

7. The Greenlands Network

The Greenlands Network is defined as *environmental features* and the *linkages* among them. The Greenlands Network, and the *ecological functions* it provides, contributes to maintaining the environmental health of Waterloo Region and the Grand River watershed. This Plan contains policies to maintain, enhance or, wherever feasible, restore the Greenlands Network. Such action is necessary to counteract the negative effects of fragmentation which can result in a loss of ecological integrity and the degradation of natural *biodiversity*. Such action is also necessary to maintain biological and geological diversity, viable populations of native species and ecosystems, and make possible adaptation in response to actual or expected effects of climate change.

Responsibility for the environment is shared among Federal and Provincial governments, the Region, Area Municipalities, the Grand River Conservation Authority and private landowners. All have an important role in enhancing the natural environment within the region, and all have the responsibility to be good stewards. As a result, establishing a Greenlands Network requires co-operation among agencies, private landholders and the wider community.

This Chapter establishes a policy framework for a co-operative approach to the identification of the *environmental features* that comprise the Greenlands Network. It also outlines how provincially and regionally significant features (termed Core Environmental Features) will be maintained, enhanced or, wherever feasible, restored. The policies in this Chapter also provide direction on how other *environmental features* (termed Supporting Environmental Features) will be maintained, enhanced or, wherever feasible, restored and encourages the establishment of *linkages* among elements of the Greenlands Network

The Greenlands Network is a layered approach to environmental protection comprised of Landscape Level Systems, Core Environmental Features and Supporting Environmental Features. Each layer contains policies that provide appropriate protection to areas of environmental significance. Landscape Level Systems are recognized within the Greenlands Network as macro-scale *environmental features* or as concentrations of high quality Core and Supporting Environmental Features. Policies relating to Landscape Level Systems focus on protecting and enhancing the ecological integrity and functions of these landscapes.

Core Environmental Features form key habitat for native flora and fauna and represent the most significant elements of the regional landscape in terms of maintaining *biodiversity* and important *ecological functions*. Supporting Environmental Features play an important role in maintaining elements of the Greenlands Network not meeting the criteria for recognition as being regionally *significant*. *Linkages* between Core and Supporting Environmental Features permit the movement of native flora and fauna and help to maintain, enhance or restore the *ecological function* of the Greenlands Network.

Overall Goal – Work with the *Province*, Area Municipalities, the Grand River Conservation Authority and private landowners to maintain, enhance and restore a comprehensive Greenlands Network within the region.

Objectives:

- 7.1 Maintain, enhance or, wherever feasible, restore landscape level *linkages* among *environmental features*.
- 7.2 Use *watershed studies*, community plans and *development applications* as opportunities not merely to maintain, but also to enhance and restore the Greenlands Network.
- 7.3 Regulate *development* within *hazardous lands* and *hazardous sites* to prevent or minimize hazards to life and property.
- 7.4 Develop partnerships, programs and policies to maintain, enhance and restore the *ecological functions* of the Greenlands Network, including the Grand River and its tributaries.
- 7.5 Increase forest cover in appropriate locations to achieve an overall target of 30 per cent or more of the region's total land area.
- 7.6 Promote informed stewardship of the Greenlands Network.

7.A The Greenlands Network

- 7.A.1 The Greenlands Network comprises Landscape Level Systems, Core Environmental Features, Supporting Environmental Features and the *linkages* among these elements, and lands designated within the Provincial Greenbelt Plan as Natural Heritage System.
- 7.A.2 Area Municipalities will designate and zone Landscape Level Systems and Core Environmental Features in their official plans and zoning by-laws respectively to regulate the use of land within these areas in conformity with the policies in Sections 7.B and 7.C.
- 7.A.3 Area Municipalities are encouraged to identify and designate Supporting Environmental Features and *linkages*, and establish associated policies for these areas in their official plans in accordance with the policies in Section 7.E.
- 7.A.4 The Region will prepare and update a Regional Greenlands Network Implementation Guideline to guide the implementation of the policies in this Chapter.

- 7.A.5 The Region will develop and maintain a Technical Appendix for Landscape Level Systems and Core Environmental Features that provide additional technical information and more precise mapping relating to each element.
- 7.A.6 Interpretation of the boundaries of Landscape Level Systems and Core Environmental Features, as required to support the review of *development applications*, will be achieved through the completion of *Environmental Impact Statements* or other appropriate studies in accordance with the policies in Section 7.G.
- 7.A.7 Boundary interpretations not consistent with the Technical Appendix for Landscape Level Systems and Core Environmental Features must be approved by Regional Council, in consultation with the *Province*, Area Municipalities, the Grand River Conservation Authority and other stakeholders.
- 7.A.8 Boundary interpretations not generally in conformity with the Greenlands Network as shown on Map 4 will require an amendment to this Plan.
- 7.A.9 On lands where elements of the Greenlands Network have not been adequately identified through a *watershed study* or similar process, *development* or *site alteration* will be prohibited until such time as a Greenlands Network Inventory has been prepared by an owner/applicant in consultation with the *Province*, Region, affected Area Municipalities and the Grand River Conservation Authority, to identify any such elements located on the subject lands and, wherever appropriate, *contiguous* lands. Where a Greenlands Network Inventory identifies such elements, the submission of an *Environmental Impact Statement* or other appropriate study may be required in accordance with the policies in Section 7.G.
- 7.A.10 Where lands have been identified by the *Province*, or through a *watershed study* or other appropriate field studies as fulfilling the criteria to be designated as a Core Environmental Feature, an amendment to this Plan will be considered to designate such lands as part of the Greenlands Network. Prior to the approval of the amendment, any *development* or *site alteration* proposed within or *contiguous* to the feature will be considered premature by the Region and affected Area Municipality, or will proceed on the basis that the lands identified as meeting the criteria as a Core Environmental Feature are protected as though they were a Core Environmental Feature in accordance with the policies in this Plan.
- 7.A.11 Where lands are designated as two or more elements of the Greenlands Network as shown on Map 4, the more restrictive policies pertaining to those elements will apply in the event of any conflict.

- 7.A.12 Illegal acts resulting, or having resulted, in a reduction in the form or function of an *environmental feature* within the Greenlands Network, including but not limited to such acts as tree removal, wetland filling or draining, or the diverting of watercourses, will not be recognized as existing conditions within the *development* review process. Restoration of the damaged area may be required prior to, or as a condition of, approval of any *development applications*.
- 7.A.13 Elements of the Greenlands Network that are privately owned are not for use by the public, except at the discretion of the owner.

Ecological and Environmental Advisory Committee

- 7.A.14 Regional Council will maintain an Ecological and Environmental Advisory Committee to advise the Region in the review of *development applications*, policy proposals and other matters, in accordance with terms of reference adopted and periodically reviewed by Regional Council.

7.B Landscape Level Systems

- 7.B.1 Landscape Level Systems are recognized within the Greenlands Network as large-scale *environmental features* or as significant concentrations of *environmental features*. Landscape Level Systems are designated as shown on Map 4 and comprise:
- (a) Environmentally Sensitive Landscapes;
 - (b) Significant Valleys;
 - (c) Regional Recharge Areas; and
 - (d) Provincial Greenbelt Natural Heritage System.
- 7.B.2 The designation of lands as Landscape Level Systems will not affect *agricultural uses* and associated *normal farm practices* as defined in applicable Provincial legislation and regulations in conformity with approved Area Municipal official plans and zoning by-laws, and statutes, policies and regulations of other government agencies, including agricultural drainage through municipal or agreement drains.
- 7.B.3 The Region will maintain, enhance or, wherever feasible, restore the scenic qualities of Regional Roads within Landscape Level Systems and Area Municipalities are encouraged to do the same for Area Municipal roads.

Environmentally Sensitive Landscapes

7.B.4 Environmentally Sensitive Landscapes are designated as shown on Map 4.

7.B.5 To qualify for designation as an Environmentally Sensitive Landscape, an area will:

(a) fulfill all of the following:

- i) be a geographically and ecologically definable landscape;
- ii) contain natural features that are *contiguous*, linked or sufficiently close to allow for movement of flora or fauna through the area;
- iii) not be bisected by major highways; and
- iv) be located primarily outside areas designated for fully serviced urban development and/or established Rural Settlement Areas; and

(b) contain any two of the following designated natural features:

- i) Significant Habitat of Endangered or Threatened Species;
- ii) Environmentally Sensitive Policy Area;
- iii) Provincially Significant Wetland;
- iv) Regionally significant Earth Science *Area of Natural and Scientific Interest*;
- v) Significant Valleys; or
- vi) Significant Woodlands; and

(c) contain any two of the following associated natural features:

- i) rivers, major stream valleys, *floodplains* and associated *hazard lands*;
- ii) *woodlands* greater than four hectares in extent;
- iii) forest interior habitat;
- iv) other *wetlands*;
- v) significant landforms such as moraines, kettle lakes, kames, eskers and drumlins;

- vi) *significant* wildlife habitat such as: winter habitat for deer or wild turkeys; colonial bird nesting areas; raptor roosting, feeding and nesting areas; hibernaculae or herpetofauna breeding areas; and significant migratory stop over areas; or
 - vii) specialized habitats such as but not limited to: savannas; tallgrass prairies; rare *woodland* types; cliffs; alvars; sand barrens; marl seeps; bogs; and fens; and
- (d) sustain any two of the following *ecological functions*:
- i) provide significant groundwater storage, recharge or discharge;
 - ii) sustain a fishery resource;
 - iii) provide diverse natural habitats;
 - iv) provide habitat for provincially or regionally *significant* species; or
 - v) serve as a *linkage*.

Environmentally Sensitive Landscape Policies

- 7.B.6 Expansions to the Urban Area, Township Urban Areas, lands designated to permit urban and recreational development within the Blair Village Special District as designated in the City of Cambridge Official Plan, Rural Settlement Areas and Rural Employment Areas as identified in Area Municipal official plans are not permitted within or into Environmentally Sensitive Landscapes.
- 7.B.7 *Development* may be considered inside Rural Settlement Areas and Rural Employment Areas located within Environmentally Sensitive Landscapes, and lands designated to permit urban and recreational development within the Blair Village Special District as designated in the Cambridge Official Plan, subject to the other policies of this Plan, Area Municipal official plans and the policies and regulations of other government agencies.
- 7.B.8 The creation of new lots for *non-farm-related residential units* within Environmentally Sensitive Landscapes is only permitted within Rural Settlement Areas and on lands designated to permit urban development within the Blair Village Special District as designated in the Cambridge Official Plan.

7.B.9 Within the Environmentally Sensitive Landscapes designation, *development applications* submitted in accordance with the policies in Chapter 6 to:

- (a) establish or expand *recreational and tourism uses* or *rural institutional uses*;
- (b) create a new lot, or permit a lot addition, for a *recreational and tourism use* or *rural institutional use*;
- (c) permit the minor intensification of *existing* industrial, commercial, recreational and/or institutional uses, including minor changes in the uses thereof;
- (d) permit new *agriculture-related uses* or *secondary uses*;

may be considered for approval subject to the following additional criteria:

- i) there will be no *adverse environmental impacts* on *environmental features* and *ecological functions*, enhancement/restoration areas, existing corridors and *linkages*, watercourses, or the quality and quantity of groundwater within or *contiguous* to the Environmentally Sensitive Landscape resulting directly from the proposed *development* or through increases in traffic or development of required servicing *infrastructure*;
- ii) disturbance of existing natural vegetation will be minimized;
- iii) the *development* will be buffered from existing natural features by an appropriate width of natural vegetation, and will otherwise facilitate the enhancement or restoration of new areas and/or corridors and *linkages*; and
- iv) all natural landscape features, required buffer strips, and enhancement or restoration areas on the subject property are given appropriate zoning in the zoning by-law of the respective Area Municipality and/or protected through a Conservation Easement acceptable to the Region.

7.B.10 The following land uses will not be permitted within Environmentally Sensitive Landscapes outside Rural Settlement Areas and outside lands designated to permit urban and recreational development within the Blair Village Special District as designated within the City of Cambridge Official Plan:

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| (a) abattoir and rendering plants; | (n) hospitals; |
| (b) amusement, theme or water parks; | (o) illuminated play fields; |
| (c) bus yards; | (p) metal painting and fabricating; |
| (d) cemeteries, crematoria, or mausoleums; | (q) motorized vehicle tracks or competition sites; |
| (e) commercial manure composting of off-site material; | (r) paintball facilities; |
| (f) commercial motor vehicle repair, sales, service and storage; | (s) portable toilet suppliers; |
| (g) commercial thermal waste treatment (incineration); | (t) private or public schools; |
| (h) commercial water extraction; | (u) private social clubs; |
| (i) contractor's yards; | (v) resorts or conference centres; |
| (j) fairgrounds or stadiums; | (w) retailing/wholesaling of chemicals and/or fuels; |
| (k) farm implement dealerships; | (x) shooting ranges; |
| (l) golf courses, driving ranges or mini-putt courses; | (y) sod farming; |
| (m) horse race tracks or casinos; | (z) trailer parks; and |
| | (zi) wood treatment (including mulch processing). |

- 7.B.11 The Region, in collaboration with willing landowners, Area Municipal and other agency staff, and other relevant organizations, will prepare a Regional Environmentally Sensitive Landscape Implementation Guideline for each Environmentally Sensitive Landscape. The Guideline will identify opportunities to enhance *environmental features*, landscape connectivity and the scenic value of roads within the Environmentally Sensitive Landscape, as well as landscape stewardship programs such as technical assistance or financial incentives that will assist in maintaining and/or enhancing the Environmentally Sensitive Landscape. The Guideline will not be used to introduce new policy which would restrict existing and future use of lands within Environmentally Sensitive Landscapes, and will be adopted by Regional Council following the public participation and notification requirements for Regional Implementation Guidelines outlined in the policies in Chapter 10.
- 7.B.12 Where *development* or *site alteration* is proposed on lands within or *contiguous* to an Environmentally Sensitive Landscape, the owner/applicant will be required to submit an *Environmental Impact Statement* which addresses landscape impacts in addition to any other requirements in accordance with the policies in Section 7.G.
- 7.B.13 Where review of an *Environmental Impact Statement* required in accordance with Policy 7.B.12 has demonstrated to the Region that the proposed *development* or *site alteration* would have no *adverse environmental impact* upon the *environmental features* and *ecological functions* of the Environmentally Sensitive Landscape, the Region may, subject to appropriate conditions, approve or recommend approval of the application.
- 7.B.14 Where review of an *Environmental Impact Statement* required in accordance with Policy 7.B.12 has demonstrated to the Region that a proposed *development* or *site alteration* may have an *adverse environmental impact* upon *environmental features*, or the *ecological functions* of the Environmentally Sensitive Landscape, the Region will refuse, or recommend refusal of, the application.
- 7.B.15 Where construction of a road on a new right-of-way, widening or upgrading of an existing roadway, construction or upgrading of a trunk sewer, trunk watermain, gas pipeline or electrical transmission line, wastewater treatment facility, waste management facility or groundwater taking project is proposed within or *contiguous* to an Environmentally Sensitive Landscape, the submission of an *Environmental Impact Statement*, or other appropriate study, in accordance with the policies in Section 7.G, which evaluates landscape level impacts, will be required.

- 7.B.16 Where review of a study completed in accordance with Policy 7.B.15 demonstrates to the satisfaction of the Region that the construction of the *infrastructure* project will:
- (a) result in localized and/or reversible impacts to the *environmental features* and *ecological functions* of the Environmentally Sensitive Landscape, and that other alternatives are reasonably less feasible from a technical, environmental and/or financial perspective, the Region and Area Municipalities will, without amendment to this Plan:
 - i) require that appropriate mitigation measures be implemented; and
 - ii) approve the undertaking; or
 - iii) support the undertaking in comments, submissions or recommendations; or
 - (b) result in widespread *adverse environmental impacts* to the *environmental features* and *ecological functions* of the Environmentally Sensitive Landscape or result in long-term damage to its significant features and functions, and that other technically and financially feasible alternatives exist that would have less negative impact on the Environmentally Sensitive Landscape, the Region and Area Municipalities will:
 - i) not approve the undertaking; or
 - ii) not support the undertaking in comments, submissions or recommendations; or
 - (c) result in widespread *adverse environmental impacts* to the *environmental features* and *ecological functions* of the Environmentally Sensitive Landscape, or result in long-term damage to its significant features and functions, but that there is a clearly demonstrated need for the undertaking, and that all other alternatives to the recommended undertaking are substantially less reasonably feasible from a technical, environmental, and/or financial perspective, the Region and Area Municipalities will, without amendment to this Plan:
 - i) require that appropriate mitigation measures be implemented to reduce the impact of the undertaking to greatest extent feasible; and
 - ii) approve the undertaking; or
 - iii) support the undertaking in comments, submissions or recommendations.

- 7.B.17 Nothing in this Plan shall prevent the owner of a legal lot of record in an Environmentally Sensitive Landscape from obtaining a building permit to construct or enlarge a house, accessory building or farm structure, provided it is in conformity with all other Regional, Area Municipal and Grand River Conservation Authority policies and regulations.
- 7.B.18 The designation of an Environmentally Sensitive Landscape will not affect existing aggregate extraction and processing operations licensed under the Aggregate Resources Act.
- 7.B.19 Field studies will be conducted from time to time to determine whether Environmentally Sensitive Landscapes still fulfill criteria necessary for designation. The Regional Environmentally Sensitive Landscapes Implementation Guideline will be revised by resolution of Regional Council to reflect the results of these field investigations.

Significant Valleys

- 7.B.20 Significant Valleys are designated as shown on Map 4. This designation identifies valleys of the Grand River, Conestogo River, Nith River and Speed River, which are together nationally recognized as a Canadian Heritage River. Significant Valleys comprise the entire river channel within the region and run up to the point where the slope of the valley begins to grade into the surrounding upland.
- 7.B.21 To complement the Canadian Heritage River status of the Grand River, the Region and Area Municipalities, in collaboration with the Grand River Conservation Authority, will seek to maintain the character of Significant Valleys by identifying, conserving, interpreting and enhancing *cultural heritage resources* of recreational and scenic value within Significant Valleys.

Regional Recharge Areas (Environmental Protection)

- 7.B.22 Regional Recharge Areas are designated as shown on Maps 4 and 6g. This designation, which includes portions of the Waterloo Moraine, identifies a large *environmental feature* where considerable deposits of sand and gravel allow for the infiltration of large quantities of rainfall and snowmelt deep into the ground. This important *hydrologic function* sustains some of the richest sources of groundwater in the Grand River watershed.

Regional Recharge Areas serve two important functions. From an environmental perspective, groundwater discharge from the shallow aquifers located within Regional Recharge Areas sustains a wide range of aquatic habitats and ecosystems within the Greenlands Network. This groundwater discharge also provides a high percentage of the baseflow to the Grand River, its tributary rivers and cold-water streams and therefore is critical to

maintaining the health of the Grand River to the benefit of the region and downstream communities.

The second function of Regional Recharge Areas is to replenish deep underground aquifers that serve as a source for a significant share of the municipal drinking-water supply. Specific policies related to this source water supply function are outlined in the policies in Chapter 8.

- 7.B.23 Expansions of the Urban Area, Township Urban Areas, Rural Settlement Areas or Rural Employment Areas will not be permitted onto lands designated as Regional Recharge Areas, except as provided for in Policy 7.B.24.
- 7.B.24 Minor expansions of Rural Settlement Areas located within Regional Recharge Areas may be permitted to facilitate the enlargement of an *existing* employment, recreational or institutional use subject to the provisions of Policies 6.G.8 and 7.B.25. Such expansions will not be permitted where the lands subject to the expansion proposal are also designated as Environmentally Sensitive Landscape.
- 7.B.25 *Development applications* within Regional Recharge Areas on lands already designated for urban development in this Plan, will comply with the following:
- (a) Category 'A' uses, or an employment land use restricted by Policy 8.A.5, will not be permitted;
 - (b) the *development* maintains, improves or restores the hydrogeologic and *hydrologic functions* of Regional Recharge Areas as established through *watershed studies*, community plans or through further study in accordance with Policy 8.A.4;
 - (c) the *development* incorporates best management practices, where appropriate, developed in accordance with the provisions of the Regional Implementation Guideline for Source Water Protection Studies; and
 - (d) the *development* is in conformity with all other applicable policies of this Plan.

Provincial Greenbelt

- 7.B.26 The Provincial Greenbelt Plan Natural Heritage System is shown on Map 4. This System identifies significant and/or sensitive natural heritage and water resource features that are part of, and connect to, broader natural heritage systems in southern Ontario. Any *development* within or *contiguous* to this Provincial designation will comply with the policies in this Plan and the Greenbelt Plan. Where there is discrepancy between this Plan and the Greenbelt Plan, the more restrictive policies will apply.

7.C Core Environmental Features

7.C.1 Core Environmental Features are those *environmental features* identified as being provincially significant or regionally *significant*. These features are the most significant elements of the regional landscape in terms of maintaining, protecting and enhancing *biodiversity* and important *ecological functions*. Core Environmental Features are designated as shown on Map 4. The Core Environmental Features designation applies to lands that meet the criteria as:

- (a) Significant Habitat of Endangered or Threatened Species;
- (b) Provincially Significant Wetlands;
- (c) Environmentally Sensitive Policy Areas;
- (d) Regionally Significant Woodlands; or
- (e) Environmentally Significant Valley Features.

7.C.2 Core Environmental Features are designated as shown on Map 4 or as identified in accordance with Policies 7.C.3 to 7.C.7.

Significant Habitat of Endangered or Threatened Species

7.C.3 Significant Habitat of Endangered or Threatened Species is identified by the *Province* or the Federal government. This habitat is necessary for the maintenance, survival and/or recovery of naturally occurring or reintroduced populations of *endangered or threatened species*, and where those areas of occurrence are occupied or habitually occupied by the species during all or any part(s) of its life cycle. Mapping of the habitat of these species may not be shown on Map 4 and will not be shown within the Core Environmental Features Technical Appendix in order to protect such species and their habitat. The Region will collaborate with the *Province* during *pre-submission consultation meetings* to identify Significant Habitat of Endangered or Threatened Species on lands affected by or *contiguous* to any proposed *development* or *site alteration*.

Provincially Significant Wetlands

7.C.4 Provincially Significant Wetlands, as identified by the *Province*, will be considered Core Environmental Features for the purposes of this Plan. The Region will collaborate with the *Province* during the *pre-submission consultation meetings* to identify Provincially Significant Wetlands on lands affected by or *contiguous* to any proposed *development* or *site alteration*.

Environmentally Sensitive Policy Areas

7.C.5 Environmentally Sensitive Policy Areas are regionally *significant* natural areas that comprise:

- (a) Provincially significant Life Science *Areas of Natural and Scientific Interest*, regionally *significant* Life Science *Areas of Natural and Scientific Interest*, or provincially significant Earth Science *Areas of Natural and Scientific Interest*; or
- (b) At least two of the following criteria:
 - i) comprise ecological communities deemed unusual, of outstanding quality or particularly representative regionally, provincially or nationally;
 - ii) contain critical habitats which are uncommon or remnants of once extensive habitats such as old growth forest, forest interior habitat, Carolinian forest, prairie-savanna, alvars, cliffs, bogs, fens, marl meadows, and cold water streams;
 - iii) provide a large area of natural habitat of at least 20 hectares which affords habitat to species intolerant of human intrusion; or
 - iv) provide habitat for organisms native to the region recognized as regionally, provincially or nationally *significant*; or
- (c) fulfill one of the criteria in Policy 7.C.5(b) and any two of the following:
 - i) contain an unusual diversity of native life forms due to varied topography, microclimates, soils and/or drainage regimes;
 - ii) perform a vital *ecological function* such as maintaining the hydrological balance over a widespread area by acting as a natural water storage, discharge or recharge area;
 - iii) provide a linking system of relatively undisturbed forest or other natural habitat for the movement of wildlife over a considerable distance;
 - iv) serve as major migratory stop-over or significant over-wintering habitat; or
 - v) contain landforms deemed unusual or particularly representative at the regional scale.

Regionally Significant Woodlands

- 7.C.6 Regionally Significant Woodlands are areas that meet all of the following criteria:
- (a) greater than four hectares in size, excluding any adjoining hedgerows;
 - (b) consisting primarily of native species of trees; and
 - (c) meets the criteria of a *woodland* in accordance with the provisions of the Regional Woodland Conservation By-law.

Environmentally Significant Valley Features

- 7.C.7 Environmentally Significant Valley Features are natural features within a Significant Valley that consist of:
- (a) at least one of the following:
 - i) river channel; or
 - ii) *Environmentally Significant Discharge Areas* or *Environmentally Significant Recharge Areas*; or
 - (b) both of the following ecological features:
 - i) habitat of regionally *significant* species of flora or fauna;
 - ii) natural area, such as a *woodland* of one to four hectares in extent, *floodplain* meadow or *wetland*, which consists primarily of native species; or;
 - (c) any one of Policy 7.C.7(b) above plus any one of the following Earth Science features:
 - i) river terrace;
 - ii) esker;
 - iii) cliff or steep slopes;
 - iv) oxbow;
 - v) confluence with significant watercourse draining a watershed greater than five square kilometres;
 - vi) regionally *significant* Earth Science *Area of Natural and Scientific Interest*; or
 - vii) fossil bed.

Core Environmental Features Policies

7.C.8 *Development or site alteration* will not be permitted within Core Environmental Features, except for:

- (a) forest, fish or wildlife management and conservation;
- (b) flood or erosion control projects demonstrated to be in the public interest and for which no other alternative is feasible; or
- (c) minor alterations to legal non-conforming land uses within Core Environmental Features.

Any application for *development or site alteration* for the above uses will require the submission of an *Environmental Impact Statement*, to the satisfaction of the Region, to determine the mitigation measures to be implemented, as appropriate, through the *development* review process.

7.C.9 *Development or site alteration* will only be permitted on lands *contiguous* to a Core Environmental Feature where an *Environmental Impact Statement*, or similar study, submitted in accordance with the policies in Section 7.G has determined to the satisfaction of the Region, Area Municipalities, the Grand River Conservation Authority and/or the *Province*, as appropriate, that approval of the proposed *development or site alteration* would not result in *adverse environmental impacts* on the features and *ecological functions* of the Core Environmental Feature. The Region may require conditions of approval to implement such recommendations.

7.C.10 An *Environmental Impact Statement* submitted in accordance with Policies 7.C.8 or 7.C.9 will identify appropriate buffers to Core Environmental Features, to the satisfaction of the Region, in consultation with Area Municipalities and the Grand River Conservation Authority. Such buffers will not only serve to protect Core Environmental Features from *adverse environmental impacts* but will also provide opportunities for net *habitat enhancement* to enhance or, wherever feasible, restore the *ecological functions* of the Core Environmental Feature. The location, width, composition and use of buffers will be in accordance with the approved *Environmental Impact Statement*, with buffers being a minimum of 10 metres as measured from the outside boundary of the Core Environmental Feature and established and maintained as appropriate self-sustaining native vegetation

7.C.11 Where construction of a road on a new right-of-way, widening or upgrading of an existing roadway, construction or upgrading of a trunk sewer, trunk watermain, gas pipeline or electrical transmission line, wastewater treatment facility, waste management facility or groundwater taking project is proposed within or *contiguous* to a Core Environmental Feature, the submission of an

Environmental Impact Statement, or other appropriate study, in accordance with the policies in Section 7.G will be required.

7.C.12 Where a study completed in accordance with Policy 7.C.11 demonstrates to the satisfaction of the Region that the construction of the *infrastructure* project will:

- (a) result in localized and/or reversible impacts to the features and *ecological functions* of the Core Environmental Feature, and that other alternatives are less feasible from a technical, environmental and/or financial perspective, the Region and Area Municipalities will, without amendment to this Plan;
 - i) require that appropriate mitigation measures be implemented; and
 - ii) approve the undertaking; or
 - iii) support the undertaking in comments, submissions or recommendations; or
- (b) result in widespread *adverse environmental impacts* to the features and *ecological functions* of the Core Environmental Feature or result in long-term damage to its *significant* features and functions, and that other technically and financially feasible alternatives exist that would have fewer *adverse environmental impacts*, the Region and Area Municipalities will:
 - i) not approve the undertaking; or
 - ii) not support the undertaking in comments, submissions or recommendations; or
- (c) result in widespread *adverse environmental impacts* to the features and *ecological functions* of the Core Environmental Feature, or result in long-term damage to its *significant* features and functions, but that there is a clearly demonstrated need for the undertaking, and that all other alternatives to the recommended undertaking are substantially less feasible from a technical, environmental, and/or financial perspective, the Region and Area Municipalities will, without amendment to this Plan:
 - i) require that appropriate mitigation measures be implemented to reduce the impact of the undertaking to greatest extent feasible; and
 - ii) approve the undertaking; or
 - iii) support the undertaking in comments, submissions or recommendations.

7.D Fisheries

- 7.D.1 *Development or site alteration* will not be permitted within *fish habitat*, except in accordance with *Provincial and Federal requirements* to the satisfaction of the Federal Department of Fisheries and Oceans, or its delegate.

7.E Supporting Environmental Features

- 7.E.1 Supporting Environmental Features are those *environmental features* not meeting the criteria for recognition as being regionally *significant*. Supporting Environmental Features play an important role in maintaining the *ecological functions* provided by the Greenlands Network and will be maintained, enhanced or, wherever feasible, restored.
- 7.E.2 Area Municipalities are encouraged, in consultation with the *Province*, the Region and the Grand River Conservation Authority to identify, maintain, enhance or, wherever feasible, restore *environmental features* not identified as Core Environmental Features within this Plan.
- 7.E.3 Area Municipalities, in consultation with the *Province*, the Region, the Grand River Conservation Authority and affected landowners, will establish policies in their official plans to provide for the protection, enhancement or, wherever feasible, restoration of *Environmentally Significant Recharge Areas* and *Environmentally Significant Discharge Areas*, not fulfilling the criteria for designation as Regional Recharge Areas in accordance with Policy 7.B.22.
- 7.E.4 Where *Environmentally Significant Discharge Areas* and/or *Environmentally Significant Recharge Areas* sustain a Core Environmental Feature as documented through a *watershed study*, Greenlands Habitat Inventory, *Environmental Impact Statement* or other such study prepared in accordance with the policies in Section 7.G, the Region and Area Municipalities will:
- (a) not permit *development or site alteration* within or *contiguous* to the *Environmentally Significant Discharge Areas* and/or *Environmentally Significant Recharge Areas*, except where it has been determined to the satisfaction of the Region and/or other applicable agencies that the *development or site alteration* would not result in *adverse environmental impacts* on the features and *ecological functions* of the Core Environmental Feature; and
 - (b) ensure that any proposed public *infrastructure* projects will avoid *Environmentally Significant Discharge Areas* and *Environmentally Significant Recharge Areas*, wherever feasible. Where it is not feasible to avoid these areas, the construction of the *infrastructure* project will be designed to maintain the *hydrologic functions* that sustain Core Environmental Features.

- 7.E.5 Lands within river or stream valleys, *floodplains*, *wetlands*, watercourses, lakes or *hazardous lands*, or lands within 120 metres of Provincially Significant Wetlands and *wetlands* greater than or equal to two hectares, or lands within 30 metres of *wetlands* less than two hectares, but greater than or equal to 0.5 hectares, are regulated by the Grand River Conservation Authority. *Development* or *site alteration* within these Regulated Areas will require a permit from the Grand River Conservation Authority in accordance with the applicable regulations approved under the Conservation Authorities Act.

Linkages

- 7.E.6 The Region, Area Municipalities, Grand River Conservation Authority and other stakeholders will identify *linkages* through *watershed studies*, Natural Heritage Inventories, *Environmental Impact Statements* or other appropriate studies. These areas are intended to provide opportunities for plant and animal movement among *environmental features*, support hydrological and nutrient cycling, and contribute to the overall *ecological integrity* of the Greenlands Network.
- 7.E.7 Area Municipalities will require the incorporation of any *linkages*, identified in accordance with Policy 7.E.6, into the design of new *development* to maintain, enhance or, wherever feasible, restore *linkages* among *environmental features*.
- 7.E.8 The Region will enhance *linkages*, where appropriate, by restoring natural habitat on lands owned by the Region. The Region encourages the naturalization of inactive sections of parks and open space areas under the jurisdiction of other agencies and in private ownership, wherever appropriate, to enhance *linkages*.

7.F Watershed Planning

- 7.F.1 The Region recognizes the watershed as the regionally ecologically meaningful scale for planning and, in collaboration with the *Province*, Area Municipalities and the Grand River Conservation Authority, will undertake *watershed studies* both to minimize *adverse environmental impacts*, including cross-jurisdictional and cross-watershed impacts, and to maintain, enhance or, wherever feasible, restore the Greenlands Network. Such studies will also be used to direct enhancement of the water system, maintenance or improvement of the health of watercourses and to identify natural hazards.
- 7.F.2 The priorities and process for undertaking and updating *watershed studies* will be jointly determined by the *Province*, the Region, Area Municipalities and the Grand River Conservation Authority.

- 7.F.3 Area Municipalities will require the finalization of a *watershed study* prior to the adoption of Area Municipal official plan amendments, community plans or secondary plans, which permit significant areas of development within the watershed.
- 7.F.4 The *Province*, the Region, affected Area Municipalities and the Grand River Conservation Authority, in consultation with affected landowners and the general public, will jointly determine the terms of reference for *watershed studies*. At a minimum, the terms of reference for *watershed studies* will include:
- (a) identification, maintenance, restoration and, wherever feasible, enhancement of *environmental features*, *groundwater features*, surface water features and *ecological functions* which are necessary for the ecological and hydrological integrity of the watershed;
 - (b) identification, maintenance, enhancement and, wherever feasible, restoration of *linkages* among *environmental features* and *ecological functions*, *groundwater features* and surface water features;
 - (c) determination of areas where *development* or *site alteration* will be prohibited to:
 - i) protect actual and potential municipal drinking-water supplies and identified *vulnerable* areas; and
 - ii) maintain, enhance or, wherever feasible, restore sensitive and *vulnerable* surface water and *groundwater features*, and their *hydrologic functions*, and *floodplains*;
 - (d) protection of the quality, quantity, distribution and direction of flow of existing surface and groundwater processes;
 - (e) identification of stormwater management practices that maintain or enhance the quality, quantity and distribution of stormwater including infiltration measures, and minimize stormwater volumes and contaminant loads;
 - (f) identification of areas where site specific *Environmental Impact Statements* may be required for the review of *development applications* in accordance with the policies in Section 7.G. Wherever feasible, *watershed studies* should partially fulfill the *Environmental Assessment* requirements for major *infrastructure* works to be located within that watershed, and/or Comprehensive *Environmental Impact Statements* for all or part of the watershed; and
 - (g) develop a monitoring plan and define roles and responsibilities for pre-,

during- and post-construction monitoring to determine and address the impact of *development* on the Greenlands Network and surface and groundwater resources.

- 7.F.5 Regional participation in *watershed studies* will focus upon the preparation of recommendations relating to Regional interests, including:
- (a) *sustainable* management of the quality and quantity of groundwater resources;
 - (b) surface water quality with reference to Regional water-taking requirements and the capability of receiving watercourses to cumulatively assimilate effluent from wastewater treatment plants to ensure the ecological integrity of the river system;
 - (c) identification, protection and management of Landscape Level Systems and Core Environmental Features; and
 - (d) implications of proposed *development* on the provision and upgrading of Regional *infrastructure*.
- 7.F.6 Portions of *watershed studies* that deal with Regional interests will be approved by the Region prior to the adoption of Area Municipal official plan amendments, community plans or secondary plans that implement the recommendations of the studies. The Region will amend this Plan as appropriate to implement recommendations that pertain to Regional interests.
- 7.F.7 Area Municipalities will amend their official plans to implement appropriate recommendations from *watershed studies*. The Region and Area Municipalities will also implement the recommendations of *watershed studies* as part of the *development* review process.

7.G Environmental Impact Statements

- 7.G.1 An *Environmental Impact Statement* may be required to identify and evaluate the potential effects of a proposed *development* or *site alteration* on elements of the Greenlands Network, and recommend means of preventing, minimizing or mitigating these impacts, as well as enhancing or restoring the quality and connectivity of elements of the Greenlands Network. An *Environmental Impact Statement* may also be used to interpret the boundaries of these elements. The *Province*, Region, Area Municipalities and the Grand River Conservation Authority will co-ordinate the requirements for the preparation of *Environmental Impact Statements*.

- 7.G.2 The Region, in consultation with the *Province*, Area Municipalities and the Grand River Conservation Authority may require the completion of a single comprehensive *Environmental Impact Statement* where:
- (a) *development* or *site alteration* is proposed on multiple contiguous properties containing elements of the Greenlands Network;
 - (b) a comprehensive community planning process is being undertaken;
 - (c) environmental studies are required to support the proposed expansion of the Urban Area or a Township Urban Area; or
 - (d) the extent of a *development application* and its anticipated impacts on the Greenlands Network are anticipated by the relevant agency(ies) to be substantial.
- 7.G.3 The need for, and scope of *Environmental Impact Statements*, will be determined by:
- (a) the *Province*, for *development* or *site alteration* potentially affecting Significant Habitat of Endangered or Threatened Species, or;
 - (b) the Region, for *development* or *site alteration* potentially affecting:
 - i) Landscape Level Systems, not including Significant Valleys;
 - ii) Core Environmental Features; or
 - iii) *Environmentally Significant Discharge Areas* and/or *Environmentally Significant Recharge Areas* that sustain Core Environmental Features.
 - (c) the Grand River Conservation Authority for Significant Valleys, Provincially Significant Wetlands located outside Environmentally Sensitive Policy Areas and *wetlands* not identified as provincially significant, including unevaluated *wetlands*;
 - (d) the affected Area Municipality for *development applications* potentially affecting other elements of the Greenlands Network; and
 - (e) the Federal Department of Fisheries and Oceans, or its delegate, for *fish habitat*;

- 7.G.4 The following provisions will apply to *Environmental Impact Statements* required by the Region under Policy 7.G.3(b):
- (a) the *Environmental Impact Statement* will be prepared in accordance with the provisions of the Regional Greenlands Network Implementation Guideline;
 - (b) the Region may reduce the scope and/or content of the *Environmental Impact Statement* where the impacts of the proposed *development* or *site alteration* upon an element of the Greenlands Network are expected to be limited in area and/or scope, or where other environmental studies fulfilling the requirements of an *Environmental Impact Statement* have been previously been prepared;
 - (c) the Region may waive the requirement for the *Environmental Impact Statement* where consultation with other agencies or site investigation by the Region indicate that there are not likely to be *adverse environmental impacts* upon the Greenlands Network; and
 - (d) the submission of an *Environmental Impact Statement* will not be required by the Region where an *Environmental Assessment* or alternative environmental reviews are being undertaken as part of a comprehensive planning process required under Provincial or Federal Legislation, provided the *Environmental Assessment* or alternative environmental review fulfills all the requirements for site specific, and/or landscape level *Environmental Impact Statements* that would otherwise be required by this Plan.

7.H Natural Hazards

- 7.H.1 *Hazardous lands* and *hazardous sites* as identified by the Grand River Conservation Authority will be given an appropriate land use designation within Area Municipal official plans. Development or *site alteration* on *hazardous lands* and *hazardous sites* may also be subject to the regulations administered by the Grand River Conservation Authority. Amendments to Area Municipal official plans will not be required for minor revisions to the boundaries of *hazardous lands* and *hazardous sites*, where such revisions are supported by technical studies approved by the Grand River Conservation Authority.
- 7.H.2 *Development* will not be permitted within areas of natural or human-made hazards where there is an unacceptable risk to public health or safety, or of property damage. Except where otherwise permitted by the policies in Section 7.H, *development* will not be permitted within:

- (a) *hazardous lands* adjacent to river, stream and small inland lake systems which are impacted by *flooding hazards* and/or *erosion hazards*, in addition to an erosion access allowance of not less than six metres; and
 - (b) *hazardous sites*.
- 7.H.3 In areas designated for development within Area Municipal official plans, *hazardous lands* and *hazardous sites* will be placed in a separate zoning category or identified by the addition of a zone suffix or prefix as an area where land use and structural regulations are applied by the Grand River Conservation Authority and the Area Municipality to minimize hazards.
- 7.H.4 *Development* or *site alteration* will not be permitted within:
- (a) areas that would be rendered inaccessible to people and vehicles during times of *flooding hazards* and/or *erosion hazards*, unless it has been demonstrated that the site has safe access appropriate for the nature of the *development* or *site alteration* and the natural hazard; and
 - (b) a *floodway* regardless of whether the area of inundation contains high points of land not subject to flooding, other than as provided for in Policy 7.H.9(b).
- 7.H.5 For the purposes of this Plan, *floodplains* will be considered as *one-zone policy areas* unless otherwise designated in an Area Municipal official plan. Where a *one-zone policy area* is applied, the entire *floodplain* is considered the *floodway*.
- 7.H.6 Area Municipalities, in collaboration with the Grand River Conservation Authority, may designate *two-zone policy areas* in their official plans where significant urban uses currently exist within the *floodplain*, and where there is significant potential for further infilling and redevelopment with no *adverse effects* on flood flows. *Flood fringe* and *floodway* designations within the *two-zone policy areas* will be in conformity with mapping approved by the Grand River Conservation Authority.
- 7.H.7 Where a *two-zone policy area* has been designated in accordance with Policy 7.H.6, Area Municipalities will establish policies in their official plans to permit *development* in the *flood fringe* subject to appropriate *floodproofing standards*. *Development* within the *floodway* of a *two-zone policy area* will not be permitted, except in accordance with Policy 7.H.9(b).
- 7.H.8 Where strict adherence to the *one-zone policy area* or *two-zone policy area* approaches would result in serious *adverse effects* on the social and economic health and viability of an Area Municipality, a *special policy area* may be established by the *Province* in collaboration with the Region, Area Municipalities and the Grand River Conservation Authority. *Special policy areas* are not intended to allow for new or intensified *development* or *site alteration* if an Area

Municipality has feasible opportunities for development outside the *floodplain* otherwise in conformity with the policies in this Plan.

7.H.9 Where a *special policy area* has been approved by the *Province*:

- (a) the designation and approval of a *special policy area* and site-specific policies and boundaries, and any changes or modifications to the site-specific policies or boundaries applying to a *special policy area*, must be approved by the *Province* prior to the Region or Area Municipality approving such changes or modifications in collaboration with the Grand River Conservation Authority; or
- (b) the *development* is limited to land uses that, by their nature, must locate within the *floodway*, including flood and/or erosion control works, structures necessary for conservation, water supply, wastewater management, or minor additions or passive non-structural uses which do not affect flood flows.

7.H.10 Area Municipalities will designate *special policy areas* and establish policies in their official plan in accordance with Policies 7.H.8 and 7.H.9.

7.H.11 *Development* will not be permitted to locate in *hazardous lands* and *hazardous sites* where the proposed use is:

- (a) an institutional land use associated with hospitals, nursing homes, pre-school, school nurseries, day care 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 standards* or *protection works standards*, or erosion;
- (b) an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations, which would be unacceptably impaired during an emergency as a result of flooding, the failure of *floodproofing standards* or *protection works standards*, or erosion; and
- (c) land uses associated with the disposal, manufacture, treatment or storage of *hazardous chemicals and/or substances*.

7.H.12 Notwithstanding Policies 7.H.4 and 7.H.11, *development* or *site alteration* may be permitted in those portions of *hazardous lands* and *hazardous sites* where the effects and risk to public safety are minor so as to be managed or mitigated in accordance with the *Province's* standards, as determined by the demonstration and achievement of all of the following:

- (a) *development or site alteration* is carried out in accordance with *floodproofing standards, protection works standards, and access standards*;
 - (b) vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
 - (c) new hazards are not created and existing hazards are not aggravated; and
 - (d) no *adverse environmental impacts* will result.
- 7.H.13 The Region will consider funding requests for inclusion in the Regional Capital Forecast for stream bank stabilization, dam, dyke and reservoir construction projects, or land acquisition for any of these projects by Area Municipalities and/or the Grand River Conservation Authority, based on appropriate studies. Priority will be given to projects that are to be effective in reducing the hazards to life and property caused by flooding within *special policy areas*.
- 7.H.14 Area Municipalities will include policies in their official plans to require detailed hydrogeological and/or geotechnical studies to assess potential risks to persons, buildings, structures, or public *infrastructure* occasioned by groundwater discharge or high water tables prior to *development*. Such studies should demonstrate that engineering solutions designed to protect structures from the effects of groundwater discharge and high water tables will be effective, will not require significant on-going maintenance to remain effective, and will not divert or impede natural groundwater flows so as to create hazards or annoyances to adjacent lands and buildings. *Discharge Constraint Areas* should be identified in community plans and/or the Area Municipal official plan where they have been identified.

7.1 Environmental Stewardship

- 7.1.1 The Region will continue to acquire *woodlands* and associated natural features such as *wetlands*, savannas, meadows and prairies as finances permit, or to accept donations of *woodland* tracts to be managed as *Regional Forests*.

Managing Woodland Resources

- 7.1.2 The Region encourages good stewardship practices to manage public and private *woodlands* through the development and implementation of forest management plans. Such plans will not only recognize the economic value of timber, but also maintain, enhance or, wherever feasible, restore the important *ecological functions of woodlands*.

- 7.1.3 Regional Forest Management Plans, capital operating budgets and shorter term operating and management plans for *Regional Forests* and other Regional *woodlands* will accord management objectives in the following order of priority:
- (a) the maintenance, or wherever feasible, enhancement of the *woodlands ecological functions*, particularly where *Regional Forests* exhibit Carolinian forest, old growth, or interior habitat attributes;
 - (b) passive recreation including trails for nature appreciation, hiking and cross-country skiing;
 - (c) outdoor education and research;
 - (d) timber production according to ecologically *sustainable* forest management practices; and
 - (e) hunting, fishing, horse-back riding and mountain biking where expressly permitted.
- 7.1.4 Trees and other vegetation within *Regional Forests* may be removed or destroyed by authorized cutting or burning to achieve the objectives of Policy 7.1.3.
- 7.1.5 The Region, in collaboration with Area Municipalities, will minimize the impact of *development* on *woodlands* by selecting alternative locations for proposed land uses and/or through the implementation of appropriate mitigation measures.
- 7.1.6 Area Municipalities will consider the importance of *woodlands* during the *development* review process. Consideration during the review of *development applications* will be given to:
- (a) the potential impact of the proposed land use on the *ecological functions*, productivity or potential productivity of the *woodland* for commercial timber production;
 - (b) the impact of the proposed land use on the extent and distribution of *woodland* cover in the watershed in which the subject land is situated; and
 - (c) opportunities to restore or re-establish productive forest habitats consisting of native species following the completion of the proposed *development*.
- 7.1.7 Area Municipalities are encouraged to adopt a Tree Preservation By-law to prohibit or regulate the destruction or injuring of trees in *woodlands* less than four hectares in area.

Land Stewardship

- 7.1.8 The Region encourages landowners to maintain, enhance or, wherever feasible, restore *environmental features* on their property through measures including conservation easements, buffers and wherever appropriate, fencing.
- 7.1.9 The Region, in collaboration with the *Province*, Area Municipalities, the Grand River Conservation Authority and other stakeholders, will provide advice and information on other land stewardship programs to landowners wishing to exercise good stewardship of lands within the Greenlands Network.
- 7.1.10 Area Municipalities are encouraged to secure ownership of elements of the Greenlands Network and to prepare management plans for these lands to maintain, enhance or, wherever feasible, restore their *ecological functions*.
- 7.1.11 The Region will consider the establishment of a Land Trust to hold, purchase and manage elements of the Greenlands Network, or to hold conservation easements.
- 7.1.12 The Region encourages individuals and agencies to use native species appropriate to the locality when planting within or *contiguous* to elements of the Greenlands Network. To provide guidance in maintaining the native *biodiversity* of the Greenlands Network, the Region will maintain a list of native trees and shrubs suitable for such use.
- 7.1.13 The Region discourages individuals and agencies from using non-native species considered invasive and unsuitable for planting within or *contiguous* to elements of the Greenlands Network. To provide guidance, the Region will prepare a list of non-native species considered invasive and unsuitable for such use.
- 7.1.14 Wherever feasible and appropriate, species native to the region will be used in plantings along Regional Roads and on the grounds of Regional facilities. Area Municipalities are similarly encouraged to use native species in roadside plantings, stormwater management facilities and park naturalization projects.
- 7.1.15 The Region may create and administer a Greenlands Network Stewardship financial incentives program to assist private landowners with stewardship initiatives and provide funds for the public acquisition of lands within the Greenlands Network.