- 3** Components that result in specific land-use policies.

It is recommended that all 14 components appear as separate subsections in one section of the Official Plan dedicated to the Natural Environment.

The categories and their respective components are:

Components that are driving the development of the Greenway System

- 1 The Oak Ridges Moraine Conservation Plan Area** – policy directions and terminology from the ORMCP, as already adopted by the Town through OPA 218 in 2006, will inform overall development of the Town’s Greenway System;
- 2 The Lake Simcoe Protection Plan Area** – policy directions from the 2009 Plan require protection, improvement or restoration of features that contribute to the ecological health of the Lake Simcoe watershed;

Components that are Town-Wide

- 3 Ecological Restoration Areas** –areas that have the ability to increase the size, connectivity, health, and resilience of the Greenway System;
- 4 Species at Risk** –species at risk as identified in the provincial Endangered Species Act or the federal Species at Risk Act;
- 5 Ecological Connections to Other Municipalities** -ecological connections between natural areas in the Town and in the adjacent jurisdictions;
- 6 Water Resources Management System** –abundance and quality of both surface and groundwater water supplies;
- 7 Landform Conservation Policies** –unique and significant landform features that help define the character of the Town and contribute to the maintenance of essential ecological processes;
- 8 Tree Protection, and Soil Erosion and Sedimentation Control** –across the entire town;
- 9 Sustainable Development Practices** –to increase the amount and quality of vegetation cover, reduce the consumption of natural resources such as energy and water, and reduce waste generation through planning, design, construction, and land management practices;

Components that result in specific land-use policies:

- 10 Natural Core Areas** –areas designated in the Official Plan for the protection and where possible improvement of the size, connectivity, diversity and resilience of natural areas;
- 11 Natural Linkage Areas** –areas designated in the Official Plan for the protection and where possible improvement of areas that serve as passageways for the movement of species throughout the Town and between areas identified as Natural Core Areas. This includes streams and their associated aquatic habitat;
- 12 Oak Ridges Moraine Countryside Areas** –areas designated in the Official Plan for the protection of Open Space lands in the Oak Ridges Moraine that, through the maintenance of open field habitats and landscapes, support wildlife habitat located in the Natural Core Areas and Natural Linkage Areas of the Oak Ridges Moraine;

13 Protected Countryside Areas in the Greenbelt Plan –areas located in the Natural Heritage System Areas of the Greenbelt Plan within the Town of Richmond Hill sit aside to maintain and improve the size, connectivity, diversity and resilience of natural areas located in this part of the Town;

14 Natural Areas in Settlement Areas –natural areas in the urban envelope where the urban land uses come in contact with the natural areas, features and attributes.

Detailed recommended policies for relevant Greenway System components are presented in Appendix A.

4.2.1 Drivers for the Greenway System

Current Regional, Provincial and Federal policies are providing the main impetus for establishment of a comprehensive Greenway System for the Town. The primary drivers are greenway system/ecosystem management based policies of the Oak Ridges Moraine Conservation Plan and the Lake Simcoe Protection Plan. These are described in the following sections.

4.2.1.1 The Oak Ridges Moraine Conservation Plan Area

As described above, the Town's Official Plan must comply with the ORMCP. Section 9(2) of the Oak Ridges Moraine Conservation Act requires that the Town's Official Plan be amended to bring it into compliance with the policies of the Oak Ridges Moraine Conservation Plan. This was done through the adoption and approval of Amendment No. 218 on March 9, 2006.

The regulatory nature of the ORMCP and the recent adoption and approval of Amendment 218 provides the direction for the Town to incorporate these compliance policies into the new Official Plan with relative ease. Integration of these policies into the appropriate policy sections throughout the new Official Plan would be unnecessarily complex and painstaking. Rather, the simplest and recommended approach would be to:

- 1 Carry forward the ORCMP policies from OPA 218 in their entirety directly into a separate sub-section in the Natural Environment Section of the new Official Plan for the Oak Ridges Moraine Conservation Plan (ORMCP); and
- 2 Add a policy recognizing:
 - that other portions of the Official Plan have policies that apply to all or portions of the Oak Ridges Moraine; and,
 - that these policies comply with the ORMCP, are more restrictive than the policies of the ORMCP and/or deal with subject matter not addressed through the ORMCP; this policy should also specify that the more restrictive policy section would prevail in the event of a conflict in policy between this ORMCP section

and any other section of the Official Plan, in adherence with direction from the *Growth Plan*.

The above recommended approach would meet the compliance tests of the Province with respect to the ORMCP and would provide a mechanism for resolving potential conflicts between the new ORMCP section and other parts of the Official Plan.

4.2.1.2 The Lake Simcoe Protection Plan Area

The Lake Simcoe Protection Plan was adopted in 2009 to protect, improve or restore the elements that contribute to the ecological health of the Lake Simcoe watershed including water quality, hydrological features, and their functions.

In the development of its Natural Environment Policy, the Town should acknowledge the need to reflect the intent of the Plan and its policies and have regard to the direction therein when appropriate. In a practical sense, there should be no difficulty meeting the requirements of the Lake Simcoe Protection Plan given that only a small area of the Lake Simcoe Watershed falls within the Town, and given that those areas located in the Oak Ridges Moraine Conservation Plan already receive a high level of environmental protection.

4.2.2 Greenway System Components that are Town-wide

4.2.2.1 Ecological Restoration Areas

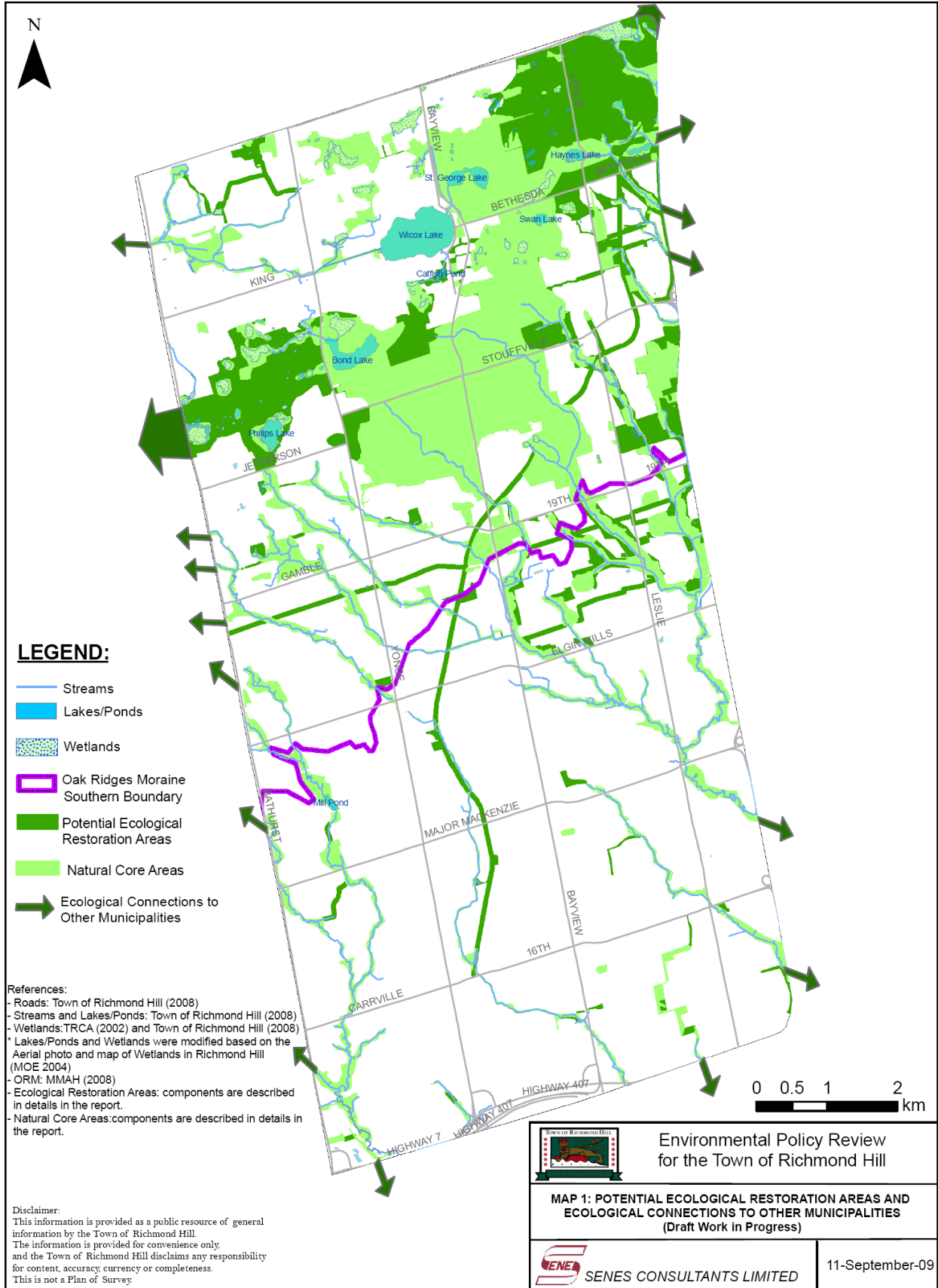
Some potential Ecological Restoration Areas have been identified within Natural Core, Natural Linkage, Countryside and Protected Countryside Areas and have been mapped as a starting point for the Town on Map 1. It is anticipated that there are many more areas located throughout the Town where the potential exists to improve the size, diversity, connectivity and resilience of natural areas through ecological restoration works. Areas having particularly high potential in this regard include:

- Areas that could be restored to round out irregularly shaped Key Natural Heritage Features in order to reduce the length of interface between natural areas and adjacent lands;
- Lands that could provide natural connections between two adjacent Key Natural Heritage Features, Natural Core Areas or Natural Linkage Areas located less than 240 metres from one another; and
- Areas that could be used to widen undersized natural corridor widths to enhance their usefulness as movement corridors for plants and animals.

The Town should include policies in the Official plan expressing its intent to pursue opportunities wherever they present themselves including situations such as:

- Working with landowners through land stewardship projects.

- Identifying and implementing restoration opportunities as part of the development of management plans for Town owned lands especially lands set aside for open space uses,
- Identifying and encouraging restoration opportunities as part of the development of management plans for lands owned and managed by other public agencies especially lands set aside for open space uses, and
- Seeking opportunities to promote restoration as part of the planning, design and management of major development proposals.



4.2.2.2 *Species at Risk Act*

A number of plant and animal species have been identified through the Provincial Endangered Species Act and the federal Species at Risk Act as being rare, vulnerable, threatened, endangered or at risk. Due to their sensitive nature, the location of these species and their associated habitat cannot be identified on the Land Use Schedule of the Official Plan. Notwithstanding this, these species and their habitat need to be protected from the potential negative impacts of land use change.

To meet this requirement, all applications for land use change or development need to be assessed to determine if the proposed facilities or development changes are located within or will impact upon identified species at risk, and that appropriate mitigation measures are undertaken to protect the habitat integrity.

Supporting policies to this effect should be included as a separate subsection in the Natural Environment Section of the Official Plan.

Sample wording for such policies is provided in Appendix A.

4.2.2.3 *Ecological Connections to Other Municipalities*

The Greenway System as defined by the Town is part of a larger Regional Greenway System that consists of the entire Oak Ridges Moraine and the waterways located within the 4 major watershed systems falling within Town boundaries.

The Town needs to acknowledge that the continuing health of the Greenway System depends in part on its ability to maintain and enhance the connectivity of this System with natural areas in adjacent municipalities. In this regard, the Town will need to work closely with York Region, adjacent municipalities and Conservation Authorities to ensure that both the major east-west connection along the Oak Ridges Moraine and the continuity of natural corridor functions along major stream courses are maintained and where possible enhanced. The lands set aside for long-term protection as open space areas in all components of the Greenway System components of this section (i.e. those with specific land use policies) include all the lands that have been identified as part of the Regional Greenway System in both the existing and proposed York Region Official Plan.

The Town should also consider committing to a long-term target of providing a continuous east-west natural vegetated corridor of no less than 500 metres* across the entire Oak Ridges Moraine to provide a high quality natural connection along this major east-west linkage consistent with similar areas in adjacent municipalities. The Town and Toronto and Region Conservation Authority have already secured major holdings in the area between Bathurst Street and Leslie

* 500 metres was identified by Environment Canada as the size of corridor needed to accommodate the full range of species using such areas as a movement corridor

Street that will be used in part to secure this corridor. As recommended in both the Environmental Policy Review and the Conservation Authority's Terrestrial Natural Heritage System Strategy, the Town should seek opportunities to extend a natural corridor further eastward up to the northeast corner of the Town to link up to natural systems located in adjacent municipalities.

A schedule to the Plan should identify potential natural connections to other municipalities (See Map 1) and be tied to appropriate supporting policies. Sample policies are included in Appendix A.

4.2.2.4 Water Resources Management System

A Water Resource Management System is defined as a planning and management model designed to protect and where possible enhance hydrological features and functions, enhance the ability to provide clean and abundant water, and maintain or restore streams and lakes to a healthy state. Water resource management is integrated with other objectives insofar as healthy water systems contribute to and reinforce the objectives of the Greenway System by ensuring the quality and quantity of water needed to sustain wildlife habitat in natural areas is maintained, restored or enhanced, especially in aquatic and riparian habitats. Other land use changes occurring throughout the Town must also consider and provide for the long-term health of water resources in the Town.

The policies for water resource management can be discussed under two themes:

- General Town-Wide Water Resource policies; and
- Site Specific policies in or Adjacent to Lands possessing significant Hydrologic and Hydrogeological Features.

A. General Water Management Policies

There are a number of principles related to good water resource management practices that need to be adopted and followed throughout the Town. These include:

i. Support of Watershed Planning and Sub-watershed Planning

A key element of any effective water resource management strategy is the preparation and implementation of a Watershed Plan that examines the characteristics of the water resource and establishes long-term management needs on the basis of watershed units. The Town contains portions of four major watercourses which all have watershed plans in various stages of preparation by the Conservation Authority. These plans, once implemented, will provide a valuable strategic framework in which the Town can assess the characteristics, sensitivities and management priorities for both surface and subsurface water resources. The Town will need to consider the content and recommended directions contained in these documents in considering any matters dealing with water management, particularly the preparation of Master Environmental Servicing Plans.

Sub-watershed Plans are more detailed water management plans that examine and implement the direction of the Watershed Plan at a sub-watershed basis. In the Town of Richmond, this role is fulfilled by the Master Environmental Servicing Plan which has proven in the past to be a very effective vehicle for developing more focused examination of water management needs at the secondary plan level. This approach should be retained as the main management tool for development of water management and municipal servicing needs as part of the planning and development review process.

ii. Adoption of State of the Art Stormwater Management Facilities

The Town has developed through many of its existing policies and practices one of the most innovative and ambitious stormwater management programs in Ontario. The Town should continue this practice and should continue to pursue best practices in stormwater management wherever economically and technically feasible.

iii. Water Conservation Initiatives

The Town should continue to encourage and support efforts by landowners in the Town to adopt land management practices that reduce water consumption, increase infiltration and minimize pollutants.

B. Area Specific Water Management Policies

Certain areas of the Town contain spatial, topographical, soil, and water depth characteristics that require specific approaches to water management consistent with the hydrological features and functions of the area. This needs to be reflected in planning, design and land use management practices that ensure specific features, functions and processes are maintained or where possible improved.

i. Identification and Protection of Sensitive/Significant Hydrological Features and Functions

The Following Hydrological Features have been identified as having functions and sensitivities that require specific consideration as part of the land use planning and development review process to ensure that the health of the water resource is not compromised. They include:

- **Hydrologically Sensitive Features and Associated Riparian Lands.** These are lands containing streams, lakes, springs and seepage areas. They also include lands immediately adjacent to lakes and streams that are an integral part of the surface water features insofar as they accommodate floodwaters, intercept and remove pollutants from overland flow, and regulate baseflow.
- **Significant Groundwater Recharge Areas.** These lands have topographic and soil conditions that make them the major collector systems for the recharge and replenishment of the major aquifer systems in the Town.
- **Ecologically Significant Groundwater Resource Areas.** These lands have topographic, location, and soil attributes that make them the major contribution areas for the maintenance of baseflow in streams and lakes with the Town.

- **Highly Vulnerable Aquifers.** These lands contain shallow aquifers, which due to high water tables and/or highly porous soils are highly prone to groundwater contamination from surface activities. These contaminants can be quickly transmitted to adjacent surface water features.
- **Artesian Zones.** These lands contain groundwater areas that are under high pressure. Without proper development control, the release of groundwater under pressure to the surface could cause damage to the building site, create serious soil erosion, and result in the loss of groundwater supplies.
- **Areas of High Aquifer Vulnerability in the Oak Ridges Moraine.** These are lands identified in the ORMCP where land use restrictions have been specified in order to protect these sensitive and vulnerable aquifers located on the Oak Ridges Moraine.

Hydrologically Sensitive Features and Associated Riparian Lands have been identified and protected as part of the Natural Core and Natural Linkage Area designations. The other areas are shown on Map 2. More detailed mapping for these areas is currently being prepared in concert with the Toronto and Region Conservation Authority and will be completed in time for inclusion in the new Official Plan.

The Town as part of the planning and development review process must ensure that these features and their associated functions and sensitivities are protected and properly managed.

The Town should require in policy that any planning or major development proposal located in an area identified on Map 2 should be supported by a report which:

- Identifies the hydrological and hydrogeological conditions of the lands subject to the planning or development application; and
- Describes how the proposal will be planned, designed, constructed and managed to ensure that essential hydrological features and functions on site are maintained or where possible improved.

ii. Restoration Strategy for Streams and Lakes

Many streams in the Town especially in its southern half are in a degraded state when compared to their condition in a pre-development state. The Town should, wherever possible, pursue opportunities to improve the health of these stream systems by the adoption of design, construction and operational measures that reduce overland flow, increase infiltration and restore riparian lands.

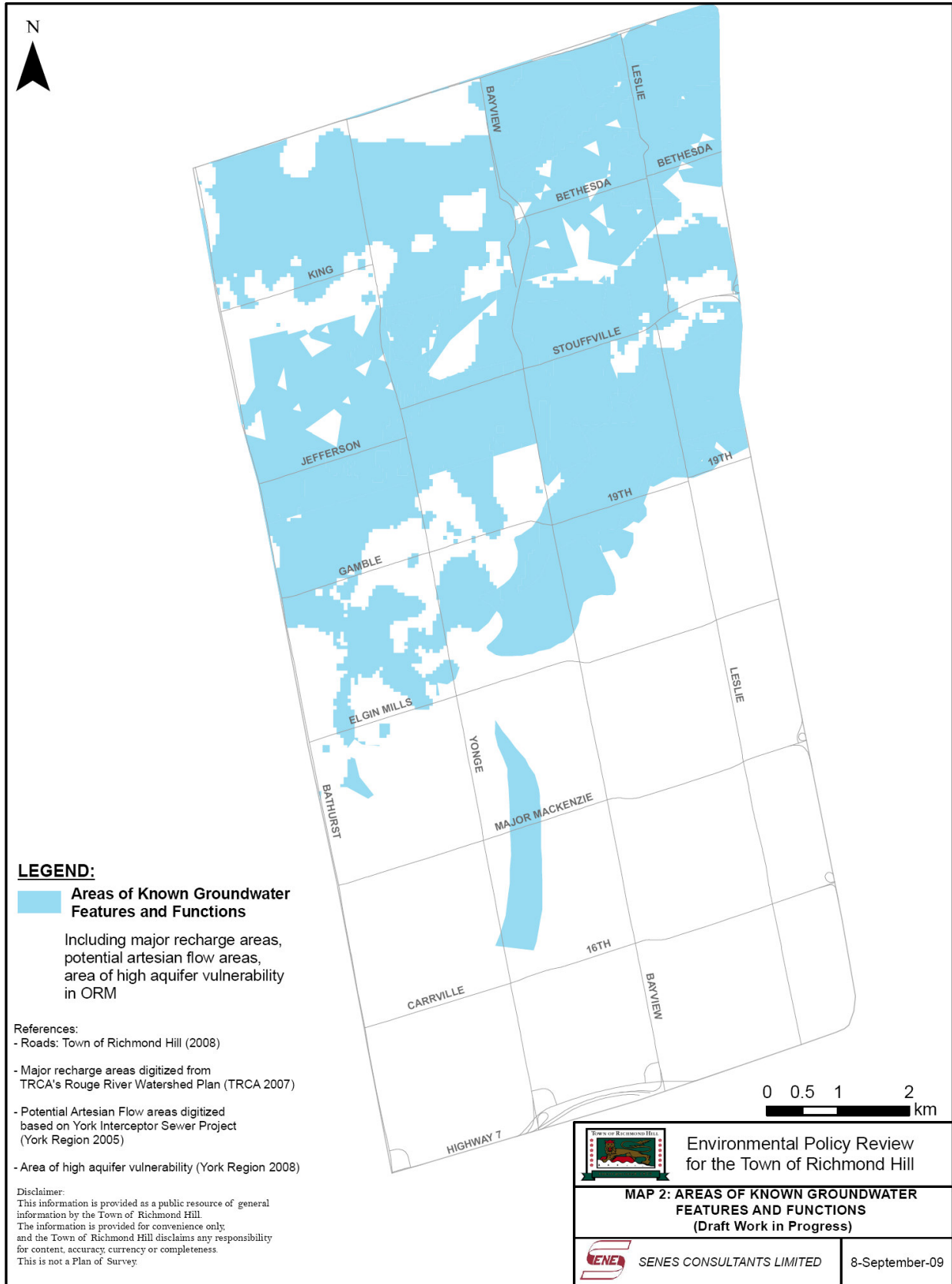
A separate subsection should be included in the Natural Environment section of the Official Plan that:

- Provides for the consideration of the direction provided by watershed and subwatershed plans prepared for the area;

- Provides for the identification and protection of groundwater features and functions as well as hydrologically sensitive features such as streams, lakes, springs and seepage areas;
- Incorporates state of the art stormwater management facilities and practices as part of the normal development process;
- Promotes water conservation initiatives; and
- Promotes opportunities for restoration of degraded stream and lake systems within the Town.

We note that OPA #129 provides very detailed and thorough policies regarding lake restoration policies for Lake Wilcox. While the intent of these policies is excellent, they are probably too detailed and too specific to be carried forward into the new official plan or to be applied to other remediation opportunities in the Town. We have provided in Appendix A, more generic policies based on the policies in OPA #129. We feel these policies are detailed enough to allow the Town to continue its remediation efforts in the lake Wilcox basin while at the same time providing a broad enough framework to allow the Town to design remediation strategies designed for the particular watershed being examined.

Sample policies for the implementation of this direction are attached as Appendix A.



4.2.2.5 Landform Conservation System

A Landform Conservation System is defined as a system that provides for the protection of complex landform types and for the minimization of soil loss, erosion, depletion and sedimentation in all parts of the Town. The protection of the character and form of complex landforms will also contribute to maintenance and protection of the Greenway and Water Resource Systems that depend on these landforms to retain their ecological and hydrological functions.

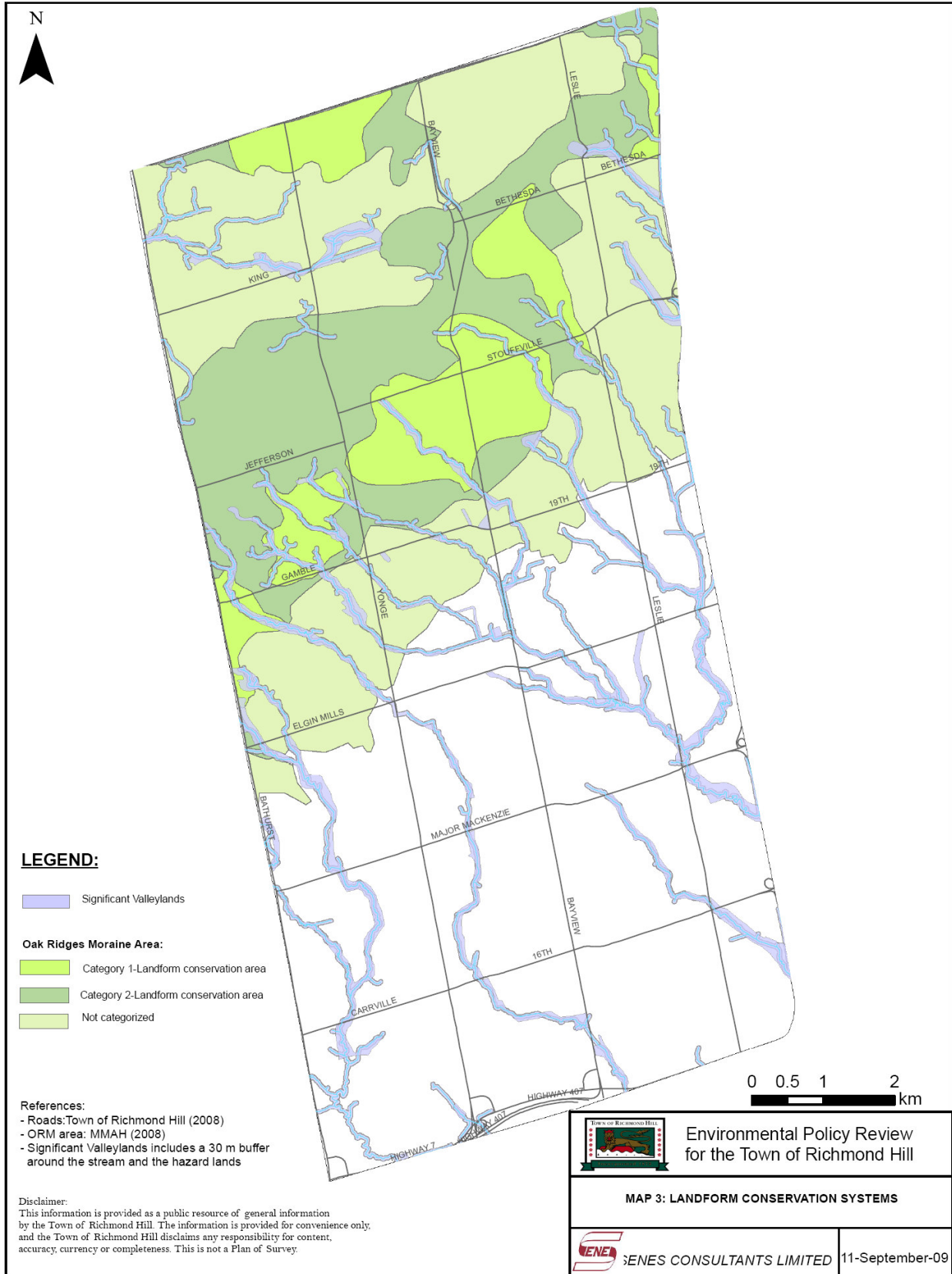
The Town of Richmond Hill contains a number of areas that have complex or steeply sloping landforms that are sensitive to environmental degradation and/or support sensitive hydrological or natural heritage functions that depend on underlying landform patterns. In such areas it is imperative that such lands retain their basic character or form.

As shown on Map 3, the Town contains three Significant Landform Areas that fall under this category:

- Landform Conservation Areas (Category 1) as identified in the Oak Ridges Moraine Conservation Plan;
- Landform Conservation Area (Category 2) as identified in the Oak Ridges Moraine Conservation Plan; and
- Significant Valley Lands identified as streams having well defined valley system cross sections.

The requirement for landform conservation in Landform Conservation Areas (Category 1 and 2) have already been established in Section 30 of the ORMCP and incorporated into the existing Town Official Plan as OPA #218. These policies should be carried forward into the new Official Plan (see 4.2.1.1 above).

Additional policies however will be required to afford a higher level of protection for Significant Valleylands in the Town. Sample policies are included in Appendix A.



4.2.2.6 Tree Protection, Soil Erosion and Sedimentation Control

As part of a suite of general environmental protection policies, the Town should adopt policies that require the Town and land developers to integrate good soil management and tree protection policies in activities undertaken throughout the Town.

Tree cover located throughout the Town including individual trees located along streets and in municipal parks can make important contributions to Town environmental health, providing cleaner air, local climate control, soil stability and reduced runoff. The Town will need to develop and maintain an urban forest management strategy that includes:

- A tree protection by-law revised to incorporate the new direction in this report;
- Tree preservation and planting programs around municipal buildings, streets and parks; and
- Stewardship programs that assist others in the Town to maintain and supplement tree cover wherever possible.

The entire Town is susceptible to soil loss and landform modification unless effective runoff, erosion and sediment control management practices are followed. The Town should adopt Town wide measures to control erosion and sedimentation as part of all land use planning and development activities that includes requirements to:

- Retain as much of the soil on site as possible both during and after construction;
- Minimize the need for long term storage of topsoil and subsoil; and
- Restore the site to a stable soil condition as soon as possible after construction is completed.

Sample policies are included in Appendix A

4.2.2.7 Sustainable Development Practices

Sustainable development practices encompass an approach that encourages land use, planning, development and management activities to seek and implement opportunities to enhance the quality of the natural environment throughout the Town. This is done through the incorporation of planning, design, construction and land management practices that increase the amount and quality of vegetation cover, reduce the consumption of natural resources such as energy and water, and reduce waste generation.

These kinds of practices not only increase the overall health of the natural environment by increasing the amount and variety of plant and animal species but they also have many positive affects on the human condition such as improving air quality, reducing heating and cooling costs, improving local climatic conditions and making for more pleasant and attractive living and working environments.

The Town should pursue sustainable development practices throughout the municipality, both within and beyond the Greenway System. Such an approach would integrate and build upon the Region of York's sustainable communities and development approach within the draft 2009 Regional Official Plan. Incorporating sustainable development requirements across the community will enhance the health, variety and abundance of plants and animals as well as generate other environmental benefits such as improved air quality, reduced facility heating and cooling costs, a more pleasant urban microclimate and a less stressful place in which to live and work.

A whole range of possibilities exist that may be pursued by the Town including:

a. Implement Sustainable Cities, Sustainable Communities policies of the Region of York Official Plan

To help create high-quality sustainable communities, require that:

- all new mid and high rise residential, mixed use, major office, commercial and institutional development shall be built to a minimum LEED® Silver standard between now and 2015, increasing to LEED® Gold for new development between 2016 and 2021 and LEED® Platinum after 2021, based upon the applicable LEED® rating system or alternative equivalent (draft ROP section 5.2.17);
- all new residential units be constructed to a minimum ENERGY STAR® standard or equivalent alternative before 2012 and that this policy be reviewed in 2012 for potential to incorporate LEED® standard for ground-related residential units into the future (draft ROP section 5.2.19);
- approved secondary plans not completely built within the designated Greenfield area be re-examined to achieve 50 residents and jobs per hectare within the developable area (draft ROP section 5.2.23); and
- encourage that secondary and subdivision plans within the designated Greenfield area that are not approved be developed in accordance with (draft ROP section 5.2.24) sustainability and liveability policies in the Regional OP (sections 5.6.5 to 5.6.19) that specify: inclusion of a mix of housing types, community core areas, live-work opportunities, high quality urban design, human service need considerations, solar energy considerations, development of a Community Energy Plan, LEED® building design for all new development, renewable and/or alternative energy systems, water management plan, a mobility plan, design according to the York Region Pedestrian and Cycling Master Plan, a Regional Greenlands Systems Plan, design to fit the integrated open space network and measures to reduce the urban heat island effect.

b. Implement Regional Centres and Corridors policies of the Region of York Official Plan

To achieve an urban, integrated and connected system of Regional Centres and Corridors, require that all new residential, mixed use, commercial, major office and institutional development shall be built to a minimum LEED® Silver standard between now and 2015, increasing to LEED® Gold for new development between 2016 and 2021 and LEED® Platinum after 2021, based upon the applicable LEED® rating system or alternative equivalent

c. Adopt innovative designs such as green roofs, white roofs, and biowalls as well as other naturalization techniques in building design:

As a condition of development or redevelopment, the Town should include policies in the Official Plan requiring or encouraging large-scale developments to integrate green roof, white roof, or biowall features as well as other sustainable development measures into their final design to enhance air quality, increase biodiversity and /or reduce energy use.

A policy could be included in the Official Plan requiring that all major developments develop and implement a sustainable development strategy as part of their proposal in order to identify and explain how sustainable development measures will be incorporated into the final design. These measures may include:

- Green roof, biowall and/ or white roof designs;
- Low impact design approaches to reduce stormwater runoff, increase onsite infiltration, reduce or eliminate direct discharge to adjacent streams and lakes, and maintain or restore natural cover in riparian lands of streams and lakes;
- Design and siting of features that improve local microclimate and reduce facility heating and cooling costs; and
- Maximizing the use of natural self-sustaining vegetation as part of the open space areas of the development.

As part of its stewardship program, the Town may also include policies to promote, encourage, and support the greater use of plant materials and other natural landscaping approaches to reduce energy costs and improve air quality and microclimate at the individual household level.

d. Promote greater naturalization of unused portions of schools sites, public lands, parks, and stormwater pond areas:

The Town could include a policy in its Official Plan that commits the Town to promoting and supporting naturalization opportunities in its own parks, as well as working with school boards, conservation authorities and other institutions to pursue opportunities to enhance the health of the natural environment through the establishment of additional self sustaining vegetated cover in areas not needed for other activities. These areas should also be encouraged to use native

plant species. Benefits include an increase in the size and diversity of natural areas in the Town, enhancement of air quality, improved microclimate and reduced energy use.

e. Promote natural landscaping and greater use of native species on public and commercial and industrial properties:

The Town could include a policy in its Official Plan that commits the Town to promote greater use of natural landscaping techniques that would increase native biodiversity and reduce property maintenance costs through its own property management programs and through its stewardship program.

f. Promote low impact development designs that promote more natural hydrological processes:

The Town should include a policy in its Official Plan to encourage the use of low impact design approaches that seek to manage water regimes to reduce runoff, increase infiltration and contribute to stream health maintenance and restoration initiatives, where technically and economically feasible,.

g. Enhance tree and shrub planting and naturalization on road allowances and other public utility corridors:

The Town should include a policy in its Official Plan committing road and other utility operating facilities to increase the use of low maintenance natural cover in the portions of road or utility rights-of-way that are not required to accommodate vehicular or pedestrian use. Native plant mixtures should be used wherever possible.

A policy could be included in the Official Plan committing the Town to the development and implementation of naturalization programs that maximize the amount of natural, self-sustaining cover within all road allowances and other utility easements owned and managed by the Town. This policy could also include a provision to encourage similar efforts in rights-of-way and easements managed by other utilities.

h. Encourage and support residential landowners to convert to natural landscaping techniques as part of the Town's Stewardship Program:

The Town should include a policy in its Official Plan committing to review its existing stewardship programs to provide for enhancement of local biodiversity, reduced water runoff and soil erosion, increased water infiltration and improved local microclimate. Programs should be influential and provide descriptive guidance, including information sources and methods with technical and financial support aimed at encouraging landowners to adopt natural landscaping practices on their properties.

i. Enhance ecological health as part of the operation, expansion, or replacement of municipal infrastructure:

The Town should include policies in its Official Plan that commit to green infrastructure practices through the building, upgrading, and maintenance of its road network, water, and sewer systems in a manner that seeks and encourages opportunities to integrate enhancements that render such services greener and more sustainable.

j. Promote the adoption of water and energy conservation and waste reduction strategies by landowners and residents within the Town:

The Town may wish to include a policy in its Official Plan to expand current stewardship programs to promote and support adoption of household practices by residents that reduce water and energy use and solid waste production.

k. Promote the adoption of sustainable land use practices in urban design:

Although the principles of sustainable design are being developed in other reports in support of the new Official Plan, it is worth noting that incorporation of sustainable development and urban design policies are ultimately beneficial to the natural environment.

Sustainable land use practices include actions such as promotion of higher residential density, concentrated growth, mixed land use, transit-oriented development and pedestrian-friendly design. These approaches accomplish environmental objectives through:

- Reduced per capita consumption of open space; and
- Reduced per capita energy and water use.
- Implementation of a variety of sustainable development and restoration measures often prove to be more economically and technically feasible than conventional designs.
- As a minimum the Town should consider including a policy that requires all large-scale developments in the Town be built to a standard that would be eligible for certification under the LEED Silver standard or equivalent.

l. Enhanced Working Relationships with Other Stakeholders within the Community:

Other stakeholders within the community can profoundly influence how land uses are planned, designed and operated in the Town. The Town should seek to maintain or enhance working relationships with others to promote the sustainable development agenda.

The Town could include policies in the Official Plan that encourage the establishment of working committees with such groups as school boards, business associations and neighborhood groups to mutually explore ways of increasing sustainable development and , restoration opportunities including the sharing of ideas, information, resources and manpower in the achievement of such opportunities.

m. Linkages with Park and Open Space Policies in the New Official Plan:

Although the parks and open space policies for the new Official Plan are being developed through another background study, it is essential that the study consider environmental protection and management policies.

The Town should include a policy committing to the development and implementation of a naturalization strategy as part of management plans prepared for the parks and open system. The Town, as part of its Park and Open Space Program, should ensure:

- Environmental protection as a key objective of the Parks and Open Space program;
- Protection and implementation of the Greenway System as part of the Town's Park and Open Space Program objectives, through actions such as the use and introduction of native plants wherever possible;
- Protection of the Greenway System as part of its Park and Open Space acquisition goals, including the acquisition of natural environment areas;
- Pursuit of naturalization and restoration opportunities within Town Parks wherever possible; and
- Inclusion of park planning, design and operation practices that control or manage public access to the environmentally sensitive portions of the Greenway System where it occurs in the Town's Park and Open Space system.

n. Linkages to the Hazard Land Management Policies and Programs in the New Official Plan:

Under separate sections of the Official Plan, the Town will be identifying natural hazards such as floodplains and erosion prone areas that will be managed specifically for the protection of human life and property, and that recognize the dangers posed by inappropriate land use. Most buildings and structures are prohibited in hazard lands.

The majority of hazard lands are located within the Greenway System. In most instances the objectives of the Greenway System and Hazard Land policies are mutually reinforcing. However, in some cases flood or erosion management practices may require structures and site alterations that can degrade natural and hydrological features and functions. The need to protect the natural features and functions when considering flood management practices should be recognized in the Official Plan. In this regard, the Town is encouraged to include policies in the Natural Hazards section of the Official Plan that:

- Encourage the use of natural, low impact techniques and practices in the management of hazard lands that protect or where possible enhance natural and hydrological features and functions; and
- Permit the use of structures or alterations to streams and/or associated riparian lands only where the need has been demonstrated and where no reasonable alternative exists and

negative impacts on ecological and hydrological integrity will be minimized to the fullest extent possible.

o. Linkages with Stormwater and Drainage Policies in the New Official Plan:

Stormwater and related servicing policies for the new Official Plan are being developed through another background study. The resulting Official Plan policies should consider environmental protection and management as a key objective through actions such as:

- Integration of planning, design, construction and management practices that emulate natural hydrological processes wherever economically and technically feasible;
- Requirement for the use of natural, low maintenance stormwater management techniques wherever economically and technically feasible; and
- Maximizing naturalization and restoration opportunities wherever possible especially as they relate to the design and management of stormwater facilities and drainage ditches.

p. Linkages with Transportation Policies in the Official Plan:

Transportation policies for the new Official Plan are being developed through another background study; however, environmental protection and management considerations for transportation should be considered.

As part of its Transportation Planning Program, the Town should include policies in the Official Plan that:

- Ensure the overall development of road systems in the Town minimize crossings or encroachments into the Greenway System and that crossings and encroachments only be allowed where there is a demonstrated need and no reasonable alternative exists;
- Maximize naturalization and ecological restoration along road allowances not required to accommodate heavy pedestrian or vehicular use; and
- Maximize opportunities to enhance natural features and functions as part of any project to establish, upgrade or replace a portion of the transportation system crossing or encroaching onto the Greenway System.

q. Climate Change Policies

The Town may consider the inclusion of climate change mitigation and adaptation policies within the new Official Plan. These policies should recognize the role that environmental policies as recommended in this report would play in counteracting the processes that lead to climate change. They should also aim to prepare the Town to adapt to changes in climate that may occur. These policies should recognize that:

- Maintenance and enhancement of natural cover will reduce the effects of increased temperature and reduce increased runoff resulting from more intensive storm events;

- The Greenway System should increase the amount of carbon that will be absorbed from the atmosphere, thereby acting as a carbon sink;
- Microclimatic improvements resulting from sustainable development initiatives should reduce energy costs associated with facility cooling and heating thereby lowering rates of carbon dioxide emissions.

The initiatives discussed in this sub-section could be included as policies in a freestanding Sustainable Development sub-section within the implementation section of the Official Plan with appropriate cross-references to other Plan sections such as Transportation, Servicing, and Parks and Open Space, as appropriate.

Alternatively, policies could be included directly into the applicable sections of the new Official Plan.

4.2.3 Greenway System Components with Specific Land Use Policies

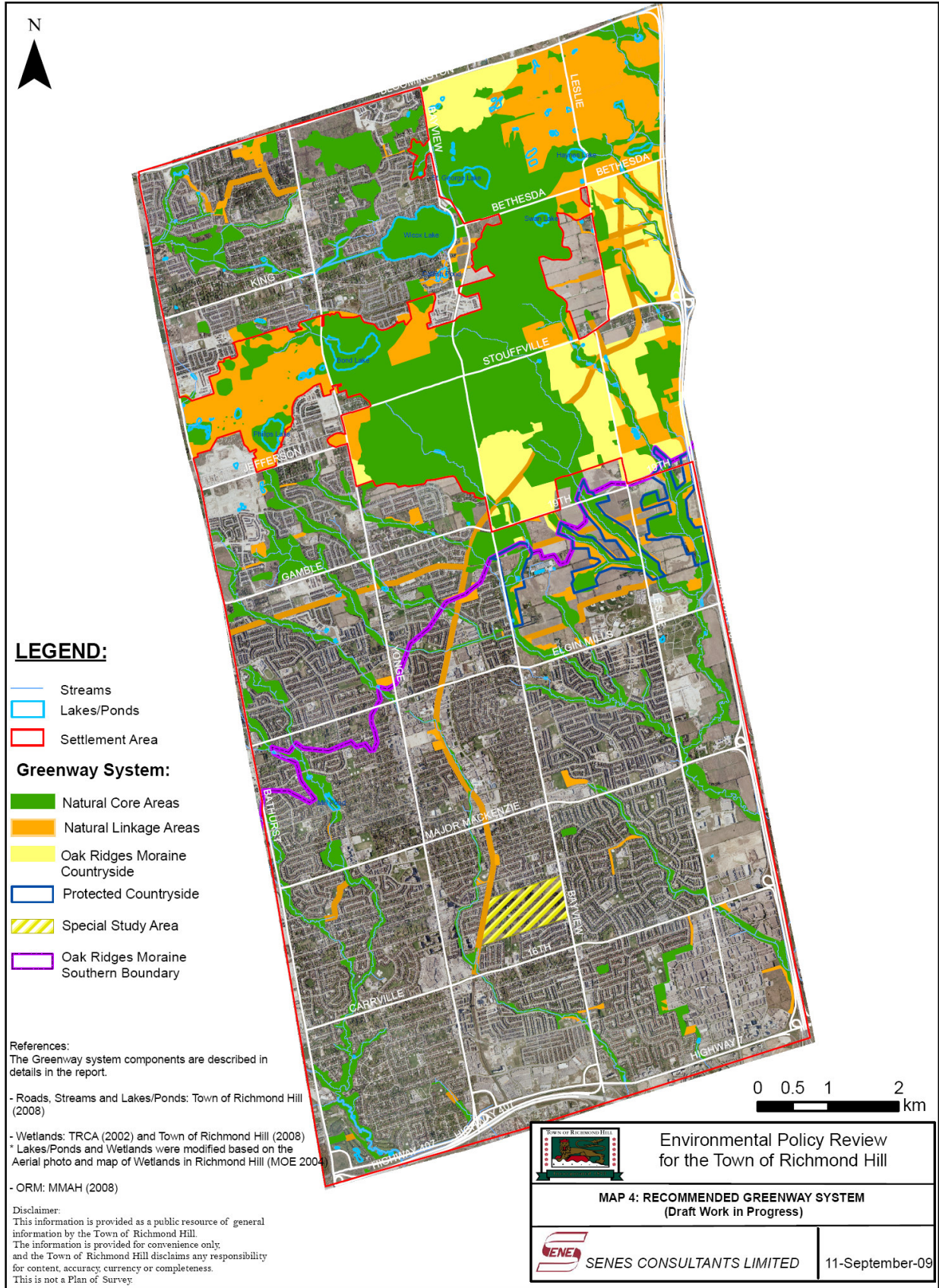
The Greenway System divides the Town into five distinct areas in terms of how natural areas will be identified, protected and managed. These five components define the basic land use policies of the Greenway System as identified in Map 4 and summarized in Table 4-1.

The remaining areas warrant general policies throughout the Town (or the Oak Ridges Moraine Conservation Plan area within the Town). These include policies such as soil management policies; air quality/ climate change policies, waste management policies, urban forest and urban/near-urban agriculture policies, each are discussed in 4.2.2.

TABLE 4-1 CHARACTERISTICS OF THE FIVE DESIGNATIONS IN THE GREENWAY SYSTEM

	Natural Core Area	Natural Linkage Area	Oak Ridges Moraine Countryside	Protected Countryside in the Greenbelt Plan	Settlement Area
Basic Intent	<p>Protection of Natural Areas</p> <p>Lands set aside for long-term protection and where possible improvement of the, size, diversity, resilience, connectivity and health of native plants and animals and their associated habitats</p>	<p>Maintain or Improve Connectivity Between Natural Areas</p> <p>Lands set aside for long-term protection and where possible improvement of lands needed to maintain the ability of plant and animal species to move across the landscape between adjacent Natural Core Areas and along stream corridors. They include areas that are known to function as important movement corridors as well as important natural habitat in its own right,</p>	<p>Open Space Area in Support of Natural Area Protection</p> <p>Due to their openness and the presence of open field habitats, these lands are set aside to contribute to meeting some of the habitat needs of animals living in the Natural Core and Natural Corridor Areas and by providing for movement between them.</p>	<p>Protection of Natural Area in the Greenbelt Plan</p> <p>These areas need to be maintained and managed to protect their critical ecological and hydrological functions as identified in the Greenbelt Plan.</p>	<p>Protection of Natural Areas in Urban Lands</p> <p>Areas managed primarily as urban land uses to meet the growth, social and economic objectives identified in the Official Plan. Development in these areas must have appropriate regard to impacts on ecological integrity within the Town improving protection of Natural Areas</p>
Composition	<p>Natural Core Areas within the ORMCP and Key Natural Heritage Features</p> <p>(not including Area identified in Protected Countryside in the Greenbelt Plan, the Dunlap Observatory Lands or Species at Risk Habitat)</p>	<p>Natural Linkage Areas in the ORMCP and stream corridors and</p> <p>Linear open space features elsewhere</p> <p>(not including Areas identified in Natural Core Area)</p>	<p>Countryside Areas identified in the ORMCP (Not including Areas identified as Natural Core or Natural Linkage Areas)</p>	<p>Areas identified as Protected Countryside in the Greenbelt Area)</p>	<p>Areas located within Settlement Areas</p>

	Natural Core Area	Natural Linkage Area	Oak Ridges Moraine Countryside	Protected Countryside in the Greenbelt Plan	Settlement Area
Permitted Uses	<p>-In all Key Natural Heritage Features low impact uses such as wildlife conservation, flood and erosion protection, natural parks and low intensity recreation</p> <p>-In parts of the Natural Core Area designation not identified above, the uses permitted in Section 11 of the ORM</p> <p>-Also provides for minor expansion of legally existing non conforming uses and essential infrastructure</p>	<p>-In parts of the Natural Linkage Area within the ORM designation the uses permitted are as specified in Section 12 of the ORM</p> <p>-In Natural Linkage Areas that occur outside of the ORMCP, low impact uses such as wildlife conservation, flood and erosion protection, natural parks and low intensity recreation</p> <p>- Also provides for minor expansion of legally existing non conforming uses and essential infrastructure</p>	<p>Uses permitted in Section 13 of the ORMCP and OPA 218.</p>	<p>Uses permitted in the Natural Environment Designation of the North Leslie Secondary Plan</p>	<p>Uses permitted in the appropriate urban land use designation of the Official Plan</p>



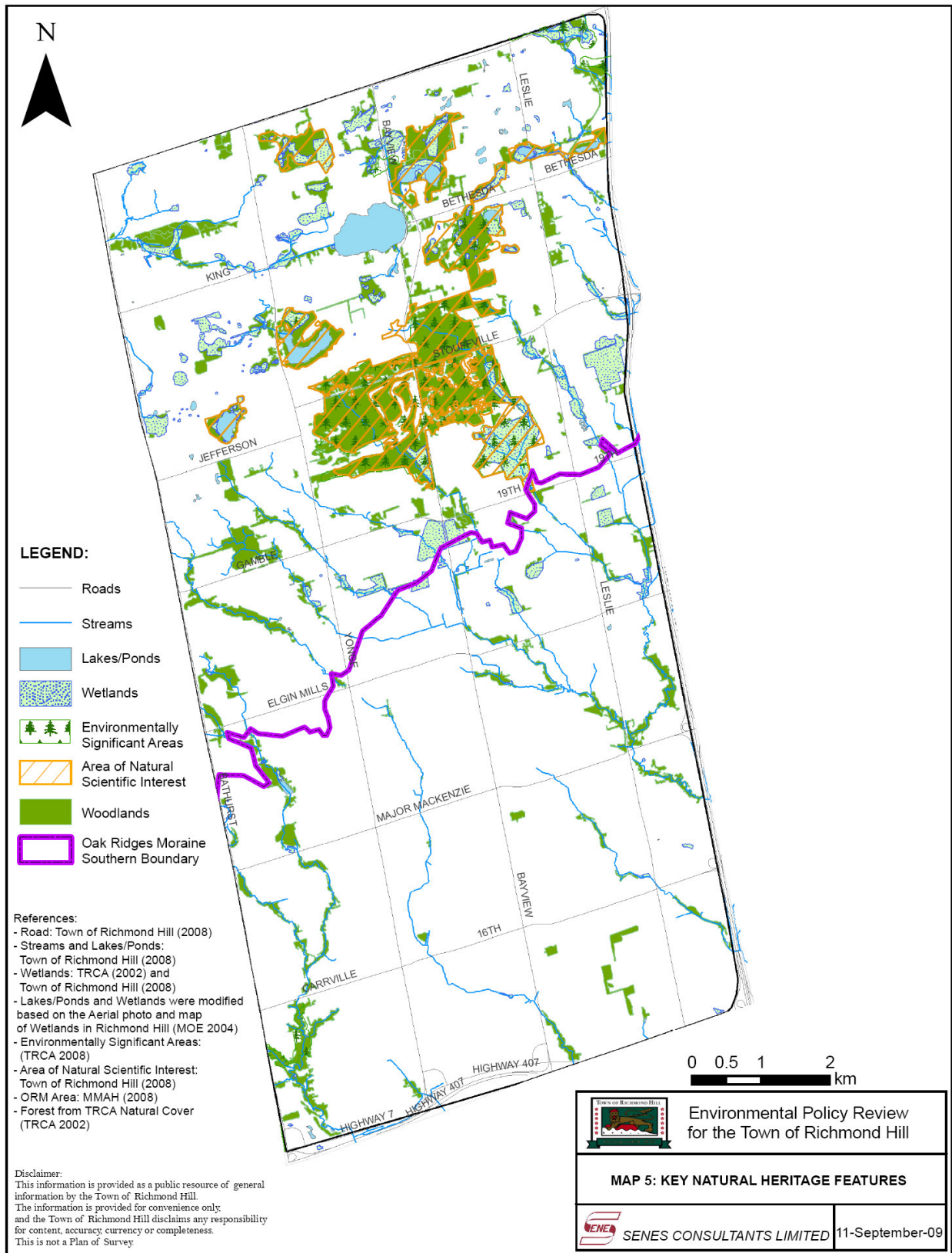
4.2.3.1 Natural Core Areas

This component of the Greenway System identifies lands that need to be set aside for the protection and where possible improvement of the size, diversity, resilience, connectivity and health of native plants and animal populations and their associated habitat. The Natural Core Areas shown on Map 4, include the lands designated Natural Core Areas within the ORMCP and existing natural areas within other parts of the Town that contain significant and/or sensitive natural features or functions that are critical to the maintenance of the diversity, health and resilience of the Town's natural heritage. These areas shall include:

- All wetlands identified in the Oak Ridges Moraine Conservation Plan and the Greenbelt Plan;
- All woodlands 2 hectares or larger in size within the Oak Ridges Moraine and the Greenbelt;
- All significant Woodlands as identified by the Ministry of Natural Resources or the Conservation Authorities;
- All woodlands identified as Regionally Significant by the Regional Municipality of York;
- All Life Science-Areas of Natural and Scientific Interest (ANSIs);
- Streams (both permanent and intermittent) and associated riparian lands including flood plains and valley slopes, defined to the top of valley slope by the Conservation Authority;
- Lands measured 30 metres outward from the meander belt of streams;
- Significant habitat of endangered species, threatened species and special concern species;
- Significant valleylands;
- All Environmentally Sensitive Areas as identified by the Conservation Authorities;
- All Kettle Lakes and their associated riparian lands, and
- Existing woodlands that are intersected by any of the areas described above.

(Note: The widths along streams are narrower in situations where urban land uses have encroached into the recommended corridor width. The most extreme case of these consists of situations where stream systems have been channelled, or piped, and covered over by urban land uses.)

The Key Natural Heritage Features constitute areas that have been identified as significant by the Ministry of Natural Resources, the Conservation Authority and/or York Region and/or can be justified as natural heritage features under the ORMCP or Policy 2.1 of the Provincial Policy Statement. These areas should be preserved in a natural vegetated state to ensure their current size, diversity and resilience is maintained. Key Natural Heritage Features are shown in Map 5 .



The Natural Core Area within the David Dunlap Observatory has not been included. These are shown on Map 4 as a Special Study Area, where more detailed studies will be carried out in a separate planning process to determine land use options. In addition, there are habitats of rare, vulnerable, threatened or endangered plant and animal species scattered across the Town that have not been specifically identified in order to protect their location from potential vandalism or other forms of inappropriate use.

The Natural Core Areas located in the Protected Countryside designation of the Greenbelt Plan as shown on Map 4 have not been included. They are dealt with in a more detailed way in subsection 4.2.3.4 of this report.

The protection and proper management of features which meet the definition of Natural Core Areas can be achieved by placing these lands in a “Natural Core Area” designation on a Land Use Schedule and developing supporting policies which:

- Limit permitted uses in Key Natural Heritage Features to low impact uses such as wildlife conservation, flood and erosion protection, natural parks and low intensity recreation uses;
- Limit permitted uses in portions of Natural Core Areas found in the Natural Core Area designation of the ORMCP to uses permitted in Section 11 of the ORMCP;
- Ensure that whenever new uses or expansion of existing uses within these areas is contemplated, appropriate plans, designs, construction and land management studies and practices are undertaken to ensure natural features and functions are maintained or improved;
- Protect Natural Core Areas in public ownership where feasible and appropriate;
- Recognize the need to refine outer boundaries of Key Natural Heritage Features and provide developers with additional technical guidance where appropriate;
- Encourage naturalization of existing stormwater facilities located in the Natural Core Areas, wherever possible.
- Recognize the need to refine outer boundaries of stream and related riparian corridors and provide developers with additional technical guidance where appropriate.

Sample wording for such policies is provided in Appendix A.

4.2.3.2 Natural Linkage Areas

Natural Linkage Areas are lands set aside for long-term protection and where possible improvement of lands needed to maintain the ability of plant and animal species to move across the landscape between adjacent Natural Core Areas and other Natural Linkage Areas.

They include:

- All lands designated Natural Linkage Areas in the ORMCP except lands identified as Natural Core Areas
- All lands in other parts of the town (including lands in the Countryside and Urban Settlement Area designations of the ORMCP) that include:
 - Open space and/or natural cover located on utility right of ways, parks owned by the Town or other park authorities and other open space areas within the built up areas of the Town that connect or have the potential to connect natural core areas and other natural linkage areas or have the potential to widen existing animal movement corridors such as along defined stream corridors

Natural Linkage Areas include lands within the ORMCP designated as Natural Linkage Areas, excluding lands designated Natural Core Areas in Map 4.

Natural Linkage Areas falling outside the Natural Linkage Areas of the ORMCP include linear areas of open space and/or natural cover that follow linear utility rights-of-way, and open space areas. These areas provide or have the potential to provide connections between natural areas.

The Natural Linkage Areas were included to support the intent of the ORMCP for these lands, which “is to maintain, and where possible improve or restore, the ecological integrity of the Plan area and to maintain, and where possible improve or restore, regional-scale open space linkages between natural core areas and along river valleys and corridors”. In other parts of the Town, outside the lands designated Natural Linkage Areas in the ORMCP, lands should be preserved or restored where feasible to a predominately natural vegetated state to ensure the connectivity between adjacent natural linkage areas and natural core areas is maintained.

The protection and proper management of features which meet the definition of Natural Linkage Areas can be achieved by placing these lands in a “Natural Linkage Area” designation on a Land Use Schedule and by developing supporting policies which:

- Limit permitted uses in portions of the Natural Linkage Areas found in the Natural Linkage Area designation of the ORMCP to uses permitted in Section 12 of the ORMCP and OPA # 218;
- Limit permitted uses in other parts of the Town shown as Natural Linkage Areas to low impact activities such as wildlife conservation, flood and erosion control, natural parks, low intensity recreational uses, and where applicable, to the maintenance of utilities and/or infrastructure;
- Ensure that whenever new uses or expansion of lawfully existing uses within these areas is contemplated, appropriate plans, designs, construction and land management studies and practices are undertaken to ensure natural features and functions are maintained or improved to the extent possible;
- Protect Natural Linkage Areas in public ownership where feasible and appropriate; and,

- Encourage and support the maintenance and return of lands in these areas to natural vegetated cover wherever practical in the context of the existing and permitted uses on site.

Sample wording for such policies is provided in Appendix A.

4.2.3.3 Oak Ridges Moraine Countryside

These areas constitute areas designated as Countryside Areas in the ORMCP that do not include areas identified as Natural Core Areas or Natural Linkage Areas above. While rural uses such as agriculture and low intensity recreation are permitted in these areas, large-scale buildings and structures are generally limited in accordance with the policies of the ORMCP and OPA 218. Due to their openness and the presence of open field habitats, these areas can fulfill some of the habitat needs of animals living in Natural Core Areas and Natural Linkage Areas by providing for movement between them.

These lands should be maintained as open space areas. The creation or expansion of any buildings or structures within these areas would need to be designed and sited in a manner that does not disrupt the movement patterns or habitat needs of wildlife living in adjacent natural areas.

The protection and proper management of Oak Ridges Moraine Countryside Areas can be achieved by maintaining these lands in an “Oak Ridges Moraine Countryside” designation on a Land Use Schedule and developing supporting policies which:

- Limit permitted uses to those permitted in Section 13 of the ORMCP; and
- Ensure that whenever new uses or expansion of existing uses are contemplated, appropriate planning, design, construction and land management studies and practices are undertaken to maintain movement patterns and habitat needs of plants and animals in adjacent natural areas;

Sample wording for such policies is provided in Appendix A.

4.2.3.4 Protected Countryside Areas in the Greenbelt Plan

Section 9 of the Greenbelt Act, 2005 requires municipalities to amend their Official Plan to conform to the Greenbelt Plan.

Lands in the Town of Richmond Hill subject to the Protected Countryside Areas designation of the Greenbelt Plan have been placed in a Natural Heritage System and Water Resource System designation. These areas are needed to protect, maintain and manage critical ecological and hydrological functions.

Compliance with this policy will be facilitated by the fact that the Greenbelt Plan applies only to a limited area of the Town currently included in the Natural Environment designations of the pending North Leslie Secondary Plan. Uses within these areas are currently limited to low intensity activities that easily comply with the requirements of the Greenbelt Plan.

Rather than create a separate policy section to address the Greenbelt Plan, the Town could achieve compliance with the Greenbelt Plan for Protected Countryside Areas by verifying that the wording in the pending North Leslie Secondary Plan is consistent with the policies in the Greenbelt Plan for Protected Countryside Areas and by integrating the policies of Section 3 of the pending North Leslie Secondary Plan directly into the new Official Plan as it relates to protection of the natural environment. Policies pertaining to the Greenbelt Plan could be included as a separate subsection within the Natural Environment Section of the Official Plan.

4.2.3.5 Key Natural Heritage Features in the Settlement Area

Key Natural Heritage Features in the settlement area will be protected and land use changes located within 120 meters* of a Key Natural Heritage Feature including lands designated as Natural Core Areas or Natural Linkage Areas should be required to ensure that land use changes or development in these areas maintain, or where possible, enhance the health of the natural features and functions of the area. This would include requirements to:

- Protect Key Natural Heritage Features;
- Establish appropriate vegetative buffer zones between the area of development and any significant natural area feature. Buffers adjacent to Key Natural Heritage Features shall be a minimum of 30 metres[‡];
- Undertake necessary studies to assess sensitivities of the natural areas and the potential impact of the development on the natural areas;
- Identify natural features and functions of the site that merit protection including species at risk as identified by MNR and /or the Conservation Authority;
- Identify naturalization opportunities that can be incorporated as part of the overall design of the development that will increase natural heritage health and diversity; and
- Identify planning, design, siting, construction and long-term management measures that will be implemented as part of any development or site alteration application that will demonstrate how the natural features on site and in the Greenway System will be maintained or enhanced.

Areas not within (either in whole or in part) or proximal to areas identified in Natural Core, Natural Linkage, ORM Countryside or Greenbelt Plan Protected Countryside Areas may still contain natural features and functions that contribute to the health of the natural environment or could enhance the health of the natural environment through naturalization and restoration. As

* A 120 metre zone of influence and a 30 metre buffer zone were derived from area of influence and buffer standards used in the Oak Ridges Moraine Conservation Plan and The Greenbelt Plan as well as being recommended in Ministry of Natural Resources and Conservation Authority Technical guidelines

such, development proposals in these areas should be required to address their impact on the natural environment including:

- The identification of natural features and functions located on site including hedgerows and small isolated woodlots;
- The identification of species at risk and their associated habitat and, where appropriate, adoption of protection measures as identified and approved by MNR or the Conservation Authority to ensure their long term protection,
- The identification of natural areas and features that can be maintained or enhanced on site including planning, design, construction and management measures required to ensure their long-term protection; and
- Identification of naturalization opportunities that can be incorporated as part of the overall design of the development that will increase natural heritage health and diversity.

Sample wording for such policies is provided in Appendix A.

5. RECOMMENDED DIRECTIONS FOR IMPLEMENTATION

The Town will need to undertake a number of actions to implement the recommended environmental policies outlined in preceding sections of this report.

It is assumed the new Official Plan will include a policy in a separate implementation section that lays the framework for the implementation of the recommended new environmental policies. Implementation will be largely achieved through the land use planning and development approvals process as prescribed under the Planning Act and the Condominium Act including Official Plan amendments, zoning by-law amendments, subdivision plans, condominium plans, site plans and consents. This approach will work well in implementing the majority of recommended, policies provided that site plan control will be applied to lands occurring within and adjacent to the Greenway System to enhance the ability of the municipality to apply detailed landscaping and design measures for building and structures and the associated land surface to improve ecological integrity or enhance protection of existing natural heritage features and functions.

Implementation of some policies, however, will require further supporting documentation obtained from additional study, the development of implementation guidelines, the development of new operating procedures, and the development of new or amended by-laws. The implementation of capital projects or supporting processes is also required in some cases. This section outlines the specific work plan items that the Town should undertake to implement the recommended environmental policy directions presented in this report.

It is recommended that the relevant Official Plan policy sections note each of the following specific tasks required to implement the respective policy directions.

5.1 POLICY

The environmental directions can be further enhanced through:

- Adoption of the new OP
- Developing a comprehensive zoning by-law
- Recognizing environmental restoration, enhancement, and management techniques as a public benefit that could be obtained using Section 37 of the Planning Act
- Requiring that all new development include minimum Sustainable Development Techniques (e.g. energy conservation and water conservation measures);
- Reviewing the Town's Sustainable Construction Policy (e.g. investigate amending the LEED Silver standard to LEED Gold or equivalent show Town's commitment to leadership in environmental design/development)

Amending the following existing Town by-laws can also enhance the environmental policy directions:

a. Tree Preservation By-law

The Town should commit in policy to review its existing tree preservation by-law passed under the Municipal Act to ensure its provisions are consistent with and support the intent of the environmental policies of the Official Plan. Opportunities may exist to refine the ecological protection, restoration and native vegetation provisions of this By-Law to further complement the new Official Plan policies.

b. Site Alteration By-law

The Town should commit in policy to review its existing site alteration by-law passed under the Municipal Act to ensure the provisions of the by-law are consistent with and support the provisions of the Official Plan. The permitting process of this by-law offers the opportunity for direction and education on appropriate soil and landform conservation best practices and can thereby support implementation of the Official Plan environmental policies.

5.2 SUPPORTING STUDIES REQUIRED FOR IMPLEMENTATION OF ENVIRONMENTAL POLICIES

In order to further align existing Town programs and processes to meet the intent of the recommended environmental policies, further study is suggested in the following areas. It is expected that the study findings will result in adjustments to program objectives, activities and staff procedures.

a. Parks and Municipal Facilities Management Program

The Town should commit to review its existing programs related to management and operation of its parks, buildings, services and lands to seek opportunities whereby management of Town lands, facilities and services meet the objectives of the environmental policies of the Official Plan. This policy should also state the Town's intent to demonstrate leadership in environmental management to the community, other municipalities and agencies.

b. Municipal Stewardship Programs

The Town should commit in policy to review existing stewardship or community support programs to identify further opportunities to effectively work with landowners and community groups in the provision of information, guidance, education materials and financial incentives that support the environmental policies of the Official Plan.

Another useful detailed study could be a Greenway System Implementation Strategy.

5.3 DEVELOPMENT OF GUIDELINES FOR IMPLEMENTATION OF ENVIRONMENTAL POLICIES

Several stakeholders raised the concern over the practicalities of some of the approaches being advocated in the recommended environmental policies for the new Official Plan including:

- Unrealistic costs expected to be accrued by the developer,
- Lack of technically feasible approaches to meet some of the targets,
- Inconsistent application or lack of clear guidance material, and
- Use of best practices developed in other jurisdictions that have not been adequately tested in the Ontario climatic or administrative context.

In order to address these concerns, the Town should as a minimum commit to clarity and consistency in environmental policy implementation through the development of technical guidelines such as:

a. In consultation with the MNR and the Conservation Authorities, develop technical guidelines or references for:

- Delineation of the outside boundaries of natural core and natural linkage areas ;
- Definition of the level of effort required to delineate significance and sensitivities within the Natural Core Areas and Natural Linkage Areas;
- Description of planning, design, construction and management best practices that meet mitigation requirements for natural heritage, water resource and landform conservation policies; and
- Establishment of a protocol whereby reports and studies in support of development applications will be reviewed and approved.

b. In consultation with the Ministry of the Environment and the Conservation Authorities, prepare a technical guideline on how to conduct the hydrological investigations necessary to meet the objectives of the water resource policies;

c. In encouraging the use of best practices, consider development of a protocol to guide the types of technologies to use. For example, this protocol could specify application of technologies being employed and effectively applied in jurisdictions with similar environmental and administrative conditions and for which there is a high degree of certainty that the technology can be successfully implemented within the proposed situation within the Town of Richmond Hill. Alternatively, where untested leading edge technologies or technologies employed successfully in environmental or administrative conditions different from those in the Town are proposed, the Town may agree to use such technologies on a pilot basis provided that:

- The applicant for the project has made an effective and thorough case for why this technology should be considered as an alternative to a more conventional approach;
 - A monitoring program is established and implemented to assess the effectiveness of the technology to meet the targets it was designed to achieve; and
 - A contingency plan has been developed and can be implemented in the event the pilot technology does not achieve the level of mitigation or protection for which it was designed.
- d.** Development of detailed design standards to demonstrate the kinds of building and structural designs that can be employed to achieve many of the sustainability standards described in this report and in the supporting Background Report. These subjects can be covered under guidelines Sustainable Design Guidelines, Stream/Shoreline Restoration Guidelines, Soil Management Guidelines and Streetscape Design Guidelines.

5.4 CAPITAL PROJECT REQUIREMENTS

Implementation of future capital projects, such as for the development or rehabilitation of roads or stormwater facilities, or of building facilities, parkland naturalization and establishment of community gardens offer the opportunity for the Town to explore and demonstrate best practices in low impact design. The Town is already undertaking this approach in their LEED Silver standard or equivalent requirement for their own future buildings and in development of new stormwater facilities. Opportunities to demonstrate green and sustainability practices should be explored for new design areas within the list of upcoming Town capital projects.

As well, many of the capital project activities carried out by the municipalities are subject to Class Environmental Assessments or individual environmental assessments. The Town should commit in policy to ensuring that the Plan's environmental policies will be addressed when preparing class and individual assessments under the Environmental Assessment Act.

5.5 RECOMMENDED ENHANCEMENTS TO TOWN OPERATING PROCEDURES

Existing Town program delivery procedures should be revised and enhanced as follows:

a. Working with Other Government Organizations

The Town should commit in policy to work closely with Provincial Ministries, the Region and Conservation Authorities to explore opportunities to work together to achieve the recommended environmental policies for the new Official Plan.

b. Working with Stakeholder Groups

The Town should commit in policy to work with community groups and other stakeholders to explore opportunities for collaboration to achieve the recommended environmental policies for the new Official Plan.

c. Monitoring

A key component of any effective planning process is the inclusion of a monitoring system which:

- Tracks the progress on the implementation of Official Plan policies and directions;
- Assesses whether the actions identified in the Plan are achieving stated goals and objectives (e.g. protection and enhancement of natural areas, improvements in water quality, etc); and
- Takes corrective action where the policies are not achieving the expected result.

The Town should include policies stating its intent to develop a monitoring program that will track the effectiveness of its environmental policies and make adjustments to its policies where necessary to ensure the objectives with respect to the protection or enhancement of the natural environment are met. The implementation of the Greenway System can be monitored through a GIS-based mapping system as part of the 5-year review of the OP.

d. Tracking of Borehole Data

Borehole data should be provided ideally in a digital format (e.g. gINT) compatible with the GIS database software. Hard copies or .pdf files of boreholes may be submitted, but submissions in formats other than compatible digital format will add considerably to the effort (and therefore the cost) of populating the data base.

The locations of all boreholes must be provided (latitude/longitude or UTM coordinates), along with the ground surface elevations referenced to Geodetic datum. The elevations of stratigraphic boundaries should be provided, referenced to Geodetic datum. Groundwater levels/elevations should also be provided and referenced to Geodetic datum.

The Town should create and host the database. The Town may wish to request a third party to maintain the database.

5.6 GOVERNANCE

A key component in the implementation of any strategy that seeks to encourage greater use of sustainability and green design practices as part of the development process is the use of incentives to support developers who are prepared to pursue innovation in the planning and design of their future projects. In these situations the Town may wish to consider greater use of incentives to reward such forward thinking on the part of the landowner. Options for incentives include:

- Increased development either onsite or on other properties owned by the developer;
- Fast tracking of development approvals, provided they meet LEED Silver standard or equivalent;

- Reduced development application and permit fees; and
- Reduction in taxes during the period of project development and approval.

In this regard the Town may wish to include a policy in the Official Plan that states the willingness of the Town to consider these incentives in exchange for a commitment by the applicant to pursue innovations that contribute to Town sustainable development beyond the minimum requirements of the Official Plan.

Other governance tools may include:

- Holding design competitions for capital projects that showcase the Town's leadership in environmental protection and enhancement
- Establish Richmond Hill Green Building Awards to recognize excellence in green design within the Town
- Continued Municipal Stewardship initiatives
- Continued partnerships with other government organizations and stakeholders

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Appendix A
Recommended Official Plan Policies

Recommended Policies for Natural Core Areas

1. A separate sub-section entitled “Natural Core Areas” should be included in the Natural Environment Section of the new Official Plan to deal specifically with the protection and enhancement of Natural Core Areas. These areas would be shown as the “Natural Core Areas” on the Land Use Schedule to the Official Plan;
2. The following policies should be included in the subsection:
 - Include a policy stating that it is the intent of the Plan that the lands designated “Natural Core Areas “ be maintained and managed for the protection and where possible improvement to the health, size, diversity, connectivity and resilience of natural areas”
3. Permitted uses for lands designated Natural Core Areas shall be limited to:
 - a) Forest, fish and wildlife management;
 - b) Conservation and flood and erosion control;
 - c) Low intensity recreation and open space uses such as non-motorized hiking trails, natural parks and nature appreciation;
 - d) Transportation, utilities and infrastructure, but only if need has been demonstrated and there is no reasonable alternatives in accordance with other policies; and
 - e) Existing land uses at the time of adoption of this Official Plan.
4. Permitted uses located in the ORMCP area but outside Key Natural Heritage Features shall include additional uses specified in section 11 of the ORMCP . Other provisions of the Oak Ridges Moraine Conservation Plan as dealt with in another subsection of this Plan shall continue to apply in all other respects. Policies in this subsection will apply where they are more restrictive and /or provide additional requirements related to the protection and improvement of natural features and functions identified herein. Where a conflict exists between the Oak Ridges Moraine Conservation Plan and the policies of this subsection, the most restrictive shall apply.
5. Applications for change in use or development located within 120 metres of a Key Natural Heritage Feature will be required to undertake studies to:
 - a) Confirm the precise location of the outer boundaries of key natural heritage features or areas,
 - b) Identify the nature and sensitivity of the natural heritage features and functions and potential sensitivities that may be affected by the proposal; and

- c) Identify the planning, design, siting, construction and management practices that will be implemented to ensure the key natural heritage features and functions will not be negatively affected.
6. Notwithstanding the results of the studies identified in 5 above, a minimum vegetative buffer zone of 30 metres shall be established next to all Key Natural Heritage Features to maintain the integrity of these features. Lesser standards shall only be considered where the location of existing buildings and structures make the achievement of the 30-metre buffer zone unfeasible or the integration of sustainable development measures can be implemented to maintain the available water, water quality, species diversity and overall health of these features.
7. Applications for development located within Natural Core Areas shall identify opportunities where feasible to integrate sustainable development measures into the design of the proposal that would supplement size, diversity, connectivity and resiliency of the natural features and functions especially for proposals that directly abut the Greenway System.
8. The Town will work with the Ministry of Natural Resources, the Regional Municipality of York and the Conservation Authorities to develop technical guidelines and standards to provide more detailed direction in the identification and delineation of Key Natural Heritage Features and development of the studies referred to in 5.
9. Legally existing land uses not in conformity with the permitted uses in the Natural Core Areas and located outside of the areas subject to the Oak Ridges Moraine Conservation Plan will be allowed to continue provided they legally existed at the day of the adoption of the new Official Plan. However, expansions of an existing building or structure or changes in use will only be considered where it can be demonstrated that:
 - a) The conversion is of an existing use to a similar use ; and
 - b) The expansion will not adversely affect the ecological integrity of the Plan Area and will be established to enhance the ecological integrity of the subject site and nearby area.
- Legally existing uses within the areas subject to the Oak Ridges Moraine Conservation Plan will be subject to the policies of section 6 of that Plan.
10. The establishment, expansion or upgrade of transportation, infrastructure or utilities will only be permitted in Natural Core Areas where the need for the project can be demonstrated and there is no reasonable alternative, and planning, design, construction and management practices are incorporated that will:

- a) Keep any adverse effects on the ecological and hydrological integrity of the Natural Core Areas to a minimum or where possible will improve them,
- b) Maximize the amount of natural vegetation cover restored within the right of way of the proposed infrastructure, transportation or utility use; and
- c) Maintain the ability of plant and animal species to move within the Natural Core Area.

11 The limits of Key Natural Heritage Features are based on the best available information available at the time of the adoption of the new Official Plan. The outer boundaries of these features may need to be refined in accordance with applicable standards provided by the Province, Region, Conservation Authority or Town as part of an application for development.

12. The Town will seek the acquisition of Key Natural Heritage Features at no cost or minimal cost, or by other appropriate public agency or Provincial Ministries in accordance with the land securement policies of this Plan. Land acquired by the Town or any other public agency within these areas shall remain in their natural state.

13. Stormwater management facilities that abut Natural Core Areas shall be included in the Natural Core Area designation. In these situations, the stormwater management facility will be allowed to continue to be used for the purpose it was designed for but will be evaluated and where appropriate be modified to implement naturalization and restoration works to enhance the ecological integrity of the Natural Core Areas.

Recommended Policies for Natural Linkage Areas

14. A separate sub-section entitled “Natural Linkage Areas” should be included in the Natural Environment Section of the new Official Plan to deal specifically with the protection and enhancement of Natural Linkage Areas. These areas should be shown as the “Natural Linkage Areas” on the Land Use Schedule to the Official Plan;

15. The lands designated “Natural Linkage Area” be maintained and managed for the protection and where possible improvement to the health, size, diversity, connectivity and resilience of natural areas and to maintain, and where possible improve or restore, regional scale open linkages between natural core areas and along river and stream corridors.

16. Permitted uses for lands designated Natural Linkage Areas shall be limited to:

- a) Forest, fish and wildlife management;
- b) Conservation and flood and erosion control;
- c) Low intensity recreation and open space uses such as non- motorized hiking trails, natural parks and nature appreciation;
- d) Transportation, utilities and infrastructure, but only if need has been demonstrated and there is no reasonable alternatives in accordance with policy xi; and
- e) Stormwater management facilities in accordance with policy xiii, and
- f) Existing land uses at the time of adoption of this Official Plan,

17. Notwithstanding Policy 16 above, permitted uses located in the Natural Linkage Area designation of the ORMCP can also include additional uses specified in section 12 of the ORMCP. Other provisions of the Oak Ridges Moraine Conservation Plan as dealt with in subsection 4.2.1.1 of this Plan shall continue to apply in all other respects. Policies in this subsection will apply where they are more restrictive and /or provide additional requirements related to the protection and improvement of natural features and functions identified herein. Where a conflict exists between the Oak Ridges Moraine Conservation Plan and the policies of this subsection the most restrictive shall apply.

18. Applications for land use change located within the Natural Linkage Areas shall identify opportunities where feasible to integrate sustainable development measures into the design of the proposal that would supplement size, diversity, connectivity and resiliency of the natural features and functions especially for proposals that directly abut the Greenway System.

19. Any application for land use change or development must address the requirements of the Fisheries Act with respect to the destruction or alteration of fish habitat.

20. Legally existing land uses not in conformity with the permitted uses in the Natural Linkage Areas will be allowed to continue provided they legally existed at the day of the adoption of the new Official Plan. However expansions of an existing building or structure or changes in use will only be considered where it can be demonstrated that:

- The expansion or change in use will not adversely affect or will enhance the ecological or hydrological integrity of the Greenway System, will not inhibit the ability of the Town to achieve naturalization or restoration objectives as stated in the other policies of the Plan and will not inhibit or where possible will enhance the ability of plants and animals to move through linkage areas and between Natural Core Areas.

21. The establishment, expansion or upgrade of transportation, infrastructure or utilities will only be permitted in Natural Linkage Areas where the need for the project can be demonstrated and there is no reasonable alternative, and planning, design, construction and management practices are incorporated that will:

- a) Keep any adverse effects on the ecological and hydrological integrity of the Natural Linkage Areas to a minimum or where possible will improve them;
- b) Maximize the amount of natural vegetation cover restored within the right of way of the proposed infrastructure, transportation or utility use; and
- c) Maintain or where possible improve the ability of plant and animal species to move within the Natural Linkage Area and between Natural Core Area and stream corridors.

22. The Town will seek the acquisition of stream corridors and Ecological Restoration Areas at no cost or minimal cost, or by other appropriate public agency or Provincial Ministries in accordance with the land securement policies of this Plan. Land acquired by the Town or any other public agency within these areas shall remain in their natural state.

23. Stormwater management facilities that abut Natural Linkage Areas shall be included in the Natural Linkage System. In these situations, the Stormwater management facility will be allowed to continue to be used for the purpose it was designed for but will be evaluated and where appropriate be modified to implement naturalization and restoration works to enhance the ecological integrity of the Natural Linkage Areas.

24. The Town will encourage the location of new Stormwater management facilities outside of areas within Natural Linkage Areas wherever possible, however such facilities may be considered within the Natural Linkage Areas where it can be demonstrated that:

- a) There is a need and there is no feasible alternative,
- b) The Town can incorporate planning, design, construction and management practices that maintain or enhance the ecological and hydrological Integrity of the Natural Linkage Area and/or the Water Resource Management System, and
- c) The new Stormwater management facility will have no negative impact on hydrologically sensitive features or functions or Key Natural Heritage Features.

Recommended Policies for Oak Ridges Moraine Countryside

25. Include a new subsection in the Natural Environment Section titled “Oak Ridges Moraine Countryside” and identify it as a separate designation on the Land Use Schedule.

26. It is the intent of the Official Plan that lands designated Oak Ridges Moraine Countryside Areas be maintained in a predominately open space condition so that the areas can continue to function as open habitat that supports and supplements the natural areas, features and processes on lands identified in the Natural Core Area and Natural Linkage Areas of the Official Plan”.

27. The permitted uses identified in Section 13 of the ORMCP are permitted in the Oak Ridges Moraine Countryside Area provided it can be demonstrated to the satisfaction of the Town that any expansion to an existing use or establishment of a new use can demonstrate:

- a) The proposed expansion or new use will not negatively affect or where possible improve the ability of the Town to achieve the intent of the policies for the Natural Core Area or Natural Linkage Areas, and
- b) Will not inhibit or where possible will improve the ability of native plants and animals to move between, Natural Core Areas and Natural Linkage Areas.

28. Other provisions of the Oak Ridges Moraine Conservation Plan as dealt with in subsection 4.2.1.1 of this Plan shall continue to apply in all other respects. Policies in this subsection will apply where they are more restrictive and /or provide additional requirements related to the protection and improvement of natural features and functions identified herein. Where a conflict exists between the Oak Ridges Moraine Conservation Plan and the policies of this subsection the most restrictive shall apply.

Recommended Policies for Protected Countryside Areas in the Greenbelt Plan

29. Include a new subsection entitled in the Natural environment Section of the Official Plan, These areas should be designated “Protected Countryside in the Greenbelt area” in the Land use schedule to the Official Plan. The natural environment policies for this section of the official plan can be taken directly from Section 3 of the North Leslie Secondary plan.

Recommended Policies for Natural Areas in Settlement Areas

30. A separate sub-section entitled “Natural Area Policies in Settlement Area” shall be included in the Natural Environment Section of the Official Plan

31. Applications for change in use or development located within 120 metres of a Key Natural Heritage Feature, A Natural Core Area or a Natural Linkage Area will be supported by studies to:

- a) Confirm the precise location of the outer boundaries of Key Natural Heritage Features;
- b) Identify the nature and sensitivity of the Key Natural Heritage Features and functions and potential sensitivities that may be affected by the proposal; and
- c) Identify the planning, design, siting, construction and management practices that will be implemented to ensure the Key Natural Heritage Features and functions will not be negatively affected;
- d) Identify planning, design construction and management measures that minimize disruption to adjacent lands in the Natural Core and Natural Linkage Areas and do not inhibit the Town’s ability to achieve the objective stated for those areas.

32. As part of any application for major development, an applicant shall identify all natural features located on site and assess their value in terms of the benefits they provide to the community and, where possible, should protect and /or enhance these features and functions and integrate them into the final design of the proposal.

33. Notwithstanding any provision in this subsection, the Oak Ridges Moraine Conservation Plan as dealt with in subsection 4.2.8 of this Plan shall continue to apply in all other respects. Policies in this subsection will apply where they are more restrictive and /or provide additional requirements related to the protection and improvement of natural features and functions identified herein. Where a conflict exists between the Oak Ridges Moraine Conservation Plan and the policies of this subsection the most restrictive shall apply.

Recommended Policies for Ecological Restoration Areas

34. A new sub-section entitled “Ecological Restoration Areas” should be included in the Natural Environment Section of the Official Plan. Policies should be included in this sub-section requiring:

- Ecological restoration areas are areas where restoration or naturalization could significantly enhance the connectivity within the Natural Linkage Areas and between Natural Core Areas and stream corridors. The Town will promote and support ecological restoration in appropriate areas of the Town to a natural self-sustaining vegetative state in order to increase the size diversity, connectedness and/or resiliency of natural areas throughout the Town through such means as:
 - Protection or restoration of such lands as part of the Town's open space and parks system.
 - Encouragement of the protection of such lands as part of the management of lands owned by other government agencies.
 - The establishment of restoration areas through the adoption of planning, design and siting practices adopted in association with an application for change in use or development, or
 - Encouragement and support of landowners through the Town's stewardship initiatives

Recommended Policies for Species at Risk

35. A new sub-section entitled "Species at Risk" should be included in the Natural Environment Section of the Official Plan.

36. Applicants of major development located within the Town are required to consult with the Ministry of Natural Resources and the Conservation Authority to determine whether any species at risk as identified under the provincial Endangered Species Act or federal Species at Risk Act, are located on or adjacent to the lands subject to the application. If applicable, the applicant shall demonstrate how the species at risk and associated habitat will be protected in a manner satisfactory to MNR.

37. The Town will work with and support MNR and the Conservation Authority, where appropriate and technically and economically feasible, in the development and implementation of recovery plans for plants and animals at risk prepared under the authority of the Endangered Species Act and/or Species at Risk Act.

Recommended Policies for Oak Ridges Moraine Conservation Plan Area

38. A new subsection entitled "Oak Ridges Moraine Conservation Plan" should be included in the Natural Environment policy section.

39. The Policies adopted and approved under Official plan Amendment #218 should be incorporated as the policies for this new subsection

40. A policy should be included clarifying that policies in other parts of the Official Plan have been provided to:

- a) Address planning matters and issues not dealt with in this subsection;
- b) Provide more stringent or detailed policy direction than provided for in this subsection; and
- c) Where a conflict in wording exists between this sub-section or the Oak Ridges Moraine Conservation Plan and other parts of the Official Plan then the most restrictive shall apply.

Recommended Policies for Lake Simcoe Protection Plan Area

41. A new subsection entitled “Lake Simcoe Protection Plan” shall be included in the Natural Environment Section of the Official Plan.

42. The Town of Richmond Hill recognizes the importance of restoring and protecting the health of Lake Simcoe and its watershed. In this regard the Town, will give full consideration to the Lake Simcoe Protection Plan in the consideration of any land use change or development located in the Lake Simcoe Watershed to ensure the objectives and policies of that Plan are met.

Recommended Policies for Ecological Connections to other Municipalities

43. Include a subsection entitled “Ecological connections Other Municipalities” as part of the Section on Natural Environment.

44. The Town will cooperate with the region, neighbouring municipalities and the Conservation Authorities to identify, preserve and enhance ecological connectivity to natural heritage areas located in lands adjacent to the Town especially in key areas of ecological connection as shown on. In this regard the Town is committed to the protection and restoration of stream corridors that provide connections to stream systems in adjacent municipalities and to the establish a continuous east /west natural corridor of at least 500 metres width across the Natural Core and Natural Linkage Areas of the Oak Ridges Moraine to link up to major natural corridors in other parts of York Region.

45. The Town will seek opportunities to work with the Rouge Park Alliance, the Conservation Authority, the Region and the Town of Markham to achieve the goals and objectives of the Rouge North Management Plan.

Recommended Policies for the Water Resource System

46. A map and explanatory text should be added as an appendix to the new Official Plan identifying and describing significant and sensitive hydrological features and their associated functions, these features will comprise:

- a. Hydrologically Sensitive Features and Functions and Associated Riparian Lands
- b. Areas of influence
- c. Significant groundwater recharge areas
- d. Ecologically significant groundwater areas
- e. Highly sensitive recharge areas
- f. Highly vulnerable aquifers
- g. Artesian Flow Zones
- h. Areas of High Aquifer Vulnerability as identified under the ORMC

47. Policies of the Oak Ridges Moraine Conservation Plan as dealt with in subsection 4.2.8 of this Plan shall continue to apply in all respects. Policies in this subsection will also apply where they are more restrictive and /or provide additional requirements related to the protection and improvement of hydrological features and functions identified herein. Where a conflict exists between the Oak Ridges Moraine Conservation Plan and the policies of this subsection, the policies of the Conservation Plan shall prevail.

48. Any large scale land use change or development proposal will be required to identify whether any hydrological features or functions identified in Policy 46 above are located on or are adjacent to the proposed development and the planning, design, construction and operation practices that will be implemented to ensure these features or functions are protected, maintained and where possible enhanced.

49. As part of this assessment a detailed hydrological investigation will be required that among other things shall:

- a) Consider information and directions in the applicable watershed plan for the area;
- b) Assess the impact of the proposal on the quality and quantity of water entering the groundwater and surface water features within the Town; and
- c) Identify planning, design, construction and management practices that will be implemented to ensure there will be no negative impact on the quality or quantity of groundwater entering aquifers in the Town, that there will not be any reduction in the minimum baseflow in streams, nor to storage levels in lakes and that overall there will not be a reduction in groundwater quality and quantity and where possible an improvement to the hydrological features and functions identified in an appendix to the Official Plan.

50. Any small scale development will be considered by the Town in the context of the features and functions (to be described in an appendix) and the Town may require the applicant to make adjustments to the planning, design, construction or operation of the proposal to protect these features and their associated functions and may require that additional hydrological investigations be carried out.

51. Major developments located within the area of influence of a stream or lake shall be required to undertake an examination of potential stream restoration measures that can be adopted and implemented to improve the health and expand the natural area of the stream or lake including its associated aquatic and riparian habitat. This shall include but not be limited to:

- a) The restoration of degraded riparian habitat;
- b) Conversion of riparian lands back to a vegetated self- sustaining condition;
- c) Restoration or modification of streambed, stream banks and shorelines back to a more natural state;
- d) Removal of direct discharge of stormwater into lakes and streams;
- e) The introduction low impact development techniques as part of the development design to reduce runoff and increase infiltration.

52. Small scale development located within the Area of Influence of a stream or lake shall be reviewed by the Town in the context of the ability of the application to contribute to stream or lake shore restoration and may require the applicant to make adjustments to planning, design, construction and operation of the proposal.

53. The Town in consultation with the Conservation Authority will identify a schedule for the development and implementation of stream restoration and lake remediation plans for waterbodies in the town based on an assessment of need in terms of current health of the waterbody, opportunities in the form of major development and redevelopment occurring in the area and degree of public interest and support.

54. A stream restoration or Lake Remediation strategy will comprise the preparation of terms of reference by the Town in consultation with the Conservation Authority, Provincial Ministries and the public to identify opportunities to improve the condition of the lake or stream. Among other matters this will include consideration of:

- a. An inventory of existing natural and environmental conditions including water budgets, baseflow, type and health of the aquatic ecosystem, condition riparian lands, etc.;
- b. Information and management direction found in the applicable watershed plan for the area;
- c. Documentation of existing statutes, guidelines and other regulatory measures that apply to the environment around the waterbody;
- d. Identification of measures required to restore or remediate and /or improve the waterbody;
- e. Descriptions of technologies that can be implemented by the Town, the Conservation Authority, the community or as part of development or redevelopment and related costs; and
- f. An outline of the monitoring program that will be used to evaluate the performance of the selected restoration or remediation plan.

55. A stormwater management plan be required as part of all major development proposals to demonstrate how water resources will be managed on site in a manner that ensure the health, quality and abundance of both surface and subsurface water storage systems are maintained or improved. In the development of Stormwater management systems best practices will be applied to a level determined to be technically and economically feasible and shall meet the following criteria:

- a. Consideration of the direction and information contained in watershed plans and groundwater studies prepared by the Region or Conservation Authority;
- b. No net reduction in the amount of water being recharged to subsurface aquifers;
- c. Minimize or where possible reduce potential for contamination of ground and surface water;

- d. Minimize alterations to the natural drainage boundaries;
- e. No creation or where possible reduction of flood or erosion problems;
- f. Minimize or where possible eliminate pollutant loading to the watercourse or lake;
- g. No reduction or where possible increase fish habitat;
- h. Minimize changes to base flow quality and quantity in receiving streams and where possible emulate natural stream or lake conditions;
- i. Minimize reductions or where possible enhance ecological integrity in accordance with the Greenway System policies; and
- j. Manage the quality of stormwater runoff to achieve the quality control target of 80% removal of suspended solids in accordance with Provincial standards.

56. Small scale development shall be required to demonstrate how water on site will be managed both during and after construction and the Town may require the applicant to make adjustments to the planning, design, construct and manage the proposal to reduce runoff, control erosion and sedimentation and return the site to a stable condition as soon after construction as feasible.

Recommended Policies for Landform Conservation System

57. A schedule should be included in the Official plan showing the location of Significant Landform Areas.

58. Any application for development or site alteration in Significant Landform Areas shall identify planning, design and construction practices that will keep disturbance to landform character to a minimum including maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form. This is in addition to the requirements specified in Section 30 of the Oak Ridges Moraine Conservation Plan and subsection 4.2.8 of this Plan.

59. Any application for a major development in Significant Landform Area shall be accompanied by a landform Conservation Plan demonstrating how the matters discussed in a. above have been met

Recommended General Town-Wide Policies for the Tree Protection, and Soil Erosion and Erosion Control

60. The Town should include a new subsection entitled “Tree Protection and Erosion and Sedimentation Control” in the Natural Environment section of the Official Plan.

61. The Town will review its current urban forestry programs to ensure it can effectively contribute to meeting the policies of this Official Plan, This will include:

- a. Review and if necessary upgrade to the Town’s Tree Protection By-law to provide for the protection of trees to a level prescribed in this Plan,
- b. Review and if necessary revise the tree and shrub planting and maintenance practices of the Town to ensure they can achieve the level of tree and shrub preservation and restoration anticipated in this plan,
- c. To adopt a more aggressive and comprehensive approach to tree and shrub planting in Town parks, along Town roads and on other municipal property to enhance total tree and shrub cover and diversity within the Town, .
- d. To adopt an aggressive in the development of tree planting and maintenance advisory services and partnerships that encourages and support tree and shrub planting on the property of other landowners in the Town.

62. In the development and implementation of tree and shrub planting programs the Town will be guiding in part by the following good forestry practices:

- a. Use of native plant species wherever possible and feasible
- b. Choosing plant species best adopted to the soil conditions of the site to encourage high survival rates and longevity,
- c. Promotion of tree species and planting and maintenance practices that keep maintenance costs to a minimum, and
- d. Provide diversity in plant species.

63. A policy should be included in this subsection addressing the Town’s intent to adopt effective approaches in the management of soil and the control of soil erosion and sedimentation, for example:

- a. The Town shall amend its current grading and site alteration by-laws to specifically control removal and/or stockpiling of surface materials in order to:

- Limit periods of soil exposures
- Encourage rapid restoration of disturbed areas; and
- Ensure appropriate erosion and sedimentation control practices are followed, such as:
 - Requiring that any removal of topsoil or subsoil on any site in the municipality requires a permit under the by-law
 - Requiring that any land use change or development proposal must prepare a soil management plan that shows how the applicant will plan, design, construct and manage the proposal to ensure:
 - Amount of soil disturbed, removed and stockpiled is kept a minimum,
 - Adoption of measures whereby exposed soils are managed to confine erosion and sedimentation to the disturbed areas of the site;
 - Stockpiling of soils and subsoils on site in terms of stockpile size and duration is kept to a minimum, and
 - Requirement for restoration of disturbed areas to a stabilized and vegetated condition as soon as possible after construction is completed.

64. A requirement that all major development proposals prepare and implement a soil management plan which will ensure:

- a. Retention of as much soil as possible on site both during and after construction is completed,
- b. Retaining sufficient topsoil on site to ensure the soil can be quickly returned a healthy productive state.
- c. Minimizing the need for long term storage of topsoil,
- d. Restoring the site to a stable soil condition as soon as possible after construction as possible including the adoption of progressive soil restoration where feasible.