

Environmental Policy Review & Consolidation



Consolidated Final Report and Policy Framework



May 2009

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Executive Summary

Natural heritage planning is a municipal responsibility defined through Provincial legislation and policy. The foundation for this activity is the Provincial Policy Statement (PPS). Municipalities must be consistent with Provincial Policy. The PPS states that:

The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

More recently the Province has enhanced and provided greater clarity regarding natural heritage protection through the Oak Ridges Moraine Conservation Plan, Greenbelt Plan, Clean Water Act and Growth Plan for the Greater Golden Horseshoe. In addition to these substantial legislative requirements, the Town of Markham contains a significant portion of the Rouge Park, one of the largest urban wilderness parks in North America.

The Environmental Policy Review and Consolidation Study was initiated by the Town of Markham with the goal of defining a comprehensive vision that will guide environmental planning over the long term. The study was undertaken with the following objectives:

- To provide a comprehensive inventory and review of all of the existing land use policies that govern the protection and management of natural heritage resources and functions within the Town of Markham;
- To compile a complete inventory of existing natural heritage features utilizing existing mapping and data from various government agency databases;
- To develop a plan for a Natural Heritage Network (NHN) for the Town of Markham that is founded on a natural heritage systems planning approach and built on the inventory of natural heritage features and composite of existing policies;
- To evaluate the NHN in comparison to local and regional natural heritage targets and strategies;
- To recommend a consolidated environmental Official Plan policy framework that is aimed at implementing the NHN and integrating existing policies governing the protection and management of environmental resources and open spaces within the Town; and
- To implement aspects of the Greenbelt Plan and Oak Ridges Moraine Conservation Plan in the Town of Markham Official Plan.

The Environmental Policy Review and Consolidation was completed to ensure that the environmental and open space policies of the Town of Markham's Official Plan are as up-to-date as possible, and are in conformity with or are consistent with, current Provincial and Conservation Authority policies, including the Greenbelt Plan and relevant aspects of the Growth Plan for the Greater Golden Horseshoe.

The study process was comprised of the following broad components:

- Compilation and review of the existing environmental and planning policies of the Town, Toronto and Region Conservation Authority (TRCA), Region of York, and Province of Ontario;
- Sourcing and consolidation of natural heritage features mapping from the various agencies;
- Delineation of the preliminary future Rouge Park boundary;
- Confirmation of natural heritage objectives and the delineation of a proposed Natural Heritage Network (NHN);
- Development of a proposed Greenway System for Markham to address the NHN and other environmental policies within Markham, including the Greenbelt Plan;
- Preparation of a draft Background Report and Policy Framework;
- Consultation with agencies, stakeholders and the public to guide the refinement of the documents and mapping; and
- Preparation of a final Consolidated Report and Policy Framework for approval by the Town of Markham Council.

All of the comments that were provided as a product of this consultation process were recorded and a record of how each was responded to in the study process is included in the “Response Document” that is appended to this report.

The strategy being recommended through this study comprises a Town-wide Greenway System which contains three distinct components:

- Natural Heritage Network
- Natural Heritage Network Enhancement Lands (Corridors and Core Areas)
- Greenbelt Agriculture

The Greenway System is intended to function as an interconnected and multifaceted system that permanently links environmental features, rural lands and recreational resources both within and beyond the boundaries of the Town. The Greenway System would provide for a multitude of functions that are intended to maintain and enhance natural heritage and hydrological features and agricultural areas and support opportunities for public use within the Town’s Greenway System.

The Natural Heritage Network comprises a combination of existing natural and hydrological features and policy areas requiring protection for natural heritage purposes identified by the Town and Province. These include:

- Flood plain lands, watercourses and stream corridors
- Wetlands meeting Provincial or TRCA criteria
- Woodlots meeting Provincial, Regional, TRCA and Town criteria, including zoned woodlots
- Meadows that are contiguous with a valley corridor or other listed feature

- Naturalized stormwater management ponds that are contiguous with a valley corridor or other listed feature
- Habitat for rare, threatened or endangered species, as well as species of concern ranked by the TRCA as L1 to L3 that are contiguous with a valley corridor or other listed feature
- Environmentally Significant Areas identified by the TRCA
- Locally Significant Areas identified by the Town
- Environmental Protection Areas identified by the Town
- Rouge North Management Lands delineated by the Town
- Key Natural Heritage Features and Key Hydrological Features identified by the Province on Greenbelt lands and including the Greenbelt corridors along Bruce Creek, Berczy Creek, Robinson Creek, Mount Joy Creek, and Little Rouge Creek

These lands are intended to be protected as conservation lands and enhanced over the long term. The policies recognize existing uses, particularly agricultural activities and these uses will be supported as a right within the Natural Heritage Network where not impacting existing natural features.

The Greenway System also comprises Natural Heritage Network Enhancement Lands. These lands comprise core areas and linkages of sufficient size and connectedness to ensure long-term ecological integrity and improve biodiversity of the system. NHN Enhancement Areas are proposed in strategic locations to achieve the following fundamental ecological objectives:

- Enhancement of connectivity and corridor function by contributing to the creation of the proposed 200-metre corridors that will link features and form inter-subwatershed linkages;
- Contribution to the creation of the proposed core areas of biodiversity that will have an area of at least 50 hectares (ha.) and enhancement of the size, shape and resilience of habitat patches by:
 - Infilling openings in habitat patches to create larger consolidated areas of habitat;
 - Reducing the extent of edge conditions in relation to patch size;
 - Providing connections between two or more proximate, yet disparate habitat patches; and,
 - Connecting complimentary habitats to each other, for example, connecting woodland to wetland or riparian habitat, to enhance habitat diversity.

Natural Heritage Network enhancement areas are intended to support the overall ecological integrity of the NHN. Enhancement lands were identified using ecological principles of connectivity, supporting Provincial documentation on achieving connectivity and the TRCA's Terrestrial Natural Heritage System Strategy. Wherever possible, connections are recommended where natural features exist.

The report acknowledges that lands designated as Natural Heritage Network – Enhancement (NHNE) are of significant importance in achieving the inter-subwatershed

connectivity necessary to support the ecological function of the Natural Heritage Network. Lands bearing this designation therefore represent a high priority for acquisition and should be prime candidates for funding under the Town's Environmental Land Acquisition Fund Program.

The final component of the Greenway System is the Greenbelt Agriculture lands. These lands comprise all the lands within the Provincial Greenbelt Plan area that are not encompassed in the Natural Heritage Network. These lands are predominantly existing agricultural lands and are identified as "prime" within the Provincial Policy Statement. The study recommendations support the continued long-term use of the lands for agricultural purposes with environmental conservation and restoration uses as secondary to agriculture. Site-specific policies would need to be introduced for this designation to reflect the specific requirements of the Greenbelt natural heritage policies.

The EPRC study also addresses the review of the Town's Hamlet boundaries in accordance with the Greenbelt Plan policies and the review of Special Policy Area land use designations. Other policy guidance is provided in the report to address Markham's Small Stream Study recommendations, TRCA watershed plan implementation and the implementation of a monitoring program to track progress made toward achieving NHN objectives.

The Environmental Policy Review and Consolidation establishes the foundation for the implementation of a functional Natural Heritage Network within the context of an overall Greenway System in Markham. The NHN is comprised of existing features and lands protected from future development by existing policies as well as "enhancement" areas that are intended to achieve the NHN vision of a system of core "Centres of Biodiversity", and connectors that will provide linkages between the subwatersheds of the Rouge River, Don River and Highland, Petticoat and Duffins / Carruthers Creeks. The NHN was conceived as a means to maintain biodiversity and ecological connectivity in order to mitigate the impacts of conversion of the landscape matrix from agricultural to urban in Markham. The realization of the NHN and Greenway System will contribute to the ecological integrity of the landscape within Markham and beyond and will benefit the health and well-being of Markham residents for generations to come.

Markham Environmental Policy Review and Consolidation

May 2009

Schollen & Company Inc., North-South Environmental Inc., The Planning Partnership,
Meridian Planning Consultants and Kidd Consulting

PART 1 - BACKGROUND REPORT

1.0 INTRODUCTION

1.1 Study Objectives and Study Purpose

The Town of Markham has long recognized the importance of protecting natural heritage features and their functions and has implemented various Official Plan policies to guide the protection and management of these features. Markham's commitment to the environment is also manifested in the objectives and goals of the Town's Official Plan. In recent years, various government agencies including the Province of Ontario, Region of York and Toronto and Region Conservation Authority have enacted policies that also address the protection and management of natural heritage resources and functions within the Town of Markham. In order to achieve a clear picture of the implications of all of these various policies upon the landscape within the Town of Markham, and with the objective of defining a comprehensive vision that will guide environmental planning within the Town in the future, Markham initiated the Environmental Policy Review and Consolidation. The study was undertaken with the following objectives:

- To provide a comprehensive inventory and review of all of the existing land use policies that govern the protection and management of natural heritage resources and functions within the Town of Markham.
- To compile a complete inventory of existing natural heritage features utilizing existing mapping and data from various government agency databases.
- To develop a plan for a Natural Heritage Network (NHN) for the Town of Markham founded on a natural heritage systems planning approach and building on the inventory of natural heritage features and composite of existing policies.
- To evaluate the NHN in comparison to local and regional natural heritage targets and strategies.
- To recommend a consolidated environmental Official Plan policy framework that is aimed at implementing the NHN and integrating existing policies governing the protection and management of environmental resources and open spaces within the Town.
- To implement aspects of the Greenbelt Plan and Oak Ridges Moraine Conservation Plan in the Town of Markham Official Plan.

The Environmental Policy Review and Consolidation Study (EPRCS) was initiated by the Town of Markham in 2004. However, the study process was temporarily

suspended when the province initiated the Greenbelt Planning process. Once the Provincial Greenbelt Plan was released, the EPRCS resumed with the terms of reference modified to address the requirement to integrate the Greenbelt Plan into the Town's Environmental Policy Framework and address other studies and legislation that had emerged since the inception of the study process, including the Town of Markham Small Streams Study, the Rouge Watershed Plan and the Provincial Growth Plan.

The EPRC Study process was comprised of the following tasks:

- A review of existing Town of Markham environmental and planning process
- A review of the planning policies of the Province of Ontario, Region of York and Toronto and Region Conservation Authority (TRCA)
- A review of various relevant planning studies including the following:
 - Rouge North Management Plan, Town of Markham / Rouge Park Alliance
 - Rouge Watershed Plan, Toronto and Region Conservation Authority
 - Town of Markham Small Streams Study, Town of Markham
 - Eastern Markham Strategic Review, Town of Markham
 - Rouge Park – A Park in Progress – Report of the Rouge Park Implementation Task Force, Town of Markham
 - Duffins and Carruthers Creek Watershed Plan, Toronto and Region Conservation Authority
 - Don Watershed Plan (Draft), Toronto and Region Conservation Authority
 - Town of Markham Natural Features Study, Town of Markham
 - Other studies and documents pertaining to Markham's natural heritage and environmental planning
- Sourcing of natural heritage features mapping from various sources including the database of the Town, the TRCA, the Province of Ontario and the Region of York
- A review and consolidation of the mapping layers
- Delineation of the preliminary Rouge Park boundary through the application of the Boundary Delineation Criteria set out in the Rouge North Management Plan
- Limited ground truthing to verify mapping. Ground truthing was limited to areas visible from public lands and road rights-of-way
- Preparation of maps illustrating environmental policy layers
- Consolidation of features mapping and policy layers
- Evaluation of mapping to characterize existing natural heritage lands within Markham and identify limitations to achieving a functional natural heritage system in consideration of the influences of future urbanization
- Confirmation of natural heritage system objectives and development of a conceptual approach to establishing the "Natural Heritage Network" utilizing a system of core areas and corridors
- Development and refinement of natural heritage network mapping including comparison with TRCA's "Targeted System" as defined by the application of TRCA's Terrestrial Natural Heritage System Strategy (TNHSS)
- Consultation with TRCA staff regarding findings of the comparative analysis of the TNHSS "Targeted System"

- Development of the Greenway System for Markham to address the integration of NHN with other environmental policies within Markham, including integration of the Greenbelt Plan
- Consultation with staff of the Ministry of Municipal Affairs and Housing and the Ministry of Natural Resources to address integration of the Greenbelt Plan and determine strategies to address agricultural lands within the Greenbelt in Markham
- Preparation of the draft background report and policy framework
- Consultation with the stakeholders, landowners and the public-at-large to seek input to direct the refinement of the report and policies
- Consultation with the staff of the TRCA, MNR, MMAH, Region of York and the Government of Canada (related to the federal greenspace lands in eastern Markham) and neighbouring municipalities to seek further technical input to aid in the process of refining the report and policy framework
- Preparation of a comprehensive “Response Document” that provides a catalogue of comments received and all of the resultant refinements made in response to each respective comment
- Refinement of the feature and policy mapping to address technical comments provided through the consultation process, to address updated TRCA floodplain mapping and reflect recent site specific planning approvals
- Preparation of the final background report, mapping and policy framework including recommended monitoring approach, Small Streams feature mapping and final response document.

The study process was implemented in stages, with each stage culminating in stakeholder and/or public consultation to assist in evaluating, defining and confirming work in progress. Key components of the public consultation process are identified below:

- June 2007 – Public Information Meeting
 - Confirmation of study goals, objectives and process
- November 2008 – Town of Markham Development Services Commission
 - Presentation of preliminary draft of background report and NHN / Greenway System concepts
- December 2008 – Town of Markham Development Services Commission
 - Presentation of draft background report and policy framework
- December 2008 – Public Information Meeting
 - Presentation of draft background report and policy framework
- December 2008 – Stakeholder Interviews
 - Opportunity to receive detailed comments on the draft documents
- March 2009 – Technical Advisory Committee Meeting
 - Detailed review of policies and mapping
- March 2009 – Town of Markham Development Services Commission

- Presentation of proposed refinements to NHN and environmental policies and Hamlet designations
- April 2009 – Stakeholder Interviews
- April 2009 – Technical Advisory Committee Meeting
- April 2009 – Public Information Meeting
 - Presentation of final background report and policy framework

This consultation process assisted in identifying issues of concern that were subsequently addressed through refinements to the mapping, report and environmental policy framework. A copy of the response document is appended to this document.

1.2 Intent of the Environmental Policy Review and Consolidation

The Environmental Policy Review and Consolidation was completed to ensure that the environmental and open space policies of the Town of Markham's Official Plan are as up-to-date as possible and are in conformity with or are consistent with current Provincial and Conservation Authority policies, including the Greenbelt Plan and relevant aspects of the Growth Plan for the Greater Golden Horseshoe.

It was the further intent of the policy review to develop an overall strategy that will guide land use planning in environmental and open space areas over the long term. Provincial policies considered in the context of the policy review included the Provincial Growth Plan for the Greater Golden Horseshoe, the 2005 Provincial Policy Statement and the 2005 Greenbelt Plan. Policies to implement the Oak Ridges Moraine Conservation Plan have already been developed for the Town of Markham within Official Plan Amendment No. 117. No substantive changes to the Oak Ridges Moraine Official Plan policies are proposed as a result of the policy review. In addition, changes to the policies recently included in the Official Plan by OPA 140, which deal with the Rouge North Management Area, are not proposed to be modified either, since they establish an appropriate context for considering the impacts of development and land use on the Rouge River watershed in the Town.

This report provides the basis for a comprehensive environmental planning policy regime that will conform to all of the Provincial directives and will implement the Town's vision for a Greenway System for current and future residents.

1.3 Town of Markham – Landscape Overview

The Town of Markham is situated in the southeast corner of the Regional Municipality of York. It is generally bounded by the Town of Whitchurch-Stouffville to the north, the Town of Pickering to the east, City of Toronto to the south and the Town of Richmond Hill and the City of Vaughan to the west. The southern and western areas of the Town are generally urbanized; however the northern and eastern areas of the Town are rural. The eastern areas of the Town are unusual in that there are substantial holdings of publicly owned land in this sector of the Town, a large portion of which is intended to remain as open space.

The Town encompasses 21,400 ha. subdivided into five watersheds. Each watershed contains a suite of natural heritage features including woodlots, wetlands, watercourses, valley and stream corridors and habitats that together contribute to the ecological health and function of the Town's landscape.

The Town of Markham is mainly located in the South Slope physiographic region (Chapman and Putnam, 1984). This region occupies the south-facing slopes immediately below the Oak Ridges Moraine. In the Markham area, the South Slope is fairly smoothed and only faintly drumlinized, the major topographical relief being provided by the principal watercourses such as the Don and Rouge Rivers, and Duffins Creek. The northernmost area of the Town extends onto the south toe of the Oak Ridges Moraine (ORM). This provincially significant landform stretches approximately 300 kilometers from the Niagara Escarpment in the west to the Ganaraska Forest in the east. It is well known for the important function it serves for groundwater recharge and as the source of the major watercourses that flow south to Lake Ontario. In Markham this includes the Rouge and Little Rouge Rivers, as well as Berczy and Bruce Creeks. Other watercourses in the Town such as Petticoat Creek and German Mills Creek have their headwaters south of the ORM within the South Slope. The presence of the ORM and the various watercourses that flow from it are germane to this study as they serve as the principal ecological linkages that connect and integrate Markham's natural heritage features into the larger regional and provincial landscapes.

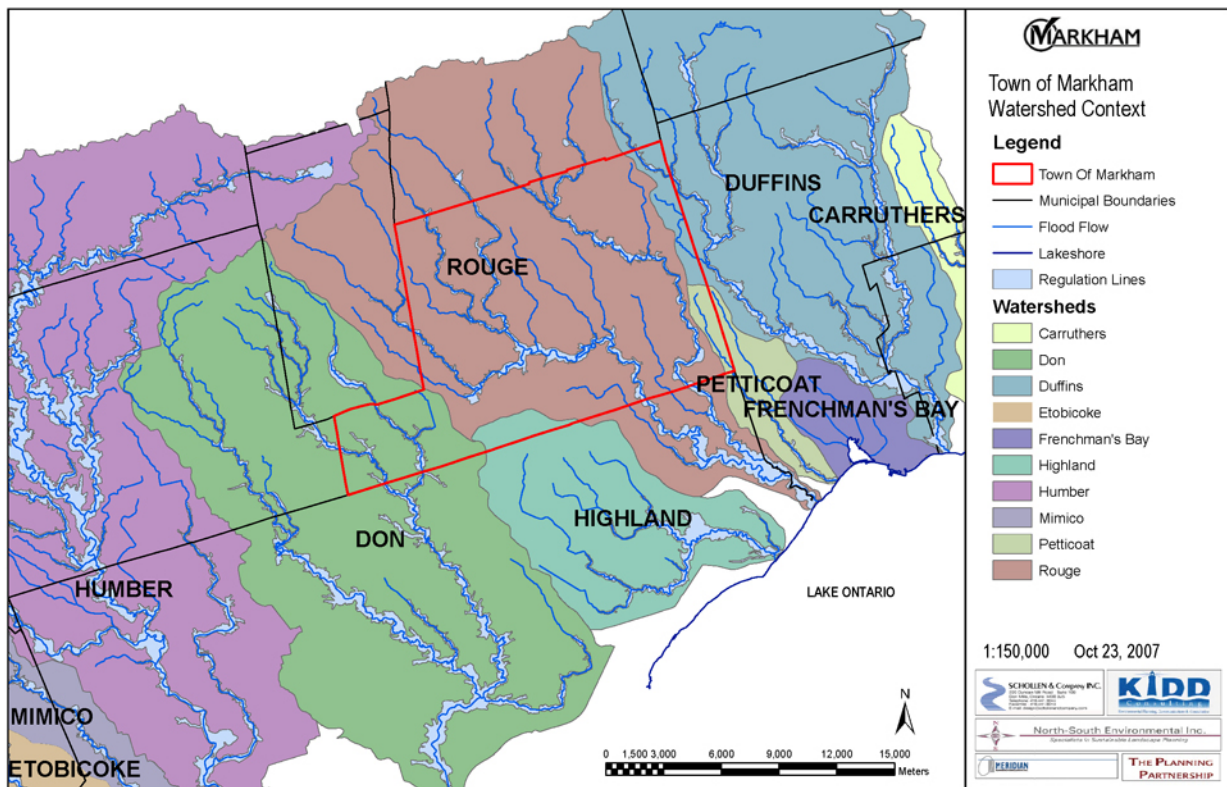


Figure 1: Key Plan – Town of Markham

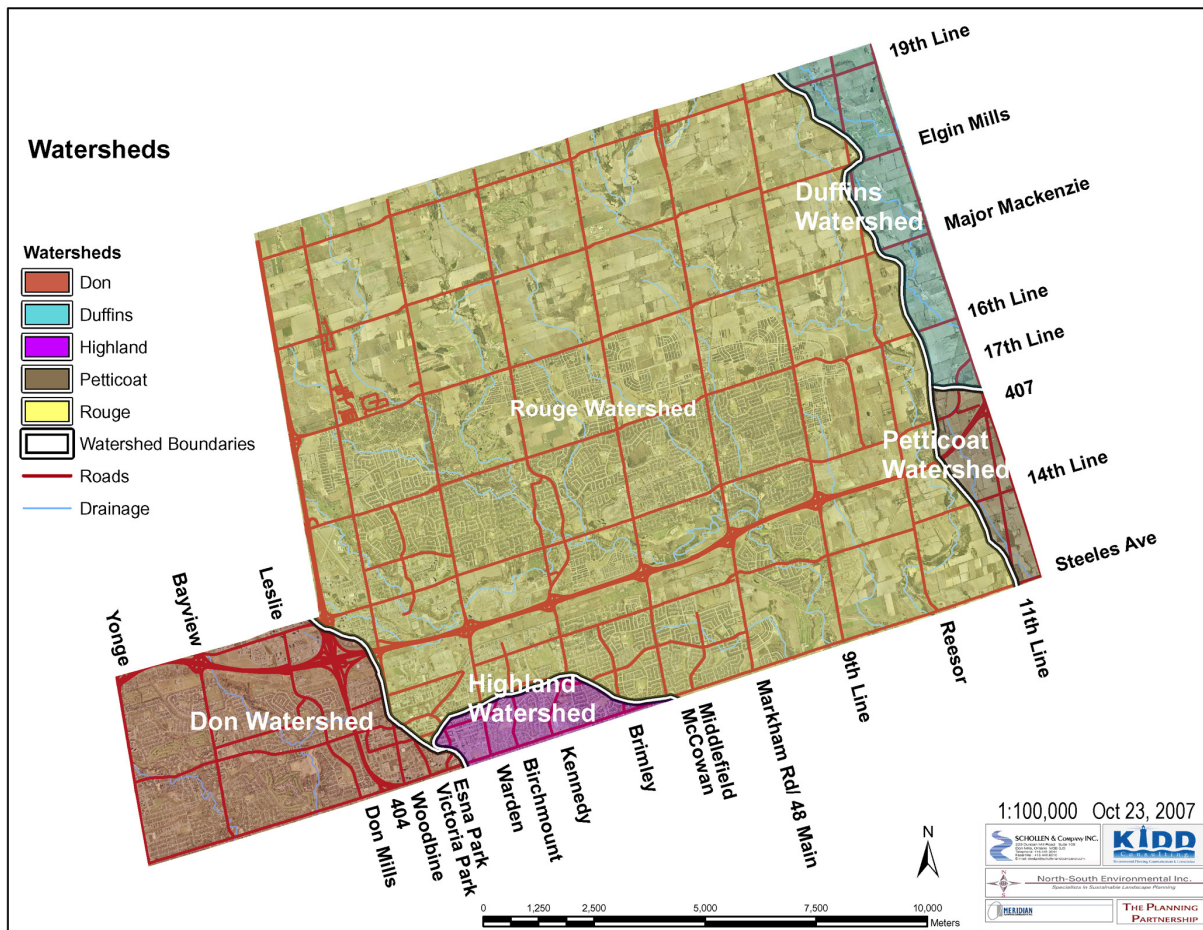


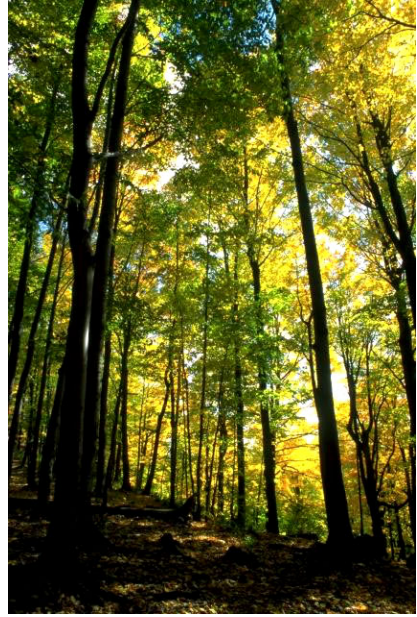
Figure 2: Watershed Boundaries, Town of Markham

Prior to settlement the Town would have been generally forested, however much of this forested landscape was removed to support agriculture and the settlements that were the foundations of the Town of Markham, and subsequently urban development. The natural features that remain today, including upland woodlands, wetlands, riparian forests and watercourses, are representative of the extensive pre-settlement forest.



The combination of the gently sloping landscape, the rural/agricultural landscapes interspersed with woodlands, wetlands and valleys, the moraine to the north, and the wildlife that this mosaic supports, represents a set of conditions that is unique to the Town of Markham. These features constitute the natural heritage of the Town and the resources they provided dictated its early settlement patterns.

The cultural history of the Town, including the early agricultural and associated industries, the street patterns, locations of hamlets and urban cores, can to a large extent be attributed to the Town's historic natural environment. Thus the preservation of natural features is not only important for environmental reasons such as preservation of biodiversity, but also as a reminder of the landscape that characterizes the Town and that distinguishes it from its neighbours. The preservation of the remnant natural features within an overall natural heritage system will maintain the natural heritage of the Town for future generations and serve as a reminder of its origins.



In response, a key component of the Environmental Policy Review was the delineation of a sustainable natural heritage system for the Town of Markham. The natural heritage system was developed to address the opportunities and constraints afforded by the present-day landscape with the goal of maximizing functional connectivity and enhancing natural heritage features and functions.

1.4 Town of Markham – Public Land Ownership

Within Eastern Markham, a significant area of land is owned by public agencies. These public land holdings include:

- The Pickering Lands held by Transport Canada for future airport uses. These lands include the “green space project” lands which encompass the 800 ha. “Alternate Rouge Park Corridor” within Markham.
- The Rouge Park East Lands held by the Province of Ontario and dedicated for Rouge Park purposes. The East Lands encompass approximately 663 ha. in the east end of Markham. The ownership of these lands will be retained by the province and will be managed by the TRCA and Rouge Park through agreements or memoranda of understanding.
- The Little Rouge Corridor and Bob Hunter Memorial Park encompass approximately 800 ha. and are owned by the Toronto and Region Conservation Authority and managed for Rouge Park purposes in accordance with the Little Rouge Corridor and Bob Hunter Memorial Park Master Plans.

Figure 4 provides an illustration of these land holdings within the Town of Markham.

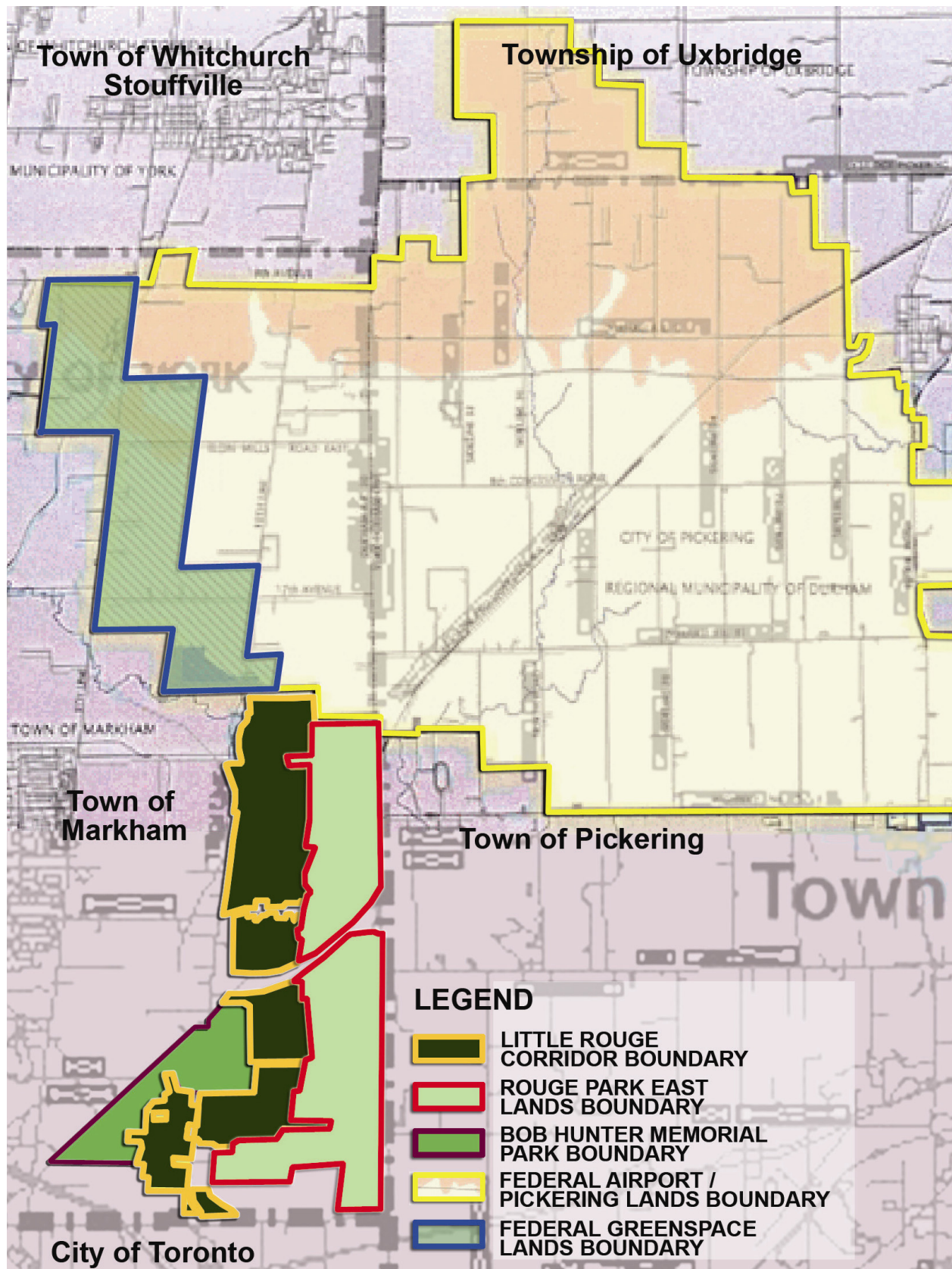


Figure 4: Land Holdings Map

2.0 BACKGROUND REVIEW

2.1 Ecological Context

The Town of Markham is strategically located as the centrepiece of a larger, regional-scale system of ecological nodes and corridors. Rouge Park, North America's largest urban natural environmental park, extends into southeastern Markham. The park encompasses approximately 4,655 ha., including 1400 ha. along the Little Rouge River corridor in Markham and extends southward to Lake Ontario. The Rouge-Duffins Agricultural Preserve (1,900 ha.) is located immediately east of Markham. Further east, the Seaton Natural Heritage System comprises approximately 1,500 ha. of natural heritage and agricultural lands that are proposed to be restored to natural cover. The Natural Core and Natural Linkage Areas associated with the Oak Ridges Moraine abut the north boundary of Markham with the primary east/west corridor located approximately 4km north of the Town's northern limit.

The North Leslie natural heritage system links to the Town of Markham at its boundary with the Town of Richmond Hill. This natural heritage system includes headwaters streams and hydrologically sensitive areas that sustain base flow in the Rouge River and its tributaries. Figure 5 illustrates the ecological context of Markham within this larger system of nodes and corridors.

2.2 Existing Natural Heritage Features

One of the initial steps in the process of completing the ERPC was to source and compile existing natural heritage feature inventory mapping from various databases including those of the Province of Ontario, Region of York, Town of Markham and Toronto and Region Conservation Authority, in order to create a comprehensive, consolidated inventory of known and mapped natural heritage features. The various map layers that were compiled to create the composite mapping included the following:



- Flood plain lands, watercourses and stream corridors
- Wetlands meeting Provincial or TRCA criteria
- Woodlands meeting Provincial, Regional, TRCA and Town criteria, including zoned woodlands
- Meadows that are contiguous with a valley corridor or other listed feature
- Naturalized stormwater management ponds that are contiguous with a valley corridor or other listed feature

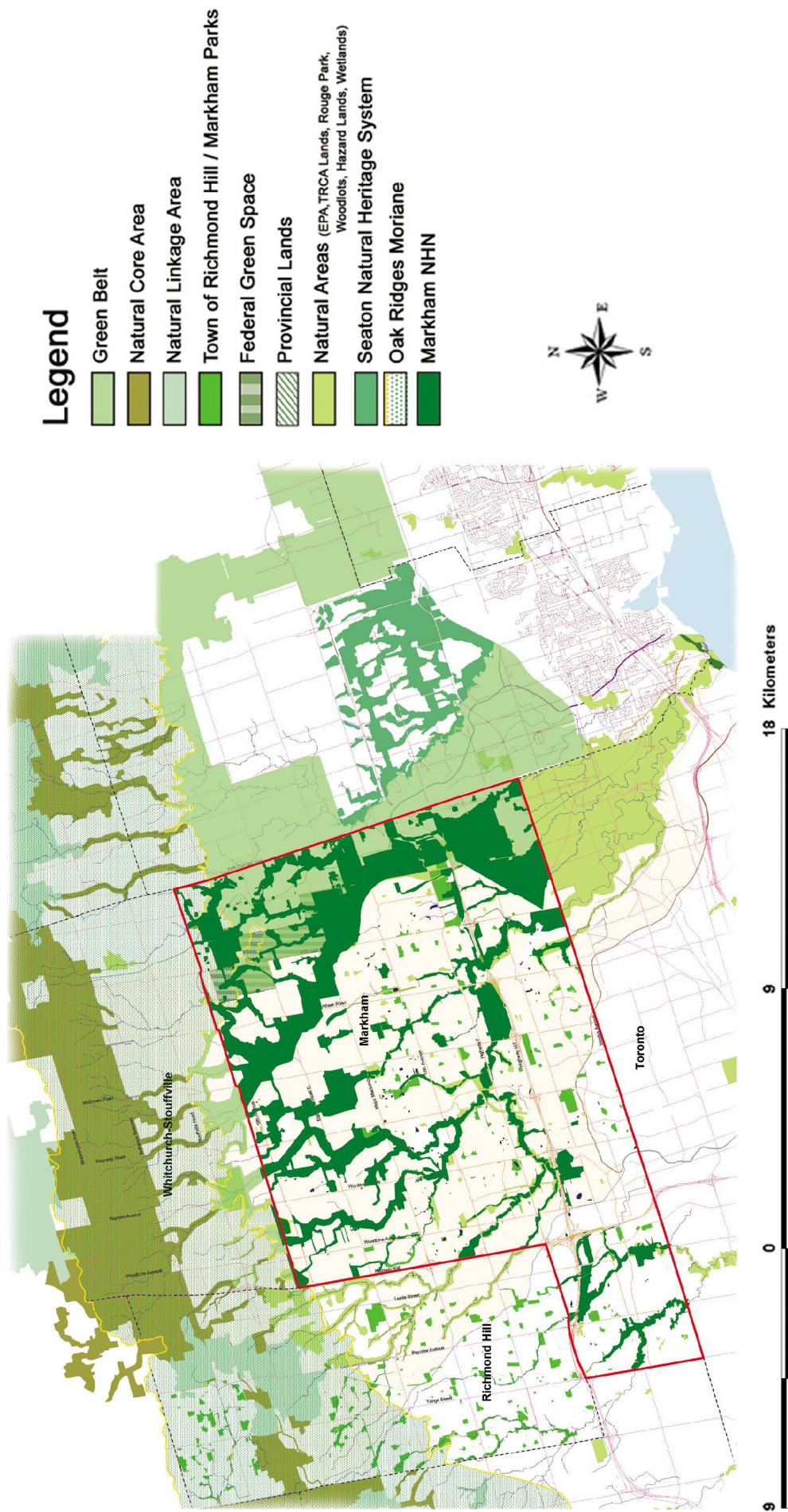


Figure 5: Natural Heritage Network Context

- Habitat for rare, threatened or endangered species, as well as species of concern ranked by the TRCA as L1 to L3 that are contiguous with a valley corridor or other listed feature
- Environmentally Significant Areas identified by the TRCA
- Locally Significant Areas identified by the Town
- Environmental Protection Areas identified by the Town
- Rouge North Management Lands delineated by the Town
- Key Natural Heritage Features and Key Hydrological Features identified by the Province on Greenbelt lands

Figure 6 provides an illustration of the various mapped features within the Town of Markham.

Following the generation of the initial iteration of the features map, limited ground truthing was undertaken to confirm the status of mapped features. It should be noted that ground truthing was confined to areas that were visible from road rights-of-way and public land holdings. Private lands were not assessed as a component of this exercise.










The mapping was further refined through desktop exercises that included:

- a comparison of the features mapping in relation to recent aerial photography; and
- a review of the limits of features within the existing urban area in consideration of existing land uses and future land uses approved by council.

Throughout the course of the study process, the features mapping was refined to incorporate new data, such as the updated Rouge River watershed floodline data sourced from the TRCA.

It should be noted that the mapping generated as a product of this study has been prepared utilizing base data sourced from the Town, TRCA, Region of York, Province of Ontario and Government of Canada and represents the state of natural features and policies at the date of publication of the report. In addition, the data were provided at a landscape scale and may not reflect site-specific conditions. Consequently, refinement of the mapping may be necessary to respond to modifications to the base data that may be made by the various source agencies or in response to detailed site-specific field work and technical studies that will be completed in the future to support changes in land use.

Legend

-  Provincially Significant Wetlands
-  Storm Water Ponds (TRCA)
-  Forest (TRCA)
-  Meadow (TRCA)
-  Successional Forest (TRCA)
-  Wetland (TRCA)
-  Significant Forest (Town)
-  Ponds
-  Roads

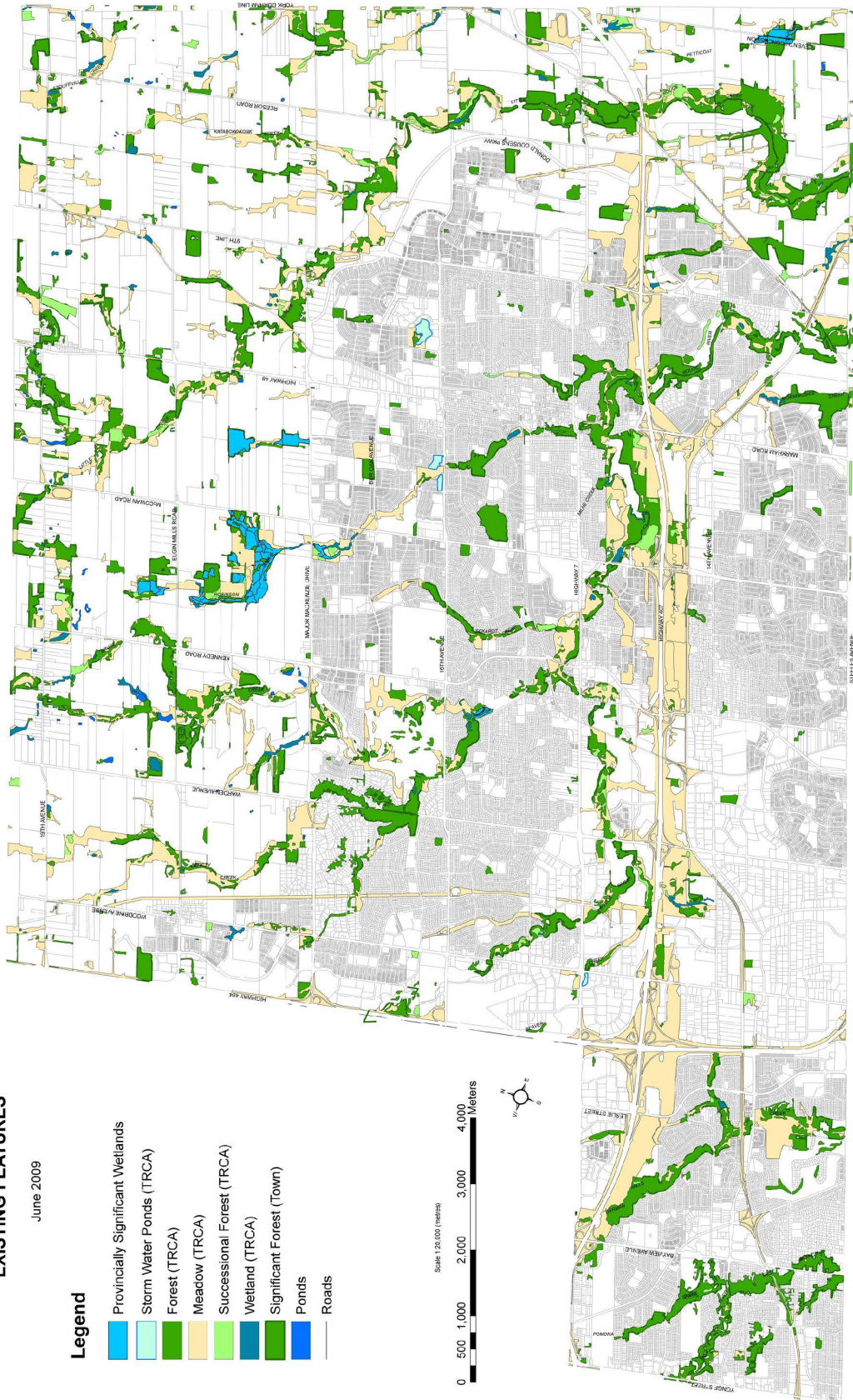
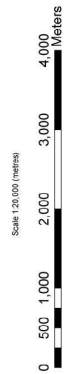


Figure 6: Existing Features

2.3 Existing Planning Policies

This section of the report provides an overview of the layers of existing planning policy that have an effect on the Town of Markham. A more detailed review of existing policies is contained within Appendix B to this report.

2.3.1 Town of Markham Official Plan

The Town of Markham Official Plan was partially approved by the Province on April 5, 1993 with further approvals granted later that year, also by the Province. A comprehensive review of the Official Plan has not been undertaken since that time. However, the Official Plan has been amended numerous times to either provide for new development in certain areas or to establish policies for specific types of uses (such as Places of Worship). In this regard, since the Official Plan was approved, the Plan has been amended over 140 times.

Section 2 of the Markham Official Plan contains the general policies that apply to all land uses in the Town. In this regard, Section 2.1 a) contains the four goals which collectively provide the basis for the policies in the Official Plan. These four goals are set out below:

- i) to accommodate the population and development anticipated for the Town in the planning period;*
- ii) to provide the necessary services and facilities required by the present and future population;*
- iii) to maintain and strengthen individual community identities and the identity of the Town community as a whole; and,*
- iv) to provide for anticipated future growth within the confines of a compact urban envelope."*

The above goals recognize that the population of the Town of Markham will continue to expand and that the services required for that population will need to be provided.

Section 2.1 b) contains the objectives that are intended to implement the goals above. It is within these objectives that it is indicated that the objective of the Town is to:

"manage the timing of development of areas designated for development so that... urbanization of agricultural lands and encroachment on natural areas is minimized, natural features are protected, and the restoration and enhancement of natural features is encouraged."

To a very large extent, this policy establishes the basis for the current policy review, which is intended to essentially achieve this objective.

Section 2.2 of the Official Plan deals specifically with the environment and natural resources. This section contains the following three goals in sub-section a):

- “i) to protect, preserve and improve the natural environment.*
- ii) to protect residents and workers from nuisance and dangers due to environmental pollution and the misuse of land.*
- iii) to promote an awareness of the natural resources and to encourage an appreciation and responsibility of the natural eco-systems among residents and owners in Markham.”*

The following objectives are also included within this section of the Official Plan.

- “i) To ensure the preservation, protection and management of forests, hedgerows, natural vegetation, watercourses and wetlands.*
- ii) To ensure that new development, including intensification, shall have a minimum impact on the established natural environment.*
- iii) To ensure that no inappropriate development occurs on Hazard Lands.*
- iv) To ensure that the population and development in Markham are protected from unacceptable levels of pollution and from sources of nuisance.*
- v) To avoid unnecessary disturbance to natural topography. If the topography must be altered, there should be no increase in stormwater run-off or disturbance to existing drainage patterns resulting from the alterations.*
- vi) To pursue sound stormwater management practises that will ensure adequate protection from flooding and erosion, will maintain and/or improve water quality and will enhance the environmental, aesthetic and recreational potential of watercourses.*
- vii) To ensure long-term accessibility to mineral aggregate resources.*
- viii) To ensure the preservation of flora and fauna reserves.*
- ix) To ensure the maintenance and protection of the Oak Ridges Moraine, and of the quality and quantity of its groundwater resources.”*

Many of the objectives above also assist in providing the basis for the updating of the Town’s environmental policies to ensure that these objectives can and will be implemented.

Section 2.2.2 of the Official Plan contains a number of policies on environmental management in the Town. The introductory paragraph in Section 2.2.2.1 (reproduced below), again provides the basis for a policy approach that recognizes that the protection of environmental lands in the Town is a priority.

“This section provides a Plan for the environment and a framework for achieving ecologically linked, healthy and diverse natural features. The Plan provides for a greener urban environment and expanded aesthetic and recreational opportunities throughout the Town for the benefit of all residents. The greater importance accorded to natural features through the policies of this Section establishes an appropriate balance of social, economic and

environmental concerns in the long-range planning for the Town, and makes a significant contribution to a healthy community.”

Policies of Section 2.2.2 dealing with environmental management are implemented through the application of the Environmental Protection Area designation on the schedules to the Official Plan. However, the Environmental Protection Area designation as shown on Schedule 'I' to the Official Plan only applies to lands that are within the Town's urban area.

The overall intent of the Plan is that as more detailed Secondary Plan Studies are undertaken in new urban areas, the Environmental Protection Area designation is applied as required based on the detailed analysis carried out in support of the Secondary Plan. In fact, Section 2.2.2 which deals with sub-watershed studies requires that such studies be prepared as part of the consideration of a Secondary Plan or Land Use Plan for a significant growth area. Lands within the Environmental Protection Area designation are intended to be “*secured for long-term protection*” according to Section 2.2.2.4 a).

The policies in the Official Plan dealing with the Environmental Protection Area designation are extensive and clearly indicate that areas so designated are to be protected from urban development. However, there are also policies which permit recreational uses and infrastructure in these areas, provided such uses are appropriately designed and located.

The boundaries of the Environmental Protection Area designation are also considered to be approximate and can be modified based on further detailed study and the support of agencies such as the Toronto Region Conservation Authority. With respect to the ownership of the lands within the Environmental Protection Area designation, Section 2.2.2.4 k) indicates that the Town will require that valley lands that are not within the Hazard Lands designation, locally significant area complexes and woodlots and other vegetation communities identified on Schedules A – Land Use and I –Environmental Protection Areas be set aside for environmental protection purposes and that the Town will encourage public conveyance of these lands through the development approval process, land trusts, easements, development agreements or other means at its disposal.

Section 2.2.2.3 of the Official Plan establishes the basis for a Greenway System in the Town of Markham. It is indicated in this section that the Greenway System is intended to support ecological functions, provide access to natural areas and provide continuous trails linking the Town's greenway with the Rouge Park, the Oak Ridges Moraine and the Don River Valley south of Steeles Avenue. The Town's Greenway System is currently shown conceptually on Appendix Map 1 to the Official Plan and includes lands designated Environmental Protection Area and activity linkages and parks. These activity linkages extend through a number of the valley systems in the existing urban area, but they also extend through the urban area using a system of streets and public parks.

Section 2.2.3 of the Official Plan, which deals with rural areas has a significant impact on the current environmental policy review since these existing policies deal specifically with areas that are outside of the current urban service boundary. This section supports the preservation of *“good quality woodlots and tree stands”* and wetlands. In addition, the policies support the: *“retention of the natural course of rivers and their tributaries; retention of, or adequate replacement of, natural undisturbed vegetation of both sides of the watercourse to assist in the absorption of stormwater and soil stabilization and thereby to protect the quality of the water.”* In addition, it is indicated that: *“the Town shall endeavour to develop a linked open space system, incorporating conservation areas and valleylands”* in the rural area. It is further indicated that: *“this will include a system of neighbourhood, community and Town parks as well as natural areas. As far as possible, the open space system shall contain continuous walkways for pedestrians and a system of separate trails for the use of non-motorized bicycles. These pedestrian and bicycle systems shall be designed to link homes to parks, open spaces, schools, recreation and shopping facilities and transit stops.”*

Section 2.16, which deals with the Rouge Park North Management Area was added to the Official Plan by Official Plan Amendment 140 which was approved by the Ontario Municipal Board in April 2009. The vision for the Rouge Park North lands is articulated in Section 2.16.1, which is reproduced below:

“Rouge Park North lands are intended to be a special place of outstanding natural features and diverse cultural heritage, in urban and rural settings protected and flourishing as a diverse and healthy eco-system. Human activities are intended to exist in harmony with the natural environment. Rouge Park North is intended to be a sanctuary for nature and the human spirit.”

To implement the vision, goals and objectives for the Rouge North Management Area, a series of policy area overlays as shown on Schedule J have been established. These policy overlays deal with the Urban Policy area, the Middle Reaches policy area, and the Little Rouge Creek policy area. It is the intent of the Official Plan that these policy overlays be considered in conjunction with the other land use policies applying to the same lands. It is noted that all of the lands within the Rouge watershed boundary, which apply to about 75% of the Town's land base, are in one of the three policy areas described above.

The policies in Section 2.16 indicate that the lands known as Rouge Park North are comprised of lands in public ownership within and adjacent to the valley and stream corridors of the tributaries of the Rouge River. There are also a number of detailed policies in this section dealing with land use, the planning and provision of municipal parkland and the urban interface.

The two policy overlay areas that apply outside of the urban area have a significant impact on the current environmental policy review. The Little Rouge Creek policy area is intended to identify a corridor of a minimum 600 metres wide that is generally centred along the main branch of the Little Rouge Creek. It is the long-term intent of the Town that these lands be secured in public ownership or protected through easements and other agreements if retained in private ownership. Over the long-term, it is the intent of the Official Plan that lands within this policy area be used for

ecological enhancements and recreation and interpretation uses. As urban service area expansions are considered, the boundary of the policy area can be further refined. The Middle Reaches policy area applies to lands outside of the urban serviced area, but do not include the sub-watershed area of the Little Rouge Creek. The intent of this policy overlay is articulated in Section 2.16.8 b), which is reproduced below:

“the Middle Reaches policy area overlay is intended to protect and enhance the natural and cultural heritage resources of the Rouge River on lands encompassed within the Middle Reaches policy area; permit uses in Rouge Park North consistent with the park objectives and policies of this Plan and, ensure that all lands that meet the boundary delineation criteria in the Rouge North Implementation Manual are identified and conveyed in public ownership.”

The other section in the Official Plan that has an impact on the environmental policy review is Section 3.10, which deals with Hazard Lands. The Hazard Lands designation as shown on Schedule A includes all lands within the regulatory floodline, or the stable or predicted stable slope lines defined by the Toronto Region Conservation Authority. Lands within this designation are to be preserved and conserved in their natural state. However, agricultural uses and outdoor recreational uses are permitted within this designation. No buildings or structures are permitted within this designation, other than those necessary for flood or erosion control. The Hazard Land designation extends through both the urban and rural area of the Town.

In addition, to the Hazard Lands designation, the Official Plan also contains a Special Policy Area designation as well. The intent of the Special Policy Area designation is to firstly identify areas of existing urban development within floodplains and then to provide policies that are unique to that area that provide specific conditions for development and re-development in these areas. The Special Policy Areas in the Town are shown on Schedule A and in more detail, on Schedule F.

2.3.2 The Greenbelt Act and Plan

One of the most significant policy documents affecting the Town of Markham is the Greenbelt Plan. The area subject to the Greenbelt Act, 2005 includes the areas covered by the Oak Ridges Moraine Conservation Plan (ORMCP) and the Niagara Escarpment Plan (NEP) and adjacent lands. The overall intent of the Greenbelt Act and Plan is to identify and permanently protect lands from urban development so that significant natural heritage and hydrological features can be protected and to provide for the continuation of agricultural uses on the lands affected.

Highlights of the Greenbelt Act, 2005 are below:

- a) Land use decisions and public works must conform to the Greenbelt Plan (Sections 7 (1), 7 (3) and 7 (4));
- b) In the event of conflicts between the Greenbelt Plan and the Provincial Policy Statement (PPS), Official Plans or Zoning By-laws, the Greenbelt Plan shall prevail (Section 8 (1));

- c) The ORMCP and the NEP prevail in their area of application in the event of a conflict with the Greenbelt Plan (Section 8 (2));
- d) Official Plans must be updated to conform to the Greenbelt Plan a) no later than the five-year review set out in Section 26 (1) of The Planning Act, if the Minister does not direct the council to make the amendments on or before a specified date or b) no later than the date specified by the Minister, if the Minister directs the council to make the amendments on or before the specified date (Section 9 (1));
- e) Provisions in Official Plans with respect to certain specified matters (agriculture and aggregate extraction) that are more restrictive or exceed the requirements of the Greenbelt Plan do not conform to the Greenbelt Plan (Section 9 (2));
- f) In conjunction with the reviews of the NEP and the ORMCP, ten year reviews of the Greenbelt Plan are required (Section 10);
- g) Only the Minister of Municipal Affairs may initiate amendments to the lands designated Protected Countryside in the Greenbelt Plan (Section 11 (1));
- h) The Minister may recommend the approval of an Amendment, in whole or in part, or appoint a hearing officer to conduct a hearing on the proposed Amendment (Section 12 (1)). In the case of the latter, the Minister shall consider the report of the hearing officer, which contains recommendations regarding the proposed Amendment, and submit it to the Lieutenant Governor in Council along with recommendations that the Minister considers appropriate (Sections 13 (5) and (13 (6)));
- i) The final decision on an Amendment is vested with the Lieutenant Governor in Council and is not subject to appeal (Section 14 (1) and 14 (2)); and,
- j) Applications, matters or proceedings that commenced on or after December 16, 2004 related to areas designated as Protected Countryside must conform to the Greenbelt Plan except as may be otherwise prescribed (Section 24 (1)).

The Greenbelt Plan is comprised of lands within the Oak Ridges Moraine Conservation Plan (ORMCP), the Niagara Escarpment Plan (NEP), the Parkway Belt West Plan Area and lands designated as Protected Countryside. Within the Protected Countryside are the Agricultural System, Natural System and Settlement Areas. Below is a brief description of each policy area.

2.3.2.1 Agricultural System

The Agricultural System is comprised of two Specialty Crop Areas, namely the Niagara Peninsula Tender Fruit and Grape Area and the Holland Marsh Prime Agricultural Areas as designated within municipal official plans, and Rural Areas that are comprised of a mixture of agricultural lands, natural features and recreational and historic rural land uses. Municipalities may amend their Official Plan designations for Prime Agricultural Areas and Rural Areas when they bring their Official Plans into conformity with the Greenbelt Plan, only in the following circumstances:

- a) If the upper-tier or single-tier municipality has not amended the designation for its prime agriculture/rural lands to reflect the PPS;
- b) If an upper-tier or single-tier has completed a comprehensive official plan review; or,

- c) In order for a lower tier official plan to conform to an upper tier plan that has been amended in either of the above circumstances.

Permitted uses in prime agricultural areas are limited to agriculture, agricultural-related uses and secondary uses, as defined in the Provincial Policy Statement. With respect to agricultural uses, the Greenbelt Plan indicates that no municipality can include policies in its Official Plan that are more restrictive than the policies of the Greenbelt Plan with respect to agriculture.

As noted above, the Greenbelt Plan provides municipalities with the one time opportunity to delineate their 'prime' and 'rural' lands through the Greenbelt conformity exercise. However, the Greenbelt Plan indicates that such an exercise can only be undertaken when the upper tier planning authority (in this case the Region of York) has made a decision on what should be 'prime' and what should be 'rural'.

In Markham, the agricultural lands have been identified as 'prime' through the Provincial Land Evaluation Area Review (LEAR). The Region of York is conducting a regional LEAR exercise to determine the agricultural classifications for the purposes of Growth Plan and Greenbelt Plan conformity. Because of the soil capability in Markham, it is likely that Markham will continue to be identified as 'prime' lands, even where fragmentation, land use conflicts and other area evaluation criteria are factored into the assessment. The agricultural policies with respect to 'prime' lands are restrictive and generally permit only agricultural, agricultural-related, agricultural secondary uses, infrastructure and existing uses.

2.3.2.2 Natural System

The Natural System is comprised of a Natural Heritage System and a Water Resource System that often coincide given the ecological linkages between terrestrial and water based functions. The Natural Heritage System includes areas with the highest concentration of the most sensitive and/or significant natural features and functions.

The Water Resource System is made up of ground and surface water features and their associated functions. In addition to primary recharge areas, headwater and discharge areas associated with lands subject to the ORMCP and the NEP, the Water Resource System includes: the upper reaches of watersheds to the west of the Niagara Escarpment; lands around the primary discharge zones along the toe of the Escarpment and the base of the ORM; the major river valleys between the Moraine/Escarpment and Lake Ontario; the portions of the Lake Simcoe Watershed and the former Lake Algonquin Shoreline within York and Durham Regions; and, the former Lake Iroquois shoreline in Durham and Niagara Regions.

There are specific policies that apply to the Natural Heritage System, the Water Resource System, and Key Natural Heritage and Key Hydrologic Features. Of particular note:

- a) Municipalities together with conservation authorities should ensure that watershed plans are completed to guide planning and development decisions within the Protected Countryside;
- b) Municipalities shall, in accordance with any provincial directions on source water protection, protect vulnerable surface and ground water areas, such as wellhead protection areas, from development that may adversely affect the quality and quantity of ground and surface waters;
- c) Development or site alteration is not permitted within key hydrologic features or key natural heritage features within the Natural Heritage System including any associated vegetation protection zone with the exception of forest, fish and wildlife management; conservation and flood or erosion control projects, infrastructure, aggregate, recreational, shoreline and existing uses as set out in the general policies of the Greenbelt Plan;
- d) Beyond the Natural Heritage System within the Protected Countryside, key hydrologic features are defined by and subject to the natural features policies contained in the Greenbelt Plan;
- e) Beyond the Natural Heritage System within the Protected Countryside, key natural heritage features are subject to the policies of the PPS;
- f) A minimum vegetation protection zone of 30 metres shall be required from the outside boundary of wetlands, seepage areas and springs, fish habitat, permanent and intermittent streams, lakes and significant woodlands;
- g) New development within 120 metres of Key Natural Heritage Features within the Natural Heritage System or a Key Hydrologic Feature anywhere within the Protected Countryside requires a natural heritage evaluation and hydrological evaluation which identifies a vegetation protection zone;
- h) Expansions to existing agricultural buildings and structures and farm and non-farm dwellings along with accessory uses are permitted in key natural heritage features subject to criteria; and,
- i) New buildings and structures for agricultural uses will generally be required to provide a 30-metre vegetation protection zone from a key natural heritage feature or key hydrologic feature.

The Greenbelt Plan provides municipalities with the one time opportunity to refine the Natural Heritage System through the conformity exercise. In Markham, the lands identified as Protected Countryside are also identified as Natural Heritage System for almost all lands except two parcels in eastern Markham (Locust Hill area and the cemetery on Steeles Avenue). It is noted that the Greenbelt Natural Heritage System is an overlay designation, with the Protected Countryside designation being the prime designation. The Greenbelt Plan in Section 3.2.2.6 and then in Section 5.5.2 indicates that "the boundaries of the Natural Heritage System may be refined, with greater precision, in a manner that is consistent with this Plan and the system shown on Schedule 4."

2.3.2.3 Settlement Areas

Settlement Areas include Towns/Villages and Hamlets, as identified in municipal Official Plans and within their approved boundaries as they existed on the date the Greenbelt Plan came into effect. Settlement areas are subject to the policies of municipal official plans. There are no such Towns or Villages in the Town of Markham. Hamlets are substantially smaller settlement areas that are typically reliant on private services. As such, they are not intended to be a focus for growth. Hamlets are identified as dots on Schedule One to the Greenbelt Plan with more precise boundaries being identified through municipal Official Plans. The Greenbelt Plan permits infill and intensification within Hamlets along with the minor rounding out of Hamlet boundaries at the time of the municipal conformity exercise, subject to infrastructure policies contained in the Plan and municipal Official Plan policies. The Town of Markham is conducting a review of the Hamlet boundaries as a component of this study.

2.3.2.4 Rouge River Watershed and Park

The Greenbelt Plan contains a dedicated section on the Rouge River Watershed and Park in Section 3.2.6 as set out below:

“The Rouge River Watershed is of particular significance within the Protected Countryside because of the extensive public investment in establishing the Rouge Park and the efforts of all levels of government in preparing the Rouge North Management Plan. The Rouge Watershed and the Little Rouge River serve as a vital ecological corridor linking the environmental systems of Lake Ontario to the Oak Ridges Moraine in this area of the Greater Toronto Area.

This plan identifies a 600m-wide corridor for the Little Rouge River as the main ecological corridor, between Lake Ontario and the southerly boundary of Oak Ridges Moraine Area, as well as several other Rouge River tributaries, in recognition of the longstanding commitment to establishing the Rouge Park.

Land use planning and resource management within those portions of the Rouge River watershed within the Protected Countryside shall comply with the provisions of both this Plan and the Rouge North Management Plan. In the case of a conflict between this Plan and the Rouge North Management Plan, the more restrictive policies play. For those lands within the watershed north of Steeles Avenue, outside of the Protected Countryside, the Rouge North Management Plan and the Rouge North Implementation Manual, together with any municipal or conservation authority plans or initiatives which build on and/or support the planning and resource management documents. For those lands within the Rouge Park south of Steeles Avenue, outside of the Protected Countryside, the Rouge Park Plan together with any municipal or conservation authority plans for initiatives which build on and/or support the Rouge Park Plan should be considered as the guiding land use planning and resource management documents.”

The effect of the inclusion of Section 3.2.6 in the Greenbelt Plan is that it establishes very clearly that the entire watershed is 'of particular Provincial significance' and worthy of protection, partially as a result of the public investment decisions that have been made in addition to its ecological and natural heritage importance. On this basis, policy directions in the Markham Official Plan that support the significance of the watershed and park are required.

2.3.3 Provincial Policy Statement (2005)

Section 2 of the Planning Act outlines matters of Provincial interest. In carrying out the planning function, it is the responsibility of those involved and the decision makers to balance these interests and, in the case of conflicts amongst them, determine what is in the best or greater public interest. Some of these matters include:

- (a) the protection of ecological systems, including natural areas, features and functions;*
- (b) the protection of the agricultural resources of the Province;*
- (c) the conservation and management of natural resources and the mineral resource base;*
- (h) the orderly development of safe and healthy communities;*
- (l) the protection of the financial and economic well being of the Province and its municipalities;*
- (m) the co-ordination of planning activities of public bodies;*
- (n) the resolution of planning conflicts involving public and private interests;*
- (p) the appropriate location of growth and development.*

Section 3 of the Act indicates that the Province may periodically issue policy statements relating to matters of Provincial interest. The Province has issued such a policy statement and it is the Provincial Policy Statement (2005). The Provincial Policy Statement (PPS) is issued under the authority of Section 3 of the Planning Act and its purpose is to provide guidance on matters of Provincial interest related to land use planning. Section 3 of the Planning Act requires that planning authorities make decisions that are 'consistent' with the policy statements contained in the PPS.

Below are the policies that are particularly relevant with respect to the environmental policy review.

<p>Section 2.1.1</p> <p><i>Natural features and areas shall be protected for the long term.</i></p>	<p>Natural heritage features and areas means: <i>"features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area"</i></p> <p>The use of the word 'shall' in this section means that these areas are intended to be protected for the long term to support the overall policy thrust in this section of the PPS that states at the introduction of Section 2.0 that <i>"Ontario's long-term prosperity, environmental health, and social well-being depend on protecting natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits."</i></p>
<p>Section 2.1.2</p> <p><i>The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.</i></p>	<p>This PPS section introduces the concept of enhancement by stating that the ecological function and biodiversity of natural heritage systems should be maintained and that linkages between and among natural heritage features and areas, surface water features and groundwater features should be improved, where possible.</p> <p>The PPS defines natural heritage system as "a system made up of natural heritage features and areas, linked by natural corridors that are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems." These systems can include lands that have been restored and areas with the potential to be restored to a natural state.</p>
<p>Section 2.1.3</p> <p><i>Development and site alteration shall not be permitted in:</i></p> <ul style="list-style-type: none"> <i>a) significant habitat of endangered species and threatened species;</i> <i>b) significant wetlands in Ecoregions 5E, 6E and 7E¹; and</i> <i>c) significant coastal wetlands</i> 	<p>This section states, <i>"development and site alteration shall not be permitted"</i> in the features identified. This policy is an absolute prohibition since there is no test to meet to vary the policy as there is in Section 2.1.4. Development in the PPS is defined as <i>"means the creation of a new lot, a change in land use or the construction of buildings and structures, requiring approval under the Planning Act"</i>.</p> <p>The definition of significant as it applies to wetlands indicates that <i>"in regards to wetlands, coastal wetlands</i></p>

	<p><i>and areas of natural and scientific interest, an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time."</i></p>
<p>Section 2.1.4</p> <p><i>Development and site alteration shall not be permitted in:</i></p> <ul style="list-style-type: none"> <i>a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E¹;</i> <i>b) significant woodlands south and east of the Canadian Shield²;</i> <i>c) significant valleylands south and east of the Canadian Shield²;</i> <i>d) significant wildlife habitat; and</i> <i>e) significant areas of natural and scientific interest</i> <p><i>unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.</i></p>	<p>This policy indicates that development and site alteration shall not be permitted in the features identified unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. This means that development and site alteration are also prohibited in these features as set out in Section 2.1.3 unless a very specific test can be met.</p> <p>The definition of negative impact states <i>"in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities."</i></p> <p>It is noted that the definition of significant indicates that with respect to all features except wetlands and areas of natural and scientific interest that <i>"Criteria for determining significance for the resources identified in sections (c)-(g) are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used"</i>. This means that only the Province can determine that a wetland or an Area of Natural and Scientific Interest is significant and therefore subject to policies 2.1.3 and 2.1.4. With the other features, the definition of significant permits municipalities to determine significance based on local context.</p> <p>The definition of significant lastly indicates <i>"while some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation."</i> This means that site-specific evaluations may identify features that are significant and then potentially subject to Section 2.0 of the PPS.</p>
<p>Section 2.1.6</p> <p><i>Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4</i></p>	<p>Adjacent lands is defined as <i>"for the purposes of policy 2.1, those lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or area. The extent of the adjacent lands may be recommended by the Province or based on municipal</i></p>

<p><i>and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.</i></p>	<p><i>approaches which achieve the same objectives;"</i></p> <p>This policy also prohibits development and site alteration unless the 'no negative impact' test can be met. However, the policy also goes further and states that the ecological function of the adjacent lands has been evaluated, which means that the ecological function must be clearly established first. Ecological function is defined as <i>"means the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions."</i></p>
<p>Section 2.2.1</p> <p><i>Planning authorities shall protect, improve or restore the quality and quantity of water by:</i></p> <ul style="list-style-type: none"> <i>a) using the watershed as the ecologically meaningful scale for planning;</i> <i>b) minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts;</i> <i>c) identifying surface water features, ground water features, hydrologic functions and natural heritage features and areas that are necessary for the ecological and hydrological integrity of the watershed;</i> <i>d) implementing necessary restrictions on development and site alteration to:</i> <ul style="list-style-type: none"> <i>1. protect all municipal drinking water supplies and designated vulnerable areas; and</i> <i>2. protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions;</i> 	<p>Below are the key definitions in this section:</p> <p>Quality and quantity of water: <i>"is measured by indicators such as minimum base flow, depth to water table, aquifer pressure, oxygen levels, suspended solids, temperature, bacteria, nutrients and hazardous contaminants, and hydrologic regime."</i></p> <p>Surface water feature is defined as <i>"refers to water-related features on the earth's surface, including headwaters, rivers, stream channels, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics."</i></p> <p>Ground water feature: <i>"refers to water-related features in the earth's subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrogeologic investigations"</i></p> <p>Hydrologic function: <i>"means the functions of the hydrological cycle that include the occurrence, circulation, distribution, and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things."</i></p> <p>Subsection c) indicates that these features must first be identified and then once identified, they must be protected, improved or restored if the feature is 'sensitive',</p>

<p>e) <i>maintaining linkages and related functions among surface water features, ground water features, hydrologic functions and natural heritage features and areas;</i></p> <p>f) <i>promoting efficient and sustainable use of water resources, including practices for water conservation and sustaining water quality; and</i></p> <p>g) <i>ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.</i></p>	<p>which is defined as "<i>in regard to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events including, but not limited to, water withdrawals, and additions of pollutants.</i>" As a result, if one of the surface water and/or groundwater features is determined to be sensitive, Policy 2.2.1 d) 2) then applies.</p> <p>Notwithstanding the above use of the word 'sensitive', Policy 2.2.1.e) does require that linkages and related functions among surface water features and ground water features (whether they are sensitive or not) and hydrologic functions and natural heritage features and areas be maintained. Given the multitude of features on the subject lands, this policy has a considerable impact on the decision to make with the application.</p>
<p>Section 2.2.2</p> <p><i>Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.</i></p> <p><i>Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.</i></p>	<p>This policy is similar to Policy 2.2.1.</p>

There are a number of competing views on which of the policies in the 2005 PPS are to be given more weight when establishing policy or responding to a development application. For example, Section 2.1.3 indicates that development and site alteration **shall** not be permitted in certain natural heritage features. Section 2.2.2 indicates that development and site alteration **shall** be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions "*will be protected, improved or restored.*" The use of the word 'restore' in this section does modify the use of the words 'shall be restricted'. It is then noted that Section 4.3 of the PPS indicates that the Provincial Policy Statement **shall** be read in its entirety and all relevant policies are to be applied to each situation. The use of the word 'shall' in each of these policies indicates that

the policy is 'mandatory'. On this basis, how these policies are balanced against each other is subject to interpretation.

However, and notwithstanding the above, Section 4.0 of the PPS states that *“in implementing the Provincial Policy Statement, the Official Plan is the most important vehicle for its implementation.”* It is further stated that:

“Municipal Official Plans shall identify provincial interests and set out appropriate land use designations and policies. Municipal Official Plans should also coordinate cross-boundary matters to complement the actions of other planning authorities and promote mutually beneficial solutions.

Municipal Official Plans shall provide clear, reasonable and attainable policies to protect provincial interests and direct development to suitable areas.

In order to protect provincial interests, planning authorities shall keep their Official Plans up-to-date with this Provincial Policy Statement. The Policies of this Provincial Policy Statement continue to apply after adoption and approval of a municipal Official Plan.”

It is the intent of the current policy review to achieve this objective.

Owing to the particular importance of the Provincial Greenbelt Plan, it is described in some detail in Section 2.3.4 below.

2.3.4 Implementing Greenbelt Policy in Markham

The following provides a description of how the Markham Official Plan is proposed to be amended to address the Provincial Greenbelt Plan. Part 2 of this document sets out recommendations to guide the development of policies that are aimed at implementing the Greenbelt Plan through the establishment of a ‘Greenway System’ within the Town of Markham. The intent of this section of the document is primarily to highlight and summarize Markham’s approach.

1. A number of references will be included in the Introductory Section of the Official Plan to reflect the passage of the Greenbelt Act, 2005 and the necessity for all planning decisions within the Greenbelt Plan area to conform to the policies of the Greenbelt Plan.



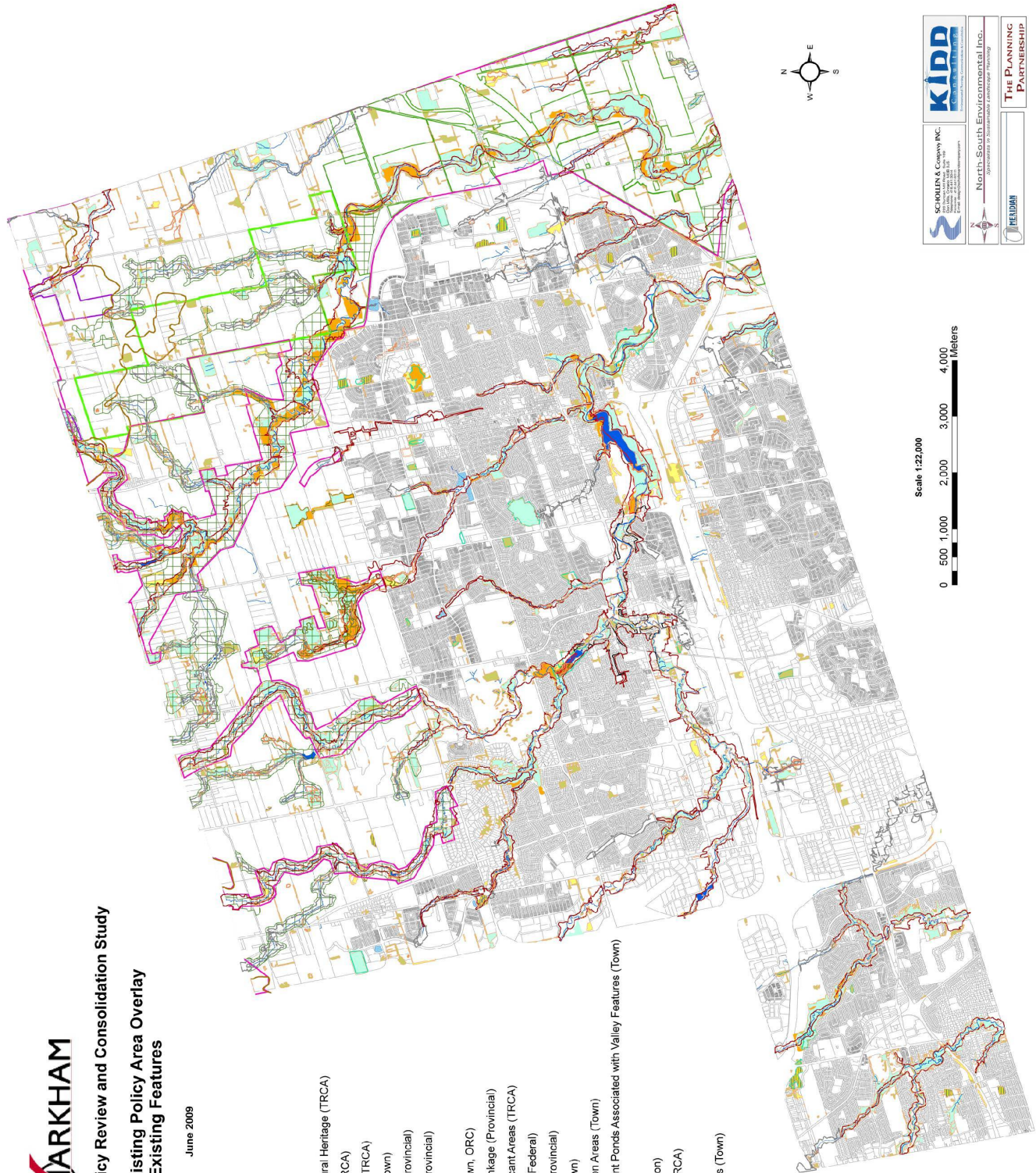
Environmental Policy Review and Consolidation Study

Proposed Existing Policy Area Overlay on Existing Features

June 2009

Legend

- Existing Terrestrial Natural Heritage (TRCA)
- Existing Flood Plain (TRCA)
- Estimated Flood Plain (TRCA)
- Special Policy Areas (Town)
- Oak Ridges Moraine (Provincial)
- Greenbelt Plan Area (Provincial)
- Wetlands (TRCA)
- Rouge Park (TRCA, Town, ORC)
- Oak Ridges Moraine Linkage (Provincial)
- Environmentally Significant Areas (TRCA)
- Green Space Corridor (Federal)
- Significant Wetlands (Provincial)
- Future Rouge Park (Town)
- Environmental Protection Areas (Town)
- Stormwater Management Ponds Associated with Valley Features (Town)
- Woodlots (Town)
- Significant Forest (Region)
- Successional Forest (TRCA)
- Forest (TRCA)
- Locally Significant Areas (Town)



Scale 1:22,000

0 500 1,000 2,000 3,000 4,000 Meters



KIDD
Environmental Planning & Consulting Inc.

SCHOLTEN & COMPANY INC.
Environmental Planning & Consulting Inc.

North South Environmental Inc.
Environmental Planning & Consulting Inc.

THE PLANNING PARTNERSHIP

Figure 7: Existing Policy Area Overlay on Existing Features

2. The Schedules to the Official Plan will be modified to clearly show the boundaries of the Greenbelt Plan area within the Town. It is noted that the entirety of the Greenbelt Plan area will be included within a new Greenway System on the Schedules to the Official Plan. Within the Greenbelt Plan area, the following designations are proposed:

- Greenbelt Agricultural (new);
- Natural Heritage Network (new); and,
- Hamlets (existing).

The Greenbelt Agricultural designation is new and would replace the current Agricultural designation in the Official Plan. The intent of this designation is to give primacy to agricultural and land uses that support agricultural activities. The recommended approach to address this designation within Markham is discussed in Section 2.D.2. It is noted that the NHN will extend beyond the Greenbelt Plan boundary in some areas. The Hamlet designation will apply in those existing hamlets that are included within the Greenbelt Plan area including Almira, Dicksons Hill, Locust Hill, and Cedar Grove, with the boundaries of those hamlets remaining unchanged at this time. A review of hamlet boundaries is being undertaken as part of the overall Greenbelt Plan implementation process.

3. The range of the uses permitted in the Greenbelt Agricultural designation will reflect what is permitted by the PPS in Prime Agricultural Areas. In this regard, only agricultural uses, agriculture-related uses and secondary uses will be permitted. Almost all of the lands within the Greenbelt Agriculture designation are located within the Greenbelt Natural Heritage System. As a result, it is proposed to permit Rouge Park uses as complementary and secondary uses. However, it is the long-term intent of the Town to protect these lands for agricultural use and to provide for the continued agricultural use of these lands in the long term and as provided for in Section 3.2.2.1, which permits a full range of agricultural uses in the Natural Heritage System..
4. Additional criteria will need to be included within the Official Plan to deal with the expansion or creation of a major recreational use, associated with the Rouge Park or the Federal Lands within the new Greenbelt Agricultural designation. An Amendment to the Official Plan would be required for such a use and the policies of Section 2.3.5.1 of the PPS would apply. In addition, the new criteria should require that an appropriate Vegetation Enhancement Plan be prepared per Policy 4.1.2.2 of the Greenbelt Plan. Such a plan shall identify opportunities for maintaining or enhancing the amount of natural self-sustaining vegetation on the site. In addition to a Vegetation Enhancement Plan, the Greenbelt Plan also requires the preparation of a Conservation Plan that is intended to demonstrate how water use and nutrient biocide will be kept to a minimum (4.1.2.3).
5. A new section that addresses the Natural Heritage System policies identified in the Greenbelt Plan, as modified by the work completed to support the NHN, will be included within the Official Plan. It is noted that policies on the NHN are to be included within a new Greenway System section in the Official Plan to address the Natural Heritage System as discussed in Section 3.8 of this report.

6. A number of new general policies regarding the Natural Heritage Network will be added to the Plan. These policies will indicate that:

Existing uses and improvements to existing properties would be permitted, but generally no new development or site alteration would be permitted within the Natural Heritage Network (NHN). Uses associated with conservation and enhancement of the Natural Heritage Network would be the intended long-term uses.
7. For areas within the Greenbelt Plan, new policies will be specified to:
 - indicate that new development is not generally permitted within the Natural Heritage Network with the exception of forest, fish, and wildlife management, conservation and infrastructure, mineral aggregate extraction and existing uses;
 - reflect that the minimum Vegetation Protection Zone requirements of at least 30 metres around key natural heritage and hydrologic features that have been incorporated into the Natural Heritage Network; and,
 - indicate that all development within 120 metres of the Natural Heritage Network shall be supported by an Environmental Impact Study.
8. New policies will indicate that single detached dwellings are permitted on lands within the Natural Heritage Network, provided the Zoning By-law applying to such lands would have permitted the construction of such a dwelling when the Greenbelt Plan came into effect.
9. New policies on Infrastructure will be included within the Official Plan. The policies would be general in nature and basically require that the location and construction of infrastructure:
 - minimizes, wherever possible, the amount of the Greenbelt and particularly the Natural Heritage Network traversed and/or occupied by such infrastructure; and,
 - minimizes the negative impacts and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusions, noise and road salt.
10. A number of specific stormwater management infrastructure policies will be included within the Official Plan. Specific direction on the location of stormwater management ponds and the criteria that are required to be considered when reviewing or planning of the development of stormwater management ponds within the NHN will be needed.

2.3.4.1 Rural Area Policies

Rural Area policies are intended to support a mixture of agricultural uses, recreational uses, natural features and historic rural land uses.

The following uses are permitted uses in the Rural Agricultural Area Policies of the Greenbelt Plan:

- Full range of agricultural uses as permitted in the Prime designation
- Primary location for recreational, tourism, institutional and resource-based commercial and industrial

Once the Region has completed the Local Evaluation Area Review (LEAR) of the agricultural lands in York Region, the Town can review any opportunities for rural lands in Markham.

2.3.4.2 Rouge Park Plans

The Rouge Park is described as the largest urban wilderness park in North America and comprises 11,500 acres or 46 square kilometers of protected parkland. The Park spans portions of the municipalities of Toronto, Markham, Pickering, Richmond Hill and Whitchurch-Stouffville.

In Markham, the majority of lands acquired and conveyed for park purposes are located in eastern Markham and Milne Park. Figure 4 identifies the Rouge Park in the context of eastern Markham. The future Rouge Park is intended to include lands along the tributaries of the Rouge River extending into Richmond Hill and Whitchurch-Stouffville and comprising the Greenbelt “fingers” in Markham. The following plans have been prepared or are under preparation for the Rouge Park in Markham:

- A. ***Rouge North Management Plan 2001*** (approved). This Management Plan is now formally recognized in the Greenbelt Plan (Section 3.2.6).
- B. ***Draft Little Rouge Creek Management Plan*** (draft prepared but not approved). This Plan provides a detailed management program for the 600-metre wide corridor along the Little Rouge Creek conveyed to the Town and TRCA for Rouge Park purposes.
- C. ***Draft Bob Hunter Memorial Park*** (draft prepared - not approved - not yet available to the public). This Plan provides a detailed management program for the 202-hectare parcel committed by the Province in 2006 as Bob Hunter Memorial Park and is located adjacent to the Little Rouge Creek corridor.
- D. ***Eastern Markham Management Plan Study*** (planning process underway). A management plan study is currently underway by the Rouge Park Alliance to address the detailed management program for the 607 acres of Provincial land east of the Little Rouge Creek corridor committed by the Province for Rouge Park purposes.

In addition, the Rouge Park is undertaking a ***Heritage Appreciation and Visitor Experience Plan*** (HAVE) which may also identify public uses and public infrastructure needed to support the Rouge Park.

The Rouge Park Management Plans are tools used to help implement the vast land holdings of the Rouge Park. The Province has recognized the Rouge North Management Plan and other plans which support the Rouge Park as the guiding land planning and resource management documents within the Greenbelt Plan. This Provincial policy suggests that in preparing the municipal Greenbelt conformity policies, land uses contemplated in the Rouge Park plans should be recognized and identified as appropriate uses for the Greenbelt lands.

The Rouge Park Management Plans permit a broad spectrum of uses beyond those that are related to natural heritage protection, enhancement and interpretation including a full complement of trails and related support amenities. Retail and commercial activities are permitted within the hamlets of Cedar Grove and Locust Hill, as well as bed and breakfast establishments and agricultural-related tourism and commercial uses. The Natural Heritage Network designation within the Rouge Park is the land use intended to support the majority of Rouge Park public uses and infrastructure. The Greenbelt Agriculture designation is intended to support the agricultural objective of the Rouge Park and these lands are to be used primarily for agricultural uses.

2.3.4.3 Relationship of Rouge North Management Plan to Greenbelt Plan

Section 3.2.6 of the Greenbelt Plan requires that planning and resource management decisions for lands contained within both the Rouge North Management Area and Protected Countryside shall comply with the provisions of both the Greenbelt Plan and the Rouge North Management Plan. In the case of conflict, the more restrictive policies apply. The Rouge North Management Plan and Greenbelt Plan are intended to complement each other and support the objectives for the Rouge Park.

2.3.4.4 Federal Pickering Airport Site

The Greenbelt Plan identifies the Federal Pickering Airport site in the north east portion of the Town as lands subject to the Provincial Greenbelt Plan. The lands were acquired by the Federal Government in 1972 for airport purposes and have been declared as a Federal Airport Site. In 2001, the Federal Government announced a north-south corridor along the western property boundary of their land holdings as 'Greenspace Lands' with the intent that these lands would be surplus to the requirements for an airport and would be protected as green space - airport buffer lands. These lands have also been identified as an alternate Rouge Park corridor in the Rouge Park Management Plan and Rouge North Management Plan and are proposed to be managed in a manner consistent with the Rouge Park, under Federal ownership.

The Federal Government is not bound by Provincial policy and is not subject to the policies and requirements of the Greenbelt Plan, notwithstanding that they have been identified as such in the Provincial Plan. The principle of paramouncy prevails. Municipalities must comply with Provincial policy, and

as such must apply the Greenbelt designation within local Official Plan even on Federal property; however, the Federal government is not obligated to respect the Municipal and Provincial policies.

2.3.4.5 Private Greenbelt Corridors

The Greenbelt encompasses lands extending north through Markham along the major tributaries of the Rouge River. These lands generally correspond to the lands that would comprise the future Rouge Park. These lands are generally in private ownership.

The Angus Glen Golf Course is located partially within the Greenbelt 'Fingers'. The Regional Official Plan designates the Angus Glen Golf Course as 'Rural' within the Regional Official Plan. The Angus Glen Golf Course lands are identified as Open Space and Hazard Lands within the Town of Markham Official Plan.

The Greenbelt corridors along the tributaries of the Rouge watershed generally correspond to the lands that would comprise future Rouge Park. The Rouge Park policies contained in Markham's OPA No. 140 address the long-term protection of these lands as a natural resource (watercourse and riparian buffer areas). These lands are currently designated Hazard Lands in the Town's Official Plan (OP) and it is the Town's intent to maintain an environmental protection designation on these lands and not introduce an Agricultural classification. Existing agricultural uses within the corridor would be recognized and permitted.

3.0 DEVELOPING A TOWN-WIDE NATURAL HERITAGE SYSTEM

3.1 Land Use Planning Justification

Section 2.1.2 of the 2005 Provincial Policy Statement (PPS) provides the basis for establishing a Natural Heritage Network in the Town of Markham:

The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

The basis for establishing a Natural Heritage Network (NHN)¹ in the Town is also provided by the Greenbelt Plan, which firstly identifies an area that is to be protected from urban development and secondly identifies a Greater Toronto Area - wide Natural Heritage System. It is noted that much of the land subject to the Greenbelt Plan in the Town of Markham is within the Provincial Natural Heritage System.

The PPS section identified above introduces the concept of enhancement by stating that the ecological function and biodiversity of natural heritage systems should be maintained and that linkages between and amongst natural heritage features and areas, surface water features and groundwater features should be improved, where possible. The NHN is the Town's response to this policy in the PPS. Collectively, both the PPS and the Greenbelt Plan support enhancements of the natural heritage system, wherever possible. On this basis, there is a clear requirement in both Provincial documents that natural heritage features and functions should be enhanced when the opportunity arises. This supports the intent of the "Enhancement Areas" identified in the NHN in order to maintain and improve the existing linkage functions among natural features, as the adjacent lands are urbanized.

In addition to the above, the Greenbelt Plan contains a dedicated section on the Rouge River Watershed and Park in Section 3.2.6 as set out below that is of particular relevance to the Town of Markham:

The Rouge River Watershed is of particular significance within the Protected Countryside because of the extensive public investment in establishing the Rouge Park and the efforts of all levels of government in preparing the Rouge North Management Plan. The Rouge Watershed and the Little Rouge River serve as a vital ecological corridor linking the environmental systems of Lake Ontario to the Oak Ridges Moraine in this area of the Greater Toronto Area.

This plan identifies a 600-metre-wide corridor for the Little Rouge River as the main ecological corridor, between Lake Ontario and the southerly boundary of Oak Ridges Moraine Area, as well as several other Rouge River tributaries, in recognition of the longstanding commitment to establishing the Rouge Park.

Land use planning and resource management within those portions of the Rouge River watershed within the Protected Countryside shall comply with the provisions of both this Plan and the Rouge North Management Plan. In the case of a conflict between this Plan and the Rouge North Management Plan, the more restrictive policies apply. For those lands within the watershed north of Steeles Avenue, outside of the Protected Countryside, the Rouge North Management Plan and the Rouge North Implementation Manual, together with any municipal or conservation authority plans or initiatives which build on and/or support the planning and resource management documents. For

¹ The term "Natural Heritage Network" is used as opposed to the more familiar "Natural Heritage System" to avoid confusion between the Town's initiative and the NHS that forms part of the Province's Greenbelt Plan

those lands within the Rouge Park south of Steeles Avenue, outside of the Protected Countryside, the Rouge Park Plan together with any municipal or conservation authority plans for initiatives which build on and/or support the Rouge Park Plan should be considered as the guiding land use planning and resource management documents.

The Rouge River Watershed policy in the Greenbelt Plan is of particular significance to the Town of Markham since it establishes the Provincial interest in the Rouge River watershed and the protection of its function over time. In addition, the policy clearly indicates that the more restrictive policies and/or provisions of the Rouge North Management Plan or the Greenbelt Plan prevail in the case of conflict. In the event of a conflict with the Rouge North Management Plan and Greenbelt Plan, the more restrictive policies apply.

The application of a new Provincial Plan to the Region of York and the Town of Markham (Growth Plan for the Greater Golden Horseshoe) does add another dynamic to how Provincial Plans and policies respecting the natural environment are interpreted. The Growth Plan requires that upper-tier municipalities accommodate a certain amount of population and employment growth to 2031 in Section 2.2.1.1. Upper-tier municipalities are then responsible for allocating that growth to lower-tier municipalities according to the Provincial Policy Statement. The Growth Plan further indicates that the policies of Section 2.0 of the PPS (Wise Use and Management of Resources) are to be applied when considering a settlement area expansion. Policy 2.1.2 of the PPS referenced above is contained within this section. Section 4.1 of the Growth Plan then indicates *"unique natural heritage features and areas...are valuable assets that must be wisely protected and managed as part of planning for future growth."* Section 4.2.1.3 then indicates *"planning authorities are encouraged to identify natural heritage features and areas that complement, link or enhance natural systems."*

On the basis of the above, it is clear that the Growth Plan, while requiring municipalities to plan for growth, also requires municipalities to consider what 'is valuable' when planning for that growth. While balancing these two objectives in an appropriate manner is always considered 'good planning', the Province does highlight the importance of the natural environment in Section 14(4) of the Places to Grow Act, 2005 as set out below:

"Despite any Act, but subject to a Regulation made under clause 18(1)(b), (c), or (d), if there is a conflict between a direction in a Growth Plan and a direction in a Plan or policy that is mentioned in subsection (5) with respect to a matter relating to the natural environment or human health, the direction that provides more protection to the natural environment or human health prevails."

The Plans and policies to which subsection 4 above refer to in subsection 5 include a Policy Statement under the Planning Act, the Greenbelt Plan, the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan. It is noted that the above subsections indicate that an Ontario Regulation may clarify this conflict issue. However, the only Regulations passed under this Act (Ontario Regulation 416/05 or 311/06 (amended to 324/06)), do not deal with this issue in any manner.

Section 1.4 of the Growth Plan contains additional policy on this issue of conflict:

"As provided for in the Places to Grow Act, 2005, this Plan prevails where there is a conflict between this Plan and the PPS. The only exception is where the conflict is between policies relating to the natural environment or human health. In that case, the direction that provides more protection to the natural environment or human health prevails. Similarly where there is a conflict between the Greenbelt, Niagara Escarpment, or Oak Ridges Conservation Plans and this Plan regarding the natural environment or human health, then the direction that provides more protection to the natural environment or human health prevails. Detailed conflict provisions are set out in the Places to Grow Act, 2005."

This means that any 'direction' in a Provincial Plan or Policy Statement that provides more protection of the natural environment prevails. In this regard, Sections 2.1.2 of the PPS and Section 3.2.6 of the Greenbelt Plan provide the basis for the protection of the natural environment in the Town of Markham and the establishment of a Town-wide Natural Heritage Network, as is being recommended in this report.

3.2 Ecological Rationale for the Natural Heritage Network

The most effective way to implement the myriad of Provincial policies on growth and the environment and to provide the basis for the long-term planning of lands for non-urban land uses is by first establishing the scientific basis for creating a network of lands that include natural heritage features that warrant protection.

The Natural Heritage Network (NHN) is required to maintain the existing natural features and functions of the Town that would otherwise be lost as the urbanization process continues. It is a broad mitigation action that is proposed in response to anticipated urbanization. At present, in the non-urbanized areas of the Town, the flora and fauna that has adapted to the agricultural landscape over the last 200 years can move relatively unimpeded among the remnant natural features that remain in the largely agricultural landscape. However, future urban development will change the existing landscape and substantially reduce the opportunities for this movement. It is for this reason that some areas that are presently in agriculture (i.e., are not natural features), are needed as part of the NHN to maintain existing connectivity, as explained later in this section.



The Natural Heritage Network (NHN) proposed for the Town of Markham was developed based on a Natural Heritage Systems (NHS) approach to land use planning. The NHS approach is focused on establishing a system of protected areas comprised of large core areas connected by a network of ecologically functional linkages. The configuration of the

core areas and linkages is built primarily upon existing natural heritage features and their inter-related functions, with the goals of protecting existing features and functions, preserving and enhancing biodiversity and accommodating the natural movement of plants and animals necessary to ensure their long-term viability. The NHS approach is founded on a long-term perspective, with a planning horizon of greater than 100 years. The NHS approach is aimed not only at preserving existing ecological functions but where possible on strengthening them, thus reversing the impacts of fragmentation resulting from past and proposed development and land use change.

Conservation organizations throughout Ontario and North America are designing bioregional conservation plans that utilize a composite of corridors, core areas and linkages to create sustainable natural heritage systems.

At the watershed scale, the Toronto and Region Conservation Authority have completed a Natural Heritage System Strategy (NHSS) (TRCA 2007a) that seeks to protect and link natural heritage features within the watershed, including the Town of Markham. Credit Valley Conservation is currently leading an initiative called the Terrestrial Ecosystem Enhancement Model (TEEM) that will include identification of an NHS for the Credit River watershed and the Lake Simcoe Region Conservation Authority has also recently completed a Natural Heritage System plan for their watershed.

Within southern Ontario there are many examples of studies and initiatives that seek to link remnant natural heritage features at a regional level, for example, York Region Greenlands System (Gartner-Lee 1994), Georgian Bay Islands Greater Park Ecosystem Study (Geomatix 1999), Rouge-Duffins Natural Heritage System (Geomatix 1997), Carolinian Canada's Big Picture initiative, Heritage Action Plan (Couchiching Conservancy 1994) and the Oak Ridges Moraine Conservation Plan (MMAH 2002). The Region of Halton is currently developing a region-wide natural heritage system as part of their 'Sustainable Halton' initiative.

Lastly, there are local-level initiatives that use a systems-based approach to the protection of natural heritage features and functions, such as the Richmond Hill Corridor Study (Geomatix 1998), the Natural Heritage Evaluation For The North-East Aurora Planning Area '2C' (North-South Environmental Inc. 2006) and the City of Pickering Growth Management Study, Phase 1: Natural Heritage (Dillon 2003).

As the examples above show, systems-based approaches to the protection of natural heritage have been advocated for many years, and this approach is now considered the most appropriate framework for natural heritage protection. Natural heritage protection has evolved from an approach that was reliant upon the identification of individual features, preserving them as discrete entities, to one within which natural heritage features are considered in relation to each other and the surrounding landscape. The Markham Natural Features Study (1993) proposed a linked system of natural features (Phase 2 Implementation Plan, figure 2.1), so this concept is not new for the Town of Markham. As part of this study, a more current understanding of conservation biology principles are applied (section 2.2) to the development of a Natural Heritage Network for the Town. The provincial Natural Heritage Reference Manual (OMNR 1999) recommends a natural heritage system approach for implementing section 2.1 of the Provincial Policy Statement (this publication is currently being revised to reflect the most version of the PPS), and the

PPS itself notes that ‘... *the long-term ecological function and biodiversity of natural heritage systems should be maintained, restored or, where possible, improved ...*’ (PPS, section 2.1.2).

This ‘natural heritage system’ approach has been utilized to generate the proposed ‘Natural Heritage Network’ for the Town of Markham as a product of this study.

The NHS approach is the most appropriate tool to be utilized for environmental planning in Markham (and indeed in southern Ontario), in response to the fact that past changes in land use have resulted in fragmentation of the natural landscape and diminished biological diversity. The settlement of Markham in the late 1700s initiated the transformation of the landscape from largely forested to agricultural uses, resulting in the removal of woodlands, the fragmentation of natural heritage features and the disconnection of ecological functions. In more recent times, growth within the southern part of the municipality has resulted in a conversion of the predominantly agricultural landscape to urban uses. This trend is not unique to Markham, and has occurred throughout southern Ontario where the urban envelope has continually expanded to accommodate an increasing population. The conversion of land from natural cover to agriculture to urban uses progressively increases fragmentation of the natural landscape and places stress on ecological functions. Biodiversity declines as a result of the disconnection of natural areas, loss of habitat and extirpation of species.

There are a number of factors that are unique to the Town of Markham and that influence the development of a Natural Heritage Network:

- there are substantial areas of land that are held in public ownership, primarily the Federal and Provincial lands in the east part of the Town;
- the Greenbelt and the Oak Ridges Moraine plans, both provide existing policy protection for environmental lands;
- the Rouge River system (including the Little Rouge River), that runs through the centre of the Town has been recognized as an important link between the Lake Ontario waterfront and the Oak Ridges Moraine and is subject to the Rouge Park Plans;
- a substantial area of the Town has been built out, and the environmental features within this area are defined by the existing limits of development (recognizing that in some instance there could be opportunities for enhancement and restoration in the future); and
- Markham is expected to accommodate additional growth through the Growth Management Plan.

All of these existing realities need to be respected and utilized in the development of a NHN that responds the unique character of the Town of Markham.

The NHS approach is founded on a recognition that individual natural areas and features have strong ecological ties to one another as well as ecological interdependencies within the larger landscape. The approach places a strong emphasis on maintaining and enhancing the ecological functions that sustain biodiversity rather than simply serving to protect individual features based on their



own merit. As a result, the NHS approach will preserve and enhance the functional connections amongst features and areas to sustain the movement of plants and animals, in recognition of the importance of daily, seasonal, annual and long-term patterns of movement.

The process of developing the NHN included consultation with the public, stakeholders and agency staff to provide the opportunity for review and refinement of the NHN to achieve its final configuration.

3.2.1 Goals and Objectives for a Comprehensive Town-wide Natural Heritage Network

Concurrent with the assembly of background information, a set of goals and objectives was drafted and reviewed. These were subsequently presented to the stakeholder group and the public for review and comment, and refined into a final goal and objectives for the study.

Establishing Goals and Objectives is an essential step in the development of a comprehensive environmental policy framework. They are important not only for establishing direction and purpose, but also for providing guidance as environmental policies are refined and implemented, for interpreting policy in the event of a dispute, and articulating a desired condition against which the success of the policies can be evaluated. Goals provide general direction and articulate an ideal condition toward which environmental protection should strive, even though it may never be achieved. Objectives, however, should be more concrete and can be quantified through the development of monitoring indicators and targets. Objectives can thus be periodically evaluated to measure the extent to which they have been achieved and determine the success of implementation measures and programs such as rehabilitation programs, regulation of uses, establishment of buffers, etc.

The Town places a high priority on the environment as indicated in the purpose (section 1.2a) and goals (section 1.5g) of the Town's Official Plan. The following goals, objectives and principles support the direction provided in the current Official Plan and served as the basis for developing the NHN.

Goal

To preserve and improve the biological diversity and ecological function of the Town of Markham for future generations, through the creation of a Natural Heritage Network consisting of natural features and linkages of sufficient size and connectedness to ensure long-term ecological integrity.

Objectives

1. Establish a Natural Heritage Network (NHN)

Establish a Natural Heritage Network comprised of natural features, restoration areas and ecological linkages for wildlife and vegetation species, and including connections to adjacent municipalities.

2. Protect and Minimize Loss

Protect and minimize further loss of existing natural heritage features including wetlands, woodlands, meadowlands in key locations, fishery resources, small streams and rivers, valleylands and wildlife habitat in order to preserve and improve biological diversity and ecological function within the Town of Markham

3. Protect Biodiversity

Protect and enhance habitats within the Natural Heritage Network that support biodiversity.

4. Increase Natural Vegetation

Where possible, and in accordance with local, regional and provincial policy, improve and enhance the biological diversity and ecological function of the Natural Heritage Network through restoration and enhancement.

5. Balance Public Use

Incorporate pedestrian trails into the Natural Heritage Network in accordance with the Town's Trails and Pathway Master Plan to encourage the use and enjoyment of the Town's Natural Heritage Network while having regard for site sensitivities and the primacy of maintaining long-term ecological health of the Natural Heritage Network.

6. Senior Government Policy

Support and implement senior government natural heritage policy and coordinate to achieve multiple objectives.

7. Support Partnerships

Identify the potential for, and create and support partnerships with government, agencies, landowners and non-profit groups to assist with the implementation of the Natural Heritage Network and its long-term maintenance and improvement.

8. Monitor and Manage

Implement monitoring protocols to identify the need for and refinement of management initiatives aimed at improving the ecological health of the Natural Heritage Network.

The Natural Heritage Network (NHN) is envisioned as the centerpiece of the Town's overall environmental system and will constitute an integral component of the overall Greenway System within the Town of Markham.

3.2.2 Guiding Principles

The Goals and Objectives provide the basic guidance for the permanent protection of Markham's natural heritage. Of key relevance to the NHN is that biodiversity will be protected through the creation of a Natural Heritage Network (NHN). In order to provide some consistent guidance for the creation of the NHN and to assist in the evaluation of how well it achieves the Goals and Objectives in the future, a set of Guiding Principles was developed. These Guiding Principles address the study Goals and Objectives with regard for the unique characteristics of the Town noted above, and the ecological systems approach that is inherent to an NHN.

1. The Natural Heritage Network shall consider the following elements:
 - i. existing natural heritage features, including habitat that supports valued species;
 - ii. lands or areas that have been identified in the past as requiring protection and/or are subject to statutory and regulatory natural heritage protection policy approved by the Town, Region or Province; and
 - iii. additional lands, required and supported by scientific principles that are required to create an ecologically sustainable Natural Heritage Network and protect Markham's biodiversity permanently.
2. Strive to develop a Natural Heritage Network that is connected not only internally among watersheds, but also to the natural heritage systems of adjoining municipalities, to the extent possible given other municipal land use priorities.
3. Consider applicable policy and research prepared by senior level governments and agencies including Watershed Plans and Management Plans.
4. Apply recognized scientific principles and approaches to identify gaps and opportunities in the existing environmental protection system to create a Natural Heritage Network.
5. To the extent possible enhance biodiversity and ecological function through a review of natural heritage features and identification of opportunities to improve their shape and size.
6. Provide options for the implementation of enhancement areas and east-west connections to ensure a sustainable and robust Natural Heritage Network, and address potential impacts resulting for other local, regional and provincial priorities.
7. Design a Natural Heritage Network that will be a shared resource for plant species, wildlife and humans.
8. To the extent that information is available, review groundwater resources to determine where there is overlap between valued groundwater resources and the Natural Heritage Network.

In order to respond to the goal, objectives and principles, especially with respect to addressing permanent biodiversity protection, guidelines specifically for the development of the Markham NHN were established as follows:

1. Include all existing features
 - include existing natural features and where captured by the Town's Official Plan, the supporting Official Plan designations (ANSIs, ESAs, Wetlands, EPAs, LSAs)
2. Incorporate isolated features
 - identify and evaluate isolated features
 - develop linkages where necessary
3. Link watersheds
 - capitalize upon opportunities for linking subwatersheds and watersheds:
 - Petticoat Creek to Little Rouge Creek
 - Little Rouge Creek to Duffins Creek
 - Little Rouge Creek to Bruce Creek to Berczy Creek to Rouge River
4. Capture features associated with valley systems
 - for the tributaries of the Rouge River and Little Rouge Creek, apply RNMP criteria
 - other watercourses apply TRCA regulations and Town policies and capture contiguous natural features
5. Create some areas of sufficient size to sustain biodiversity within 'Regional Biodiversity Centres'
 - recognize need for a few large patches (50ha to >100ha)
 - identify where restoration and enhancement is required to achieve this
6. Incorporate lands designated as Rouge Park, Federal Green Space, Greenbelt and ORM where they contribute to the NHN
 - overlay data from Greenbelt, ORM and Federal Green Space Plan
 - define preliminary Rouge North boundary
7. Connections outside Markham
 - look for opportunities for connections along:
 - Duffins Creek (via Stouffville Creek)
 - Petticoat Creek
 - Rouge River/Little Rouge Creek
 - Don River (including German Mills Creek)

3.3 Review of Natural Heritage Targets

3.3.1 Natural Heritage Protection Targets

Several natural heritage targets have been established by various agencies including the Region of York and the Toronto and Region Conservation Authority. These

targets provided guidance with respect to the development of the NHN. The following targets were considered in the process of generating Markham's NHN.

- Regional Municipality of York Official Plan (Region of York 2005)
 - 25% forest cover region-wide
- Toronto and Region Conservation Authority – Rouge River Watershed Plan (TRCA 2007a)
 - 31% natural cover within the Rouge River watershed
- Toronto and Region Conservation Authority – TNHSS – Targeted System (TRCA 2007b)
 - 21.56% natural cover within the Town of Markham
 - 30% natural cover within the area of TRCA jurisdiction
- Town of Markham – Natural Features Study (Gore and Storrie 1992)
 - 21% natural cover within the Town of Markham
- Environment Canada (Environment Canada 2004)
 - 30% forest cover

These targets were considered in the process of defining the Natural Heritage Network within the Town of Markham.

3.4 Review and Mapping of Background Information

Markham, through its present and past environmental policies, has protected a large number of natural features such as watercourses, wetlands and woodlands, all of which assist in achieving the Goals and Objectives. The continued protection of these features is an important component of future environmental policies. To the extent possible, these features are incorporated into the NHN² as this will further enhance their ecological integrity and assist in the long-term preservation of their quality.

3.4.1 Review of Environmental Policy Areas

Existing policies governing the protection and management of natural heritage features and functions within the Town of Markham were reviewed and summarized. Following the review of the background information and summary of policies, all known natural features were mapped and overlaid with relevant policy areas (e.g., ORMCP areas, Greenbelt, Federal lands, future Rouge Park lands, etc.). The resulting map provides a comprehensive illustration of the existing natural areas, watercourses and the environmental policy areas. The NHN includes lands that are encompassed by the following policy and mapping layers as prepared by the Town,

² Note that owing to the location of some natural features it is impractical to incorporate them into the NHN. Such areas will still receive a least the same level of protection as at present, but outside of the NHN.

TRCA, Federal and Provincial Governments for the purpose of protecting natural heritage features and ecological functions.

- A. Natural heritage and hydrological features in the Greenbelt
- B. Hazard Lands (TRCA floodline policies and Valley and Stream Corridor Management Program guidelines)
- C. Provincially Significant Wetlands (Province)
- D. Significant Woodlands (Region/Province)
- E. Environmentally Significant Areas (ESAs) (Province/TRCA)
- F. Locally Significant Areas (Town)
- G. Rouge Park lands (existing and future, based on RNMP criteria)
- H. Transport Canada Federal Greenspace Lands

The Rouge Park lands were delineated using the criteria established in the Rouge North Management Plan (2001) and subsequently adopted by Markham Council in Official Plan Amendment No. 140 (Rouge North Management Plan). The Rouge North Management Plan is recognized as a specific land planning and resource management document for the Rouge watershed. The Oak Ridges Moraine policies are retained as a separate but integrated component of the Natural Heritage Network.

3.4.2 Mapping Natural Features

The natural features and policy areas described above are mapped in Figure 7 and formed the basis for the development of the NHN. It is important to realize that the mapping of the features is only an approximation based on the best information available at the time of this study. Some of the data layers used were developed at a relatively coarse level and although some reconnaissance level ground-truthing was undertaken, and every effort was taken to be as accurate as possible, the final determination of feature boundaries and buffers will have to be undertaken as part of future site-specific studies during the preparation of sub-watershed studies, secondary plans and/or draft plans of subdivision.

3.4.2.1 Natural Feature Buffers

Most of the natural features identified as part of the background review are associated with existing policy designations or plans that have established buffer policies. For example, key natural features within the Greenbelt or the Oak Ridges Moraine have a minimum Vegetation Protection Zone which in all but a few instances is 30 m. Similarly there is a comprehensive process for establishing buffers for a features within the jurisdiction of the Rouge North Management Plan, and the TRCA have established buffers for areas within their Regulation Limit. In order to maintain consistency with these plans, it is proposed that the same buffer standards be applied to all features in the Natural Heritage Network. This will generally be 30 m. As noted above, the exact boundaries of features and buffers will have to be determined following site-specific field studies undertaken during future development. It is

recognized that some features, such as meadows that are contiguous with a valley, may not require a 30m wide buffer and that a detailed natural heritage evaluation will be used to determine buffers as identified in the future implementation policies.

3.4.2.2 Plantations, Hedgerows and Urban Trees

As the natural feature mapping was based on existing data, it included plantations and hedgerows wherever they were included in the underlying base data. For example, the Regional significant woodlands definition includes certain plantations that are not nurseries, nut-farms, Christmas tree farms or which have been specifically managed for commercial reasons. The ORM Conservation Plan Technical Papers provide similar guidance and the Rouge North Management Plan provides guidance on the inclusion of hedgerows. Generally, hedgerows, urban trees and plantations are not included in the NHN. When future detailed studies are undertaken on a site specific basis, plantations and hedgerows must be assessed according to the policies that apply to that specific area, and this may differ across the NHN (i.e., there will be different criteria to apply on the ORM than when a plantation or hedgerow is outside the ORM but within the RNMP area). Plantations and hedgerows that fall outside any existing policy area will need to be assessed on a site-specific basis, with consideration for its contribution to the goals and objectives of the NHN, as well as the guiding principles. Features that do not qualify for inclusion in the NHN are subject to Region and Town Trees By-laws.

3.5

Establishing Sustainable Biodiversity Centres



The rationale for creating core areas of between 50 ha. and 100 ha. or greater is based on the objective to maintain the existing biodiversity of the Town. Environment Canada (2004) undertook a review of the scientific literature to develop guidelines on the proportion of watersheds that should be retained in natural cover, as well as the size of individual habitat patches that are required to maintain biological diversity. With respect to woodlands, the review concluded the following:

Size of Forest Patch	Response
200 ha	will support 80% of edge-intolerant bird species including most area-sensitive species
100 ha	will support approximately 60% of edge-intolerant bird species including most area-sensitive species
50-75 ha	will support some edge-intolerant bird species, but several will be absent and edge tolerant species will dominate

20-50 ha	may support a few area-sensitive bird species, but few that are intolerant of edge-habitat
<20 ha	dominated by edge-tolerant bird species only

The Environment Canada report provides a guideline that each watershed should have at least one 200 ha forest patch that is at least 500 metres in width. The literature that addresses the needs of mammals indicates even larger patches are required. The Environment Canada report notes that even areas of 1,000 ha. will only support some forest-dependent mammals, but most will still be absent.

Given the existing landscape in Markham, it is not feasible to preserve patches in the largest size categories. Thus it is recommended that several patches of at least 50 ha. and preferably 100 ha. in order to be protected within the NHN. Providing several patches builds in a precautionary measure to the NHN so that if one of the patches is impaired through natural or human actions, there are still several others which can continue to function. Also, by providing several large, connected patches in relatively close proximity to one another, there is a synergistic effect whereby each patch may support greater diversity than if it were completely isolated. However, it is clear from the summary table provided above that forest patches less than 50 ha. are not going to contribute substantially to protecting species that require large areas, and thus alone will not fulfill the objective of maintaining biodiversity. Figure 8 was provided early in the study process to conceptually illustrate the main existing ecological linkages through the Town and where additional linkages, in the form of enhancement areas, may be required to meet NHN objectives, if and when future urbanization occurs in Markham.

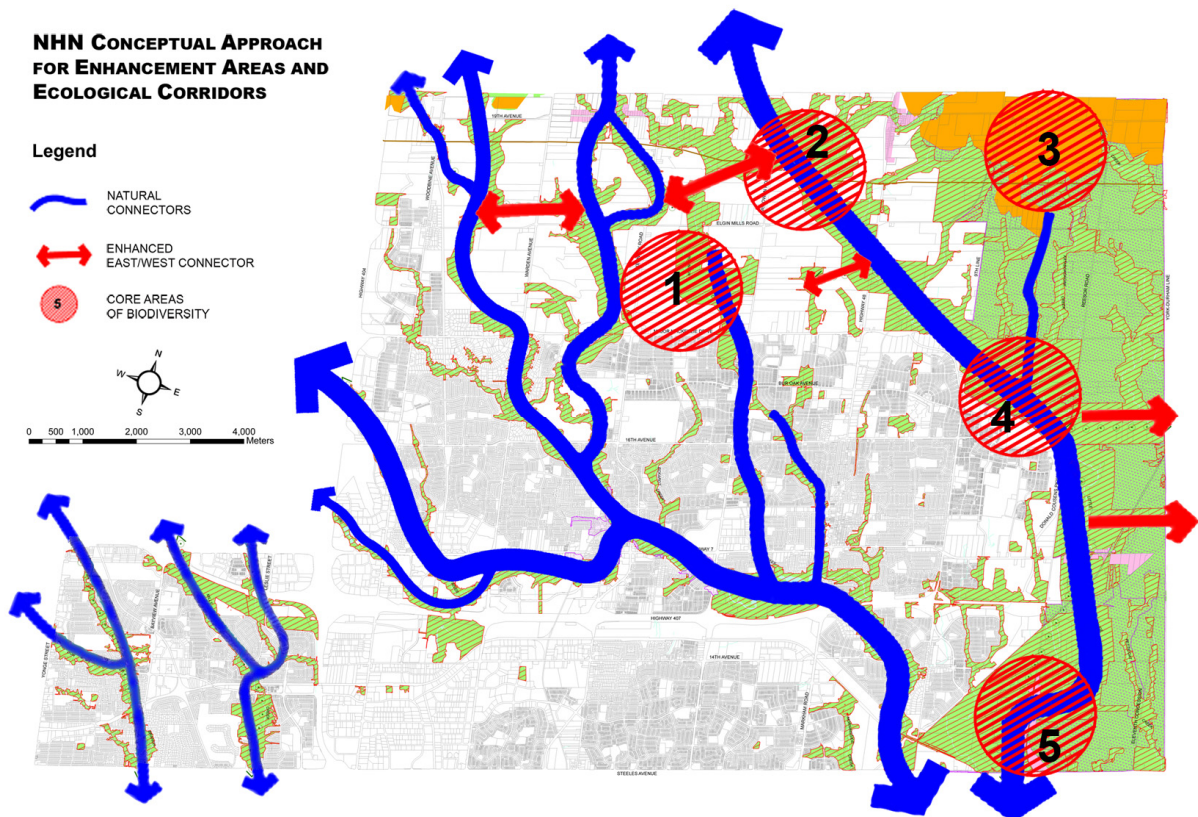


Figure 8: NHN Conceptual Approach

3.6 Connecting the System – Identifying Ecological Corridors

Environment Canada (2004) also provides guidance on the design of ecological linkages. The determination of linkage widths is difficult as it depends on the species that will use the linkage, the quality of habitat within the linkage, the length of the linkage, the habitat surrounding the linkage, etc. Some species will adapt to urban conditions and may not require a dedicated linkage, whereas other, reclusive or slow-moving species that may require several generations to move from one habitat patch to another, may need linkages that provide breeding and foraging habitat. The Environment Canada report recommends linkage widths of 50 to 100 metres. In a study undertaken in Richmond Hill, Geomatics International (1998) recommended forest corridor widths of 300 to 600 metres to accommodate the movement of species that require interior forest. This recommendation followed an extensive literature review and was predicated on the recognition that 100 metres from the edge is commonly used to define interior forest, and that 100 metres of interior habitat was desirable as a minimum (i.e., two edges and 100 metres of interior = 300 metres minimum). The Geomatics report also recommended narrow connections of 50 metres in width to facilitate the movement of amphibians among wetland patches and between breeding ponds and upland habitat, 10 to 30 metres corridors for species tolerant of open conditions, and 100 to 125 metres of upland forest along riparian areas (i.e., upland habitat that would generally be located outside of the floodplain). These were all recommended as a result of the literature review. The Natural Heritage System developed by MNR and TRCA for the recently completed Central Pickering Development Plan (Planning Alliance 2005) provided corridor widths of between 150 and 400 metres.

In consideration of the ecological studies that supported these projects, it was concluded that connections between patches in the Markham NHN should be a minimum of 200 metres in width. This was arrived at recognizing that there was the intent to build some redundancy into the NHN by providing 2 or more connections wherever possible, and that the connections would be relatively short (<750 metres), since the watercourses and patches that needed dedicated connections were relatively close. Also, one of the main sections of the NHN, the Little Rouge River, was very substantial, being 600 metres wide, thus several of the larger patches are connected by a very robust linkage. In recommending these widths, it was assumed that the lands adjacent to core and corridors within the NHN may eventually be converted to urban uses.



The preferred corridor location would provide connections amongst each of the tributaries within the Rouge watershed as well as linkages to the adjacent valley corridors within the Rouge watershed in Richmond Hill and the Petticoat Creek and Duffins/Carruthers Creek watersheds in Pickering. The location of the corridor should be determined with a focus on areas where concentrations of existing natural heritage features and lands addressed by existing environmental policy (TRCA Floodline, future Rouge Park, Greenbelt NHS, etc) occur with the objective of minimizing the extent of lands requiring restoration to achieve functional objectives. Inter-subwatershed connectivity is essential to achieve species movement and biodiversity objectives.

Environmental Policy Review and Consolidation Study

NHN MAP

June 2009

- Legend**
- Natural Heritage Network
 - Natural Heritage Network - Enhancement Area
 - Linkages

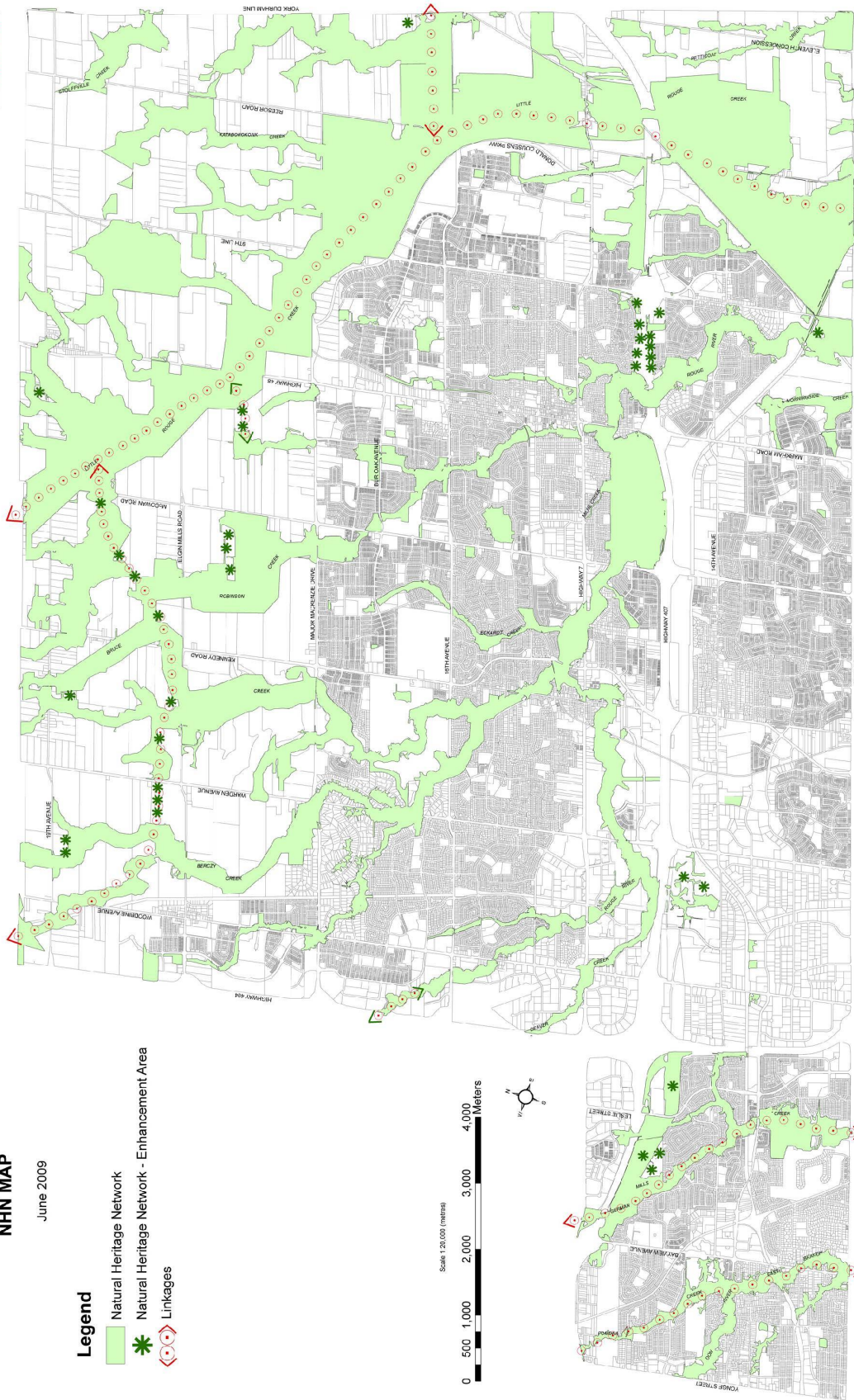


Figure 9: NHN Map

3.7 Integration of TRCA's Terrestrial NHS Strategy

In 2007 the TRCA approved the Terrestrial Natural Heritage System Strategy, a jurisdiction-wide program aimed at identifying the protection of existing and enhancement lands for terrestrial natural heritage protection.

The map that resulted from the process of overlaying natural heritage feature inventory mapping from various agency sources was compared with the TRCA's targeted Natural Heritage System. There were a number of areas identified by the TRCA as components of the "Targeted System" that were outside of the draft NHN boundary, as well as the reverse, where the draft NHN included areas omitted by the TRCA's "Targeted System". However, the differences were minor and overall there was exceptionally good agreement between the two approaches. The minor differences were not surprising given the differences in the methods to develop each system. Each of the areas of difference was subsequently discussed with the TRCA and the reason for the difference determined. A judgment was then made on whether to include additional areas in the NHN or not. These decisions were based on a review of the rationale supporting the inclusion of the lands in the TRCA's "Targeted System" in comparison with the inventory database utilized for the overall environmental policy review process and based upon the anticipated environmental benefits of including the TNHS targeted lands in the NHN. The result of this analysis represented the final draft Natural Heritage Network recommended for the Town of Markham.

3.8 Description of the Proposed Natural Heritage Network

The proposed NHN for Markham is illustrated in Figure 9. Overall the proposed NHN encompasses 5,336 ha. and constitutes approximately 25% of the Town of Markham. This is consistent with the various targets established in other plans and studies as described in section 2.4 which range from 21% to 30%. It can be thought of as comprising of three main components: the main core areas, the existing natural features and the connections amongst them.

Core Areas: The goal and objectives speak to the permanent preservation of biological diversity. To achieve this, it is necessary to create several substantial cores (generally greater than 50 ha.), that will contain sufficient habitat to sustain species that require large areas of natural habitat for long-term persistence (see Section 3.2). The delineation of these cores is especially important as urbanization of the remaining area of Markham occurs. As noted above, this urbanization will place additional pressure on Markham's natural features and the establishment of large core areas is thus crucial to prevent future loss of species and achieve the goal of biodiversity protection. Where core areas insufficient in size and/or shape, they enlarged with "Enhancement Areas" and are referred to as "Centres of Biodiversity". The acquisition of these areas, which are outside any existing regulatory framework, will have to be addressed during the development of policies.

There are five core Centres of Biodiversity proposed in the Markham NHN:

- 1: Robinson Swamp Provincially Significant Wetlands
- 2: Headwaters of the Little Rouge

- 3: Northeast Markham Core
- 4: Forks of the Little Rouge
- 5: Lower Rouge / Petticoat Creek

The location of these five core Centres of Biodiversity was defined based upon the following:

- Extent of existing patches of woodlands and natural heritage features
- Strategic situation at the intersection of major tributary corridors within the Rouge watershed
- Proportion of publicly owned lands that comprise the proposed core areas including Federal and Provincial lands

Each of these Centres of Biodiversity is centred on existing natural heritage features and represents areas where a minimum amount of enhancement is needed to create relatively large areas that are shaped such that interior forest conditions and substantial areas of habitat can be efficiently created. These areas are, not surprisingly, biased to the east and north of the Town. This is a reflection of the existing conditions in Markham noted in section 1.2, such as the existing urban area, location of land protected in public ownership, and the location of the major valley and stream corridors.

Existing Natural Features: These constitute the majority of woodlands, wetlands and watercourses that fall outside of the Centres of Biodiversity. They constitute the majority of the natural features in the NHN. Wherever possible, they are connected to other features within the NHN to help achieve the goal and objectives.

Connection Areas: A key characteristic of a systems approach to natural heritage protection is the provision of functional connections amongst the various components of the NHN. This provision of connections is what primarily distinguishes a systems approach from the traditional features-based approach to natural heritage protection.

As shown in Figure 2, the Rouge River and Little Rouge Creek provide the main connectivity across the Town and present the opportunity to connect the Markham NHN with natural features in adjacent municipalities. Most notably, the Rouge River connection integrates the Markham NHN with the regional landscape level system that provides ecological continuity between the Rouge Park/Lake Ontario waterfront, with the Oak Ridges Moraine. It thus represents a critical component of the Markham NHN. These existing valley corridors form strong connections through the landscape of the Town of Markham; however these natural corridors extend in a predominantly south to north direction through the Town. Consequently, the north/south connectivity of the Natural Heritage System is well supported. Conversely, there is a lack of connectivity east to west, between the various tributary corridors. Strong east to west connectivity is important to ensure that plants and animals can migrate between the subwatersheds and that the five Centres of Biodiversity are bound together to function as an integral system. The establishment

of connections between the Bruce Creek, Robinson Creek and Little Rouge Creek watersheds are important to link these less extensive corridors to the larger cores and natural heritage corridors that exist within eastern Markham. The east/west connections are proposed to be located at the points of least separation between the tributary corridors and where existing important features such as the Robinson Swamp wetland complex can serve as ecological nodes at key points along the connecting corridors. Because of the patterns of existing urban development and the barrier imposed by Highway 404, opportunities to create linkages to extend further westward within Markham are limited, as is the potential to link the Don River watershed with the Rouge River watershed.

Wherever possible, connections are recommended along existing natural features, however; like the Centres of Biodiversity, the connections did not always meet the minimum criteria to provide ecologically functional linkages among natural features (see Section 3.6). Thus “Enhancement Areas” were also added to connections to ensure their long-term functionality. Enhancement Areas were also proposed to establish core areas with an area of at least 50 ha. and preferably 100 ha. as well as to enhance the shape and size of existing habitat patches within the Town. Strategies for securing these Centres of Biodiversity and Enhancement Areas are discussed in the Section 4.1.5.4.

3.9 Incorporating Greenbelt Plan Area Lands

3.9.1 Components of the NHN

The NHN extends throughout the Town and encompasses natural heritage features, associated buffers, senior government policy areas, connecting corridors, core areas and enhancement areas that are to be protected. The boundaries of the NHN within the Greenbelt Plan have been modified to firstly protect key natural heritage features and secondly to identify areas in eastern Markham that are considered to be priority lands for long-term agricultural uses. Within the lands subject to the Oak Ridges Moraine Conservation Plan, the Natural Heritage Network is comprised of Natural Linkage Areas and Natural Heritage Features mapped by the Province.

Outside of both the Greenbelt Plan and Oak Ridges Moraine Conservation Plans, the Natural Heritage Network designation is comprised of lands that are to be protected and enhanced to improve the ecological function of the overall Greenway System and any other environmentally significant lands that have historically been protected from development. In addition, where applicable, the criteria for the establishment of the Rouge Park (North) have been used to define the boundaries of the Natural Heritage Network.

The Natural Heritage Network designation applies to lands whose protection is deemed necessary to sustain human and ecological health in the Town. The Natural Heritage Network designation policies are intended to protect areas of natural heritage, hydrologic and/or landform features, which are functionally inter-related and which collectively support biodiversity and ecological integrity.

The Natural Heritage Network designation is made up of a Natural Heritage System and a Water Resource System that often coincide given ecological linkages between terrestrial and water-based functions. The Natural Heritage Network designation includes the following:

- a) Woodlots;
- b) Wetlands;
- c) Watercourses and valley and stream corridors;
- d) Meadows that are contiguous with a valley corridor or other listed feature;
- e) Naturalized storm water management ponds that are contiguous with a valley corridor or other listed feature;
- f) Habitat for VTE species and species of concern ranked by the appropriate conservation authority as I1-I3 that are contiguous with a valley corridor or other listed feature;
- g) Key natural heritage features and key hydrological features on lands subject to the greenbelt plan and their stipulated buffers;
- h) Hazard lands;
- i) Provincially significant wetlands;
- j) Significant woodlands;
- k) Environmentally significant areas;
- l) Locally significant areas; and,
- m) Rouge park lands.

3.9.2 The NHN and Agriculture

The NHN identified as a consequence of this study will be divided into three land use designations in the Official Plan - NHN, NHN - Enhancement and Greenbelt - Agriculture. Below is a discussion of each designation, particularly as it relates to the Greenbelt Plan.

3.9.2.1 NHN Designation

As noted previously, there is one land use designation in the Greenbelt Plan and a series of overlays - Agricultural System, Natural System and Settlement Areas. It is noted that except for one small area of land in the Town's southeast corner, all of the land subject to the Greenbelt Plan in Markham is within the Greenbelt Natural Heritage System. The lands within the Greenbelt Natural Heritage System are to be designated NHN or Greenbelt Agriculture.

The Greenbelt Plan defers to existing municipal Official Plans to establish the 'Prime' or 'Rural' classification. The Markham Official Plan currently identifies lands in the non-urban area and non-rural residential and hamlet areas as AGRICULTURE (Agriculture 1 and Agriculture 3). The Town of Markham Official Plan provides for an Agriculture 2 designation, which permits additional recreational uses, but is currently not used. Agriculture lands in

Markham are described as 'prime' in the Official Plan by virtue of the soil capability.

The Greenbelt provides a one - time opportunity to change the classification of agricultural lands within the Protected Countryside. Section 3.1 of the Greenbelt Plan provides that "municipalities may amend their municipal official plan designations for prime agriculture area and rural areas when they bring their official plans into conformity with the Greenbelt Plan, subject to the criteria identified in the municipal implementation policies of section 5.2". Section 5.3 of the Greenbelt Plan identifies municipal implementation policies and suggests that amendments to re-designate prime or rural land, are intended to be minor in nature, solely with a view to rationalizing prime agricultural area and rural area boundaries.

There are however, unique circumstances in Markham that justify and support a reclassification of narrow slivers of 'prime' lands to 'NHN' for lands within the Greenbelt that correspond to the corridors established by the Greenbelt Plan in central and western that extend through central Markham. These corridors are identified in both the Rouge North Management Plan and Markham's Official Plan Amendment No. 140 as terrestrial and aquatic corridors comprising a river and associated riparian buffer intended for natural heritage conservation uses, not agriculture. It is the intent of the Town to recognize these lands for long-term natural heritage protection, while continuing to recognize and support existing agricultural uses. On this basis, it is recommended that the lands be placed in the NHN designation. It is noted that agriculture will continue to be a permitted use on these lands and that their use could continue for as long as adjacent lands are integrated with the use. It is also noted that there are lands outside of the Greenbelt Plan boundary that are also being placed in the new NHN designation. The re-designation of these lands is not subject to the Greenbelt Plan.

3.9.2.2 NHN - Enhancement Areas

Lands within identified Enhancement Areas are intended to be restored to natural habitat to create the nodes and corridors that are required to achieve the ecological objectives of the NHN. These areas may not presently encompass existing natural heritage features but are intended to be restored to create the minimum 200-metre-wide corridor and/or the five core areas of biodiversity that are fundamental components of the NHN. The corridors will establish the inter-subwatershed connectivity within and beyond Markham that is necessary to achieve ecological objectives and sustain ecological function in consideration of long-term change in the land use matrix from agricultural to urban within Markham over the long term.

This land use designation applies to lands that are intended to function as linkages between the sub-watersheds and/or become integrated components of the Natural Heritage Network. The establishment of these Enhancement Areas is critical to achieving the objectives for the Town-wide NHN. All of the lands within this proposed designation are not subject to the Greenbelt Plan and are currently designated Agricultural.

NHN Enhancement Areas are proposed in strategic locations to achieve the following fundamental ecological objectives:

- Enhancement of connectivity and corridor function by contributing to the creation of the proposed 200-metre-wide corridors and inter-subwatershed linkages
- Contribution to the creation of the proposed core areas of biodiversity
- Enhancement of the size, shape and resilience of habitat patches by:
 - Infilling openings in habitat patches to create large consolidated areas of habitat
 - Reducing the extent of edge conditions
 - Providing connections between two or more proximate yet disparate habitat patches
 - Connecting complementary habitats to each other, for example, connecting woodland to wetland or riparian's habitat, to enhance habitat diversity.

NHN Enhancement Areas are intended to support the overall ecological integrity of the NHN.

The proposed Enhancement Areas will be identified symbolically in the Town's Official Plan. In this regard, their location, size and configuration are not precise, but will be refined through further planning studies, such as Secondary Plans and sub-watershed studies. It is recommended that the Town should secure these lands so they can be included within the NHN in order to permanently protect them from urban development. In the event that it is not possible to secure these lands within the NHN, it is recommended that a certain degree of flexibility be exercised in the future in terms of the land uses to be permitted in these areas. In this regard, a range of private and open space uses could be located on these lands, provided the uses complement the natural heritage features within the NHN and provide for the integration of open space uses with the NHN.

3.9.2.3 Greenbelt Agriculture Designation

The lands within this designation comprise lands within the Greenbelt Plan Area that are not the site of natural heritage or hydrological features, associated vegetative protection zones or enhancement lands. The intent of this designation is to provide a degree of certainty as to where agricultural uses will be sustained in Markham. These lands are intended to remain in agriculture and for the purpose of Greenbelt Plan are considered to be 'prime'. The lands within this designation are predominantly owned by the TRCA, Province of Ontario and the Federal Government. The Town should work cooperatively with these public landowners in managing the agricultural land uses in a manner consistent with the Greenbelt Plan, while supporting the objectives of the Rouge Park and the Federal Government intention for protected Green Space lands.

Given the proximity of the Town to growing urban areas, the emerging Rouge Park, and the Federal Green Space lands, the Town should support the development of uses that highlight the importance and value of the agricultural economy in a near urban context. On this basis, a full range of secondary and accessory uses to agricultural practices are permitted and may include farm machinery and equipment exhibitions, farm tours, petting zoos, hay rides and sleigh rides, processing demonstrations, pick-your-own produce, small-scale farm theme playgrounds for children and small-scale educational establishments that focus on farming instruction are permitted.

The Federal Pickering Airport Site has been acquired for airport purposes and the Federal Government has no obligation to recognize or adhere to the Greenbelt Plan. The principle of paramountcy applies. The Federal lands are used for short-term agricultural and residential leases, an aerodrome, children's day camp, some small-scale commercial uses and a golf course. The portion of the Federal lands identified as 'Greenspace' is intended to be used in a manner consistent with the Rouge Park and has been identified as an 'Alternate Rouge Park' corridor in the Rouge Management Plans. Numerous farm and heritage buildings on the site have been demolished over the years. Although the Federal Government is not subject to the Provincial requirements of the Greenbelt Plan, an agricultural classification that would reflect existing and intended uses where these are known and supported through senior government policy would be appropriate.

4.0 STRUCTURE FOR A TOWN-WIDE GREENWAY SYSTEM

4.1 Establishing the Greenway System

Section 2.2.2.3 of the Official Plan currently establishes the basis for a Greenway System in the Town of Markham. It is indicated in this section that the Greenway System is intended to support ecological functions, provide access to natural areas and provide continuous trails linking the Town's Greenway with the Rouge Park, the Oak Ridges Moraine and the Don River Valley south of Steeles Avenue. The Town's Greenway System is currently shown conceptually on Appendix Map 1 to the Official Plan and includes lands designated Environmental Protection Area and activity linkages and parks. These activity linkages extend through a number of the valley systems in the existing urban area, but they also extend through the urban area using a system of streets and public parks.

While the Section in the Official Plan that provides the basis for the Greenway System is a part of the Official Plan, the location of the Greenway System is not, since it is shown on an Appendix to the Official Plan. In addition, the Appendix only applies to lands within the existing urban area.



Environmental Policy Review and Consolidation Study

PROPOSED GREENWAY SYSTEM

June 2009

Legend

- Greenbelt Plan Boundary
- Oak Ridges Moraine
- Greenway System
- Special Policy Areas

Scale 1:20,000 (metres)
0 500 1,000 2,000 3,000 4,000 Meters

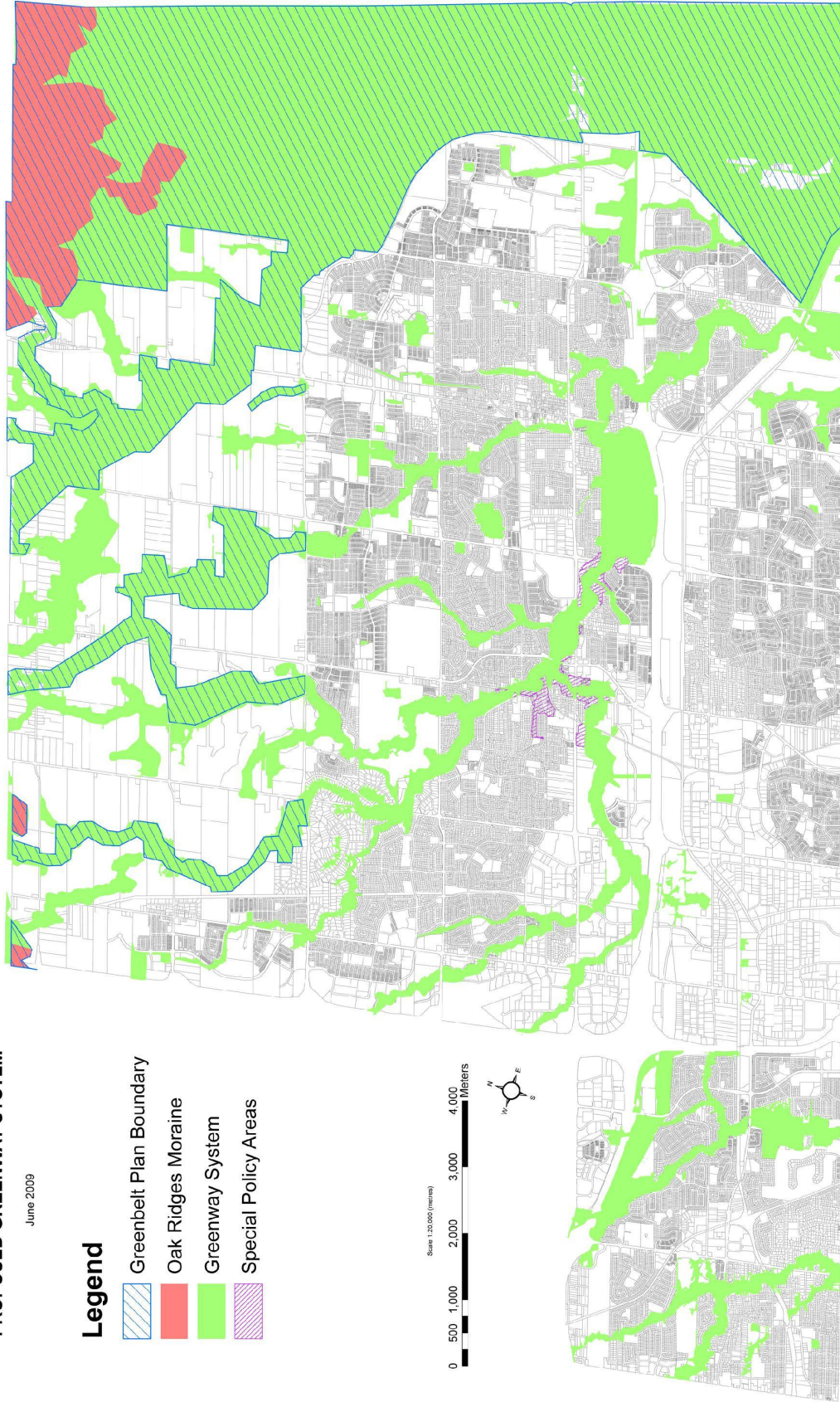


Figure 10: Greenway System

Given the desire of the Town to be clear on where development is expected and where it is not over the long term, it is the Town's intent that the Greenway System be refined and extended to apply to the entire Town. The first step in that refinement process involved the establishment of the NHN, as discussed in Section 3.0 of this report. Given that the Greenway System is anchored by the NHN, establishing the NHN first was required.

4.1.1 Components of the NHN

The Greenway System is to be identified on a Schedule to the Official Plan. A second schedule to the Official Plan would identify the three land use components of the Greenway System, as follows:

1. The Natural Heritage Network Designation (NHN);
2. The Natural Heritage Network - Enhancement Designation (NHNE); and,
3. The Greenbelt Agriculture Designation (GA).

The Oak Ridges Moraine Conservation Plan has been implemented through OPA No. 117 and will be retained as a separate designation.

The three NHN designations were discussed in Section 3.9.2 of this report. The Oak Ridges Moraine area is subject to the Provincial Oak Ridges Moraine Conservation Plan (ORMCP). The ORMCP includes the Town of Markham component of Oak Ridges Moraine within either the Natural Linkage designation (which is primarily located within or adjacent to watercourses) or the Countryside designation (which applies primarily to agricultural and rural lands). Areas of High Aquifer Vulnerability and Landform Conservation are also identified for protection in this area. Lands within the Oak Ridges Moraine were the subject of Official Plan Amendment (OPA) No. 117.

There is a forth policy area that applies to lands within the Greenway System and lands that are within the urban area. Special Policy Areas have been established by the Province and applied to lands that were developed prior to their inclusion within a floodplain and on which a number of specific development rules apply as a result. These areas contain components of the Natural Heritage Network, are the site of a number of open space/recreation uses and are also the site of urban land uses.

PROPOSED GREENWAY COMPONENTS

June 2009

- Legend**
- Greenway System
 - Oak Ridges Moraine Planning District
 - Greenbelt Agriculture
 - Natural Heritage Network
 - Natural Heritage Network - Enhancement Area
 - Proposed Hamlets (Subject to Hamlet Policies in the Official Plan)
 - Special Policy Area (Subject to Special Policy Area Policies in the Official Plan)
 - Linkages
 - TransCanada Pipeline

Scale 1:20,000 (metres)

0 500 1,000 2,000 3,000 4,000 Meters

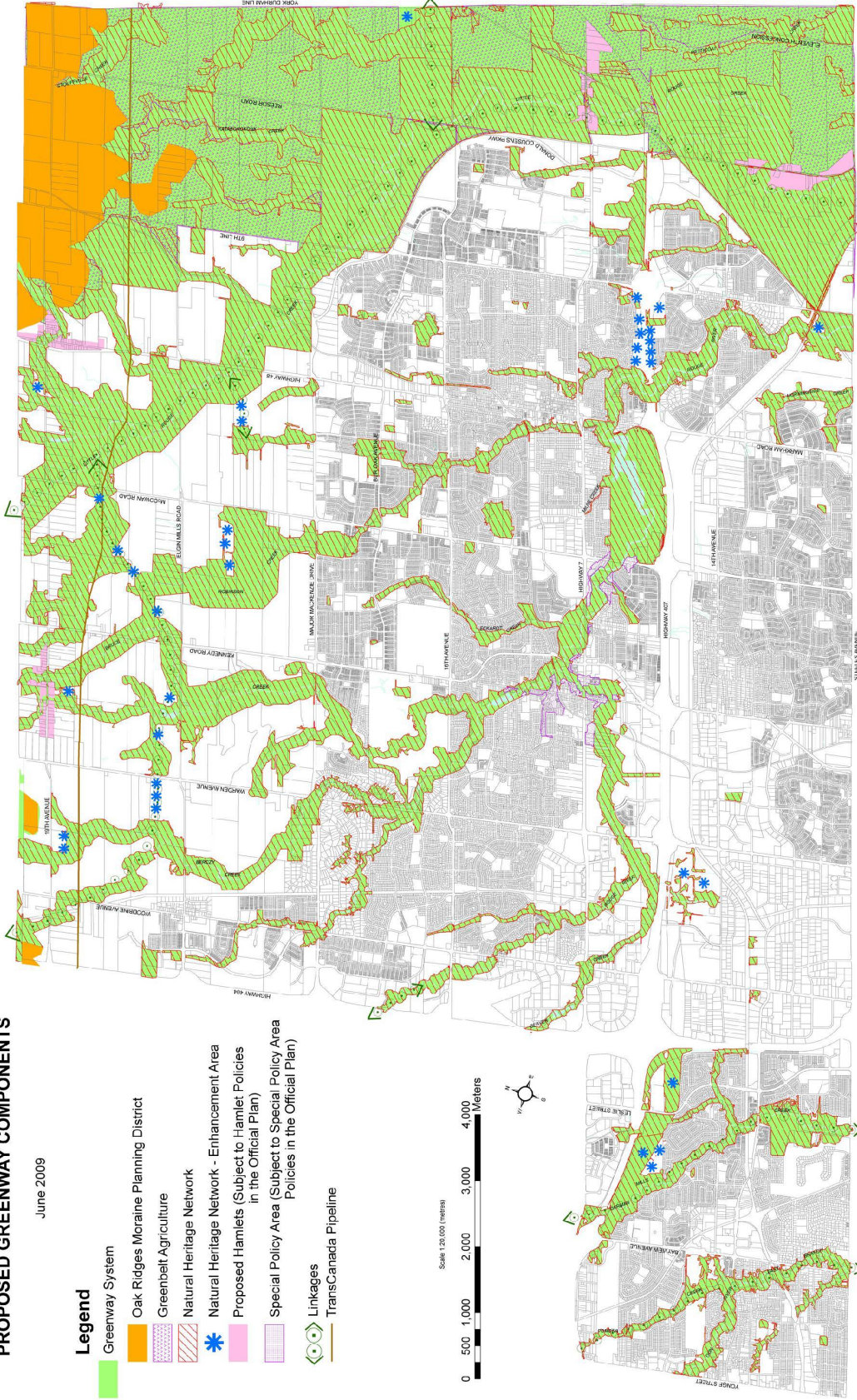


Figure 11: Greenway Components

The Greenway System may include lands held in private or public ownership. With respect to private holdings, the Greenway designation does not imply that these lands are available for public use.

4.1.2 Greenway System Vision

It is recommended that the Town include the following vision statement in its Official Plan:

This Plan recognizes that the Town is an urban and rural community that is expected to continue to accept growth in accordance with the Growth Plan for the Greater Golden Horseshoe. It is on this basis that this Plan identifies and permanently protects those lands that have environmental significance and preserves important open space resources by including them within a Town-wide Greenway System.

The Greenway System is intended to function as an interconnected and multifaceted system that permanently links environmental features, agricultural lands and recreational resources both within and beyond the boundaries of the Town. The Greenway System is intended to provide for a multitude of functions that are intended to support and enhance the overall urban system and assist in maintaining and enhancing the quality of life for existing and future residents of the Town of Markham.

The establishment of the Greenway System will ensure that all planning decisions consider the importance of maintaining, restoring and, where possible, enhancing natural heritage features and ecological functions as urbanization continues to occur. The Greenway System also establishes the long-term vision for a key defining element of the Town and the basis for permanently protecting landforms, agricultural uses and natural heritage features, and functions in a manner that maintains them in their current form with no or as little displacement or encroachment as possible.

It is the intent of the policy framework included in this Plan to establish a number of basic principles with respect to the use and location of environmental and open space lands in the Town over the long term. As the long-term intent of the Town is to protect lands within the Greenway System from urban development, establishing the Greenway System is critical to the land use planning processes required to facilitate additional growth and economic development in the future.

4.1.3 Greenway System Goal – Protecting What is Valuable

It is recommended that the following goal be included within the Official Plan:

The goals of this Plan are to establish, maintain and enhance a functional Greenway System throughout the Town, and to establish an approach to decision-making that considers both existing and future generations. Fundamental to these goals is a planning strategy that:

- a) Promotes awareness of the role that the Greenway System plays in contributing to a sustainable community vision;*
- b) Recognizes that a healthy community includes an interconnected system of open spaces and natural heritage features;*
- c) Protects from urban development and, where possible, enhances and restores, significant natural heritage features and their related ecological functions;*
- d) Protects from urban development Greenbelt agricultural lands;*
- e) Protects surface and ground water resources;*
- f) Improves air and water quality; and,*
- g) Supports nature-based recreation.*

4.1.4 Greenway System Objectives

It is recommended that the following objectives be included within the Official Plan:

- a) To ensure that a comprehensive understanding of the natural environment - including the values, opportunities, limits and constraints that it provides - guides land use decision-making in the Town;*
- b) To protect all significant natural heritage and hydrogeologic and hydrologic features and their associated ecological functions on an integrated watershed management basis so that they can be sustained and enjoyed by future generations;*
- c) To protect Greenbelt agricultural lands;*
- d) To achieve integrated watershed management through partnership with stakeholders within the watershed;*
- e) To prohibit development that will result in a negative impact to the critical functions and processes of small streams, watercourses, ponds, aquifers and wetlands;*
- f) To protect and enhance the open space character of the Greenway System;*
- g) To establish and enhance appropriate uses that support and enhance the role and function of the Greenway System;*

- h) To protect, enhance and provide for the diversification of existing agricultural operations;*
- i) To promote natural heritage and agricultural best management practices within the Greenway System;*
- j) To encourage the public acquisition of the Natural Heritage Network within the Greenway System and improve public accessibility to public areas;*
- k) To establish and maintain the public open space and parkland areas in a manner that is consistent with the environmental and nature-based recreational objectives of this Plan, while accommodating appropriate levels of public use;*
- l) To promote the sensitive design of infrastructure where it is required within the Greenway System;*
- m) To identify the study requirements to evaluate an application for development adjacent to the Natural Heritage Network; and,*
- n) To provide recommendations to guide the implementation of a monitoring program aimed at gauging the long term health of the NHN.*

4.1.5 Implementation of the Greenway System

4.1.5.1 Overview

The establishment of a Town-wide Natural Heritage Network and an expanded Greenway System, in conjunction with the implementation of the Greenbelt Plan, will require a number of significant changes to the Official Plan.

The planning framework will implement a number of basic principles with respect to the use and location of environmental and open space lands in the Town over the long-term. The identification of lands that are key components of the Greenway System at this point in Markham's evolution ensures that all future land use decisions take the location of the lands within the Greenway System into account. As it is the long-term intent of the Town to protect lands within the Greenway System from development, defining the Greenway System is critical to the land use planning processes required to facilitate additional growth and economic development in the future.

The proposed policy framework includes lands that are designated under the Greenbelt Plan and the Oak Ridges Moraine Act. Establishing this context is important at this point in the evolution of the Town of Markham, since it sets forth a number of basic principles with respect to the use and location of environmental and open space lands within the Town over the long term.

The Greenway System and implementing planning framework recognize that the Town is primarily an urban and rural community that is expected to continue to accept new growth in accordance with the Growth Plan for the Greater Golden Horseshoe. It is on this basis that the planning framework identifies and protects from any development those lands that have environmental significance through the inclusion of these lands in a Town-wide 'Greenway System'. Once established, the Greenway System will function as an interconnected and multifaceted system that links environmental, agricultural and recreational resources both within and beyond the boundaries of the Town. The Greenway System includes a multitude of functions that will support and enhance the overall urban system and assist in maintaining and enhancing the quality of life of the residents of the Town of Markham.

It was recognized that as the Town continues to evolve and grow, a number of other factors had to be considered in the process of developing an appropriate land use planning framework. Factors considered in this regard include the location and density of new development, the location and alignment of transportation infrastructure and the long-term plans of the Federal and Provincial governments, both of which own a considerable amount of land in the eastern precinct of the Town. For this reason the policy framework should be sufficiently flexible to accommodate future policy revisions. However, it is the intent that further policy revisions be undertaken only to refine boundaries at a site-specific scale where appropriate, provided that the overall integrity of the Natural Heritage Network is not compromised.

Notwithstanding the above, the framework should also provide certainty in terms of where land will be protected from urban development in the future. To a great extent, lands within the Greenbelt Plan area are already protected from urban development by virtue of the policies of the Greenbelt Plan. In addition to these lands, additional lands have been identified beyond those encompassed by the Greenbelt Plan and other existing policies that warrant protection from development on the basis of the contribution to the maintenance of natural heritage features and their inter-related function within the Town of Markham.

4.1.5.2 Implementation Issues

1. Illustrating the Greenway System on Schedules to the Official Plan

While the Section in the Official Plan that provides the basis for the Greenway System is a part of the Official Plan, the location of the Greenway System is not, since it is shown on an Appendix to the

Official Plan. In addition, the Appendix only applies to lands within the existing urban area. On this basis, it is recommended that the Greenway System be shown on Schedule 'A' to the Official Plan. In addition, a new Schedule is to be added to the Official Plan as well, with this new schedule showing the location of the:

- a) NHN designation;
- b) NHN - Enhancement Area designation;
- c) Greenbelt Agriculture designation;
- d) Two proposed ecological corridors in the NHN Enhancement Area designation, including:
 - A connector between the Little Rouge Creek corridor and the Provincial Significant Wetland located north of Major MacKenzie Drive east and west of Highway 48;
 - A connector that extends from the Little Rouge Creek corridor westward to the Berczy Creek corridor that links the Little Rouge Creek, Robinson Creek, Bruce Creek and Berczy Creek subwatersheds;
- e) Hamlet boundaries;
- f) Special Policy areas;
- g) The Oak Ridges Moraine boundary; and,
- h) The Greenbelt Plan boundary.

The existing Environmental Protection Area and Hazard Lands designations would be replaced by the above designations.

2. Permitted Uses

Below is a list of the uses to be permitted within each new land use designation.

Within the NHN, NHN Enhancement Area and Greenbelt Agriculture Designation, Rouge Park uses are permitted in accordance with the approved Rouge Park Plans. Infrastructure is also permitted within all three of these designations subject to the following:

- The location and construction of infrastructure minimizes, wherever possible, the amount of area traversed and/or occupied by such infrastructure, and,
- The location and construction of infrastructure minimizes negative impacts on and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusions, noise and road salt.

NHN

- a) Existing land uses, including agricultural uses;
- b) Conservation uses;
- c) Forest and fisheries management;
- d) Watershed management and flood and erosion control projects carried out by a public authority;
- e) Essential infrastructure only if it can be demonstrated that it cannot be located outside of the NHN;
- f) Within Rouge Park lands, Rouge Park uses as identified in the Rouge Park plans; and,
- g) Nature-based recreational uses.

NHN - Enhancement Area

- a) All uses permitted in the NHN designation;
- b) All uses permitted in the Greenbelt - Agriculture designation;
- c) Essential infrastructure, only if it can be demonstrated that it cannot be located outside of the NHN Enhancement Area; and,
- d) Open space and active parkland uses

Greenbelt Agriculture

- a) Agricultural uses;
- b) Agriculture-related uses;
- c) Agriculture secondary uses;
- d) Single detached dwellings on existing lots of record;
- e) Bed and breakfast establishments;
- f) Home occupations;
- g) Home industries;
- h) Uses permitted in the NHN as secondary uses to the primary agricultural use;
- i) Farm-related tourism establishments as secondary to agriculture; and,
- j) Essential infrastructure only if it can be demonstrated that it cannot be located outside of the Greenbelt Agriculture lands.

3. Defining Permitted Uses

Below are the definitions proposed for some of the uses to be permitted.

Agriculture-Related Uses

Means those farm-related commercial and farm-related industrial uses that are small-scale and directly related to the farm operation and are required in close proximity to the farm operation.

Agricultural Uses

Means the growing of crops, including nursery and horticultural crops; raising of livestock; raising of other animals for food, fur or fibre, including poultry and fish; aquaculture; apiaries; agro-forestry; maple syrup production; and associated on-farm buildings and structures, including accommodation for full-time farm labour when the size and nature of the operation requires additional employment.

Bed and Breakfast Establishments

Means a single detached dwelling in which rooms are provided with or without meals for hire or pay for the traveling public.

Conservation Use

Means an area of land that is generally left in its natural state and that is used to preserve, protect and/or improve components of the natural heritage system of other lands for the benefit of man and the natural environment and that may include, as an accessory use, hiking trails and/or cross country ski trails, buildings and structures such as nature interpretation centres and public information centres.

Farm Related Tourism Establishment

Means a commercial farm that provides, as an accessory use, educational and active opportunities to experience the agricultural way of life in the Town. Such activities may include farm machinery and equipment exhibitions, farm-tours, petting zoos, hay rides, sleigh rides, processing demonstrations, pick-your-own produce, farm theme playground for children and small-scale educational establishments that focus on farming instruction. Overnight camping, amusement parks and recreational uses are not permitted.

Fisheries Management

Means the management of fish habitat and fish population for the purpose of sustaining and improving the quality and quantity of fish.

Forest Management or Forestry

Means the management of woodlands, including accessory uses such as the construction and maintenance of forest access roads and maple syrup production facilities,

- a) for the production of wood and wood products, including maple syrup;
- b) to provide outdoor recreation opportunities;
- c) to maintain, and where possible improve or restore, conditions for wildlife; and,
- d) to protect water supplies.

Home Industry

Means a small-scale industrial use, such as a carpentry shop, a metal working shop, a welding shop or an electrical shop that provides services or wares to the rural farming community and that is an accessory use to an agricultural use or a single detached dwelling.

Home Occupation

Means an occupation that provides a service as an accessory use within a dwelling unit performed by one or more of its residents. Such activities may include services performed by an accountant, architect, auditor, dentist, medical practitioner, engineer, insurance agent, land surveyor, lawyer, realtor, planner, hairdresser or a provider of private home daycare.

Infrastructure

Means physical structures that form the foundation for development. Infrastructure includes sewage and water works, waste management systems, stormwater management, electric power generation and transmission, communications/telecommunications, transit and transportation corridors and facilities, oil and gas pipelines and associated facilities.

Secondary uses

Means uses secondary to the principal use of the property, including home occupations, home industries and uses that produce value-added agricultural products from the farm operation on the property.

4.1.5.3 Implementing the Greenbelt Plan

The policies of the Greenbelt Plan will be implemented in their entirety in the Town of Markham Official Plan. In this regard, the policies will:

- a) not be more restrictive than the Greenbelt Plan with respect to agriculture;
- b) include all the applicable provisions of the Natural Heritage System within the new NHN, Greenbelt - Agriculture and NHN - Enhancement Area designations;
- c) restrict permitted uses as required in key natural heritage and hydrologic features;
- d) include the policies of the Greenbelt Plan dealing with the conditions under which development may be considered;
- e) provide the basis for considering infrastructure proposals pursuant to the Greenbelt Plan; and,
- f) address hamlet boundary refinement; and,
- g) address the prime agricultural classification in consultation with the Region of York.

4.1.5.4 Land Securement Strategy

In order to ensure the long term protection of the ecological function of lands designated as Natural Heritage Network (NHN) and Natural Heritage Network – Enhancement (NHNE), it is a priority for the Town of Markham to bring these lands into public ownership. The strategy for securing these lands is based upon the following fundamental principles:

1. That the important functional requirements of the Natural Heritage System within the Town of Markham, including all of the lands designated as NHN and NHNE, are best protected and managed if they are secured in public ownership.
2. It is the objective of the Town of Markham to, in the long-term, secure into public ownership all of the lands designated as NHN through land dedication as part of the Urban Boundary Expansion, and subsequent urban development processes.

3. Lands identified within the Natural Heritage Network that are not key natural heritage features or their associated buffers (Enhancement Areas and Recreational Corridor Areas, for example) as well as lands designated as NHNE proposed to be secured using the full array of securement tools available to the Town including, but not limited to:
 - parkland dedication (only where directly associated with municipal parkland and where there is no impact to parkland dedication required for active park uses);
 - designation for other space extensive public uses, such as school sites, recreation centre etc.
 - land swaps; and/or
 - outright purchase.

It is important to note that it is not the intention of the Town of Markham to aggressively secure private lands into public ownership through expropriations. In addition, existing uses will be permitted to remain in the long-term, and owners may expand existing uses or further improve their lands, subject to the policies that will govern such activities.

It is also important to note that the designation of lands as Greenway, NHN or NHNE does not infer that these lands are accessible for public use until such time that they are secured into public ownership.

With respect to the purchase of private lands designated as NHNE, the Town of Markham maintains the “Markham Environmental Land Acquisition Fund”. This fund is intended to provide financial assistance to acquire key environmental lands within the Town. The fund is not intended to apply to lands that would otherwise be acquired through the development approvals process, nor tableland parkland that can be purchased through the parkland fund. Criteria were established as the basis for identifying lands for securement utilizing the Environmental Land Acquisition Fund on the basis of the following principles:

1. Consideration for public funding will include an evaluation to establish the environmental significance of the property within the Markham context.
2. The evaluation process should be consistent and flexible to ensure a fair evaluation.
3. All properties will be evaluated according to their merit as an environmental resource and in the context of the public benefit to the community at large.

4. The evaluation process considers financial impacts and opportunities.

Lands designated as Natural Heritage Network – Enhancement (NHNE) are of significant importance in achieving the inter-subwatershed connectivity necessary to support the ecological function of the NHN. Lands bearing this designation therefore represent a high priority for acquisition and should be prime candidates for funding under the Town Environmental Land Acquisition Fund Program.

4.1.6 Town Of Markham Small Streams Study

In 2002, the Town of Markham initiated the Small Streams Study with the objective of developing guidelines to direct the management of the small drainage courses that traverse Markham's landscape. The features that were the subject of this study are known as 'zero-order' streams and include drainage courses that convey flow intermittently and occur in a variety of forms. These features are typically ill-defined and do not meet the definition of a 'watercourse' as set out by the Toronto and Region Conservation Authority. The Small Streams Study was completed in 2006 with the final report being released in September of that year.

In February of 2007, the Town of Markham Council endorsed the recommendations and guidelines set out in the Small Streams Study in principle and directed that the classification protocol and management recommendations set out in the document be incorporated into the Official Plan and Technical Engineering Manuals and associated documents as they are updated. Council also directed that an inventory of Small Stream features within the rural area be included as a component of this study and future Official Plan Amendment. Figure 12 below illustrates the location of small stream features that are located within the rural area of the Town of Markham. This map was generated using air photo interpretation.



Environmental Policy Review and Consolidation Study

POTENTIAL SMALL STREAM FEATURES

DECEMBER 2008

Legend

- Small Streams
- Roads
- Municipal Boundary

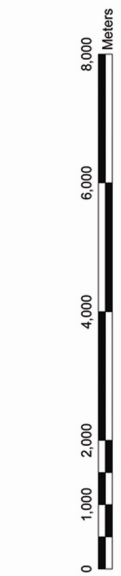
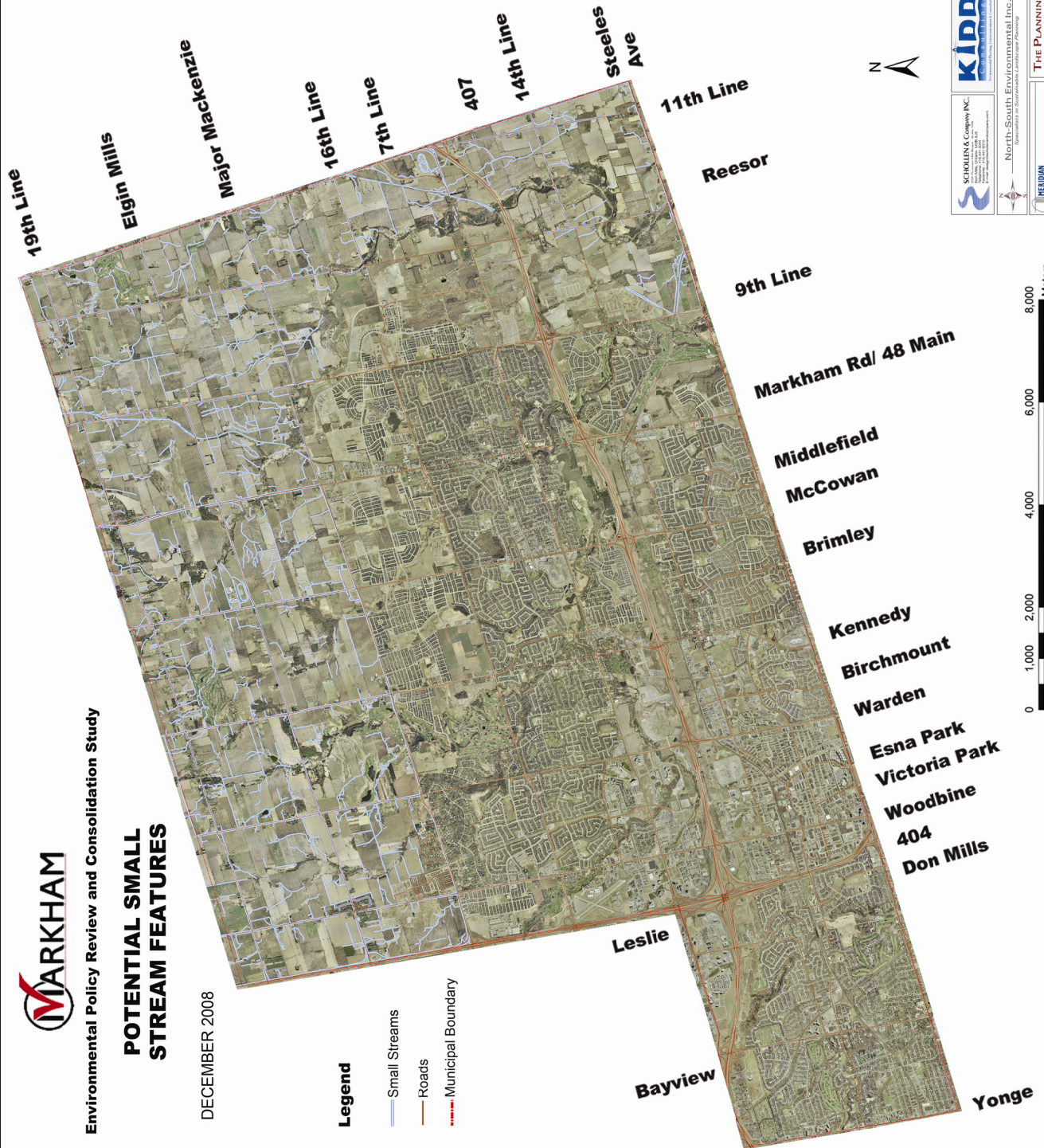


Figure 12: Potential Small Stream Features

The Small Streams Study sets out the following:

- Criteria for defining the types of features that the Small Streams Study addresses
- A description of the functional importance of 'zero-order' features
- A methodology for classifying small stream features based upon their form and ecological function
- Recommendations to guide the management of small stream features based upon their classification
- A catalogue of potential stormwater management and low-impact development techniques that can be applied to achieve some of these management objectives
- Recommendations to guide the restoration of existing small stream features that have been degraded or lost in the urban area of Markham

The Small Streams Study sets out recommendations to guide the protection and management of small drainage features based upon their classification. These recommendations are summarized below.

CLASS 1 Features

Features that are defined as Class 1 through the application of the Classification System possess physical and functional characteristics that contribute to the ecological health of the subwatershed of which they are a part through direct and indirect contributions to terrestrial and aquatic habitat, contribution of base flow and contribution to the health of downstream receiving watercourses or water bodies. The function of features ranked as Class 1 is directly related to their specific location and landscape setting within the subwatershed. Class 1 features are the most significant of the three classes of features. The management direction for Class 1 features as set out in the Small Streams Study is 'preserve and enhance the functional integrity of the feature'.

CLASS 2 Features

Features defined as Class 2 based on the outcome of the application of the Classification System provide important direct and indirect contributions to terrestrial and aquatic habitat and the integrity of downstream receiving watercourses and water bodies, however, their function is not directly related to site-specific characteristics or locational factors.

The management direction for Class 2 Features as set out in the Study is 'permissible to modify the feature as long as function and form are enhanced'.

CLASS 3 Features

Class 3 Features as defined through the application of the Classification System do not contribute significantly, directly or indirectly, to aquatic or terrestrial habitat. These features typically require frequent maintenance to ensure their conveyance function. For features ranked as Class 3 the management recommendation is 'permissible to eliminate feature as long as function is enhanced through the implementation of stormwater management techniques'.

The Small Streams Study includes mapping of all of the potential 'zero-order' streams within the rural area of Markham. It is the intent of the Town that potential small stream features be classified and the appropriate management strategy implemented as a component of the development approval process.

In response to the direction provided by Council, it is recommended that the Town prepare a set of policies that are aimed at implementing the guidelines set out in the Small Streams Study related to the following:

- The identification and classification of small stream features
- The protection and management of small stream features
- The preparation of standards and guidelines aimed at encouraging low impact development and innovative stormwater management solutions to facilitate the protection and management of small stream features
- The restoration of degraded small stream features within the urban area

4.1.7 Watershed and Subwatershed Studies

Within the Town of Markham, the Toronto and Region Conservation Authority has produced watershed plans for the Don, Rouge and Duffins watersheds. These watershed plans prepared by the TRCA have the potential to influence land use planning and servicing practices within the Town and these implications need to be considered by the Town in the process of setting planning policy. In response it is recommended that:

- The Town of Markham review the recommendations set out in the watershed strategies in order to define those that the Town would like to implement as part of its overall environmental and planning vision.

- Review these recommendations to determine how best to facilitate their implementation in the course of developing future Secondary Plans.
- Address any applicable policy relative to source water protection requirements.

4.1.8 Hedgerows

Hedgerows are important rural landscape features and make a significant contribution to the natural landscape while providing wildlife habitat and microclimate benefits. Policies should be introduced into the Official Plan to ensure that hedgerows are protected and conserved, wherever practical and feasible, within the context of the development approval process.

4.1.9 Implementation Recommendations

A number of actions are recommended to facilitate the implementation of the consolidated policy framework, the most significant of which is the Town of Markham initiating an amendment to the Official Plan to achieve the Greenway vision. Specific policies will need to be crafted and refined based on the policies recommended in the previous sections of this document.

The implementation process will require consultation with the Province, the Region of York, the Toronto and Region Conservation Authority, and the Rouge Park Alliance, as well as stakeholders, landowners, and the public-at-large.

4.1.10 Monitoring

As the Town of Markham proceeds with implementing the Greenway System vision, it is important that progress made towards restoring the lands that comprise the Natural Heritage Network be tracked for the purpose of gauging the success of the implementation process and determining future restoration priorities. Because the NHN encompasses a large geographical area, it is important that the proposed monitoring strategy be relatively simple and cost effective to implement. To achieve this goal, a remote sensing/map-based approach is proposed. This approach will utilize Geographic Information System (G.I.S.) technology with the objective of integrating the monitoring data with the Town's geomatics database. Monitoring information will be compiled and documented through the implementation of the following steps.

4.1.10.1 Delineation of Baseline Condition

The limits of the NHN will be overlain on current high resolution aerial photography. The location and type of existing natural heritage features will be added to this base map. Updated inventory information will be acquired from various sources including the Region of York, Toronto and Region Conservation Authority, Ministry of Natural Resources and Town databases. This inventory information will be added to the base map. Subsequently, a process of interpretation of the aerial photography will be applied to identify features that were not captured within the existing database. Limited ground-truthing may be required to positively confirm the type and status of potential features identified through the process of interpretation. The location of confirmed features will be mapped and added to the baseline drawing.

4.1.10.2 Cyclical Review and Update

As new aerial photographs become available, the following tasks should be completed:

- Aerial Photography Interpretation
- The most current aerial photography will be scrutinized with the intent of identifying changes in the composition of the landscape within the NHN. For example, meadows that have succeeded into wooded areas will be mapped and overlain on the baseline mapping. Limited ground-truthing may be required to confirm the status of specific features.

4.1.10.3 Tracking of Agency and Volunteer-Based Restoration Projects

Within the Town of Markham, a number of agencies and volunteer-based organizations are actively restoring landscapes to increase forest cover through the implementation of tree planting projects. It is important that the work completed by these groups be tracked and that areas replanted by agency and volunteer forces be added to the base mapping as a component of the monitoring program to expedite this process, it is recommended that the Town of Markham develop a standardized form for distribution to agencies and volunteer groups that are interested in implementing restoration projects similar to the Town's current Rouge Park Screening Application. The form should facilitate documentation of the following information:

- Location of restoration site
- Area of restoration site
- Map illustrating the boundaries of the restoration site
- List of species and quantities planted

- Name of agency or volunteer organization responsible for implementing the planting program

This information would be translated into G.I.S format and added to the baseline mapping on an annual basis.

At the end of each review period the monitoring program will illustrate the increase in woody vegetation cover within the NHN. Using this information, critical gaps in cover can then be identified and future restoration efforts focussed to target these gaps, enhancing connectivity and expanding core habitats. The monitoring program provides a means to measure and track progress while serving as a tool to support the strategic allocation of funding and resources to optimize ecological benefits.

Although this proposed monitoring program is focused on tracking progress made towards the realization of a fully forested NHN within Markham, the program could be integrated with initiatives aimed at monitoring progress on the Town's 'Trees for Tomorrow' initiative providing the ability to define the increase in the overall extent of tree cover within the Town of Markham over time.

PART 2 - POLICY DIRECTIONS AND FRAMEWORK

- GREENWAY SYSTEM POLICIES
- NATURAL HERITAGE NETWORK POLICIES

1.0 GREENWAY SYSTEM

(formally Hazards Lands, also incorporates Environmental Protection Area policies)

(These policies are specific to the Greenway System and would be included in Section 3.10 of the Official Plan.)

1.1 Purpose

The purpose of the Greenway System is to maintain, as a permanent landform, an interconnected system of natural, open space and agricultural areas that will preserve areas of significant ecological value while providing, where appropriate, opportunities for recreation and uses that support the near-urban and rural economy. Lands within the Greenway System are not available for urban development.

1.2 Location

The Greenway System is located throughout the Town on lands identified for conservation, protection and enhancement or that are used or capable of being used for agricultural purposes in the Greenbelt Plan Area. The Greenway System is shown on Map 1. The Greenway System comprises approximately 6,830 hectares of land, which represents approximate 32% of the land area of the Town.

The lands within the Greenway System comprise the Provincial Greenbelt Plan area, which includes as a component, lands subject to the Oak Ridges Moraine Conservation Plan and Rouge North Management Area lands. Much of the land within the Greenway System is also within the Rouge North Management Area, which also extends across most of the developed land in the Town. The Greenway System also includes river and stream corridors, valleylands, woodlots, wetlands and adjacent naturalized stormwater management infrastructure within the Urban Service Area (USA) boundary.

On lands that are outside of the USA boundary, the Greenway System extends beyond the Greenbelt Plan area to include natural heritage features, Rouge North lands and potential enhancement and linkage areas that currently or are planned to support the overall ecological function of the Greenway System (Map 1 – Greenway System).



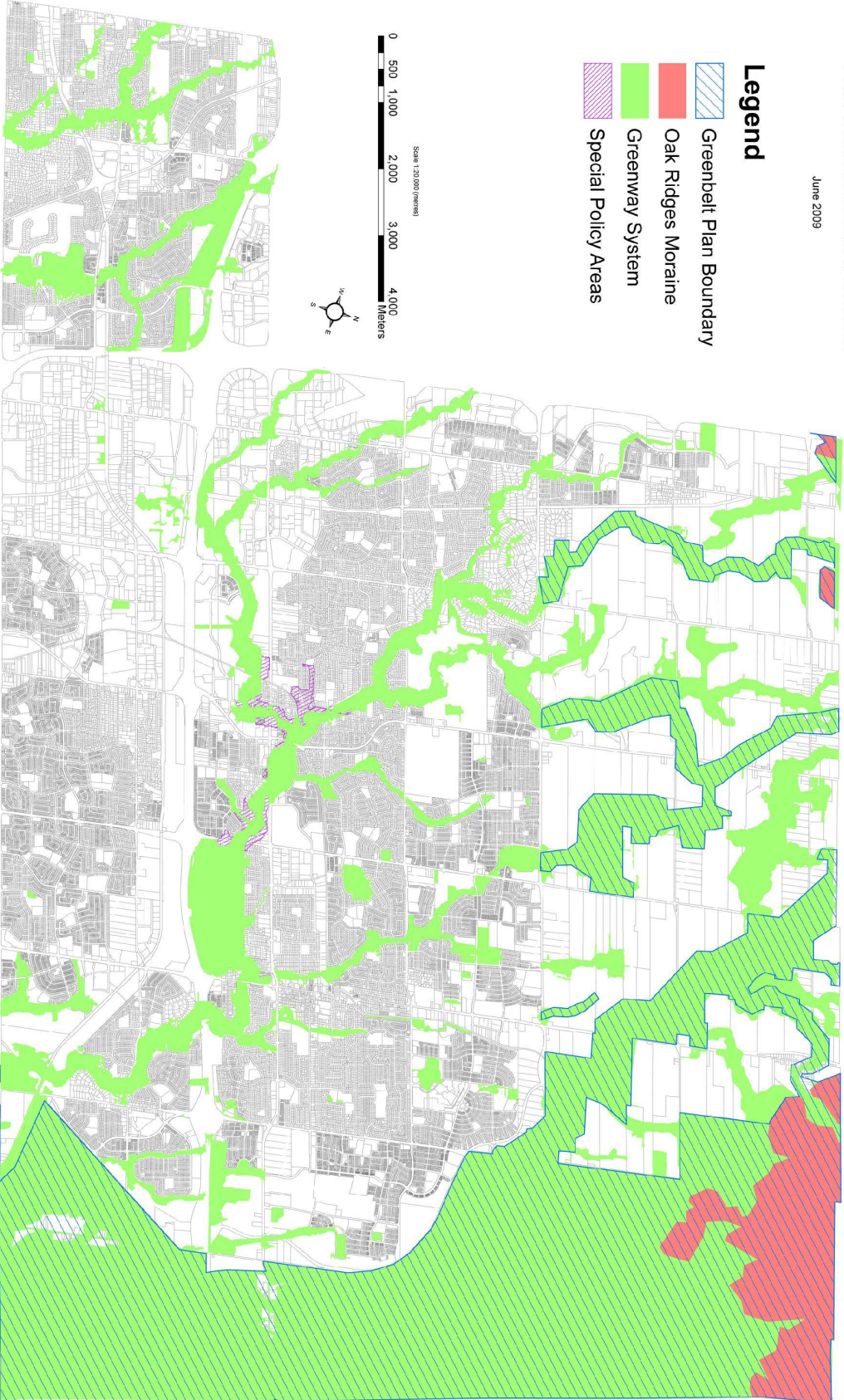
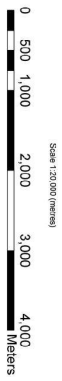
Environmental Policy Review and Consolidation Study

PROPOSED GREENWAY SYSTEM

June 2009

Legend

- Greenbelt Plan Boundary
- Oak Ridges Moraine
- Greenway System
- Special Policy Areas



Map 1 : Greenway System

Schenck & Company Inc.
Environmental Policy Review and Consolidation Study
June 2009

KIDD
Environmental Policy Review and Consolidation Study
June 2009

North-South Environmental Inc.
Environmental Policy Review and Consolidation Study
June 2009

The Planning Partnership
Environmental Policy Review and Consolidation Study
June 2009

1.3 Objectives of the Town

- a) To identify and protect from urban development lands that are considered to be critical to the maintenance and enhancement of a natural heritage system that provides an appropriate balance between urban development and nature in the Town;
- b) To identify lands that are capable of being used for a wide range of agricultural uses that support the local economy;
- c) To provide opportunities for the public to access natural areas in a manner that is sustainable and respectful of their environmental sensitivity;
- d) To promote a healthy and active community by providing for a full range and distribution of publicly accessible natural and built settings for recreation;
- e) To maintain, restore and where possible, improve the diversity and connectivity of natural heritage features in the Greenway System, and their long-term ecological function and biodiversity, recognizing linkages between and amongst natural heritage features and areas, surface water features and ground water features;
- f) To ensure that a comprehensive understanding of the natural environment guides land use decision-making in the Town;
- g) To support and reinforce the policies of the Greenbelt Plan, the Oak Ridges Moraine Plan and the Rouge North Management Plan;
- h) To encourage the public acquisition of the Natural Heritage Network lands within the Greenway System;
- i) To promote the sensitive design of infrastructure where it is required within the Greenway System; and,
- j) To identify the study requirements to evaluate an application for development adjacent to the Natural Heritage Network.

1.4 Components in the Greenway System

Greenway Components

There are three land use designations within the Greenway System:

- 1. Natural Heritage Network (NHN) - these are the lands that are the site of significant natural heritage features and applicable Provincial policy areas.
- 2. Natural Heritage Network – Enhancement (NHNE) - these are the lands adjacent to Natural Heritage Network lands which are intended to support the ecological function of adjoining lands.
- 3. Greenbelt Agriculture (GA) - these are the lands that support agricultural uses and which are capable of being used for sustainable agricultural uses over the long term.

Also identified on Map 2, but subject to site specific policies are:

4. Oak Ridges Moraine (ORM) – these are lands currently designated Oak Ridges Moraine.
5. Special Policy Areas.

1.5 Relationship with Provincial Plans and Other Levels of Government

Oak Ridges Moraine Conservation Plan

The Town's Greenway System identifies the Oak Ridges Moraine as a separate land use designation. The policies of Official Plan Amendment No 117, dealing specifically with the Oak Ridges Moraine continue to apply and no policy in the Official Plan is intended to modify those policies in any way.

Rouge North Management Area within the Greenbelt Plan Area

Land use planning and resource management decisions within the Greenbelt Plan Area and within the Rouge North Management Area shall conform to the Rouge North Management Plan (2001) and the applicable policies of the Greenbelt Plan.

Other Lands within the Greenbelt Plan Area

For lands within the Greenway System that are also subject to the Greenbelt Plan, but not the Rouge North Management Plan, the policies of the Official Plan apply. In the case of conflict, the policy that is more protective of the natural environment shall prevail.

Agricultural Uses in the Greenbelt Plan Area

Notwithstanding any other policy in this Plan, no policy dealing with agriculture shall be more restrictive than the Greenbelt Plan.

Federal Government

This Plan recognizes that the Federal Government owns a considerable amount of land within the Greenway System and that the policies of this Plan do not affect the use of land by the Government of Canada. However, the Federal Government is encouraged to have regard to the policies of this Plan when making land use decisions. If lands cease to be in the ownership of the Government of Canada, they will be automatically subject to the policies of this Plan.

Greenbelt Plan Transition Policies

The Greenbelt Plan requirements do not apply to Official Plan and Zoning By-law amendments, approved prior to December 16, 2004 and subsequent Planning Act approvals necessary to implement the amendments, notwithstanding the inclusion of these lands within the Greenway System. The following transition policies are

specifically recognized as having lands identified in the Greenway System as Greenbelt Plan:

- a) Official Plan Amendment No. 51 (Greensborough Planning District)
- b) Official Plan Amendment No. 149 (Highway 404 North Planning District)

The Town shall request the Province to amend the Greenbelt Plan through the Provincial 10-year review process to reflect the approvals.

1.6 Relationship with Other Policies in this Plan

Place Holder - Rouge North

The Rouge River valleylands contained within the Greenway System are subject to the policies contained in Official Plan Amendment No. 140 (Rouge North Management Area). Official Plan Amendment No. 140 creates a new section 2.16 in the Official Plan to contain the specific Rouge North Management Area policies. Technical and minor amendments will be required to Section 2.16 to consolidate the policies in order to delete duplicate policies and modify numerical references and Official Plan language. Any modifications to the policy wording would be for conformity purposes only and would not alter the intent of the policies as approved.

Place Holder - Special Policy Areas

Special Policy Areas are lands within the regulatory flood plain of the Rouge River, but that have been identified as Special Policy Area to reflect existing historical development and support the existing urban land uses. The existing Special Policy Area policies are to be retained and incorporated into a new consolidated amendment. Given the predominate redevelopment of almost all Special Policy Areas in the Town, it is recommended that Schedule 'A' – LAND USE to the Official Plan be revised to identify the existing land use designations on the SPA properties and that the SPA overlay that directs specific policies related to flood protection be incorporated as an overlay onto the Greenway System schedule.










Hamlets

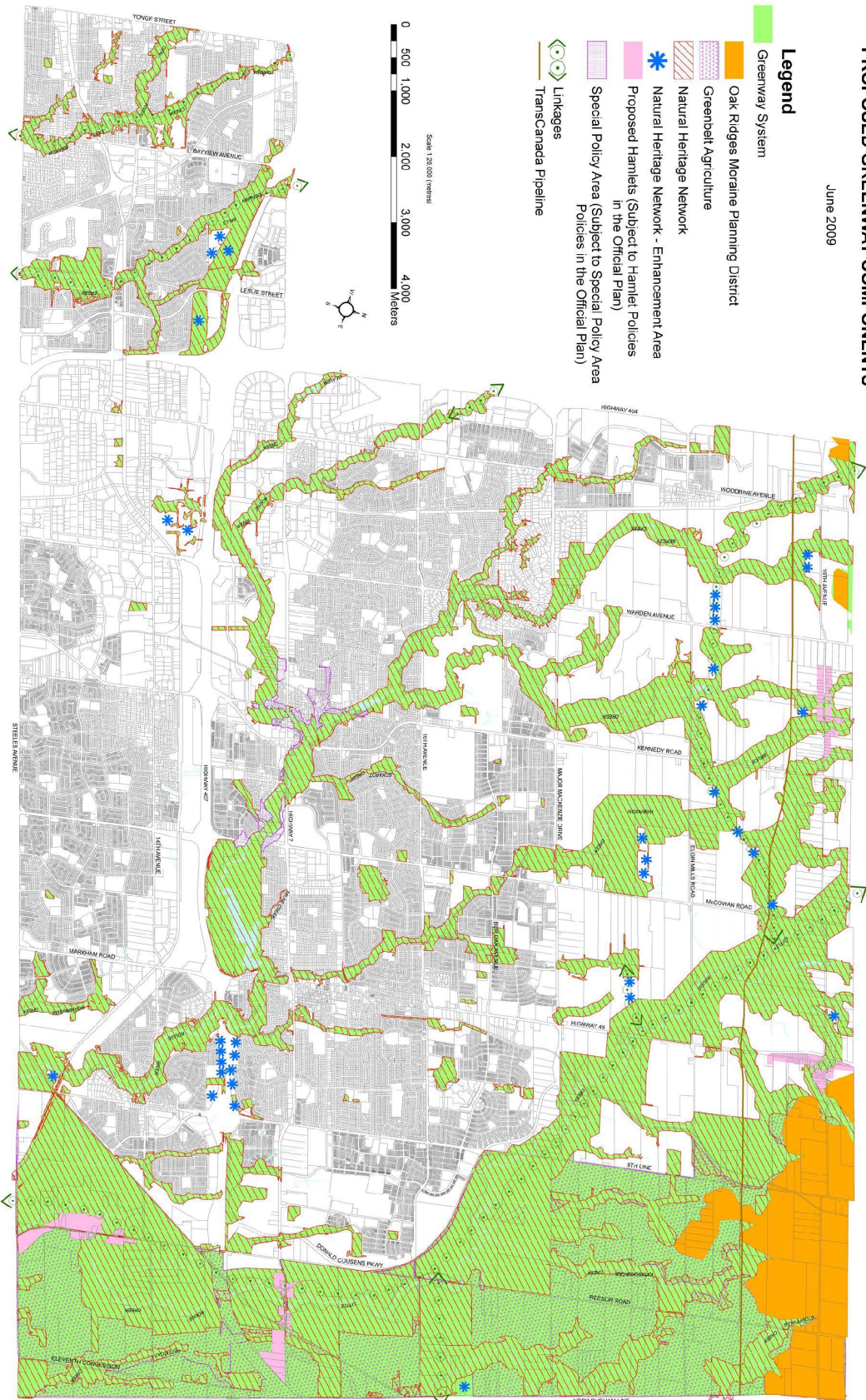
Hamlet areas are existing settlement areas in the Town. The Greenway System extends through a number of Hamlet areas. The Hamlet designation and the policies of Section 3.8 in the Official Plan prevails, with the exception of a new policy that would provide that, as a condition of development approval, efforts are made to protect, improve or restore elements of the natural heritage network to the extent feasible.

The Greenbelt Plan provides a single one time opportunity to review the Hamlet boundaries through the conformity exercise to address boundary adjustments.

June 2009

Legend

-  Greenway S/S system
-  Oak Ridges Moraine Planning District
-  Greenbelt Agriculture
-  Natural Heritage Network
-  Natural Heritage Network - Enhancement Area
-  Proposed Hamlets (Subject to Hamlet Policies in the Official Plan)
-  Special Policy Area (Subject to Special Policy Area Policies in the Official Plan)
-  Linkages
-  TransCanada Pipeline



Map 2: Greenway Components

1.7 General Greenway Policies

1.7.1 Boundary Interpretation

1.7.1.1 Boundaries and Alignment of the Greenway System

The boundaries and alignment of the Greenway System as shown on Map 1 – Greenway System will be further confirmed through Environmental Management Studies and other appropriate studies in accordance with the policies in this Plan and in consultation with the TRCA and appropriate Provincial ministries, without the requirement for an Amendment to the Official Plan.

1.7.1.2 Boundaries and Alignment of The Greenbelt Plan Area

The Greenbelt Plan area boundary will not be altered by Council without approval by the Region and Province through revisions to the Greenbelt Plan.

1.7.1.3 Boundaries and Alignment of Natural Heritage and Hydrologic Features

The precise boundary and alignment of the natural heritage and hydrologic features identified on Map 3 - Natural Heritage and Hydrologic Features and Policy Areas may be further refined through an Environmental Management Study or equivalent study subject to the approval of the Town and TRCA. Where a feature identified on Map 3 – Natural Heritage and Hydrologic Features and Policy Areas is confirmed to not be significant and not an integral component of the natural heritage system that is included within the Natural Heritage Network designation, the use of that land may be subject to the policies of the relevant adjacent land use designation without the need for an amendment to the Official Plan.

This policy is not intended to imply or support the removal of features to obtain a more expanded range of use permissions. In a case where the whole or a part of a natural heritage feature has been removed without approval from the Town, the Town will require appropriate compensation in the form of naturalization or enhancement to ensure no net loss.

1.7.2 Policies for Land Securement

1.7.2.1 Land Securement Strategy

Council shall work with the Region of York and the Toronto and Region Conservation Authority and other public agencies, including the Rouge Park Alliance, to develop and implement a land securement strategy that would

result in the transfer of private lands within the Natural Heritage Network designation into public ownership. However, given the financial limitations of every level of government and consistent with the principle of land stewardship, this policy does not imply that all lands within the Natural Heritage Network designation will be purchased by the Town or other public agencies.

1.7.2.2 Parkland Dedication Requirements Not Applicable To Natural Heritage Network Lands

Council shall consider every opportunity to obtain, through dedication, the lands within the Natural Heritage Network designation through the development approval process. However, such dedications will not be considered as part of the required parkland dedication set out by the Planning Act unless integrated with adjacent parkland and functionally related with the municipal parkland.

1.7.2.3 Urban Expansion Requirements

Notwithstanding any other policy of this Plan, it shall be a requirement of approval of an urban expansion of the Town's Urban Service Area, that all lands within the Natural Heritage Network designation as identified on Map 2 – Greenway Components, and as may be confirmed through the preparation of an Environmental Management Study, be protected and set aside as non-development land. Arrangements for the conveyance of lands within the Natural Heritage Network designation into public ownership shall be undertaken before or concurrent with the approval of development applications through the development approval process. As a condition of urban expansion, the Town may require Developer's Group Agreements be secured to address the cost sharing of public conveyance of lands within the Natural Heritage Network.

1.7.2.4 Tools for Land Securement

Mechanisms to secure lands through development approval or other processes include:

- land dedications/conveyance;
- voluntary sale and public purchase through funds allocated in the Town's budget or from funds raised through the cash-in-lieu of parkland dedications, where appropriate;
- land swaps/exchanges;
- donations, gifts, bequests from individuals and/or corporations;
- density transfers and/or bonuses;
- through any applicable requirement relating to parkland or environmental resource area acquisition in the Town's Development Charges By-law; and/or;
- density transfers and/or bonuses;

- through any applicable requirement relating to parkland or environmental resource area acquisition in the Town's Development Charges By-law; and/or
- other appropriate land acquisition methods.

1.7.2.5 Conservation Easements

Where appropriate, Council shall also work with the Region of York and the TRCA to encourage the use of conservation easements to protect private lands within the Natural Heritage Network designation.

1.7.2.6 Environmental Land Securement Fund

The Town has established an Environmental Land Securement Fund that may be used to contribute to the costs of acquisitions for specific properties that are designated Natural Heritage Network. In particular, the Environmental Land Securement Fund shall prioritize the funding and acquisition of Natural Heritage Network – Enhancement Lands.

1.7.2.7 Funding Partnerships

Council may provide an annual budget allocation for the Environmental Land Securement Fund and may authorize staff to pursue funding partners and other funding opportunities to achieve the objectives for the securement of the lands designated Natural Heritage Network in this Plan.

1.7.2.8 Where Lands Cannot be Secured in Public Ownership

It is recognized that the Town of Markham may not be able to secure in public ownership all of the lands that are designated Natural Heritage Network in this Plan. Where substantial efforts have been unsuccessfully undertaken in accordance with the land securement policies of this Plan, the Town will negotiate with the landowners in an effort to protect the identified natural, environmental and cultural features and functions in private ownership and enhance environmental features and/or functions on private lands. In these instances, the Town shall consider the following stewardship techniques to ensure the appropriate level of protection and, where appropriate, public access to the privately owned lands that are within the Natural Heritage Network designation:

- municipal land use controls including zoning;
- information and education programs;
- stewardship agreements;
- charitable tax receipts;
- conservation easements; and/or
- any other appropriate agreements with the landowners.

1.7.2.9 Meeting Objectives on Private Lands

The Town, in consultation with the TRCA and other public agencies shall support and work cooperatively with private landowners to meet the objectives of this Plan on privately owned lands within the Natural Heritage Network designation.

1.7.3 Existing Uses, Lots of Record and Conversions

1.7.3.1 One Single-Detached Dwelling Is Permitted

One single-detached dwelling is permitted on every lot of record that existed prior to the approval of this Plan that is within the Greenway System provided that:

- the proposed dwelling is located on an open public road allowance maintained on a year round basis;
- the proposed dwelling is subject to the provisions of the Zoning By-law that was in force prior to the approval of this Plan;
- the use, erection and location would have been permitted by the Zoning By-law that was in force prior to the approval of this Plan;
- the proposed dwelling shall be subject to Site Plan Control;
- the proposed dwelling does not impact an existing natural heritage or hydrological feature and is located outside of the feature buffer where possible;
- a Natural Heritage Evaluation is required to reduce buffer setback from the feature if a reasonable sized dwelling cannot be accommodated due to lot constraints.

1.7.3.2 Reconstruction of Any Legal Building or Structure is Permitted

Nothing in this Plan shall prevent the reconstruction of any building or structure that legally existed on the date of adoption of the Official Plan Amendment within the Greenway System, provided the ground floor area of the reconstructed building or structure is within the outside limits of the building or structure that legally existed prior to the date of adoption of this Amendment, and provided the use of the building or structure, once reconstructed, will be the same as the use of the building or structure that legally existed and there is no intensification of the use, with the exception of the lands within the Greenbelt Plan where the operative date is prior to February 27, 2005.

1.7.3.3 Conversion of a Use

Nothing in this Plan shall prevent the conversion of a use that legally existed on the date of adoption of the Official Plan Amendment to similar use. An application to amend the Zoning By-law to permit any other use not identified in the By-law will be required, and will only be approved if it can be

demonstrated that the conversion will bring the use into closer conformity with the requirements of this Plan and will not adversely affect the ecological integrity of the lands within the Natural Heritage Network designation, with the exception of the lands within the Greenbelt Plan where the operative date is prior to February 27, 2005.

1.7.3.4 Expansions to Existing Buildings and Structures

Expansions to existing buildings and structures, accessory structures and uses, may be permitted provided that:

- new municipal services are not required;
- the building, structure or use does not expand further into any identified natural heritage or hydrologic features, unless there is no other alternative, and it can be shown that there will be no negative impacts on the natural heritage or hydrological features or their functions;
- connectivity between natural heritage and hydrologic features is maintained, or where possible, enhanced for the movement of native plants and animals across the landscape;
- the removal of other natural features not identified on Map 3 - Natural Heritage and Hydrologic Features and Policy Areas is avoided; and,
- such features shall be incorporated into the planning and design of the proposed use wherever possible.

1.7.4 Special Management Sites Policies

Special Management Sites are areas in the Town that are either historically more actively used, require naturalization, restoration and management efforts or are subject to policies in approved Secondary Plans and include:

- Milne Park Conservation Area;
- Markham Centre;
- Little Rouge Creek Corridor including Cedarena and Cedar Grove Community Park;
- Bob Hunter Park;
- Berczy Creek through historic Unionville and Toogood Pond; and,
- Federal Greenspace Lands Initiative.

These areas may require further design and use consideration reflecting their historic context, natural features, existing circumstances, recreational functions and/or planning approvals.

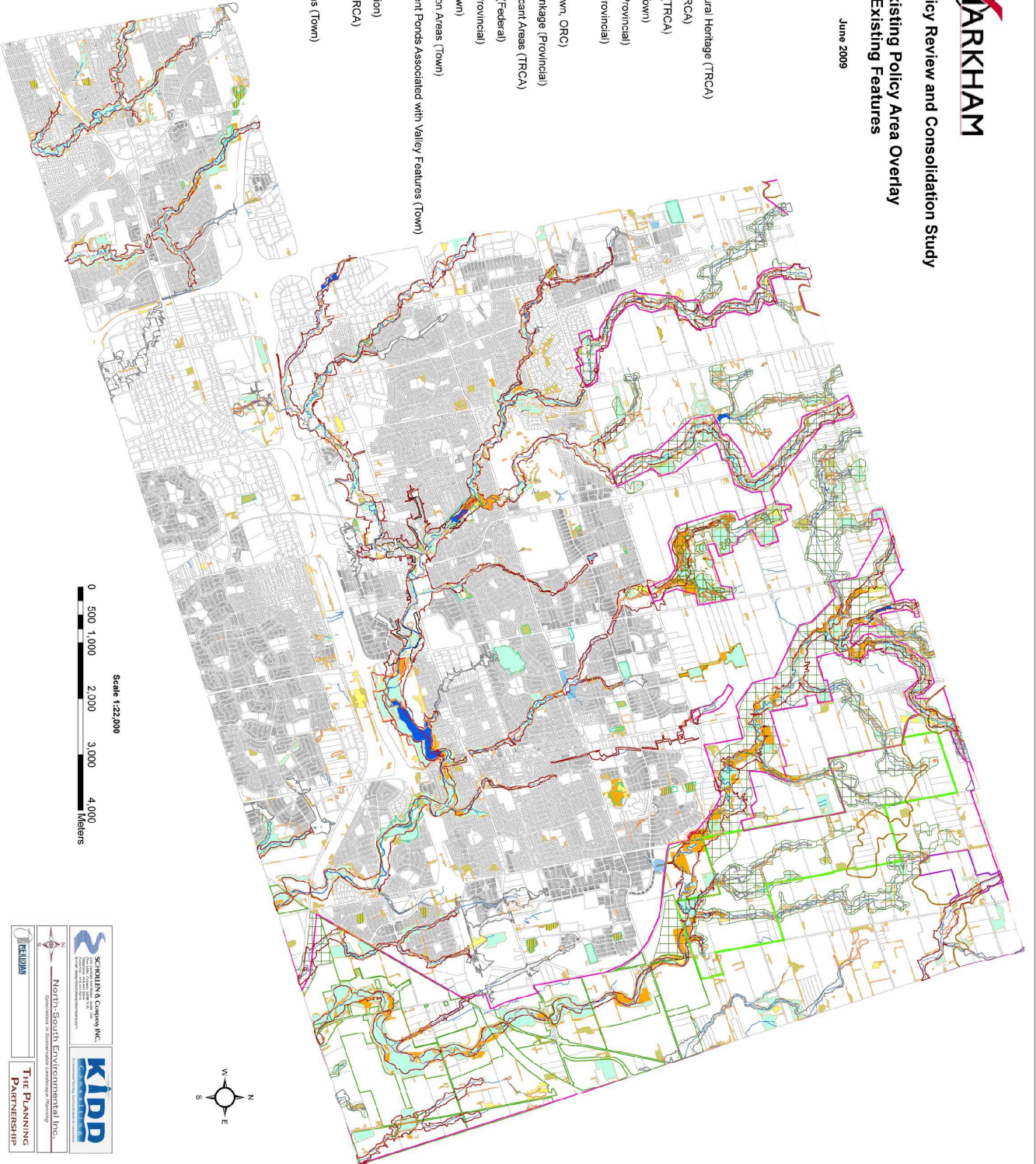


Environmental Policy Review and Consolidation Study
Proposed Existing Policy Area Overlay
on Existing Features

June 2009

Legend

- Existing Terrestrial Natural Heritage (TRCA)
- Existing Flood Plain (TRCA)
- Estimated Flood Plain (TRCA)
- Special Policy Areas (Town)
- Oak Ridges Moraine (Provincial)
- Greenbelt Plan Area (Provincial)
- Wetlands (TRCA)
- Rouge Park (TRCA, Town, ORC)
- Oak Ridges Moraine Linkage (Provincial)
- Environmentally Significant Areas (TRCA)
- Green Space Corridor (Federal)
- Significant Wetlands (Provincial)
- Future Rouge Park (Town)
- Environmental Protection Areas (Town)
- Stormwater Management Ponds Associated with Valley Features (Town)
- Woodlots (Town)
- Significant Forest (Region)
- Successional Forest (TRCA)
- Forest (TRCA)
- Locally Significant Areas (Town)



Map 3: Existing Policy Area Overlay on Existing Features

1.7.5 Infrastructure Policies

1.7.5.1 Existing, Expanded or New Infrastructure is Permitted with The Greenway System

All existing, expanded or new infrastructure is permitted with the Greenway System subject to the policies of this Section and provided it meets one of the following two objectives:

- it supports agriculture, recreation and tourism, rural settlement areas, resource use or the rural economic activity that exists and is permitted in this Plan; or,
- it serves the growth and economic development projected for the Town and Region through the Provincial Growth Plan.

1.7.5.2 Requirements for Infrastructure Extensions, Operations and Maintenance

The location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure with the Greenway System are subject to the following:

- planning, design and construction practices shall minimize, wherever possible, the amount of the Greenway System and particularly the Natural Heritage Network traversed and/or occupied by such infrastructure;
- planning, design and construction practices shall minimize, wherever possible, the negative impacts and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusions, noise and road salt;
- where practicable, existing capacity and coordination with different infrastructure services is optimized so that the rural and existing character of the Greenway System and the overall urban structure for southern Ontario established by Provincial Plans and Policy are supported and reinforced;
- new or expanding infrastructure shall avoid Natural Heritage and Hydrologic Features unless need has been demonstrated and it has been established that there is no reasonable alternative;
- where infrastructure does cross the Natural Heritage Network, intrude into, or result in the loss of a Natural Heritage or Hydrological Feature, including related landform features, planning, design and construction practices shall minimize negative impacts and disturbance on the features of their related functions and where reasonable, maintain or improve connectivity;
- construction of new infrastructure shall minimize, wherever possible, the amount of area traversed and/or occupied by such infrastructure, and,
- construction of new infrastructure shall minimize negative impacts on and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusions, noise and road salt.

1.7.5.3 Agricultural Infrastructure

Infrastructure serving the agricultural sector, such as agricultural irrigation systems, may need certain elements to be located within the buffer zones identified for Natural Heritage or Hydrologic Features. In such instances, and where all reasonable efforts are undertaken to mitigate impacts, these elements of infrastructure may be established within the feature itself or its associated buffer zone.

1.7.5.4 Sewer and Water Infrastructure

Sewer and water infrastructure proposals crossing the Greenway System shall demonstrate that:

- Sewage and water servicing can be provided in a manner that does not impact ecological functions, quality and quantity of ground and surface water, including stream baseflow, and is sufficient to accommodate the proposed use;
- Applicable recommendations, standards or targets within the watershed plans and water budgets are reflected; and,
- Any sewage and water servicing installation is planned and constructed to minimize surface and groundwater disruption.

1.7.6 Stormwater Management

1.7.6.1 Location of Stormwater Management Ponds

Stormwater management ponds are prohibited in natural and hydrological features identified on Map 3 - Natural Heritage and Hydrologic Features and Policy Areas, except in river and stream corridors. In these areas naturalized stormwater management ponds are permitted provided they are located 30 metres away from the edge of the valley or stream.

1.7.6.2 Stormwater Management Objectives

Stormwater management facilities shall be designed and located in accordance to the Town's Stormwater Management Guidelines and where located in the Greenway System shall address the following objectives:

- Maintain groundwater quality and flow and stream baseflow;
- Protect water quality;
- Minimize the disruption of pre-existing (natural) drainage patterns wherever possible;
- Prevent increases in stream channel erosion;
- Prevent any increase in flood risk; and,
- Protect aquatic species and their habitat.

1.7.6.3 Stormwater Management Facilities to Address Specific Requirements

Stormwater management facilities in the Greenway System shall demonstrate the following:

- Planning, design and construction practices will minimize vegetation removal, grading and soil compaction, sediment erosion and impervious surfaces;
- Where appropriate, an integrated treatment approach shall be used to minimize stormwater management flows and structures through such measures as lot level controls and conveyance techniques such as grass swales; and,
- Applicable recommendations, standards or targets with watershed plans and water budgets are complied with.

1.7.7 Policies for Severances

1.7.7.1 Agricultural and Agricultural-Related Severances are Permitted In the Greenway System

Severances are permitted in the Greenway System to support uses permitted in the Natural Heritage Network and Greenbelt Agriculture designations, subject to the following:

- Agricultural severances are permitted where the retained and severed lots are used for agricultural purposes and the minimum lot size is 40 hectares;
- Existing and new agricultural related uses subject to adequate sewage and water facilities;
- The severance of a surplus residence to a farming operation as a result of farm consolidation, provided a new dwelling is not permitted on the remnant parcel, if applicable;
- infrastructure purposes, where the facility or corridor cannot be accommodated through the use of easements or rights-of-way.;
- facilitating conveyances to public bodies or non-profit entities for natural heritage conservation, provided the lands to be conveyed are the site of natural heritage features or are proposed to be restored; and,
- minor lot additions or boundary adjustments provided there is no increased fragmentation of a Natural Heritage or Hydrologic Features.

1.8 Study Requirements

1.8.1 Watershed Plans

Watershed plans provide management direction for the protection of hydrological and natural heritage resources at the watershed boundary scale using an

ecosystem approach. Five watersheds encompass the Town of Markham including the Don, Rouge, Duffins, Petticoat and Morningside. Where watershed plans have been completed and endorsed by Council, the watershed plan shall be considered in the preparation of Environmental Management Study and all other studies prepared in support of development. Where watershed plans have not been prepared, the Town shall work with the TRCA to ensure current best management and sustainable technologies and practices are identified for consideration in all new development.

1.8.2 Environmental Management Studies (EMS) – Study Level 1 Urban Expansion

1.8.2.1 Purpose

The Environmental Management Study (EMS) is a broad scale and comprehensive study undertaken in support of new urban development to ensure minimal harm to the environment. The EMS will identify and evaluate all potential environmental impacts arising from the development of the lands within the study area, and propose appropriate solutions to mitigate these impacts in accordance with the provisions of the Official Plan and relevant agencies and Town guidelines and standards. The EMS will address long-term management of natural heritage and hydrological resources identified in the Greenway System.

1.8.2.2 Environmental Management Studies shall be Required as Condition of Urban Expansion

Environmental Management Studies (EMS's) shall be required as condition of urban expansion and shall include consideration for watershed studies. EMSs shall be completed to the satisfaction of the Town in consultation with relevant agencies prior to approval of any Secondary Plan.

1.8.2.3 Terms of Reference for Environmental Management Studies

Terms of Reference for the preparation of Environmental Management Studies shall be prepared by the Town.

1.8.2.4 Approval of Environmental Management Study

The Environmental Management Study shall be approved by the Town, in consultation with the TRCA, affected agencies and utilities, prior to or concurrently with approvals for urban expansion. The findings and recommendations of the Environmental Management Study shall be reflected in all supporting development related studies relating to specific development approvals.

1.8.3 Master Environmental Servicing Study (MESS) - Study Level 2 – Secondary Plan

1.8.3.1 Purpose

The Master Environmental Servicing Study is a Secondary Plan level study undertaken in support of new urban development to detail and ensure compliance with the Environmental Management Study. The MESP will provide a recommended approach for the protection, enhancement and management of natural heritage and hydrologic features including small drainage features, sustainability recommendations and stormwater management recommendations.

1.8.3.2 Terms of Reference for Master Environmental Servicing Studies

Terms of Reference for the preparation of Master Environmental Servicing Studies shall be prepared by the Town.

1.8.3.3 Approval of Master Environmental Servicing Study

The Master Environmental Servicing Study shall be approved by the Town, in consultation with the TRCA, affected agencies and utilities, prior to or concurrently with Secondary Plan approvals. The findings and recommendations of Master Environmental Servicing Studies shall be reflected in all supporting development related studies relating to specific development approvals.

1.8.4 Environmental Audit (EAudit) – Study Level 3 – Plan of Subdivision and Site Plan

The Town shall require as a minimum a Phase 1 Environmental Audit in accordance with Provincial guidelines for lands conveyed to the Town and where lands may be subject to contamination as identified in the Official Plan or through other documentation. Where the Phase 1 Audit identifies the potential for contamination, the Town shall require a Phase 2 and/or Phase 3 Audit study be prepared in accordance with Provincial Guidelines.

1.8.5 Natural Heritage Evaluation (NHE) – Study Level 3 - Plan of Subdivision and Site Plan

1.8.5.1 Purpose

Natural Heritage Evaluation Reports shall be required by the Town for site-specific development applications to collect and evaluate information pertaining to natural heritage and hydrological features to make an informed recommendation as to whether or not a proposed use will have a negative impact on the natural heritage features and related ecological functions of the Town.

1.8.5.2 Terms of Reference for Natural Heritage Evaluation Reports

Terms of Reference for the preparation of Natural Heritage Evaluation Reports shall be prepared by the Town. The Terms of Reference shall address the specific requirements identified in the Oak Ridges Moraine Plan and the Greenbelt Plan where applicable. The determination of the level of effort required to prepare an NHE shall be in general accordance with Town guidelines and be agreed to in advance with the appropriate agencies and shall be scoped as required. A scoped NHE shall generally be required where development is outside of the natural heritage or and/hydrological features and buffer as identified in Section and is not directly impacting other natural heritage features not identified in the Official Plan.

2.0 POLICIES FOR THE NATURAL HERITAGE NETWORK

2.1 Components of the Natural Heritage Network

Natural Heritage Features and Hydrological Features are identified on Map 3 - Natural Heritage and Hydrologic Features and Policy Areas and comprise the following:

- Floodplain lands, watercourse and stream corridors
- Wetlands meeting Provincial or TRCA criteria
- Woodlands meeting Provincial, Regional, TRCA and Town definitions including existing zoned woodlots
- Meadows that are contiguous with a valley corridor or other listed feature
- Naturalized stormwater management ponds that are contiguous with a valley corridor or other listed feature
- Habitat for Vulnerable, Threatened and Endangered species and species of concern ranked by the TRCA as L1 to L3 that are contiguous with a valley corridor or other listed feature
- Key Natural Heritage Features and Key Hydrological Features identified by the Province on Greenbelt lands
- Environmentally Significant Areas identified by the TRCA
- Locally Significant Areas identified by the Town
- Environmental Protection Areas identified by the Town
- Rouge North Management Lands delineated by the Town
- Feature buffers in accordance with applicable policy

2.2 Permitted Uses

The following uses may be permitted in the Natural Heritage Network:

- Existing land uses, including agricultural uses;
- Conservation uses;

- Forest and fisheries management;
- Watershed management and flood and erosion control projects carried out by a public authority;
- Essential infrastructure, only if it can be demonstrated that it cannot be located outside of the NHN;
- Rouge Park uses as identified in Rouge Park plans; and,
- Nature-based recreation uses.

2.3 General Development Policies

2.3.1 Development and Site Alteration

New development or site alteration in the Natural Heritage Network as permitted in the Official Plan shall demonstrate that:

- a) there will be no negative impacts on natural heritage features or hydrologic features or their functions;
- b) connectivity between natural heritage features and hydrologic features is maintained, or where possible, enhanced for the movement of native plants and animals across the landscape;
- c) the removal of other natural features not identified as natural heritage features and hydrologic features should be avoided. Such features should be incorporated into the planning and design of the proposed use wherever possible; and,
- d) within the Greenbelt Plan Area boundary, the disturbed area of any site does not exceed 25%, and the impervious surface does not exceed 10%, of the total developable area, except for recreational and mineral aggregate uses.

2.3.2 Non Agricultural Uses

Where non-agricultural uses are proposed within the Greenbelt Plan and are subject to the NHN designation applicants shall demonstrate that:

- a) at least 30% of the total developable area of the site will remain or be returned to natural self-sustaining vegetation;
- b) connectivity along the system and between Key Natural Heritage Features or Key Hydrologic Features located within 240 metres of each other is maintained or enhanced; and,
- c) buildings or structures do not occupy more than 25% of the total developable area and are planned to optimize the compatibility of the project with the natural surroundings.

2.3.3 Existing Agricultural Operations and Buildings

Existing agricultural operations and expansions to existing agricultural buildings and structures and accessory uses are permitted within natural heritage features and hydrologic features if it demonstrated that:

- a) there is no alternative and the expansion, alteration or establishment is directed away from the feature to the maximum extent possible; and,
- b) the impact of the expansion or alteration on the feature and its functions is minimized to the maximum extent possible.

2.4 Vegetation Protection Zones Requirements

- a) In the case of wetlands, seepage areas and springs, fish habitat, permanent and intermittent streams, lakes, and significant woodlands, the minimum vegetation protection zones shall be a minimum of 30-metre wide measured from the outside boundary of the natural heritage feature or hydrologic feature.
- b) In the existing Urban Service Area, the minimum vegetation protection zones shall be defined by approved Secondary Plan, zoning by-laws and Plans of Subdivision.
- c) The minimum Vegetative Protection Zone for lands forming part of the Future Rouge Park shown on Map 3 – Natural Heritage and Hydrological Features and Policy Areas has been incorporated into boundary.
- d) A proposal for new development or site alteration within 120 metres of a natural heritage feature not identified in subsection (a) above and outside of the Urban Service Area requires a Natural Heritage or Hydrological Evaluation, to identify a vegetation protection zone that:
 - i. is of sufficient width to protect the natural heritage feature or hydrologic feature and its functions from the impacts of the proposed change and associated activities that may occur before, during and after, construction and where possible, restore or enhance the feature and/or its function; and
 - ii. is established to achieve, and be maintained as natural self-sustaining vegetation.
- e) Agricultural uses are exempt from the requirement to provide natural self-sustaining vegetation. Despite this exemption, agricultural uses should pursue best management practices to protect and/or restore hydrologic features and functions.

2.5 Policies for Trails and Nature Based Recreation

2.5.1 Town shall prepare a Pathways and Trails Master Plan

The Town shall prepare a Pathways and Trails Master Plan to guide the implementation of a pedestrian and cycling trail network.

2.5.2 Considerations for Trails and Nature-Based Recreational Uses

The development of trails and nature-based recreational uses, including interpretation, within the Natural Heritage Network designation shall be encouraged provided that:

- nature-based recreational uses are located on publicly owned or controlled lands or on lands that are subject to a Conservation Easement;
- the trails and nature-based recreational uses are integrated with the Natural Heritage Network;
- the trails and nature-based recreational uses are designed to minimize impact to sensitive environmental features;
- proper consideration is given to issues of trespassing on private properties;
- trails and pathways conform to current safety and accessibility standards; and,
- trail routes will be planned to ensure that they conform to the latest safety and accessibility standards and guidelines.

2.5.3 Policies for Adjacent Development

The Town shall update the Town-Wide Urban Design Guidelines to address appropriate interface development along the Natural Heritage Network including appropriate trail and public use connections.

2.5.4 Policies for Site Plan Control

Site Plan Control shall be applied to all new development on lands within the Natural Heritage Network. Applications for Site Plan Approval will be reviewed in accordance with the goals and objectives of this Plan in order to protect and enhance the ecological features and functions of the lands within the Natural Heritage Network designation.

2.6 Natural Heritage Network (NHNE) - Enhancement Areas

2.6.1 Components of the Natural Heritage Network- Enhancement Lands Area

Natural Heritage Network Enhancement lands comprise lands currently not identified as containing natural heritage or hydrological features or policy areas, but that have been identified using ecological and scientific principles to add additional lands to meet ecological corridor core area biodiversity objectives. The TRCA Terrestrial Natural Heritage System Strategy has been reviewed and considered in the identification of enhancement lands. The following enhancement lands form part of this Plan:

- Enhancement lands required to support a 200-metre east-west ecological corridor from Little Rouge Creek to Berczy Creek south of Nineteenth Avenue and Little Rouge Creek to the Provincially Significant Wetland located between Highway 48 and McCowan Road north of Major MacKenzie Drive; and,

- Core Area Enhancement Ecological nodes comprising lands adjacent to existing features intended to increase natural heritage patch size to enhance biodiversity objectives.

It is the intent of the Town to secure these lands and then incorporate them within the Natural Heritage Network. The location and corridor classification is identified conceptually on Map 2 – Greenway Components.

2.6.2 Permitted Uses

The following uses may be permitted in the Natural Heritage Network – Enhancement Areas:

- All uses permitted in the NHN designation;
- All uses permitted in the Greenbelt Agriculture designation;
- Essential infrastructure, only if it can be demonstrated that it cannot be located outside of the NHN; and,
- Open space and active parkland uses

2.6.3 Location, Size and Configuration of the Major and Minor Ecological Corridors

The location, size and configuration of the Ecological Corridors will be refined through Environmental Management Studies. It is the intent that the Ecological Corridor be approximately 200 metres in width. Where the corridor cannot be secured as natural heritage lands, lands uses permitted in accordance to this Plan, shall ensure that wildlife and habitat connectivity between the features anchoring the corridor is secured through development approvals.

2.6.4 Location, Size and Configuration of the Enhancement Nodes

The location, size and configuration of the enhancement nodes are identified on Map 2 – Greenway Components. These lands have been combined with existing natural heritage features to create biodiversity centres. Where the core area enhancement nodes cannot be secured as natural heritage lands, lands uses permitted in accordance with this Plan, shall ensure on-site naturalization plantings to the extent feasible to support the biodiversity objectives for the site.

2.6.5 Conversion from Enhancement Lands to Natural Heritage Network

Where Natural Heritage Network – Enhancement Lands are integrated in the Natural Heritage Network through development plans, the lands may be redesignated to Natural Heritage Network without the need for an amendment to the Official Plan.

2.6.6 Conversion from Enhancement Lands to Development Lands

Where Natural Heritage Network - Enhancement Lands are placed in a development category in accordance with policies in this Plan, an amendment to the Official Plan is required.

2.6.7 Additional Land Securement Policies

In addition to the land securement policies identified in this Plan, the Town shall prepare an area-specific land securement strategy to address tax incentives, density transfer and bonus provisions and land purchase priorities, concurrent with the preparation of Environmental Management Studies. The Land Securement Strategy shall be prepared in partnership with the TRCA in support of the objectives for TRCA Terrestrial Natural Heritage System Strategy.

2.7 Policies for the Greenbelt Agriculture Designation

2.7.1 Description

Greenbelt Agriculture lands comprise lands within the Provincial Greenbelt Plan Area that are lands not containing natural heritage or hydrological features, associated vegetative protection zones or enhancement lands. These lands are intended to remain in agriculture and for the purpose of Greenbelt classification are considered to be 'prime'.

The lands within the Greenbelt Agriculture designation are primarily owned by the TRCA, Province of Ontario and the Federal Government. The Town will work cooperatively with these public landowners in managing the agricultural land uses in a manner consistent with the Greenbelt Plan, while supporting the objectives of the Rouge Park and the Federal Government intention for protected Green Space lands.

2.7.2 Permitted Uses

Given the proximity of the Town to growing urban areas, the emerging Rouge Park, and the Federal Green Space lands, the Town supports the development of uses that highlight the importance and value of the agricultural economy in a near urban context. On this basis, a full range of secondary and accessory uses to agricultural practices are permitted and may include farm machinery and equipment exhibitions, farm tours, petting zoos, hay rides and sleigh rides, processing demonstrations, pick-your-own produce, small-scale farm theme playgrounds for children and small-scale educational establishments that focus on farming instruction are permitted.

In addition to agricultural uses, agricultural-related uses and secondary uses, the following uses may be permitted within the 'prime' agricultural lands in the Greenbelt Agriculture designation:

- a) Single detached dwellings on existing lots of record;
- b) Bed and breakfast establishments;

- c) Home occupations;
- d) Home industries;
- e) Uses permitted by the NHN designation as secondary uses to the primary agricultural use;
- f) Essential infrastructure, only if it can be demonstrated that it cannot be located outside of the NHN;
- g) Forest and fisheries management; and,
- h) Farm-related tourism establishments;

2.7.3 Site Plan Approval

Site Plan approval shall be required for all new development in the Greenbelt Agriculture designation. Prior to approving such an application, the Town shall be satisfied that:

- a) The proposed use shall not have a negative impact on the enjoyment and privacy of neighbouring properties;
- b) Adequate on-site parking facilities are provided for the use, in addition to the parking required for the principal use on the property, and such parking is provided in locations compatible with surrounding land uses;
- c) The proposed access to the site will not cause a traffic hazard;
- d) Essential municipal infrastructure such as storm water management facilities are provided;
- e) Essential watershed management and flood and erosion control projects carried out or supervised by a public authority;
- f) Where located in the Rouge Park, the uses are consistent with the Rouge North Management Plans.

2.7.4 Land Use Policies

It is the intent of this Plan to only permit development that is compatible with the character, role and function of the rural landscape defined by the agricultural fields, rivers and streams and the open and natural setting of the rural landscape. It is the intent of this Plan to protect the agricultural, natural and cultural heritage character of the rural landscape in accordance with the policies of this Plan. On this basis, the Town ensure, as a condition of any Planning Act approval for development located in the Greenbelt Agriculture designation that:

- a) Uses be designed to blend in with the existing topography and vegetation wherever possible;
- b) Existing trees are maintained wherever possible;
- c) New buildings on farm properties are generally sited in existing building clusters only, where practical;
- d) Existing hedgerows and original farm fences along property lines are maintained wherever possible;

- e) All signage, if required, reflects the natural and cultural heritage character of the area;
- f) All lighting, if required, is subdued and appropriate for the use; and,
- g) Existing buildings, structures, barns and other agricultural buildings are upgraded and/or restored wherever possible.

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APPENDIX A – DEFINITIONS

Definitions – For the purpose of this report the following definitions apply:

“accessory use” means a use of land, buildings or structures that is normally incidental or subordinate to the principal use, building or structure located on the same lot;

“adverse effect” means any impairment, disruption, destruction or harmful alteration;

“adversely affect” means to have an adverse effect on;

“agricultural uses” means,

- (a) growing crops, including nursery and horticultural crops,
- (b) raising livestock and other animals, including poultry and fish, for food and fur,
- (c) aquaculture, and
- (d) agro-forestry and maple syrup production;

“agriculture-related uses” means commercial and industrial uses that are,

- (a) small-scale,
- (b) directly related to a farm operation, and
- (c) required in close proximity to the farm operation;

“animal agriculture” means growing, producing and raising farm animals including, without limitation,

- (a) livestock, including equines, poultry and ratites,
- (b) fur-bearing animals,
- (c) bees,
- (d) cultured fish,
- (e) deer and elk, and
- (f) game animals and birds;

“area of natural and scientific interest” (earth science) means an area that has been,

- (a) identified as having earth science values related to protection, scientific study or education, and
- (b) further identified by the Ministry of Natural Resources using evaluation procedures established by that Ministry, as amended from time to time;

“area of natural and scientific interest” (life science) means an area that has been,

- (a) identified as having life science values related to protection, scientific study or education, and
- (b) further identified by the Ministry of Natural Resources using evaluation procedures established by that Ministry, as amended from time to time;

“bed and breakfast establishment” means an establishment that provides sleeping accommodation (including breakfast and other meals, services, facilities and amenities for the exclusive use of guests) for the travelling or vacationing public in up to three guest rooms within a single dwelling that is the principal residence of the proprietor of the establishment;

“connectivity” means the degree to which key natural heritage features are connected to one another by links such as plant and animal movement corridors, hydrological and nutrient cycling, genetic transfer, and energy flows through food webs;

“development” means the creation of a new lot, a change in land use, or the construction of buildings and structures, any of which require approval under the Planning Act, the Environmental Assessment Act, or the Drainage Act, but does not include,

- (a) the construction of facilities for transportation, infrastructure and utilities uses, as described in section 41, by a public body, or
- (b) for greater certainty,
 - (i) the reconstruction, repair or maintenance of a drain approved under the Drainage Act and in existence on November 15, 2001, or
 - (ii) the carrying out of agricultural practices on land that was being used for agricultural uses on November 15, 2001;

“dwelling unit” means one or more habitable rooms, occupied or capable of being occupied as an independent and separate housekeeping establishment, in which separate kitchen and sanitary facilities are provided for the exclusive use of the occupants;

“earth science values” means values that relate to the geological, soil and landform features of the environment;

“ecological features” means naturally occurring land, water and biotic features that contribute to ecological integrity;

“ecological functions” means the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes, including hydrological functions and biological, physical, chemical and socio-economic interactions;

“ecological integrity”, which includes hydrological integrity, means the condition of ecosystems in which,

- (a) the structure, composition and function of the ecosystems are unimpaired by stresses from human activity,
- (b) natural ecological processes are intact and self-sustaining, and
- (c) the ecosystems evolve naturally;

“endangered species” means any native species, as listed in the regulations under the Endangered Species Act, that is at risk of extinction throughout all or part of its Ontario range if the limiting factors are not reversed;

“farm vacation home” means an establishment that provides sleeping accommodation (including participation in farm activities, meals, services, facilities and amenities for the exclusive use of guests) for the travelling or vacationing public in up to three guest rooms within a single dwelling that is located on a farm and is the principal residence of the proprietor of the establishment;

“fish habitat” means the spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out the life processes, as further identified by the Department of Fisheries and Oceans (Canada);

“forest management” means the management of woodlands, including accessory uses such as the construction and maintenance of forest access roads and maple syrup production facilities,

- (a) for the production of wood and wood products, including maple syrup,
- (b) to provide outdoor recreation opportunities,
- (c) to maintain, and where possible improve or restore, conditions for wildlife, and
- (d) to protect water supplies;

“greenway” means a corridor of undeveloped land preserved for recreational use or environmental protection;

“groundwater recharge” means the replenishment of subsurface water,

- (a) resulting from natural processes, such as the infiltration of rainfall and snowmelt and the seepage of surface water from lakes, streams and wetlands, and
- (b) resulting from human intervention, such as the use of stormwater management systems;

“habitat of endangered, rare and threatened species” means land that,

- (a) is an area where individuals of an endangered species, a rare species or a threatened species live or have the potential to live and find adequate amounts of food, water, shelter, and space needed to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species, and
- (b) has been further identified, by the Ministry of Natural Resources or by any other person, according to evaluation procedures established by the Ministry of Natural Resources, as amended from time to time;

“home business” means an occupation that,

- (a) involves providing personal or professional services or producing custom or artisanal products,
- (b) is carried on as a small-scale accessory use within a single dwelling by one or more of its residents, and
- (c) does not include uses such as an auto repair or paint shop or furniture stripping;

“home industry” means a business that,

- (a) is carried on as a small-scale use that is accessory to a single dwelling or agricultural operation,
- (b) provides a service such as carpentry, metalworking, welding, electrical work or blacksmithing, primarily to the farming community,
- (c) may be carried on in whole or in part in an accessory building, and
- (d) does not include uses such as an auto repair or paint shop or furniture stripping;

“hydrological features” means,

- (a) permanent and intermittent streams,

- (b) wetlands,
- (c) kettle lakes and their surface catchment areas,
- (d) seepage areas and springs, and
- (e) aquifers and recharge areas;

“hydrological functions” means the functions of the hydrological cycle that include the occurrence, circulation, distribution, and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water’s interaction with the environment including its relation to living things;

“hydrological integrity” means the condition of ecosystems in which hydrological features and hydrological functions are unimpaired by stresses from human activity;

“hydrologically sensitive feature” means a hydrologically sensitive feature as described in section 26 of the Oak Ridges Moraine Conservation Plan;

“impervious surface” means a surface that does not permit the infiltration of water, such as a rooftop, sidewalk, paved roadway, driveway or parking lot;

“key natural heritage feature” means a key natural heritage feature as described in section 22 of the Oak Ridges Moraine Conservation Plan;

“landform features” means distinctive physical attributes of land such as slope, shape, elevation and relief;

“life science values” means values that relate to the living component of the environment;

“lot” means a parcel of land that is,

- (a) described in a deed or other document legally capable of conveying an interest in the land, or
- (b) shown as a lot or block on a registered plan of subdivision;

“major development” means development consisting of,

- (a) the creation of four or more lots,
- (b) the construction of a building or buildings with a ground floor area of 500 m² or more, or
- (c) the establishment of a major recreational use as described in section 38 of the Oak Ridges Moraine Conservation Plan;

“natural self-sustaining vegetation” means self-sustaining vegetation dominated by native plant species;

“net developable area” means the area of a lot or site, less any area that is within a key natural heritage feature or a hydrologically sensitive feature;

“Oak Ridges Moraine Conservation Plan Area” and “Plan Area” mean the areas described in Section 2 of the Oak Ridges Moraine Conservation Plan;

“prime agricultural area” means an area that is,

- (a) designated as prime agricultural land in the relevant Official Plan, or
- (b) identified through an alternative agricultural land evaluation system approved by the Government of Ontario;

“prime agricultural land” means,

- (a) land where fruit and vegetable crops and greenhouse crops are grown,
- (b) agriculturally developed organic soil land, or
- (c) land with Class 1, 2 or 3 soils according to the Canada Land Inventory;

“rare species” means a native species that is not currently at risk of becoming threatened but, because of its limited distribution, small population or specialized habitat needs, could be put at risk of becoming threatened through all or part of its Ontario range by changes in land use or increases in certain types of human activity;

“self-sustaining vegetation” means vegetation dominated by plants that can grow and persist without direct human management, protection, or tending;

“significant” means identified as significant by the Ministry of Natural Resources, using evaluation procedures established by that Ministry, as amended from time to time;

“single dwelling” means a building containing only one dwelling unit;

“site” means the land subject to an application;

“site alteration” means activities such as filling, grading and excavation that would change the landform and natural vegetative characteristics of land, but does not include,

- (a) the construction of facilities for transportation, infrastructure and utilities uses by a public body, or
- (b) for greater certainty,
 - (i) the reconstruction, repair or maintenance of a drain approved under the Drainage Act and in existence on November 15, 2001, or

- (ii) the carrying out of agricultural practices on land that was being used for agricultural uses on November 15, 2001;

“subwatershed” means an area that is drained by a tributary or some defined portion of a stream;

“surface catchment area” means the area including and surrounding a kettle lake or wetland, from which surface runoff drains directly into the kettle lake or wetland;

“sustainable”, when used with respect to a natural resource, means that the natural resource is able to support a particular use or activity without being adversely affected;

“valleyland” means a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year;

“watershed” means an area that is drained by a river and its tributaries;

“wetland” means land such as a swamp, marsh, bog or fen (not including land that is being used for agricultural purposes and no longer exhibits wetland characteristics) that,

- (a) is seasonally or permanently covered by shallow water or has the water table close to or at the surface,
- (b) has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants, and
- (c) has been further identified, by the Ministry of Natural Resources or by any other person, according to evaluation procedures established by the Ministry of Natural Resources, as amended from time to time;

“wildlife habitat” means land that,

- (a) is an area where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species, and
- (b) has been further identified, by the Ministry of Natural Resources or by any other person, according to evaluation procedures established by the Ministry of Natural Resources, as amended from time to time;

“woodland” means a treed area, woodlot or forested area, other than a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees;

TOWN OF MARKHAM – ENVIRONMENTAL POLICY REVIEW AND CONSOLIDATION

SUMMARY OF EXISTING ENVIRONMENTAL POLICIES IN TOWN OF MARKHAM OFFICIAL PLAN

Policy Document	Summary of Objectives	Natural Heritage Features Addressed	Criteria for Protection	Implementation Strategies	Notes/Comments
<p>Document: OPA 52</p> <p>Date: Jun. 24, 97</p> <p>Supporting Documents: Town of Markham Natural Features Study</p> <p>Date Approved: Sept. 18, 98</p> <p>Jurisdiction: Lands designated Urban in the Town of Markham Official Plan</p> <p>Focus of Policy: to protect, enhance and restore natural features in the urban development area</p>	<ul style="list-style-type: none">To prevent any further losses of significant natural features, functions and landformsto minimize losses of other natural featuresto provide the basis for improving the remaining natural features and ecological resources;to create a sustainable linked open space system within the Town with opportunities for connections with Regional and inter-regional systems;to require developers to acknowledge and respect the environmental and recreational resources of the Town;to protect existing natural features associated with public recreational uses;to require the protection of natural heritage features as a condition of development;to improve public accessibility to important natural features;to integrate the Town's Greenway system with broader inter-regional systems;to retain and improve existing wetlands;to retain and re-establish low-land vegetation at key locations within the valley system;to retain cold water fisheries and other fisheries where feasible;to restore riparian communities;to protect and rehabilitate rivers and streams and their catchment areas; and,to protect and rehabilitate valleylands while providing suitable opportunities for recreation.	<p>Appendix map 1 to OPA 52 includes the following components:</p> <ol style="list-style-type: none">Activity linkages;Environmental protection areas;public open space;hedgerows. <p>Schedule I of the Official Plan includes the Environmental Protection areas in the Urban area. Components of the Environmental Protection Area designation are:</p> <ol style="list-style-type: none">Valley Lands (including lands designated Hazard lands on Schedule A)12 locally significant area complexesWoodlots and other significant vegetation communities; and,hedgerows. <p>The boundaries of the Greenways system appear to match the boundaries of the Environmental Protection area shown on Schedule I. The only significant difference between Appendix Map 1 and Schedule I is the identification of activity linkages on Appendix Map 1.</p>	<ul style="list-style-type: none">Locally significant area complexes are those which have "exceptional biological, physiographic or hydrologic attributes that warrant the highest order of protection."New locally significant area complexes may be identified if the area:<ol style="list-style-type: none">contains a distinctive and/or unusual landform or water feature that is unusual within Markham or;is at least a Class 7 wetland or;the plant or animal communities are identified as high quality within Markham or;the area provides habitat for rare, threatened, vulnerable or endangered species or;the area is extensive and/or contains a diversity of biological communities and associated plants and animals.A small portion of Little Rouge Creek (locally significant area complex 3B) is included within a locally significant area complex and it is the intent of the Plan to protect, restore and enhance the complex while providing opportunities for public enjoyment.Valley land areas include lands designated Hazard Lands and it is the intent of the Town to protect landforms, features and ecological functions within the river valley system and prohibit development on hazard lands.The natural heritage features study indicates that all woodlots greater in size than 0.5 hectares are considered to be of local significance. It is unclear whether all such wood lots were included on appendix Map 1 and Schedule I.The policies indicate that woodlots shall be conserved and protected and "wherever feasible"All hedgerows that existed at the time are identified on Schedule I and are intended to be conserved	<ul style="list-style-type: none">Sub-watershed plans are required as the basis for the preparation of any new Secondary PlanSection 2.2.4 g) indicates that no adjustment to the Boundary of the EP designation will be considered if the environmental features are wilfully damaged or destroyed. In such instances Council may require the replacement or rehabilitation of the features and landforms. Notwithstanding the above, Subsection h) recognizes that changes to natural features do occur and that boundaries may be changed if it is determined that the feature is of inferior quality, limited sustainability and no longer worthy of preservation.All lands identified as being Hazard Lands on Schedule A and being within the Environmental Protection Area designation are to be conveyed to the Town as a condition of development. (Sub-section 2.2.24 j).All Valleylands that are not within the Hazard Lands designation, locally significant area complexes and woodlots and other vegetation communities identified on Schedules A and I will be set aside for environmental protection purposes. The policy also encourages the public conveyance of these lands through the development approval process, land trust, easements and development agreements. (Section 2.2.24 k)Locally significant area complexes, woodlots and other vegetation communities may be considered as part of a parkland dedication. In addition, such lands may be included in the calculation of permitted development density on adjacent development lands. (Section 2.2.2.4 l)Any conveyance of an Environmental Protection Area shall include an environmental buffer. This buffer is typically 10 metres from the stable top of bank or predicted stable top of bank or 10 metres from the regulatory floodline.A riparian vegetative buffer shall also be required and determined on the basis of further study. A 10 metre buffer is required from the drip line of the trees or the edge of a vegetation community in a wood lot and ten metres adjacent to a Provincially significant wetland. (2.2.2.4 m) and (2.2.2.9)Policies indicate that the Town may consider the retention of environmental lands in private ownership, provided appropriate agreements have been entered into.The policies require that the Town, through its stewardship programs, prepare educational material to advise owners of lands identified locally significant area of the environmental value of these features.Valleylands areas draining less than 125 hectares should generally remain open and in their natural state and be set aside for environmental protection purposes and conveyed to the Town. The public use of these areas is encouraged.Special Policy areas and the policies applying to special policy areas take precedence over the environmental protection area policies that apply to valleylands.The policies require the preparation of the Rouge Park	<ol style="list-style-type: none">The policies apply only to the urban area. However, the policies indicate that the Town shall consider an amendment to the policies to incorporate the recommendations of the Rouge Park North Management Plan Study.In addition, the policies indicate that policies and land use designations should be included within the Official Plan for the rural lands. In order to provide an interim measure, OPA 52 reintroduces the policies that were in effect prior to the adoption of OPA 52 that apply to trees and woodlots, wetlands, watercourses, open space system for the rural area in Section 2.2.3. the policies indicate that Section 2.2.3 "are intended to function as interim measure until a Natural Features amendment for the rural area is adopted by Council".The March 1993 Natural Features Study (Phase 2 – Implementation Plan) identified a greenway system that included the entire Town. OPA 52, within Appendix 1, identifies the Greenway system applying only to the urban area.The boundaries of the Environmental Protection Area designation are considered to be approximate and can be modified provided appropriate justification is submitted.Golf courses and public recreational uses are permitted in Environmental Protection Areas, provided a number of conditions are met. Municipal infrastructure is also permitted in this area.There are a number of general policies regarding restoration of public parks and rights-of-way, a future transformer station, the Miller pit, private landholdings and golf course and utility corridors.

Policy Document	Summary of Objectives	Natural Heritage Features Addressed	Criteria for Protection	Implementation Strategies	Notes/Comments
			and protected “ <i>wherever practical and feasible.</i> ”	<p>Management Plan for portions of the Rouge River and the Little Rouge, Berczy, Bruce and Morningside Creeks.</p> <ul style="list-style-type: none">• Woodlot areas may be incorporated into public parks and may be considered as part of the required parkland dedication and/or maybe included in the calculation of permitted development density on adjacent development lands.• An EIS is required for any development within 30 metres of a significant wood lot or vegetation feature.• Hedgerows within development proposals, if they are to be removed, the planting of trees in other locations shall be considered.• Aquatic habitat shall be protected with riparian vegetative buffers measuring 10 metres.• Stormwater management plans shall be prepared according to Best Management Practices.• Stormwater management facilities may be permitted in Valleylands.• Opportunities for creating wetland areas will be explored as part of the design of new stormwater facilities (the wetland policies of the Plan would not apply in such cases).• Parks may be the site of water quality or quality control features• Buffers are intended to be primarily left in a naturally vegetative state.• A community design plan which includes an Open Space Master Plan component will be required for all Secondary Plan Areas. Such a plan will be implemented through park development plans, plans of subdivision, zoning by-laws and site plan control application.• Activity linkages identified on appendix Map 1 shall be considered as part of the preparation of Secondary Plans, Community Design Plans, Plans of Subdivision and special trail studies.• Policies indicated that stewardship programs will be developed.• Policies also encourage private initiatives to establish a land trust.• The policies require that the Town request the Region to include all lands within the Valleylands, locally significant area complexes and woodlot and other significant vegetation features as subject to the Regional Trees By-law.• The Town may allocate funds to purchase key environmental properties.• Environmental Impact Study guidelines shall be prepared. The Town shall document protection, restoration and naturalization efforts to monitor progress relative to the environmental objectives of the Plan.• The Town will consider passing a Fill control By-law• Letters of Credit may be required to protect Environmental Features during the development process.	

Policy Document	Summary of Objectives	Natural Heritage Features Addressed	Criteria for Protection	Implementation Strategies	Notes/Comments
<p>Document: Markham Official Plan (Rural EP policies)</p> <p>Date: Nov 10, 87</p> <p>Supporting Documents: Unknown</p> <p>Date: Approved: Unknown</p> <p>Jurisdiction: Rural Area Only (all lands outside of the Urban Development Area Boundary shown on Schedule I)</p> <p>Focus of Policy: Environmental Protection in Rural Area</p>	<ul style="list-style-type: none">• Supports the programs of the MNR regarding existing forest reserves and the sponsoring of new planting.• Encourage the preservation of good quality wood lots.• To have regard for wetlands identified by the MNR in the planning process.• To encourage the retention of the natural course of rivers and their tributaries.• Encourage the retention of or adequate replacement of natural undisturbed vegetation on both sides of watercourses.• Maintain water quality.• To protect wildlife habitats and corridors on both sides of the watercourse.• To protect environmentally sensitive areas• Protect fisheries• To encourage the provision of maintenance of public access to rivers for fishing.• Develop a linked open space system incorporating Conservation Areas and Valleylands that includes a system of neighbourhood, community and town parks as well as natural areas.	<ul style="list-style-type: none">• Trees and woodlots;• Wetlands;• Watercourses;• Open Space areas	<p>The only mapping applying to the rural area identifying any type of feature is the mapping of Hazard Lands.</p>	<ul style="list-style-type: none">• Policies require that regard should be given to protecting woodlots or tree stands.• Stormwater management plans should give due consideration to the protection of the extent, water volume and integrity of the wetland.• Channelization of watercourses shall be minimized.• Stormwater Management Plans shall be prepared. Rural property owners are encouraged to enter into woodland improvements agreements.• Tree cutting By-law under the Trees Act is to be provided for.• Tree preservation plans may be required.• An Environmental Assessment may be required for major undertakings.	<ul style="list-style-type: none">• These policies are generally very weak. Policies encourage the retention of features, but do not require the retention of significant features. The mapping is not environmental protection based but more Hazard Land based, with the mapping source being the TRCA.
<p>Document: Town of Markham Official Plan (Hazard Land Policies)</p> <p>Date:</p> <p>Supporting Documents:</p> <p>Date Approved:</p> <p>Jurisdiction: Entire Town</p> <p>Focus of Policy: To identify and protect all lands within the regulatory floodplain or by the stable slope lines identified by the TRCA</p>	<ul style="list-style-type: none">• To protect human life and minimize negative impacts on property, land buildings or structures as a result of flooding• Hazard lands are intended primarily for preservation and conservation in their natural state.		<p>Hazards lands are lands within:</p> <ul style="list-style-type: none">• regulatory floodline• stable or predicted stable slopelines identified by the TRCA• lands which are characterized by inherent hazards such as organic soil, susceptibility to slippage, erosion, mining subsidence, extensive areas of more than 15% slopes or conditions requiring uneconomic building foundation construction.	<ul style="list-style-type: none">• The identification of additional hazard lands may occur as part of a review of a specific development application.• The acquisition of Hazard Lands by the TRCA is encouraged.• No buildings or structures are permitted, minor additions may be permitted subject to the approval of the TRCA.• Lands designated Hazard Lands shall be conveyed to the Town as condition of development approval.• Lands adjacent to watercourses shall be planted, where required, to establish or improve riparian buffers for the protection and improvement of aquatic habitat and wildlife corridors as a condition of development approval.• Environmental Impact Studies, Open Space Master Plans and environmental studies may be required.	<ol style="list-style-type: none">1. It is assumed that all lands designated Hazard Lands are within the regulatory floodline. If this is the case, the regulations of the TRCA with respect to the development of building and structures supercedes the provisions of the Official Plan and Zoning By-law of the Town of Markham.2. Notwithstanding the above, the policies do require the conveyance of Hazard Lands as a condition of development approval on adjacent lands.

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<p>Document: Markham Official Plan (Special Policy Area) OPA 100</p> <p>Date:</p> <p>Supporting Documents:</p> <p>Date Approved: July 5, 1990</p> <p>Jurisdiction: The SPA area applies to the Rouge River and tributaries in the vicinity of the west of Main Street, Unionville to McCowan Road on both sides of Highway 7.</p> <p>Focus of Policy: Policy applies to lands that are developed but are within a floodplain.</p>	<p>To provide the basis for the consideration of development, redevelopment or extensions to and rehabilitation of buildings and structures in floodplains.</p>			<ul style="list-style-type: none">• The TRCA takes the lead in determining what can occur in a Special Policy Area. <p>A number of uses such as elementary schools, daycare centres, hospitals, nursing homes, senior citizen homes, homes for the physically or mentally handicapped, child care or residential care facilities are prohibited. Other uses which involve the storage, handling, production or use of a chemical, flammable, explosive, toxic, corrosive, or other dangerous material and the treatment collection or disposal of sewage is prohibited as is any building or structure related to the distribution and delivery of an essential or emergency public service.</p> <ul style="list-style-type: none">• Free-standing By-laws 1229, 304-87, 122-72 177-96 and 134-79 are effected by these Special Policy Area designation.• Each of the above By-laws, with the exception of 177-96 has been amended to implement the Special Policy Area policies in the Official Plan. Specifically, it has been implemented by prohibiting certain uses as set out in the Official Plan.	
<p>Document: Tree Preservation By-law.</p> <p>Date: December 9, 2003 - Discussion Paper only.</p> <p>Supporting Documents:</p> <p>Date Approved: June 24, 2008</p> <p>Jurisdiction:</p> <ul style="list-style-type: none">• all trees on all properties with a trunk diameter over 20cm at 1.37m ht;• trees identified for preservation through the subdivision and site planning process;	<ul style="list-style-type: none">• to establish a by-law restricting the cutting of trees in accordance with the <i>Municipal Act, 2001</i>;• to implement the Region of York Forest Conservation By-law;• to protect the character/aesthetic value of trees in Heritage Conservation Districts;• to prevent new homeowners from destroying trees protected through the planning process in existing subdivisions;• to protect trees that provide significant ecological benefits in areas next to valleys or other significant natural features;• to prevent removal or damage of any trees that may be considered for future tree preservation areas;• to protect trees in core and linkage areas on the Oak Ridges Moraine.• to protect all trees over 20cm in diameter on all properties	<ul style="list-style-type: none">• all trees on all properties over 20cm diameter measured at 1.37m above grade;• exemption available for:<ul style="list-style-type: none">• hazard tree removal;• emergency work removal;• work on dead, dying or diseased trees;• maintenance or pruning;• tree renovating roof top gardens, indoor courtyards, solariums and raised podiums;• nursery business trees;• cultivated orchard trees;• removal authorized under municipal building permit.	<ul style="list-style-type: none">• Field assessment by Town arborist;• Permit is not required:<ul style="list-style-type: none">• A tree is removed by the municipality or local board as defined in the Municipal Act;• A tree is removed under an approved site plan, plan of subdivision or development permit.	<ul style="list-style-type: none">• Permit application and fee submitted for approval by the Town;• Unauthorized tree removal or injury of a regulated tree will result in a fine upon conviction varying from \$500 to \$100,000.	<p>1. The owners of large land holdings, such as golf courses, cemeteries, commercial and/or institutional facilities, may have a Tree Management Olan prepared by a certified arborist for approval by the Town. After approval of the plan, tree management will be done in accordance with the plan. Permits will be granted in accordance with the approved plan.</p>

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<p>Document: OPA 117 (ORM)</p> <p>Date: October 21, 2003</p> <p>Supporting Documents: Oak Ridges Moraine Conservation Plan</p> <p>Date Approved: To be confirmed</p> <p>Jurisdiction: Lands within the Oak Ridges Moraine Conservation Plan Area</p> <p>Focus of Policy: To protect significant natural heritage features and functions within the Oak Ridges Moraine</p>	<ul style="list-style-type: none">• Protect the ecological and hydrological integrity of the ORM;• ensure that only land and resource uses that maintain, improve or restore the ecological and hydrological functions of the ORM area are permitted;• maintain, improve and, where possible, restore the health, diversity, size and connectivity of significant natural heritage features, hydrologically sensitive features and related ecological functions;• maintain natural stream form and flow characteristics to the extent possible and the integrity and quality of water courses;• ensure that the ORM area has a continuous natural land form and environment for the benefit of present and future generations;• provide for land and resource uses and development that is compatible with the other objectives of the plan;• encourage private land owners to practice good stewardship;• provide for public recreational access to the ORM area; and,• provide clear direction on what uses are permitted and under what conditions as may be specified in the implementing zoning by-law.	<ul style="list-style-type: none">• All areas identified as linkage by the ORMCP. No lands are identified as core in the Town of Markham;• all natural heritage and hydrologically sensitive features are also protected;• all woodlots not identified as a key natural heritage and/or hydrologically sensitive feature are also protected.	<ul style="list-style-type: none">• As set out in the ORMCP;• key natural heritage features may comprise wetlands, significant portions of the habitat of endangered, rare and threatened species, fish habitat, areas of natural and scientific interest (Life Science), significant valley lands, significant woodlands, significant wildlife habitat, and sand barrens, savannahs and tall grass prairies;• hydrologically sensitive features maybe comprised of permanent and intermittent streams, wetlands, kettle lakes, and seepage areas and springs.	<ul style="list-style-type: none">• The expansion of any existing building or structure is only permitted, provided no part of the additional ground floor area is located within or closer than 120 metres from a natural heritage and hydrogeologically sensitive feature;• no building can be expanded if the building is within or closer than 10 metres from lands within woodlots not identified by the ORMCP;• a minor variance to the zoning by-law would be required to permit the expansion;• new single detached dwellings are not permitted within any natural heritage feature or hydrologically sensitive feature or within 120 metres of such a feature;• the same applies to lands within 10 metres of a woodlot not identified in the ORMCP;• as with expansions, a minor variance is required in the above circumstances;• buildings and structures accessory to agriculture are only permitted provided they are 120 metres away from a key feature or 10 metres away from a woodlot not identified by the ORMCP;• the same policy applies to all other accessory buildings as well;• uses within the natural linkage area designation are limited to:<ul style="list-style-type: none">- fish, wildlife and forest management- conservation projects and flood and erosion control projects- agricultural uses- home businesses- home industries- bed and breakfast establishments- fabrication homes- low-intensity recreational uses- transportation, infrastructure and utilities.• Uses that may have an impact on groundwater are restricted in areas of high-aquifer vulnerability;• uses which may modify the landscape are prohibited within landform conservation areas identified by the ORMCP;• watershed studies are required to be prepared by April 23, 2007;• an amendment to 117 shall be prepared once a Region of York Wellhead Protection Plan has been prepared.	<ol style="list-style-type: none">1. The policies of OPA 117 go beyond the minimum requirements of the ORMCP.2. While many municipalities have adopted policies which conditionally permit development within 120 metres of a key natural heritage or hydrologically sensitive feature, the Town has prohibited such development, unless a minor variance is granted. In these other municipalities, a scoped site plan process is required instead.3. The Town has also gone beyond the minimum requirements of the ORMCP by identifying other woodlots not identified initially by the Province as requiring protection in this area.4. The policies are currently under review by the MMAH.
<p>Document: Eastern Markham Strategic Review Committee - Final Report</p> <p>Date: July 8, 2003</p> <p>Supporting Documents:</p> <p>Jurisdiction: Applies to lands on the east side of Markham incorporating both the</p>	<ul style="list-style-type: none">• To provide the basis for discussions with a number of other stakeholders, including the TRCA, the Federal Government, the ORC and private landowners;• to promote a vision based on countryside;• to link the Oak Ridges Moraine to Lake Ontario;• to strengthen agricultural and rural communities;• to enhance transportation routes with an accent on public transit.	<ul style="list-style-type: none">•	<ul style="list-style-type: none">•	<ol style="list-style-type: none">1. Little Rouge Creek Corridor Management Plan should be prepared.2. Parcels of land should be identified as key linkage areas; should be transferred from the Province to the TRCA or the Town.3. Parcels identified as potential linkage areas should be transferred by the Province to the TRCA or the Town.4. The Rouge Park Alliance should assign the highest priority for land acquisition to two identified private parcels (E4-1 and E4-2) to be added to the Little Rouge Creek corridor of the Rouge Park. Parcels owned by the Federal Government at the southern end of the Federal Land Holdings should be transferred to the TRCA or the Town.	

Policy Document	Summary of Objectives	Natural Heritage Features Addressed	Criteria for Protection	Implementation Strategies	Notes/Comments
<p>Rouge North Management Area and most of the lands subject to the ORMCP</p> <p>Focus of Policy/Report: To provide the basis for making land use decisions in East Markham in the future.</p>				<p>5. The Town should actively participate in the Federal Greenspace Initiative, the GTAA planning process for Pickering Airport.</p> <p>6. The Little Rouge Creek Corridor Land Acquisition Strategy should be finalized.</p> <p>7. Links underneath the 407 should be established.</p> <p>8. Additional lands owned by ORC should be transferred to the TRCA or the Town for future Rouge Park purposes (these lands have not been identified as having a high or moderate ecological importance).</p>	
<p>Document: OPA 140</p> <p>Date: Approved by OMB in 2009</p> <p>Supporting Documents: Numerous. Rouge North Management Plan (2001)</p> <p>Jurisdiction: All of the area identified as being within the Rouge North Management Area, which includes both urban and rural areas</p> <p>Focus of Areas: To enhance and restore natural features in the Rouge North Management Area - applies to all lands within the Rouge Watershed, with the exception of the lands within the Oak Ridges Moraine.</p>	<ul style="list-style-type: none">• To extend Rouge Park from south of Steeles Avenue to the Oak Ridges Moraine;• to implement the Rouge North Management Plan, which is not a statutory planning document;• to protect, restore and enhance the natural, scenic and cultural values of the park in an ecosystem context, and to promote public responsibility, understanding, appreciation and enjoyment of this heritage.	<ul style="list-style-type: none">•	<ul style="list-style-type: none">•	<ul style="list-style-type: none">• OPA 116 establishes/recognizes three policy areas - Urban Policy Area, Middle Reaches Policy Area and Little Rouge Creek Policy Area;• it is the intent of OPA 116 to augment current planning policy by adding an additional layer of policy to the current land use designations included in this plan;• it is the intent of the Town of Markham to establish the boundaries of Rouge Park North "<i>by application of the boundary delineation criteria identified in the Rouge North Implementation Manual and the policies of this plan</i>";• urban interface and infrastructure guidelines shall be prepared;• the Town shall implement a monitoring program to record the implementation of Rouge Park North in the Town of Markham;• ecological monitoring may be undertaken by the TRCA;• a comprehensive watershed strategy is intended to be completed by the TRCA by 2006;• within the Urban Policy Area, the policies only apply to public lands and lands which come into public ownership as a result of a planning approval;• the Middle Reaches Policy Area includes all lands outside of the Urban Service Area but excluding the sub-watershed of the Little Rouge Creek;• the Rouge Park North boundary within the Middle Reaches Policy Area will be generally located within an area of 130 metres from the stable top of bank or 130 metres from the centreline of a tributary where there is no defined top of bank.• A setback of 100 metres from any significant natural feature which intersects with the Primary Study Area boundary is also recommended.• All development applications in the Middle Reaches Policy Area are conditional upon the identification of and dedication of lands that meet the boundary delineation criteria of the Rouge Management Plan. This shall be implemented by a further OPA;• the Little Rouge Creek Policy Area applies to the Little Rouge Creek watershed;• a 600 metre wide corridor centred along the main branch of the Little Rouge Creek is established. A Little Rouge Creek Management Plan shall be prepared to implement the objectives of the OPA;• it is recognized that not all lands within the 600 metre wide corridor are in public ownership and nothing in the policies of the Plan are intended to imply that these lands shall be	<p>1. The policies included within OPA 116 are intended to implement a guideline document prepared by the Rouge Park Alliance. Relying upon a guideline document within an Official Plan does not lead to surety.</p> <p>2. It is noted in OPA 116 that the Town only has to have "regard for" the Rouge Park North Management Plan in regard to planning approvals in the area.</p>

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				<div><div>purchased by the Town;</div><div><div><div>•</div><div>a number of special management sites have been identified and they include<ul style="list-style-type: none">- Milne Park Conservation Area- Markham Centre- Little Rouge Creek Corridor, including Cedarena and Cedar Grove Community Park, Berczy Creek through historic Unionville and Toogood Pond, Beaver Creek and alternative Rouge Park Corridor (Federal Greenspace Lands Initiative)</div></div><div>• area specific management plans or restoration plans should be prepared for these areas;</div><div>• all lands meeting the boundary delineation criteria for inclusion within Rouge Park North shall be dedicated to the Town where an urban expansion is proposed;</div><div>• an Environmental Land Securement Fund shall be established;</div><div>• an annual budget allocation for the Environmental Land Securement Fund shall be established.</div></div></div>	
<div><div>Document:</div><div>Rouge North Implementation Manual (this is the companion document to OPA 116)</div><div>Date:</div><div>June 2003</div><div>Focus of Policy/Document:</div><div>To provide the background required to determine the boundary of the Rouge North Park.</div></div>	<div><div>• To establish the boundary delineation process and an alternative scenario for defining the park boundary outside of the planning process;</div><div>• to recognize that all lands within the natural core and natural linkage designations in the ORMCP are to eventually be dedicated to a public authority (no core exists in the Town of Markham).</div></div>	<div><div>• Within the Little Rouge Creek Study Area, a minimum average corridor width of 600 metres is required. This is because interior forest habitat occurs at approximately 100 metres inland from the outside edge of the forest community. As a result, a nominal area of interior forest habitat of 300 metres is created if 600 metres is secured.</div></div>	<div><div>• Lands that are subject to the boundary delineation process are generally located within 130 metres of a water course in the middle reaches area, or within 400 metres of the main branch of Little Rouge Creek, or within 130 metres of any other water course that is a tributary to Little Rouge Creek.</div></div>	<div><div>• It is intended that the boundary of Rouge Park be determined through the application of 10 of the boundary delineation criteria identified in s.3.7. These criteria include<ul style="list-style-type: none">- watercourses and existing regulatory floodplains;- natural vegetation communities, riparian vegetation communities and interior forest conditions;- wetlands, evaluated wetlands, ESA's ANSI's and LSA's;- habitat for vulnerable, threatened and endangered species and species of concern;- terrestrial corridor habitat function and woodland restoration requirements;- seepage areas and areas exhibiting groundwater discharge;- vegetation community and maintenance area;- cultural heritage and archaeological resources.</div></div>	
<div><div>Document:</div><div>Greenbelt Plan - Bill 135 Ontario Ministry of Municipal Affairs and Housing</div><div>Date:</div><div>February 28, 2005</div><div>Supporting Documents:</div><div>Oak Ridges Moraine Conservation Act & Plan Niagara Escarpment Plan Provincial Policy Statement Rouge North Management Plan Rouge Park</div></div>	<div><div>• Protects against loss and fragmentation of agricultural land</div><div>• Provides permanent protection to the natural heritage and water resource systems that sustain ecological and human health</div><div>• Provides a diverse range of economic and social activities associated with tourism, recreation and resource use</div><div>• Provides guidance for long-term management of natural heritage and water</div><div>• Protects connections between Oak Ridges Moraine, Niagara Escarpment, Lake Simcoe and the major river valley lands</div><div>• Promotes cultural resources</div><div>• Sustains countryside and rural communities</div><div>• Provides for sustainable use of natural resources.</div></div>	<div><div>Key Natural Heritage Features include:</div><div><div>• Significant habitat for endangered, threatened and special concern species</div><div>• Fish habitat</div><div>• Wetlands</div><div>• Life Science Areas of Natural and Scientific Interest (ANSIs)</div><div>• Significant valleylands</div><div>• Significant woodlots</div><div>• Significant wildlife habitat</div><div>• Sand barrens, savannahs and tall-grass prairies</div><div>• Alvars</div></div><div><div>Key Hydrological Features include:</div><div><div>• Permanent and intermittent streams</div><div>• Lakes (and their littoral zones)</div><div>• Seepage areas and springs</div><div>• Wetlands</div></div></div></div>	<div><div>• Lands identified as protected, countryside, natural heritage system, key natural heritage features and key hydrologic features</div><div>• Rouge Park and Rouge Park North</div><div>• Buffer around key features to be defined through studies to be completed for lands within 120m of the feature</div><div>• External connections through enhancement of buffers and restoration</div></div>	<div><div>• The Greenbelt Act requires that all decisions on planning applications conform to the policies of the Greenbelt Plan</div><div>• Transition Policy – Applications after December 16, 2004 are required to conform</div><div>• Municipal Official Plans are to be amended to conform with Greenbelt policies</div><div>• Municipalities to provide maps to illustrate key natural heritage and key hydrologic features</div><div>• Municipalities to provide mapping of wellhead protection areas</div><div>• Greenbelt Plan builds on existing policy framework established in the PPS</div></div>	<div><div>• Provisions for existing golf courses to develop within the natural system as long as the disturbed area does not exceed 40% of the site area and 10% imperviousness is not exceeded</div><div>• Stormwater management ponds prohibited in key feature areas</div><div>• Plan subject to review and modification on a 10-year cycle.</div></div>

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<p>Management Plan</p> <p>Date Approved: February 28,2005</p> <p>Jurisdiction: Lands designated countryside, natural system and connecting links as identified in the mapping appended to the document.</p> <p>Focus of Policy: Create a Greenbelt to contain growth and establish a connected natural heritage system.</p>					

