

<b>Chapter/Policy/Section</b>	
<b>15.</b>	<p><b><u>INTRODUCTION</u></b></p> <p><i>The Environmental Policies of the Plan provide for the recognition <u>and protection</u> of significant natural features and ecological functions; lands subject to development constraints such as flooding and erosion hazards, contaminated soils and abandoned oil and gas wells; and lands containing aggregate, mineral or petroleum resources. <u>This is consistent with the 2007 – 2010 Council Strategic Plan which identifies Environmental Leadership as a strategic priority.</u> The lands known to be subject to the policies of Chapter 15 are delineated on Schedule "B" – <u>Flood Plain and Environmental Features "B1" – Natural Heritage Features, and "B2" – Natural Resources and Natural Hazards.</u> <u>Where warranted on the basis of environmental studies, lands may be added to Schedules "B1" and "B2" through amendments to the Official Plan.</u></i></p> <p><small>(Introduction deleted and replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</small></p>
<b>15.1.</b>	<p><b><u>OBJECTIVES FOR ENVIRONMENTAL POLICIES</u></b></p> <p><small>(Section 15.1 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</small></p> <p>It is intended that the development and use of natural heritage areas, areas containing natural or human generated hazards, and aggregate, mineral and petroleum resource areas, shall be directed towards the following objectives:</p>
<b>15.1.1.</b>  <b>Natural Heritage Objectives</b>	<ul style="list-style-type: none"> <li>i) Achieve healthy terrestrial and aquatic ecosystems in the City's subwatersheds.</li> <li>ii) Provide for the identification, protection and rehabilitation of significant natural heritage areas.</li> <li>iii) <u>Protect, maintain and improve surface and groundwater quality and quantity where possible by protecting wetlands, groundwater recharge areas and headwater streams.</u></li> <li>iv) Enhance the contribution of the Natural Heritage System to urban form and community design.</li> <li>v) <u>Maintain, restore and improve the diversity and connectivity of natural features, and the long-term ecological function and biodiversity of natural heritage systems.</u></li> <li>vi) <u>Encourage, through education and incentive programs, the co-operation of property owners in the maintenance of or enhancement to the naturalization of lands.</u></li> <li>vii) <u>Develop targets for woodland cover through the preparation of an Urban Forest Strategic Plan.</u></li> </ul>
<b>15.1.2.</b>  <b>Natural Hazards Objectives</b>	<ul style="list-style-type: none"> <li>i) <del>Reduce</del> <u>Minimize</u> the possibility of property damage, social disruption and danger to life from flooding, by restricting the uses and activities permitted on lands susceptible to flooding and/or erosion <u>processes.</u></li> <li>ii) Provide for limited and controlled development on flood plain lands in accordance with provincial policies, where such development would be safe and appropriate, and would not reduce flood storage capacity.</li> <li>iii) Through acquisition and agreement, provide for the use of flood plain lands as public open space.</li> <li>iv) Define and regulate <u>flood plain areas natural hazards</u> as permitted by provincial <del>flood plain natural hazard</del> management policies and the <i>Conservation Authorities Act</i> including, but not limited to flood plain areas, slope hazards and erosion <u>hazards.</u></li> <li>v) <del>Reduce</del> <u>Minimize</u> the risk to public safety and to property due to erosion and slope instability.</li> </ul>
<b>15.1.3.</b>  <b>Human Generated Hazards</b>	<ul style="list-style-type: none"> <li>i) Minimize the potential for contaminated lands to create a hazard to public health and safety, to property or to the natural environment.</li> </ul>

<p><b>Objectives</b></p>	<p>ii) <u>Encourage the restoration of contaminated land.</u></p> <p>iii) <u>Support development and redevelopment proposals that will facilitate the remediation of vacant or underutilized brownfield sites.</u></p>
<p><b>15.1.4. Objectives for Aggregate, Mineral and Petroleum Resource Areas</b></p>	<p>i) Provide for the continuation of existing extractive operations.</p> <p>ii) Provide for the expansion of existing pits and quarries, and the establishment of new pits and quarries, where appropriate.</p> <p>iii) <u>Protect mineral aggregate resources for long-term use.</u></p> <p>iv) Minimize potential land use compatibility problems between pits and quarries and surrounding land uses.</p> <p>v) Provide for the sensitive rehabilitation of pits and quarries to an appropriate after-use compatible with the long-term intent of the Plan.</p> <p>vi) Minimize the potential for safety hazards from abandoned oil or gas wells.</p>
<p><b>15.1.5. Agricultural Uses</b></p>	<p>i) Provide for the continuation of existing agricultural activities.</p> <p>ii) Promote farm practices which are environmentally sustainable.</p> <p>iii) Promote the protection of natural and environmental features in the farming community through the mechanisms noted in Subsection 15.3.5 of this Plan.</p> <p>iv) Permit improvements to the agriculturally related infrastructure such as drainage systems while having regard to the policies of <del>this</del> Section 15 of the Plan.</p> <p>(Ministry Modification No.1 to OPA No. 88) (Section 15.1 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.2.</b></p>	<p><b><u>NATURAL HERITAGE SYSTEM</u></b></p> <p>(Section 15.2 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>This section provides the policy framework for a Natural Heritage System for London. The policies provide for the recognition and protection of natural features and ecological processes that are important to the sustainability of healthy urban and rural environments.</i></p>
<p><b>15.2.1. Sub-Watershed Planning Studies</b></p>	<p>The City of London Sub-Watershed <u>Planning Studies</u> provide background for the content and implementation of the Natural Heritage <u>and Water Resources Management</u> policies. These <u>Planning Studies</u> include the watersheds of all of the major tributaries entering the Thames River within the City as well as the upper reaches of the Kettle Creek Watershed which flows to Lake Erie. <u>There are areas of the City not covered by the Subwatershed Studies, including much of the pre-annexation City. Environmental studies within these areas may identify lands that should be protected as part of the Natural Heritage System. Such findings will result in amendments to Schedules "A" and/or "B1", as necessary, to implement the policies of this Plan.</u></p>
	<p>The Sub-Watershed <u>Planning Studies</u> apply an ecosystem 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 <u>and restore natural features and ecological functions</u>; <u>opportunities for enhancement and rehabilitation of natural features and ecological functions</u>; management practices to mitigate impacts from existing land uses; and programs to promote education, awareness and stewardship. These <u>Planning Studies</u> provide a generalized level of direction that will be refined through more area specific assessment including area planning studies and environmental impact studies.</p>
<p><b>15.2.2. Purpose of Natural Heritage Policies</b></p>	<p>The Natural Heritage policies <del>also</del> establish the requirements for the refinement and protection of the Natural Heritage System through <u>public ownership/acquisition, stewardship, management and rehabilitation, ecological buffers and the preparation of area planning studies, and environmental impact studies, environmental assessments or conservation master plans.</u> <del>Such processes may warrant additions or changes to the Natural Heritage System and provide for the implementation of rehabilitation measures.</del></p>

<p><b>15.2.3. Natural Heritage Policies - Open Space - Environmental Review</b></p>	<p>The Natural Heritage policies apply as an overlay to the land use designations shown on Schedule "A". <u>Many, but not all Natural Heritage features identified on Schedule "B1" are designated as "Open Space" or "Environmental Review" on Schedule "A", depending on the attributes of the feature and the need for further evaluation to assess significance, refine boundaries and determine the appropriate level of protection. Therefore Where they are designated Open Space or Environmental Review,</u> the Natural Heritage policies should be read in conjunction with the Open Space and Environmental Review policies contained in Chapters 8A and 8B respectively. (Section 15.2.3. replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.2.4. Other Land Use Designations</b></p>	<p><u>Components of the Natural Heritage System that are identified on Schedule "B1" but not designated Open Space or Environmental Review on Schedule "A", will be evaluated to further assess their significance and determine the need for protection under the policies of the Official 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.</u></p>
<p><b>15.3.</b></p>	<p><b><u>NATURAL HERITAGE AREAS DESIGNATED AS OPEN SPACE</u></b></p> <p>(Section 15.3 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>Natural heritage areas designated as Open Space represent significant natural features and ecological functions. While these areas are protected to some extent by their inclusion in the Open Space designation, additional measures to provide for their protection and <u>utilization rehabilitation</u> are considered necessary. <del>It is the City's intent to protect these areas for their natural features and ecological functions and to encourage their rehabilitation where warranted.</del></i></p>
<p><b>15.3.1. Lands Included</b></p>	<p>i) Natural heritage areas designated as Open Space include:</p> <ul style="list-style-type: none"> <li>(a) Provincially Significant Wetlands;</li> <li>(b) Environmentally Significant Areas;</li> <li>(c) Significant River, Stream, and Ravine Corridors;</li> <li>(d) Life Science Areas of Natural and Scientific Interest as identified by the Province;</li> </ul>
	<ul style="list-style-type: none"> <li>(e) Habitat of Endangered and Threatened Species;</li> <li>(f) <del>Areas of</del> Significant Woodlands, <u>Woodlands</u>, Significant Wildlife Habitat, Habitat of <del>Vulnerable Species of Special Concern</del>, <u>Fish Habitat</u>, Locally Significant Wetlands and renaturalization corridors and linkages as described in Section 15.4., that are deemed by Council, on the basis of an appropriate environmental study, to satisfy the criteria in Section 15.4.;</li> <li>(g) <u>Areas of significant groundwater recharge, headwaters and aquifers, where necessary to protect their hydrological function</u></li> </ul> <p>ii) Council may <u>require or</u> encourage the retention of natural features other than the features listed in i) above, through the area planning, subdivision approval, <u>Official Plan and/or Zoning By-law amendment, consent, variance</u> and site plan approval processes.</p> <p><u>iii) Natural heritage areas may be identified on Schedule "B1" and designated as Open Space on Schedule "A" by an amendment to the Official Plan, where warranted on the basis of an environmental study accepted by the City and on consideration of the policies in Section 15.4.</u></p>
<p><b>15.3.2. Permitted Uses</b></p>	<p><del>i) Notwithstanding policy 8A.2.2., the uses permitted in natural heritage areas designated as Open Space shall be limited to:</del></p> <ul style="list-style-type: none"> <li><del>(a) Existing development and uses, and expansions to existing uses provided that it can be demonstrated to the satisfaction of Council that the expansion will protect the natural features and ecological functions of the area;</del></li> <li><del>(b) Passive Recreational uses including community trails provided that such trails are designed, constructed and managed to minimize their impact on</del></li> </ul>

	<p><del>the natural heritage area;</del></p> <p>i) <del>Notwithstanding policy 8A.2.2. development and site alteration shall not be permitted in Provincially Significant Wetlands or in the significant habitat of Endangered and Threatened Species, except for:</del></p> <p><del>(a) activities that create or maintain infrastructure in accordance with section 15.3.3.; or</del></p> <p><del>(b) works subject to the <i>Drainage Act</i>.</del></p> <p>ii) <del>Notwithstanding policy 8A.2.2. development and site alteration shall not be permitted in other natural heritage areas designated as Open Space except:</del></p> <p>(a) Existing development and uses, and expansions to existing uses provided that it can be demonstrated to the satisfaction of Council that <del>the expansion will protect the natural features and ecological functions of the area;</del> <u>there will be no negative impacts on the natural heritage features or their ecological functions;</u></p> <p>(b) <u>Passive Recreational uses associated with the passive enjoyment of natural features including pathways and community trails provided that such trails uses are designed, constructed and managed to minimize their impact on the natural heritage area;</u></p> <p>(c) Creation or maintenance of infrastructure subject to policy 15.3.3;</p> <p>(d) The harvesting of trees in accordance with <u>responsible good</u> forestry management practices; and</p> <p>(e) <u>Conservation, mitigation and rehabilitation</u> works.</p>
<p><b>15.3.3. Infrastructure</b></p>	<p><del>i) New or expanded infrastructure shall only be permitted within natural heritage areas including stream corridors where it is clearly demonstrated through an environmental assessment process or an environmental impact study that there is no reasonable alternative for locating that infrastructure elsewhere. The City and other relevant public authorities shall in any case consider methods for minimizing impacts when reviewing proposals to construct transportation, communication, sewerage or other infrastructure in natural heritage areas.</del></p> <p><u>i) New or expanded infrastructure shall only be permitted within the Natural Heritage System where it is clearly demonstrated through an environmental assessment process under the Environmental Assessment Act that it is the preferred location for the infrastructure, and that the alternatives are all evaluated having regard for the relevant policies of the Official Plan.</u></p> <p><u>Where the preferred alternative is located within or adjacent to the Natural Heritage System, an environmental impact study, approved by the City, shall be completed to further assess potential impacts, identify mitigation requirements, and determine appropriate compensation where impacts cannot be mitigated.</u></p> <p><u>The City and other relevant public authorities shall include methods for minimizing impacts when reviewing proposals to construct transportation, communication, sewerage or other infrastructure in the Natural Heritage System.</u></p>
	<p>ii) 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.</p> <p>iii) <u>As conditions of approving infrastructure projects in or adjacent to the Natural Heritage System natural heritage areas, the City may will require specific mitigation and rehabilitation measures and/or compensation that are identified in the approved environmental impact study and/or environmental assessment, to address potential impacts on the for the damage to natural features and functions caused by the construction or maintenance of the infrastructure.</u></p>
<p><b>15.3.4. Public Ownership/ Acquisition</b></p>	<p>i) It is not intended that all natural heritage areas shall be purchased or otherwise brought into public ownership, nor 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</p>

	<p>otherwise acquiring, managing or providing access to these lands.</p> <p>ii) 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.</p> <p>iii) Council may accept natural heritage areas for parkland or conservation use in accordance with the provisions of Chapter 16, concerning parkland dedication.</p> <p><u>iv) 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.</u></p>
<p><b>15.3.5. Stewardship</b></p>	<p>i) 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 the following techniques:</p> <p>(a) Stewardship agreements;</p> <p>(b) Conservation easements;</p> <p>(c) Education programs to inform landowners of maintenance and stewardship options available to protect or rehabilitate natural features and ecological functions;</p> <p>(d) Encouraging 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; <del>and</del></p> <p><u>(e) Modification of property tax assessment and/or facilitation of the Provincial Conservation Land Tax Incentive Program or the Managed Forest Tax Incentive Program; and</u></p> <p>(f) Any other suitable techniques.</p>
	<p>ii) Where natural heritage areas <del>designated as Open Space</del> are owned by the City, the City will encourage community groups and individuals to take an active role in their protection, <del>and</del> rehabilitation <u>and enhancement</u>. The City may develop programs to facilitate community involvement in the protection <u>and</u> rehabilitation of these areas</p>

<p><b>15.3.6. Ecological Buffers</b></p>	<ul style="list-style-type: none"> <li>i) Ecological buffers serve to protect the ecological function and integrity of the Natural Heritage System. <u>Ecological Buffers may will</u> be required around, or adjacent to, <del>the shorelines of lakes, rivers and streams and other</del> components of the Natural Heritage System, <u>based upon the recommendations of an approved Environmental Impact Study.</u></li> <li>ii) 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 <u>application of the Council approved Guidelines for Determining Setbacks and Ecological Buffers as part of</u> an area study and/or an environmental impact study.</li> <li>iii) In addition to buffer lands, additional techniques may be required to assist in minimizing the impact of development on the Natural Heritage System, including but not limited to: <ul style="list-style-type: none"> <li>(a) The use of site planning to orient the development away from natural heritage areas;</li> <li>(b) The acceptance of lands immediately adjacent to natural heritage areas as part of the required parkland dedication for the proposed development;</li> <li>(c) The use of a setback from the boundary of natural heritage areas for construction purposes;</li> <li>(d) Restriction of public access by providing a limited number of access points to natural heritage areas; and</li> <li>(e) Other measures, such as fencing.</li> </ul> </li> <li><del>iv) The City shall prepare and adopt a Guideline Document setting out recommended criteria and parameters to facilitate the identification of Ecological Buffers.</del></li> </ul>
<p><b>15.3.7. Management and Rehabilitation Priorities</b></p>	<p>The City will encourage <u>rehabilitation and enhancement</u> 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 area studies, environmental impact studies, <u>the environmental assessment process,</u> or other environmental studies or programs. <u>Rehabilitation and enhancement</u> measures may be implemented through <del>the management of</del> <u>conservation master plans or woodland management plans on</u> publicly owned land and through stewardship and conservation programs for privately owned lands.</p>
	<ul style="list-style-type: none"> <li>i) The City's highest priority for rehabilitating <u>and enhancing</u> the Natural Heritage System shall be those areas linking or adjacent to natural heritage areas that are subject to flood or erosion hazard constraints.</li> <li>ii) With respect to specific components of the Natural Heritage System, the City's management and rehabilitation priorities are: <ul style="list-style-type: none"> <li>(a) Environmentally Significant Areas - to protect the existing ecosystem features and functions, to increase the amount of interior forest habitat, and to strengthen corridors.</li> <li>(b) Wetlands - to protect the <u>natural features and ecological</u> functions of all <del>existing</del> <u>Provincially and Locally Significant</u> wetlands.</li> <li>(c) <u>Significant Woodlands and Woodlands</u> - to protect existing ecosystem features and functions, to increase the amount of interior forest habitat, and to retain or restore linkages between isolated natural areas.</li> <li>(d) River, Stream and Ravine Corridors - to protect existing ecosystem features and functions, <u>maintain water resource functions,</u> and <del>to</del> rehabilitate <del>degraded shorelines</del> <u>eroded banks and channels.</u></li> <li>(e) Upland Corridors - to retain or create linkages between isolated natural</li> </ul> </li> </ul>

	<p>areas.</p> <p>(f) Wildlife Habitat - to protect wildlife habitat.</p> <p>(g) Fish, <u>Riparian</u> Habitat - to protect, rehabilitate and/or create fish <u>and riparian</u> habitat, and to encourage a net gain of productive capacity of <u>fish</u> habitat where possible.</p> <p>(h) Potential Naturalization Areas - <del>to naturalize areas within fill regulated areas of streams, rivers and ravine corridors</del> <u>to restore or replace connections between and within vegetation patches, riparian corridors and wildlife habitat.</u></p> <p>(i) <u>Groundwater Recharge Areas, Headwaters and Aquifers – to protect hydrological functions and source water.</u></p>
<p><b>15.3.8. Conservation Master Plans</b></p>	<p>i) 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 defining the boundaries and providing direction on the management of these areas.</p> <p>ii) Matters which may be addressed through Conservation Master Plans include:</p>
	<p>(a) Refinement of the boundaries of the Environmentally Significant Area, or other natural heritage area;</p> <p>(b) Identification of programs for the acquisition of lands within, adjacent to, or providing a linkage to, the Environmentally Significant Areas, or other natural heritage area, by the City or other public body;</p> <p>(c) Programs for site and facility development, including descriptions of recreational programs and facilities to be provided if applicable, and details of access permitted to and within the area, including formalized <u>pathways and</u> trail systems;</p> <p>(d) Descriptions of proposed management strategies for the area and the management considerations to be addressed in conjunction with the review of development proposals for adjacent lands;</p> <p>(e) Identification of opportunities to rehabilitate degraded natural heritage areas, and to establish or strengthen corridors or linkages between isolated natural heritage areas;</p> <p>(f) Background information including a description of the natural features and their significance to the Natural Heritage System; and</p> <p>(g) Other relevant background information, as applicable.</p>
<p><b>15.3.9. Environmental Advisory Committee</b></p>	<p>City Council may establish an environmental advisory committee, consisting of individuals appointed on the basis of their expertise, experience, academic qualification and/or availability, to provide expert technical advice to the City of London on environmental matters that are relevant to the formulation and implementation of the City's Official Plan. Detailed terms-of-reference, membership guidelines and operational requirements for the Committee will be determined by City Council, from time to time. (Section 15.3 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.4.</b></p>	<p><b><u>COMPONENTS OF THE NATURAL HERITAGE SYSTEM</u></b></p> <p>(Section 15.4 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>The policies in Section 15.4 apply to recognized and potential components of the Natural Heritage System as delineated on Schedule "B1" or features that may be considered for inclusion on Schedule "B1". and These policies are supplemental to policies contained in Section 15.3. They also address the protection of environmental quality and ecological function with respect to water quality, <u>water quantity</u>, fish habitat, groundwater recharge, headwaters and aquifers</i></p>
<p><b>15.4.1. Environmentally Significant Areas</b></p>	<p>Environmentally Significant Areas contain natural features and perform ecological functions that warrant their retention in a natural state. While Environmentally Significant Areas are protected to some extent by their inclusion in the Open Space designation, additional measures to provide for their protection and utilization are considered</p>

	necessary. <u>Environmentally Significant Areas (ESA's) are identified through the application of the Council approved Environmentally Significant Areas Identification and Boundary Delineation Guideline Document, and through the application of Provincial guidelines.</u>
<b>15.4.1.1. Identification of Environmentally Significant Areas</b>	Environmentally Significant Areas (ESA's) which have been identified by Council as being of city-wide, regional, or provincial significance, are designated as Open Space on Schedule "A" - the Land Use Map, and are shown on Schedule "B1" - <u>Flood Plain and Environmental Natural Heritage Features. New Environmentally Significant Areas may be identified by City Council and added to Schedule "B1" by amendment to this Plan and in accordance with the provisions of Section 15.4.1.3.. Areas which have the potential to meet the criteria for an ESA but have not been thoroughly studied are identified as "Potential ESA's" on Schedule "B1".</u> The identified Environmentally Significant Areas recognized by Council include:
<u>Sifton Bog/Byron Botanical Bog</u>	i) <del>The Sifton Bog, located in the Oakridge area, is recognized by the Province of Ontario and the Upper Thames River Conservation Authority as a Provincially Significant Wetland and a regional life science ANSI.</del> The Bog contains a kettle lake and is an excellent example of sphagnum bog. <u>It represents a relic landscape and disjunct boreal ecosite.</u>
Westminster Ponds	ii) <del>The Westminster Ponds - Pond Mills wetland complex, located in the Westminster, Glen Cairn, and Jackson areas, is the subject of an approved Conservation Master Plan, and is classified as a Provincially Significant Wetland complex and a Regional Life Science ANSI.</del>
Meadowlily Woods	iii) <del>The Meadowlily Woods, located in the Jackson area, is recognized as London's best example of some vegetative associations. Some of this area is classified as a Provincially Significant Wetland.</del>
Medway Valley Heritage Forest	iv) <del>The Medway Valley Heritage Forest, located in the Masonville, and Medway and Sunningdale areas, is largely within the flood plain an abrupt spillway valley through which the Medway Creek flows, contains some rare plant and animal species, and is an important asset for research and educational purposes.</del>
Warbler Woods	v) <del>Warbler Woods, located in the Byron area, is classified by the Province of Ontario as an Area of Natural and Scientific Interest (ANSI) Provincial Life Science ANSI, (Byron Woods) and is significant because of its size, its diversity of vegetative associations, and the presence of rare species.</del>
Fanshawe Wetlands	vi) <del>The Fanshawe Wetlands located in northwest east London, contain a Provincially Significant Wetland complex (Fanshawe Wetlands) that straddles Stoney Creek, and a locally significant wetland (Ballymote Wetland).</del> It is part of a groundwater recharge area and includes a diverse assemblage of community types and species, as well as several rare plants.
<u>Kilworth/Komoka Park Reserve</u>	vii) <del>The Kilworth Environmentally Significant Area is adjacent to the Thames River on the Western boundary of the City. ‡ This Provincial Park contains diverse natural communities, rare species, distinctive relic shoreline landforms, and is recognized as an Provincial Earth Science ANSI, and a Provincial Life Science ANSI rare species.</del>
<u>Kilally Meadows and Forest</u>	viii) <del>The Kilally Meadows and Kilally Forest straddles the North Branch of the Thames River just north of Kilally Road, between Adelaide Street and Clark Road and includes Meander Creek. It is an important component of the Thames River corridor, a groundwater recharge area and contains meadows, woodland and wetland area. Among the many vulnerable and rare plant and animal species, the area maintains a diverse community of forest birds.</del> (Clause viii) amended by OPA No. 298 - approved 05/01/31)
Lower Dingman Corridor	ix) <del>The Lower Dingman Corridor is adjacent to the Dingman Creek west of Lambeth to the City Limits. It forms a continuous linkage with the Dingman Creek Fen Provincially Significant Wetland Complex and a Kilworth Shoreline Provincial Earth Science ANSI. It contains a Provincially Significant Wetland complex, very diverse assemblage of natural communities and species and provides an important linkage function.</del>
East Lambeth Forest	x) <del>Located immediately east of Lambeth, this relatively large area contains a diverse range of natural communities and swamp communities dominated by Black Ash and White Elm.</del>
Tenant's Pond	xi) <del>Tenant's Pond is located south of Wilton Grove Road near Highbury Avenue. It consists of a Provincially Significant Wetland complex (Westminster Wetlands) and a locally significant wetland (Elliot-Laidlaw Wetland) which includes the Elliot-Laidlaw Wetland located within the Dingman Creek Subwatershed area. The small lake and surrounding area contains a diversity of distinctive plant and animal species.</del>
Allen White's Wetland	xii) <del>Allen White's Wetland lies in an upper tributary of Dodd Creek south of Glanworth Drive and west of Wellington Road South. It contains two relatively undisturbed, mid-age communities dominated by Yellow Birch, and a wetland which makes an important contribution to the baseflow of Dodd Creek.</del>

<p>Glanworth <u>ESA Wetland</u></p>	<p>xiii) The Glanworth <u>ESA Wetland</u> which is located south of the hamlet of Glanworth, <u>is a contains</u> Provincially Significant Wetland <u>complex and mature upland woodland.</u></p> <p>xiv)</p>
<p>Regina Mundi-Kirk Cousins Wetland</p>	<p>xiv) The Regina Mundi - Kirk Cousins Wetland is a Provincially Significant Wetland. It is located east of Wellington Road South near Regina Mundi School.</p>
<p>Kains Woods</p>	<p>xv) Kains Woods is adjacent to the Thames River west of Hyde Park and south of Gainsborough Road. This large and important component of the Thames River Corridor contains a significant variety of communities and species, many of them nationally, provincially or regionally rare. <u>It is a Regional Life Science ANSL.</u></p>
<p>The Coves</p> <p><u>Dingman Creek Fen Wetland Complex</u></p>	<p>xvi) The Coves area, which is situated in central London south and west of the confluence of the north and south branches of the Thames River, contains a series of oxbow ponds and forms part of the Thames River Corridor.</p> <p>xvii) <u>The Dingman Creek Fen Wetland Complex is located in the western end of the City, between the Lower Dingman Creek ESA and Kilworth ESA. It is a Provincially Significant Wetland representing a rare community type. The wetland is associated with the Kilworth Shoreline Provincial Earth Science ANSL.</u></p>
<p><u>Ballymote ESA</u></p>	<p>xviii) <u>The Ballymote esa is located in northeast London along a tributary of Stoney Creek. It is considered part of the Arva Moraine Provincially Significant Wetland Complex that extends to the north of the City boundary and contains forest interior and area sensitive bird species.</u></p>
<p><u>Delaware East Woodland ESA</u></p>	<p>xvii) <u>This large, mature wooded area is located on steep slopes and floodplain lands of the Dingman Creek Corridor at the eastern edge of the City and extends into Delaware Township. It is part of the Lower Dingman Corridor ESA.</u></p>
<p><u>Arva Moraine ESA</u></p>	<p>xv) <u>This complex of uplands and provincially significant wetland vegetation patches is located on the Arva Moraine landform unit located along the northern limit of the City, generally bounded by Fanshawe Park Road, Richmond Street and Highbury Avenue.</u></p>
<p><b>15.4.1.2. Expansion of Environmentally Significant Areas</b></p>	<p>Certain lands adjacent to these recognized Environmentally Significant Areas may have potential for inclusion in the ESA if warranted on the basis of site-specific evaluation undertaken in conjunction with area studies or environmental impact studies, <u>or the application of boundary delineation guidelines. Such lands are designated as "Environmental Review" on Schedule "A" and are shown as "Potential Environmentally Significant Areas" on Schedule "B1".</u></p>
<p><b>15.4.1.3. Evaluation of Environmentally Significant Areas</b></p>	<p>To assist in the consideration of proposals to recognize Environmentally Significant Areas in the Official Plan, 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 this section will be used, together with more detailed application and boundary guidelines contained in an associated Guideline Document, to recognize Environmentally Significant Areas in this Plan. Candidate areas that clearly satisfy two or more of the following criteria will be considered for recognition:</p>
<p>Criteria Intrinsic to the Site</p>	<p>i) The area contains unusual landforms and/or rare to uncommon natural communities within the country, province or London subwatershed region.</p> <p>ii) The area contains high quality natural landform-vegetation communities that are representative of typical presettlement conditions of the dominant physiographic units within the London subwatershed region, and/or that have been classified as distinctive in the Province of Ontario.</p> <p>iii) The area, due to its large size, provides habitat for species intolerant of disturbance or for species that require extensive blocks of suitable habitat.</p> <p>iv) The area, due to its hydrologic characteristics, contributes significantly to the healthy maintenance (quality or quantity) of a natural system beyond its boundaries.</p> <p>v) The area has a high biodiversity of biological communities and/or associated plant and animal species within the context of the London subwatershed region.</p> <p>vi) The area serves an important wildlife habitat or linkage function.</p>

	<p>vii) 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.</p>
<p><b>15.4.1.4. Public Access to Environmentally Significant Areas</b></p>	<p>Where necessary, public access to identified Environmentally Significant Areas within public ownership will be controlled so that such access will not be detrimental to the significant features of the property. Permission for public access to privately owned lands in Environmentally Significant Areas shall be at the discretion of the property owner.</p>
<p><b>15.4.1.5. Potential Environmentally Significant Areas</b></p>	<p>Several areas have been identified as candidate sites for recognition as Environmentally Significant Areas pending further evaluation according to the criteria in 15.4.1.3. iii) Such areas are shown as "Potential Environmentally Significant Areas" on Schedule "B1" and are designated as "Environmental Review" on Schedule "A". Such areas include:</p> <ul style="list-style-type: none"> <li>i) Sharon Creek;</li> <li>ii) Hyde Park;</li> <li>iii) Silver Swamp;</li> <li>iv) Arva.</li> </ul>
<p><b>15.4.2. Wetlands</b></p>	<p><del>Wetlands provide important habitat for plants, fish and wildlife. They also influence the quality and temperature of water flowing through them and some wetlands provide storage capacity to offset peak flows associated with storm events.</del></p> <p><u>Wetlands provide important habitat for plants, fish and other 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. They 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 wetland have deep organic soils. Wetlands are also important for their social values including such activities as hunting, recreation, education and research, and cultural heritage.</u></p> <p><del>Wetland classes and boundaries have been identified according to the evaluation methodology adopted by the Province of Ontario. This methodology categorizes wetlands into seven classes based on their ecological functions. Class 1 to 3 wetlands are considered to be Provincially Significant and Class 4 to 7 wetlands are considered to be Locally Significant.</del></p> <p><u>The determination of significant wetlands in accordance with the Provincial Policy Statement (PPS) is made by the Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time. Evaluated wetlands are classified on the basis of scores received through the evaluation and are identified on Schedule "B1":</u></p> <ul style="list-style-type: none"> <li>i) <u>Provincially Significant Wetlands are identified by the Ministry of Natural Resources and include wetlands that achieve a score in the Wetland Evaluation Manual for Southern Ontario of 600 points, or over 200 points in either Biological or Special Features components;</u></li> <li>ii) <u>Locally Significant Wetlands are identified in London as wetlands that achieve a score in the Wetland Evaluation Manual for Southern Ontario of 400 points, or over 100 points in either Biological or Special Features components.</u></li> </ul> <p><u>Development and site alteration shall not be permitted in Provincially Significant Wetlands, except for:</u></p> <ul style="list-style-type: none"> <li>i) <u>activities that create or maintain infrastructure, in accordance with Section 15.3.3.; or</u></li> <li>ii) <u>works subject to the <i>Drainage Act</i>.</u></li> </ul> <p><u>Known wetlands that have not yet been evaluated are also identified on Schedule "B1" as "Unevaluated Wetlands". Council may request that any unclassified identified or unevaluated wetlands identified in an area study, or environmental study or Environmental Impact Study, be evaluated by qualified persons in accordance with the Provincial Wetlands Evaluation System for Southern Ontario.</u></p>

<p><b>15.4.3.</b> <b>Areas of Natural and Scientific Interest</b></p>	<p>Areas of Natural and Scientific Interest (<u>ANSI's</u>) 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 <u>glacial</u> landforms.</p>
	<p>There are two <u>Provincial</u> Life Science Areas of Natural and Scientific Interest in London: Warbler Woods <u>or the Byron Woods</u>; and the Komoka Park Reserve. The Komoka Park Reserve <u>ANSI exhibits part of a Lake Maumee II bluff, which is a Provincial also categorized as an Earth Science ANSI.</u> The <u>Kilworth Shoreline Provincial Earth Science ANSI also represents a Lake Maumee shoreline and bluff.</u> There are several <u>Regional Life Science ANSI's located within ESA's.</u> These include <u>Byron Bog, Westminster Ponds, and Kains Road River Valley Area of Natural and Scientific Interest.</u> These areas are included within recognized Environmentally Significant Areas as shown on Schedule "B1".</p> <p>The significance of Areas of Natural and Scientific Interest will be evaluated in accordance with <u>Provincial</u> criteria.</p>
<p><b>15.4.4.</b> <b>Habitat of Endangered, Threatened and Vulnerable Species at Risk</b></p>	<p>The <u>Ontario</u> Ministry of Natural Resources <u>identifies designates species at risk</u> in categories of <u>eEndangered-Regulated, Endangered-Not Regulated, Threatened, and Special Concern (formerly vulnerable).</u> <del>threatened and vulnerable.</del> The Ministry administers the <i>Endangered Species Act</i> to protect and conserve the species listed by regulation as well as their habitat. Criteria for determining significant portions of the habitat of endangered, threatened and vulnerable species may be recommended by the Province, if requested by the City. <span style="float: right;">(Ministry Modification No.2 to OPA No.88)</span></p> <p>Area Studies, Subject Lands Status Reports or Environmental Impact Studies will identify the extent of the habitat of endangered, threatened and vulnerable species.</p> <p>The significance of the Habitat of Endangered, Threatened and Vulnerable Species will be based on an evaluation of the following considerations:</p> <ul style="list-style-type: none"> <li>i) Assessments reviewed by the Ministry of Natural Resources regarding the extent of the species' habitat; <span style="float: right;">(Ministry Modification No.3 to OPA No.88)</span></li> <li>ii) Portions of species' habitat that are critical to sustaining or expanding populations; and</li> <li>iii) Species specific requirements identified in recovery plans or management guidelines <u>or Department of Fisheries and Oceans (DFO) approvals,</u> or through an Environmental Impact Study.</li> </ul> <p><u>Development and site alteration shall not be permitted in the significant habitat of Endangered Species and Threatened Species, except for:</u></p> <ul style="list-style-type: none"> <li>i) <u>activities that create or maintain infrastructure in accordance with Section 15.3.3.; or</u></li> <li>ii) <u>works subject to the Drainage Act.</u></li> </ul>

**15.4.5.  
Significant  
Woodlands and  
Woodlands**

Woodlands are complex ecosystems of different tree species, shrubs, ground vegetation and soil complexes that provide habitat for many plants and animals. Woodlands is a general term which collectively refers to areas occupied by trees, treed areas, woodlots, ~~and forested areas~~ and naturalizing woodland edges. Woodlands identified through the Subwatershed ~~Planning~~ Studies and located outside of the recognized Environmentally Significant Areas are shown as "Unevaluated Vegetation Patches" on Schedule "B1". New woodland vegetation patches may be added to Schedule "B1", through an amendment to this Plan, on the basis of more detailed environmental studies.

Potentially significant woodlands and other vegetation forms that have not been evaluated are designated as Environmental Review on Schedule "A" and delineated as "Unevaluated Vegetation Patches" on Schedule "B1". The significance of Woodlands will be based on an evaluation of the following considerations:

- i) The Woodland contains natural features and ecological functions that are important to the environmental quality and integrity of the Natural Heritage System.
- ii) ~~The Woodland contains natural features and ecological functions that are important to the environmental quality and integrity of the Natural Heritage System~~ 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.
- iii) The Woodland is important for the provision of a balanced distribution of open space amenities and passive recreational opportunities across the urban area.
- iv) ~~The Woodland provides significant habitat for endangered or threatened species~~ at risk.
- v) The Woodland contains distinctive, unusual or high quality natural communities or landforms.

Woodlands that are determined to be ecologically significant on the basis of these Official Plan criteria and the application of the Council approved Guideline Document for the Evaluation of Ecologically Significant Woodlands will be designated as Open Space on Schedule "A" and delineated as "Significant Woodlands" on Schedule "B1".

Woodlands that are not determined to be ecologically significant but are to be retained for public open space or park purposes according to criterion iii) above, or woodlands to be retained at the landowners request as a private woodland, will be designated as Open Space on Schedule "A" and delineated as "Woodlands" on Schedule "B1". If a woodland is evaluated and confirmed as not being ecologically significant, and the landowner or the City have no interest in their retention, the lands may be redesignated from Environmental Review to another designation in keeping with the policies of this Plan, and the "Woodlands" or "Unevaluated Vegetation Patch" delineation on Schedule "B1" may be removed.

<p><b>15.4.6. Corridors</b></p>	<p>Corridors provide a number of important <u>natural features and ecological</u> functions. From a natural heritage perspective, corridors contain natural habitat, they link many aspects of the Natural Heritage System, and they facilitate species richness, movement and diversity. River and stream corridors are the water collection systems for watersheds, providing a vital support to the City's natural environment. In addition to these ecological functions, corridors may also provide protection from flooding <u>and other natural hazard processes</u> ; <del>erosion and other hazards</del>. Corridors are valued for their aesthetic and cultural values, and for the recreational opportunities they provide.</p> <p><u>River, Stream and Ravine Corridors identified on Schedule "B1" include "Significant River Stream and Ravine Corridors" that have been identified in the Subwatershed Studies according to the criteria in i) below; and, other "Unevaluated Stream or Ravine Corridors" that require further evaluation. Significant River, Stream and Ravine Corridors are designated Open Space on Schedule "A". Unevaluated Stream or Ravine Corridors are designated Environmental Review, pending further evaluation.</u></p> <p><u>Within the City of London the entire length of the Thames River corridor is recognized as a "Significant River, Stream and Ravine Corridor" on Schedule "B1". Also, the main branches of Stoney Creek, Medway Creek, Dingman Creek, Pottersburg Creek, Wabuno Creek, Mud Creek, Stanton Drain, Kelly Drain and several tributary streams are Significant River, Stream and Ravine Corridors. Determination of the width of Significant River, Stream and Ravine Corridors will be in accordance with ii) below:</u></p>
<p><u>Significant River, Stream and Ravine Corridors</u></p>	<p>i) The <del>significance of identification of</del> <u>Significant River, Stream and Ravine Corridors</u> will be based on an evaluation of their ecological, hazard protection, recreational, aesthetic and <u>surface water resources</u> management functions including the following considerations:</p> <ul style="list-style-type: none"> <li>(a) The corridor performs an important <u>hydrological water resources</u> role relating to surface drainage, groundwater recharge <u>or discharge</u>, and filtering of surface water sediments, <u>or is located in a headwater area</u>.</li> <li>(b) The corridor contains distinctive, unusual natural communities or landforms of high quality.</li> <li>(c) The corridor represents mostly continuous, large natural areas that provide <u>for wildlife movement</u>, linkages and connections <u>that typically extend</u> beyond the City or subwatershed boundaries.</li> <li>(d) The corridor provides linkage between significant natural heritage areas; remains in a largely natural state containing a diversity of species, communities and habitat; or provides reasonable opportunities for rehabilitation of the landform to a natural state, and the habitat to a state that can support healthy natural communities.</li> </ul>
	<ul style="list-style-type: none"> <li>(e) The corridor serves as a visual amenity to the surrounding areas and plays an important role in minimizing land use impacts by providing a physical separation or buffer between incompatible forms of development.</li> <li>(f) The corridor 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.</li> <li>(g) The corridor provides opportunities for the logical extension of the City's trail systems.</li> </ul>
<p><u>Width of Significant River, Stream and Ravine Corridors</u></p>	<p>ii) <u>Significant River, Stream and Ravine Corridors are designated Open Space on Schedule "A", and delineated on Schedule "B1" with the corridor width to be determined on the basis of the following criteria:</u></p> <ul style="list-style-type: none"> <li>(a) <u>The corridor 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, and provision for future pathways or access trails. This will be determined through the preparation of an Area Plan, Environmental Impact Study and/or Subject Lands Status Report; and</u></li> <li>(b) <u>The minimum width of Significant River, Stream and Ravine Corridors will</u></li> </ul>

	<p><u>be generally 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 through application of the Guidelines for Determining Setbacks and Ecological Buffers, as part of an Environmental Impact Study and/or Subject Lands Status Report approved by the City.</u></p>
<p>Alterations to Stream Corridors</p>	<p><del>ii) Council may consider alterations to stream corridors and any associated flood lines where it can be demonstrated, through an area study or environmental impact study that such alterations will enhance the ecological function of the stream corridor.</del></p> <p><u>ii) Council may consider alterations to stream corridors to enhance, rehabilitate and restore the system through such measures as:</u></p> <ul style="list-style-type: none"> <li><u>(a) bank stabilization;</u></li> <li><u>(b) the creation of riffles and pools;</u></li> <li><u>(c) restoration of meandering and natural stream fluvial morphology;</u></li> <li><u>(d) plantings; and</u></li> <li><u>(e) removal of barriers.</u></li> </ul>
<p>Upland Corridors</p> <p><u>Establishment of Upland Corridors</u></p>	<p><del>iiiv) Upland Corridors area vegetated areas, or potentially revegetated areas, outside of River, Stream, Valley or Ravine Corridors that link significant components of the Natural Heritage System. The potential for creation of upland corridors will be addressed in the area planning process. Where a corridor is to be created, the area study will provide direction for its location, scale and function. The Subwatershed Plans provide guidance for the planning of upland corridors. Locations shown in the Subwatershed Plans as being suitable for the creation of upland corridors are indicated on Schedule "B1".</del></p> <p><u>v) Potential locations for future upland corridors are identified on Map Schedule "B1". Upland Corridors will be encouraged to be established through a variety of measures such as stewardship agreements or conservation easements with private landowners, planting programs, and acquisition by the City through purchase, dedication, donation and/or bequest. Upland Corridors that have been established may be designated Open Space and zoned in a manner that will ensure their long-term protection.</u></p>
<p><b>15.4.7. Wildlife Habitat</b></p>	<p><del>Habitat is one of the primary ecological functions provided by natural heritage areas. All animals and plants have specific, individual habitat requirements, which differ for different periods in their life cycles. For animals, these essentials include the food, water, cover and space they need at different times for shelter to reproduce, care for young or feed.</del></p> <p><u>Habitat functions as a home for wildlife. In addition to common requirements like nutrient sources and physical space, many types of wildlife have specific, individual habitat requirements that can change during different periods in their life cycles. Some specific wildlife habitats are particularly important, and should be considered significant. In general, these are habitats where that support important wildlife species, are concentrated or that are particularly susceptible to impacts, during a specific period of their life cycle or are habitats that are under-represented in the City of London.</u></p> <p>i) The significance of Wildlife Habitat will be based on an evaluation of the following considerations <u>that have had regard for and having regard for the Significant Wildlife Habitat Technical Guide prepared by the Ministry of Natural Resources, which provides information on the identification, description and prioritization of significant wildlife habitats:</u></p>

	<p>(a) 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; <u>These areas include but are not limited to: seasonal concentration areas; rare vegetation communities or specialized habitat for wildlife; habitats for species of conservation concern; and animal movement corridors.</u></p> <p>(b) The amount of the specific type of habitat that exists within the context of the ecological region and its representation within other components of the Natural Heritage System; <u>and . 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.</u></p> <p>(c) It is an area of habitat having a high diversity of species that are of value for research, conservation, education and passive recreation opportunities.</p> <p>ii) <u>Areas of Significant Wildlife Habitat will be identified on Schedule "B1" and designated Open Space on Schedule "A".</u></p>
<p><b>15.4.8. Fish Habitat</b></p>	<p>"Fish habitat" includes the habitat of fish and other aquatic <del>communities</del> <u>organisms which together make up the aquatic ecosystem.</u> 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, <u>untreated urban runoff, and increased stormwater flows and sedimentation and changes in the timing and amount of stormwater entering the watercourse.</u> The harmful alteration, disruption or destruction of fish habitat is <u>generally prohibited under the Fisheries Act.</u> 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 Natural Resources having regard for the Subwatershed Plan and the Subwatershed Studies Aquatic Biology Study where applicable. <u>Development and site alteration shall not be permitted in areas of fish habitat, except in accordance with relevant provincial and federal requirements.</u> (Ministry Modification No. 4 to OPA No. 88)</p>
<p><b>15.4.9. Groundwater Recharge Areas, Headwaters and Aquifers</b></p>	<p>Groundwater recharge areas, headwaters and aquifers are key components in the functioning of the hydrologic cycle. Sensitive Groundwater Recharge Areas <u>and Headwater Streams, and Aquifers</u> as identified in the Subwatershed Studies are shown on Schedule "B1" - <del>the Flood Plain and Environmental Natural Heritage</del> <u>Features Map. New Groundwater Recharge Areas, Headwater Streams and Aquifers that are identified through subsequent environmental studies may be added to Schedule "B1" through an amendment to the Official Plan.</u> The City will require the protection of the hydrological function of these sensitive areas through its planning approval processes.</p>
<p><b>15.4.10. Water Quality and Quantity</b></p>	<p>Water quality and quantity are addressed from a number of perspectives in this Plan. The Natural Heritage System policies address water quality and quantity through the protection of: natural heritage features and areas such as river, stream and valley corridors; fish habitat; and ground water recharge, headwaters and aquifers. Water quality and quantity are also protected through storm water management policies, water supply and sanitary sewerage policies, and water conservation policies.</p> <p>The City will seek to protect, <u>improve and/or restore</u> the quantity and quality of groundwater and surface water through its planning approval processes. The Subwatershed Plans and the stormwater management policies in Section 17.6 provide guidance for the measures necessary to achieve this interest. <u>The City will also promote efficient and sustainable use of water resources including practices for water conservation and sustaining water quality.</u></p> <p><u>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 ground water features in order to protect, improve and/or restore these features and their related hydrologic functions. The City will participate in the preparation of a source protection plan under the provisions of the Clean Water Act and the Official Plan will be amended, as required, to conform with relevant policies set out in the approved source protection plan.</u> The City will also co-operate 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.</p>

<p><b>15.4.11. Potential Naturalization Areas</b></p>	<p>Area Studies and Environmental Impact Studies will address opportunities for naturalizing areas that will form part of the Natural Heritage System. Locations identified in the Subwatershed Plans as being suitable for the application of a naturalization strategy are <u>shown identified as Potential Naturalization Areas on Schedule "B1"</u>. (Section 15.4 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.4.12. Carolinian Canada Big Picture Concept</b></p>	<p><u>In addressing opportunities for Potential Naturalization Areas that will form part of the Natural Heritage System, 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, provincial and federal agencies.</u></p> <p><u>The "Big Picture Meta-Cores and Meta-Corridors" have been refined to reflect local conditions and are identified on Schedule "B1" for reference purposes. The core areas and corridors are represented conceptually, and not to be interpreted as rigid boundary delineations.</u></p> <p><u>The "Big Picture" concept is not a component of London's Natural Heritage System. While policies for land use and development activity within the area will continue to be guided by the designations on Schedule "A", naturalization projects and landowner stewardship initiatives that support the "Big Picture" system of core natural areas and corridor connections will be encouraged by the City of London.</u></p>
<p><b>15.4.13. Unevaluated Vegetation Patches</b></p>	<p><u>Unevaluated Vegetation Patches, as delineated on Schedule "B1", were identified through the Subwatershed Studies or other environmental studies. These features may include treed areas, swamps, wetlands, savannahs, old field plantations, or other similar natural features. Most large Unevaluated Vegetation Patches are designated Environmental Review on Schedule "A". Smaller patches may have previously been designated for development or agricultural activity.</u></p> <p><u>The "Environmental Review" designation and "Unevaluated Vegetation Patches" delineation 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 as directed by policy 8B.3.1.ii), or an Area Plan, Environmental Impact Study and/or Subject Lands Status Report accepted by the City, and Map Schedules "A" and "B1" have been amended to reflect the final designation and delineation.</u></p>
<p><b>15.4.14. Other Woodland Patches larger than 0.5 Hectares</b></p>	<p><u>In addition to areas that are designated Environmental Review or Open Space, woodland patches in other designations that are larger than 0.5 hectares in size shall be evaluated in order to determine the significance of vegetation and identify the need for protection prior to 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 provisions. Pending an evaluation and decision on long term protection, woodland patches that are larger than 0.5 hectares in size will be identified as "Unevaluated Vegetation Patches" on Schedule "B1" and may be regulated under the City of London Tree Conservation By-law.</u></p>
<p><b>15.4.15. Other Drainage Features</b></p>	<p><u>In addition to the "Significant River, Stream and Ravine Corridors" and "Unevaluated Stream and Ravine Corridors" that comprise part of the Natural Heritage System, the base map features on Schedules "A", "B1" and "B2" also identify "Watercourses/Ponds" to delineate 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 contribution of these drainage features as headwaters, recharge areas and riparian corridors, will be addressed as part of the Area Plan, Environmental Assessment and/or EIS process.</u></p>

<p><b>15.5.</b></p>	<p align="center"><b><u>ENVIRONMENTAL IMPACT STUDIES AND SUBJECT LANDS STATUS REPORTS</u></b></p> <p>(Section 15.5 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>Environmental Impact Studies are required prior to the approval of development to prevent negative impacts on the Natural Heritage System. Environmental Impact Studies will normally be completed as part of Area Studies in accordance with the provisions of Section 19.2, however, they can also be completed separately as part of subdivision or site plan applications.</i></p> <p><i>In circumstances where an Area Study is not completed, the City may require a Subject Lands Status Report to determine <del>whether a more detailed Environmental Impact Study is required</del> <u>the significance of any natural heritage feature.</u></i></p>									
<p><b>15.5.1. Purpose of Environmental Impact Studies</b></p>	<p>i) Environmental Impact Studies are required to determine whether, or the extent to which development <del>will</del> <u>may</u> be permitted in areas within, or adjacent to, specific components of the Natural Heritage System. They <del>may</del> <u>will confirm or</u> refine the boundaries of components of the Natural Heritage System, and <del>may</del> <u>will</u> include conditions to ensure that development does not negatively impact the natural features and ecological functions for which the area is identified. <u>Council has approved "Guidelines for the Preparation and Review of Environmental Impact Studies" to implement the Official Plan policies.</u></p>									
<p>Where Required</p>	<p>ii) <u>Environmental Impact Studies are required where development or site alteration is proposed within or adjacent to components of the Natural Heritage System.</u> The City will require that an Environmental Impact Study be completed to its satisfaction, in consultation with the relevant public agencies prior to the approval of an Official Plan amendment, Zoning By-Law amendment, subdivision application, <u>consent application</u> or site plan application, where development is proposed entirely or partially within the distances adjacent to Natural Heritage System components set out in Table 15-1.</p>									
<p><b>Table 15-1</b></p>	<p align="center"><b>Areas Subject to Environmental Impact Study Requirements</b></p> <table border="1" data-bbox="354 1298 1531 1513"> <thead> <tr> <th data-bbox="354 1298 646 1338"><b>DISTANCE</b></th> <th data-bbox="646 1298 1531 1338"><b>COMPONENTS</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="354 1338 646 1405">Within 120 metres</td> <td data-bbox="646 1338 1531 1405">-Provincially Significant Wetlands and all lands connecting Provincially Significant Wetland areas within a wetland complex</td> </tr> <tr> <td data-bbox="354 1405 646 1513">Within 100 metres</td> <td data-bbox="646 1405 1531 1513"><del>-Locations of endangered, or threatened or vulnerable species, where the extent of significant portions of the habitat is not mapped or where management guidelines are unavailable</del></td> </tr> </tbody> </table>		<b>DISTANCE</b>	<b>COMPONENTS</b>	Within 120 metres	-Provincially Significant Wetlands and all lands connecting Provincially Significant Wetland areas within a wetland complex	Within 100 metres	<del>-Locations of endangered, or threatened or vulnerable species, where the extent of significant portions of the habitat is not mapped or where management guidelines are unavailable</del>		
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Within 120 metres	-Provincially Significant Wetlands and all lands connecting Provincially Significant Wetland areas within a wetland complex									
Within 100 metres	<del>-Locations of endangered, or threatened or vulnerable species, where the extent of significant portions of the habitat is not mapped or where management guidelines are unavailable</del>									
	<table border="1" data-bbox="354 1513 1531 2400"> <tbody> <tr> <td data-bbox="354 1513 646 1862">Within 50 metres</td> <td data-bbox="646 1513 1531 1862"> <ul style="list-style-type: none"> <li>-Environmentally Significant Areas</li> <li>- <u>Life Science</u> Areas of Natural and Scientific Interest</li> <li><del>-Locations of endangered, or threatened or vulnerable <u>special concern</u> species, where the extent of significant portions of the habitat is mapped or where management guidelines indicate the appropriate extent of significant portions of the habitat</del></li> <li>-Significant Woodlands</li> <li>-Significant Wildlife Habitat</li> <li>-Significant River, Stream and Ravine Corridors</li> <li><del>-Significant Upland Corridors</del></li> </ul> </td> </tr> <tr> <td data-bbox="354 1862 646 2024">Within 30 metres</td> <td data-bbox="646 1862 1531 2024"> <ul style="list-style-type: none"> <li>-Locally Significant Wetlands and all lands connecting Locally Significant areas within a wetland complex</li> <li>- Fish Habitat</li> <li>- <u>Woodlands</u></li> </ul> </td> </tr> <tr> <td data-bbox="354 2024 646 2131">Within</td> <td data-bbox="646 2024 1531 2131"> <ul style="list-style-type: none"> <li>-Earth Science Areas of Natural and Scientific Interest</li> <li>- <u>Groundwater Recharge Areas</u></li> </ul> </td> </tr> <tr> <td data-bbox="354 2131 646 2400">Within a distance appropriate to the specific components of the Natural Heritage System contained on the lands</td> <td data-bbox="646 2131 1531 2400">-Areas designated as Environmental Review on Schedule "A"</td> </tr> </tbody> </table>		Within 50 metres	<ul style="list-style-type: none"> <li>-Environmentally Significant Areas</li> <li>- <u>Life Science</u> Areas of Natural and Scientific Interest</li> <li><del>-Locations of endangered, or threatened or vulnerable <u>special concern</u> species, where the extent of significant portions of the habitat is mapped or where management guidelines indicate the appropriate extent of significant portions of the habitat</del></li> <li>-Significant Woodlands</li> <li>-Significant Wildlife Habitat</li> <li>-Significant River, Stream and Ravine Corridors</li> <li><del>-Significant Upland Corridors</del></li> </ul>	Within 30 metres	<ul style="list-style-type: none"> <li>-Locally Significant Wetlands and all lands connecting Locally Significant areas within a wetland complex</li> <li>- Fish Habitat</li> <li>- <u>Woodlands</u></li> </ul>	Within	<ul style="list-style-type: none"> <li>-Earth Science Areas of Natural and Scientific Interest</li> <li>- <u>Groundwater Recharge Areas</u></li> </ul>	Within a distance appropriate to the specific components of the Natural Heritage System contained on the lands	-Areas designated as Environmental Review on Schedule "A"
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Within a distance appropriate to the specific components of the Natural Heritage System contained on the lands	-Areas designated as Environmental Review on Schedule "A"									

	<p>iii) The City may require that the Environmental Impact Study consider areas beyond those outlined in Table 15.1. to ensure the relevant context for the assessment of potential impacts which may be induced by proposed land uses and for the prescription of effective avoidance and mitigation measures.</p>
<p>Relationship to Subwatershed Plans</p>	<p>iv) The Subwatershed Plans have provided broad level subwatershed-by-subwatershed environmental evaluations to be refined through site specific studies. 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.</p>
<p>Content</p>	<p>v) An Environmental Impact Study shall include:</p> <ul style="list-style-type: none"> <li>(a) a description of the existing natural environment that will be affected or that might reasonably be expected to be affected, either directly or indirectly;</li> <li>(b) the environmental effects that might reasonably be expected to occur <u>and their temporal and spatial scales;</u></li> <li>(c) <u>development criteria alternative methods and measures for mitigation of potential environmental effects of the proposed development to maintain natural features and ecological functions, and mitigate the impacts of development within or on adjacent lands;</u> and</li> <li>(d) <u>an implementation strategy for mitigation measures including a monitoring plan to measure the potential effects on the environment if demonstrated to be necessary.</u></li> </ul>
<p>Additional Matters to be Addressed</p>	<p>vi) Prior to initiation of the Environmental Impact Study, a work plan <u>and study scope</u> shall be prepared to the satisfaction of the City, in consultation with the relevant public agencies. Generally, an Environmental Impact Study will be required to:</p> <ul style="list-style-type: none"> <li>(a) confirm <u>and map</u> boundaries of natural heritage areas designated as Open Space;</li> <li>(b) evaluate <u>the</u> significance of lands designated as Environmental Review on Schedule "A" <u>in accordance with the criteria outlined in Section 15.4;</u></li> <li>(c) identify and evaluate <u>the</u> significance of other natural heritage features which are not designated as Open Space or Environmental Review on Schedule "A" including headwater areas, <u>rivers, streams, and drainage corridors and other vegetation patches greater than 0.5 hectares in size;</u></li> </ul> <p><u>The results of this initial stage of the Environmental Impact Study are to be reviewed and confirmed by the City prior to completing the balance of the study.</u></p> <ul style="list-style-type: none"> <li><del>(d) identify site-specific development criteria required to maintain the features and functions of the Natural Heritage System and to buffer them from the impacts of development on adjacent lands; and</del></li> <li><del>(e) identify mitigation and compensation measures that may be required to protect natural heritage features and areas.</del></li> </ul>
<p>Environmental Assessment</p>	<p>vii) When an Environmental Assessment of a proposal is carried out under the <i>Ontario Environmental Assessment Act</i> or relevant Federal legislation, <del>that assessment will be considered as fulfilling the Environmental Impact Study required by this Plan</del> <u>any required EIS will be scoped to include only those matters that have not been adequately addressed through the Environmental Assessment. For any proposal carried out under the Ontario Environmental Assessment Act or relevant Federal legislation, alternatives involving development and site alteration within the Natural Heritage System will only be considered after the evaluation of options that would avoid development and site alteration within the Natural Heritage System.</u></p>

<p>Notice</p>	<p>viii) The public, including adjacent property owners, shall be notified of the preparation of an Environmental Impact Study, and given the opportunity to comment. The public notices respecting all Official Plan, Zoning, Subdivision, <u>Consent</u> and Site Plan applications shall clearly state whether an associated Environmental Impact Study is being prepared and, if so, that a separate notice of its preparation will be given to the public, including abutting property owners.</p>
<p><b>15.5.2. Subject Lands Status Reports</b></p>	<p>i) Where an Area Study has not been completed, <del>prior to approving new development</del> the City may require the preparation of a Subject Lands Status Report. <u>The work plan for the Subject Lands Status Report will be determined in consultation with the City and relevant public agencies:</u></p> <p>ii) <u>a) A Subject Lands Status Report shall provide an preliminary assessment of natural features on the Subject Lands and within that part of the Sub-Watershed catchment area that may be impacted by the new development and including but not limited to those areas designated as Open Space or Environmental Review on Schedule "A" in accordance with the requirements of 15.4.</u></p> <p>iii) <u>b) If the Subject Lands Status Report identifies any lands that, in the estimation of the City, may meet the criteria for determining significance set out in Section 15.4 for specific components of the Natural Heritage System, the City shall require the preparation of an Environmental Impact Study for these lands in accordance with the requirements of 15.5.2.</u> Lands that satisfy the criteria for significance shall be designated as Open Space in conjunction with any Official Plan amendment required for the proposed development.</p>
<p><b>15.5.3. Environmental Management Guidelines</b></p>	<p>The City <del>has shall</del> prepared <u>Environmental Management Guidelines</u> setting out in more detail the requirements of <del>the</del> environmental <del>component of</del> <u>studies for</u> Area Plans; Environmental Impact Studies; and/or Subject Lands Status Reports.</p> <p>(Section 15.5 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.6.</b></p>	<p><b><u>FLOOD PLAIN LANDS</u></b></p> <p>(Section 15.6 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>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 Schedule "B2" - <del>Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u>. The Regulatory Flood Standard for the Thames watershed is based on the 1937 observed Flood Event, <u>which represents the equivalent of a one in 250 year return flow occurrence</u>. The Regulatory Flood Standard for the Kettle Creek Conservation Authority is based on the Hurricane Hazel Storm.</i></p> <p><i>The policies of this Section of the 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 will be permitted subject to appropriate floodproofing measures. An illustration of one and two-zone floodplain concepts is provided by Figure 15.6.</i></p> <p><i>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 standards, subject to specific regulations. Potential Special Policy Areas are identified on Schedule "B2".</i></p> <p><i>In addition to Official Plan flood plain policies, all flood plain lands are subject to the Construction regulations administered by the appropriate Conservation Authority pursuant to the Conservation Authorities Act. Under these regulations, construction is prohibited unless prior written consent has been received from the Authority.</i></p>

**15.6.1. Areas Identified as Flood Plain**

The Regulatory Flood Standard for the Thames watershed shall be defined by the 1937 Observed Flood Event. The Regulatory Flood Standards for the Kettle Creek Watershed shall be defined by the Hurricane Hazel Storm Event.

Detailed flood line mapping studies have been completed for most of the tributaries in the Upper Thames Watershed. Due to limited development pressure, these studies have not been completed for the Kettle Creek and Lower Thames Valley Conservation Authority areas of jurisdiction within the City of London. The approximate boundaries of the flood plain, which contain those lands below the Regulatory Flood Standard, are shown on Schedule "B2".

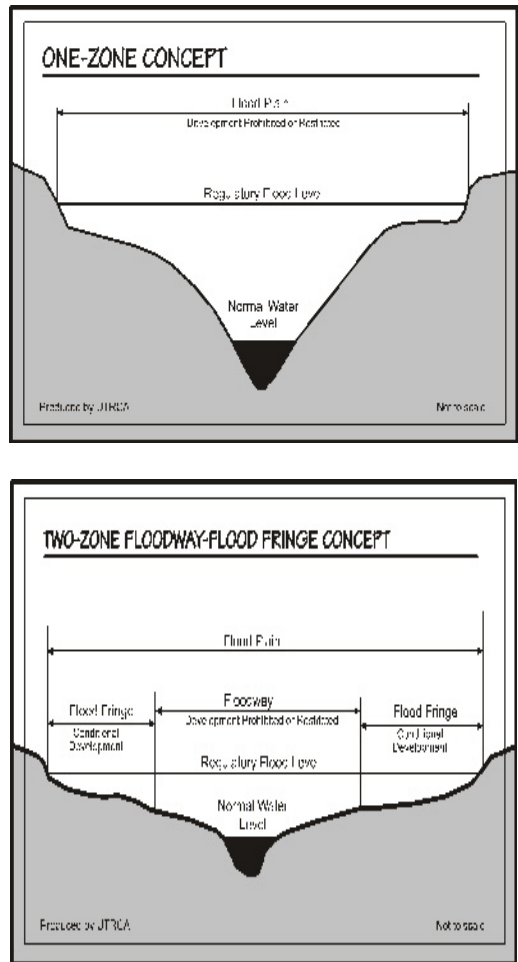
~~Where detailed flood line studies have not been completed, the extent of the flood plain hazard is generally identified for fill regulation by the conservation authority having jurisdiction. The fill line areas are identified as a constraint area on Schedule "B". Where a landowner is proposing to develop in close proximity to a watercourse where a flood line study has not been completed, the landowner may be required to undertake a detailed flood line study consistent with the requirements established in the Flood Plain Planning Policy Technical Manual (1988). 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 Section do not apply.~~

Limits of Flood Plain

- i) The flood plain within London, as shown on Schedule "B2", will be based on the Regulatory Flood Standard of the appropriate Conservation Authority.
- ii) The precise delineation of the flood plain is shown on flood plain mapping available through the appropriate Conservation Authority.
- iii) Flood plain mapping has not been prepared for the Kettle/Dodds Creek or Sharon Creek subwatersheds. Any proposal for development within, or partly within, fill regulated areas in the Kettle/Dodds Creek or Sharon Creek subwatersheds, as shown on Schedule "B2", will be required to fulfil the requirements of the Conservation Authority having jurisdiction and applicants may be required to undertake studies necessary to delineate flood prone lands.

**FIGURE 15.6.:**

**ONE AND TWO-ZONE FLOOD PLAIN CONCEPTS**



**15.6.2.**

- i) In keeping with provincial policies, the City of London and the Conservation

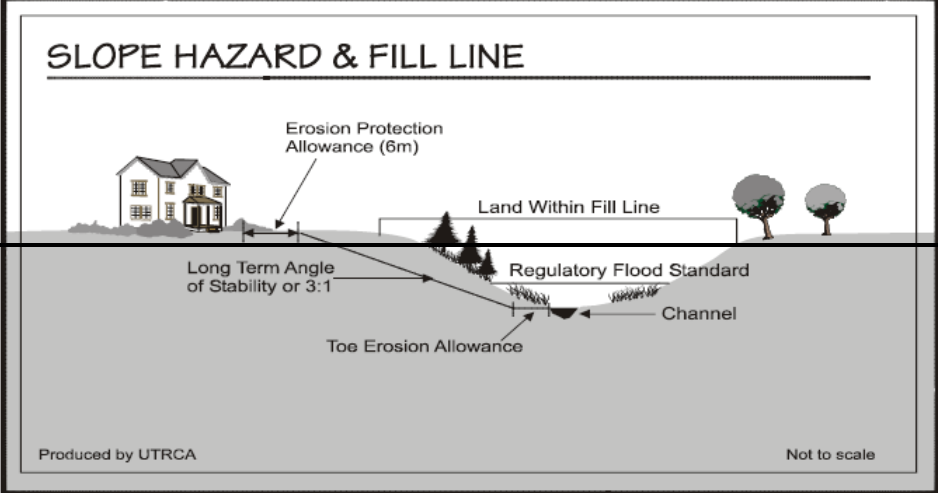
<p><b>One Zone Concept</b></p> <p>Zoning</p> <p>Development within the Flood Plain</p>	<p>Authorities have adopted a one-zone concept for the City of London, except where a two-zone concept is applied in accordance with policy 15.6.3.</p> <p>ii) The zoning of flood plain lands will reflect the restricted 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 flood proofing may be required. Less restrictive zoning may be applied to Special Policy Areas in accordance with policy 15.6.4.</p> <p>iii) Unless otherwise provided for under the Special Policy Area provisions in Section 15.6.4., development within the flood plain will be restricted to:</p> <ul style="list-style-type: none"> <li>(a) flood and/or erosion control structures;</li> <li>(b) facilities which by their nature must locate near watercourses;</li> <li>(c) ancillary facilities of an adjacent land use which are of a passive, non-structural nature and do not adversely affect the ability of the flood plains to pass floodwaters; and</li> <li>(d) essential public utilities and services.</li> </ul> <p>iv) The development of flood plain lands shall also be subject to the following conditions:</p> <ul style="list-style-type: none"> <li>(a) 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.</li> <li>(b) All new development or structures within the flood plain will require the approval of the appropriate Conservation Authority.</li> <li>(c) Minor renovations, alterations, or additions to existing buildings may be permitted subject to the approval of Council in co-operation with the appropriate Conservation Authority.</li> </ul> <p>Uses associated with the following are not permitted in the flood plain:</p> <ul style="list-style-type: none"> <li>i) The manufacture, storage, disposal and/or consumption of hazardous substances;</li> <li>ii) Institutional uses such as hospitals, nursing homes and schools; and</li> <li>iii) Uses associated with services such as those provided by fire, police and ambulance stations and electrical substations.</li> </ul>
<p><b>15.6.3. Two Zone Concept</b></p>	<p>In keeping with provincial policies, the City of London and the Upper Thames River Conservation Authority have adopted a two-zone concept to allow infill development and redevelopment of an existing use for identified areas along the Thames River and its tributaries where there is a significant difference between the one hundred year flood elevation and the Regulatory Flood elevation or where a flood fringe has been identified through hydraulic floodway analysis. Flood fringe areas may be identified by the Upper Thames River Conservation Authority and added to Schedule "B2" by amendment to this Plan.</p> <p>In these areas the Flood Plain will be divided into two zones, including a floodway and a 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.</p> <p>i) Under the two-zone concept, the floodway and the flood fringe shall be defined as follows:</p>

<p>Delineation of Floodway</p>	<p>(a) Floodway - the hazardous portion of the flood plain where water flows during regulatory flood conditions are expected to be greatest. In these areas, the floodway is generally defined as the area below the one hundred year flood standard. In some circumstances the floodway may be further delineated by depth and velocity parameters as provided for by provincial flood plain management policies; and</p> <p>(b) Flood fringe - the portion of the flood plain outside of the floodway. Flood depth and velocity are generally less severe in this portion of the flood plain. In these areas, the flood fringe is generally the area between the Regulatory Flood elevation and the one hundred year flood standard. In some situations, the extent of the flood fringe may be further defined by depth and velocity parameters as the flood fringe is generally the area between the Regulatory Flood elevation and the one hundred year flood standard. In some situations, the extent of the flood fringe may be further defined by depth and velocity parameters as provided for by provincial flood plain management policies. The delineation of the floodway and the flood fringe areas by the Upper Thames River Conservation Authority may require submission of geodetic survey information and/or a hydraulic analysis by the applicant.</p> <p>ii) The extent of the floodway will be generally defined by the one hundred year flood standard. On individual watercourse reaches the floodway may vary from the one hundred year flood standard according to critical flood depth and velocity, existing and proposed development in the immediate area, and the potential for adverse impact on upstream or downstream development or lands. The precise delineation of the floodway is the responsibility of the Upper Thames River Conservation Authority.</p>
<p>Delineation of Flood Fringe</p>	<p>iii) In the areas, the flood fringe will be generally defined as that area between the floodway as determined by the Upper Thames River Conservation Authority, and the Regulatory Flood elevation.</p>
<p>Zoning of Floodway, Flood-Fringe</p>	<p>iv) The zoning of flood plain lands shall be subject to the following conditions:</p> <p>(a) The floodway - the zoning of lands in the floodway will be consistent with the One-Zone flood plain policies in Section 15.6.2 iii); and</p> <p>(b) 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 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 safe access to the proposed development, have been satisfied.</p>
<p>Development within the Flood Plain</p>	<p>v) Unless otherwise provided for under the Special Policy Area provisions in Section 15.6.4., development within the flood plain will be restricted in accordance with the following conditions:</p> <p>(a) The floodway - the development of lands in the floodway will be consistent with the One-Zone flood plain policies in Section 15.6.2 iv) and v)</p> <p>(b) The flood fringe - conditional development may occur subject to meeting flood proofing and access requirements and obtaining the approval of the Upper Thames River Conservation Authority.</p> <p>(c) All new development or structures within the flood plain will require the approval of the Upper Thames River Conservation Authority.</p> <p>(d) Within the flood plain, minor renovations, alterations, or additions to existing buildings may be permitted subject to the approval of Council in co-operation with the Upper Thames River Conservation Authority.</p>

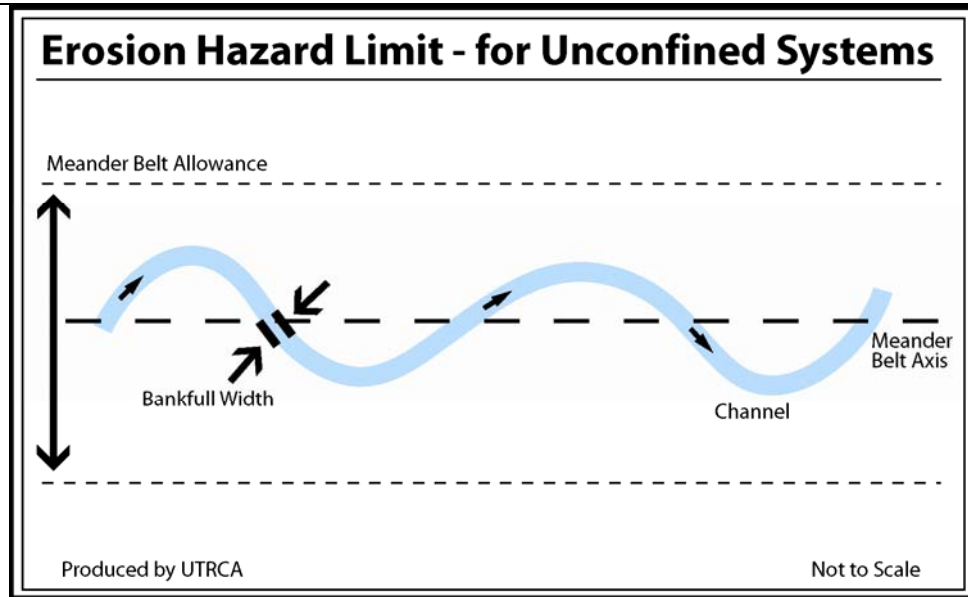
<p><b>15.6.4. Special Policy Area Concept</b></p> <p>Purpose</p> <p>Eligible Areas</p> <p>Studies</p> <p>Development In Special Policy Areas</p> <p>Delineation of Special Policy Areas</p>	<p>Council, in accordance with provincial policy, may apply to the Province for approval of a "Special Policy Area" status for specific areas of the City where development would not normally be permitted due to flood plain restrictions.</p> <p>i) The purpose of a Special Policy Area status is to provide for the maintenance and upgrading of existing development and to recognize and permit limited, additional development in built-up areas to retain the socio-economic viability and nature of the area, without adding undue risk to life and property.</p> <p>ii) Areas of the City which may be considered for Special Policy Area status include portions of West London immediately west of the Thames River; <del>the "Coves" area;</del> and the Ada Street area. Other proposed Special Policy Areas, as may be determined by Council and the appropriate Conservation Authority, will be incorporated into the Official Plan by amendment. Potential Special Policy Areas are shown on Schedule "B<sub>2</sub>". (Clause ii) amended by OPA No. 90 - approved by MMAH 98/04/23)</p> <p>iii) On application for a Special Policy Area status, 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 will allow for development in the Special Policy Area in accordance with applicable Official Plan policies, and the provincial policies.</p> <p>iv) On approval of a Special Policy Area(s), this Plan will be amended to incorporate appropriate policies to address the following matters:</p> <p>(a) the circumstances under which new development will be considered in each Special Policy Area;</p> <p>(b) 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;</p> <p>(c) the permitted types and locations of new development;</p> <p>(d) alternative means or measures of providing increased levels of flood protection; and</p> <p>(e) minimum elevations for the provision of safe ingress and egress within each area.</p> <p>v) On approval of the Special Policy Area(s), Schedule "B<sub>2</sub>" of this Plan will be amended to include the Special Policy Area(s).</p>
<p><b>15.6.4.1. Coves Special Policy Area</b></p>	<p><u>The Coves Special Policy Area, identified on Schedule "B<sub>2</sub>" – Natural Resources and Natural Hazards, contains important natural 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.</u></p> <p><u>The standard two-zone (floodway-flood fringe) concept 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 Section 3.1 of the Provincial Policy Statement. Accordingly, the following special policies will apply in the area:</u></p> <p>i) <u>For the purposes of the Coves Special Policy Area:</u></p> <p>(a) <u>"Development" shall mean the creation of a new lot, a change in 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.</u></p> <p>(b) <u>"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 result of flooding, the failure of floodproofing measures and/or protection works, and/or erosion.</u></p> <p>(c) <u>"Floodproofing" shall mean structural changes and/or adjustments incorporated into the basis design and/or construction or alteration or</u></p>

	<p><u>placement of individual buildings, structures or properties to protect them from flood damage, or to reduce or eliminate flood damages.</u></p> <p>(d) <u>“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.</u></p> <p>(e) <u>“Infilling” shall mean development on previously undeveloped lots, generally bounded by existing development on adjacent sides.</u></p> <p>(f) <u>“Institutional Uses” shall mean those uses, associated with hospitals, nursing homes, pre-schools, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, the physically challenged or the young during an emergency as a result of flooding, failure of floodproofing measures or protection works, or erosion.</u></p> <p>(g) <u>“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.</u></p> <p>(h) <u>“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.</u></p> <p>(i) <u>“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.</u></p> <p>(j) <u>“Replacement” shall mean removing an existing structure and erecting a new structure.</u></p> <p>(k) <u>“Site Alteration” shall mean activities such as fill, grading and excavation, that would change the landform and natural vegetative characteristics of a site.</u></p> <p>ii) <u>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.</u></p> <p>iii) <u>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.</u></p> <p>iv) <u>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.</u></p> <p>v) <u>On existing lots of record that are designated and zoned for 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.</u></p> <p>vi) <u>On existing lots of record that are designated and zoned for 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) of adjacent structures at a minimum, and in no case less than the elevation of the Coves flood standard. Basements will not be permitted.</u></p> <p>vii) <u>Applications for Official Plan and/or Zoning By-law amendments to permit open space uses will be evaluated on the basis of relevant policies in the Plan. Development within the Open Space designation will generally be restricted to non-intensive or passive uses that are not susceptible to significant flood damages. Associated structures, uses and parking areas may only be permitted on lands that are above the elevation of the Coves flood standard.</u></p> <p>viii) <u>All infill, replacement, building additions and site alteration activity within the</u></p>
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	<p><u>Coves Special Policy Area will continue to be regulated under the requirements of the <i>Conservation Authorities Act</i> and this will be denoted on Zoning maps to increase the awareness of landowners and area residents.</u></p> <p>ix) <u>The City of London and Upper Thames River Conservation Authority will continue to co-operate in order to ensure the ongoing maintenance, repair and servicing of the Thames River dyking system, which provides flood damage reduction to the Coves Special Policy Area.</u></p> <p>x) <u>The City of London, in co-operation 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.</u></p>
<p><b>15.6.5. Flood Plain Acquisition</b></p> <p>Objectives Acquisition</p> <p>Priorities Acquisition</p> <p>Methods of Acquisition</p>	<p>Selected flood plain lands will be acquired through a long term program of progressive acquisition, carried out in conjunction with the appropriate Conservation Authority.</p> <p>i) 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.</p> <p>ii) For the purposes of flood plain acquisition, priorities will be established and evaluated on a regular basis according to the potential for loss of life, damage to property 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 Council in co-operation with the appropriate Conservation Authority.</p> <p>iii) Acquisition will occur as properties become available primarily through the following methods: purchase; dedication; and donation or bequest. In some cases where a property cannot be acquired through other means, the property may be acquired through expropriation. (Section 15.6. added by OPA No. 88 - OMB Order No.2314 - approved 99/12/23)</p>
<p><b>15.7.</b></p>	<p><b><u>ONE HUNDRED YEAR EROSION LIMIT AND FILL LINE AREA</u></b></p> <p>(Section 15.7. added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>Ravines, river valleys and stream corridors may be susceptible to natural hazards. The natural hazards addressed in this section are:</i></p>
	<p>i) <del>Lands within the one hundred year erosion limit in accordance with provincial policy;</del></p> <p>ii) <del>Steep slopes; and</del></p> <p>iii) <del>Lands within a fill line as identified by the Conservation Authority having jurisdiction. The lands susceptible to natural hazards are shown on Schedule "B" - Flood Plain and Environmental Features.</del></p>
<p><b>15.7.1. One Hundred Year Erosion Limited</b></p>	<p><del>This policy restricts development within areas susceptible to erosion. The contents of the One Hundred Year Erosion Limited are illustrated in Figure 15.7.1.</del></p>
<p>Identification of One Hundred Year Erosion Limit</p>	<p>i) <del>The One Hundred Year Erosion Limit is delineated on Schedule "B" - the Environmental Features Map. In accordance with provincial policy, it is based on the combined influence of the following factors, where applicable:</del></p> <p><del>(a) Toe Erosion Allowance - a setback based on the anticipated toe erosion which would occur for a 100 year design period, or 100 times the measured annual recession rate;</del></p> <p><del>(b) Stable Slope Allowance - a setback based on a 3 to 1 horizontal to vertical slope projected from the toe erosion allowance; and</del></p> <p><del>(c) Erosion Protection Allowance - a setback of 6 metres</del></p>
<p>Boundaries</p>	<p>ii) <del>Where warranted on the basis of a geotechnical assessment as described in policy 15.7.4., reductions to the 100 Year Erosion Limit may be permitted without an amendment to this Plan.</del></p>
<p>Permitted Uses</p>	<p>iii) <del>Uses permitted by the underlying land use designation may be developed within the 100 Year Erosion Hazard Limit are limited to infill, reconstruction and minor</del></p>

	<p>additions to existing structures. provided that all of the following requirements can be fulfilled:</p> <ul style="list-style-type: none"> <li>(a) the erosion and/or slope instability hazard can be safely addressed;</li> <li>(b) new or existing hazards are not created or aggravated including possible impacts on upstream or downstream areas;</li> </ul>
	<ul style="list-style-type: none"> <li>(c) adverse environmental impacts can be appropriately mitigated;</li> <li>(d) vehicles and people have a way of entering and exiting the area during times of emergencies;</li> <li>(e) development will be carried out in accordance with established standards and procedures; and</li> <li>(f) 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.</li> </ul> <p>iv) Permitted uses within the One Hundred Year Erosion Limit will also include:</p> <ul style="list-style-type: none"> <li>(a) flood and erosion control and bank stabilization works necessary to protect existing and new development, provided that, in areas of new development, the use of hazard avoidance, vegetation plantings and other non-structural solutions will be the preferred method of addressing erosion and slope stability hazards.</li> <li>(b) creation or maintenance of infrastructure authorized under an environmental assessment process</li> </ul>
<p>Geotechnical Study</p>	<p>v) Compliance with the above conditions shall be demonstrated through geotechnical study in accordance with policy 15.7.4.</p>
	
<p><b>15.7.</b></p>	<p><b><u>EROSION AND WETLAND HAZARDS</u></b></p> <p><u>Ravines, river valleys, stream corridors, slopes and wetlands may be subject to natural hazards that preclude or restrict land use and development activity. The lands susceptible to natural hazards are subject to the policies in this section and may be identified for reference purposes on Schedule "B2" - Natural Resources and Natural Hazards. 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.</u></p>

<p><b>15.7.1. Riverine Erosion Hazards</b></p>	<p>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:</p>
<p><b>Confined Systems</b></p>	<p>i) The Riverine Erosion Hazard Limit for Confined Systems is comprised of the combined effect of the following:</p> <ul style="list-style-type: none"> <li>(a) 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.</li> <li>(b) 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.</li> <li>(c) 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.</li> <li>(d) A six (6) metre erosion access allowance added to the valley top of slope or the combined toe erosion and stable slope allowances, is required for the purpose of providing sufficient access for emergencies, maintenance and construction activities.</li> </ul>
	<p>The diagram illustrates the components of the Riverine Erosion Hazard Limit for confined systems. It shows a cross-section of a river channel with a regulatory flood standard (1:250 year storm) indicated by a horizontal line. The channel is flanked by slopes. Key features and allowances shown are:         <ul style="list-style-type: none"> <li><b>Erosion Access Allowance (6 m):</b> Indicated by a horizontal double-headed arrow at the top of the slope on both sides.</li> <li><b>Erosion Hazard Limit:</b> A horizontal line extending across the top of the slopes, defining the boundary for development.</li> <li><b>Regulatory Flood Standard (1:250 Year Storm):</b> A horizontal line above the channel water level.</li> <li><b>Top of Stable Slope:</b> The point where the slope meets the tableland on the right side.</li> <li><b>Riverine Hazard Allowance (15 m):</b> Indicated by horizontal double-headed arrows on both slopes, representing the distance from the top of the slope to the hazard limit.</li> <li><b>Long Term Angle of Stability or 3:1:</b> A dashed line showing the assumed stability gradient for the slope.</li> <li><b>Toe Erosion Allowance:</b> A horizontal double-headed arrow at the base of the slope, indicating the distance from the toe to the hazard limit.</li> <li><b>Channel:</b> The water body in the center.</li> <li><b>Land Within Regulation Limit:</b> A horizontal double-headed arrow at the bottom, indicating the total width of the regulated area.</li> </ul>         The diagram is credited to UTRCA and is noted as 'Not to Scale'.</p>
<p><b>Unconfined Systems</b></p>	<p>ii) The Riverine Erosion Hazard Limit for Unconfined Systems, where there is no discernable valley slope or bank, is the combined limit of:</p> <ul style="list-style-type: none"> <li>(a) the meander belt allowance, which provides a limit to development within those areas where the river system is likely to shift. It is based on twenty (20) times the bankfull channel width; and</li> <li>(b) the erosion access allowance, a six (6) metre allowance added to the meander belt. The erosion access allowance is required for the purpose of maintaining sufficient access for emergencies, maintenance and construction activities.</li> </ul>



**Boundaries**

iii) The alignment of the Riverine Erosion Hazard Limit shall be determined by the City, in consultation with the Conservation Authority having jurisdiction. The delineations on Schedule “B2” are subject to interpretation and refinement without an amendment to the Official Plan, on the basis of a technical study prepared in accordance with policy 15.7.6. and completed to the satisfaction of the City, in consultation with the Conservation Authority having jurisdiction.

**Permitted Uses**

iv) Most areas of riverine erosion hazards are designated Open Space and 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.

v) In areas of existing development, uses permitted by an underlying land use designation 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 the Conservation Authority having jurisdiction:

- (a) the riverine erosion hazard can be safely addressed and new or existing hazards are not created or aggravated, including possible impacts on upstream and downstream areas;
- (b) vehicles and people have a way of entering and exiting the area during times of emergencies;
- (c) 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;
- (d) 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;

**15.7.2. Steep Slopes Outside the One Hundred Year Riverine Erosion Hazard Limit**

The One Hundred Year 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 no longer continuous with the river system exist within the City outside of the One Hundred Year Riverine Erosion Hazard Limit. These features, identified on Schedule “B2”, will be identified and 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 other supporting technical study in accordance with policy 15.7.46.

<p><b>15.7.3 Lands Within the Fill Line</b></p> <p><b>Boundaries</b></p>	<p>The fill lines of the respective conservation authorities are approximately delineated on Schedule "B" - Flood Plain and Environmental Features. Fill lines are intended to generally identify hazards such as steep slopes, flood plain areas and areas of unstable or organic soils. As a result, fill lines generally follow steep river valley slopes and ravines, flood lines or estimated flood plain areas and wetlands.</p> <p>Fill line maps accompanied with written schedules can be registered to form part of the Fill, Construction and Alteration to Waterways Regulation made pursuant to Section 28 (l) of the <i>Conservation Authorities Act</i>.</p> <p>i) The approximate limit of the fill lines is indicated on Schedule "B" - Flood Plain and Environmental Features. More detailed fill line mapping is available for inspection at the respective Conservation Authority office.</p> <p>ii) The preparation and review of an area study, or any development proposal outside of a community planning area, that pertains to lands within the fill line, shall identify and address hazards associated with flooding, erosion, steep slopes and unstable or organic soils to the satisfaction of the City and the Conservation Authority. Lands may be designated and zoned and conditions may be imposed on development to provide for hazard protection.</p> <p>iii) Development may be permitted within the fill line delineated on Schedule "B", in accordance with the requirements of the <i>Conservation Authorities Act</i>.</p> <p>iv) In cases where the slope is not sufficiently steep to be classified as an area within the One Hundred Year Erosion Line, the City and the conservation authority may still require the submission of a geotechnical assessment completed in accordance with policy 15.7.4. of this Plan.</p>
<p><b>15.7.3. Lands Within the Regulation Limit</b></p>	<p>Regulation Limits may be mapped by the respective Conservation Authority, pursuant to the <i>Conservation Authorities Act</i> and enacting regulations, to represent the outside limit of all potential hazards and adjacent lands associated with riverine flooding and erosion, wetlands and watercourses. The Regulation Limit typically includes a 15 metre allowance adjacent to riverine systems, and an area of interference of between 30 metres and 120 metres adjacent to wetlands. Within the Regulation Limit, all site alteration and development activity is regulated and subject to approval, conditional approval or prohibition by the Conservation Authority having jurisdiction; and, subject to approval by the City Engineer.</p> <p>The Regulation Limits are delineated on Schedule "B2", to denote areas within which approval for site alteration and development activity is required from the Conservation Authority having jurisdiction. The Regulation Limits are subject to interpretation and refinement, without an amendment to the Official Plan, to reflect changes that have been enacted by the Conservation Authority having jurisdiction.</p>
<p><b>15.7.4. Wetlands and Areas of Interference</b></p>	<p>Wetlands and their surrounding areas of interference are subject to regulation under the <i>Conservation Authorities Act</i> 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.</p> <p>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 Schedule "B2" of the Official Plan for information purposes. Within regulated wetlands and their areas of interference, development or site alteration that are consistent with the underlying land use designation and zoning may only be permitted if prior approval is received from the Conservation Authority having jurisdiction.</p>
<p><b>15.7.5. Maximum Hazard Line</b></p>	<p>The Maximum Hazard Line, which represents the general extent of combined natural hazards associated with the flood plain, areas of unstable or organic soils and steep slopes, including steep slopes outside of the Riverine Erosion Hazard Limit, is delineated on Schedule "B1" for information purposes. This delineation is subject to interpretation and refinement without an amendment to the Official Plan, to reflect changes that have been enacted by the Conservation Authority having jurisdiction.</p>

<p><b>15.7.46 Geotechnical Assessments</b></p>	<p>i) <u>Geotechnical assessments, hydrogeological studies, river morphology studies, erosion control plans and/or other supporting technical studies</u> will be required to:</p> <p>(a) <del>refine boundaries of</del> <u>accurately delineate</u> the <del>One Hundred Year</del> <u>Riverine Erosion Hazard Limit</u>;</p> <p>(b) identify existing erosion and/or slope instability hazards;</p> <p>(c) assess the impact of the proposed development on existing hazards;</p> <p>(d) assess the potential for the proposed development to create new hazards; <del>and</del></p> <p>(e) identify measures to safely avoid <del>or address</del> the potential hazards, including <del>building</del> <u>appropriate development setbacks</u> from the <del>One Hundred Year</del> <u>Riverine Erosion Hazard Limit</u>; <del>and</del></p> <p>(f) <u>identify and address any associated impacts that development adjacent to the Riverine Erosion Hazard Limit will have on components of the Natural Heritage System.</u></p> <p>ii) The City shall require that the geotechnical assessment <u>and other technical studies</u> be completed to its satisfaction, in consultation with the relevant <u>Conservation Authority and other</u> public agencies, prior to the approval of an Official Plan Amendment, Zoning By-Law Amendment, subdivision application or site plan application.</p> <p>iii) A geotechnical assessment <u>and other required technical studies</u> may be completed as part of an Area Plan, <u>Environmental Assessment</u>, or an Environmental Impact Study in accordance with Section 15.5. of this Plan.</p> <p>(Section 15.7 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.8. 15.8.1. Development in the Vicinity of Known or Suspected Contaminated Sites</b></p>	<p><b>CONTAMINATED LANDS</b></p> <p>i) Notwithstanding the land use designated on Schedule "A" 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 <i>Environmental Protection Act</i>, and the development complies with any other provincial and municipal guidelines, as applicable.</p> <p>ii) The City may consult with appropriate Provincial agencies and may require an investigation, including testing of soil and groundwater samples, to:</p> <p>(a) Determine potential health concerns;</p> <p>(b) Demonstrate the site can be rehabilitated to meet appropriate Federal, Provincial and local standards; and</p> <p>(c) Identify procedures for site remediation.</p>
<p><b>15.8.2. Cooperation With Other Agencies</b></p>	<p>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. (Section 15.8 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.9.</b></p>	<p><b><u>ABANDONED OIL, OR GAS OR WATER WELLS</u></b></p> <p>(Section 15.9 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p>
<p><b>15.9.1. Known or Suspected Wells</b></p>	<p><del>On lands found to contain abandoned oil, gas or water wells, prior to approving development, the City will require the proponent to demonstrate that the wells are plugged, capped or otherwise made safe in accordance with the <i>Petroleum Resources Act</i> as administered by the Ministry of Natural Resources. For information purposes, known petroleum well locations are shown on Schedule "B2". Information pertaining to well locations and petroleum resources may be obtained from the Ministry of Natural Resources.</del></p> <p><u>For information purposes, the approximate locations of known or suspected former petroleum wells are identified on Schedule "B2". Prior to approving new development on or adjacent to former petroleum (oil and gas) well locations, the City will require the proponent to demonstrate that the known or suspected hazard has been mitigated in accordance with relevant provisions of the <i>Oil, Gas and Salt Resources Act</i>.</u></p>

<p><b>15.10.</b></p>	<p><b><u>AGGREGATE RESOURCES</u></b></p> <p>(Section 15.10 renumbered by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)</p> <p><i>The London area contains extensive sand and gravel deposits which provide a valuable source of road and building construction material. In recognition of the value of these aggregate resources, the Plan provides for the continuation and expansion of existing pits and quarries and the introduction of new pits and quarries. The potential impacts of pits and quarries on other land uses are also taken into account.</i></p> <p><i>Aggregate extraction is recognized by the Plan as an interim land use and, as such, aggregate resources are designated on Schedule "A" - the Land Use Map, for their ultimate intended land use. The locations of both aggregate resources and existing pits and quarries are shown on Schedule "<u>B2</u>" - <del>Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u>.</i></p>
	<p><i>In addition to the policies of the Plan, existing pits and quarries in London are also subject to the provisions of the Aggregate Resources Act.</i></p>
<p><b>15.10.1. Extractive Industrial</b></p>	<p>Legally existing pits and quarries are recognized as a permitted use by this Plan. In areas shown Extractive Industrial on Schedule "B2", aggregate extraction is a permitted interim land use in all designations on Schedule "A".</p>
<p>Location</p>	<p>i) <del>Extractive Industrial Areas shown on Schedule "B2" - Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u> include licensed pits and quarries and properties appropriate for consideration for a license under the <i>Aggregate Resources Act</i>.</p>
<p>Designation</p>	<p>ii) Extractive Industrial Areas shown on Schedule "B2" may be designated on Schedule "A" - the Land Use Map, according to their ultimate intended land use.</p>
<p>Evaluation of Proposals for Adjacent Development</p>	<p>iii) In evaluating proposals for change in land use within, or adjacent to, Extractive Industrial Areas shown on Schedule "B2" - <del>Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u>, the potential impact of the pit or quarry on the proposed use and the future availability of aggregate resources for extraction will be considered. <del>To reduce conflicts between the new development and the aggregate resource extraction, the following measures may be required</del> <u>Existing mineral 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 mineral aggregate resource extraction and new development:</u></p> <ul style="list-style-type: none"> <li>(a) 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;</li> <li>(b) phasing of the proposed development, so that rehabilitation of portions of the pit or quarry precedes the development of adjacent residential uses; and</li> <li>(c) the provision of berms, landscaping, and fencing.</li> </ul>
<p><b>15.10.2. Mineral Aggregate Resources</b></p>	<p><u>Council will promote the conservation of mineral aggregate resources by making provision for the recovery of these resources, wherever feasible.</u> Aggregate resources within the City are shown on Schedule "B2" - <del>Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u>. It is recognized that the extraction of these resources may occur during the life of the Plan. An Official Plan amendment will be required to establish a new pit or quarry, or to substantially expand an existing pit or quarry, according to the provisions of policy 15.4.3. of the Plan. The foregoing notwithstanding, in the case of Aggregate Resource Areas in the Byron area, only a zoning by-law amendment will be required to establish a new pit or expand an existing pit.</p> <p><u>In areas within or adjacent to known mineral aggregate resources development and activities that would preclude the establishment of new aggregate extraction operations, or access to the resources will only be permitted if:</u></p> <ul style="list-style-type: none"> <li><u>(a) resource use would not be feasible; or</u></li> <li><u>(b) the proposed land use or development serves a greater long-term public interest; and</u></li> </ul>

	<u>(c) issues of public health, public safety and environmental impact are addressed.</u>
<b>15.10.3.</b> <b>Applications to Expand or Add Pits or Quarries</b>	In addition to the requirements of the <i>Aggregate Resources Act</i> , <ul style="list-style-type: none"> <li>(a) except in the south-east Byron area, an Official Plan amendment will be required in order to establish a new pit or quarry or to expand an existing pit or quarry beyond that area shown on Schedule "B2" - <del>Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u> as Extractive Industrial Area; and</li> <li>(b) in the case of lands in the south-east Byron area shown on Schedule "B2" - <del>Flood Plain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u> as Extractive Industrial Area or <u>Mineral</u> Aggregate Resource Area, only a rezoning will be required to establish a new pit or quarry or to expand an existing pit or quarry</li> </ul>
Potential Impact On Other Uses	i) Proposals will be evaluated in terms of their potential impact on surrounding land uses.
Information to Assist in Evaluation	ii) In reviewing aggregate extraction proposals applied for under the <i>Aggregate Resources Act</i> , where an Official Plan amendment would be required, or in the case of those lands in the Byron area where only a rezoning is required to establish a new pit or quarry or to expand an existing pit or quarry, Council may request submission of the following information from the applicant: <ul style="list-style-type: none"> <li>(a) a report setting out the location, extent, amount, and quality of the aggregate resource to be extracted;</li> <li>(b) 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;</li> <li>(c) an evaluation of potential noise and vibration impacts on adjacent land uses in keeping with the provisions of policy 19.9.5.;</li> <li>(d) the site plan of the extractive operation, as required by the <i>Aggregate Resources Act</i>, 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 roads; 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 surrounding land uses; and the phasing of rehabilitation of the extractive operation.</li> </ul>
Other Designations	iii) In land use designations other than Urban Reserve, applications for Official Plan amendment to establish a new pit or quarry, or to expand on existing pit or quarry will require the completion of a Planning Impact Analysis according to the applicable section of the Plan.
Byron	iv) In connection with 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 area, in addition to compliance with policies 15.4.3.i) and ii), the Ministry of Natural Resources may be requested, through the licence and site plan approval process, to require any of the following: <ul style="list-style-type: none"> <li>(a) 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 <i>Aggregate Resources Act</i>;</li> <li>(b) the location of stockpiling, screening, mixing, crushing or other processing of materials at the lowest elevations that are reasonably possible;</li> <li>(c) to the extent possible, the use of common, paved entrances and exits as recommended by the City Engineer to be shared by extraction operations; and/or</li> <li>(d) the retention of tree or other vegetative cover within the setback areas to the extent practicable.</li> </ul>
<b>15.10.4.</b> <b>Rehabilitation</b>	Council, in considering an Official Plan amendment and/or rezoning, as the case may be, and an application under the <i>Aggregate Resources Act</i> to add or expand a pit or quarry, will request the submission of a rehabilitation plan, as provided for by the <i>Aggregate</i>

<b>of Pits and Quarries</b>	<i>Resources Act</i> , to ensure that the rehabilitation of a pit or quarry is in keeping with the land use designation(s) shown on Schedule "A" - the Land Use Map, and other relevant policies of this Plan.
Rehabilitation Plan Criteria	i) 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.
Basis of Rehabilitation Plans	ii) Council may request that rehabilitation plans be based on an area study, prepared in accordance with the provisions of policy 19.2.1. of the Plan - Area Studies. Area studies intended to form the basis of a rehabilitation plan will address, in addition to those matters described in policy 19.2.1. ii), methods of minimizing potential land use conflicts between proposed new development and existing land uses.
South East Byron	iii) In connection with Extractive Industrial Areas and Aggregate Resource Areas in southeast Byron, the integration of rehabilitation plans for the extraction area east of North Street will be achieved through the process of both new and replacement site plan approval by the Ministry of Natural Resources. 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. 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 Natural Resources and the City of London. The resulting plan and related documentation will indicate: <ul style="list-style-type: none"> <li>(a) an accurate delineation of the land intended to be rehabilitated as public open space;</li> <li>(b) accurate contour information indicating the final grading of the rehabilitated areas;</li> <li>(c) the approximate configuration of any ponds to be incorporated in the rehabilitation scheme;</li> <li>(d) road and trail access to and through the rehabilitated pit area including any required parking facilities;</li> <li>(e) the siting of any recreational facilities proposed for the rehabilitated pit area;</li> <li>(f) 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.</li> </ul>
<b>15.10.5. Wayside Pits and Quarries</b>	"Wayside" pits or quarries may be established in undeveloped areas within any land use designation of the Plan without the requirement for an Official Plan or Zoning By-law amendment, subject to the following provisions:
Definition	i) For the purposes of this Plan, "wayside pit or quarry" shall mean: a temporary pit or quarry opened and used by a public road authority solely for the purpose of a particular project or contract of road construction, and not located within the road right-of-way.
Open Space of Flood Plain Lands	ii) Wayside pits or quarries to be established within areas of the Open Space designation which have been recognized by Council as environmentally significant areas, or within areas of any land use designation that are subject to the <del>Fill, Construction, and Alteration to Waterways regulations</del> <u>Regulations for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses</u> of the Upper Thames River Conservation Authority, 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 Planning Impact Analysis, according to the applicable Planning Impact Analysis section of the Plan.
Areas of Existing Development	iii) Wayside pits or quarries 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 <i>Planning Act</i> . Applications for a Zoning By-law amendment to permit wayside pits and quarries will be subject to Planning Impact

	Analysis, according to the applicable Planning Impact Analysis section of the Plan.
Rehabilitation	iv) Council, in reviewing applications under the <i>Aggregate Resources Act</i> for wayside permits, will request the submission of a rehabilitation plan prepared to Council's satisfaction, as provided for by the <i>Aggregate Resources Act</i> , to ensure that the rehabilitation of a pit or quarry is in keeping with the land use designations shown on Schedule "A", the Land Use Map, and other relevant policies of this Plan.
<b>15.10.6.</b> <b>Byron Gravel Pits and Adjacent Lands</b>	Aggregate resources adjacent to the Byron Gravel Pits are shown on Schedule B <sub>2</sub> - <del>Floodplain and Environmental Features</del> <u>Natural Resources and Natural Hazards</u> Map. 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 as provided for in policy 9.2.4. Consideration of the long term development for the lands identified on Schedule "B <sub>2</sub> " as having aggregate resources adjacent to the Byron Gravel Pits shall be incorporated and form a part of the studies being undertaken to achieve a comprehensive extraction, rehabilitation and development plan for the lands designated "Urban Reserve and Residential" on Schedule "A". (Section 15.10 renumbered by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)