

ECAC PRELIMINARY COMMENTS ON LONDON PLAN CHANGES

ECAC supports the changes to Map 5. We have consistently recommended that such land use and zoning changes take place concurrently with other land use changes because of an EIS or an EA. We continue to encourage the City staff to make this change in its process. This is already part of Policy 1335 of the London Plan.

Regarding Environmental Policy changes (Section 7 London Plan)

ECAC has no concerns with the “housekeeping” wording changes to reflect the relevant Ministry.

We are unclear as to whether the proposed changes to the hazard policies starting at policy 1442, are consistent with the Conservation Authorities Act. For example, it is our understanding that under the Conservation Authorities Act, a CA would be the authority to approve flood proofing measures in the flood fringe (policies 1448, 1462_2) or riverine or slope hazards (policy 1489, 1493) and wetlands (policy 1498).

Also, in 1452, 1460 and 1461, the City does not have the mapping. How can it be responsible for the delineation of the floodplain? Mapping across the Province has been done piecemeal since the 1980s, including in the local watersheds. It is known to be out of date for climate change. As well it is our understanding that legislatively, the CA has responsibility for this, not the City.

1463_4 – recently this was removed from Section 28 of the CA Act. The question will be what guidance will the City use to determine what is minor?

1485 what is the difference between consultation and cooperation?

1335 does the Ministry still need to approve an OWES evaluation?

1336 why does the amendment remove the part related to the London Plan policies on Natural and Human made Hazards? The City policies should continue to apply even if the Conservation Authorities no longer have regulatory authority.

1499 – there are two parts to this. If the first part related to mapping is removed, who then is responsible for identification? The second part may fall under the all-encompassing new 1444A, but not the first part.

ECAC would recommend that a policy be added such that an application that is required to conduct an EIS, that such application not be deemed complete until the City approves the required EIS.

1398, it is unclear why this change is necessary. Won't there be approvals from other public agencies from time to time? Perhaps better wording would be:

The City shall include methods for minimizing impacts when reviewing proposals to construct mobility, communication, sewerage or other infrastructure in the Natural Heritage System. The City shall consultation with other public authorities as required or advisable.

1441 re Sunningdale North

As the Area Plan and works preceded changes to the CA Act, no change is needed to this section.

Environmental Policies

WHAT ARE ENVIRONMENTAL POLICIES?

1293_ Protection, management and enhancement of the environment is central to all of the planning that we do. Our Environmental Policies provide direction for:

1. The identification, protection, conservation, enhancement, and management of our Natural Heritage System.
2. The minimization of risks associated with Natural and Human-made Hazards.
3. The identification, protection, and conservation of our Natural Resources.

WHY ARE ENVIRONMENTAL POLICIES IMPORTANT TO OUR FUTURE?

1294_ As London grows and develops, the policies for the protection, conservation, enhancement, and management of our Natural Heritage System will ensure that future generations will continue to enjoy our natural heritage features and areas of the city. Policies that direct development away from hazard areas will minimize risks to public health, safety, and property from both natural and human-made hazards. The Natural Resources policies will ensure that our drinking water supply will be protected, and that aggregate resources are protected and conserved to ensure that they are available for extraction over the long term, that impacts from extraction activities are minimized, and that sites will be restored and rehabilitated once the aggregate resource has been removed. These policies all work together to ensure that the City's Natural Heritage System is protected and that development is directed away from areas of significant natural or human-made hazards or natural resources.

WHAT ARE WE TRYING TO ACHIEVE?

1295_ Our Environmental Policies will provide clear direction for the long-term protection and conservation of our Natural Heritage System and our Natural Resources and ensure that development is directed away from Natural and Human-made Hazards.

HOW ARE WE GOING TO ACHIEVE THIS?

1296_ These policies must be read and considered in the review and evaluation of all planning and development applications, public projects, public works, or any other activity within or adjacent to any component of the Natural Heritage System, or on or within any lands identified as Natural and Human-made Hazards or Natural Resources. All applications, works and activities shall conform with these policies. Map 5 - Natural Heritage and Map 6 – Hazards and Natural Resources are to be used in conjunction with these policies.

1297_ The Environmental Policies that follow address:

1. Natural Heritage
2. Natural and Human-made Hazards
3. Natural Resources

Natural Heritage

WHAT IS NATURAL HERITAGE?

1298_ The City's Natural Heritage System is a system of natural heritage features and areas and linkages intended to provide connectivity at the regional or site level and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of native species, and ecosystems. In London, this includes natural heritage features and areas, provincial parks, other natural heritage features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions and working landscapes that enable ecological functions to continue. The City's Natural Heritage System is shown on Map 5 – Natural Heritage.

1299_ The natural heritage features and areas found in London include environmentally significant areas, provincially significant wetlands and wetlands, fish habitat, significant woodlands and woodlands, significant valleylands, the habitat of endangered and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are all important for their environmental and social values as a legacy of the natural landscapes of the City of London and the surrounding area.

1300_ London's natural environment has shaped the city since London was first founded along the banks of the Thames River. The City will consider how natural heritage features and areas relate to one another and the role each natural heritage feature or area plays within the Natural Heritage System. Many of these natural heritage features and areas and their associated functions have city-wide, regional or provincial significance, and many of the features extend beyond the city and form part of the broader Natural Heritage System of southwestern Ontario.

1301_ The diversity and connectivity of natural features and areas, and the long-term ecological function and biodiversity of Natural Heritage Systems, will be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features. It is important to note that ecosystem processes are happening everywhere, not just in a defined Natural Heritage System, and that recognition of ecosystem based planning needs to account for all these processes across the City of London. Not all natural heritage features and areas are physically connected to each other. This is because there is a scattered pattern of remnant natural heritage features and areas across the landscape that has been modified over time by human activities.

1302_ Surface and groundwater features and their hydrological functions are to be considered as part of the systems approach to land use planning, consistent with the *Provincial Policy Statement* and in conformity with the City Structure Plan in the Our City part of this Plan, that establishes watersheds as a component of our City Structure. Factors to be considered in this systems approach include the surface water catchment areas of wetlands that are necessary to maintain a natural heritage feature and area, species or function, including the water balance and areas where natural heritage features and groundwater conditions or seepage areas are connected. Sensitive recharge or vulnerable aquifer features identified through *Source Protection Plans* are important water resource areas that may require additional consideration in conformity with the Natural Resources policies of this Plan.

1303_ The Natural Heritage policies establish requirements for the identification, delineation and protection of the natural heritage features and areas that form the City of London's Natural Heritage System. Policies establish how we identify and define the boundaries of the significant natural heritage features and areas, how we assess the impacts of development on them, and how

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we will protect them, restore them and mitigate the impacts of development on the natural heritage features and areas and the overall Natural Heritage System.

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WHY IS NATURAL HERITAGE IMPORTANT TO OUR FUTURE?

1304_ One of the many assets that Londoners say makes London great is the Thames River Valley and its tributaries and our unique natural environment within the urban fabric of the city. Our Natural Heritage System contributes to both our high quality of life and our image as The Forest City. The significant valleylands of the Thames River Valley, the provincially significant wetlands of Westminster Ponds and Sifton Bog, and the significant woodlands of Warbler Woods, Meadowlily Woods and the Medway Valley are just some of the significant natural heritage features and areas that help to define London. These places are also key components of the City's Natural Heritage System and, like the many other natural heritage features and areas that form the Natural Heritage System, shall be protected and managed to improve their ecological integrity and to provide opportunities for public use where appropriate.

1305_ London is located in the Carolinian Life Zone at the northern limit of the Eastern Deciduous Forest Region - the most biologically diverse in all of Canada. The Carolinian forest is a term used to describe the special plant and animal species that are found in our region – some of which are found only in the Carolinian Life Zone in Canada. London's biodiversity is our natural wealth, providing irreplaceable ecosystem functions like clean air and water, productive soils, and food. Greater biodiversity makes our Natural Heritage System more sustainable over the long term.

1306_ In London, nature truly is at our doorstep, and these rich surroundings provide us with convenient access to natural features and areas. We are fortunate to have a Natural Heritage System that runs through the city and our neighbourhoods. This creates the opportunity for us to share these areas with the plants and animals that make them their home. Managed and appropriate access to these natural features and areas provides health and wellness benefits for all Londoners. These spaces are also important to London's sustainability and for a healthy urban and rural environment that is also resilient to the expected impacts of climate change.

WHAT ARE WE TRYING TO ACHIEVE?

1307_ The Natural Heritage policies of this Plan provide for the identification and protection of natural heritage features and areas and the ecological functions, processes, and linkages that they provide over the long term.

1308_ We will plan for our city to ensure that London's Natural Heritage System is protected, conserved, enhanced, and managed for present and for future generations by taking the following actions:

1. Achieve healthy terrestrial and aquatic ecosystems in the city's subwatersheds.
2. Provide for the identification, protection, rehabilitation, and management of natural heritage features and areas and their ecological functions.
3. Protect, maintain, and improve surface and groundwater quality and quantity by protecting wetlands, groundwater recharge areas and headwater streams.
4. Enhance, protect and conserve the Natural Heritage System through well planned built form and community design.
5. Maintain, restore, monitor and improve the diversity and connectivity of natural heritage features and areas and the long-term ecological function and biodiversity of Natural Heritage Systems.
6. Encourage, through education and incentive programs, the cooperation of property owners in the maintenance of, or enhancement to, the naturalization of lands and the sustainable use of our Natural Heritage System.
7. Monitor the potential impacts of climate change to maintain the integrity and resiliency of the Natural Heritage System and adjust management activities accordingly.

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8. Provide opportunities for appropriate recreational activities based on the ecological sensitivities of the area.

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HOW ARE WE GOING TO ACHIEVE THIS?

1309_ The Natural Heritage policies are intended to protect the natural heritage features and areas over the long term by establishing requirements for the identification and protection of the Natural Heritage System through public ownership and acquisition, stewardship, management and rehabilitation, ecological buffers, and environmental studies including but not limited to conservation master plans, secondary plans, environmental impact studies, hydrogeological studies, environmental assessments, and subject lands status reports.

1310_ The City of London Subwatershed Plans provide background, framework and broad direction for the content and implementation of the Natural Heritage and water resources management policies of this Plan. Since the original Subwatershed Plans were completed, the City has undertaken subwatershed studies for many of the subwatersheds. Information from these studies is one source that is used to ensure that the Natural Heritage policies and Map 5 - Natural Heritage, remain current.

1311_ The Subwatershed Plans applied an ecosystem, water resources and landscape-based planning approach to: the identification of lands to be protected or conserved; criteria to be applied in the planning and design of development to protect and restore natural features and ecological functions; opportunities for enhancement and rehabilitation of natural features and ecological functions; management practices to mitigate impacts from existing and proposed land uses; and programs to promote education, awareness and stewardship. These Plans provide a generalized level of direction that continues to be refined through comprehensive area-specific assessments and studies, including secondary plans, conservation master plans, subwatershed updates and reviews, master drainage plans, environmental assessments, subject lands status reports, and environmental impact studies.

1312_ Watershed report cards produced by the local conservation authorities provide a base

level of monitoring for various ecological functions, from water quality to forest cover in each watershed. This information extends beyond London's boundaries. The City also carries out detailed water quality monitoring on the Thames River and many of its tributaries. These monitoring programs may provide baseline information to be used to evaluate the policies of this Plan.

1313_ Most, but not all, natural heritage features and areas identified or delineated on Map 5 are within the Green Space Place Type or the Environmental Review Place Type on Map 1 – Place Types, depending on the attributes of the natural feature and the need for further evaluation to assess significance, refine boundaries, and determine the appropriate level of protection. Where natural heritage features and areas are within the Green Space or Environmental Review Place Type, the Natural Heritage policies shall be read in conjunction with the Green Space or Environmental Review policies of this Plan.

1314_ Components of the Natural Heritage System that are identified or delineated on Map 5 but not within the Green Space or Environmental Review Place Types on Map 1, will be evaluated to further assess their significance and determine the need for protection under the policies of this Plan. Where appropriate, these features and functions may be protected in whole or in part through measures such as, but not limited to, Open Space zoning, tree preservation plans associated with subdivision or site plan applications, public land acquisition, site alteration and tree conservation by-laws, conservation easements, and private stewardship initiatives.

1315_ Natural heritage areas that are within the Green Space Place Type represent significant natural features and ecological functions. In addition to the protection provided by their inclusion in the Green Space Place Type, additional measures to provide for their protection and rehabilitation are considered necessary.

COMPONENTS OF THE NATURAL HERITAGE SYSTEM

1316_ The policies in this chapter apply to recognized and potential or unevaluated components of the Natural Heritage System as identified or delineated on Map 5, or features that may be considered for inclusion on Map 5. Not all components of the Natural Heritage System are necessarily mapped on Map 5. In the review of any planning and development application, an initial review of the lands shall be undertaken to confirm the presence or absence of any natural features and areas that may be present that have not been mapped to determine if further evaluation of the feature is required.

1317_ Where a new or expanded component of the Natural Heritage System has been identified through a required study associated with a planning and development application, environmental assessment or municipal infrastructure project, the natural heritage feature or area shall be added to Map 5 and identified as Green Space on Map 1.

1318_ The following policies address the criteria used to identify and evaluate natural heritage areas for their significance, and may be complemented by *Environmental Management Guidelines* adopted by City Council. Significant components of the Natural Heritage System identified or delineated for protection will be shown as Green Space Place Type on Map 1. Certain components of the Natural Heritage System will be identified and evaluated in accordance with provincial requirements. These policies also address the protection of environmental quality and ecological function with respect to water quality, water quantity, groundwater recharge areas, headwater streams and highly vulnerable aquifers when read in conjunction with the Natural Resources policies of this Plan.

1322_ Where warranted on the basis of an environmental study accepted by the City, consistent with the relevant criteria of the Natural Heritage policies of this Plan, natural heritage features and areas may be identified and delineated on Map 5 and included in the Green Space Place Type on Map 1 by amendment to this Plan.

1319_ Natural heritage features and areas and other areas included in the Green Space Place Type include:

1. Fish Habitat
2. Habitat of Endangered Species and Threatened Species
3. Provincially Significant Wetlands and Wetlands
4. Significant Woodlands and Woodlands
5. Significant Valleylands
6. Significant Wildlife Habitat
7. Areas of Natural and Scientific Interest
8. Water Resource Systems
9. Environmentally Significant Areas
10. Upland Corridors
11. Naturalization Areas
12. Other lands as identified through an environmental study

1320_ Natural heritage features and areas included in the Environmental Review Place Type include:

1. Unevaluated Wetlands
2. Unevaluated Vegetation Patches
3. Valleylands
4. Potential Environmentally Significant Areas

1321_ City Council may encourage the retention of natural features or functions other than the features listed above, through the planning and development application process.

FISH HABITAT

1323_ Fish habitat as defined in the *Fisheries Act*, means spawning grounds and any other areas, including nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes. Healthy aquatic communities are generally a good indicator of environmental health. The Thames River and London's creeks and streams support a variety of cold water and warm water fisheries; however, these fish habitats are vulnerable to degradation from factors such as channelization, loss of stream bank vegetation, untreated urban runoff, increased sedimentation and changes in the timing, temperature and amount of stormwater entering the watercourse. The harmful alteration, disruption or destruction of fish habitat is generally prohibited under the *Fisheries Act*. It is the City's intention to encourage improvement of productive capacity of this habitat. The extent and significance of fish habitat shall be determined in consultation with the Ministry of ~~Northern Development, Mines, Natural Resources and Forestry~~, as amended, the conservation authority having jurisdiction over the area, and Fisheries and Oceans Canada. (OPA 78)

1324_ Development and site alteration shall not be permitted in fish habitat except in accordance with relevant provincial and federal requirements.

HABITAT OF ENDANGERED SPECIES AND THREATENED SPECIES

1325_ Provincially, species at risk are identified as extirpated, endangered, threatened or special concern on the *Species at Risk in Ontario* list. The Ministry of ~~Northern Development, Mines, Natural Resources and Forestry~~, as amended, administers the *Endangered Species Act*, to protect and conserve species at risk and their habitats. Guidance for surveying and determining habitat of endangered and threatened species may be provided by the Ministry of ~~Northern Development, Mines, Natural Resources and Forestry~~, as amended. Federally protected aquatic species at risk need to be considered in a planning application. Federal species at risk are those listed under Schedule 1 of the federal *Species at Risk Act* (SARA). The Minister of

Fisheries and Oceans administers the Act with respect to aquatic species at risk (fishes and mussels). The location of such waters and habitats is identified on Fisheries and Oceans Canada (DFO) *Aquatic Species at Risk Distribution and Critical Habitat* maps. (OPA 78)

1326_ Secondary plans, subject lands status reports and/or environmental impact studies will delineate the extent of the habitat of endangered, threatened and special concern species.

1327_ The habitats of endangered and threatened species have habitat protection under the *Endangered Species Act*, while special concern species may qualify for habitat protection under significant wildlife habitat criteria, and will be based on an evaluation of the following considerations:

1. The identification and delineation of the presence and extent of habitat of endangered species and threatened species will be confirmed by the Ministry of ~~Northern Development, Mines, Natural Resources and Forestry~~, as amended.
2. Habitat that is necessary for the maintenance, survival, and/or the recovery of naturally occurring or reintroduced populations of endangered species 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.
3. Species-specific requirements identified in action plans or recovery plans or management guidelines, or Department of Fisheries and Oceans (DFO) approvals, or through an approved environmental impact study. (OPA 78)

1328_ Development and site alteration shall not be permitted in the habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

1329_ Development and site alteration shall not be permitted within waters supporting aquatic species at risk listed under Schedule 1 of SARA

and their critical habitats unless an environmental impact study demonstrates that there will be no negative impacts on natural

heritage features and areas and their ecological functions, and SARA provisions have been addressed.

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PROVINCIALY SIGNIFICANT WETLANDS, WETLANDS, AND UNEVALUATED WETLANDS

1330_ Wetlands are defined as lands that are seasonally or permanently covered by shallow water, as well as lands where the water is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four main types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or lands or wetlands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.

1331_ Wetlands provide important habitat for plants, fish and wildlife that are fully dependent on the presence of a wetland, and for wildlife that need wetlands to complete some life cycle requirements. Wetlands provide important staging and breeding areas for waterfowl. Wetlands also influence the quality, temperature and flow of water and provide storage capacity to offset peak flows associated with storm events. They are important source water protection areas and have groundwater recharge and discharge functions. Some types of wetlands have deep organic soils. Wetlands are also important for their cultural values including such activities as hunting, recreation, education and research, and cultural heritage.

1332_ Development and site alteration shall not be permitted in provincially significant wetlands as identified on Map 5 or determined through environmental studies consistent with the *Provincial Policy Statement* and in conformity with this Plan. Wetlands evaluated using the *Ontario Wetland Evaluation System* are classified on the basis of scores determined through the evaluation. Wetlands meeting the criteria set forth by the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended, shall be ~~confirmed accepted~~ by the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, and shall be mapped as provincially significant wetlands on Map 5 and included in the Green Space Place Type on Map 1.

Wetlands can be identified using Ecological Land Classification. Where a wetland is

identified through Ecological Land Classification, the significance of the wetland must be evaluated using the *Ontario Wetland Evaluation System*. (OPA 78)

1333_ For wetlands that are evaluated using the *Ontario Wetland Evaluation System (OWES)* and confirmed by the City and accepted by the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended, to not be provincially significant, the City of London shall identify the wetland on Map 5 as wetland and include it in the Green Space Place Type on Map 1. (OPA 78)

1334_ For non-provincially significant wetlands there shall be no net loss of the wetlands' features or functions. In some instances, and in consultation with the conservation authority having jurisdiction, the City may consider the replacement of wetlands rather than in situ protection where the features and functions of the wetland may be provided elsewhere and would enhance or restore the Natural Heritage System. Such replacement will be on at least a one-to-one land area basis except:

1. Where a wetland is between 0.1 ha and 0.5 ha, replacement may be considered at less than a one-to-one land area basis if there will be a net gain to wetland function and the overall natural heritage system; and
2. Where a wetland is less than 0.1 ha, the City may consider replacement on a less than one-to-one land area basis and /or additional measures to achieve no net loss of function.

1335_ Development and site alteration shall not be permitted within and/or adjacent to an unevaluated wetland identified on Map 5 and/or if an Ecological Land Classification determines that a vegetation community is a wetland that has not been evaluated. City Council shall require that the unevaluated wetlands be evaluated by qualified persons in accordance with the *Ontario Wetlands Evaluation System (OWES)*. The *OWES* evaluation must be ~~approved-accepted~~ by the Ministry of ~~Northern Development, Mines,~~

Natural Resources and Forestry, as amended, and circulated to the City. The wetland delineation, illustrated in a Subject Lands Status Report (SLSR) must be approved by the City. Map 1 - Place Types and Map 5 - Natural Heritage shall be amended as required to reflect the results of the evaluation. (OPA 78)

~~1336_ Policy deleted (OPA XX). Wetlands and their surrounding areas of interference are also subject to regulation under the Conservation Authorities Act and the Natural and Human-made Hazards policies of this Plan.~~

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SIGNIFICANT WOODLANDS AND WOODLANDS

1337_ Woodlands means treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland product. Woodlands include treed areas, woodlots or forested areas that may vary in their level of significance at the local, regional and provincial levels.

1338_ Woodlands identified through the Subwatershed Plans that have not been evaluated for significance and are located outside of the recognized environmentally significant areas are identified as vegetation patches on Map 5. New woodlands may be added to Map 5 through an amendment to this Plan, on the basis of more detailed environmental studies.

1339_ Potentially significant woodlands and other vegetation forms that have not been evaluated are identified as unevaluated vegetation patches on Map 5 and may be shown as Environmental Review on Map 1.

1340_ A woodland will be considered significant if it achieves a minimum of one High or five Medium criteria scores as determined by application of the *Environmental Management Guidelines*. A significant woodland will be included in the Green Space Place Type on Map 1 and identified as significant woodlands on Map 5. (OPA 78)

1341_ The significance of woodlands will be based on an evaluation of the following considerations and the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry's, as amended, *Natural Heritage Reference Manual*:

1. The woodland contains natural features and ecological functions that are important to the environmental quality and integrity of the Natural Heritage System. These include site protection (hydrology and erosion/slope) and

landscape integrity (richness, connectivity and distribution).

2. The woodland provides important ecological functions and has an age, size, site quality, diversity of biological communities and associated species that is uncommon for the planning area.

3. The woodland is important for the provision of a balanced distribution of open space amenities and passive recreational opportunities across the urban area.

4. The woodland provides significant habitat for species at risk.

5. The woodland contains distinctive, unusual or high-quality natural communities or landforms. (OPA 78)

1342_ Woodlands that are determined to be ecologically significant on the basis of the criteria in this Plan and the application of the *Environmental Management Guidelines* will be included in the Green Space Place Type on Map 1 and identified as significant woodlands on Map 5. (OPA 78)

1342A_ Development and site alteration shall not be permitted in significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

1342B_ In some instances, for significant woodlands located within an Urban Place Type on Map 1, replacement may be considered rather than in situ protection where the features and functions may be provided elsewhere and would enhance or restore the Natural Heritage System, to the City's satisfaction. These features will be included in the Green Space Place Type on Map 1 and significant woodland on Map 5.

1343_ Woodlands that are not determined to be ecologically significant but are to be retained for public open space or park purposes, or woodlands to be retained at the property owner's request as a private woodland, will be included in the Green Space Place Type on Map 1 and identified as woodlands on Map 5. If a woodland is

evaluated and confirmed as not being ecologically significant and is not to be retained, the lands may be changed from the Environmental Review Place Type to another

place type in conformity with the policies of this Plan, and the woodlands or unevaluated vegetation patch identified on Map 5 may be removed.

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SIGNIFICANT VALLEYLANDS AND VALLEYLANDS

1344_ Valleylands are defined as a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year, and includes rivers, streams, other watercourses and ravines.1344A_ Significant valleylands and valleylands provide opportunities for the logical extension of the City's trail and pathway systems.

1345_ Valleylands can provide a number of important natural heritage values and ecological functions. They also overlap and are an integral part with a number of different natural heritage features and areas, such as woodlands, wetlands, wildlife habitat, etc. Valleylands may contain natural habitat or the potential to contain natural habitat, they link many aspects of the Natural Heritage System, and they facilitate species richness, movement and diversity. Valleylands are the water collection systems for watersheds, providing vital support to the city's natural environment. In addition to these ecological functions, valleylands may also provide protection from flooding and other natural hazard processes.

1346_ Significant valleylands have been identified on Map 5. Significant valleylands are included in the Green Space Place Type on Map 1. Valleylands are included in the Environmental Review Place Type, pending further evaluation.

>IDENTIFICATION OF SIGNIFICANT VALLEYLANDS

1347_ The identification of significant valleylands will be based on an evaluation of their ecological, hazard protection, and water resources management functions including the following considerations:

1. The valleyland performs an important water resources role relating to headwater functions, surface drainage, groundwater recharge or discharge, or filtering of surface water sediments.

2. The valleyland contains distinctive, unusual natural communities or landforms of high quality.
3. The valleyland represents mostly continuous, large natural areas that provide for wildlife movement, linkages and connections that typically extend beyond the City or subwatershed boundaries.
4. The valleyland provides linkage or a corridor between significant natural heritage features and areas.
5. The valleyland provides opportunities to create linkages or corridors and opportunities for rehabilitation of the landform to a natural state, or to a state that can support healthy natural communities.
6. The valleyland plays an important role in minimizing land use impacts by providing a physical separation or buffer between incompatible forms of development.
7. The valleyland has physical characteristics, related to size, depth and slope gradient, that are susceptible to slope instability or erosion and that are expected to present constraints to development.
8. *Policy Deleted*
9. Additional criteria as identified in the *Natural Heritage Reference Manual*.

1348_ Within the City of London the entire length of the Thames River corridor is recognized as a significant valleyland on Map 5. Also, the main branches of Stoney Creek, Medway Creek, Dingman Creek, Pottersburg Creek, Wabuno Creek, Mud Creek, Stanton Drain, Kelly Drain and numerous tributary streams are significant valleylands as identified on Map 5.

1349_ Development and site alteration shall not be permitted in significant valleylands unless it has been demonstrated that there will

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be no negative impacts on the natural features or their ecological functions.

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>DETERMINATION OF THE WIDTH OF SIGNIFICANT VALLEYLANDS

1350_ Significant valleylands are included in the Green Space Place Type on Map 1, and identified on Map 5 with the corridor width to be determined and delineated on the basis of the following criteria:

1. The valleyland width shall be sufficient to accommodate the natural features and ecological functions that contribute to its significance including water resource functions such as flood plain and erosion hazards, riparian buffers for natural features, ecological functions and water quality and quantity. This will be determined through the preparation of a secondary plan, environmental impact study and/or subject lands status report.
2. The minimum width of significant valleylands will generally be comprised of 30 metres on each side of the watercourse measured from the high water mark. The ultimate width of a corridor will be established on a case-by-case basis to address the impacts of the adjacent development and the sensitivity of the features and functions through the application of the *Environmental Management Guidelines*, as part of an environmental impact study and/or subject lands status report approved by the City. The City may also consider technical and/or scientific documents that reflect improvement in scientific knowledge regarding natural features.
3. The valleyland width will be sufficient to support and provide corridor functions.

4. *Policy Deleted (OPA 78)*

>ALTERATION TO RIVER OR STREAM VALLEYS AND WATERCOURSES

1351_ City Council, in consultation with the conservation authority having jurisdiction, may consider alterations to river or stream valleys and watercourses to enhance, rehabilitate and restore the system through such measures as:

1. Bank stabilization
2. The creation of riffles and pools
3. Restoration of meandering and natural stream fluvial morphology
4. Plantings
5. Removal of barriers
6. Relocation

SIGNIFICANT WILDLIFE HABITAT

1352_ Wildlife habitat means areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle, and areas which are important to migratory or non-migratory species. Significant wildlife habitat is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System.

1353_ Development and site alteration shall not be permitted in significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

1354_ The significance of wildlife habitat will be assessed following the processes outlined in the *Natural Heritage Reference Manual*. Applicants shall evaluate the significance of wildlife habitat using criteria outlined in the Ministry of ~~Northern Development, Mines, Natural Resources and Forestry's~~, as amended, *Significant Wildlife Habitat Technical Guide*, the *Natural Heritage Reference Manual*, and associated Ecoregion 7E Criteria Schedule. The following will also be considered:

1. It is an area of habitat where particularly important wildlife species are concentrated or are particularly susceptible to impacts for a specific period of their life cycle. These areas include but are not limited to: seasonal concentration areas; rare vegetation communities; specialized habitat for wildlife; habitat for special concern

species; habitat for species of conservation concern; and animal movement corridors.

2. The amount of the specific type of habitat that exists within the context of the ecological region

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and its representation within other components of the Natural Heritage System. In the City of London, examples of under-represented habitat types include marshes, tall grass prairie and savannah, bog, fen, bluff, shallow aquatic and open aquatic.

3. It is an area of habitat having a high diversity of species that are of value for research, conservation, education and passive recreation opportunities. (OPA 78)

1355_ Areas confirmed as significant wildlife habitat will be included in the Green Space Place Type on Map 1.

AREAS OF NATURAL AND SCIENTIFIC INTEREST

1356_ Areas of natural and scientific interest (ANSIs) represent high-quality and unique life science and earth science features across a variety of landscapes throughout the province. Life science areas of natural and scientific interest are significant representative segments of Ontario's biodiversity and natural landscapes including specific types of forests, valleys, prairies and wetlands, their native plants and animals, and their supporting environments. Earth science areas of natural and scientific interest include the best representative of bedrock, fossils and glacial landforms.

1357_ There are two provincially significant life science ANSIs in London: Warbler Woods or the Byron Woods, and Komoka Provincial Park. The Komoka Provincial Park ANSI exhibits part of a Lake Maumee II bluff, which is a provincially significant earth science ANSI. Kilworth Lake Maumee provincially significant earth science ANSI also represents a Lake Maumee shoreline and bluff. There are several regionally significant life science ANSIs located within environmentally significant areas. These include Sifton Bog, Westminster Ponds, and Kains Road River Valley. These areas are included within recognized environmentally significant areas as identified on Map 5.

1358_ Lands within the Komoka Provincial Park are not subject to the policies of the Plan as it is regulated under the *Provincial Parks and*

Conservation Reserves Act. However, lands adjacent to the Park shall be addressed in conformity with the policies of this Plan and consistent with the *Provincial Policy Statement*.

1359_ The significance of areas of natural and scientific interest will be evaluated in accordance with provincial criteria.

1360_ Development and site alteration shall not be permitted in or adjacent to areas of natural and scientific interest unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

WATER RESOURCE SYSTEMS

1361_ The water resource system is addressed from a number of perspectives in this Plan. The Natural Heritage chapter addresses water quality and quantity through the protection of natural heritage features and areas. Water quality and quantity are also protected through the Natural Resources policies, storm water management policies, water supply and sanitary sewerage policies, and water conservation policies of this Plan.

1362_ Groundwater features include recharge/discharge areas, water tables, and aquifers. Surface water features include headwaters, rivers, stream channels, seepage areas, recharge/discharge areas, springs, wetlands and associated riparian lands. Groundwater and surface water features are key components in the functioning of the hydrologic cycle. Significant groundwater recharge areas and highly vulnerable areas have been identified through *Source Protection Plans*. Streams are shown as a base map feature on Maps 5 and 6 of this Plan. Headwater streams or other tributaries may be identified as a significant valleyland or a valleyland on Map 5 – Natural Heritage. The City will require that the hydrological function of these areas be protected and the linkages and related functions of these features be maintained through its planning approval processes.

1363_ The City shall protect, improve or restore the quantity and quality of groundwater and surface water through its planning approval processes, consistent with the *Provincial Policy Statement* and in conformity with the Natural Resources policies of this Plan. The Subwatershed Plans and the stormwater management policies in the Civic Infrastructure chapter of this Plan also provide guidance for the measures necessary to achieve this interest.

The City will also promote efficient and sustainable use of water resources including practices for water conservation and sustaining water quality.

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1364_ Development and site alteration will be restricted and mitigative measures or alternative development approaches may be required in or near sensitive surface water features and sensitive groundwater features in order to protect, improve and/or restore these features and their related hydrologic functions consistent with the *Provincial Policy Statement*. In accordance with the *Source Protection Plans*, uses or activities that may be a significant drinking water threat may be prohibited, restricted or otherwise regulated by the policies of the *Source Protection Plan*. Areas of significant drinking water threat are identified in the *Source Protection Plans*.

1365_ The City will implement *Source Protection Plans* under the provisions of the *Clean Water Act*, and this Plan will be amended, as required, to conform with relevant policies set out in the *Source Protection Plan*.

1366_ The City will also cooperate with Middlesex County, the surrounding municipalities and the conservation authorities to ensure that water quality and quantity goals and objectives identified in the Subwatershed Plans are achieved across municipal boundaries.

ENVIRONMENTALLY SIGNIFICANT AREAS

1367_ Environmentally significant areas (ESAs) are large areas that contain natural features and perform ecological functions that warrant their retention in a natural state. Environmentally significant areas are large features of the Natural Heritage System, often represented by a complex of wetlands, woodlands, significant wildlife habitat or valleylands. Wetlands, areas of natural and scientific interest and species at risk will be identified and evaluated in accordance with provincial requirements. While environmentally significant areas are protected by their inclusion in the Green Space Place Type, additional measures to provide for their protection, management and utilization are considered necessary, and may include the preparation of conservation master plans. Environmentally significant areas are delineated through the application of the *Environmental Management Guidelines* and through the application of provincial guidelines. (OPA 78)

1368_ Environmentally significant areas that have been identified by City Council as being of city-wide, regional, or provincial significance are included in the Green Space Place Type on Map 1, and are identified on Map 5. New environmentally significant areas may be identified by Council and added to Map 5 by amendment to this Plan and in conformity with the criteria set out in the Environmentally Significant Areas policies of this Plan. Areas that have the potential to meet the criteria for an environmentally significant area, but have not been thoroughly studied are identified as potential environmentally significant areas on Map 5 and are included in the Environmental Review Place Type on Map 1. Further study of these areas following City policies and guidelines is required through any planning and development application process. Environmentally significant areas recognized by Council are identified as Environmentally Significant Areas on Map 5 and included in the Green Space Place Type on Map 1.

1369_ Certain lands adjacent to these recognized environmentally significant areas may have potential for inclusion in the environmentally significant area if warranted on the basis of site-specific evaluation, including the application of the *Environmental Management Guidelines* that shall be undertaken in conjunction with secondary plans, subject lands status reports, or environmental impact studies associated with a development application. (OPA 78)

1370_ To assist in the consideration of proposals to recognize environmentally significant areas in *The London Plan*, City Council may request the submission of detailed supporting information from any agency, individual or group proposing the recognition of a candidate area. The evaluation criteria contained in the following policy will be used, together with more detailed criteria and application of the *Environmental Management Guidelines*, to recognize environmentally significant areas in this Plan. (OPA 78)

1371_ Candidate areas that clearly satisfy two or more of the following criteria will be considered for recognition as environmentally significant areas:

1. The area contains unusual landforms and/or rare to uncommon natural

communities within the country, province or London subwatershed region.

2. The area contains high-quality natural landform-vegetation communities that are representative of typical pre-settlement conditions of the dominant

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physiographic units within the London subwatershed region, and/or that have been classified as distinctive in the Province of Ontario.

3. The area, due to its large size, generally more than 40 hectares, provides habitat for species intolerant of disturbance or for species that require extensive blocks of suitable habitat.
4. The area, due to its hydrologic characteristics, contributes significantly to the healthy maintenance (quality or quantity) of a natural system beyond its boundaries.
5. The area has a high biodiversity of biological communities and/or associated plant and animal species within the context of the London subwatershed region.
6. The area serves an important wildlife habitat or linkage function.
7. The area provides significant habitat for rare, threatened or endangered indigenous species of plants or animals that are rare within the country, province or county.

UPLAND CORRIDORS

1372_ Upland corridors are vegetated areas, or potentially revegetated areas, that provide a link between natural heritage features and areas of the Natural Heritage System. Upland corridors may incorporate infrastructure (such as culverts or underpasses) to support connectivity. Upland corridors are identified on Map 5.

1373_ Upland corridors are an important component of the Natural Heritage System. They provide opportunities to maintain, restore, or where possible improve the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of Natural Heritage Systems.

1374_ Upland corridors support and connect valleylands to natural heritage features and areas where the valleylands do not directly connect. Valleylands are also essential for establishing connectivity for the Natural Heritage System, and they provide corridor

and linkage functions between natural heritage features and areas. Both are essential in a highly fragmented or urban landscape.

1375_ The creation of upland corridors will be addressed as part of a planning and development application, secondary planning process or environmental study. Where a corridor is to be created, the environmental study will provide direction for the location, scale and function of the corridor.

1376_ Upland corridors should be established through a variety of measures such as stewardship agreements or conservation easements with private property owners, planting programs, and acquisition by the City through purchase, dedication, donation and/or bequest.

1377_ Upland corridors that have been established shall be included in the Green Space Place Type and zoned in a manner that will ensure their long-term protection.

POTENTIAL NATURALIZATION AREAS

1378_ Potential naturalization areas are defined as areas where the opportunity exists to enhance, restore, or where appropriate, expand the Natural Heritage System. These areas may include lands suitable to create natural habitats such as wetland habitat, pollinator habitat, wildlife habitat, or to compensate for trees lost to development. Locations identified as being suitable for the application of a naturalization strategy are identified as potential naturalization areas on Map 5. Not all potential naturalization areas have been identified on Map 5.

1379_ Potential naturalization areas are an important component of the Natural Heritage System. Potential naturalization areas can include lands adjacent to natural heritage features and areas, other natural features, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue. Potential naturalization areas may enhance, restore or strengthen and expand the health and viability of a natural heritage feature or area.

1380_ Environmental studies including conservation master plans, secondary plans, environmental impact studies, hydrogeological studies, environmental assessments or subject lands status reports

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will address opportunities for creating naturalization areas that will form part of the Natural Heritage System.

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1381_ Naturalization areas that are established through planning and development applications shall be included in the Green Space Place Type on Map 1 and zoned in a manner that will ensure their long-term protection.

ADJACENT LANDS

1382_ Adjacent lands are defined as lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or area. The extent of the adjacent lands will be in conformity with the distances identified in Table 13 or as recommended by the Province.

UNEVALUATED VEGETATION PATCHES

1383_ Unevaluated vegetation patches, as identified on Map 5 were identified through the Subwatershed Plans or other environmental studies. These features may include treed areas, swamps, wetlands, savannahs, old field plantations, or other similar natural features. Unevaluated vegetation patches may be included in the Environmental Review Place Type on Map 1. Unevaluated vegetation patches previously identified for development or agricultural activity will be assessed for significance and protection as part of any development application or secondary planning study. Where all or a portion of an unevaluated vegetation patch is assessed and not found to be part of the Natural Heritage System, the removal of trees will be in conformity with the Forest City policies of this Plan.

1384_ The Environmental Review Place Type and unevaluated vegetation patches identifications are considered to be interim in nature, until such time as the significance of these patches can be confirmed through the completion of an environmental study of the Environmental Review lands outside the Urban Growth Boundary, or a secondary plan, environmental impact study and/or subject lands status report accepted by the City, and Map 1 and Map 5 have been amended to reflect the final place type and natural heritage feature identification.

OTHER VEGETATION PATCHES LARGER THAN 0.5 HECTARES

1385_ In addition to areas that are included in the Environmental Review or Green Space Place Types, vegetation patches in other place types that are larger than 0.5 hectares in size shall be evaluated in conformity with the policies of this Plan to determine the significance of vegetation and identify the need for protection prior to planning and development approvals. Where it is considered appropriate, the protection of trees or other vegetation will be required through measures such as, but not limited to, tree preservation plans for subdivision or site plan applications, acquisition of land through parkland dedication and/or purchase by the City, conservation easements, landowner stewardship initiatives and zoning regulations. Pending an evaluation and decision on long-term protection, vegetation patches that are larger than 0.5 hectares in size will be identified as unevaluated vegetation patches on Map 5 and may be regulated under the City of London *Tree Conservation By-law*.

1386_ Where a vegetation patch that is larger than 0.5 hectares has been evaluated and determined to be significant, the natural feature shall be retained and the natural feature shall be included in the Green Space Place Type on Map 1 and identified as the appropriate significant natural heritage feature on Map 5.

OTHER DRAINAGE FEATURES

1387_ The base map features on Map 5 also identify watercourses/ponds to identify the location of municipal or agricultural drains, intermittent or headwater streams and man-made or natural ponds. These features are identified for information purposes and may be added or removed from the base map without an official plan amendment, to reflect changes over time in drainage patterns and features on the ground. The ecological significance of these drainage features as headwaters, recharge areas and riparian corridors or valleylands, will be addressed as part of a secondary plan, Environmental Assessment and/or environmental impact study process. Through the City's agreement with the Ministry of ~~Northern Development, Mines,~~ Natural

Resources and Forestry, as amended, additional environmental study and mitigation efforts are required when carrying out works along Municipal Drains under the *Drainage Act* to protect significant features, functions and wildlife habitat. (OPA 78)

PERMITTED USES AND ACTIVITIES

1388_ In the Green Space Place Type, certain activities or uses will not be permitted, or may be permitted only after studies have been undertaken and approved by the City. This policy of the Plan identifies those uses.

1389_ The following uses may be permitted in the Green Space Place Type:

1. Expansion to existing development and uses provided that it can be demonstrated to the satisfaction of City Council that there will be no negative impacts on natural heritage features and areas or their ecological functions.
2. Recreational uses associated with the passive enjoyment of natural features including pathways and trails provided that such uses are designed, constructed and managed to protect the natural heritage features and their ecological functions.

3. Creation or maintenance of infrastructure subject to the infrastructure policies below.

4. The harvesting of trees in accordance with good forestry management practices and applicable federal, provincial and municipal requirements.

5. Conservation, mitigation and rehabilitation works.

DEVELOPMENT AND SITE ALTERATION

1390_ Development and site alteration shall not be permitted within a provincially significant wetland.

1391_ Development and site alteration shall not be permitted in significant woodlands, significant valleylands, significant wildlife habitat, wetlands, and significant areas of natural and scientific interest unless it has been demonstrated that there will be no negative impacts on the natural heritage features or their ecological functions.

1392_ Development and site alteration shall not be permitted in fish habitat and in habitat of endangered species and threatened species, except in accordance with federal and provincial requirements.

1393_ Development and site alteration shall not be permitted on adjacent lands to natural heritage features and areas until appropriate studies have been completed to satisfy provincial and municipal policy and the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural heritage features or on their ecological functions.

1394_ Works may be required within or adjacent to wetland areas to fulfill the City's responsibilities under the *Drainage Act*. A protocol approved by the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended, and the Ministry of Agriculture, Food and Rural Affairs will guide the City on how to proceed in such cases in order to help protect significant features, functions and wildlife habitat. Other federal, provincial and municipal regulations may be applicable for new drainage proposals within wetland areas, and must be considered prior to works proceeding. (OPA 78)

INFRASTRUCTURE

1395_ Infrastructure should not be located within the Natural Heritage System.

1396_ New or expanded infrastructure shall be permitted within the Natural Heritage System only where it is clearly demonstrated through an environmental assessment process under the *Environmental Assessment Act*, including an environmental impact study, that it is the

preferred alternative for the location of the infrastructure.

1397_ The environmental impact study undertaken as part of the Environmental Assessment shall be completed to further assess potential impacts, identify mitigation measures, and determine appropriate compensatory mitigation, if required. Any alternative where the impacts of the proposed works as identified in the environmental impact study would result in the loss of the ecological features or functions of the component of the Natural Heritage System affected by the proposed works, such that the natural heritage feature would no longer be determined to be significant, shall not be permitted.

1398_ The City, in consultation with ~~and~~ other public authorities shall include methods for minimizing impacts when reviewing proposals to construct mobility, communication, sewerage or other infrastructure in the Natural Heritage System.

1399_ Where there is more than one type of infrastructure, the rights-of-way shall be combined, wherever feasible, to reduce the extent of the intrusion into the area.

1400_ For infrastructure projects within the Natural Heritage System, the City shall require specific mitigation and compensatory mitigation measures that are identified in the accepted environmental impact study to address impacts to natural features and functions caused by the construction or maintenance of the infrastructure.

1401_ For the purposes of this Section, mitigation shall mean the replacement of the natural heritage feature removed or disturbed on a one-for-one land area basis. Compensatory mitigation shall mean additional measures required to address impacts on the functions of the Natural Heritage System affected by the proposed works. The extent of the compensation required shall be identified in the environmental impact study, and shall be relative to both the degree of the proposed disturbance, and the component(s) of the Natural Heritage System removed and/or disturbed.

1402_ Compensatory mitigation may be provided in forms such as, but not limited to:

1. Additional rehabilitation and/or remediation beyond the area directly affected by the proposed works.
2. Off-site or on-site works to restore, replace or enhance the ecological functions affected by the proposed works.
3. Replacement ratios greater than the one-for-one land area required to mitigate the impacts of the proposed works.

1406_ City Council may accept natural heritage areas for parkland or conservation use in conformity with the provisions of the policies concerning parkland dedication.

1407_ City Council may accept gifts of ecologically sensitive lands in accordance with the provisions of the Ecological Gifts Program administered by Environment Canada, or any other similar program administered by the provincial or federal governments.

STEWARDSHIP

1408_ Where natural heritage areas are privately-owned, the City will encourage individual property owners to provide for their protection and conservation. In this regard, the City may use all of the following techniques:

1. Stewardship agreements.
2. Conservation easements.
3. Programs to inform property owners of stewardship options available to protect or rehabilitate natural features and ecological functions.

HOW WILL WE PROTECT THE NATURAL HERITAGE SYSTEM?

1403_ There are various measures that the City may use to protect lands that have been identified as part of our Natural Heritage System. These measures are described below:

PUBLIC OWNERSHIP AND ACQUISITION

1404_ It is not intended that all natural heritage areas shall be purchased or otherwise brought into public ownership, or that all such lands shall be open and accessible for public use. It may be determined, however, that certain areas should be in public ownership or accessible for passive recreational uses, where appropriate. In such cases, the City or other agencies shall explore options for purchasing, or otherwise acquiring, managing or providing access to these lands.

1405_ The City shall develop a program for the long-term acquisition of natural heritage areas. Acquisition may occur as properties become available primarily through the following methods: purchase; dedication; and donation or bequest.

4. Encourage the establishment of land trusts and the utilization of existing land trusts, as well as other mechanisms to purchase land and to rehabilitate, create or conserve natural heritage areas.
5. Encourage property owners to make use of programs and services provided by the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended, and the conservation authorities for the management of forests and woodlots.
6. Modification of property tax assessment and/or facilitation of the *Provincial Conservation Land Tax Incentive Program* or the *Managed Forest Tax Incentive Program*.
7. Where privately-owned lands abut public lands, the City will provide signage or property demarcation to indicate the limits of publicly-owned lands.
8. Any other suitable techniques. (OPA 78)

1409_ Some lands within environmentally significant areas are privately-owned, and this categorization of the lands is not to be interpreted as permitting access or use by the general public. Permission for public access to privately-owned lands in environmentally significant areas shall be at the discretion of the property owner.

1410_ Where necessary, public access to identified natural heritage features and areas within public ownership will be controlled such that access will not be detrimental to the significant features and ecological functions of the property.

1411_ Where natural heritage features and areas are owned by the City, the City will encourage community groups and individuals to take an active role in their protection, rehabilitation and enhancement. The City may develop programs to facilitate community involvement in the protection and rehabilitation of these areas.

ECOLOGICAL BUFFERS

1412_ Ecological buffers serve to protect natural heritage features and areas, and their ecological functions and processes, to maintain the ecological integrity of the Natural Heritage System.

1413_ Ecological buffers will generally be required on lands contiguous to a specific natural heritage feature or area. Ecological buffer requirements shall be determined as part of an Environmental Impact Study.

1414_ The location, width, composition and use of ecological buffers necessary to protect natural heritage areas from the impacts of development on adjacent lands will be specified through application of the *Environmental Management Guidelines* as part of an approved secondary plan and/or an environmental impact study. The City may also consider technical and/ or scientific documents that reflect improvements in scientific knowledge regarding natural features. (OPA 78)

1415_ In addition to buffer lands, additional techniques may be required to assist in minimizing the impact of development on the Natural Heritage System, including all of the following:

1. Discourage rear-lotting adjacent to the Natural Heritage System, and the use of site planning to orient the development away from natural heritage features and areas.
2. The acceptance of lands immediately adjacent to natural heritage areas as part of the required parkland dedication for the proposed development.
3. The use of a geotechnical setback from the boundary of natural heritage areas or natural hazard areas for construction purposes.
4. Restriction of public access by providing a limited number of access points to natural heritage areas.
5. Lands identified and delineated as ecological buffers may be zoned to permit their inclusion in calculating and applying zoning regulations applicable for the lot.
6. Development and site alteration on lands identified and delineated as an ecological buffer shall be prohibited unless permitted in the Zoning By-law.

7. Setbacks shall apply from any lands identified as an ecological buffer.

8. The creation of individual lots that

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include lands identified and delineated as ecological buffers is not permitted.

9. Fencing (without gates) along private lands abutting natural features.

10. Other measures, as determined through a detailed environmental study.

1416_ Where different components of the Natural Heritage System overlap, the limit of development shall be set at the limit of the maximum ecological buffer as determined through an approved environmental impact study. Where the limits of a natural hazard overlap with the limits of an ecological buffer determined for a natural heritage feature, the development limit shall be set as the greater of the limit of the natural hazard corridor or the limit of the ecological buffer.

MANAGEMENT, RESTORATION AND REHABILITATION PRIORITIES

1417_ The City will encourage rehabilitation and enhancement measures that protect the ecological function and integrity of the Natural Heritage System. The City of London Subwatershed Plans provide guidance for the types of measures that may be identified through secondary plans, environmental impact studies, the Environmental Assessment process or other environmental studies or programs. Rehabilitation and enhancement measures may be implemented through conservation master plans, woodland management plans, or invasive species management plans on publicly-owned land and through stewardship and conservation programs for privately-owned lands.

1. The City's highest priority for restoring, rehabilitating and enhancing the Natural Heritage System shall be those areas linking or adjacent to natural heritage areas that are subject to flooding or erosion hazard constraints, such as the Thames Valley Corridor and other major tributaries of the Thames River.

2. With respect to specific components of the Natural Heritage System, the City's management, restoration and rehabilitation priorities are:

a. Fish and riparian habitat - to protect, rehabilitate and/or create fish and riparian habitat, and to encourage a net gain of productive capacity of habitat where possible.

b. Significant wetlands - to protect the natural features and ecological functions of all provincially significant wetlands and wetlands, and to restore disturbed areas.

c. Significant woodlands and woodlands - to protect and restore existing ecosystem features and functions, to increase the amount of interior forest habitat, and to retain or restore linkages between isolated natural areas.

d. Significant valleylands - to protect existing ecosystem features and functions, maintain water resource functions, and rehabilitate eroded banks and channels.

e. Significant wildlife habitat - to protect significant wildlife habitat and restore areas that have been degraded, including habitat of endangered species and threatened species.

f. Environmentally significant areas - to protect the existing ecosystem features and functions, to protect significant wildlife habitat, to restore areas that have been degraded or damaged, to increase the amount of interior forest habitat, and to strengthen significant valleylands, significant wetlands, and upland corridors.

g. Upland corridors - to retain or create linkages between isolated natural areas.

h. Potential naturalization areas - to restore, establish, or replace connections between and within vegetation patches, riparian corridors and wildlife habitat.

i. Water resource systems - to protect, improve or restore the water resource system.

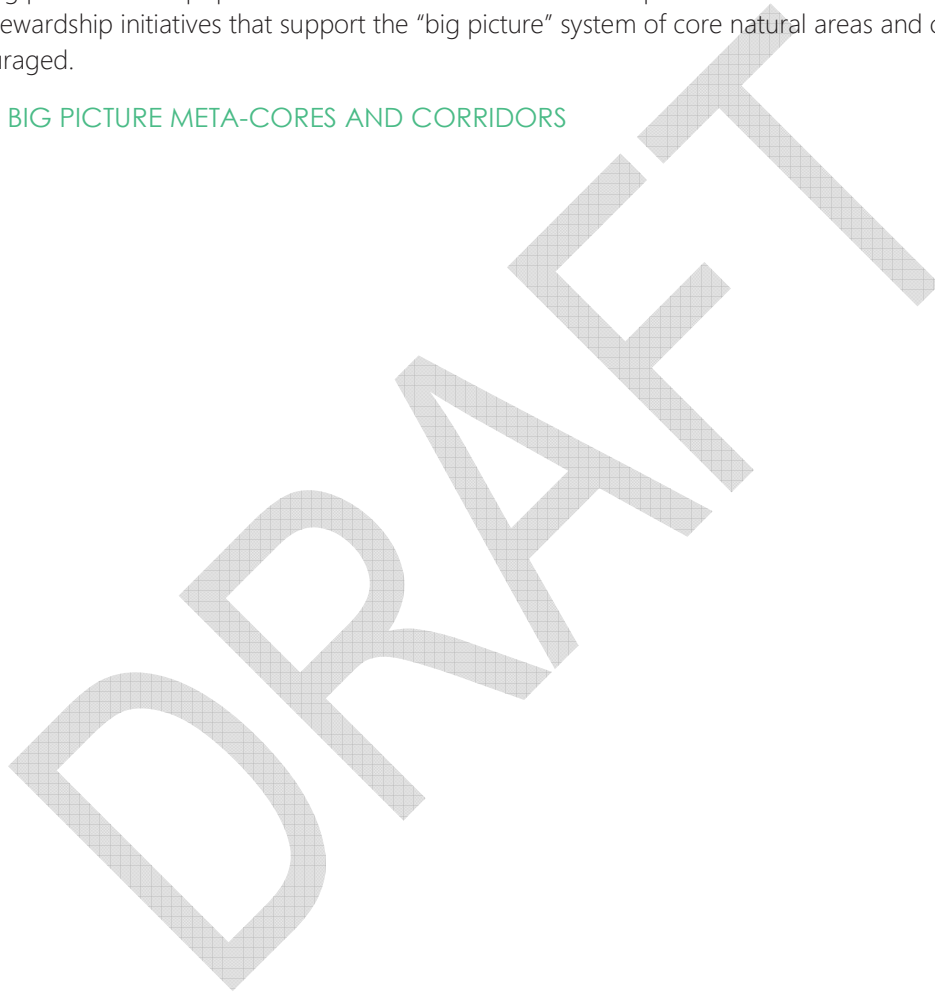
j. The urban forest.

1418_ In addressing opportunities, management restoration and rehabilitation of the Natural Heritage System or for potential naturalization areas identified on Map 5, consideration will be given to the context of London within the surrounding ecological region that extends beyond the City limits. A concept plan prepared by Carolinian Canada identifies large core natural areas, other significant natural areas, and corridors and linkages connecting the system together. This concept, referred to as the “big picture” vision, is designed to complement other analyses of natural heritage conducted by municipalities, conservation authorities, and federal and provincial agencies, and includes the *Middlesex Natural Heritage System Study* (2014).

1419_ The big picture meta-cores and meta-corridors have been refined to reflect local conditions and are identified on Figure 22. The core areas and corridors are represented conceptually, and not to be interpreted as rigid boundary delineations.

1420_ The “big picture” concept provides direction for the location of upland corridors. Naturalization projects and landowner stewardship initiatives that support the “big picture” system of core natural areas and corridor connections will be encouraged.

FIGURE 22 - BIG PICTURE META-CORES AND CORRIDORS



CONSERVATION MASTER PLANS

1421_ City Council may request the preparation of conservation master plans for environmentally significant areas and other natural heritage areas. Conservation master plans may be adopted by Council, and will function as guideline documents for the purposes of providing direction on the management of these areas. The preparation of conservation master plans shall also consider the ecological principles as outlined in the City's *Planning and Design Standards for Trails in Environmentally Significant Areas*.

1422_ Matters which may be addressed through conservation master plans include:

1. Refinement of the boundaries of the environmentally significant area, or other natural heritage areas.
2. Identification of programs for the acquisition of lands within, adjacent to, or providing a linkage to, the environmentally significant areas, or other natural heritage areas, by the City or other public body.
3. The identification of management zones based on ecological sensitivity, including descriptions of recreational uses and opportunities for eco-tourism to be provided if applicable, and details of access permitted to and within the area, including formalized pathways and trail systems.
4. Descriptions of proposed environmental management strategies for the area and the management considerations to be addressed in conjunction with the review of development proposals for adjacent lands.
5. Identification of opportunities to restore and rehabilitate degraded areas within natural heritage areas, and to establish or strengthen corridors or linkages between isolated natural heritage areas.
6. Background information including a description of the natural features and their significance to the Natural Heritage System.

7. Other relevant background information, as applicable.

8. Budgets will be prepared to implement the recommendations of conservation master plans.

ENVIRONMENTAL MANAGEMENT GUIDELINES

1423_ The City may prepare environmental management guidelines setting out in more detail the requirements of environmental studies for development and site alteration. Environmental studies are the means by which the City establishes the precise boundaries of natural features and areas and the significant ecological functions within them. They also assess the potential impacts of development and site alteration on the Natural Heritage System and on their adjacent lands, and are required prior to the approval of development to prevent negative impacts on the Natural Heritage System, and to demonstrate that there will be no negative impacts on the natural heritage features and areas or their ecological functions.

1424_ These guidelines shall be updated as required to reflect changes to provincial policy and technical documents and to reflect improvements in scientific knowledge regarding natural features and ecological functions.

SUBJECT LANDS STATUS REPORTS

1425_ Where a secondary plan has not been completed the City may require the preparation of a subject lands status report. The work plan for the subject lands status report will be determined in consultation with the City and relevant public agencies.

1426_ A subject lands status report shall provide an assessment of natural features and areas on the subject lands and within that part of the subwatershed catchment area that may be impacted by the new development including, but not limited, to those areas included in the Green Space or Environmental Review Place Types on Map 1 or a component of the Natural Heritage System identified or delineated on Map 5.

TABLE 13 - AREAS REQUIRING ENVIRONMENTAL STUDY

Component of Natural Heritage System	Trigger Distance	Area of Adjacent Lands
Fish Habitat		
Habitat of Endangered Species and Threatened Species		
Locations of Endangered Species and Threatened Species		
Unevaluated Wetlands		
Interest	120m	
Woodlands		
wellhead protection areas and highly vulnerable aquifers		
Upland Corridors		
Wetlands	30m	
Environmental Review lands		As appropriate

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1427_ If the subject lands status report identifies any lands that, in the estimation of the City, may meet the criteria for determining significance for specific components of the Natural Heritage System, the City shall require the preparation of an environmental impact study for these lands. Lands that satisfy the criteria for significance shall be included in the Green Space Place Type in conjunction with any amendment to *The London Plan* required for the proposed development.

1428_ Prior to initiation of the subject lands status report, a work plan and study scope shall be prepared to the satisfaction of the City, in consultation with the relevant public agencies. Generally, a subject lands status report will be required to:

1. Confirm and map boundaries of natural heritage features and areas.
2. Evaluate the significance of lands in the Environmental Review Place Type on Map 1.
3. Identify and evaluate the significance of other natural heritage features and areas which are not included in the Green Space or Environmental Review Place Types on Map 1 including those natural heritage features and areas shown on Map 5 and vegetation patches greater than 0.5 hectares in size.

1429_ Where a subject lands status report has not been completed, the City may require that the matters to be addressed in a subject lands status report be undertaken as part of the environmental impact study.

1430_ If a subject lands status report is completed as part of an environmental impact study, the results of this initial stage of the environmental impact study are to be reviewed and confirmed by the City, in consultation with relevant agencies, prior to completing the balance of the study.

ENVIRONMENTAL IMPACT STUDIES

1431_ Environmental impact studies are required to determine whether, or the extent to which, development may be permitted in areas within, or adjacent to, specific components of the Natural Heritage System. They will confirm or refine the boundaries of components of the Natural Heritage System, and will include conditions to ensure that development does not negatively impact the natural features and ecological functions for which the area is identified in accordance with the *Environmental Management Guidelines*. (OPA 78)

1432_ Environmental impact studies are required where development or site alteration is proposed within or adjacent to components of the Natural Heritage System. The City will require that an environmental impact study be completed to its satisfaction, and in accordance with provincial policy, in consultation with the relevant public agencies prior to the approval of a planning and development application, where development or site alteration is proposed entirely or partially within the distances adjacent to Natural Heritage System components set out in Table 13 – Areas Requiring Environmental Study.

1433_ Development or site alteration on lands adjacent to features of the Natural Heritage System shall not be permitted unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions. Adjacent lands shall be identified and delineated by the trigger distances shown in Table 13 for requiring environmental evaluations.

1434_ The City may require that the environmental impact study consider areas beyond those outlined in Table 13 to ensure the relevant context is established for the assessment of potential impacts which may be induced by proposed land uses and for the prescription of effective avoidance and mitigation measures.

1435_ The Subwatershed Plans provide broad level subwatershed-by-subwatershed

environmental information about the ecosystem, and established specific environmental targets that are to be considered in more detailed studies. Secondary plans are also comprehensive in nature, and may include environmental management strategies to be considered at the site-specific level. An environmental impact study completed pursuant to this Plan shall have regard to both the ecosystem framework and specific environmental targets contained in the Subwatershed Plans or any other relevant Plan.

1436_ An environmental impact study shall include all of the following, but not be limited to:

1. A description of the existing natural environment that will be affected or that might reasonably be expected to be affected, either directly or indirectly, including terrain and hydrological functions, vegetation and wildlife species and other features, corridors and linkages.
2. The environmental effects that might reasonably be expected to occur and their temporal and spatial scales.
3. Development criteria to maintain natural features and ecological functions, and mitigate the impacts of development within or on adjacent lands.
4. An Environmental Management Plan that includes requirements for restoration, mitigation and/or compensation, and a monitoring plan.

1437_ Required public notices respecting all official plan and zoning by-law amendment applications and subdivision, consent, and site plan applications under the *Planning Act* shall indicate that an environmental impact study is being prepared to assist in the evaluation of the application.

ENVIRONMENTAL ASSESSMENT

1438_ When an Environmental Assessment of a proposal is carried out under the *Environmental Assessment Act* or relevant federal legislation, the requirements for an environmental impact study will be scoped to include issues that have not been adequately addressed through the Environmental Assessment process. Alternatives involving activities that create or maintain infrastructure that are proposed within the

Natural Heritage System will be considered only after the evaluation of options that would avoid development and site alteration within the Natural Heritage System.

1439_ Required public notices for projects carried out under the *Environmental Assessment Act* shall indicate when an environmental impact study is being prepared to assist in the evaluation of alternatives.

SPECIFIC POLICIES FOR NATURAL HERITAGE

1440_ The following policies relate to specific sites or areas affected by the Natural Heritage policies. These policies serve to augment the general policies for Natural Heritage. Where there is a conflict between the following policies and the more general Natural Heritage policies, these more specific policies shall prevail. Areas subject to specific policies are shown on Map 7 – Specific Policy Areas.

SUNNINGDALE NORTH

1441_ The Sunningdale North area includes lands on the north side of Sunningdale Road West, east of Wonderland Road North, and west of Richmond Street. Along the Medway Creek corridor, any expansion of the existing golf course operation within the distances specified in Table 13 - Areas Requiring Environmental Studies of this Plan, of the Medway Creek Significant Stream Corridor or lands adjacent to the corridor that are identified as woodlands, vegetation patches outside ESA's and wetlands, or environmentally significant area on Map 5, the following policies shall apply. Prior to any expansion, an environmental impact study shall be prepared for the Medway Creek Significant Stream Corridor and features described above. The recommendations of the environmental impact study may include changes to the limits or interior characteristics of the Dry-Fresh Sugar Maple-White Ash Deciduous Forest and the Willow Mineral Deciduous Forest and the Willow Mineral Deciduous Swamp on the north and south ends of the area, identified as FOD5-8 and SWD4-1 in the *Natural Heritage Study Addendum* (Stantec Consulting Ltd., July, 2004) provided adequate compensation is provided,

including the implementation of vegetation management practices and significant renaturalization that will provide a net benefit to the riparian and terrestrial condition of the

valley lands and associated upland woodlots to the satisfaction of the City of London, in consultation with ~~and~~ the Upper Thames River Conservation Authority.

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Natural and Human-made Hazards

WHAT ARE NATURAL AND HUMAN-MADE HAZARDS?

1442_ In addition to the natural heritage features and areas described in this Plan, land areas identified as Natural and Human-made Hazards may also be included in the City's Natural Heritage System, and will be shown on Map 6 – Hazards and Natural Resources. Natural and Human-made Hazard lands include flood plain lands, riverine erosion and wetland hazards, unstable soils and steep slopes, and contaminated lands and abandoned resource wells and are included in the Green Space Place Type on Map 1 – Place Types. Many of these hazards fall within the local conservation authority's regulation limit and within their jurisdiction regarding permitted uses. Former mineral aggregate operations may also be considered as human-made hazards. Policies regarding the rehabilitation of these areas are found in the Natural Resources chapter of this Plan.

1443_ For the purposes of this Plan, the limit of development is established at the natural hazard limit or the limit of the natural heritage feature or area, including the lands required for any ecological buffer, in conformity with the Natural Heritage policies of this Plan, whichever is greater.

WHY ARE NATURAL AND HUMAN-MADE HAZARDS IMPORTANT TO OUR FUTURE?

1444_ Development shall be directed away from areas of natural or human-made hazards where there is an unacceptable risk to public health or safety or of property damage, and not create new or aggravate existing hazards. Natural and human-made hazards are to be identified and delineated through appropriate studies, and plans for their protection and/or avoidance are to be established. Often, natural heritage features overlap with natural hazard lands.

1444A. All natural hazard lands, including riverine flooding and erosion hazards as well as wetlands, including those not identified on Map 5 – Natural Heritage, and the areas of interference surrounding wetlands, are regulated by the conservation authorities having jurisdiction, in accordance with regulations made pursuant to Section 28 of the Conservation Authorities Act. This regulation requires property owners to obtain approval prior to undertaking any development and/or site alteration within these areas, including the placement of fill, grading, construction, alteration to a watercourse and/or interference with a wetland. This regulation is in addition to any requirements outlined by the policies in this London Plan:

WHAT ARE WE TRYING TO ACHIEVE?

1445_ The policies of this Plan are intended to minimize the risks associated with natural hazard lands, and to meet the following objectives:

1. Identify and delineate flood plain, slope and erosion hazard areas, and prohibit or regulate land use activity in areas where public safety may be affected by natural hazards, in accordance with provincial natural hazard management policies, and regulations under the *Conservation Authorities Act*.
2. Minimize the possibility of property damage, social disruption and risk to public safety from natural hazard areas, by restricting the uses and activities permitted on lands susceptible to flooding and/or erosion processes.
3. Direct development away from natural hazard areas to minimize the risk to public safety and/or property damage.
4. Provide for limited and controlled development and site alteration on riverine hazard lands within the floodway, including flood and/or erosion control works, minor additions or passive non-structural uses which do not affect flood flows or reduce flood storage capacity.
5. Through acquisition and agreement, provide for the use of flood plain lands as public open space.
6. Consider the potential impacts of climate change that may result in an increase of the risk associated with natural hazards.

1446_ The policies of this Plan are intended to minimize the risks associated with human-made hazards, and to meet the following objectives:

1. Minimize the potential for safety hazards from abandoned oil or gas wells.
2. Assess and remediate brownfield sites as necessary.
3. Direct development away from human-made hazards.

HOW ARE WE GOING TO ACHIEVE THIS?

FLOOD PLAIN LANDS

1447_ The City of London falls within the jurisdiction of the Upper Thames River, Kettle Creek and Lower Thames Valley Conservation Authorities. The watershed boundaries of these three conservation authorities are shown on Map 6. The Regulatory Flood Standard for the Upper Thames River and Lower Thames Valley Conservation Authorities is based on the 1937 observed Flood Event. The Regulatory Flood Standard for the Kettle Creek Conservation Authority is based on the Hurricane Hazel Storm.

1448_ The Flood Plain policies of this Plan regulate flood plain lands by restricting permitted uses located in the flood plain. The policies are structured around a “one-zone concept” based on the Regulatory Flood Standard. However, in some areas the flood plain is divided into two zones: the floodway, where no development will be permitted; and the flood fringe, where a limited amount of development may be permitted subject to appropriate floodproofing measures, in consultation with ~~and approvals from~~ the conservation authority having jurisdiction. An illustration of the one and two-zone flood plain concepts is provided below in Figures 23 and 24.

1449_ Within the flood plain, there are some areas of well-established development where additional development would not normally be permitted due to flood plain restrictions. Application may be made to the provincial government for the approval of a “special policy area” status to permit controlled development in these areas, as exceptions to the normal provincial flood plain policies, subject to specific policies. Special policy areas are identified on Map 6.

1450. ~~Policy Deleted (OPAXX)~~ ~~1450_ In addition to the Flood Plain policies of this Plan, all flood plain lands are subject to the regulations administered by the appropriate conservation authority pursuant to the Conservation Authorities Act. Under these regulations, development and site alteration is prohibited~~

~~unless prior written consent has been received from the conservation authority.~~

>AREAS IDENTIFIED AS FLOOD PLAIN

1451_ Detailed flood line mapping studies have been completed for most of the tributaries in the Upper Thames and Kettle Creek watersheds. Due to limited development pressure in the Lower Thames Valley Conservation Authority area of jurisdiction within the City of London, studies have not been completed. The approximate boundaries of the flood plain, which contain those lands below the Regulatory Flood Standard, are identified on Map 6. (OPA 21)

1452_ Where a property owner is proposing to develop in close proximity to a watercourse where a flood line study has not been completed, the property owner may be required to undertake a detailed flood line study consistent with the requirements established in the *Technical Guide, River and Stream Systems: Flooding Hazard Limit* (OMNR, 2002). Flooding from watercourses with a drainage area less than 125 hectares is generally considered to be local or municipal flooding and the provisions of this paragraph do not apply.

1. ~~Policy Deleted (OPA XX)~~ ~~The flood plain within London, as identified on Map 6, will be based on the Regulatory Flood Standard of the conservation authority having jurisdiction.~~

2. The precise delineation of the flood plain is determined by the City, in consultation with the conservation authority having jurisdiction, and shown on flood plain mapping available through the conservation authority having jurisdiction.

3. Flood plain mapping has not been prepared for the Sharon Creek subwatershed. Any proposal for development within, or partly within, regulated areas in the Sharon Creek subwatershed, as identified on Map 6, will be required to fulfill the requirements of the City, in consultation with the conservation authority having jurisdiction and

| applicants may be required to undertake studies necessary to delineate flood prone lands. (OPA 21)

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>ONE-ZONE FLOOD PLAIN CONCEPT

1453_ In keeping with provincial policies, the City of London and the conservation authorities have adopted a one-zone concept for the City of London, except in some cases where a two-zone concept is applied. See Figures 23 and 24 for reference.

1454_ The zoning of flood plain lands will reflect the restricted use of these lands, and will prohibit any new development, with the exception of existing uses and minor additions and/or renovations to existing structures. ~~A permit may be required from the appropriate conservation authority and floodproofing may be required.~~

1455_ Development within the flood plain will be restricted to:

1. Flood and/or erosion control structures.
2. Facilities that, by their nature, must locate near water or traverse water.
3. Ancillary facilities of an adjacent land use which are of a passive, non-structural nature and do not adversely affect the natural hazard or natural features and areas or their functions.
4. Municipal infrastructure including roads and utilities/services.

1456_ The development of flood plain lands shall also be subject to the following conditions:

1. Construction of buildings or structures within the floodway is prohibited with the exception of buildings or structures associated with essential public infrastructure, flood

and erosion control, bank stabilization, and watershed management works. Proposed structures will be evaluated in terms of their potential impact on upstream or downstream development of lands, and any new development will incorporate floodproofing measures in accordance with provincial requirements.

~~2. Policy Deleted (OPAXX) 2- All new development or structures within the flood plain will require the approval of the appropriate conservation authority.~~

3. Minor renovations, alterations, or additions to existing buildings may be permitted subject to the approval of the City, ~~in consultation~~ cooperation ~~with the appropriate~~ with the conservation authority having jurisdiction.

1457_ Uses associated with the following are not permitted in the flood plain:

1. Institutional uses including hospitals, long-term care homes, retirement homes, pre-schools, school nurseries, day cares and schools.
2. Essential emergency services such as fire, police and ambulance stations and electrical substations.
3. Uses associated with the disposal, manufacture, treatment or storage of hazardous substances.

FIGURE 23 - ONE ZONE CONCEPT

>TWO-ZONE FLOODWAY - FLOOD FRINGE CONCEPT

1458_ In keeping with provincial policies, the City of London and the ~~Upper Thames River Conservation Authority~~ conservation authority having jurisdiction have adopted a two-zone floodway-flood fringe concept to allow infill development and redevelopment of an existing uses for identified areas along the Thames River and its tributaries where there is a significant difference between the One Hundred Year Flood Standard and the Regulatory Flood Standard or where a flood fringe has been delineated through hydraulic floodway analysis. Flood fringe areas may be identified and delineated by the City, in consultation with the conservation authority having jurisdiction ~~the Upper Thames River Conservation Authority~~ and added to Map 6 by amendment to this Plan.

1459_ In these areas where the two-zone concept is applied, the flood plain is divided into the floodway and the flood fringe. The use of the two-zone concept may allow for some new development within the flood fringe areas of the flood plain that can be safely developed with no adverse impacts.

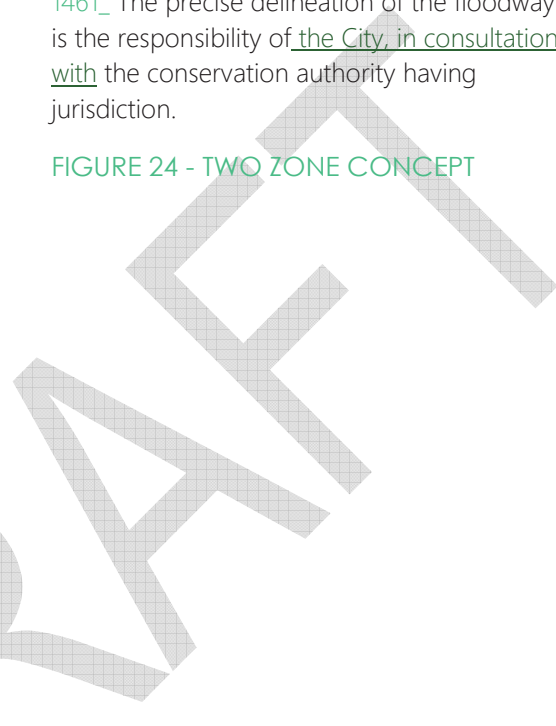
1460_ Under the two-zone concept, the floodway and the flood fringe shall be defined as follows:

1. Floodway - the contiguous inner portion of the flood plain, representing the area required for the safe passage of flood flow and/or the area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage. In some circumstances the floodway may be further delineated by depth and velocity parameters as provided for by provincial flood plain management policies.
2. Flood fringe - the portion of the flood plain between the floodway and the flooding hazard limit. Flood depth and velocity are generally less severe in this portion of the flood plain. The extent of the flood fringe is defined by depth and velocity parameters as

provided for by provincial flood plain management policies. To delineate ~~The delineation of~~ the floodway and the flood fringe areas by the City, in consultation with the conservation authority having jurisdiction, ~~the Upper Thames River Conservation Authority~~ may require submission of geodetic survey information and/or a hydraulic floodway analysis by the applicant.

1461_ The precise delineation of the floodway is the responsibility of the City, in consultation with the conservation authority having jurisdiction.

FIGURE 24 - TWO ZONE CONCEPT



1462_ The zoning of flood plain lands shall be subject to the following conditions:

1. The floodway - the zoning of lands in the floodway will be consistent with the One-Zone Flood Plain policies, and will prohibit development and site alteration.
2. The flood fringe - the zoning of lands in the flood fringe may utilize a holding zone to provide direction as to future permitted uses and to ensure that conditions of floodproofing and safe access are met or achieved prior to development. ~~The Zoning By-Law will be amended to remove the holding symbol when the requirements of the Upper Thames River Conservation Authority with respect to floodproofing, and the provision of dry access to the proposed development, have been satisfied.~~

1463_ Unless otherwise provided for under the Special Policy Area policies below, development within the flood plain will be restricted in accordance with the following conditions:

1. The floodway - the development of lands in the floodway will be consistent with the One-Zone Flood Plain policies.
2. The flood fringe - conditional development may occur subject to undertaking any necessary studies, meeting flood proofing and access requirements ~~and obtaining the approval of the Upper Thames River Conservation Authority.~~
3. ~~*Policy deleted (OPA XX)* All new development or structures within the flood plain will require the approval of the Upper Thames River Conservation Authority.~~
4. Within the flood plain, minor renovations, alterations, or additions to existing buildings may be permitted ~~subject to the approval of the City in cooperation with the Upper Thames River Conservation Authority.~~

SPECIAL POLICY AREAS

1464_ City Council, in accordance with provincial policy, may apply to the Province for approval of a “special policy area” status for specific areas of the city that have historically existed in the flood plain.

1465_ The purpose of a special policy area is to establish site-specific policies, approved by the Province, that are intended to provide for the continued viability of existing uses and address the significant social and economic hardships to the community that would result from strict adherence to provincial policies concerning development.

1466_ Areas of the city which may be considered for special policy area status include portions of West London immediately west of the Thames River, and the Ada Street area. Other proposed special policy areas, as may be determined by City Council and the appropriate conservation authority, will be incorporated into this Plan by amendment. Existing and potential special policy areas are identified on Map 6.

1467_ On application for a special policy area status, City Council may, in conjunction with the appropriate conservation authority and other relevant agencies or provincial ministries, undertake studies to identify development control regulations and floodproofing measures that may allow for limited development in the special policy area in conformity with applicable policies of this Plan, and in accordance with provincial policies.

1468_ On approval of a special policy area(s), this Plan will be amended to incorporate appropriate policies to address the following matters:

1. The circumstances under which new development will be considered in each special policy area.
2. The minimum acceptable level of floodproofing required for new development in each special policy area. In determining the minimum acceptable level of floodproofing required, the degree of flood protection provided by existing flood control works will be considered.

3. The permitted types and locations of new development.
4. Alternative means or measures of providing increased levels of flood protection.
5. Minimum elevations for the provision of safe ingress and egress within each area.

1469_ On approval of the special policy area(s), Map 6 of this Plan will be amended to include the special policy area(s).

>COVES SPECIAL POLICY AREA

1470_ The Coves Special Policy Area, identified on Map 6, contains important natural heritage features and a viable low density residential neighbourhood that has historically existed within the flood plain of the Thames River. While a berm/dyke structure provides protection up to the Regulatory elevation of the Thames River, there continues to be a potential for flooding from the river, as well as from internal drainage sources in the Coves basin.

1471_ The standard two-zone (floodway-flood fringe) cannot be reasonably applied to development in the area. In order to provide for the continued viability of the existing community and an appropriate level of flood damage reduction, the Coves is recognized as a special policy area pursuant to the *Provincial Policy Statement*. Accordingly, the following special policies will apply in the area:

1472_ For the purposes of the Coves Special Policy Area:

1. “Development” shall mean the creation of a new lot, a change in the land use, or the construction of buildings or structures, requiring approval under the *Planning Act* but does not include activities that create or maintain infrastructure authorized under the Environmental Assessment process, or works subject to the *Drainage Act*.
2. “Essential Emergency Services” shall mean services such as those provided by fire, police and ambulance stations and electrical substations, which would be impaired during an emergency as a

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result of flooding, the failure of
floodproofing measures and/or
protection works, and/or erosion.

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3. "Floodproofing" shall mean structural changes and/or adjustments incorporated into the basic design and/or construction or alteration or placement of individual buildings, structures or properties to protect them from flood damage, or to reduce or eliminate flood damages.
4. "Hazardous Substances" shall mean substances which, individually, or in combination with other substances, are normally considered to pose a danger to public health, safety and the environment. These substances generally include a wide array of materials that are toxic, ignitable, corrosive, reactive, radioactive or pathological.
5. "Infilling" shall mean development on previously undeveloped lots, generally bounded by existing development on adjacent sites.
6. "Institutional Uses" shall mean those uses, associated with hospitals, long-term care homes, pre-schools, school nurseries, day cares and schools where there is a threat to the safe evacuation of vulnerable populations such as older persons, persons with disabilities, and those who are young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion.
7. "Regulatory Flood Standard" shall mean the level of flooding which has been calculated by the Upper Thames River Conservation Authority and recognized by the Province, to define the Thames River flood plain limits for regulatory purposes. The 1937 observed historical event, which represents the equivalent of a one in 250 year return flow occurrence, is recognized by the Province as the Regulatory Flood Standard for the Upper Thames watershed. The Regulatory Flood Standard for the Thames River is delineated by the 235.6 metre contour.

8. "100-Year Flood Standard" shall mean the level of flooding which has been calculated by the Upper Thames River Conservation Authority for the Thames River flood plain based on an analysis of precipitation, snow melt, or a combination thereof, having a return occurrence of 100 years on average or having a 1% chance of occurring or being exceeded in any given year. The 100-Year Flood Standard for the Thames River is delineated by the 234.8 metre contour.

9. "Coves Flood Standard" shall mean the level of flooding which has been calculated by the Upper Thames River Conservation Authority to define the flood plain limits from internal drainage sources within the Coves basin, based on a one in 250 year return flow occurrence. The Coves Flood Standard is delineated by the 232.33 metre contour.

10. "Replacement" shall mean removing an existing structure and erecting a new structure.

11. "Site Alteration" shall mean activities such as the placement of fill, grading and excavation that would change the landform and natural vegetative characteristics of a site.

1473_ All development within the Coves Special Policy Area will be encouraged to incorporate floodproofing to the level of the Regulatory Flood Standard, if possible, and to the level of the 100 Year Flood Standard at a minimum.

1474_ Applications for official plan and/or zoning by-law amendments, plans of subdivision and consents that would have the effect of increasing the amount or intensity of residential development within the Special Policy Area will not be supported.

1475_ Applications for official plan and/or zoning by-law amendments that would have the effect of permitting institutional uses, essential emergency services or hazardous substances within the Special Policy Area will not be supported.

1476_ On existing lots of record that are within a place type and zone that permits residential development, minor additions and alterations to existing structures will be permitted, in accordance with relevant zoning and building guidelines, provided it is floodproofed to the elevation of the main floor (first floor) of adjacent structures at a minimum, and in no case less than the elevation of the Coves Flood Standard.

1477_ On existing lots of record that are within a place type and zone that permits residential development, infilling and replacement will be encouraged to incorporate floodproofing to the level of the Regulatory Flood Standard. Where this level of protection would be impractical, obtrusive, or out of context with adjacent development patterns, floodproofing shall be required to the elevation of the main floor (first floor) or adjacent structures at a minimum, and in no case less than the elevation of the Coves Flood Standard. Basements will not be permitted.

1478_ Applications for official plan and/or zoning by-law amendments to permit open space uses will be evaluated on the basis of the relevant policies of this Plan. Development within the Green Space Place Type will generally be restricted to non-intensive or passive uses that are not susceptible to significant flood damages.

1479_ Associated structures, uses and parking areas may be permitted only on lands that are above the elevation of the Coves Flood Standard.

1480_ All infill, replacement, building additions and site alteration activity within the Coves Special Policy Area will continue to be regulated under the requirements of the *Conservation Authorities Act* and this will be denoted on zoning maps to increase the awareness of property owners and area residents.

1481_ The City of London and Upper Thames River Conservation Authority will continue to

cooperate in order to ensure the ongoing maintenance, repair and servicing of the Thames River dyke system, which provides flood damage reduction to the Coves Special Policy Area.

1482_ The City of London, in cooperation with the Upper Thames River Conservation Authority, will maintain, update and enhance the local *Flood Contingency Plan* on an ongoing basis. The City will support the efforts of the conservation authority to maintain, update and enhance the *Flood Warning System Plan*, which provides flood forecasting, control and warning services in the watershed area.

FLOOD PLAIN ACQUISITION

1483_ Selected flood plain lands will be acquired through a long-term program of progressive acquisition, carried out in conjunction with the appropriate conservation authority.

1484_ This flood plain acquisition program will be conducted in recognition of the limited development potential of flood plain lands, and as a means of achieving objectives for open space and recreational lands.

1485_ For the purposes of flood plain acquisition, priorities will be established and evaluated on a regular basis according to the risk to public safety and/or for property damage in the case of a major flood event, and the potential contribution to the network of public open space within the city. Priorities for the acquisition of flood plain lands will be established by City Council, in consultation ~~in~~ cooperation with the ~~appropriate~~ conservation authority having jurisdiction.

1486_ Acquisition will occur as properties become available primarily through the following methods: purchase; parkland dedication; and donation or bequest. In some cases where a property cannot be acquired through other means, the property may be acquired through expropriation.

RIVERINE EROSION AND WETLAND HAZARDS

1487_ Ravines, river valleys, stream corridors, valleylands, unstable slopes and wetlands are hazardous lands which may be subject to erosion and hazardous processes that preclude or restrict land use and development activity. These lands are identified or delineated on Map 6. ~~In addition to satisfying the policies in this section, all site alteration, land use and development activity within the applicable regulation limit will be subject to review and approval by the conservation authority having jurisdiction.~~

1488_ Most areas of riverine erosion hazards are included in the Green Space Place Type. In keeping with provincial policy, new development shall be directed away from lands that are subject to riverine erosion hazards. In areas of new development, the use of hazard avoidance, vegetative plantings and other non-structural solutions are the preferred method of addressing riverine erosion hazards.

1489_ In areas of existing development, uses permitted by an underlying place type may only be developed on lands that are subject to riverine erosion hazards if the following criteria can be addressed to the satisfaction of the City ~~and~~, in consultation with the conservation authority having jurisdiction:

1. The riverine erosion hazard can be avoided and new or existing hazards are not created or aggravated.
2. Vehicles and people have a way of entering and exiting the area during times of emergencies.
3. The development does not involve institutional uses, essential emergency services or the storage of hazardous substances, which could pose an unacceptable threat to public safety if damaged or impacted by erosion forces.
4. Permitted uses may also include works required to be undertaken for the creation or maintenance of infrastructure authorized under an

Environmental Assessment process, and works required for flood and erosion control and bank stabilization to protect areas of existing development.

>LANDS WITHIN THE REGULATION LIMIT

1490_ ~~Policy deleted (OPA XX). All natural hazard lands, including riverine flooding and erosion hazards as well as wetlands and the areas of interference surrounding wetlands are regulated by the respective conservation authorities having jurisdiction, in accordance with regulations made pursuant to Section 28 of the Conservation Authorities Act. This regulation requires property owners to obtain approval prior to undertaking any development and/or site alteration within these areas, including the placement of fill, grading, construction, alteration to a watercourse and/or interference with a wetland.~~

1491_ ~~Policy deleted (OPA XX). The regulation limits are identified on Map 6 to illustrate the hazard lands regulated by the conservation authority having jurisdiction. The regulation limits are subject to interpretation and refinement, without an amendment to this Plan, to reflect changes that have been enacted by the conservation authority having jurisdiction.~~

>RIVERINE EROSION HAZARDS

1492_ The natural movement of watercourses and valley slopes due to erosion can be aggravated by human activities and the impact of the activity can be transferred some distance from the impact site. The risk of erosion is managed by planning for the 100 year erosion rate (the average annual rate or recession extended over a one hundred year time span). The extent of the riverine erosion hazard limit depends on whether the erosion is occurring in a confined system (where the physical presence of a valley corridor containing the system is visibly discernable), or an unconfined system (where there is no discernable valley slope or bank that can be detected from the surrounding landscape). In keeping with the hazard avoidance approach, development and site alteration is generally not permitted in areas that are subject to riverine erosion hazards. Riverine erosion hazards are further addressed by the following criteria and illustrations.

1493_ ~~The boundaries and alignment of the riverine erosion hazard limit shall be determined by the conservation authority having jurisdiction.~~ The riverine erosion hazard limits identified on Map 6 are subject to interpretation and refinement without an amendment to this Plan, on the basis of a technical study prepared in conformity with the Maximum Hazard Line policies of this Plan and completed to the satisfaction of the City, in consultation with ~~and~~ the conservation authority having jurisdiction.

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> CONFINED SYSTEMS

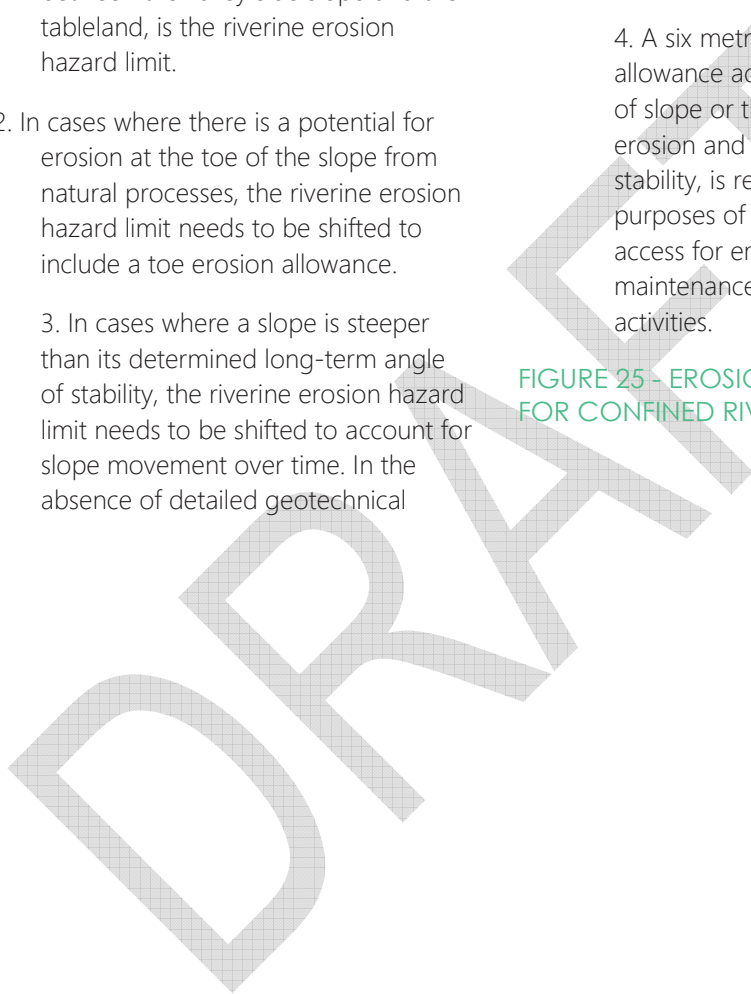
1494_ The riverine erosion hazard limit for confined systems, as shown on Figure 25, is comprised of the combined effect of the following:

1. In cases where valley slopes are found to be at a stable angle, and not subject to the potential influence of toe erosion, the Valley Top of Slope, located at the break in slope point between the valley side slope and the tableland, is the riverine erosion hazard limit.
2. In cases where there is a potential for erosion at the toe of the slope from natural processes, the riverine erosion hazard limit needs to be shifted to include a toe erosion allowance.
3. In cases where a slope is steeper than its determined long-term angle of stability, the riverine erosion hazard limit needs to be shifted to account for slope movement over time. In the absence of detailed geotechnical

information, the stable slope allowance is based on an assumed stable slope gradient of three horizontal units to one vertical unit (3:1). For slopes having a steeper gradient, the allowance is equal to the distance between the actual valley top of slope and the point at which a slope at a 3:1 gradient, rising from the same toe position, would intersect the ground surface.

4. A six metre erosion access allowance added to the valley top of slope or the combined toe erosion and long term angle of stability, is required for the purposes of providing sufficient access for emergencies, maintenance, and construction activities.

FIGURE 25 - EROSION HAZARD LIMIT FOR CONFINED RIVERINE SYSTEM



>UNCONFINED SYSTEMS

1495_ The riverine erosion hazard limit for unconfined systems where there is no discernable valley slope or bank, as shown on Figure 26, is the combined limit of:

1. The meander belt allowance, which provides a limit to development within those areas where the river system is likely to shift.
2. The erosion access allowance, which is required for the purpose of maintaining sufficient access for emergencies, maintenance, and construction activities.

>STEEP SLOPES OUTSIDE THE RIVERINE EROSION HAZARD LIMIT

1496_ The riverine erosion hazard limit identifies the erosion hazard associated with slopes along the city's river and stream corridors. Steep slopes associated with other features such as moraines or remnant valley slopes that are no longer continuous with the river system exist within the city outside of the riverine erosion hazard limit. These features, identified on Map 6 will be assessed through the community planning process and appropriate measures will be taken to address erosion hazards and protect the natural vegetation associated with these features. Such measures may include the preparation of a geotechnical study and/or supporting technical study in conformity with the Maximum Hazard Line policies below.

1497_ ~~Policy deleted (OPA XX). Applicants may be required to obtain the necessary approvals from the conservation authority having jurisdiction for development proposed within steep slopes outside of the riverine erosion hazard limit.~~

>WETLANDS AND AREAS OF INTERFERENCE

1498_ ~~Policy deleted (OPA XX). Wetlands and their surrounding areas of interference are subject to regulation under the Conservation Authorities Act due to the potential hazards associated with flooding, organic soils and interference with water source/recharge areas. Filling or draining can have an impact on the hydrologic functions of a wetland which, in turn, may influence the flooding and erosion processes in the area. The incremental impact of widespread wetland interference can also have a significant impact on downstream hydrology. The regulation limit also applies to surrounding areas of interference, for a distance of 120 metres around provincially significant wetlands and other wetlands larger than two hectares in size, and 30 metres around wetlands that are less than two hectares in size and not provincially significant.~~

1499_ ~~Policy deleted (OPA XX). Mapping for the wetlands and areas of interference included within the regulation limit, is maintained by the conservation authority having jurisdiction and may be reflected on Map 6 of this Plan as the conservation authority regulation limit for information purposes. Within regulated wetlands and their areas of interference, development or site alteration that is consistent with the underlying place type and zoning may be permitted only if prior approval is received from the conservation authority having jurisdiction, and in accordance with the recommendations of an environmental impact study.~~

FIGURE 26 - EROSION HAZARD LIMIT FOR UNCONFINED RIVERINE SYSTEM

MAXIMUM HAZARD LINE

1500_ The Maximum Hazard Line represents the outer limit of combined natural hazards including flood plains and areas of unstable or organic soils and steep slopes, including steep slopes outside of the riverine erosion hazard limit and wetlands, and is identified on Map 6 for information purposes. Regulated lands within the Maximum Hazard Line include riverine flooding and erosion hazards, wetlands and the areas of interference around wetlands. This identification is subject to interpretation and refinement without an amendment to this Plan, to reflect changes that have been enacted by the conservation authority having jurisdiction.

>TECHNICAL STUDIES

1501_ For new development, redevelopment, or expansions to existing development, geotechnical assessments, hydrogeological studies, river morphology studies, erosion control plans and/or other supporting technical studies will be required to:

1. Accurately delineate the riverine erosion hazard limit.
2. Identify existing erosion and/or slope hazards.
3. Assess the impact of the proposed development on existing hazards.
4. Assess the potential for the proposed development to create new hazards.
5. Identify measures to safely avoid the potential hazards, including appropriate development setback from the riverine erosion hazard limit.
6. Identify and address any associated impacts that development adjacent to the riverine erosion hazard limit will have on components of the Natural Heritage System.

1502_ The City shall require that the geotechnical assessment and other technical studies be completed by a qualified professional to its satisfaction, in consultation with the ~~relevant~~ conservation authority having jurisdiction and other public agencies, prior to the approval of an official plan amendment, zoning by-law amendment, subdivision

application, consent to sever, or site plan application.

1503_ A geotechnical assessment and other required technical studies may be completed as part of a secondary plan, Environmental Assessment and/or an environmental impact study in conformity with the policies in the Our Tools part of this Plan.

HUMAN-MADE HAZARDS

1504_ There are lands within the City of London that as a result of previous human activity may not be suitable for future development. These policies are intended to:

1. Minimize the potential for contaminated lands to create a hazard to public health and safety, to property or to the natural environment.
2. Encourage the restoration of contaminated land.
3. Support development and redevelopment proposals that will facilitate the remediation of vacant or underutilized brownfield sites.

>CONTAMINATED LANDS

1505_ Notwithstanding the place types on Map 1 of this Plan and any associated policies, future development will not be permitted on or in the vicinity of known or suspected contaminated sites, unless it is determined that the development satisfies the provisions of the *Environmental Protection Act*, and the development complies with any other provincial and municipal guidelines, as applicable.

1506_ The City may consult with appropriate provincial agencies and may require an investigation, including testing of soil and groundwater samples, to:

1. Determine potential health concerns.
2. Demonstrate the site can be rehabilitated to meet appropriate federal, provincial and local standards.
3. Identify procedures for site remediation.

1507_ The City shall cooperate and participate with other private or public agencies, in an effort to reduce adverse environmental impacts or health hazards associated with contaminated sites.

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1508_ In determining the standards to be used for the purposes of site remediation for Records of Site Condition on contaminated lands, water standards shall be used in accordance with the provisions of the *Environmental Protection Act* and any associated regulation.

>ABANDONED OIL OR GAS WELLS

1509_ For information purposes, the approximate locations of known or suspected former petroleum wells are identified on Map 6. Prior to approving new development on or adjacent to known or former petroleum (oil and gas) well locations, the City will require the applicant to demonstrate that the known or suspected hazard has been mitigated in accordance with relevant provisions of the *Oil, Gas and Salt Resources Act*. Should previously unknown abandoned petroleum works be discovered during the course of a project, work shall be ceased until such time that hazards have been mitigated in accordance with relevant provisions of the *Oil, Gas and Salt Resources Act*.

>ABANDONED WATER WELLS

1510_ Where there are known abandoned water wells, or prior to approving development on lands found to contain abandoned water wells, the City shall require the applicant to demonstrate that the wells have been properly decommissioned, in accordance with the provisions of the *Ontario Water Resources Act* and any associated regulation. It is the responsibility of the applicant and/or property owner to determine if any abandoned water wells exist within a development site.

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Natural Resources

WHAT ARE NATURAL RESOURCES?

1511_ There are lands within the City of London that contain natural resources that are to be protected to ensure that the resources are available for extraction to support on-going development and infrastructure needs. In London, these lands include aggregate resource areas, extractive industrial areas, such as the Byron Gravel Pits, and potential mineral and petroleum resources. These resources require protection from development until such time as the resource is exhausted and rehabilitation of the resource area is complete.

1512_ Wellhead Protection Areas are zones around wells where land uses must be planned to protect the quality and quantity of the drinking water supply. These wells serve as emergency municipal water wells, and are located within the identified wellhead protection areas. *Source Protection Plans* identify areas where uses or activities may be prohibited, restricted, or otherwise regulated by the Source Protection Plan to protect our drinking water supply within highly vulnerable aquifers and significant groundwater recharge areas.

WHY ARE NATURAL RESOURCES IMPORTANT TO OUR FUTURE?

1513_ Ready access to convenient resources is important to the continued growth and development of the city. Sand and gravel provide a valuable source of street and building construction material. Policies of this Plan provide for the protection of these resources, including the continuation and expansion of existing pits and quarries and the introduction of new pits and quarries. The Plan also provides policies to ensure that the potential impacts of pits and quarries on other land uses are also taken into account. There are no known mineral or petroleum resource operations in the city, however, in certain areas of London underground petroleum resources may exist. Access to high-quality drinking water that meets or exceeds all regulatory standards is important to the health and well-being of Londoners.

WHAT ARE WE TRYING TO ACHIEVE?

1514_ To balance the needs of property owners, operators and residents, to facilitate the extraction of our natural resources, to provide access to aggregate resources as close to market as possible, and to ensure the rehabilitation of these lands, we will:

1. Promote aggregate resource conservation, including aggregate extraction and the recovery and recycling of manufactured materials derived from aggregates.
2. Provide for the continuation of existing extractive operations.
3. Provide for the expansion of existing pits and quarries, and the establishment of new pits and quarries, in accordance with provincial requirements and in conformity with the policies of this Plan.
4. Protect aggregate resources for long-term use from development and activities that would preclude or hinder the expansion or continued use of the operation, or would be incompatible for reasons of health, safety or environmental impact.
5. Minimize potential land use compatibility problems between pits and quarries and surrounding land uses.
6. Ensure that human health and safety impacts are mitigated.
7. Promote best practices in the operation, site design and after-use remediation of extractive industrial sites.
8. Provide for the sensitive rehabilitation of pits and quarries to an appropriate after-use compatible with the long-term intent of this Plan.

1515_ To protect drinking water resources and to ensure high-quality drinking water supply and to address significant drinking water threats, we will:

1. Implement *Source Protection Plans* as required by provincial regulations.
2. Prohibit, restrict, or otherwise regulate uses or activities where significant drinking water threats may occur as mapped in the *Source Protection Plans* and in accordance with *Source Protection Plan* policies.
3. In designated vulnerable areas identified through the *Assessment Report*, all planning decisions shall be in conformity with the policies of the *Source Protection Plan* that address significant drinking water threats.

HOW ARE WE GOING TO ACHIEVE THIS?

1516_ Map 6 – Hazards and Natural Resources, includes the following natural resources:

1. Aggregate Resources
2. Mineral and Petroleum Resources
3. Emergency Municipal Water Wells, Wellhead Protection Areas, Significant Groundwater Recharge Areas and Highly Vulnerable Aquifers

1517_ Policies for Extractive Industrial Areas are included in the Aggregate Resources policies. Identified extractive industrial areas are aggregate resource areas that are licensed under the *Aggregate Resources Act*.

AGGREGATE RESOURCES

1518_ Aggregate extraction is a permitted interim use in all place types of this Plan. In prime agricultural areas, aggregate extraction sites shall be rehabilitated to an agricultural condition. The locations of aggregate resource areas, and licensed pits and quarries and properties appropriate for consideration for a license under the *Aggregate Resources Act* are identified on Map 6. The ultimate intended uses for lands identified as extractive industrial areas on Map 6, are shown on Map 1 – Place Types.

1519_ In addition to the policies of this Plan, the operation of pits and quarries in London is also subject to the provisions of the *Aggregate Resources Act*.

1520_ In evaluating proposals for change in land use within, or adjacent to, extractive industrial areas identified on Map 6, the potential impact of the proposed use on the pit or quarry and the future availability of aggregate resources for extraction will be considered. Existing aggregate extraction operations shall be protected from new development and activities that would preclude or hinder their expansion or continued use, or which would be incompatible for reasons of public health, public safety, or environmental impact. The following measures may be required to ensure that extraction is undertaken

in a manner which minimizes social and environmental impacts between the aggregate resource extraction and new development:

1. Phasing of the proposed development, such that portions of the site furthest away from the pit or quarry are developed first. This will assist in the maintenance of a buffer area between the two uses.
2. Phasing of the proposed development, so that rehabilitation of portions of the pit or quarry precedes the development of adjacent residential uses.
3. The provision of berms, landscaping, and fencing.

1521_ The City will promote the conservation of aggregate resources by making provision for the recovery of these resources, wherever possible. It is recognized that the extraction of these resources may occur during the life of this Plan. An amendment to *The London Plan* may be required to establish a new pit or quarry, or to substantially expand an existing pit or quarry, in conformity with the policies of this Plan. Map 6 may be amended to identify extractive industrial areas for a new or expanded pit or quarry, or to remove the extractive industrial areas for a closed pit or quarry. The foregoing notwithstanding, in the case of aggregate resource areas in the Byron Gravel Pits, only a zoning by-law amendment will be required to establish a new pit or expand an existing pit.

1522_ In addition to aggregate resource extraction, the recovery and recycling of manufactured materials derived from aggregates for re-use is a permitted use within an aggregate operation.

1523_ In areas within or adjacent to known aggregate resource areas, development and activities that would preclude the establishment of new aggregate extraction operations, or access to the resources, will be permitted only if one or more of the following criteria are met:

1. Resource use would not be feasible.

2. The proposed land use or development serves a greater long-term public interest.

3. Issues of public health, public safety and environmental impact are addressed.

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>EXPANSIONS OF PITS AND QUARRIES
OR NEW PITS AND QUARRIES

1524_ In addition to the requirements of the *Aggregate Resources Act*:

1. An amendment to this Plan will be required in order to establish a new pit or quarry or to expand an existing pit or quarry beyond that area identified on Map 6 as extractive industrial areas except in the south-east Byron area.
2. In the case of lands in the Byron Gravel Pits identified on Map 6 as extractive industrial areas or aggregate resource areas, only a zoning by-law amendment will be required to establish a new pit or quarry or to expand an existing pit or quarry.

1525_ Proposals will be evaluated in terms of their potential impact on surrounding land uses.

1526_ In reviewing aggregate extraction proposals applied for under the *Aggregate Resources Act*, where an official plan amendment or zoning by-law amendment is required, City Council may require the applicant to submit the following information:

1. A report setting out the location, extent, amount, and quality of the aggregate resource to be extracted.
2. An inventory of existing site conditions, including the description and dimensions of the site, property ownership and area, adjacent land uses, vegetation, topography, soil conditions, ground and surface water, and other significant features.
3. An evaluation of potential noise and vibration impacts on adjacent land uses in conformity with the Noise, Vibration and Safety policies in the Our Tools part of this Plan.
4. The site plan of the extractive operation, as required by the *Aggregate Resources Act*, and showing the proposed development as planned and staged. Such site plans shall include: the location of structures,

operating equipment, activity areas, points of access, and internal streets; the anticipated use of traffic routes to and from the site; the proposed use of measures to mitigate the potential impact of dust, noise, vibration, and other nuisances on sensitive receptors within 150 metres of the site; surrounding land uses; and the phasing of rehabilitation of the extractive operation.

1527_ In place types other than Future Growth, applications for an amendment to this Plan to establish a new pit or quarry or to expand an existing pit or quarry will be subject to the Planning and Development Application policies in the Our Tools part of this Plan.

>REHABILITATION OF PITS AND QUARRIES

1528_ City Council, in considering an official plan amendment and/or zoning by-law amendment and an application under the *Aggregate Resources Act* to add or expand a pit or quarry, will require the applicant to submit a rehabilitation plan, as provided for by the *Aggregate Resources Act*, to ensure that the rehabilitation of a pit or quarry is in keeping with the relevant place type(s) shown on Map 1 and other relevant policies of this Plan.

1529_ City Council may request that the following items be included in the rehabilitation plan: details of the proposed land use; final topographic contours; the expected depth and quality of topsoil; the expected depth and quality of ground water; the expected extent, depth, and quality of surface water; proposed measures to ensure slope stability; details of the landscaping or replanting program; and delineation of proposed drainage patterns.

1530_ City Council may request that rehabilitation plans be based on an area study, prepared in conformity with the Secondary Plans policies of this Plan. Secondary plans intended to form the basis of a rehabilitation plan will address, in addition to those matters described in the Secondary Plans policies, methods of minimizing potential land use conflicts between proposed new development and existing land uses.

>WAYSIDE PITS AND QUARRIES, PORTABLE ASPHALT AND CONCRETE PLANTS

1531_ Wayside pits and quarries, and portable asphalt and concrete plants may be established in undeveloped areas within any place type of the Plan without the requirement for an amendment to *The London Plan* or the *Zoning By-law*, subject to the following provisions.

1532_ For the purposes of this Plan, a wayside pit or quarry means a temporary pit or quarry opened and used by or for a public authority solely for the purpose of a particular project or contract of street construction and not located on the street right-of-way. A portable asphalt plant means a facility with equipment designed

to heat and dry aggregate and mix aggregate with bituminous asphalt to produce asphalt paving material, and includes stockpiling and storage of bulk materials used in the process, and which is not of permanent construction, but which is to be dismantled at the completion of the construction project. A portable concrete plant means a building or structure with equipment designed to mix cementing materials, aggregate, water and admixtures to produce concrete, and includes stockpiling and storage of bulk materials used in the process, and which is not of permanent construction, but which is designed to be dismantled at the completion of the construction project.

1533_ Wayside pits and quarries, and portable asphalt and concrete plants to be established within areas of the Green Space Place Type that have been recognized by City Council as Environmentally Significant Areas, or within areas of any place type that are subject to a regulation limit described by the conservation authority having jurisdiction, will require a zoning by-law amendment to permit a temporary use, in accordance with the provisions of the *Planning Act*. Applications for a zoning by-law amendment to permit wayside pits and quarries will be subject to the Planning and Development Application policies in the Our Tools part of this Plan.

1534_ Wayside pits and quarries, and portable asphalt and concrete plants to be established within areas of existing development will require a zoning by-law amendment to permit a temporary use, in accordance with the provisions of the *Planning Act*. Applications for a zoning by-law amendment to permit wayside pits and quarries will be subject to the Planning and Development Application policies in the Our Tools part of this Plan.

1535_ City Council, in reviewing applications under the *Aggregate Resources Act* for wayside permits, will require the submission of a rehabilitation plan prepared to Council's satisfaction, as provided for by the *Aggregate Resources Act*, to ensure that the rehabilitation of a pit or quarry is in conformity with the place types shown on Map 1 and other relevant policies of this Plan.

SPECIFIC POLICIES FOR AGGREGATE RESOURCES

1536_ The following policies relate to specific sites or areas affected by the Aggregate Resources policies. These policies serve to augment the general policies for Aggregate Resources. Where there is a conflict between the following policies and the more general Aggregate Resources policies, these more specific policies shall prevail. Areas subject to specific policies are shown on Map 7 – Specific Policy Areas.

>BYRON GRAVEL PITS AND ADJACENT LANDS

1537_ Within the Future Growth Place Type east of North Street, south of Byron Baseline Road and Commissioners Road West, known as the Byron Gravel Pits, it is anticipated that the long-term land use of this area will be a mix of mid-rise housing types and recreational uses. Redevelopment of this area will be based on a comprehensive rehabilitation and development plan. Expansion of the existing licensed aggregate area and the realignment of North Street may be considered if it can be demonstrated that this will assist in the rehabilitation of the existing gravel pits and that compatibility with surrounding land uses can be achieved.

1538_ Aggregate resource areas adjacent to the Byron Gravel Pits are identified on Map 6. It is recognized that extraction of these resources may occur during the life of this Plan as a means of assisting in the overall rehabilitation of the Byron Gravel Pits. Consideration of the long-term development for the lands identified on Map 6 as aggregate resource areas adjacent to the Byron Gravel Pits will be incorporated and form a part of the studies being undertaken to achieve a comprehensive extraction, rehabilitation and development plan for the lands in the Future Growth and Neighbourhoods Place Types shown on Map 1.

1539_ For lands identified as extractive industrial areas and aggregate resource areas in Byron, it is the intent of this Plan to minimize the impact of extraction activities upon surrounding land uses. Accordingly, in the Byron Gravel Pits, in

addition to conformity with the Natural Resources policies of this Plan, the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended, may be requested, through the ~~licence~~-license and site plan approval process, to require any or all of the following:

1. The extraction and rehabilitation of extracted areas to be expedited to the extent possible through a phasing sequence on the site plans required by the *Aggregate Resources Act*.
2. The location of stockpiling, screening, mixing, crushing or other processing of materials at the lowest elevations that is reasonably possible.
3. To the extent possible, the use of common, paved entrances and exits as recommended by the City Engineer to be shared by extraction operations.
4. The retention of tree or other vegetative cover within the setback areas to the extent possible. (OPA 78)

1540_ The integration of rehabilitation plans for the extraction area will be achieved through the process of both new and replacement site plan approval by the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended. The integrated plans will provide an approximate indication of the rehabilitated landscape including limited peripheral areas that are intended for residential after-use, and the greater portion of the pit that will not be suitable for residential development because of slope or elevation constraints. (OPA 78)

1541_ Since the ultimate use of this area is likely to be open space and recreation, a more detailed level of site planning will have to be undertaken in the future involving the pit operators and land owners, the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry and the City. The resulting plan and related documentation will indicate:

1. An accurate delineation of the land intended to be rehabilitated as public open space.
2. Accurate contour information indicating the final grading of the rehabilitated areas.
3. The approximate configuration of any ponds to be incorporated in the rehabilitation scheme.
4. Street and trail access to and through the rehabilitated pit area including any required parking facilities.
5. The siting of any recreational facilities proposed for the rehabilitated pit area.
6. A planting scheme to provide for the stabilization of soils and reduced maintenance on rehabilitated slopes, the naturalization of lands at the edge of forest areas, and the creation of a visually attractive landscape suitable for passive recreation pursuits. (OPA 78)

1542_ The development of lands within the vicinity of the extractive industrial areas or aggregate resource areas, as identified on Map 6 for residential uses shall have regard for the mitigation of the noise and dust impact of extraction operations on the proposed residential development. The review of applications for rezoning or plan of subdivision approval will include the following considerations:

1. Prior to a zoning by-law amendment or final approval of a plan of subdivision within 300 metres of lands identified as extractive industrial areas or aggregate resource areas on Map 6, a noise and dust impact study shall be completed and any recommended mitigation

measures contained therein will be carried out to the satisfaction of the City of London, the Ministry of the Environment, Conservation and Parks and the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended. Furthermore, the subdivider will notify prospective lot purchasers, in agreements of purchase and sale and in notices registered on title that are binding on successors and assigns to the subdivision lands and in a separate agreement with the City, of the potential for new ~~licences,~~ licenses in the identified aggregate resource area and of the long-term continuation of active aggregate operations in the Byron Gravel Pits and of the noise and dust impacts associated with extraction and related operations.

2. Residential subdivisions will be developed in phases so that the maximum possible separation distance between areas of residential development and extraction operations is maintained. A minimum separation distance of 150 metres between residential development and the maximum extent of extraction activity (this separation distance being measured from the limit of extraction, not the licensed area boundary) will normally be required.

3. As peripheral portions of the extraction area are rehabilitated, the separation area could shift to reflect any adjusted limits of active extraction operations. Any deviation from the 150 metre norm will be considered only on the basis of studies undertaken by a qualified consultant which demonstrate to the satisfaction of the City of London, the Ministry of the Environment, Conservation and Parks and the Ministry of ~~Northern Development, Mines,~~ Natural Resources and Forestry, as amended, that the deviation is satisfactory to protect the residential development

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from adverse impacts of extraction
operations. (OPA 78)

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>KILALLY NORTH

1543_ Within the Kilally North area, which is bounded by Stoney Creek on the north, the Urban Growth Boundary on the east, the Thames River on the south, and Highbury Avenue North on the west, the following policies apply:

1544_ The development of lands within the vicinity of the extractive industrial areas or aggregate resource areas, as identified on Map 6 will have regard for the mitigation of the noise and dust impacts of extraction operations on the proposed development. The review of applications for rezoning or plan of subdivision approval will include the following considerations:

1. Prior to a zoning by-law amendment or final approval of a plan of subdivision within 300 metres of lands identified as extractive industrial areas or aggregate resource areas on Map 6, a noise, dust and vibration impact study will be completed by a qualified consultant and any recommended setbacks for development or mitigation measures contained therein will be carried out to the satisfaction of the City. Mitigation measures will be implemented at the sole cost of the proponent of the development.
2. With respect to residential development, the subdivider will notify prospective lot purchasers, in agreements of purchase and sale and in notices registered on title that are binding on successors and assigns to the subdivision lands and in a separate agreement with the City, of the potential for new licenses in the identified aggregate resource area and of the long-term continuation of active aggregate operations adjacent to the Kilally North area and of the noise and dust impacts associated with extraction and related operations.

1545_ There are no known mineral or petroleum resource operations in the city, however, in certain areas of London underground petroleum resources may exist. Exploration of petroleum resources will not require an amendment to this Plan or the *Zoning By-law*. Development of petroleum resources, including exploration, drilling, production and storage of petroleum resources, shall comply with the *Oil, Gas and Salt Resources Act* and any other provincial requirements, as applicable.

1546_ City Council shall ensure that no development will be permitted around any prior existing operational petroleum wells for maintenance, servicing, and safety reasons. Known abandoned oil and gas wells are identified on Map 6.

1547_ Appropriate setbacks as outlined in the regulations of the *Oil, Gas and Salt Resources Act* will be addressed through the *Zoning By-law*.

MINERAL AND PETROLEUM RESOURCES

WELLHEAD PROTECTION AREAS, SIGNIFICANT GROUNDWATER RECHARGE AREAS AND HIGHLY VULNERABLE AQUIFERS

1548_ Wellhead protection areas are zones around wells where land uses must be planned to protect the quality and quantity of the water supply.

1549_ Within the wellhead protection areas identified on Map 6, a range of restricted or prohibited activities or land uses may be identified due to their potential impact on the quality or quantity of drinking water.

1550_ The City will implement a *Source Protection Plan*, as required by provincial legislation, to protect the drinking water supply. The *Source Protection Plans* and *Assessment Reports* identify and map the locations of designated vulnerable areas. Existing and future land uses and activities may be regulated or prohibited by the policies of the *Source Protection Plan*.

1551_ In designated vulnerable areas identified through a *Source Protection Plan* and *Assessment Report*, all planning decisions shall be in conformity with those policies that address significant drinking water threats in accordance with Section 39(1)(a) of the *Clean Water Act*. All planning decisions shall have regard for those policies that address low and moderate drinking water threats in accordance with Section 39(1)(b) of the *Clean Water Act*.

1552_ For areas identified as significant groundwater recharge areas or highly vulnerable aquifers on Map 6, a hydrological study may be required to determine the potential impacts of the proposed development on the quality and quantity of the groundwater resource as part of a planning or building permit application. This could result in a prohibition, restriction or other regulation on activities within these areas.

1553_ The City may prepare a guideline document to identify the uses and activities that may require a hydrological study to protect and maintain the drinking water resource.

1554_ The limits of a significant groundwater recharge area on Map 6 are intended to identify areas that may require additional study to permit site alteration or development, and may be amended only as part of an *Assessment Report*.

1555_ These policies also address the protection of environmental quality and ecological function with respect to water quality, water quantity, groundwater recharge areas, headwater streams and highly vulnerable aquifers when read in conjunction with the Natural Heritage policies of this Plan.