

Green Directions Vaughan: The Community Sustainability and Environmental Master Plan (2009) provides the following objective with respect to Natural Heritage in the City:

2.2.4. Develop a comprehensive Natural Heritage Strategy that examines the City's natural capital and diversity and how best to enhance and connect it. As part of this action:

- *Develop an inventory of Vaughan's natural heritage, and identify opportunities for habitat restoration;*
- *Ensure that policies in the City's new Official Plan protect all ecological features and functions as per current provincial and regional policies, and also include consideration for locally significant natural features and functions*
- *Develop policies to create opportunities for near urban agriculture within Vaughan's rural areas, through policies described in the City's new Official Plan*

The identification of a Natural Heritage Network is a key component in support of the strategy.

The new Official Plan will provide guidance for the physical development of the municipality over a 25-year period while taking into consideration important social, economic and environmental issues and objectives. The Plan will provide a policy framework that will guide the following:

- Where new development can locate;
- How existing and future neighbourhoods will be strengthened;
- How Vaughan's environment will be enhanced;
- What (and where) municipal services, such as roads, water mains, sewers and parks, will be provided;
- When and where Vaughan will grow



The purpose of this document is to support the new Official Plan:

1. To provide a description of the natural heritage resources in the City;
2. To provide a scientifically defensible methodology for the identification of a natural heritage network; and,
3. To identify a Natural Heritage Network for the City of Vaughan.

The Natural Heritage Network is intended to clearly identify those elements to which land use policies will apply with the goal of protection and enhancement of terrestrial and aquatic biodiversity in the context of the provision of ecosystem functions.

2. Conservation Planning Context

Like Vaughan, the agencies and municipalities with whom Vaughan partner matured their approaches to defining and protecting natural heritage using a variety of strategies, policies and regulations. Key to the implementation of existing policies in the City, was the collaboration with the Toronto and Region Conservation Authority, York Region the Province of Ontario and the Government of Canada. TRCA launched its Toronto and Region Terrestrial Natural Heritage System (TNHS) Strategy, published watershed plans for the Don and Humber Rivers which included identified TNHS, implemented Ontario Regulation 166/06 - Development, Interference with Wetlands and Alterations to Shorelines and Watercourses and is revising its Valley and Stream Corridor Management Program (1994)

policies. A study of significant woodlands and an update of the York Regional Greenlands is complete (www.york.ca). The York Region Official Plan (Dec 2009) is under review that reflects these studies in new and expanded policies that integrate a sustainable natural environment with healthy communities and economic vitality. The Ontario Endangered Species Act (2007) came into effect in 2008. The Ontario Ministry of Municipal Affairs and Housing advanced new approaches to the future growth in Ontario through the Planning Act (2005), the Growth Plan, the Oak Ridges Moraine Conservation Act and the Greenbelt Act, all of which have consequences for the City.

2.1 Federal Context

The Government of Canada has two instruments that apply to natural heritage planning in the City of Vaughan: the Federal Fisheries Act and the Species at Risk Act.

2.1.1 Federal Fisheries Act

The key national legislation for the protection of fish habitat is the Fisheries Act. The primary goal of this Act is to protect fish habitat from 1) biological 2) physical 3) or chemical alterations that are harmful or destructive. Fisheries and Oceans Canada (DFO) is responsible for the enforcement and management of fisheries resources according to the Fisheries Act. DFO works in conjunction with a variety of other agencies (Environment Canada, Ontario Ministry of Natural Resources (OMNR), Ontario Ministry of the Environment and Conservation Authorities) for administration of various portions of the Fisheries Act. The two significant components of this legislation in relation to watercourse crossings are briefly discussed below:

Section 35(1):

No person shall carry on any work or undertaking that result in the harmful alteration, disruption or destruction of fish habitat.

The guiding principle for Section 35(1) is "no net loss" of productive capacity of fish habitat in relation to project proposals. The DFO is ultimately responsible for the review and analysis process to identify the mitigation measures required to minimize or eliminate the adverse effects of projects on habitat or the compensation measures that apply in order to achieve no net loss in the productive capacity of fish habitat.

Section 36(3):

No person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter such water.

A substance is deleterious if it is harmful to fish, if it limits the use of fish by humans, or if by going through some process of degradation, it harms the water quality (for example, oxygen-depleting wastes). The Ministry of the Environment is responsible for governing this legislation, except when the deleterious substance is suspended solids; in which case the OMNR is responsible.

2.1.2 Species at Risk Act

The federal *Species at Risk Act* (SARA) was created to prevent wildlife species from becoming extinct. The federal Act protects species at risk and their critical habitats. SARA also contains provisions to help manage species of special concern to prevent them from becoming endangered or extinct. The Act became law in June 2003. It includes prohibitions against killing, harming, harassing, capturing or taking species at risk, and makes it illegal to destroy their critical habitats and can impose restrictions on development and construction projects.

The new Ontario ESA (2007) covers public and private lands while the main limitation of SARA is that its legislative coverage extends largely to federal lands. In Ontario, the SARA will take precedence for habitat protection and stewardship efforts for migratory birds and some aquatic species designated 'at risk' through the Migratory Birds Convention Act (1994) and Recovery Plans under the direction of the Canadian Wildlife Service and the Department of Fisheries and Oceans due to the overlap of jurisdiction for aquatic species. The Ontario ESA (2007) also applies, and is an important instrument in the protection and recovery of all species at risk identified in Ontario by The Committee on the Status of Species at Risk in Ontario (COSSARO).

Species are designated 'at risk' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), an independent body of experts that assesses wildlife according to a broad range of scientific data. The committee meets annually to review status reports on species suspected of being at risk and provides assessments to government and the public. The federal Cabinet then decides whether those species should get legal protection under the Act. These decisions are made after consultations with affected stakeholders and other groups.

Once a species is added to the list and protected officially under SARA, a recovery strategy must be developed. For endangered species, this strategy must be developed within a year of the listing; for threatened or extirpated (extinct in Canada) species, it must be developed within two years.

Recovery strategies and action plans for species listed as endangered or threatened will be developed in consultation with stakeholders. These recovery strategies and action plans will detail the specific steps that need to be taken to protect identified species.

Action plans summarize the projects and activities required to meet recovery strategy objectives and goals. They include information on habitat, details of protection measures, and evaluation of socio-economic costs and benefits. Action plans are the second element of the Act's two-part recovery planning process, and are used to implement projects and activities to improve species status.

Management plans differ from recovery strategies and action plans. Management plans set goals and objectives for maintaining sustainable population levels of one or more species that are particularly sensitive to environmental factors, but which are not yet considered in danger of becoming extinct. Whenever possible, management plans are prepared for multiple species on an ecosystem or landscape level.

SARA provides for a number of exceptions in a variety of circumstances. For example, activities that are undertaken in accordance with conservation measures for wildlife species under a land claims agreement are exempt from the application of SARA prohibitions. Activities related to public safety, health or national security may also be exempted.

SARA also allows for permits to be issued or agreements to be entered into under certain conditions, to authorize certain activities that would otherwise contravene the Act.

2.2 Provincial Context

Long before the Ontario Wetland Policy was first published in 1992, there were many approaches to the preservation of wild places. The 1996 Provincial Policy Statement (PPS) required that natural heritage features of provincial significance be evaluated and accommodated into applications under the Planning Act. In 1997, Costanza's seminal paper on Natural Capital appeared providing a basis on which the services provided by natural heritage could be evaluated on a par with other infrastructure. Changes increasing the commitment to the protection of natural heritage features within the Ontario Provincial Policy Statements followed in 2005. Conservation authorities were undertaking watershed studies which expanded rapidly as an outcome of the Walkerton Enquiry into the causes for the contamination of that community's drinking water concluded in 2002. The Growth Plan was published by the

Ministry for Public Infrastructure Renewal to focus development (2005) and identify needs. The passing of the Oak Ridges Moraine Act (2002) and the Greenbelt Act (2005) by the Ministry of Municipal Affairs and Housing removed large areas of land from development with a resulting increased pressure on “white-belt” lands; lands squeezed between urban areas and Plan Areas. The influence of conservation authorities was greatly extended through the implementation of regulations to govern *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (1997 and later)*. With the passing of the Endangered Species Act (2007), the Ministry of Natural Resources improved habitat protection for species at risk as listed by the province.

The burgeoning policies and regulations each have unique goals that were not always in harmony and results in conflicting advice. They tended to focus on individual features rather than the ecosystems that are described by the PPS and the Natural Heritage Reference Manual (1997). The policies, individually, are not reflective of the growing body of knowledge of ecosystem design, the ecosystem functions provided by the various natural features and the interaction of those functions across societal, economic and environmental factors to maintain sustainable communities.

An adaptive management approach (Allen, 2001) has emerged as the best sustainable model for land use management. This approach respects the intent of policies, integrates current understanding of ecological function and ecosystem persistence with our models for global change, and recognizes land use management as an experiment that requires monitoring. As a result, an adaptive management approach³ enables a process that is responsive to new breakthroughs in scientific knowledge and actual results of monitoring the outcomes of existing practices so that new best practices are identified.

At the provincial level, the following policies apply:

2.2.1 *Planning Act (1996)*

The Planning Act co-ordinates planning in the Province of Ontario. The Planning Act sets out the ground rules for land use planning throughout the province and describe how land uses may be controlled and who may control them. In terms of Natural Heritage policy specifically, the Planning Act is important for two reasons. First, it requires that municipal planning authorities “shall have regard to matters of provincial interest.” Among the primary “matters of provincial interest” the first one indentified in the Act is “the protection of ecological systems, including natural areas, features and functions”. In addition, the Planning Act provides for the issuance of Provincial Policy Statements and mandates that municipal planning authorities’ decisions “shall be consistent with” said statements. Further, the Act requires municipal planning authorities’ decisions to conform to the Provincial plans effective at the time decisions are made.

2.2.2 *Provincial Policy Statement (2005)*

The Provincial Policy Statement (PPS) has a strong focus on the long-term prosperity and environmental health of Ontario. It states that Natural features and areas shall be protected for the long-term (2.1.1). The PPS defines Natural Features and Areas as:

“features and areas, including significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valley lands south and east of the

3. *“Adaptive management is a formal, systematic, and rigorous approach to learning from the outcomes of management actions, accommodating change and improving management. It involves synthesizing existing knowledge, exploring alternative actions and making explicit forecasts about their outcomes. Management actions and monitoring programs are carefully designed to generate reliable feedback and clarify the reasons underlying outcomes. Actions and objectives are then adjusted based on this feedback and improved understanding.” (Nyberg, 1999)*

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”.

The PPS also defines Natural Heritage System as:

“A system made up of natural heritage features and areas, linked by natural corridors which 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“

And 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 groundwater features” (2.1.2).

The PPS provides direction on the protection of the Natural Heritage System by not permitting development and site alteration in a number of circumstances:

2.1.3 *Development and site alteration shall not be permitted in:*

- a) *significant habitat of endangered species and threatened species;*
- b) *significant wetlands in Ecoregions 5E, 6E and 7E ; and*
- c) *significant coastal wetlands.*

2.1.4 *Development and site alteration shall not be permitted in:*

- a) *significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E & 7E ¹ ;*
- b) *significant woodlands south and east of the Canadian Shield ²;*
- c) *significant valleylands south and east of the Canadian Shield ;*
- d) *significant wildlife habitat; and*
- e) *significant areas of natural and scientific interest*

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.5 *Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.*

2.1.6 *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 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.*

2.2.3 Greenbelt (2005)

Ontario’s Greenbelt is 1.8 million acres of permanently protected green space, farmland, vibrant communities, forests, wetlands, and watersheds. The Greenbelt Plan contains policies for providing permanent agricultural and environmental protection as well as providing for a wide range of recreation, tourism and cultural opportunities in the area. The Greenbelt Plan encompasses lands within the Niagara Escarpment Plan (NEP) and the Oak Ridges Moraine Conservation Plan (ORMCP), while building upon the foundation of ecological protections provided by these



two Plans. The Protected Countryside comprises of an Agricultural System and a Natural System, together with a number of settlement areas and is intended to improve linkages between these areas and surrounding systems.

The Natural System identifies lands that support both natural heritage and hydrologic features and functions. The Natural System policies protect areas of natural heritage, hydrologic and/or *landform* features, which are often functionally inter-related and which collectively support biodiversity and overall ecological integrity. This Natural System is made up of a Natural Heritage System and a Water Resource System that often coincides given ecological linkages between terrestrial and water based functions. The Natural Heritage System includes areas of the Protected Countryside with the highest concentration of the most sensitive and/or *significant* natural features and functions. The Water Resource System is made up of both ground and surface water features and their associated functions, which provide the water resources necessary to sustain healthy aquatic and terrestrial ecosystems and human water consumption.



The Greenbelt Plan recognizes that the Natural System extends beyond the boundaries of the Greenbelt and encourages connections between the Greenbelt's Natural System and broader scale natural heritage systems of southern Ontario. Criteria have been identified to permit potential municipal requests to grow the Greenbelt.

2.2.4 Oak Ridges Moraine Conservation Plan (2002)

The ORMCP is a fundamental component of the Greenbelt Plan. The Oak Ridges Moraine is an environmentally sensitive, geological landform in south central Ontario, covering 190,000 ha.

Municipal planning decisions and Official Plans shall conform to this Plan, which takes precedence over municipal official plans. Municipal plans are required to be brought into conformity with this Plan. Nothing in this Plan is intended to prevent municipalities from adopting official plan policies and zoning by-law provisions that are more restrictive than the policies of this Plan, except where prohibited by this Plan.

The Oak Ridges Moraine has a unique concentration of environmental, geological and hydrological features that make its ecosystem vital to south-central Ontario. The Moraine is also under increasing pressure for new residential, commercial, industrial and recreational uses which compete with the present natural environment. This ORMCP provides clarity and certainty about the long-term protection and management of this vital natural resource.

The Conservation Plan identifies four categories of land use: Settlement, Countryside, Natural Linkage and Natural Core. The latter two designations are the most restrictive, and provide the most aggressive goals for the protection of natural heritage. The former two protect for human activities on the Moraine.

2.2.5 Growth Plan for the Greater Golden Horseshoe (2006)

The Growth Plan for the Greater Golden Horseshoe has been prepared under the authority of the Places to Grow Act, 2005. This Plan works within the existing planning framework to provide growth management policy direction for the GGH.

The Plan recognizes that urban sprawl contributes to the degradation of our natural environment, air quality and water resources, as well as the consumption of agricultural lands and other natural resources. The Plan supports the role of municipal policy in providing leadership and innovation in developing a culture of conservation.

The Plan intends to conduct sub-area assessments and in consultation with municipalities and other stakeholders will identify natural systems for the GGH, and where appropriate develop additional policies for their protection. The Plan also encourages planning authorities to identify natural heritage features and areas that complement, link, or enhance natural systems.

Municipalities are encouraged to develop a system of publicly accessible parkland, open space and trails embedded in a natural heritage system as well as establish an urban open space system within built-up areas, which may include rooftop gardens, communal courtyards, and public parks.

2.2.6 Endangered Species Act, 2007

Ontario's original Endangered Species Act was written in 1971. The new Endangered Species Act, 2007 received Royal Assent on May 17, 2007. With some minor exceptions, the Act came into force on June 30, 2008.

The purposes of this Act are:

1. To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge.
2. To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk.
3. To promote stewardship activities to assist in the protection and recovery of species that are at risk.

The new legislation is the first in Canada to combine mandatory habitat protection with a science-based approach to listing species for protection. Species thought to be at risk are assessed by The Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is an independent body that reviews species based on the best available science, including community knowledge, and Aboriginal Traditional Knowledge.

Once species are classified "at risk", they are added to the Species at Risk in Ontario (SARO) list in one of four categories. Endangered, threatened and extirpated species on this list automatically receive legal protection under the ESA 2007. Providing legal protection to threatened species is a change from the original Act which only applied to endangered species.

The new Act provides protection for species and their habitats. When a species is classified endangered or threatened the habitat of that species is protected under a general definition.

The ESA 2007 calls for the creation of recovery strategies for endangered and threatened species, and management plans for special concern species. These documents provide advice to the government on steps to take to protect and recover species at risk to healthy population levels.

Timelines and reporting requirements have been outline in the Act to improve implementation. For example:

- Recovery strategies must be created within 1 year for newly listed endangered species.
- The government must also let the public know which actions will be taken for species recovery.

The ESA 2007 is also responsive to Ontario's Environmental Bill of Rights. Proposed policies and regulations will be posted on the Environmental Registry for public review and comment.

The new Endangered Species Act 2007 recognizes the importance of stewardship and includes the creation of a Species at Risk in Ontario Stewardship Program. Through the \$18 million funding and outreach program, landowners, other groups and individuals are encouraged to get involved in recovery activities.

The ESA 2007 contains tools that provide opportunities for the government to enter into agreements, make regulations and issue permits for a range of activities otherwise prohibited under the act. These tools enable activities that would not otherwise be permitted, as long as the intent is stewardship, protection, or rehabilitation of the species. These tools may also allow for social and economic issues to be addressed.

2.2.7 York Region Official Plan (2009)

The York Region Official Plan (December 2009) has been adopted. The goal for Natural Environment is:

To protect and enhance the natural environment for current and future generations so that it will sustain life, maintain health and provide an improved quality of life.

The York OP (2009) recognizes the importance of integrating the objectives of the natural environment with those for healthy communities and economic vitality as outlined in its Sustainability Strategy (2007). The importance of maintaining and enhancing a healthy Regional Greenlands System is emphasized in the OP. The policies that form the basis for this system are:

... designed to identify, protect, and enhance a linked Regional Greenlands System as a permanent legacy for York Region.

The policy framework has been greatly expanded to bring the plan into conformity with the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan, the York Region Significant Woodlands Study (2005) among other important instruments that will affect the outcomes for the Greenlands System. The primary function of the Regional Greenlands System is:

... the protection of natural heritage features in a system of cores connected by corridors and linkages. The Regional Greenlands System also provides opportunities for passive recreation in a future Regional Trails System such as hiking and nature appreciation. Urban uses and infrastructure projects should contribute ecological gains to the Regional Greenlands System through enhancement and restoration, and the strategic creation of natural habitat.

It is the intent that the Vaughan Natural Heritage Network and supporting policies be consistent with the objectives identified in the York OP (2009).

2.2.8 Toronto and Region Conservation Policy and Regulation

TRCA plays an important role in the outcome of proposals for land use change and land management in the City of Vaughan. They have a regulatory role that focuses on watercourse management to protect public and private property from flood damage which is achieved through a commenting role on applications submitted to the municipality under the Planning Act. They rely on the following instruments to guide their comments and permitting.

2.2.8.1 *Toronto and Region Terrestrial Natural Heritage Systems for the Don and Humber Watersheds*

The objective of the TRCA Terrestrial Natural Heritage System (TNHS) is to identify and evaluate natural heritage features and functions within the landscape, for inclusion in a Natural Heritage System. The Humber River Watershed Plan and draft Don River Watershed Plan describe TNHS for the respective watersheds and include implementation recommendations regarding land use, outreach and stewardship. The target for natural cover in the Vaughan portion of the two watersheds combined is 22% (TRCA, Sept. 2009).

It is important to note that although aquatic systems are indirectly incorporated into the TNHS, that a thorough analysis of the local waterways are not included in the TNHS. Protection of aquatic habitats and features in the City of Vaughan are addressed in the Don and Humber River Watershed Plans.

2.2.8.2 *Watershed Plans and Implementation Strategy*

The Humber River Watershed Plan: Pathways to a Healthy Humber and the Implementation Guide (2008) provide guiding principles and objectives that support strategies and targets that include protecting and expanding the terrestrial natural heritage system, build sustainable communities and to create an enhanced regional open space system. Contained within the plan is a targeted natural heritage system that exceeds the anticipated natural heritage system provided for in Official Plans in order to offset negative effects of anticipated land use change. The implementation Guide provides policies for incorporation into planning documents for the consideration of municipalities that share in the management of the Humber River, as well as other mechanisms grouped under the headings of regeneration, land securement, stewardship and education, and operations and maintenance.

Similarly, while the Don River Watershed Plan is under construction, the Terrestrial Natural Heritage – Report on Current Conditions and Refinement of a Target System (2008) also provides an expanded Refined Target Terrestrial Natural Heritage System. The Don River Fish Management Plan is also in preparation and staff at TRCA has been generous in sharing the preliminary findings with the study team.

2.2.8.3 *Ontario Regulation 166/06 – Development, Interference with Wetlands and Alterations to shorelines and Watercourses*

TRCA's Regulation, made under the authority of Section 28 of the Conservation Authorities Act, is known as Ontario Regulation 166/06. The Minister of Natural Resources approved Ontario Regulations 166/06 on May 4, 2006 bringing it into force, and replacing the former regulation (O.R. 158).

The main objectives of O.R. 166/06 are to ensure public safety and protect property with respect to natural hazards and to safeguard watershed health by preventing pollution and destruction of sensitive environmental areas such as wetlands, shorelines and watercourses. O.R. 166/06 establishes Regulated Areas where development could be subject to flooding, erosion or dynamic beaches, or where interference with wetlands and alterations to shorelines and watercourse might have an adverse effect on those environmental features. Under the regulation, any proposed development, interference or alteration within a Regulated Area requires a permit from TRCA. In evaluating projects, TRCA relies on the policies contained within the Valley and Stream Corridor Management Program (1994) currently under revision, the watershed plans.

2.2.8.4 *The City of Vaughan Environmental Legacy*

The City of Vaughan Official Plan Amendment 600 (2000) provides a comprehensive summary of Natural Heritage land use policy in the City of Vaughan. The City's ecosystem approach to land use planning precedes OPA 600. Since 1991 in OPA 400 the City of Vaughan provided direction for land use planning and development to be undertaken in a manner which protects and where possible enhances the Natural Heritage Network. The definition of an ecosystem approach presaged the current Environmental Master Plan by incorporating social, economic, and cultural implications on the natural environment.

This approach was the foundation for the environmental background work for OPA 400, including a Subwatershed Environmental Study, and provides the rationale for environmental planning at every stage of the planning approval process, including preparation of Master Environmental Servicing Plans as part of block planning applications. The Environmental Management Guideline (EMG), a separate companion document to OPA 400 defined environmental study requirements for development proposals in rural areas and new communities described in OPA 600.

The Environmental Principles in OPA 600 include the following:

- a) The City shall preserve, protect and where possible enhance Vaughan's environmental resources to ensure that they are not compromised by urban development and its related activities.
- b) The City shall employ an ecosystem approach in its future planning to ensure that planning decisions are made with an understanding of the environmental social, cultural and economic implications for Vaughan and other influences on the same ecosystem.
- c) The City shall follow the fundamental principles of sustainable development in its future decisions, including: integration of environmental and economic decisions; stewardship; shared responsibility; prevention; conservation; recycling; enhancement; rehabilitation and reclamation; scientific and technological innovation; and global responsibility.(City of Vaughan OPA 600, 2000).

2.3 Summary of Protection for a Natural Heritage Network

The Natural Heritage Network for the City of Vaughan is built upon the landscape approaches recommended in the Greenbelt Plan (including the Oak Ridges Moraine Plan), the York Region Official Plan and in the Toronto Region Conservation's targeted Terrestrial Natural Heritage Systems for the Don and Humber Watersheds. It is inclusive of important natural heritage features and functions and together identify the landbase that supports essential ecosystem functions. The term "network" is used instead of "system" only to avoid confusion between the regional approaches and that of the City. Internationally the concept of a Natural Heritage Network has been applied to scales ranging from local to intercontinental (Bennett and Wit 2001). The following Table 1 provides an overview of the levels of government that play a role in the design of natural heritage networks and the instruments, many of which have been discussed in detail above. Protection ranges from individual features (wetlands and woodlands) to connected systems (valley corridors and landscape connectivity). The intent for the Natural Heritage Network is to protect a connected system of features and functions, and to enhance the network through strategies connected to the environmental management of the City.

Table 1. Legislation, Policy and Plans Governing Protection of Natural Heritage in Vaughan

Level of Government	Responsible Agency	Instrument‡	Relevance
Federal	Environment Canada	Species at Risk Act	Species at Risk: focus on aquatic
	Department of Fisheries and Oceans	Fisheries Act	Fish habitat
Provincial	Ministry of Municipal Affairs and Housing	Planning Act and Provincial Policy Statement (2005)	Natural Heritage (see NHRM below)
		Oak Ridges Moraine Act	Delineation of Natural Core and Natural Linkages within the ORMCP and associated regulation
		Greenbelt Act	Delineation of Agricultural and Natural Systems within the Plan and associated policy
		Places to Grow Act	Growth Plan for the Greater Golden Horseshoe
	Ministry of Natural Resources	Endangered Species Act	Species at Risk in Ontario (e.g., Butternut, reidside dace)
		Natural Heritage Reference Manual (NHRM)	Systems Approach to Natural Heritage Planning, also Significant: <ul style="list-style-type: none"> • Habitat for Endangered and Threatened Species; • Wetlands; • Woodlands; • Valleylands; • Wildlife Habitat; • ANSIs, and • Fish Habitat.
		Guidelines for Significant Wildlife Habitat	Biodiversity; must be designated by the planning authority
		Oak Ridges Moraine Conservation Plan Technical Paper Series (17 Papers)	Provides guidance for the identification of significant features and planning guidance within the ORM Planning Area.
		Greenbelt Technical Paper Series (Draft) (3 Papers)	Provides guidance for the identification of key natural heritage features, significant woodlands and significant habitat for Endangered, Threatened and Special Concern Species within the Greenbelt.
Ministry of Environment	Section 53 of the Ontario Water Resources Act	Stormwater Management Planning and Design Manual (2003)	
Regional	Toronto Region Conservation	Ontario Regulation 166/06	Development, Interference with Wetlands and Alterations to Shorelines and Watercourses; Delineation of valley corridors and floodplains; Buffers to valleylands, watercourses and wetlands; Stormwater Management
		Toronto and Region Terrestrial Natural Heritage Systems for the Don and Humber Watersheds	Landscape approach to Natural Heritage Systems Planning
		Watershed Plans	Land Use Planning and Management
		Valley and Stream Corridor Management Program	Valleylands
	Regional Municipality of York	Official Plan	Land Use Planning Woodlands Greenlands System
Municipal	Planning and Development	Official Plan OPA 600	Land Use Planning Woodlands
	Environment Committee	City of Vaughan's Community Sustainability and Environmental Master Plan: Green Directions	Sustainable Development

Legend:

Interpretation of Protection	Instrument	Level of Protection
	Legislation	Regulations under the Acts provide the highest level of protection
	Policy	Significant protection with variable levels of flexibility
	Plan	Guidance on land use planning with influence on protection, but flexible
	Guidance	Principles to guide strategies to provide protection and potential flexibility