

15.

ENVIRONMENTAL POLICIES

INTRODUCTION

The Environmental Policies of the Plan provide for the recognition 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. The lands subject to the policies of Chapter 15 are delineated on Schedule "B" - Flood Plain and Environmental Features.

(Introduction deleted and replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.1.

OBJECTIVES FOR ENVIRONMENTAL POLICIES

(Section 15.1 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

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:

15.1.1. Natural Heritage Objectives

- i) Achieve healthy terrestrial and aquatic ecosystems in the City's subwatersheds.
- ii) Provide for the identification, protection and rehabilitation of significant natural heritage areas.
- iii) Protect, maintain and improve surface and groundwater quality and quantity where possible.
- iv) Enhance the contribution of the Natural Heritage System to urban form and community design.

15.1.2. Natural Hazards Objectives

- i) Reduce 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.
- 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.
- iii) Through acquisition and agreement, provide for the use of flood plain lands as public open space.
- iv) Define and regulate flood plain areas as permitted by provincial flood plain management policies and the *Conservation Authorities Act*.
- v) Reduce the risk to public safety and to property due to erosion and slope instability.

**15.1.3.
Human
Generated
Hazards
Objectives**

- i) Minimize the potential for contaminated lands to create a hazard to public health and safety, to property or to the natural environment.

**15.1.4.
Objectives for
Aggregate,
Mineral and
Petroleum
Resource Areas**

- i) Provide for the continuation of existing extractive operations.
- ii) Provide for the expansion of existing pits and quarries, and the establishment of new pits and quarries, where appropriate.
- iii) Minimize potential land use compatibility problems between pits and quarries and surrounding land uses.
- iv) Provide for the sensitive rehabilitation of pits and quarries to an appropriate after-use compatible with the long-term intent of the Plan.
- v) Minimize the potential for safety hazards from abandoned oil or gas wells.

**15.1.5.
Agricultural
Uses**

- i) Provide for the continuation of existing agricultural activities.
- ii) Promote farm practices which are environmentally sustainable.
- 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.
- iv) Permit improvements to the agriculturally related infrastructure such as drainage systems while having regard to the policies of this Section of the Plan.

(Ministry Modification No.1 to OPA No. 88)

(Section 15.1 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.2.

NATURAL HERITAGE SYSTEM

(Section 15.2 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

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.

**15.2.1.
Sub-Watershed
Planning
Studies**

The City of London Sub-Watershed Planning Studies provide background for the content and implementation of the Natural Heritage policies. These Planning Studies 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.

The Sub-Watershed Planning Studies 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

ecological functions; management practices to mitigate impacts from existing land uses; and programs to promote education, awareness and stewardship. These Planning Studies provide a generalized level of direction that will be refined through more area specific assessment including area planning studies and environmental impact studies.

**15.2.2.
Purpose of
Natural Heritage
Policies**

The Natural Heritage policies also establish the requirements for the refinement and protection of the Natural Heritage System through the preparation of area planning studies and environmental impact studies. Such processes may warrant additions or changes to the Natural Heritage System and provide for the implementation of rehabilitation measures.

**15.2.3.
Natural Heritage
Policies - Open
Space -
Environmental
Review**

The Natural Heritage policies apply as an overlay to the land use designations shown on Schedule "A". Natural features identified on Schedule "B" 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, 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)

15.3.

NATURAL HERITAGE AREAS DESIGNATED AS OPEN SPACE

(Section 15.3 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

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 utilization are considered necessary. It is the City's intent to protect these areas for their natural features and ecological functions and to encourage their rehabilitation where warranted.

**15.3.1.
Lands Included**

- i) Natural heritage areas designated as Open Space include:
 - (a) Provincially Significant Wetlands;
 - (b) Environmentally Significant Areas;
 - (c) Significant River, Stream, and Ravine Corridors;
 - (d) Life Science Areas of Natural and Scientific Interest as identified by the Province;
 - (e) Habitat of Endangered and Threatened Species;
 - (f) Areas of Significant Woodlands, Significant Wildlife Habitat, Habitat of Vulnerable Species, Locally Significant Wetland 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.

- ii) Council may encourage the retention of natural features other than the features listed in i) above, through the area planning, subdivision approval and site plan approval processes.

**15.3.2.
Permitted Uses**

- i) Notwithstanding policy 8A.2.2., the uses permitted in natural heritage areas designated as Open Space shall be limited to:
 - (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;
 - (b) Passive recreational uses including community trails provided that such trails are designed, constructed and managed to minimize their impact on the natural heritage area;
 - (c) Creation or maintenance of infrastructure subject to policy 15.3.3;
 - (d) The harvesting of trees in accordance with responsible forestry management practices; and
 - (e) Conservation works

**15.3.3.
Infrastructure**

- 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.
- 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.
- iii) As conditions of approving infrastructure projects in natural heritage areas, the City may require specific mitigation and rehabilitation measures and/or compensation for the damage to natural features and functions caused by the construction or maintenance of the infrastructure.

**15.3.4.
Public
Ownership/**

- 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,

Acquisition

however, that certain areas should be in public ownership or accessible for passive recreational uses, where appropriate. In such cases, the City or other agencies shall explore options for purchasing, or otherwise acquiring, managing or providing access to these lands.

- 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.
- iii) Council may accept natural heritage areas for parkland or conservation use in accordance with the provisions of Chapter 16, concerning parkland dedication.

15.3.5. Stewardship

- i) Where natural heritage areas are privately owned, the City will encourage individual property owners to provide for their protection and conversation. In this regard, the City may use the following techniques:
 - (a) Stewardship agreements;
 - (b) Conservation easements;
 - (c) Education programs to inform landowners of maintenance and stewardship options available to protect or rehabilitate natural features and ecological functions;
 - (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; and
 - (e) Any other suitable techniques.
- ii) Where natural heritage areas designated as Open Space are owned by the City, the City will encourage community groups and individuals to take an active role in their protection and rehabilitation. The City may develop programs to facilitate community involvement in the protection and rehabilitation of these areas.

15.3.6. Ecological Buffers

- i) Ecological buffers serve to protect the ecological function and integrity of the Natural Heritage System. Buffers may be required around, or adjacent to, the shorelines of lakes, rivers and streams and other components of the Natural Heritage System.
- 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 an area study and/or an environmental impact study.

- 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:
 - (a) The use of site planning to orient the development away from natural heritage areas;
 - (b) The acceptance of lands immediately adjacent to natural heritage areas as part of the required parkland dedication for the proposed development;
 - (c) The use of a setback from the boundary of natural heritage areas for construction purposes;
 - (d) Restriction of public access by providing a limited number of access points to natural heritage areas; and
 - (e) Other measures, such as fencing.
- iv) The City shall prepare and adopt a Guideline Document setting out recommended criteria and parameters to facilitate the identification of Ecological Buffers.

**15.3.7.
Management
and
Rehabilitation
Priorities**

The City will encourage rehabilitation 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 or other environmental studies or programs. Rehabilitation measures may be implemented through the management of publicly owned land and through stewardship and conservation programs for privately owned lands.

- i) The City's highest priority for rehabilitating the Natural Heritage System shall be those areas linking or adjacent to natural heritage areas that are subject to flood or erosion hazard constraints.
- ii) With respect to specific components of the Natural Heritage System, the City's management and rehabilitation priorities are:
 - (a) Environmentally Significant Areas - to protect the existing ecosystem features and functions, to increase the amount of interior forest habitat, and to strengthen corridors.
 - (b) Wetlands - to protect the functions of all existing wetlands.
 - (c) Woodlands - 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.

- (d) River, Stream and Ravine Corridors - to protect existing ecosystem features and functions, and to rehabilitate degraded shorelines.
- (e) Upland Corridors - to retain or create linkages between isolated natural areas.
- (f) Wildlife Habitat - to protect wildlife habitat.
- (g) Fish Habitat - to protect, rehabilitate and/or create fish habitat, and to encourage a net gain of productive capacity of fish habitat where possible.
- (h) Potential Naturalization Areas - to naturalize areas within fill regulated areas of streams, rivers and ravine corridors.

**15.3.8.
Conservation
Master Plans**

- i) Council may request the preparation of Conservation Master Plans for Environmentally Significant Areas and other natural heritage areas. Conservation Master Plan 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.
- ii) Matters which may be addressed through Conservation Master Plans include:
 - (a) Refinement of the boundaries of the Environmentally Significant Area, or other natural heritage area;
 - (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;
 - (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 trail systems;
 - (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;
 - (e) Identification of opportunities to rehabilitate degraded natural heritage areas, and to establish or strengthen corridors or linkages between isolated natural heritage areas;
 - (f) Background information including a description of the natural features and their significance to the Natural

Heritage System; and

- (g) Other relevant background information, as applicable.

**15.3.9.
Environmental
Advisory
Committee**

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)

15.4.

COMPONENTS OF THE NATURAL HERITAGE SYSTEM

(Section 15.4 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

The policies in Section 15.4 apply to recognized and potential components of the Natural Heritage System as delineated on Schedule "B" and 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, fish habitat, groundwater recharge, headwaters and aquifers.

**15.4.1.
Environmentally
Significant
Areas**

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 necessary.

**15.4.1.1.
Identification of
Environmentally
Significant
Areas**

Environmentally Significant Areas 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 "B" - Flood Plain and Environmental Features. The identified Environmentally Significant Areas recognized by Council include:

Sifton Bog

- i) 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. The Bog contains a kettle lake and is an excellent example of sphagnum bog.

Westminster
Ponds

- ii) 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.

Meadowlily
Woods

- iii) 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.

Medway Valley

- iv) The Medway Valley Heritage Forest, located in the Masonville and

Heritage Forest		Medway areas, is largely within the flood plain, contains some rare plant and animal species, and is an important asset for research and educational purposes.
Warbler Woods	v)	Warbler Woods, located in the Byron area, is classified by the Province of Ontario as an Area of Natural and Scientific Interest (ANSI), and is significant because of its size, its diversity of vegetative associations, and the presence of rare species.
Fanshawe Wetlands	vi)	The Fanshawe Wetlands located in northwest London, contain a Provincially Significant Wetland complex (Fanshawe Wetlands) and a locally significant wetland (Ballymote Wetland). It is part of a groundwater recharge area and includes a diverse assemblage of community types and species, as well as several rare plants.
Kilworth	vii)	The Kilworth Environmentally Significant Area is adjacent to the Thames River on the Western boundary of the City. It contains diverse natural communities, distinctive landforms and rare species.
Kilally Meadows	viii)	The Kilally Meadows straddles the Thames River just north of Kilally Road. It is an important component of the Thames River corridor, a groundwater recharge area and contains wetland area. Among the many vulnerable and rare plant and animal species, the area maintains a diverse community of forest birds. (Clause viii) amended by OPA No. 298 - approved 05/01/31)
Lower Dingman Corridor	ix)	The Lower Dingman Corridor is adjacent to the Dingman Creek west of Lambeth. It contains a Provincially Significant Wetland complex, very diverse assemblage of natural communities and species and provides an important linkage function.
East Lambeth Forest	x)	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.
Tenant's Pond	xi)	Tenant's Pond is located south of Wilton Grove Road near Highbury Avenue. It consists of a Provincially Significant Wetland (Westminster Wetlands) and a locally significant wetland (Elliot-Laidlaw Wetland). The small lake and surrounding area contains a diversity of distinctive plant and animal species.
White's Wetland	xii)	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.
Glanworth Wetland	xiii)	The Glanworth Wetland which is located south of the hamlet of Glanworth, is a Provincially Significant Wetland.

Regina Mundi-Kirk Cousins Wetland	xiv) The Regina Mundi - Kirk Cousins Wetland is a Provincially Significant Wetland. It is located east of Wellington Road South near Regina Mundi School.
Kains Woods	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.
The Coves	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.

15.4.1.2. Expansion of Environmentally Significant Areas 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. Such lands are designated as "Environmental Review" on Schedule "A" and are shown as "Potential Environmentally Significant Areas" on Schedule "B".

15.4.1.3. Evaluation of Environmentally Significant Areas 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:

- | | |
|--------------------------------|---|
| Criteria Intrinsic to the Site | <ul style="list-style-type: none"> i) The area contains unusual landforms and/or rare to uncommon natural communities within the country, province or London subwatershed region. 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. 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. iv) The area, due to its hydrologic characteristics, contributes significantly to the healthy maintenance (quality or quantity) of a natural system beyond its boundaries. v) The area has a high biodiversity of biological communities and/or |
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associated plant and animal species within the context of the London subwatershed region.

- vi) The area serves an important wildlife habitat or linkage function.
- 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.

**15.4.1.4.
Public Access to
Environmentally
Significant
Areas**

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.

**15.4.1.5.
Potential
Environmentally
Significant
Areas**

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 "B" and are designated as "Environmental Review" on Schedule "A". Such areas include:

- i) Sharon Creek;
- ii) Hyde Park;
- iii) Silver Swamp;
- iv) Arva.

**15.4.2.
Wetlands**

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.

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.

Council may request that any unclassified wetlands identified in an area study or environmental study be evaluated by qualified persons in accordance with the Provincial Wetlands Evaluation System.

**15.4.3.
Areas of Natural
and Scientific
Interest**

Areas of Natural and Scientific Interest 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 landforms.

There are two Life Science Areas of Natural and Scientific Interest in London: Warbler Woods; and the Komoka Park Reserve. The Komoka Park Reserve is also categorized as an Earth Science Area of Natural and Scientific Interest. These areas are included within recognized Environmentally Significant Areas as shown on Schedule "B".

The significance of Areas of Natural and Scientific Interest will be evaluated in accordance with provincial criteria.

**15.4.4.
Habitat of
Endangered,
Threatened and
Vulnerable
Species**

The Ministry of Natural Resources identifies species in categories of endangered, threatened and vulnerable. The Ministry administers the *Endangered Species Act* 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.

(Ministry Modification No.2 to OPA No.88)

Area Studies, Subject Lands Status Reports or Environmental Impact Studies will identify the extent of the habitat of endangered, threatened and vulnerable species.

The significance of the Habitat of Endangered, Threatened and Vulnerable Species will be based on an evaluation of the following considerations:

- i) Assessments reviewed by the Ministry of Natural Resources regarding the extent of the species' habitat;
(Ministry Modification No.3 to OPA No.88)
- ii) Portions of species' habitat that are critical to sustaining or expanding populations; and
- iii) Species specific requirements identified in recovery plans or management guidelines, or through an Environmental Impact Study.

**15.4.5.
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. Woodlands identified through the Subwatershed Planning Studies and located outside of the recognized Environmentally Significant Areas are shown as "Vegetation Patches" on Schedule "B".

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.
- 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.
- v) The Woodland contains distinctive, unusual or high quality natural communities or landforms.

15.4.6. Corridors

Corridors provide a number of important 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, erosion and other hazards. Corridors are valued for their aesthetic and cultural values, and for the recreational opportunities they provide.

River, Stream and Ravine Corridors

- i) The significance of River, Stream and Ravine Corridors will be based on an evaluation of their ecological, hazard protection, recreational, aesthetic and surface water management functions including the following considerations:
 - (a) The corridor performs an important hydrological role relating to surface drainage, groundwater recharge and filtering of surface water sediments.
 - (b) The corridor contains distinctive, unusual natural communities or landforms of high quality.
 - (c) The corridor represents mostly continuous, large natural areas that provide linkages and connections beyond the City or subwatershed boundaries.
 - (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.
 - (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.

- (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.
- (g) The corridor provides opportunities for the logical extension of the City's trail systems.

Alterations to Stream Corridors

- 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.

Upland Corridors

- iii) 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 "B".

15.4.7. Wildlife Habitat

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.

Some specific wildlife habitats are particularly important, and should be considered significant. In general, these are habitats where important wildlife species are concentrated or are particularly susceptible to impacts during a specific period of their life cycle.

- i) The significance of Wildlife Habitat will be based on an evaluation of the following considerations:
 - (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;
 - (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; and
 - (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.

**15.4.8.
Fish Habitat**

"Fish habitat" includes the habitat of fish and other aquatic communities. 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, and increased stormwater flows and sedimentation. The harmful alteration, disruption or destruction of fish habitat is prohibited under the *Fisheries Act*. It is the City's intention to encourage improvement of productive capacity of this habitat. The extent and significance of fish habitat shall be determined in consultation with the Ministry of Natural Resources having regard for the Subwatershed Plan and the Subwatershed Studies Aquatic Biology Study where applicable.

(Ministry Modification No. 4 to OPA No. 88)

**15.4.9.
Groundwater
Recharge Areas,
Headwaters and
Aquifers**

Groundwater recharge areas, headwaters and aquifers are key components in the functioning of the hydrologic cycle. Sensitive Groundwater Recharge Areas, Headwaters, and Aquifers as identified in the Subwatershed Studies are shown on Schedule "B" - the Flood Plain and Environmental Features Map. The City will require the protection of the hydrological function of these sensitive areas through its planning approval processes.

**15.4.10.
Water Quality
and Quantity**

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.

The City will seek to protect 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.

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.

**15.4.11.
Potential
Naturalization
Areas**

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 shown on Schedule "B".

(Section 15.4 replaced by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.5.

ENVIRONMENTAL IMPACT STUDIES AND SUBJECT LANDS

STATUS REPORTS

(Section 15.5 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

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.

In circumstances where an Area Study is not completed, the City may require a Subject Lands Status Report to determine whether a more detailed Environmental Impact Study is required.

**15.5.1.
Purpose of
Environmental
Impact Studies**

- i) Environmental Impact Studies are required to determine whether, or the extent to which development will be permitted in areas within, or adjacent to, specific components of the Natural Heritage System. They may refine the boundaries of components of the Natural Heritage System, and may include conditions to ensure that development does not negatively impact the natural features and ecological functions for which the area is identified.
- Where Required ii) 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 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.

Table 15-1 Areas Subject to Environmental Impact Study Requirements

DISTANCE	COMPONENTS
Within 120 metres	– Provincially Significant Wetlands and all lands connecting Provincially Significant Wetland areas within a wetland complex
Within 100 metres	– Locations of endangered, threatened or vulnerable species, where the extent of significant portions of the habitat is not mapped or where management guidelines are unavailable
Within 50 metres	– Environmentally Significant Areas – Life Science Areas of Natural and Scientific Interest – Locations of endangered, threatened or vulnerable species, where the extent of significant portions of the habitat is

	<p>mapped or where management guidelines indicate the appropriate extent of significant portions of the habitat</p> <ul style="list-style-type: none"> - Significant Woodlands - Significant Wildlife Habitat - Significant River, Stream and Ravine Corridors - Significant Upland Corridors
Within 30 metres	<ul style="list-style-type: none"> - Locally Significant Wetlands and all lands connecting Locally Significant areas within a wetland complex - Fish Habitat
Within	<ul style="list-style-type: none"> - Earth Science Areas of Natural and Scientific Interest
Within a distance appropriate to the specific components of the Natural Heritage System contained on the lands	<ul style="list-style-type: none"> - Areas designated as Environmental Review on Schedule "A"

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.

Relationship to Subwatershed Plans

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.

Content

v) An Environmental Impact Study shall include:

- (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;
- (b) the environmental effects that might reasonably be expected to occur;
- (c) alternative methods and measures for mitigation of potential environmental effects of the proposed development; and
- (d) a monitoring plan to measure the potential effects on the environment if demonstrated to be necessary.

- | | |
|---|---|
| Additional Matters to be Addressed | <ul style="list-style-type: none"> vi) Prior to initiation of the Environmental Impact Study, a work plan 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: <ul style="list-style-type: none"> (a) confirm boundaries of natural heritage areas designated as Open Space; (b) evaluate significance of lands designated as Environmental Review on Schedule "A"; (c) identify and evaluate significance of other natural heritage features which are not designated as Open Space or Environmental Review on Schedule "A" including headwater areas, streams and drainage corridors; (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 (e) identify mitigation and compensation measures that may be required to protect natural heritage features and areas. |
| Environmental Assessment | <ul style="list-style-type: none"> vii) When an Environmental Assessment of a proposal is carried out under the <i>Ontario Environmental Assessment Act</i> or relevant Federal legislation, that assessment will be considered as fulfilling the Environmental Impact Study required by this Plan. |
| Notice | <ul style="list-style-type: none"> 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 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. |
| 15.5.2. Subject Lands Status Reports | <ul style="list-style-type: none"> i) Where an Area Study has not been completed, prior to approving new development the City may require the preparation of a Subject Lands Status Report. ii) A Subject Lands Status Report shall provide a 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". iii) 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. 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.

**15.5.3.
Environmental
Management
Guidelines**

The City shall prepare Environmental Management Guidelines setting out in more detail the requirements of the environmental component of Area Plans; Environmental Impact Studies; and/or Subject Lands Status Reports.

(Section 15.5 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.6.

FLOOD PLAIN LANDS

(Section 15.6 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

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 "B" - Flood Plain and Environmental Features. The Regulatory Flood Standard for the Thames watershed is based on the 1937 observed Flood Event. The Regulatory Flood Standard for the Kettle Creek Conservation Authority is based on the Hurricane Hazel Storm.

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.

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 "B".

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.

**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.

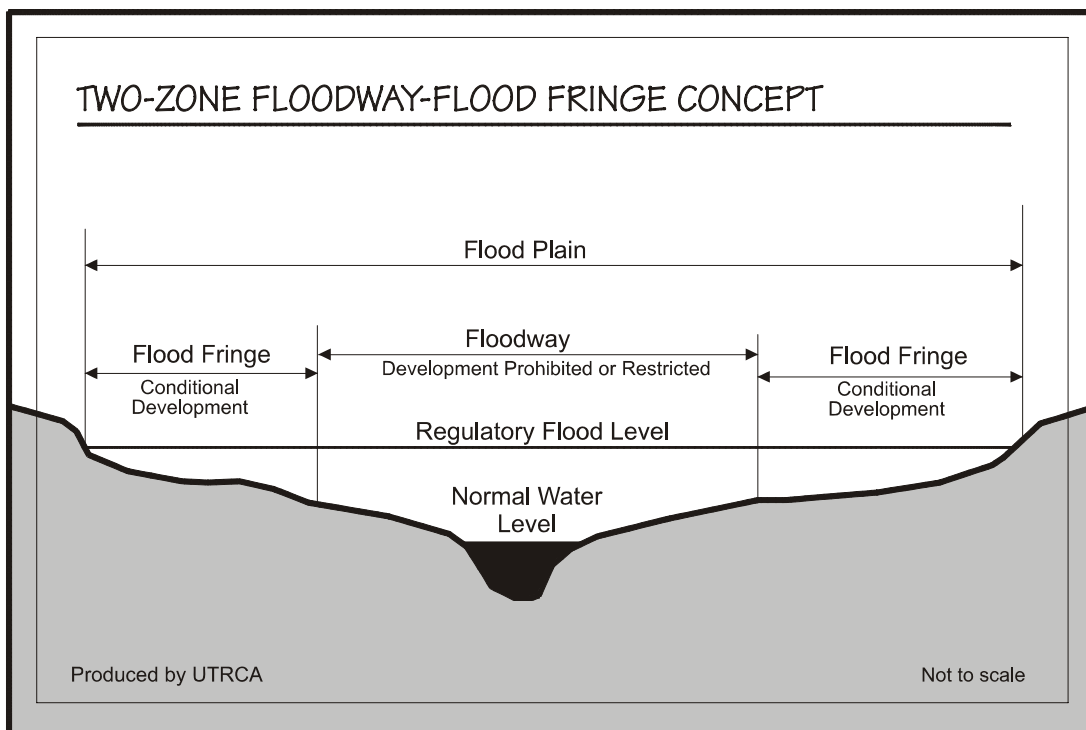
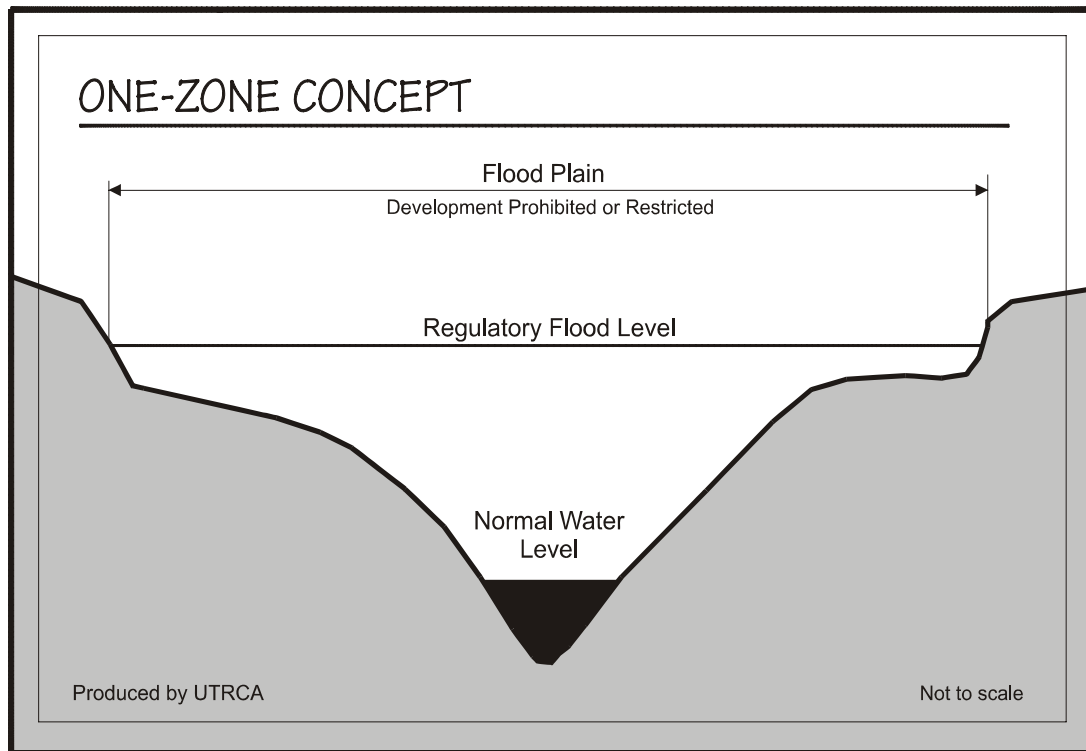
Detailed flood line mapping studies have been completed for most of the tributaries in the Upper Thames Watershed. Due to limited development pressure, these studies have not been completed for the Kettle Creek and Lower Thames Valley Conservation Authority areas of jurisdiction within the City of London.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

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 "B", 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 "B", 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.
One-Zone
Concept**

- i) In keeping with provincial policies, the City of London and the Conservation Authorities have adopted a one-zone concept for the City of London, except where a two-zone concept is applied in accordance with policy 15.6.3.

- ii) Institutional uses such as hospitals, nursing homes and schools; and
- iii) Uses associated with services such as those provided by fire, police and ambulance stations and electrical substations.

**15.6.3.
Two Zone
Concept**

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 "B" by amendment to this Plan.

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.

- i) Under the two-zone concept, the floodway and the flood fringe shall be defined as follows:
 - (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
 - (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.

- Delineation of Floodway
- 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.
- Delineation of Flood Fringe
- 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.
- Zoning of Floodway, Flood-Fringe
- iv) The zoning of flood plain lands shall be subject to the following conditions:
- (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
- (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.
- Development within the Flood Plain
- 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:
- (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)
- (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.
- (c) All new development or structures within the flood plain will require the approval of the Upper Thames River Conservation Authority.
- (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.

**15.6.4.
Special Policy
Area Concept**

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.

Purpose

- 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.

Eligible Areas

- 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; the "Coves" area; 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".

(Clause ii) amended by OPA No. 90 - approved by MMAH 98/04/23)

Studies

- 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.

Development
in Special
Policy Areas

- iv) On approval of a Special Policy Area(s), this Plan will be amended to incorporate appropriate policies to address the following matters:
 - (a) the circumstances under which new development will be considered in each Special Policy Area;
 - (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;
 - (c) the permitted types and locations of new development;
 - (d) alternative means or measures of providing increased levels of flood protection; and
 - (e) minimum elevations for the provision of safe ingress and egress within each area.

Delineation of
Special Policy

- v) On approval of the Special Policy Area(s), Schedule "B" of this Plan will be amended to include the Special Policy Area(s).

Areas

15.6.5. Flood Plain Acquisition

Selected flood plain lands will be acquired through a long term program of progressive acquisition, carried out in conjunction with the appropriate Conservation Authority.

Objectives Acquisition

- 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.

Priorities Acquisition

- 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.

Methods of Acquisition

- 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)

15.7.

ONE HUNDRED YEAR EROSION LIMIT AND FILL LINE AREA

(Section 15.7. added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

Ravines, river valleys and stream corridors may be susceptible to natural hazards. The natural hazards addressed in this section are:

- i) Lands within the one hundred year erosion limit in accordance with provincial policy;*
- ii) Steep slopes; and*
- iii) 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.*

15.7.1. One Hundred Year Erosion Limited

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.

Identification of One Hundred Year Erosion Limit

- i) 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:

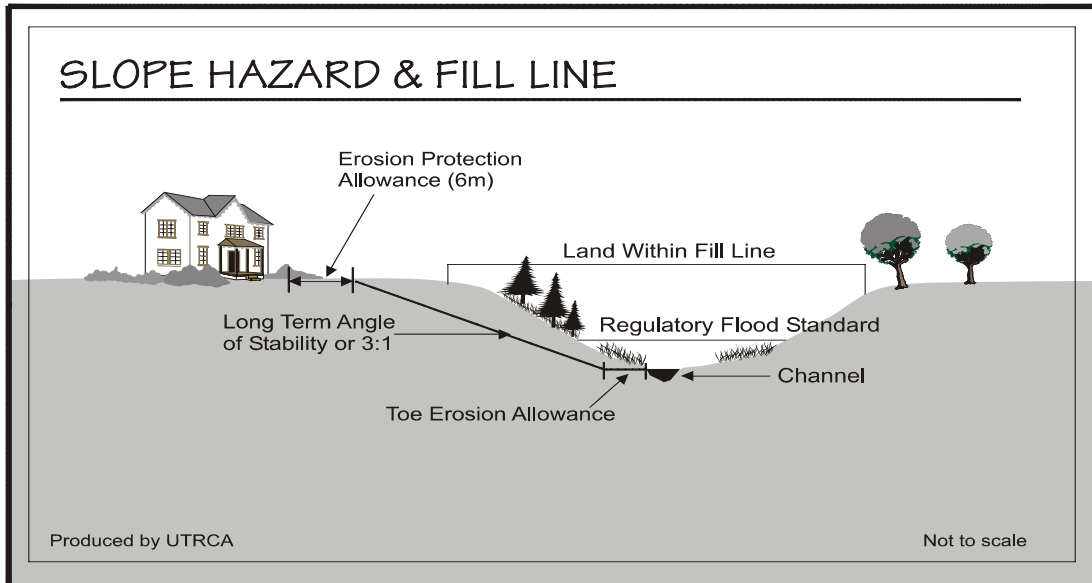
- (a) Toe Erosion Allowance - a setback based on the anticipated toe erosion which would occur for a 100 year design period, or 100 times the measured annual recession rate;
 - (b) Stable Slope Allowance - a setback based on a 3 to 1 horizontal to vertical slope projected from the toe erosion allowance; and
 - (c) Erosion Protection Allowance - a setback of 6 metres
- Boundaries
 - ii) 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.
- Permitted Uses
 - iii) Uses permitted by the underlying land use designation may be developed within the 100 Year Erosion Hazard Limit provided that all of the following requirements can be fulfilled:
 - (a) the erosion and/or slope instability hazard can be safely addressed;
 - (b) new or existing hazards are not created or aggravated including possible impacts on upstream or downstream areas;
 - (c) adverse environmental impacts can be appropriately mitigated;
 - (d) vehicles and people have a way of entering and exiting the area during times of emergencies;
 - (e) development will be carried out in accordance with established standards and procedures; and
 - (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.
 - iv) Permitted uses within the One Hundred Year Erosion Limit will also include:
 - (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.
 - (b) creation or maintenance of infrastructure authorized under

an environmental assessment process.

Geotechnical
Study

- v) Compliance with the above conditions shall be demonstrated through a geotechnical study in accordance with policy 15.7.4.

FIGURE 15.7.1.: ONE HUNDRED YEAR EROSION LIMIT



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

The One Hundred Year Erosion 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 Erosion Limit. These features 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 in accordance with policy 15.7.4.

**15.7.3.
Lands Within
the Fill Line**

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.

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 *Conservation Authorities Act*.

Boundaries

- 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.

- 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.
- iii) Development may be permitted within the fill line delineated on Schedule "B", in accordance with the requirements of the *Conservation Authorities Act*.
- 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.

**15.7.4.
Geotechnical
Assessments**

- i) Geotechnical assessments will be required to:
 - (a) refine boundaries of the One Hundred Year Erosion Limit;
 - (b) identify existing erosion and/or slope instability hazards;
 - (c) assess the impact of the proposed development on existing hazards;
 - (d) assess the potential for the proposed development to create new hazards; and
 - (e) identify measures to safely avoid or address the potential hazards, including building setbacks from the One Hundred Year Erosion Limit.
- ii) The City shall require that the geotechnical assessment 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 or site plan application.
- iii) A geotechnical assessment may be completed as part of an Area Plan or an Environmental Impact Study in accordance with Section 15.5. of this Plan.

(Section 15.7 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.8.

CONTAMINATED LANDS

(Section 15.8 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.8.1.

- i) Notwithstanding the land use designated on Schedule "A" of this

Development in the Vicinity of Known or Suspected Contaminated Sites

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

- ii) The City may consult with appropriate Provincial agencies and may require an investigation, including testing of soil and groundwater samples, to:
 - (a) Determine potential health concerns;
 - (b) Demonstrate the site can be rehabilitated to meet appropriate Federal, Provincial and local standards; and
 - (c) Identify procedures for site remediation.

15.8.2. Cooperation With Other Agencies

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)

15.9.

ABANDONED OIL, GAS OR WATER WELLS

(Section 15.9 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

15.9.1. Known or Suspected Wells

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 *Petroleum Resources Act* as administered by the Ministry of Natural Resources. For information purposes, known petroleum well locations are shown on Schedule "B". Information pertaining to well locations and petroleum resources may be obtained from the Ministry of Natural Resources.

15.10.

AGGREGATE RESOURCES

(Section 15.10 renumbered by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

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.

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 "B" - Flood Plain and Environmental Features.

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*.

**15.10.1.
Extractive
Industrial**

Legally existing pits and quarries are recognized as a permitted use by this Plan. In areas shown Extractive Industrial on Schedule "B", aggregate extraction is a permitted interim land use in all designations on Schedule "A".

Location

- i) Extractive Industrial Areas shown on Schedule "B" - Flood Plain and Environmental Features include licensed pits and quarries and properties appropriate for consideration for a license under the *Aggregate Resources Act*.

Designation

- ii) Extractive Industrial Areas shown on Schedule "B" may be designated on Schedule "A" - the Land Use Map, according to their ultimate intended land use.

Evaluation of
Proposals for
Adjacent
Development

- iii) In evaluating proposals for change in land use within, or adjacent to, Extractive Industrial Areas shown on Schedule "B" - Flood Plain and Environmental Features, the potential impact of the pit or quarry on the proposed use and the future availability of aggregate resources for extraction will be considered. To reduce conflicts between the new development and the aggregate resource extraction, the following measures may be required:
 - (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;
 - (b) phasing of the proposed development, so that rehabilitation of portions of the pit or quarry precedes the development of adjacent residential uses; and
 - (c) the provision of berms, landscaping, and fencing.

**15.10.2.
Aggregate
Resources**

Aggregate resources within the City are shown on Schedule "B" - Flood Plain and Environmental Features. 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.

**15.10.3.
Applications to
Expand or Add
Pits or Quarries**

In addition to the requirements of the *Aggregate Resources Act*,

- (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 "B" - Flood Plain and

Environmental Features as Extractive Industrial Area; and

- (b) in the case of lands in the south-east Byron area shown on Schedule "B" - Flood Plain and Environmental Features as Extractive Industrial Area or Aggregate Resource Area, only a rezoning will be required to establish a new pit or quarry or to expand an existing pit or quarry

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 *Aggregate Resources Act*, 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:

- (a) a report setting out the location, extent, amount, and quality of the aggregate resource to be extracted;

- (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;

- (c) an evaluation of potential noise and vibration impacts on adjacent land uses in keeping with the provisions of policy 19.9.5.;

- (d) the site plan of the extractive operation, as required by the *Aggregate Resources Act*, and showing the proposed development as planned and staged. Such site plans shall include: the location of structures, operating equipment, activity areas, points of access, and internal 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.

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:

- (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 *Aggregate Resources Act*;
- (b) the location of stockpiling, screening, mixing, crushing or other processing of materials at the lowest elevations that are reasonably possible;
- (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
- (d) the retention of tree or other vegetative cover within the setback areas to the extent practicable.

**15.10.4.
Rehabilitation
of Pits and
Quarries**

Council, in considering an Official Plan amendment and/or rezoning, as the case may be, and an application under the *Aggregate Resources Act* to add or expand a pit or quarry, will request the submission of a rehabilitation plan, as provided for by the *Aggregate Resources Act*, to ensure that the rehabilitation of a pit or quarry is in keeping with the 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:

- (a) an accurate delineation of the land intended to be rehabilitated as public open space;
- (b) accurate contour information indicating the final grading of the rehabilitated areas;
- (c) the approximate configuration of any ponds to be incorporated in the rehabilitation scheme;
- (d) road and trail access to and through the rehabilitated pit area including any required parking facilities;
- (e) the siting of any recreational facilities proposed for the rehabilitated pit area;
- (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.

**15.10.5.
Wayside Pits
and Quarries**

"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 Fill, Construction, and Alteration to Waterways regulations 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 *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.

Rehabilitation iv) Council, in reviewing applications under the *Aggregate Resources Act* for wayside permits, will request the submission of a rehabilitation plan prepared to Council's satisfaction, as provided for by the *Aggregate Resources Act*, to ensure that the rehabilitation of a pit or quarry is in keeping with the land use designations shown on Schedule "A", the Land Use Map, and other relevant policies of this Plan.

**15.10.6.
Byron Gravel
Pits and
Adjacent Lands**

Aggregate resources adjacent to the Byron Gravel Pits are shown on Schedule B - Floodplain and Environmental Features 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" 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)

15.11.

MINERAL AND PETROLEUM RESOURCES

(Section 15.11 added by OPA No. 88 - OMB Order No. 2314 - approved 99/12/23)

There are no known mineral or petroleum resource operations in the City of London. Nevertheless, in certain areas of London underground petroleum resources may exist. Exploration of petroleum resources will not require an amendment to this Plan or the Zoning By-law. Development of petroleum resources, including exploration, drilling, production and storage of petroleum resources, shall comply with the *Petroleum Resources Act* and any other Provincial requirements, as applicable. Council shall ensure that no development will be permitted around any prior existing operational petroleum wells for maintenance, servicing and safety reasons. Appropriate setbacks as outlined in the regulations of the *Petroleum Resources Act* will be addressed through the Zoning By-Law.

(Ministry Modification No. 5 to OPA No. 88)