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ENVIRONMENT

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3.1 Environmental Management

3.1.1 A Commitment to Environmental Stewardship

The natural environment is among Vaughan's most important and cherished assets. The Humber and western Don Valley systems are prominent on the City's landscape and the overall health of those systems is reliant on the stewardship provided by Vaughan. The watercourses, *woodlands*, *wetlands* and related open spaces and agricultural lands each have an important function in maintaining ecological vitality and diversity in the City. Protecting flood prone areas from inappropriate development is critical to ensuring public safety. Ensuring the quality of our air, water and soil is fundamental to maintaining overall environmental health. We must also recognize the impacts of climate change on our environment and plan for both mitigation and adaptation.

Environmental management is a multi-jurisdictional effort. Vaughan must work in consultation with the Toronto and Region Conservation Authority, whose mandate it is to further the conservation and restoration of the Humber and Don watersheds in Vaughan. York Region is also a significant partner as together the City and Region are responsible for various components of environmental management. Finally the Province has a major role to play. Numerous Provincial regulations and requirements are incorporated into the policies of this Plan. Additionally, the Provincial Greenbelt Plan and Oak Ridges Moraine Conservation Plan establish specific policies for large areas of Vaughan.

This Chapter provides policy direction for managing Vaughan's natural environment and establishing a legacy of stewardship that it will remain healthy and robust for generations to come. The growth management strategy set out in Chapter 2 is a major part of that legacy as it designates approximately 40% of the overall City as **Natural Areas and Countryside**. This Chapter provides the framework for protecting and enhancing those areas and others throughout the City.

It is the policy of Council:

- 3.1.1.1. To provide for the long-term health of Vaughan's natural environment for the benefit of present and future generations.
- 3.1.1.2. To support the ability of Vaughan's residents to live in a manner that has a low impact on the natural environment.
- 3.1.1.3. To define and protect the Natural Heritage Network within Vaughan and provide policies to enhance that Network over time.
- 3.1.1.4. To work in consultation with the Toronto Region and Conservation Authority to identify flood and erosion prone areas of the City and provide policies that provide for public safety within those areas.
- 3.1.1.5. To enhance and maintain the quality of air, water and soil.
- 3.1.1.6. To recognize the impacts of global climate change on the natural environment and to plan for mitigation of and adaptation to such impacts.

3.2 Vaughan's Natural Heritage Network

3.2.1 Building a Network based on Ecosystem Function

The natural environment performs many functions that benefit ecological and human health. Trees clean excess pollutants from the air; *wetlands* filter the water that enters our drinking supply; vegetated areas provide natural flood control by allowing water to infiltrate the ground; and, natural areas provide habitat for a wide variety of species that create a healthy biodiversity in the City. By also providing recreational opportunities and visual respite the natural environment contributes to a high quality of living for Vaughan residents.

The Natural Heritage Network defined in this Plan, and the related policies, are built on an understanding of the functions that each identified natural heritage feature performs independently and as part of a connected system. The intent is to protect the specific natural features, and their functions within the overall Natural Heritage Network are maintained and enhanced. This approach protects the defined Natural Heritage Network while allowing flexibility in how to promote enhancement and improved connectivity to better link the Network.

Ecosystem functions provide a wide variety of environmental, benefits. Examples of ecosystem functions include:

- Natural water filtration – a higher amount of forest cover, and /or an increase in *wetlands* will reduce the cost of water treatment
- Carbon sequestration – vegetation, soil and other natural elements naturally absorb atmospheric carbon dioxide and other pollutants, cleaning the air we breathe
- Flood control – both *wetlands* and other vegetated areas allow stormwater to attenuate, infiltrate, and evapotranspire
- Food production – most food crops require pollination by bees to produce future generations of the crop. The bees themselves require natural areas as a habitat

Specific functions that provide benefit to people may also be referred to as ecosystem services.

It is the policy of Council:

- 3.2.1.1. To recognize the various functions performed by the natural environment that benefit ecological and human health and that these functions improve the overall quality of life for Vaughan residents.
- 3.2.1.2. To utilize an ecosystem function approach to planning that protects specific natural features and encourages their specific functions are maintained and enhanced.
- 3.2.1.3. To utilize an ecosystem function approach to enhancing and better linking Vaughan's Natural Heritage Network. Such an approach will clearly indicate areas for enhancing and linking the Network but allow for some flexibility in how that is achieved.

3.2.2 Developing and Maintaining a Natural Heritage Inventory

A comprehensive inventory of natural heritage features and understanding of their functions are the first steps in natural heritage management. Building an inventory is an ongoing process that involves cooperation between the City, the Toronto and Region Conservation Authority, York Region, the Province and private landowners. The information in Schedule 2 represents the most detailed and up-to-date information available. Vaughan is committed to updating this information through an ongoing process of environmental reporting associated with land-use planning studies, infrastructure development and related Environmental Assessments and development applications.

It is the policy of Council:

- 3.2.2.1. To use environmental data gathered through land-use planning studies, Environmental Assessments, infrastructure development, development applications, and other means, to maintain and update Vaughan's natural heritage inventory and Schedule 2 of this Plan, as appropriate.
- 3.2.2.2. To evaluate Vaughan's natural heritage inventory from time to time to maintain effective natural heritage management is being achieved. Such a review may be coordinated with a comprehensive review of this Plan.

3.2.3 Vaughan's Natural Heritage Network

Vaughan's Natural Heritage Network consists of a wide range of natural features. It reaches throughout the City and forms part of the larger York Regional Greenlands System. The Natural Heritage Network is represented on Schedule 2. It has been developed through analysis, modelling and review of previous work prepared by the Toronto and Region Conservation Authority, including the Watershed Plans for the Don and Humber Rivers, and other agencies. The Natural Heritage Network is consistent with the Provincial Policy Statement, which requires 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." Furthermore, the Provincial Policy Statement defines a natural heritage system to include lands that have been restored and areas with the potential to be restored to a natural state.

The Natural Heritage Network represents an interconnected system of natural features and the functions they perform. Natural features such as *wetlands*, *woodlands* and the extensive *valley and stream corridors* are identified as **Core Features** to be protected and enhanced. To support these features and create the connections that establish a strong network, **Enhancement Areas** are identified that either add to or connect the **Core Features**. The Natural Heritage Network also includes the Provincial Greenbelt and Oak Ridges Moraine lands and specific policies are provided for these areas consistent with Provincial Plans and York Region policies. Natural areas also exist in Vaughan where past development has taken place and buildings currently exist. These uses may continue with minor alterations but no new such uses will be allowed in order to maintain the integrity of the Network.

In determining the Natural Heritage Network the policy text prevails over the mapping shown on Schedule 2. As more detailed studies are undertaken, either through the development process or by other agencies such as the TRCA, Region of York or the Province new instances of Natural Heritage Network components may be found, than were able to be determined at the City wide scale of the Official Plan Review. For example, the Province has recently evaluated the East Humber Wetland Complex but this mapping has not been released.

Core Features include *valley and stream corridors; woodlands; wetlands; fish and wildlife habitat; significant, endangered and threatened species habitat; and Environmentally Significant Areas and Areas of Natural and Scientific Interest.* **Core Features** also include key natural heritage features and key hydrological features within the Greenbelt and Oak Ridges Moraine Plan areas. These features are the core elements of the Natural Heritage Network to be protected and enhanced as identified on Schedule 2. Development and/or site alteration will not be permitted in such areas, and significant alteration or expansion of any existing development in such areas will not be permitted.

Enhancement Area opportunities have been identified consistent with the Region of York Official Plan policies to identify potential **Enhancement Area** and linkages that complement the Regional Greenlands System. In consultation with the Toronto and Region Conservation Authority, the potential **Enhancement Area** reflect the best opportunities on remaining undeveloped land to provide additional habitat and/or ecological connectivity of the Natural Heritage Network through restoration or renaturalization of specific natural features. **Enhancement Area** have been identified conceptually on Schedule 2. The request for and precise limits of **Enhancement Area** to add to the Natural Heritage Network will be determined through appropriate studies to be initiated by the City or prepared as part of the development approvals process.

Built-up Valley Lands recognize existing and occupied developed lands located below the physical top of bank. Such lands are found in and around Woodbridge and Kleinburg in the Humber Valley and contribute to the overall Natural Heritage Network. Minor modifications or additions within these areas are permitted with restrictions.

Oak Ridges Moraine and Greenbelt include those areas of the Oak Ridges Moraine Conservation Plan and Greenbelt Plan areas that are located within Vaughan. These lands provide important groundwater recharge and open space functions, including providing habitat to species that require open areas to complete their life cycles, such as Eastern Meadowlark, or rare vegetation communities. These areas are identified on Schedule 2 as an overlay. Where lands within these areas are also identified as **Core Features**, they will be subject to those policies of the Plan. Otherwise, specific policies have been developed for these areas that are in conformity with the Provincial Plans and York Region policies.

It is the policy of Council:

- 3.2.3.1. To protect and enhance the Natural Heritage Network, as identified on Schedule 2, by:
- a. restricting development within the Natural Heritage Network in accordance with the policies of this Plan;
 - b. seeking opportunities to expand and better link the Natural Heritage Network;
 - c. seeking the dedication of **Core Features** and their associated minimum vegetation protection zones through the development approval process to an appropriate public agency at no public expense; and,
 - d. securing new natural and open space linkages for improved connectivity of the Natural Heritage Network through the development approvals process, conservation easements, donations or purchases.
- 3.2.3.2. That identification of elements comprising the Natural Heritage Network is an ongoing process and as such the Natural Heritage Network identified on Schedule 2 is based on the best information available. Schedule 2 may not identify all the natural heritage features in Vaughan. The precise limits of mapped natural heritage features, and any additions to the mapped network, will be determined through appropriate study undertaken in consultation with the Toronto and Region Conservation Authority and the Province. This may occur on a site-by-site basis through the development process or through studies carried out by the City, Region, Toronto and Region Conservation Authority or other government agencies.
- 3.2.3.3. That any development lawfully existing within the Natural Heritage Network on the date this Plan is approved is permitted to remain. Minor alterations or additions to such existing development are permitted subject to the policies of this Plan and which may include consultation with the Toronto and Region Conservation Authority, York Region, or Province as required.

Core Features

- 3.2.3.4. That **Core Features**, as identified on Schedule 2, provide critical ecosystem functions, and consist of the following natural heritage components and their minimum vegetation protection zones:
- a. *valley and stream corridors*, including provincially significant valleys, with a minimum 10 metre vegetation protection zone, or a 30 metre vegetation protection

zone for those *valley and stream corridors* within the Oak Ridges Moraine and Greenbelt Plan Areas, measured from the greater extent of the top of stable slope, meander belt, or regulatory floodplain;

- b. *wetlands*, including those identified as locally or provincially significant, with a minimum 30 metre vegetation protection zone;
- c. *woodlands* including those identified as locally or provincially significant, with a minimum 10 metre vegetation protection zone or a 30 metre vegetation protection zone for those *woodlands* within the Oak Ridges Moraine and Greenbelt Plan Areas;
- d. *significant wildlife habitat* and significant *habitat of endangered and threatened species*;
- e. fish habitat including a minimum vegetation protection zone of 15 metres or 30 metres depending on the thermal regime of the watercourse; and,
- f. Environmentally Significant Areas and Areas of Natural and Scientific Interest.

3.2.3.5. That specific requirements related to the protection and enhancement of the various elements of **Core Features** are included in Section 3.3. of this Plan.

3.2.3.6. That within the boundaries of the provincial Greenbelt Plan area and the Oak Ridges Moraine Conservation Plan area, **Core Features**, as identified on Schedule 2, represent the key natural heritage and key hydrologic features as defined by those Provincial Plans.

3.2.3.7. That new development and/or site alteration in **Core Features** are prohibited except for the following:

- a. natural area management for the purposes of maintaining and enhancing the functions associated with **Core Features**;
- b. flood or erosion control projects, where such projects are necessary and deemed in the public interest after all alternatives have been considered, and where such projects will not result in a negative impact on the **Core Features** and will not have a negative impact on the ecosystem function;
- c. transportation, infrastructure and utilities, where such projects are necessary and deemed in the public interest after all alternatives have been considered, and where such projects will minimize negative impacts on the **Core Features** and measures shall be identified to maintain habitat area and enhance overall ecosystem function; and,

- d. low-intensity and passive recreational activities where such activities will not result in a negative impact on the **Core Features** and will not have a negative impact on the ecosystem function.
- 3.2.3.8. Unauthorized removal or alteration of natural features or functions within areas identified as **Core Features** is prohibited, and will result in the features and functions being restored to their previous state at no expense to the City of Vaughan and other public agencies. In the case of a development application, the application will not proceed until restoration works have been undertaken to the satisfaction of the City and TRCA and/or Region of York, as needed.
- 3.2.3.9. That **Core Features** will be conveyed to the City and/or Toronto and Region Conservation Authority as a condition of development approval. Where public ownership of all or part of the vegetation protection zone is not considered practical or feasible, the City in consultation with the Toronto and Region Conservation Authority may permit the vegetation protection zone or portions of it to remain in private ownership, subject to an acceptable level of protection being provided.
- 3.2.3.10. That minor modifications to the boundaries and alignment of **Core Features**, as identified on Schedule 2, may be considered if environmental studies, submitted as part of the development process to the satisfaction of the City and in consultation with the Toronto and Region Conservation Authority, provide appropriate rationale for such minor modifications and include measures to maintain overall habitat area and enhance ecosystem function. Minor modifications deemed acceptable by the City in consultation with the Toronto and Region Conservation Authority do not require amendment to this Plan. Core Features and their ecological buffers will be encouraged to be conveyed to the City and/or TRCA as a condition of development approval.

Enhancement Areas

- 3.2.3.11. That **Enhancement Areas** are identified conceptually on Schedule 2 and may be important potential components of the Natural Heritage Network because they may:
- a. enhance form and function of watercourses;
 - b. maintain and/or enhance water flow;
 - c. improve wildlife habitat value;
 - d. improve species movement and/or dispersal;

- e. provide restoration options;
- f. improve overall connectivity value; and,
- g. improve the likelihood of maintaining self-sustaining vegetation.

3.2.3.12. That development as provided for on Schedule 13 is permitted on all or part of an **Enhancement Area** subject to environmental studies conducted by the City or submitted as part of the development process, and prepared to the satisfaction of the City, in consultation with the Toronto and Region Conservation Authority. The purpose of the studies will be to determine the function of the proposed Enhancement Area; to determine the supportability based on applicable science; and to establish the sizes and boundary of the **Enhancement Area**.

3.2.3.13. Lands deemed appropriate as **Enhancement Areas** will be incorporated into the Natural Heritage Network as **Core Features** or suitable open space designations. Such changes do not require amendment to this Plan.

Built-up Valley Lands

3.2.3.14. That **Built-up Valley Lands**, as identified on Schedule 2, recognize existing developed lands located below the physical top of bank.

3.2.3.15. That new development and/or site alterations on **Built-up Valley Lands** are prohibited, except where a Secondary Plan or site-specific management strategy has been developed, to the satisfaction of the City in consultation with the Toronto and Region Conservation Authority. The Secondary Plan or management strategy must minimize the that impacts on natural heritage features and that appropriate flood control measures are implemented.

Oak Ridges Moraine and Greenbelt Lands

3.2.3.16. That the **Oak Ridges Moraine Lands**, as identified on Schedule 2, form part of the Natural Heritage Network and are regulated by the Oak Ridges Moraine Conservation Plan Act. These lands are further defined on Schedule 4 and are subject to the policies of Section 3.4.1 of this Plan.

3.2.3.17. That the **Greenbelt Lands**, as identified on Schedule 2, form part of the Natural Heritage Network and are regulated by the Greenbelt Act. These lands are further defined on Schedule 4 and are subject to the policies of Section 3.4.2 of this Plan.

3.2.4 Environmental Reporting related to the Natural Heritage Network

Applications for development with the potential to impact the Natural Heritage Network are required to prepare environmental reports demonstrating how the policies of this Plan are met by the proposed development. All development applications within 120 metres of the identified Natural Heritage Network will prepare an Environmental Impact Study. In the case of a Block Plan application, a more significant study called a Master Environment and Servicing Plan is required, regardless of proximity to the Natural Heritage Network. The Master Environment and Servicing Plan will examine the complete range of environmental resources with which the environmental policies of this Plan are concerned and align new development, infrastructure and municipal service provision with the protection and enhancement of natural heritage features and related ecosystem functions.

To guide the preparation of environmental reports, including the Environmental Impact Studies and Master Environment and Servicing Plans, the City has developed an Environmental Management Guide that sets out the general requirements for specific studies that must be undertaken to satisfy the environmental reporting required in this Plan. It also provides additional detail on how certain features and functions of the Natural Heritage Network will be treated.

It is the policy of Council:

Environmental Management Guide

- 3.2.4.1. That the City of Vaughan Environmental Management Guide establishes the scope and technical requirements for the preparation of environmental reporting, to be confirmed based on area-specific issues, in support of development applications.
- 3.2.4.2. To review, update and refine the Environmental Management Guide from time to time, to facilitate the successful implementation of the ecosystem function approach and to ensure that development activity successfully achieves the environmental objectives of this Plan.

Environmental Impact Studies

- 3.2.4.3. That any proposal for *development*, site alteration or change of land use in the Natural Heritage Network, or within 120 metres of the Natural Heritage Network, shown on Schedule 2 shall be required to prepare an Environmental Impact Study.
- 3.2.4.4. That the specific requirements of the Environmental Impact Study will be outlined in the Environmental Management Guide, but at a minimum will address the following:
- a. the condition of the Natural Heritage Network, and its ecosystem functions, on the subject lands or *adjacent* to the subject lands;
 - b. the manner in which the proposed development might have an impact on the Natural Heritage Network, and its ecosystem functions, on the subject lands or *adjacent* to the subject lands;
 - c. mitigation of any impacts on the Natural Heritage Network, and its ecosystem functions, on the subject lands or *adjacent* to the subject lands; and,
 - d. proposed improvements to the Natural Heritage Network, and its ecosystem functions, on the subject lands or *adjacent* to the subject lands.

Master Environment and Servicing Plan

- 3.2.4.5. That as part of the preparation of a Block Plan or development application for a large site, a Master Environment and Servicing Plan will be completed to the satisfaction of the City of Vaughan, in consultation with public agencies such as the Toronto and Region Conservation Authority, and Region of York prior to the approval of the Block Plan.
- 3.2.4.6. That, prior to initiation of a Master Environment and Servicing Plan, a work plan will be prepared to the satisfaction of the City, in consultation with the public agencies such as the Toronto and Region Conservation Authority, pursuant to the policies of this Plan and the detailed requirements of the Environmental Management Guide.
- 3.2.4.7. That the study area boundaries for the Master Environment and Servicing Plan may be required to extend beyond the boundaries of the Block Plan, or development application site, in order to properly identify the existing functions and the extent of impact related to the Natural Heritage Network within the context of its watershed or sub-watershed.

- 3.2.4.8. That any documents or reports associated with a Master Environment and Servicing Plan will be prepared in consultation with the relevant public agencies, and will be available for review by the general public.
- 3.2.4.9. That a Master Environment and Servicing Plan, to be undertaken by qualified professionals, will be conducted in a manner consistent with an ecosystem functions approach to planning, involving a rigorous analysis of the environmental functions of the natural system, and the inter-relationships among these functions.
- 3.2.4.10. That the specific requirements of the Master Environment and Servicing Plan will be outlined in the Environmental Management Guide, and at a minimum will address the following:
- a. an inventory of all natural heritage features and ecosystem functions on the site and on *adjacent* and nearby sites, including groundwater resources;
 - b. proposed measures to improve natural heritage features and ecosystem functions;
 - c. the limits of development;
 - d. the proposed approach to development informed by the evaluation of features and functions to be maintained and/or enhanced, and additional infrastructure requirements;
 - e. an assessment of impacts on natural heritage features and ecosystem functions, including cumulative impacts from development;
 - f. proposed environmental management techniques and measures to mitigate anticipated impacts;
 - g. an assessment of impacts on natural hazards, including cumulative impacts of development and proposed mitigation or remediation measures;
 - h. recommendations for long-term management, monitoring requirements and contingency plans for the Natural Heritage Network; and,
 - i. a statement on overall compliance with the environmental policies of this Plan.
- 3.2.4.11. That the Master Environment and Servicing Plan may be subject to peer review at the discretion of the City in consultation with the Toronto and Region Conservation Authority, the cost of which shall be borne by the affected landowners within the subject block.

3.3 Components of the Natural Heritage Network

3.3.1 Valley and Stream Corridors

Vaughan contains a number of significant valley systems. The largest are formed by the Humber and East Humber Rivers in the western portions of the City, and the Don River in the eastern portion of the City. Stream corridors are the vital link between the headwaters, the mid-reaches, and the lower reaches of watercourses.

Valley and stream corridors are valued landscape features that provide topographic and habitat diversity, act as corridors and linkages, and contain rich *archaeological resources*. Maintaining the integrity of these streams will foster the maintenance of the ecological health of the valley and surrounding land-based features. Vaughn will work in consultation with the Toronto and Region Conservation Authority to protect *valley and stream corridors* as critical elements of the Natural Heritage Network. Development will be restricted within *valley and stream corridors* and the natural features and functions within these systems will be protected and enhanced.

It is the policy of Council:

- 3.3.1.1. To protect and enhance *valley and stream corridors* by:
 - a. prohibiting development or site alteration in *valley and stream corridors* and their required vegetation protection zones except as permitted per the provisions of policy 3.2.3.7.c;
 - b. prohibiting uncontrolled storm sewer discharges into *valley and stream corridors* within Vaughan; and,
 - c. requiring that the minimum vegetation protection zone adjoining a *valley and stream corridor* be excluded from any proposed development block and shall be restored and revegetated with native species and maintained as part of the Natural Heritage Network.

- 3.3.1.2. That no application for development or site alteration on lands abutting or *adjacent* to *valley and stream corridors* will be considered by Council unless the precise limits of *valley and stream corridors* and appropriate ecological buffers have been established to the satisfaction of the City, in consultation the Toronto and Region Conservation Authority.

- 3.3.1.3. That those public works considered to be generally compatible for location in the valleys are those associated with flood control, erosion control, reconstruction, repair or maintenance of existing drains approved under the Drainage Act. Public works which because of their linear nature, such as roadways, must cross the valleys at some point are permitted following completion of necessary environmental assessments. Where such structures are necessary, they must be properly sited, designed and constructed with state-of-the-art erosion and sediment control measures to minimize environmental impacts and measures shall be identified to maintain habitat area and enhance overall ecosystem function.
- 3.3.1.4. To recognize that proposals for modifications to watercourses may occur at the time of proposed development or site alteration. Such proposals may only be considered by the City in consultation with the Toronto and Region Conservation Authority provided that all other policies of this Plan are satisfied and that such modification is associated with a permitted development. Where such alterations are proposed, the proponent must satisfy the requirements of the Toronto and Region Conservation Authority, address the considerations outlined in the Environmental Management Guide, and demonstrate an improve the ecological function of the watercourse.
- 3.3.1.5. To support the ongoing efforts of the Ministry of Natural Resources and the Toronto and Region Conservation Authority to protect *valley and stream corridors*, and to work co-operatively with these agencies to successfully achieve the goals of this Plan.

3.3.2 Wetlands

Wetlands play critical hydrological and habitat roles. Many of Vaughan's *wetlands* are in the headwaters of the Humber and Don Rivers, feeding the small tributaries that in turn feed these large river systems. They also occur along the floodplains of watercourses and in "kettles" once occupied by trapped blocks of glacial ice. *Wetlands* are a vital link in the maintenance of surface and ground water interactions improving water quality, regulating water temperature and providing natural flood control by absorbing peak storm flows. They also provide important habitat for a wide range of plant, fish and other wildlife that require aquatic and semi-aquatic conditions. All *wetlands* and appropriate buffers will be protected from development and site alteration.

It is the policy of Council:

- 3.3.2.1. To protect and enhance *wetlands* by:
- a. prohibiting development and site alteration on *wetlands* and their minimum vegetation protection zones;
 - b. encouraging the rehabilitation of privately-owned *wetlands* in order to provide for their continued environmental function;
 - c. encouraging environmental farm programs that would direct livestock grazing areas away from *wetlands* and seek alternative water sources for livestock; and,
 - d. encouraging the creation of *wetlands*, where appropriate, to contribute to increased natural heritage functions in the landscape.
- 3.3.2.2. That an application for development or site alteration on lands *adjacent* to *wetlands* must demonstrate that:
- a. there will be no loss of *wetland* features and functions, including the hydroperiod of the *wetland* (timing, volume, and duration of water);
 - b. there will be no loss of contiguous *wetland* area;
 - c. subsequent demand for development will not cause increased pressure on the *wetland* in the future; and,
 - d. the minimum vegetation protection zone between the *wetland* and the proposed development is sufficient to address items (a) through (c) above.

3.3.3 Woodlands

Woodlands are comprised of natural areas of vegetation in the landscape and their associated wildlife populations. Those *woodlands* on table lands are smaller and disconnected, but provide important ecological functions that will be preserved. The variety of available woodland resources influences the range of native biodiversity in Vaughan.

Vaughan will support the maintenance of important environmental functions, attributes and linkages of woodland resources, recognizing that this will lead to more stable, resilient systems of vegetation and wildlife.

It is the policy of Council:

- 3.3.3.1. To protect and enhance *woodlands*, by:
 - a. prohibiting development or site alteration in *woodlands* and their minimum vegetation protection zones;
 - b. encouraging that minimum vegetation protection zones be restored using a diversity of native tree species that are sensitive to the realities of the impact of invasive species and invasive destructive pests in new development;
 - c. seeking public ownership of *woodlands* and their ecological buffers through the development process; and,
 - d. using sound woodland management practices that will maintain or enhance existing functions, attributes and linkages, including entering into heritage conservation and other easement agreements, where woodland resources remain in private ownership.

- 3.3.3.2. That no application for development or site alteration on lands abutting or *adjacent* to *woodlands* will be considered by Council unless:
 - a. the precise limits of any woodland within the area of the application have been established to the satisfaction of the City; and,
 - b. an evaluation is carried out to assess whether the minimum vegetation protection zone between the woodland and the proposed development is sufficient to maintain or enhance existing functions, attributes and linkages of the woodland.

- 3.3.3.3. That *woodlands* that experience degradation from natural processes and events or human activities will retain their woodland designation and will be given priority for rehabilitative measures. Rehabilitative measures and programs may be identified in the Environmental Management Guide or through a separate by-law or policy.

- 3.3.3.4. That notwithstanding policy 3.3.3.1 to policy 3.3.3.3, development and site alteration may be permitted in a woodland if:
 - a. the woodland is not a significant woodland as defined in the Region of York Official Plan or in the Provincial Policy Statement;
 - b. the woodland does not contain other natural features for which it has been defined as a **Core Feature**;

- c. the *woodland* is a cultural community; (A cultural community unit [code of CU] in accordance with the Ministry of Natural Resource Field Guide for Ecological Land Classification for Southern Ontario. These vegetation communities originate from, or are maintained by, anthropogenic influences and culturally based disturbances and often contain a large proportion of non-native species.)
 - d. the *woodland* is not connected to other parts of the Natural Heritage Network and is more than 120 metres away from other parts of the Natural Heritage Network; and,
 - e. *woodland* compensation is identified to the satisfaction of the City in consultation with other appropriate agencies, such as the Toronto and Region Conservation Authority and Region of York, that provides ecological gains to the Natural Heritage Network.
- 3.3.3.5. To consider the preparation of an urban forest inventory with the objective of creating a forest management plan for Vaughan to include the urban forest (which is forest resource that occurs within the *urban area*, both in and out of the Natural Heritage Network) and support the active management and long term health of the forest for its intrinsic biodiversity and ecosystem function.

3.3.4 Species at Risk and Significant Wildlife Habitat

The lands that comprise the Natural Heritage Network provide habitat for a wide variety of plant and animal species. Certain of these species are considered Species at Risk as determined by the Federal Species at Risk Act or Provincial Endangered Species Act. Areas where these species are found, or areas with certain characteristics known to provide habitat for such species, will be protected to maintain the health of the species.

It is the policy of Council:

- 3.3.4.1. To protect and enhance the habitat of species at risk including endangered, threatened and special concern species by:
 - a. prohibiting development or site alteration within the *habitat of endangered and threatened species*, as identified on the Species at Risk in Ontario List;
 - b. ensuring appropriate buffers from this habitat are provided as identified in provincial guidelines;

- c. encouraging stewardship measures to protect the habitat of species at risk; and,
- d. working with landowners, developers, York Region, the Toronto and Region Conservation Authority and other government agencies to develop management plans or recovery strategies for species at risk in Vaughan.

3.3.4.2. To protect and enhance *significant wildlife habitat* by:

- a. identifying *significant wildlife habitat* in accordance with criteria provided by the Province through the appropriate study such as a watershed plan, environmental impact statement, or natural heritage or hydrological evaluations, prior to undertaking any development or site alteration; and,
- b. working with the Toronto and Region Conservation Authority and other government agencies to identify *significant wildlife habitats* where there are concentrations of biodiversity.

3.3.5 Fisheries and Aquatic Habitat

Watercourses in Vaughan support a range of fish species and a wide variety of aquatic life. Fishery resources and aquatic habitat are important indicators of overall environmental health and as such they are recognized for protection in the Provincial Policy Statement. Vaughan will work to protect and enhance fish habitat by limiting further impacts from urban development and agricultural activities. Where degradation has occurred due to land use activities, Vaughan will support the remediation of streams and renewal of aquatic habitats.

It is the policy of Council:

3.3.5.1. To protect aquatic biodiversity by:

- a. prohibiting development and site alteration in areas identified as fish habitat;
- b. preserving or remediating natural variation in stream flows to maintain healthy aquatic systems ensuring any permitted development maintains pre-development water balance and groundwater direction;
- c. encouraging consistency with the framework for fisheries management outlined in the Humber River Fisheries Management Plan (2005) and Don River Fisheries Management Plan, particularly with respect to rehabilitation activities;

- d. encouraging the protection and improvement of in-stream habitat for target species identified for each fisheries management zone in the Humber River Fisheries Management Plan and Don River Fisheries Management Plan; and,
- e. requiring any development proposal on lands *adjacent* to existing fish habitat to consider the best management practices for new development as documented in the Humber River Watershed Based Fisheries Management Plan and the Don River Watershed Based Fisheries Management Plan.

- 3.3.5.2. That any development application or Block Plan prepared in support of new development will be reviewed by the City and appropriate agencies with respect to its potential impact on fish habitat to determine if it will result in a reduction of the ecological functions, attributes, or linkages of the stream which could impair aquatic health. Where adverse impacts are confirmed, authorizations will be consistent with the Fish Habitat Referral Protocol for Ontario (2009).
- 3.3.5.3. That development and associated servicing infrastructure that has an impact on streams identified as habitat for species at risk will provide for the protection and enhancement of aquatic habitat that supports these species. Development will be required to adhere to recommendations in the endangered species recovery plan.
- 3.3.5.4. That, where permitted by the City and Toronto and Region Conservation Authority, stream restoration or alteration will be undertaken using natural channel design principles where alterations to stream channels may be required and/or where channel instability is indicated.

3.3.6 Environmentally Significant Areas and Areas of Natural and Scientific Interest

Environmentally Significant Areas (ESAs) are natural areas that have special geological or landform characteristics, hydrological or hydrogeological functions; or which support rare, threatened or endangered species; or provide high quality wildlife habitat or important habitat for a concentration of species such as migratory stop-over areas; or provide a significant linkage function. Life Science and Earth Science Areas of Natural and Scientific Interest (ANSIs) are landscapes that have provincially or regionally

significant ecological and geological features, respectively. ESAs are identified by TRCA and ANSIs are identified by the Province. Vaughan will protect all ESAs and ANSIs from development to preserve their unique landscape, species and habitat features.

It is the policy of Council:

- 3.3.6.1. To protect and enhance Environmentally Significant Areas (ESAs) and both Earth and Life Science Areas of Natural and Scientific Interest (ANSIs), as identified on Schedule 3, by prohibiting development and site alteration in ESAs and ANSIs.
- 3.3.6.2. That an application for development or site alteration on lands *adjacent* to ESAs and or ANSIs must:
 - a. identify planning, design and construction practices that will provide for the protection of the ecological attributes for which the ESA or ANSI was identified;
 - b. determine the appropriate minimum vegetation protection zone and specify the dimensions of that zone and provide for the maintenance and, where possible, improvement or restoration of the natural vegetation within it; and,
 - c. assess the potential impact of the development on the ecological functions and attributes of the ESA and ANSI and provide a detailed mitigation strategy.

3.4 The Oak Ridges Moraine and Greenbelt

3.4.1 The Oak Ridges Moraine

The Oak Ridges Moraine is a landform that crosses a portion of the Greater Golden Horseshoe. The area of the Moraine known as the Maple Spur is located in north eastern Vaughan. It is notable for its unique geological characteristics, its important groundwater recharge and discharge functions, the coldwater streams that originate within it, its high quality and extensive natural areas, and its landform characteristics. In Vaughan, the Moraine provides a number of significant vistas and panoramic views to the south. The Moraine includes the Maple Upland and Kettle Wetlands Regionally Significant Life Science ANSI and Oak Ridges Moraine Maple Spur Earth Science ANSI as well as the McGill ESA.

The Oak Ridges Moraine Conservation Plan was developed by the Province to protect this landform. Vaughan will support the objectives of the Oak Ridges Moraine Conservation Plan to protect natural heritage and hydrological features and functions.

It is the policy of Council:

- 3.4.1.1. To recognize the Oak Ridges Moraine as a Provincially significant natural feature that requires special regard and protection.
- 3.4.1.2. That the Provincial Oak Ridges Moraine Conservation Plan Area applicable to the City of Vaughan is identified on Schedule 4.
- 3.4.1.3. That the use of land within the Oak Ridges Moraine identified on Schedule 4 is subject to the applicable policies of this Section as written to be in conformity with the Oak Ridges Moraine Conservation Plan.
- 3.4.1.4. That where there is a conflict between the policies of this section and the policies in the remainder of this Plan, the policies of this section shall prevail.
- 3.4.1.5. To assist in the implementation of the Oak Ridges Moraine Conservation Plan by working with the Province in the implementation of tree cutting and site alteration by-laws required by the Oak Ridges Moraine Conservation Act and any subsequent regulations.

Oak Ridges Moraine Natural Core Area

- 3.4.1.6. That Oak Ridges Moraine Natural Core Areas, as identified on Schedule 4, are areas with a high concentration of key natural heritage features, hydrologically sensitive features or landform conservation areas to be protected and enhanced through the policies of this Plan.
- 3.4.1.7. That the following uses are permitted on lands designated Oak Ridges Moraine Natural Core Area on Schedule 4:
- a. fish, wildlife and forest management;
 - b. conservation projects and flood and erosion control projects;
 - c. agricultural uses;
 - d. transportation, infrastructure and utilities, subject to policy 3.4.1.38 through 3.4.1.42, but only if the need for the project has been demonstrated and there is no reasonable alternative;
 - e. single detached dwelling on a lot existing on November 15, 2001, and on a lot created in accordance with the consent policies of Section 10.1.2;
 - f. *home occupations*;
 - g. cottage industries (being defined the same as Home Industry under the Oak Ridges Moraine Conservation Plan);
 - h. low-intensity recreational uses where such activities will not negatively impact ecosystem function;
 - i. *un-serviced parks*;
 - j. uses accessory to agricultural uses as set out in policy 3.4.1.8;
 - k. uses accessory to the permitted uses set out in policy 3.4.1.7.a. to j inclusive.
- 3.4.1.8. That permitted uses accessory to agricultural uses include, but are not limited to the following:
- a. roadside sale of produce of the farm operation;
 - b. the manufacture of value-added products from produce of the farm operation; and
 - c. a second dwelling that is a temporary, mobile or portable unit, if the applicant demonstrates that the dwelling:
 - i. is required to house help that is needed on the farm operation on a seasonal or full time basis;
 - ii. does not require a consent under section 50 or 53 of the Planning Act, and
 - iii. will not adversely affect the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area.

Oak Ridges Moraine Natural Linkage Area

- 3.4.1.9. That Oak Ridges Moraine Natural Linkage Areas are areas forming part of a central corridor system that support or have the potential to support the movement of plants and animals among the Oak Ridges Moraine Natural Core Areas, Oak Ridges Moraine Natural Linkage Areas, river valleys and stream corridors.
- 3.4.1.10. That the following uses are permitted on the lands designated Oak Ridges Moraine Natural Linkage Area on Schedule 4:
- a. all of the uses listed in policy 3.4.1.7 for Oak Ridges Moraine Natural Core Area;
 - b. *wayside pits* subject to policy 9.2.2.17 and policy 3.4.1.29 through 3.4.1.32 inclusive;
 - c. *mineral aggregate operations* subject to policy 9.2.2.17 and policy 3.4.1.29 through 3.4.1.32 inclusive; and,
 - d. uses accessory to the permitted uses set out in policy 3.4.1.10.a. to c.

Oak Ridges Moraine Countryside Area

- 3.4.1.11. That Oak Ridges Moraine Countryside Areas are areas of rural land use such as agriculture, recreation, *mineral aggregate operations*, parks and open space.
- 3.4.1.12. That the following uses are permitted on lands designated Oak Ridges Moraine Countryside Area on Schedule 4:
- a. all of the uses listed in policy 3.4.1.10 for Oak Ridges Moraine Natural Linkage Area;
 - b. major recreational uses subject to policies 3.4.1.27 and 3.4.1.28; and,
 - c. uses accessory to the permitted uses set out in policy 3.4.1.12.a. and b.

Oak Ridges Moraine Settlement Area

- 3.4.1.13. That Oak Ridges Moraine Settlement Areas recognize existing and planned community areas on the Oak Ridges Moraine.
- 3.4.1.14. That on lands designated Oak Ridges Moraine Settlement Area on Schedule 4, all of the uses permitted in accordance with the applicable Land Use designations on Schedule 13 and their respective policies in Chapter 9 of this Plan are permitted, subject to the other applicable policies of this Plan, including the policies of this Chapter.

Key Natural Heritage Features and Hydrologically Sensitive Features

- 3.4.1.15. That the key natural heritage features and hydrologically sensitive features and their minimum vegetation protection zones, identified in the Oak Ridges Moraine Conservation Plan, are equivalent to the **Core Features** of the Natural Heritage Network and are subject to the policies of this Plan applicable to **Core Features**. Key Natural Heritage Features in the Oak Ridges Moraine Conservation Plan area include *wetlands*, significant portions of habitat of endangered, rare and threatened species, fish habitat, areas of natural and scientific interest (life science), significant valleylands, significant *woodlands*, *significant wildlife habitat*, sandbarrens, savannahs and tallgrass prairies. Hydrologically sensitive features in the Oak Ridges Moraine Conservation Plan area include permanent and intermittent streams, *wetlands* and kettle lakes and seepage areas and springs.
- 3.4.1.16. That notwithstanding policy 3.4.1.15, on lands designated Oak Ridges Moraine Settlement Area on April 22, 2002, a minimum vegetation protection zone less than that specified in policy 3.2.3.4. may be permitted where it is adopted on the basis of environmental studies or infrastructure planning, environmental assessments, infrastructure servicing studies or through Master Environment and Servicing Plans in accordance with Section 3.2.4 of this Plan.
- 3.4.1.17. That no amendment to this Plan is required where minor changes to the boundary of the key natural heritage features or hydrologically sensitive features are based on studies carried out in accordance with this Plan or the Oak Ridges Moraine Conservation Plan technical papers, or updated information from the Toronto and Region Conservation Authority, Province of Ontario, Department of Fisheries and Oceans or their delegate is provided to the satisfaction of the City of Vaughan.
- 3.4.1.18. That any change to Schedule 2 which affects the boundary of a *wetland* or an area of natural and scientific interest (life science) or confirmation of the boundaries of a feature not included on Schedule 2 including habitat of endangered, rare and threatened species or fish habitat, will only be made after consultation with the District office of the Ministry of Natural Resources and in the case of fish habitat, with the Toronto and Region Conservation Authority as the delegate for the Department of Fisheries and Oceans.

- 3.4.1.19. That the presence or absence of significant portions of habitat of endangered, rare and threatened species, fish habitat, significant valleylands, *significant wildlife habitat*, and seepage areas and springs on the lands subject to a development or site alteration application and within 120 metres of the application, shall be confirmed through environmental studies using criteria established by the Province of Ontario, to the satisfaction of the City of Vaughan in consultation with the Toronto and Region and Conservation Authority, the Region of York and Provincial Ministries. Key natural heritage features and hydrologically sensitive features identified on the Oak Ridges Moraine but not shown on Schedules to this Plan, are subject to the provisions in Sections 3.2, 3.3 and 3.4 of this Plan respecting key natural heritage features and hydrologically sensitive features. Fish habitat on the Oak Ridges Moraine are to include but are not limited to all hydrologically sensitive features with surface water characteristics.
- 3.4.1.20. That no *development* or *site alteration* is permitted within key natural heritage features or hydrologically sensitive features or their related minimum vegetation protection zones except for those activities identified in policy 3.2.3.7.
- 3.4.1.21. That applications for *development* or *site alteration* with respect to land within 120 metres of a key natural heritage feature or hydrologically sensitive feature, shall be accompanied by a natural heritage and or hydrologic evaluation.
- 3.4.1.22. That the evaluation referenced in policy 3.4.1.21 shall:
- a. demonstrate that the *development* or *site alteration* applied for will have no adverse effects on the key natural heritage feature or hydrologically sensitive feature or on the related ecological functions;
 - b. identify planning, design and construction practices that will restore the health, diversity and size of the key natural heritage feature or hydrologically sensitive feature and its connectivity with other key natural heritage and hydrologically sensitive features;
 - c. in the case of an application relating to land in a Natural Core Area, Natural Linkage Area or Countryside Area, demonstrate how connectivity within and between key natural heritage features or hydrologically sensitive features will be maintained and, where possible, improved or restored before, during and after construction;

- d. determine whether the specified minimum vegetation protection zone is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it;
- e. if no minimum vegetation protection zone is specified, determine whether one is required, and if one is required, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it;
- f. in the case of a key natural heritage feature that is also fish habitat, ensure compliance with the requirements of the Department of Fisheries and Oceans;
- g. in the case of Areas of Natural and Scientific Interest (Life Science), the basis on which the determination and specification in policy 3.4.1.22.e. is undertaken shall include, without limitation, an analysis of land use, soil type, slope class and vegetation type, using criteria established by the Government of Ontario, as amended from time to time; and
- h. in the case of permanent and intermittent streams and seepage areas and springs, the basis on which the determination and specification mentioned in policy 3.4.1.22.g., is undertaken shall include, without limitation, an analysis of land use, soil type and slope class, using criteria established by the Government of Ontario, as amended from time to time.

Major Development on the Oak Ridges Moraine

- 3.4.1.23. That major development in Section 3.4.1 of this Plan 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 greater, or
 - c. the establishment of a major recreational use as described in policy 3.4.1.27 and 3.4.1.28.

- 3.4.1.24. That for every application in the Oak Ridges Moraine Natural Core Area, Oak Ridges Moraine Natural Linkage Area, Oak Ridges Moraine Countryside Area and Oak Ridges Moraine Settlement Area, commenced on or after April 23, 2007 major development as defined in policy 3.4.1.23 is prohibited unless:
 - a. the major development conforms with the Humber River Watershed Plan and Don River Watershed Plan; and

- b. a water budget and conservation plan, prepared by the Region of York in accordance with Section 25 of the Oak Ridges Moraine Conservation Plan and demonstrating that the water supply required for the major development is sustainable, has been completed.

- 3.4.1.25. That an application for major development commenced prior to April 23, 2007, shall not be approved unless:
- a. the Region of York has completed a water budget and conservation plan, prepared in accordance with Section 25 of the Oak Ridges Moraine Conservation Plan, demonstrating that the water supply required for the major development is sustainable; or
 - b. the applicant,
 - i. identifies any hydrologically sensitive features and related hydrological functions on the site and how they will be protected,
 - ii. demonstrates that an adequate water supply is available for the development without compromising the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area, and
 - iii. provides, with respect to the site and such other land as the approval authority considers necessary, a water budget and water conservation plan that:
 - A. characterizes groundwater and surface water flow systems by means of modelling;
 - B. identifies the availability, quantity and quality of water sources, and
 - C. identifies water conservation measures.
- 3.4.1.26. That the City will incorporate through an Official Plan Amendment, the applicable objectives and requirements that have been established through the Watershed Plan undertaken by the Region of York.

Major Recreational Uses in the Oak Ridges Moraine

- 3.4.1.27. That Major Recreational uses are recreational uses that require large-scale modification of terrain, vegetation or both and usually also require large-scale buildings or structures, including:
- a. golf courses;
 - b. serviced playing fields;

- c. parks;
- d. playgrounds; and
- e. buildings and structures accessory to the uses listed in policy 3.4.1.27.a., b., c. and d.

- 3.4.1.28. That an application to establish a new or expansion to an existing major recreational use in the Oak Ridges Moraine Countryside Area designation, shall:
- a. be accompanied by a recreation plan demonstrating that,
 - i. water use for maintenance will be kept to a minimum;
 - ii. grassed, watered and manicured areas will be limited to sports field surfaces, golf fairways, tees and greens, and landscaped areas around buildings and structures;
 - iii. crossings of intermittent and permanent streams will be kept to a minimum;
 - iv. water-conserving technologies will be used in clubhouses and restaurants;
 - v. water-conserving technologies will be used in irrigation and watering of sports field surfaces, golf fairways, tees and greens, and landscaped areas around buildings and structures; and
 - vi. stormwater treatment facilities will be used to capture and treat runoff from areas with impervious surfaces.
 - b. be accompanied by a vegetation management plan demonstrating that:
 - i. the application of fertilizers, pesticides, herbicides and fungicides will be limited to sports field surfaces, golf fairways, tees, greens and landscaped areas around buildings and structures, and, in those locations, will be kept to a minimum;
 - ii. grass mixtures that require minimal watering and upkeep will be used for sports field surfaces and golf fairways; and
 - iii. wherever possible, intermittent stream channels and drainage swales will be kept in a free to grow, low maintenance condition.
 - c. demonstrate that:
 - i. the recreational activities on the site:
 - A. will be compatible with the natural character of the surrounding area, and
 - B. will be designed and located so as not to conflict with *adjacent* land uses; and

- d. new technologies relating to construction, grounds maintenance and water conservation will be explored and incorporated, as they become available, to help maintain, and where possible improve or restore the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area.

Mineral Aggregate Operations on the Oak Ridges Moraine

- 3.4.1.29. That active and inactive mineral aggregate extraction areas in Vaughan are shown on Schedule 5.

- 3.4.1.30. That in the Oak Ridges Moraine Natural Linkage Area and the Oak Ridges Moraine Countryside Area designations,
 - a. *mineral aggregate operations*, may be permitted subject to an amendment to the Official Plan and the applicable policies of this Plan.
 - b. an application for a *wayside pit* may be permitted subject to an amendment to the zoning by-law.

- 3.4.1.31. That the City of Vaughan, in the review of all applications for *mineral aggregate operations* and *wayside pits*, will require that the applications comply with Section 35 and 36 of the Oak Ridges Moraine Conservation Plan to the extent that the provisions can be addressed under the Planning Act and Municipal Act, along with all other applicable provisions of this Plan.

- 3.4.1.32. That the City of Vaughan will encourage the Ministry of Natural Resources in their review of applications for licences or permits for *mineral aggregate operations* and *wayside pits* under the Aggregate Resources Act, that the requirements of the Oak Ridges Moraine Conservation Plan, including Sections 35 and 36, be complied with prior to the Ministry of Natural Resources issuing the licence or permit.

Connectivity on the Oak Ridges Moraine

- 3.4.1.33. That all applications for *development* and *site alteration* in the Oak Ridges Moraine Natural Core Area, Oak Ridges Moraine Natural Linkage Area and Oak Ridges Moraine Countryside Area shall identify planning and design construction practices that demonstrate that no buildings or other site alterations impede the movement of plants and animals among key natural heritage features, hydrologically sensitive features and *adjacent* land within Oak Ridges Moraine Natural Core Areas and Oak Ridges Moraine Natural Linkage Areas.

Subwatersheds on the Oak Ridges Moraine

- 3.4.1.34. That with respect to land in the Oak Ridges Moraine Natural Core Area, Oak Ridges Moraine Natural Linkage Area and Oak Ridges Moraine Countryside Area designations, all *development* and *site alteration* with respect to land in a subwatershed are prohibited if they would cause the total percentage of the area of the subwatershed that has impervious surfaces to exceed:
- a. 10 percent; or
 - b. any lower percentage specified in the applicable watershed plan.
- 3.4.1.35. That with respect to land in the Oak Ridges Moraine Natural Core Area, Oak Ridges Moraine Natural Linkage Area and Oak Ridges Moraine Countryside Area designations, in considering applications for *development* or *site alteration* with respect to land in a subwatershed, the approval authority shall take into account the desirability of ensuring that at least 30 percent of the area of the subwatershed has self-sustaining vegetation.
- 3.4.1.36. That with respect to land in the Oak Ridges Moraine Settlement Area designation, in considering applications for *development* or *site alteration* with respect to land in a subwatershed, the approval authority shall consider the importance of:
- a. ensuring that natural vegetation is maintained, and where possible improved or restored; and
 - b. keeping to a minimum impervious surfaces.

Trails on the Oak Ridges Moraine

- 3.4.1.37. That a recreational trail system shall be established, which is accessible to all including persons with disabilities, to provide continuous access and travel throughout the Oak Ridges Moraine Conservation Plan Area and to provide connections to existing open space and park lands, as well as trails identified in City of Vaughan and York Region Pedestrian and Bicycle Master Plans. The Oak Ridges Moraine Trail, or trails connecting to it, may be permitted in all Oak Ridges Moraine designations shown on Schedule 4, subject to the provisions of Section 39 of the Oak Ridges Moraine Conservation Plan.

Transportation, Infrastructure and Utilities on the Oak Ridges Moraine

- 3.4.1.38. That transportation, infrastructure and utilities in the Oak Ridges Moraine Conservation Plan Area shown on Schedule 4, include the following:
- a. public highways;
 - b. transit lines, railways and related facilities;
 - c. gas and oil pipelines;
 - d. sewage and water service systems and lines and stormwater management facilities;
 - e. power transmission lines;
 - f. telecommunications lines and facilities, including broadcasting towers;
 - g. bridges, interchanges, stations and other structures, above and below ground, that are required for the construction, operation or use of the facilities listed in policy 3.4.1.38.a. through 3.4.1.38.f. inclusive; and
 - h. rights of way required for the facilities listed in policy 3.4.1.38.a. through 3.4.1.38.g inclusive.
- 3.4.1.39. That in the Oak Ridges Moraine Natural Linkage Area, an application for transportation, infrastructure or utilities use shall not be approved unless the applicant demonstrates that:
- a. the need for the project has been demonstrated and there is no reasonable alternative; and
 - b. the applicant demonstrates that the following requirements will be satisfied, to the extent that is possible while also meeting all applicable safety standards:
 - i. the area of construction disturbance is kept to a minimum;
 - ii. right-of-way widths will be kept to the minimum that is consistent with meeting other objectives such as stormwater management and with locating as many transportation, infrastructure and utility uses within a single corridor as possible;
 - iii. the project will allow for wildlife movement;
 - iv. lighting will be focused downwards and away from Oak Ridges Moraine Natural Core Areas;
 - v. the planning, design and construction practices adopted will keep any adverse effects on the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area to a minimum.

- 3.4.1.40. That in the Oak Ridges Moraine Natural Core Area an application for transportation, infrastructure or utilities use, shall not be approved unless the applicant demonstrates that:
- a. the requirements of policy 3.4.1.39.a and 3.1.4.39.b have been met;
 - b. the project does not include and will not in the future require a highway interchange or a transit or railway station in an Oak Ridges Moraine Natural Core Area; and
 - c. the project is located as close to the edge of the Oak Ridges Moraine Natural Core Area as possible.
- 3.4.1.41. That within the Oak Ridges Moraine Conservation Plan Area shown on Schedule 4, all new transportation, infrastructure and utilities uses and all upgrading or extension of existing transportation, infrastructure and utilities uses, including the opening of a road within an unopened road allowance such as Kirby Road and Teston Road, but not including a stormwater management pond, may be permitted to cross a key natural heritage feature or a hydrologically sensitive feature only if the applicant demonstrates that:
- a. the need for the project has been demonstrated and there is no reasonable alternative;
 - b. the planning, and design and construction practices adopted will keep any adverse effects on the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area to a minimum;
 - c. the design practices adopted will maintain, and where possible improve or restore, key ecological and recreational linkages, including the trail system in policy 3.4.1.37 of this Plan.
 - d. the landscape design will be adapted to the circumstances of the site and use native plant species as much as possible, especially along rights-of-way; and
 - e. the long-term landscape management approaches adopted will maintain, and where possible improve or restore, the health, diversity, size and connectivity of the key natural heritage feature or hydrologically sensitive feature.
- 3.4.1.42. That, on lands designated Oak Ridges Moraine Natural Core Area, Oak Ridges Moraine Natural Linkage Area and Oak Ridges Moraine Countryside Area on Schedule 4, service and utility trenches for transportation, infrastructure and utilities where permitted in accordance with policies 3.4.1.39., 3.4.1.40., and 3.4.1.41, shall be planned, designed and constructed so as to keep disruption of the natural groundwater flow to a minimum.

Sewage and Water Services on the Oak Ridges Moraine

- 3.4.1.43. That within the Oak Ridges Moraine Conservation Plan Area shown on Schedule 4, an application for major development shall be accompanied by a sewage and water system plan that demonstrates:
- a. that the *ecological integrity* of hydrologically sensitive and key natural heritage features will be maintained;
 - b. that the quantity and quality of groundwater and surface water will be maintained;
 - c. that stream baseflows will be maintained;
 - d. that the project will comply with the applicable Watershed Plan and water budget and conservation plan to be prepared by the Region of York in accordance with sections 24 and 25 of the Oak Ridges Moraine Conservation Plan, Ontario Regulation 140/02; and
 - e. that the water use projected for the development will be sustainable.
- 3.4.1.44. That water and sewer service trenches shall be planned, designed and constructed so as to keep disruption of the natural groundwater flow to a minimum.
- 3.4.1.45. That the construction or expansion of partial services are prohibited except where the construction or expansion of partial services is necessary to address a serious health concern or environmental concern.
- 3.4.1.46. That policy 3.4.1.45 does not apply to prevent the connection to municipal water for existing lots and for lots in plan of subdivision applications which received draft plan approval prior to November 16, 2001 in the Woodland Acres Area, where the lots have been approved for development on the basis of private sewage disposal systems and a municipal water supply.

Stormwater Management on the Oak Ridges Moraine

- 3.4.1.47. That within the Oak Ridges Moraine Conservation Plan Area shown on Schedule 4, an application for major development as defined in policy 3.4.1.23 of this Plan, shall be accompanied by a stormwater management plan which shall:
- a. have the following objectives:
 - i. maintain groundwater quantity and flow and stream base flow;
 - ii. protect groundwater quality;
 - iii. protect aquatic species and their habitat;

- iv. prevent increases in stream channel erosion; and
 - v. prevent any increase in flood risk.
 - b. provide for an integrated treatment train approach that uses a planned sequence of methods of controlling stormwater in keeping its impact to a minimum by techniques including, without limitation:
 - i. lot level controls such as devices and designs that direct roof discharge to rear yard ponding areas;
 - ii. conveyance controls such as grassed swales; and
 - iii. end-of-pipe controls such as wet ponds at the final discharge stage.
 - c. be prepared in accordance with the applicable Watershed Plan prepared by the Region of York in accordance with Section 24 of the Oak Ridges Moraine Conservation Plan, Ontario Regulation 140/02, if one exists.

- 3.4.1.48. That every application for *development* or *site alteration* shall demonstrate that planning, design and construction practices that protect water resources will be used, including:
 - a. keeping the removal of vegetation, grading and soil compaction to a minimum;
 - b. keeping all sediment that is eroded during construction within the site;
 - c. seeding or sodding exposed soils as soon as possible after construction; and
 - d. keeping chemical applications to suppress dust and control pests and vegetation to a minimum.

- 3.4.1.49. That in considering an application for *development* or *site alteration*, the municipality shall seek to reduce areas with impervious surfaces and increase areas retained in a natural undisturbed state, in order to minimize stormwater volumes and contaminant loads.

- 3.4.1.50. That municipal development standards shall incorporate planning, design and construction practices that will:
 - a. reduce the portions of lots and sites that have impervious surfaces; and
 - b. provide the flexibility to use alternative stormwater management techniques such as directing roof discharge to rear yard ponding areas and using grassed swales.

- 3.4.1.51. That policies 3.4.1.48., 3.4.1.49 and 3.4.1.50. do not apply to applications for *mineral aggregate operations*.

- 3.4.1.52. That for the purposes of stormwater management, the minimum standard for water quality is that 80 percent of suspended solids shall be removed from stormwater runoff as a long-term average, or as recommended in the latest applicable Ministry of the Environment Guidelines.
- 3.4.1.53. That despite anything else in this Plan, disposal of stormwater into a kettle lake is prohibited.
- 3.4.1.54. That despite anything else in this Plan, new stormwater management ponds are prohibited with respect to land in key natural heritage features and hydrologically sensitive features.
- 3.4.1.55. That despite anything else in this Plan and the Oak Ridges Moraine Conservation Plan, new *rapid infiltration basins* and new *rapid infiltration columns* are prohibited in the Oak Ridges Moraine Conservation Plan Area shown on Schedule 4.

Aquifer Vulnerability on the Oak Ridges Moraine

- 3.4.1.56. Areas of high *aquifer vulnerability* on the Oak Ridges Moraine are shown on Schedule 6, based on mapping provided by the Province of Ontario and are subject to the policies of section 3.7.2 respecting groundwater. In addition, the following uses are prohibited with respect to land in areas of high *aquifer vulnerability*,:
 - a. generation and storage of hazardous waste or liquid industrial waste;
 - b. waste disposal facilities, organic soil conditioning sites, and snow storage and disposal facilities;
 - c. underground and above-ground storage tanks that are not equipped with an approved secondary containment device; and,
 - d. storage of a contaminant listed in Schedule 3 (Severely Toxic Contaminants) to Regulation 347 of the Revised Regulations of Ontario, 1990.

Landform Conservation on the Oak Ridges Moraine

- 3.4.1.57. That an application for *development* or *site alteration* on lands designated Oak Ridges Moraine Natural Core, Oak Ridges Moraine Natural Linkage, and Oak Ridges Moraine Countryside, in the area identified on Schedule 7 as Landform Conservation Area, shall identify planning, design and construction practices that will keep disturbance of the landform character to a minimum, including but not limited to:

- a. maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form;
- b. limiting the portion of the net developable area of the site that is disturbed to not more than:
 - i. 25% of the total area of the site in Landform Conservation Area Category 1; or
 - ii. 50% of the total area of the site in Landform Conservation Area Category 2; and
- c. limiting the portion of the net developable area of the site that has impervious surfaces to not more than:
 - i. 15% of the total area of the site in Landform Conservation Area Category 1; or
 - ii. 20% of the total area of the site in Landform Conservation Area Category 2.

3.4.1.58. That an application for *development* or *site alteration* on lands designated Oak Ridges Moraine Natural Core, Oak Ridges Moraine Natural Linkage, and Oak Ridges Moraine Countryside in a landform conservation area of either Category 1 or Category 2 shall, with the exception of applications for *mineral aggregate operations*, be accompanied by a site plan that:

- a. identifies the areas within which all building, grading, and related construction occur;
- b. demonstrates that buildings and structures shall be located within such areas so as to minimize the amount of site alteration required; and
- c. provides protection of areas of natural and scientific interest (earth science) in accordance with Section 3.3.6.

3.4.1.59. That an application for major development, as defined in policy 3.4.1.23, or *site alteration* on lands designated Oak Ridges Moraine Natural Core, Oak Ridges Moraine Natural Linkage, and Oak Ridges Moraine Countryside in a landform conservation area of either Category 1 or Category 2 as identified on Schedule 7, shall be accompanied by a landform conservation plan that:

- a. shows, on one or more maps:
 - i. elevation contours in sufficient detail to show the basic topographic character of the site, with an interval of not more than two metres;
 - ii. analysis of the site by slope type (for example, moderate or steep);

- iii. significant landform features such as kames, kettles, ravines and ridges; and
- iv. all water bodies including intermittent streams and ponds.
- b. includes a development strategy that identifies appropriate planning, design and construction practices to minimize disruption to landform character, including:
 - i. retention of significant landform features in an open, undisturbed form;
 - ii. road alignment and building placement to minimize grading requirements;
 - iii. concentration of development on portions of the site that are not significant;
 - iv. use of innovative building design to minimize grading requirements; and
 - v. use of selective grading techniques.

3.4.1.60. In considering applications for *development* or *site alteration* within landform conservation areas Category 1 or Category 2 identified on Schedule 7, on land in the Oak Ridges Moraine Settlement Area on Schedule 4, the City will consider the importance of adopting planning, design and construction practices that will keep disturbance to landform character to a minimum, so as to satisfy the requirements of Section 3.5.1 and if possible to satisfy the requirements of policies 3.4.1.57 through 3.4.1.59.

Areas of Natural and Scientific Interest on the Oak Ridges Moraine

3.4.1.61. An application for *development* or *site alteration* within the Oak Ridges Moraine Conservation Plan Area shown on Schedule 4 and within an area of natural and scientific interest (earth science) feature shown on Schedule 3, and the related minimum area of influence which includes all lands within 50 metres of any part of the feature, shall be accompanied by an earth science heritage evaluation that:

- a. identifies planning, design and construction practices that will ensure protection of the geological or geomorphological attributes for which the area of natural and scientific interest was identified; and
- b. determines whether the minimum vegetation protection zone is required, and if so, specifies the dimensions of that zone and provides for the maintenance and, where possible, improvement or restoration of *natural self-sustaining vegetation* within it.

Existing Uses

- 3.4.1.62. That for the purposes of policies 3.4.1.63 through policy 3.4.1.68:
- a. “existing” means lawfully in existence on November 15, 2001, and for greater certainty does not include a use, building or structure that is in existence on that date without being lawful; and
 - b. “institutional use” includes, without limitation, a long-term care facility, hospital, school, university or college.
- 3.4.1.63. That nothing in this Plan applies to prevent:
- a. the use of any land, building, or structure for a purpose, prohibited by Section 3.4.1 of this Plan, if the land, building or structure was lawfully used for that purpose on November 15, 2001 and continues to be used for that purpose; or
 - b. the erection or use for a purpose prohibited by Section 3.4.1 of this Plan of a building or structure for which a permit has been issued under subsection 8(2) of the Building Code Act, 1992 on or before November 15, 2001 if:
 - i. the permit has not been revoked under subsection 8(10) of the Building Code Act, 1992; and
 - ii. the building or structure when erected is used and continues to be used for the purpose for which it was erected.
- 3.4.1.64. That nothing in Section 3.4.1. of this Plan applies to prevent the expansion of an existing building or structure on the same lot, or the expansion of an existing institutional use, if the applicant demonstrates that:
- a. There will be no change in use; and
 - b. The expansion will not adversely affect the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area.
- 3.4.1.65. That despite policy 3.4.1.64, an existing *mineral aggregate operation* or an existing *wayside pit* within an area designated Oak Ridges Moraine Natural Core Area on Schedule 4 shall not be expanded beyond the boundary of the area under licence or permit.

- 3.4.1.66. That nothing in Section 3.4.1. of this Plan applies to prevent the reconstruction, within the same locations and dimensions, of an existing building or structure that is damaged or destroyed by causes beyond the owner's control, and the reconstructed building or structure shall be deemed to be an existing building or structure if there is no change in use and no *intensification* of the use.
- 3.4.1.67. That nothing in Section 3.4.1. of this Plan applies to prevent the conversion of an existing use to a similar use, if the applicant demonstrates that the conversion:
- a. Will bring the use into closer conformity with this Plan and the Oak Ridges Moraine Conservation Plan;
 - b. Will not adversely affect the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area.
- 3.4.1.68. That, if an existing use has adverse effects on the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area, any application to expand the building, structure or use, or to convert the existing use to a similar use, shall be considered with the objective of bringing the use into closer conformity with this Plan and the Oak Ridges Moraine Conservation Plan.

Previously Authorized Single Dwellings

- 3.4.1.69. That in accordance with Section 7 of the Oak Ridges Moraine Conservation Plan nothing in Section 3.4.1 of this Plan applies to prevent the use, erection or location of a single dwelling if:
- a. the use, erection and location would have been permitted by the applicable zoning by-law on November 15, 2001; and
 - b. the applicant demonstrates, to the extent possible, that the use, erection and location will not adversely affect the *ecological integrity* of the Oak Ridges Moraine Conservation Plan Area.

Buildings and Structures Authorized under Section 17 of the Oak Ridges Moraine Conservation Act

- 3.4.1.70. That in accordance with Section 8 of the Oak Ridges Moraine Conservation Plan, nothing in Section 3.4.1 of this Plan applies to prevent the use, erection or location of a building or structure if:

- a. the use, erection and location were authorized by the approval of an application that was commenced before November 17, 2001 and approved after that date; or
- b. the use, erection and location were authorized by the approval of an application that was commenced after November 17, 2001 and decided in accordance with subsection 17(1) of the Oak Ridges Moraine Conservation Act.

Site Plan Applications

- 3.4.1.71. That an application for Site Plan Approval under the Planning Act is not required to comply with Section 3.4.1 of this Plan where the application:
- a. is on lands located in the Oak Ridges Moraine Settlement Area identified on Schedule 4 and the lands subject to the application do not include a key natural heritage feature or a hydrologically sensitive feature;
 - b. relates to land in respect of which any of the following was commenced before November 17, 2001 and approved after that date:
 - i. an application for an amendment to a zoning by-law;
 - ii. an application for approval of a plan of subdivision under section 51 of the Planning Act;
 - iii. an application for approval or exemption from approval for a plan of condominium under section 9 of the Condominium Act, 1998.

3.4.2 The Greenbelt

The Province's Greenbelt Plan provides for the protection of a system of agricultural and environmental lands that are linked to other major features in the Province including the Oak Ridges Moraine. The Greenbelt Plan recognizes the functional inter-relationships between the natural heritage features, open spaces and agricultural lands within the Greenbelt Plan area and the lands surrounding it, and is therefore an important part of Vaughan's Natural Heritage Network.

It is the policy of Council:

- 3.4.2.1. That the Provincial Greenbelt Plan Area, as identified on Schedule 4, is an important feature in Vaughan intended to protect lands for natural heritage and agricultural uses.

- 3.4.2.2. That key natural heritage features and key hydrologic features as defined in the Greenbelt Plan are identified as **Core Features** on Schedule 2 and are subject to the policies of Section 3.3 of this Plan.

Greenbelt Natural Heritage System

- 3.4.2.3. That within the Greenbelt Natural Heritage System as identified on Schedule 4 **Agricultural** and existing **Rural Residential** uses are permitted as identified on Schedule 13 and subject to the applicable policies of Section 9.2.2 and subject to the policies of 3.4.2.4 through 3.4.2.6 below.
- 3.4.2.4. That new buildings or structures for agriculture, agricultural-related and secondary uses within lands identified as Greenbelt Natural Heritage System on Schedule 4 are not subject to policies 3.4.2.5 below, but are subject to the policies on key natural heritage features and key hydrologic features.
- 3.4.2.5. That new *development* or *site alteration* in lands designated as Greenbelt Natural Heritage System (as permitted by the policies of this Plan) shall demonstrate that:
- a. there will be no negative effects on key natural heritage features or key hydrologic features or their functions;
 - b. connectivity between key natural heritage features and key 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 key natural heritage features and key hydrologic features shall be avoided. Such features shall be incorporated into the planning and design of the proposed use wherever possible; and
 - d. the disturbed area of any site does not exceed 25 percent, and the impervious surface does not exceed 10 percent, of the total developable area, except for major recreational uses described in policy 3.4.2.9 or non-renewable resources described in policy 3.4.2.13. With respect to golf courses, the disturbed area shall not exceed 40 percent of the site.

- 3.4.2.6. That where non-agricultural uses are contemplated within the Greenbelt Natural Heritage System, applicants shall demonstrate that:
- a. at least 30 percent of the total developable area of the site will remain or be returned to natural self-sustaining vegetation, recognizing that policies 3.4.2.13 through 3.4.2.20 establish specific standards for the non-renewable resource uses;
 - 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 percent of the total developable area and are planned to optimize the compatibility of the project with the natural surroundings.

Greenbelt Protected Countryside

- 3.4.2.7. That, within the Protected Countryside of the Greenbelt as identified on Schedule 4, **Agricultural** and existing **Rural Residential** uses are permitted as identified on Schedule 13 and subject to the applicable policies of section 9.2.2 of this Plan.

Recreational Uses in the Greenbelt

- 3.4.2.8. That residential dwelling units, other than for an employee, shall not be permitted in association with recreational uses.
- 3.4.2.9. That major recreational uses are those uses described in policy 3.4.1.27.
- 3.4.2.10. That an application to establish or expand a major recreational use in the Greenbelt Natural Heritage System will be accompanied by a vegetation enhancement plan that incorporates planning, design, landscaping, and construction measures that:
- a. maintain or, where possible, enhance the amount of natural self-sustaining vegetation on the site and the connectivity between *adjacent* key natural heritage features or key hydrologic features;
 - b. wherever possible, keep intermittent stream channels and drainage swales in a free-to-grow, low-maintenance condition;
 - c. minimize the application and use of pesticides and fertilizers; and
 - d. locate new natural self-sustaining vegetation in areas that maximize the ecological value of the area.

- 3.4.2.11. That an application to expand or establish a major recreational use shall be accompanied by a conservation plan demonstrating how water use and nutrient and biocide will be kept to a minimum, including the establishment and monitoring of targets.
- 3.4.2.12. That small-scale structures for recreational uses (such as boardwalks, footbridges, fences, docks and picnic facilities) are permitted within key natural heritage features and key hydrologic features; however, the negative impacts on these features shall be minimized.

Non-renewable Resources in the Greenbelt

- 3.4.2.13. That non-renewable resources are those non-agriculture based natural resources that have a finite supply, including mineral aggregate resources.
- 3.4.2.14. That activities related to the use of non-renewable resources are permitted in the area shown on Schedule 4 as Greenbelt Protected Countryside, subject to all other policies of this Plan, applicable legislation, regulations and by-laws. The availability of mineral aggregate resources for long-term use will be determined in accordance with the PPS, except as provided below.
- 3.4.2.15. That notwithstanding policies 3.4.2.3 through 3.4.2.6, within the Greenbelt Natural Heritage System, *mineral aggregate operations* and *wayside pits and quarries* are subject to the following:
- a. no new *mineral aggregate operation* and no *wayside pits and quarries*, or any ancillary or accessory use thereto will be permitted in the following key natural heritage features and key hydrologic features:
 - i. significant *wetlands*;
 - ii. significant *habitat of endangered and threatened species*; and
 - iii. significant *woodlands* unless the *woodland* is occupied by young plantation or early succession habitat (as defined by the Ministry of Natural Resources). In this case, the application must demonstrate that the specific provisions of policy 3.4.2.17.c, 3.4.2.17.d and 3.4.2.18.c have been addressed, and that they will be met by the operation;
 - b. an application for a new *mineral aggregate operation* or new *wayside pits and quarries* may only be permitted in other key natural heritage features and key

hydrologic features not identified in policy 3.4.2.15.a and any vegetation protection zone associated with such other feature where the application demonstrates:

- i. how the Water Resource System of the Greenbelt will be protected or enhanced; and
 - ii. that the specific provisions in policy 3.4.2.17.c, 3.4.2.17.d and 3.4.2.18.c have been addressed, and that they will be met by the operation;
- c. Any application for a new *mineral aggregate operation*, or the expansion of an existing *mineral aggregate operation* shall be required to demonstrate:
- i. how the connectivity between key natural heritage features and key hydrologic features will be maintained before, during and after the extraction of mineral aggregates;
 - ii. how the operator could immediately replace any habitat that would be lost from the site with equivalent habitat on another part of the site or on *adjacent* lands; and
 - iii. how the Water Resource System will be protected or enhanced; and
- d. An application for the expansion of an existing *mineral aggregate operation* may be permitted in the Natural Heritage System, including key natural heritage features and key hydrologic features, and in any associated vegetation protection zone only if the related decision is consistent with the Provincial Policy Statement.

3.4.2.16. That within the Protected Countryside of the Greenbelt Plan Area, existing and new *mineral aggregate operations* and *wayside pits* shall comply with the Aggregate Resources Act as directed by the Ministry of Natural Resources and the provisions of the applicable Provincial Plan.

3.4.2.17. When operators are undertaking rehabilitation of *mineral aggregate operation* sites in the Greenbelt Protected Countryside, the following provisions apply:

- a. they shall work with the Ministry of Natural Resources to consider the development and implementation of comprehensive rehabilitation plans in areas of high concentration of *mineral aggregate operations*;
- b. the disturbed area of a site will be rehabilitated to a state of equal or greater ecological value, and for the entire site, long-term *ecological integrity* will be maintained or restored, and to the extent possible, improved;
- c. if there are key natural heritage features or key hydrologic features on the site, or if such features existed on the site at the time of application:

- i. the health, diversity and size of these key natural heritage features and key hydrologic features will be maintained or restored and, to the extent possible, improved to promote a net gain of ecological health; and
 - ii. any permitted extraction of mineral aggregates that occurs in a feature will be completed, and the area will be rehabilitated, as early as possible in the life of the operation;
 - d. aquatic areas remaining after extraction are to be rehabilitated to aquatic enhancement, which shall be representative of the natural ecosystem in that particular setting or ecodistrict, and the combined terrestrial and aquatic rehabilitation shall meet the intent of policy 3.4.2.17.c; and
 - e. outside the Greenbelt Natural Heritage System, and except as provided in policy 3.4.2.17.b, 3.4.2.17.c and 3.4.2.17.d, final rehabilitation will appropriately reflect the long-term land use of the general area, taking into account applicable policies of this Plan and, to the extent permitted under this Plan, existing municipal and provincial policies.
- 3.4.2.18. Final rehabilitation in the Greenbelt Natural Heritage System will meet these additional provisions:
- a. where there is no underwater extraction, an amount of land equal to that under natural vegetated cover prior to extraction, and no less than 35% of each license, is to be rehabilitated to forest cover, which shall be representative of the natural ecosystem in that particular setting or ecodistrict;
 - b. where there is underwater extraction, no less than 35% of the non-aquatic lands of each license is to be rehabilitated to forest cover, which shall be representative of the natural ecosystem in that particular setting or ecodistrict; and
 - c. rehabilitation will be implemented so that the connectivity of the key natural heritage features and the key hydrologic features on the site and on *adjacent* lands will be maintained or restored, and to the extent possible, improved.
- 3.4.2.19. Operators are encouraged to consider and provide for public access to former aggregate sites upon final rehabilitation.
- 3.4.2.20. To require that all land use activities related to the post extraction rehabilitation of *mineral aggregate operations* are consistent with any relevant approved source protection plan and relevant Watershed or Sub-Watershed Plan.

3.5 Landform Conservation

3.5.1 Significant Landforms

The City of Vaughan has a variety of significant landform features that provide interesting character to the landscape and offer many scenic views and vistas. The most important of these are the Oak Ridges Moraine and Humber and Don River Valleys. The Oak Ridges Moraine is characterized by rolling terrain with sandy and gravelly soils that perform an important groundwater recharge function. The many rivers and streams flowing south from the Moraine, including the Humber and Don systems, depend on groundwater discharge to sustain their baseflow. Their broad valleys also provide topographic relief in the City, which is otherwise largely dominated by the broad Halton Till Plain.

Mass grading and other extensive land alteration activities are a significant threat to Vaughan's distinctive landscape features. Vaughan will implement landform conservation measures in place for development and infrastructure projects to protect significant landforms.

It is the policy of Council:

- 3.5.1.1. That landform conservation planning will be undertaken to the satisfaction of the City in consultation with the Region of York and Toronto and Region Conservation Authority. Landform conservation planning will demonstrate that the landform character of the site will be maintained.
- 3.5.1.2. That landform conservation measures will be addressed in planning, design and construction, including:
 - a. demonstrating approaches to land use planning, siting and design which will be compatible with existing landform character and the existing settlement landscape;
 - b. the specific planning, site design, grading, construction, and restoration of landform character of the site will be addressed to the satisfaction of the City and other appropriate agencies; and
 - c. site design and construction practices will minimize mass grading and the disturbance of steep slopes.

- 3.5.1.3. To preserve significant landform features and landscape character by:
- a. allowing increased flexibility in design standards for subdivision layout and building setback requirements;
 - b. ensuring appropriate implementation of the built form and urban design policies of this Plan; and
 - c. considering modifying engineering and design standards in order to achieve the objective of landform conservation.

3.6 Natural Hazards

3.6.1 Hazardous Lands and Sites

Development in certain areas of the City poses risks to human health and safety and private property because of proximity to flood vulnerable areas, or areas with unstable slopes or erosion issues. Accordingly, the Provincial Policy Statement requires that development be directed away from these areas. Permission for development or site alteration in these areas is regulated by the Toronto and Region Conservation Authority.

It is the policy of Council:

- 3.6.1.1. To protect the safety of the public by directing development to locations outside of hazardous lands and hazardous sites.
- 3.6.1.2. To take a comprehensive approach to natural hazard management for all development and site alteration proposals considering factors including but not limited to:
 - a. risk to life and property;
 - b. upstream and downstream impacts and the cumulative impacts of development on the overall hazard level;
 - c. climate change effects on the overall hazard level; and,
 - d. impacts to natural features and areas including their ecological and hydrologic functions.
- 3.6.1.3. To prohibit new lot creation in hazardous lands and hazardous sites.
- 3.6.1.4. To seek public ownership of hazardous lands and hazardous sites through the development process.
- 3.6.1.5. To require any proponent for development in proximity to hazardous lands or hazardous sites to determine the limit and extent of such hazardous lands and hazardous sites to the satisfaction of the City, through appropriate study in a manner consistent with Provincial standards, in consultation with the Toronto and Region Conservation Authority.
- 3.6.1.6. To promote and encourage mitigation and remediation works for existing development within hazardous lands and hazardous sites.

- 3.6.1.7. That, in accordance with the Provincial Policy Statement, the following uses shall not be permitted to locate in hazardous lands and hazardous sites:
- a. hospitals, nursing homes, pre-schools, school nurseries, *day cares* and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion;
 - b. an essential emergency service such as that provided by fire, police and ambulance stations, which would be impaired during an emergency as a result of flooding, the failure of floodproofing measures and/or protection works, and/or erosion; and
 - c. uses associated with the disposal, manufacture, treatment or storage of hazardous substances
- 3.6.1.8. That all development shall be set back a minimum of 10 metres from the stable top of bank and may require greater setbacks based on geotechnical review.
- 3.6.1.9. To minimize risk associated with erosion, in areas where slopes exceed 10% and/or in areas *adjacent to valley and stream corridors*, development may be permitted only if the erosion and siltation control measures are satisfactory to the City of Vaughan in consultation with the Toronto and Region Conservation Authority, and subject to the policies of this Plan.

3.6.2 Flooding Hazards

It is the policy of Council:

- 3.6.2.1. That within the City of Vaughan, a One Zone approach to flood plain management, based on the regulatory flood, will be implemented, in accordance with Provincial standards and policies except where the Province has designated and approved a Special Policy Area.
- 3.6.2.2. The limits of the flood plain will be determined in accordance with Provincial standards, in consultation with the Toronto and Region Conservation Authority. Where flood plain limits are required and not available, or where existing flood plain information is outdated, the City may require the regulatory flood plain to be mapped by a qualified

professional, at the expense of the proponent, to the satisfaction of the City in consultation with the Toronto and Region Conservation Authority.

- 3.6.2.3. That development within the flood plains is regulated in accordance with Provincial floodplain management policies and the regulations of the Toronto and Region Conservation Authority and that specifically, new development below the top-of-bank of *valley and stream corridors*, which are included in **Core Features** on Schedule 2, is prohibited.
- 3.6.2.4. That any development, redevelopment or land use change that would result in *intensification* within flood vulnerable areas will not be permitted until such time as it has been demonstrated through an appropriate comprehensive study that the flood risk has been reduced through flood remediation, flood proofing, flood warning and emergency response measures, to the satisfaction of the City in consultation with the Toronto and Region Conservation Authority.
- 3.6.2.5. To update the City's Flood Emergency Management Plan on a regular basis to reflect best practices for disaster response.

3.6.3 Special Policy Areas

The Provincial Flood Plain Planning Policy generally prohibits development or redevelopment below the Regulatory Flood as determined by the Toronto and Region Conservation Authority.

However, the Provincial Flood Plain Planning Policy also recognizes that parts of certain *urban areas* have historically developed within floodplains. In accordance with the Special Policy Area provisions of the Provincial Flood Plain Planning Policy, certain lands within the Regulatory Floodplain of the Humber River in the Woodbridge Community have been identified as "Special Policy Area" on Schedule 8. The continued viability of these areas depends on a reasoned application of the Provincial standards for flood plain management.

The Provincial Flood Plain Planning Policy recognizes the concept of special policy area status as a possible option for flood prone communities or portions thereof where

the Province, Conservation Authority and the City agree to accept a higher level of risk to floodplain management. The implementation of flood proofing measures will be a condition of development approval by the City in co-operation with the TRCA.

It is the policy of Council:

- 3.6.3.1. The “Special. Policy Area” includes all lands designated SPA on Schedule 8. The policies for the land use designations as shown on Schedule 13 located within the “Special Policy Area” and related policies continue to apply.
- 3.6.3.2. Within the limits of the Special Policy Area, new development, redevelopment, rehabilitation of and addition to existing buildings and structures, shall only be permitted subject to the following policies:
 - a. The proposed development is flood protected to the Regulatory Flood, as defined by regulations made under Section 28 of the Conservation Authorities Act, and to the satisfaction of the City in co-operation with the Toronto and Region Conservation Authority;
 - b. No buildings or structures other than for conservation or flood control projects will be permitted within the “floodway” of the Humber River as defined by the Toronto and Region Conservation Authority;
 - c. Notwithstanding 3.6.3.2.b above, in the area located west of Islington Avenue, north of Legion Court Road, designated “Commercial Mixed Use” and located within the floodway, no new buildings or structures, or additions shall be permitted, until these lands are removed from the floodway through remedial measures undertaken by the Toronto and Region Conservation Authority or otherwise removed from the floodway through remedial measures undertaken by the Toronto and Region Conservation Authority and the City.
 - d. Notwithstanding the provision of 3.6.3.2.a above, where it is technically impractical to flood protect a building or structure, or an addition thereto, to the level of the Regulatory Flood, the city in consultation with the Toronto and Region Conservation Authority, may permit a lower level of flood protection to a minimum of the 1:350 year flood.
 - e. The specific level of flood protection to be imposed, and any flood protection measures to be implemented relative to individual development applications, shall be determined by the Toronto and Region Conservation Authority in consultation

with the City. The level of protection to be required shall be the highest level determined to be technically feasible or practical.

- f. All applications for development approval on lands designated Special Policy Area shall be accompanied by engineering studies, prepared by a qualified professional, detailing such matters as flood frequency, the velocity and depth of storm flows, proposed flood damage reduction details, stormwater management techniques and other information and studies as may be required by the Toronto and Region Conservation Authority and the City.
- g. Prior to development proceeding, the Toronto and Region Conservation Authority and the City of Vaughan shall approve any proposed flood damage reduction measures including such matters as setbacks from the floodway, the use of fill, columns or design modifications to elevate openings in buildings and structures above the regulatory flood level, the use of water tight doors, waterproof seals at structural joints, berms/floodwalls, strengthened foundation walls, the installation of backwater valves and sump pumps.
- h. For all types of development, dry, passive floodproofing measures shall be implemented to the extent technically and/or practically feasible. Where dry passive floodproofing may not be achieved or practical, wet floodproofing and/or dry, active floodproofing measures may be considered by the Toronto and Region Conservation Authority and the City. The placement of fill as a method of flood damage reduction shall be minimized.
- i. Upon completion of the foundation of any building or structure, the Toronto and Region Conservation Authority and the City may require a letter from an OLS or Professional Engineer verifying the required floodproofing levels.
- j. Ingress and egress for all buildings should be “safe”, pursuant to the Provincial floodproofing standards, and/or achieve the maximum level of flood protection determined by the Toronto and Region Conservation Authority in consultation with the City to be feasible and practical.

- 3.6.3.3. Notwithstanding the provisions of 3.6.3.2, no new development, including additions, shall be permitted on any parcel of land which is designated Special Policy Area if:
 - a. the building or structure will be subject to a risk of flooding in excess of 25% over an assumed life of 100 years (approximately 1:350 flood - a probability of occurrence once in every 350 years).

- b. the development will be subjected to flows which due to their velocity and/or depth would be a hazard to life or susceptible to major structural damage as a result of a flood less than or equal to the Regulatory Storm.
 - c. the necessary flood damage reduction measures would increase the risks associated with flooding and erosion on adjacent, up stream or downstream properties

- 3.6.3.4. The following uses shall be prohibited on lands designated Special Policy Area:
 - a. public or private elementary school, *day care* centre, hospital, nursing home, senior citizens housing, a home for the physically or mentally handicapped; and
 - b. an automobile service station or any development which includes the storage, handling, production, disposal or use of a chemical, flammable, explosive, toxic, corrosive, or other dangerous material which would pose an unacceptable threat to public safety if they were to escape their normal containment and the treatment, collection or disposal of sewage; and
 - c. a building or structure directly related to the distribution and delivery of an essential or emergency public service including police, fire, ambulance and electric power transmission.

- 3.6.3.5. Modifications to the boundaries of the Special Policy Area designation as shown on Schedule 8 may be considered, based on flood or erosion control remedial measures, approved by the Toronto and Region Conservation Authority. Such modifications, if approved by the City shall be adopted by amendment to the Official Plan.

- 3.6.3.6. The Zoning By-law may be amended to show lands designated Special Policy Area on Schedule 8 and to include the necessary provisions to implement policy 3.6.3.4.

- 3.6.3.7. Any new restricted area zoning by-laws within the Special Policy Area shall contain provisions, where appropriate, relating to minimum building or structure setbacks, maximum lot coverage, minimum building or structure setbacks, minimum height of any building or structure opening, and other such matters as determined by the Toronto and Region Conservation Authority and the City of Vaughan.

- 3.6.3.8. The implementation of flood proofing and all other requirements of the Toronto and Region Conservation Authority shall be a condition of the City for development in the Special Policy Area.

3.7 Air, Water and Soil Quality

3.7.1 Improving Air Quality

Clean air is often taken for granted, but is critical to the health of all Vaughan residents and the natural environment. Air pollutants are a by-product of many day-to-day activities, including driving, home heating and industrial activities. These activities produce a variety of harmful emissions, including airborne particulates, smog-forming gases and gases that contribute to global climate change, such as carbon dioxide. Vaughan can play an important role in changing how these day-to-day activities occur in order to reduce air quality impacts, by supporting and encouraging emissions reductions from major sources of pollution. The policies of this Plan work in conjunction with those in Green Directions Vaughan to improve air quality in the City.

It is the policy of Council:

- 3.7.1.1. To work with York Region and other agencies to develop and implement clean air initiatives.
- 3.7.1.2. To reduce air emissions and impacts from air emissions by:
 - a. increasing opportunities for natural carbon sequestration by establishing annual targets to grow the urban forest through tree planting programs;
 - b. encouraging energy efficient development and energy efficient retrofitting;
 - c. supporting alternatives to single occupant vehicle use and automobile travel;
 - d. encouraging emissions reductions in industries;
 - e. directing the location of industrial and other activities with high emissions such that they reduce impacts on sensitive uses such as residential areas; and,
 - f. supporting programs and initiatives that aim to reduce air emissions.
- 3.7.1.3. To support the adoption and use of zero emissions vehicles by:
 - a. supporting the establishment of fuelling and recharging stations for zero emissions vehicles; and,
 - b. exploring opportunities to include low and zero emissions vehicles in Vaughan's vehicular fleet to showcase available technologies.
- 3.7.1.4. To support reductions in emissions from travel by:
 - a. planning for and supporting a compact pattern of urban growth that is designed to support pedestrian, cyclist and transit use;

- b. supporting transportation initiatives that encourage the use of low or zero emissions vehicles to the extent possible; and
- c. supporting measures to reduce unnecessary automobile and truck travel and enforcement of regulations to reduce vehicular idling.

3.7.2 Protecting Water Resources

While the Natural Heritage Network described in Section 3.2 protects the lands that encompass Vaughan's rivers, streams and *wetlands*, urban development activities beyond the Natural Heritage Network have impacts on the surface and ground water that eventually drains into the major tributaries of the Humber and Don River systems, ultimately ending up in Lake Ontario. Vaughan promote water quality and maintain natural stream flows, to the extent possible. Vaughan will also work with neighbouring municipalities and partners such as the Toronto Region and Conservation Authority to monitor and enhance water quality and natural stream flows throughout the Humber and Don watersheds.

It is the policy of Council:

- 3.7.2.1. That the quality and quantity of groundwater and surface water and the function of sensitive groundwater recharge/discharge areas, aquifers and headwaters will be protected and enhanced, especially for those stream reaches that are heavily reliant on local sources of groundwater discharge.
- 3.7.2.2. To work with York Region in the preparation of source water protection plans to protect the quality and quantity of Regional water supply from incompatible uses and sources of contamination.

Erosion and Sediment Control

- 3.7.2.3. That all proposed development shall have sediment control measures in place to the satisfaction of the City in consultation with the Toronto and Region Conservation Authority before topsoil removal and grading of lands.
- 3.7.2.4. To prohibit top soil removal and grading until approval of a draft Plan of Subdivision or a Site Plan for large sites that are not subject to Plan of Subdivision, and to require that

construction practices, erosion and sediment controls are to the satisfaction of the City in consultation with the Toronto and Region Conservation Authority.

- 3.7.2.5. That the Master Environment and Servicing Plan will consider the use of sediment retention basins to control the large quantities of suspended matter washed off sites during construction.
- 3.7.2.6. That construction practices and sediment control are to the satisfaction of the City of Vaughan in consultation with the Toronto and Region Conservation Authority.
- 3.7.2.7. To require that proponents design and undertake a monitoring program for construction sites to maintain effective sediment control measures throughout the entire construction period and subsequent landscaping.

Protecting Groundwater

- 3.7.2.8. To direct compatible land uses with low imperviousness, including natural areas, parks and open spaces, to potentially significant recharge areas through the development processes. These areas will be determined in consultation with the Toronto and Region Conservation Authority and the City during the development process.
- 3.7.2.9. That low-impact development techniques, as described in the Toronto and Region Conservation Authority's Low Impact Development Stormwater Management Planning and Design Guide (2010), will be established, where appropriate, for all new Block Plans, or Site Plans for large development sites, in order to protect groundwater resources and aquatic habitat, and that overall groundwater flow patterns. The Master Environment and Servicing Plans shall reflect these best practices.
- 3.7.2.10. That, where development occurs in significant recharge areas, the Master Environment and Servicing Plan will include a hydrogeological study to define the local pre-development water balance, establish site-specific water balance criteria that maintain ecological functions and demonstrate how the appropriate proportion of infiltration and evaporation/reuse measures for stormwater management will achieve the water balance objectives established through the Master Environment and Servicing Plan study.

- 3.7.2.11. That significant groundwater infiltration functions be maintained at the pre-development levels or enhanced where practical, particularly in those areas identified as hydrogeologically sensitive areas. In such areas, source and conveyance controls as may be appropriate, may be required by the City to maintain or enhance pre-development groundwater infiltration levels.
- 3.7.2.12. That transportation and infrastructure projects should minimize interference with recharge areas and should be located in the least sensitive locations for infrastructure.
- 3.7.2.13. That development located in areas of groundwater discharge, including many valley corridors, shall maintain significant discharge functions. Buildings and structures that require substantial below-ground excavation will not be permitted in areas where there is a high potential for groundwater interference and dewatering. The City, in consultation with the Toronto and Region Conservation Authority, may approve a mitigation plan where it can be demonstrated that interference and dewatering can be mitigated.

Stormwater Management

- 3.7.2.14. To recognize the value of stormwater as a resource and encourage the reuse of stormwater and snowmelt for on-site, non-potable uses, such as greywater systems and irrigation.
- 3.7.2.15. To recognize stormwater management facilities as a functioning part of Vaughan's natural water system and ecosystem. New development will employ stormwater management practices that are sensitive to the natural environment and natural heritage features.
- 3.7.2.16. That new development must satisfy the City and demonstrate consistency with the Toronto and Region Conservation Authority (TRCA) Stormwater Management Criteria for water quantity (flood flow) control, water quality control, erosion control and water balance, groundwater recharge and water balance, for the protection of hydrologically sensitive features. TRCA Stormwater Management Criteria are based on current research, watershed planning and hydrology studies, therefore the criteria is subject to change based on the approval and adoption of updated studies.

- 3.7.2.17. To satisfy the City and demonstrate consistency with the Toronto and Region Conservation Authority (TRCA) Stormwater Management Criteria, innovative stormwater management approaches must be implemented and designed in accordance with the Ministry of Environment Stormwater Management Practices Planning and Design Manual and with reference to TRCA's Low Impact Development Stormwater Management Planning and Design Guide (2010), as may be updated from time to time. For all development, a treatment train approach to stormwater must be considered consisting of source controls (for example, green roofs, permeable paving, improved urban tree canopy), conveyance controls (for example, bioswales and permeable pipes), and end of pipe treatment (for example, *wetlands* and ponds).
- 3.7.2.18. That new stormwater facilities shall be:
- a. located outside of *valley and stream corridors*, unless approved by the City and the Toronto and Region Conservation Authority; and
 - b. integrated into the design of the proposed development to positively contribute to the overall character of the development.
- 3.7.2.19. To require new stormwater management facilities to be designed as local amenities while also providing a utilitarian function, in part by:
- a. locating stormwater facilities adjacent to open spaces, parks and/or natural heritage areas contributing to a connected system and to encourage public access to these facilities, where appropriate;
 - b. integrating stormwater facilities into surrounding developments as publically accessible open space; and
 - c. designing stormwater facilities as naturalized or formal landscapes that are complementary to adjacent features, including adjacent landscapes or natural heritage features.
- 3.7.2.20. To require that proposed stormwater management quality, quantity, erosion control and water balance for ground water and natural features be developed as part of a Master Environment and Servicing Plan in order to permit proper assessment of development impacts upon environmental features.

- 3.7.2.21. That the Master Environment and Servicing Plan will apply a range of stormwater management practices, including Low Impact Development, to address water quality control, baseflow management, temperature moderation and aquatic habitat protection. The selection of stormwater management techniques will be governed by flood and erosion conditions, the type of fisheries present, soil conditions and local groundwater conditions. Preliminary and final design will be to the satisfaction of the City in consultation with the Toronto and Region Conservation Authority. Potential stormwater management practices to be considered in development are identified in the TRCA's Low Impact Development Stormwater Management Planning and Design Guide (2010) and will consider innovative naturalized approaches to stormwater management and maximize opportunities to enhance open space and natural heritage resources.
- 3.7.2.22. To require that road, transit and other infrastructure projects that entail expansion of an existing service provide full stormwater management for new and existing infrastructure, where practically feasible.
- 3.7.2.23. To require that stormwater be treated as close to the source as possible. Roof leaders will not be directly connected to the storm sewer system, in conformity with City of Vaughan policy. In highly sensitive sub-watershed areas, alternative, innovative stormwater management approaches will be considered if such approaches will improve stormwater quality and quantity.
- 3.7.2.24. To require the use of source controls in parking lots and other large paved surfaces such as oil/grit separators where deemed necessary by the City.
- 3.7.2.25. To encourage, where existing development has outdated or absent stormwater controls, stormwater retrofitting to the greatest extent possible to incorporate a treatment train hierarchy with source, conveyance and end-of-pipe measures that provide water quality treatment, erosion control, flood control and address water balance objectives.
- 3.7.2.26. To implement end-of-pipe stormwater retrofits as outlined in the City's stormwater management retrofit study (as updated).
- 3.7.2.27. To require that all *significant development* provide post-development stormwater quantity control to pre-development levels for the 2 through 100 year storm events

and stormwater quantity control in accordance with current guidelines in consultation with the Toronto and Region Conservation Authority. Should a subsequent Toronto and Region Conservation Authority-approved watershed hydrology study indicate that an alternative runoff control requirement is appropriate, alternative criteria may be established by the City in consultation with the Toronto and Region Conservation Authority.

- 3.7.2.28. That all development will undertake stormwater management on a volume control basis that maintains recharge rates, flow paths and water quality to the extent possible, in addition to peak flow control, and to maintain pre-development water balance. Particular emphasis will be placed on areas confirmed as significant recharge areas.
- 3.7.2.29. To support the Toronto and Region Conservation Authority in establishing programs for ongoing monitoring of ambient conditions as part of the Regional Watershed Monitoring Program, including evaporation, stream flow, channel form, groundwater levels, water quality and terrestrial communities and species to provide baseline data to facilitate an adaptive management approach.
- 3.7.2.30. To work with the Toronto and Region Conservation Authority to monitor the effects of new development and redevelopment in *urban areas* on receiving watercourses and the hydrologic balance in order to apply adaptive management measures as necessary to maintain water balance and evaluate flooding on downstream flood vulnerable areas.

3.7.3 Soil Quality and Site Remediation

Clean air and water are vital to the health of the environment and human health. Soil quality can also have a direct impact on human and environmental health. *Brownfield* sites are abandoned or underutilized properties where development or activities have led to environmental contamination of the soil. In order to minimize risk of health impacts, sites with contaminated soils are severely restricted in terms of the uses that can occur on the lands.

As Vaughan matures, redevelopment and *intensification* will result in the identification of an increasing number of *brownfield* sites. Many of these sites will be found in ***Intensification Areas***, where a significant portion of new growth must occur. *Brownfield*

sites are an important part of the urban fabric and an environmental legacy for which solutions must be identified and implemented. Vaughan will support their reuse and redevelopment, and will support development on or adjacent to *brownfields* to incorporate these sites into the urban fabric.

It is the policy of Council:

- 3.7.3.1. To support and encourage the cleanup, renewal and redevelopment of *brownfield* and other contaminated sites for a variety of uses.
- 3.7.3.2. That *brownfields* and other contaminated sites are a legacy of past or current use that must be addressed when new development or a change in land use is proposed. New development on or adjacent to *brownfield* sites must plan for the redevelopment and reintegration of the *brownfield* site. Secondary plans and other planning exercises will also be required to plan for the redevelopment of *brownfield* sites.
- 3.7.3.3. To encourage the use of municipal funding mechanisms and funding sources from other tiers of government to support the cleanup, renewal and redevelopment of *brownfield* and other contaminated sites. Potential municipal funding mechanisms are identified in Chapter 10 of this Plan.
- 3.7.3.4. That, where development is proposed on a site which, in the opinion of the City or other approval authority, may be contaminated due to previous use, environmental assessment reports are required to be submitted in accordance with provincial regulations and guidelines.
- 3.7.3.5. To require that, prior to considering to permit development on contaminated sites, the following be completed to the satisfaction of the City or other approval authority:
 - a. determination of the impacted area of the site, in consultation with the City or appropriate approval authority, on the basis of technical studies;
 - b. submission of studies by the proponent identifying the level of contamination of the site, proposed remediation measures and post clean-up conditions as deemed necessary for the proposed use; and
 - c. cleaning or remediation of the site in accordance with provincial criteria, the policies of this Plan, and the directions identified in studies submitted to support redevelopment.

3.8 Climate Change

3.8.1 Responding to Climate Change

In addition to local environmental impacts, the effects of global climate change will also be felt in Vaughan. Human-induced climate change, through carbon dioxide and greenhouse gas emissions, is expected to cause more extreme hot days, changes to wildlife habitat and natural heritage, changes to farming yields, more extreme weather events, decreased water levels, and increased infrastructure issues such as electricity supply and transmission. Vaughan will play an important local role in the global effort to reduce carbon dioxide and other greenhouse gas emissions, and will respond to the reality of climate change through mitigation and adaptation. This will be achieved through a comprehensive approach to environmental protection. Vaughan will be a leader in ensuring clean air, pure water, healthy soil, preserving natural heritage features and supporting climate stability.

This Plan outlines a pattern of compact growth and development that supports energy efficient transportation options and protects natural heritage features, which will contribute significantly to reducing greenhouse gas emissions which are the leading cause of climate change. In addition, Vaughan will encourage energy efficient development and retrofitting of existing development to significantly reduce air emissions while ensuring saving on heating and cooling costs. Consistent with the policies of Green Directions Vaughan the City will also prepare a climate change action plan, which will target reductions in greenhouse gas emissions from a variety of sources and will identify adaptation measures to respond to impacts from climate change.

It is the policy of Council:

- 3.8.1.1. To implement the climate change actions in Green Directions Vaughan in coordination with York Region and other agencies to:
 - a. undertake a risk assessment with respect to Vaughan's need for adaptation to climate change;
 - b. develop targets for greenhouse gas reductions;
 - c. identify adaptation measures to respond to impacts from climate change; and
 - d. establish a long-term target of carbon neutrality for Vaughan's facilities, infrastructure and operations.

- 3.8.1.2. To establish Vaughan as a leader in greenhouse gas reductions by:
- a. applying high standards of energy performance in new construction and retrofits;
 - b. reducing demand for single-occupant vehicle trips and supporting alternative transportation means;
 - c. supporting agricultural practices that reduce greenhouse gas emissions from farm vehicles, livestock and waste;
 - d. undertaking carbon sequestration and storage audits for the existing forest and urban forest and establish targets for forest renewal and expansion;
 - e. supporting the use of low-impact alternative energy sources;
 - f. pursuing and supporting pilot projects to reduce industrial greenhouse gas emissions; and
 - g. establishing and achieving greenhouse gas reduction targets or meeting international, national, provincial and/or regional targets, where appropriate.



