



TOGETHER, WE GROW – AGAIN!

Municipality of Thames Centre Official Plan Review

Discussion Paper: Natural Heritage Policies

April 2022

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Introduction

Natural heritage features, including natural hazards are important for the overall well-being of the Municipality. These features not only provide natural landscapes that residents can enjoy but they also perform important ecological functions such as providing habitat for wildlife and mitigating erosion and flooding. This discussion paper has been prepared to provide a background of the current natural heritage policies at the provincial-level, at the county-level and at the local-level to be considered during Thames Centre's Official Plan Review. This paper also further examines the policies related to the natural heritage system, including the natural heritage/ ecological systems-based approach and natural heritage features, including significant woodlands and natural hazards, to determine if any revisions should be made. Along with this, the paper also touches on the policies for Environmental Impact Studies (EIS) and the definitions related to natural heritage found within the Thames Centre Official Plan. This paper concludes with recommended next steps for the Thames Centre Official Plan Review.

Policy Background

Natural heritage policies that inform the Thames Centre Official Plan come from the direction of the Province, the County and the Municipality, through policy, plans, and other sources such as Conservation Authorities and the Middlesex Natural Heritage Systems Study. This section will provide policy context in relation to natural heritage and natural hazards.

Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) lays out the foundation for land use planning in Ontario with respect to matters of provincial interest. The PPS includes policies pertaining to building strong healthy communities, wise use and management of resources, and protecting public health and safety. As an important tool to describe the policies within the PPS at a local level and with local context, the Thames Centre Official Plan is required to be consistent with the PPS.

In regards to natural heritage and the PPS, natural heritage is identified as a matter of provincial interest under the Planning Act as it provides environmental, social, and economic benefits for the province and for residents. The PPS states "*Natural Heritage features and areas shall be protected for the long term*" and indicates that development and site alteration are not permitted within certain natural heritage system features (Ministry of Municipal Affairs and Housing, 2020). These features include significant wetlands, significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it can be demonstrated that there will be no negative impacts on natural features or their ecological functions. It is also noted in the PPS that nothing in the natural heritage policies is meant to limit the ability of agricultural uses to continue to operate (MMAH, 2020).

Per the PPS, municipalities within Ecoregions 6E and 7E must identify within their official plans the natural heritage systems that are located within Ecoregions 6E and 7E (MMAH, 2020). Since the County of Middlesex, which encompasses the Municipality of Thames Centre, is located within Ecoregion 7E, it is necessary for natural heritage systems to be reflected in County and local Official Plans. The PPS notes that although the Province has a recommended approach to identifying natural heritage systems,

municipalities may use other approaches provided that they achieve the same objective or exceed the objective.

In addition to natural heritage policies, natural hazards policies are also featured within the PPS. Natural hazards are defined as lands or property “*that could be unsafe for development due to natural occurring processes*”. These policies generally steer development away from natural hazards/ hazardous lands. The PPS requires municipalities to *prepare for the impacts of a changing climate* as there may be an increase in the risk associated with natural hazards (MMAH, 2020).

Conservation Authorities

Conservation Authorities play an important role in local municipalities, particularly in relation to natural hazards. They are local watershed management agencies who work towards ensuring that Ontario’s land, water, and natural habitats are conserved, restored, and responsibly managed through programs and services that they provide (Conservation Ontario, 2021). Conservation Authorities are also responsible for providing feedback on policy documents, such as official plans, as part of their duty to represent provincial interest in natural hazards. Out of the five Conservation Authorities that have jurisdiction in the County of Middlesex, only two have jurisdiction in Thames Centre including the Upper Thames River Conservation Authority (UTRCA), which accounts for 90% of the Municipality’s land area compared to only 10% for the Kettle Creek Conservation Authority (KCCA), whose jurisdiction is limited to the extreme southerly portion of the Municipality including the Hamlets of Avon, Gladstone and Harrietsville.

Middlesex Natural Heritage System Study

The Middlesex Natural Heritage Systems Study (MNHSS) was conducted in 2014 and provides a landscape level assessment of natural heritage features and functions within the County of Middlesex. This current MNHSS further builds on the previous 2003 version and is meant to be a local approach to determining the elements of the natural heritage system (Upper Thames River Conservation Authority, 2014). In relation to Thames Centre, the MNHSS includes modelling results for significance criteria for all vegetation patches within Thames Centre in addition to providing mapping of the vegetation patches located within the Municipality. The current Thames Centre Official Plan relies on information from the previous 2003 version and as such needs to be updated to reflect the 2014 version, considering the last Official Plan review was locally adopted in 2014 prior to the latest version (and subsequently approved by the County in 2015).

As shown in **Table 1** and **Figure 1**, MNHSS identified that there are 402 significant vegetation patches in Thames Centre, making up 7,146 hectares (18,123 ac) of land or 16.3% of the area of the Municipality (UTRCA, 2014). The study shall form the basis for updating the natural heritage policies information within the Thames Centre Official Plan.

Table 1- Results of Modeling Significance Criteria for all Patches in Thames Centre

Number of Patches			Area of Patches				
# patches	# patches that are significant	% of patches that are significant	Municipal Area (ha)	Area of all patches in (ha)	Area of patches that are significant (ha)	% of patch area that is significant	% of Municipality that is significant
524	402	76.7	43,746	7,334	7,146	97.4	16.3

Source: UTRCA, 2014

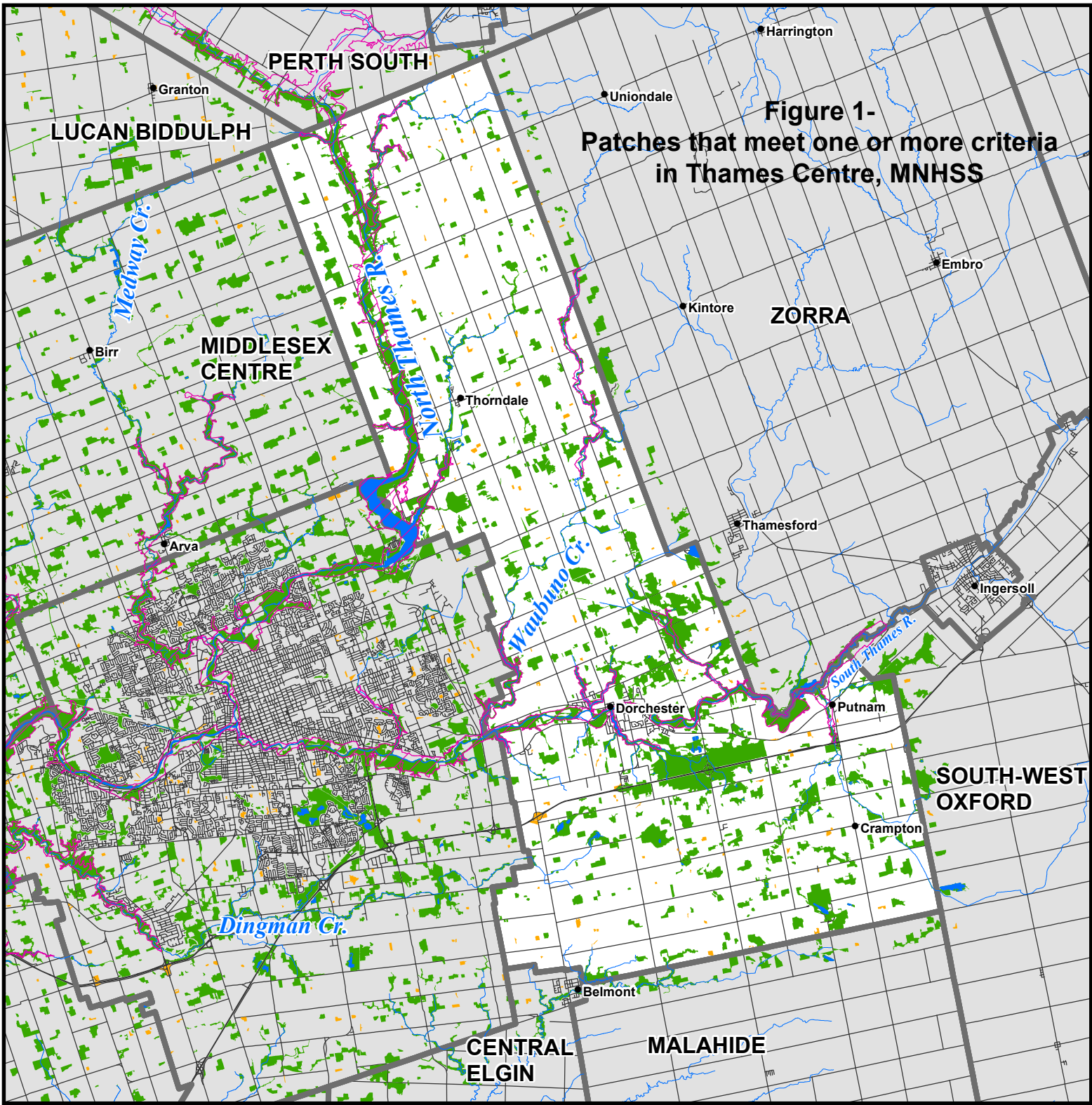
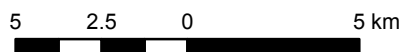


Figure 1- Patches that meet one or more criteria in Thames Centre, MNHSS

Middlesex Natural Heritage Systems Study 2014

Thames Centre Significant Vegetation Patch



Legend

- Meet No Criteria
- Meet at Least One Criteria
- Significant Valley System
- Municipality Boundaries

Produce by Upper Thames River Conservation Authority, July 2014, Basemapping -Land Information Ontario, Copyright © Queens Printer, 2014.

Vegetation Patch and Significant Valley Systems defined by Conservation Authorities: Ausable Bayfield, St. Clair Region, Upper Thames River, Lower Thames Valley, based on 2010 imagery.

County of Middlesex Official Plan

The County of Middlesex, an upper-tier government, is made up of eight local municipalities, including Thames Centre. The County has an Official Plan that directs land use planning policy on a broad basis and is intended to set forth an upper tier policy foundation to provide policy direction to local municipalities in the development of local Official Plans and Zoning By-laws (County of Middlesex, 2021).

The County is currently undergoing an Official Plan update to ensure that the policies within the Official Plan are consistent with the PPS. The proposed changes to the County Plan includes policy regarding the development of an ecological systems-based approach to planning to ensure there is coordination of land use and planning activities within and outside of the County. This involves adopting a comprehensive approach to natural heritage system planning, to maintain and protect natural heritage features and areas, the ecological functions, and the ecological interactions that occur within the environment. The proposed policy changes to the County Plan indicates that Middlesex's natural environment is comprised of natural hazards elements, natural heritage system elements as well as groundwater features elements and generally seeks to protect, maintain and steer development away from these elements (County of Middlesex, 2021).

Thames Centre Official Plan

The Municipality of Thames Centre's Official Plan (Thames Centre OP) provides land use planning policy and strategies for the Municipality up to the year 2022. The Thames Centre OP is to be reviewed to ensure that it is in conformity with the County of Middlesex Official Plan and consistent with the PPS and provides policy and strategies for the next 25 years. The current OP includes policies regarding natural heritage features and natural hazard areas and highlights natural heritage features located within Thames Centre including the Dorchester Swamp and the North and South Branches of the Thames River (The Municipality of Thames Centre, 2003).

The Thames Centre OP has a natural heritage "green-space" system with an overall goal to grow the size of the green space system and to improve the ecological condition and diversity of the system's components to help enhance the quality of life for biodiversity, protect groundwater areas and strengthen the appearance of the landscape within the Municipality. The green space system is composed of three groups of features: Group A, Group B and Group C (see **Table 2**). Each feature group requires a different level of evaluation and consideration prior to any planning approvals being granted (The Municipality of Thames Centre, 2003).

The natural heritage "green-space" system is composed of three groups of land use designations that correspond to the group features. The natural area designation provides policy direction for Group A features and areas, the Protection Area designation provides policy direction for Group B features, and the environmental area designation provides policy direction and guidance for Group C features. The Thames Centre OP requires applicants to conduct an Environmental Impact Study (EIS) when development or site alteration is proposed near or within the general locations of Group A, B, or C features (The Municipality of Thames Centre, 2003). These Groups will be further discussed in the topics of interest section.

Table 2-Thames Centre Natural Heritage Green Space System Features

Group A Features	Group B Features	Group C Features
<ul style="list-style-type: none"> • Provincially significant wetlands • Habitats for endangered and threatened species • Fish habitat 	<ul style="list-style-type: none"> • Regionally significant wetlands • Significant woodlands and woodland patches identified by the MNHSS • Significant valley lands • Significant wildlife habitat • Provincially significant areas of natural and scientific interest (ANSIs) • Regionally significant ANSIs & environmentally significant areas (ESAs) 	<ul style="list-style-type: none"> • Stream-bank corridors and flood plains along creeks and tributaries • Natural hazard lands, including floor plains and floor prone areas, areas within the 100 Year Erosion Limit, and areas susceptible to erosion

Natural hazard areas policies are also set out in the current Thames Centre OP. These policies apply to areas that are commonly known for physical hazards, for example, steep slopes, susceptibility to erosion or floods, or other physical conditions that are intense enough to cause damage to property and/or potential loss of life if the lands were to be developed with habitable structures or buildings. The OP states that the majority of the natural hazard areas are within the Environmental Area Designation although natural hazards may also be located within the Natural Area and Protection Area Designations. It is required that all development or site alterations within natural hazards areas be reviewed and approved by the conservation authority having jurisdiction (The Municipality of Thames Centre, 2003).

Topics of Interest

This section will further examine natural heritage policies to identify if any changes need to be made to the Thames Centre Official Plan to ensure it is in consistent with the PPS and in conformity with the County Official Plan.

Natural Heritage System/ Ecological Systems-Based Approach

As previously mentioned, the PPS requires municipalities to identify and map natural heritage systems. The County of Middlesex has utilized the information obtained by the MNHSS to identify and map the natural heritage systems by incorporating this information into the County Official Plan as part of its Official Plan Review. Revised Schedules C and D of the County OP show the natural hazards and natural heritage system as well as natural heritage features within Thames Centre. **Figure 2**, Schedule C of the draft County OP shows the natural hazard areas and natural heritage system. **Figure 3**, Schedule D of the draft County OP shows the natural heritage system features, including wetlands, connecting vegetation, meadows, watercourses, woodlands and thickets. To ensure consistency with the PPS and conformity with the draft County OP, the updated Thames Centre OP will be revised to combine Group A and Group B features which would eliminate the ‘Natural Area’ and ‘Protection Area’ designations to form a new ‘Natural Heritage System’ designation. Group C features would be revised to form the new ‘Hazardous Lands’ designation which would eliminate the ‘Environmental Area’ designation.

**Figure 2-
Schedule C, Natural Heritage System, County OP**

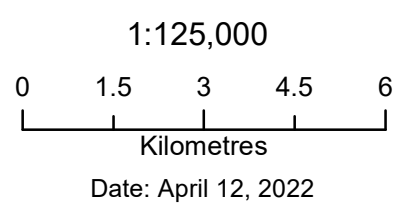
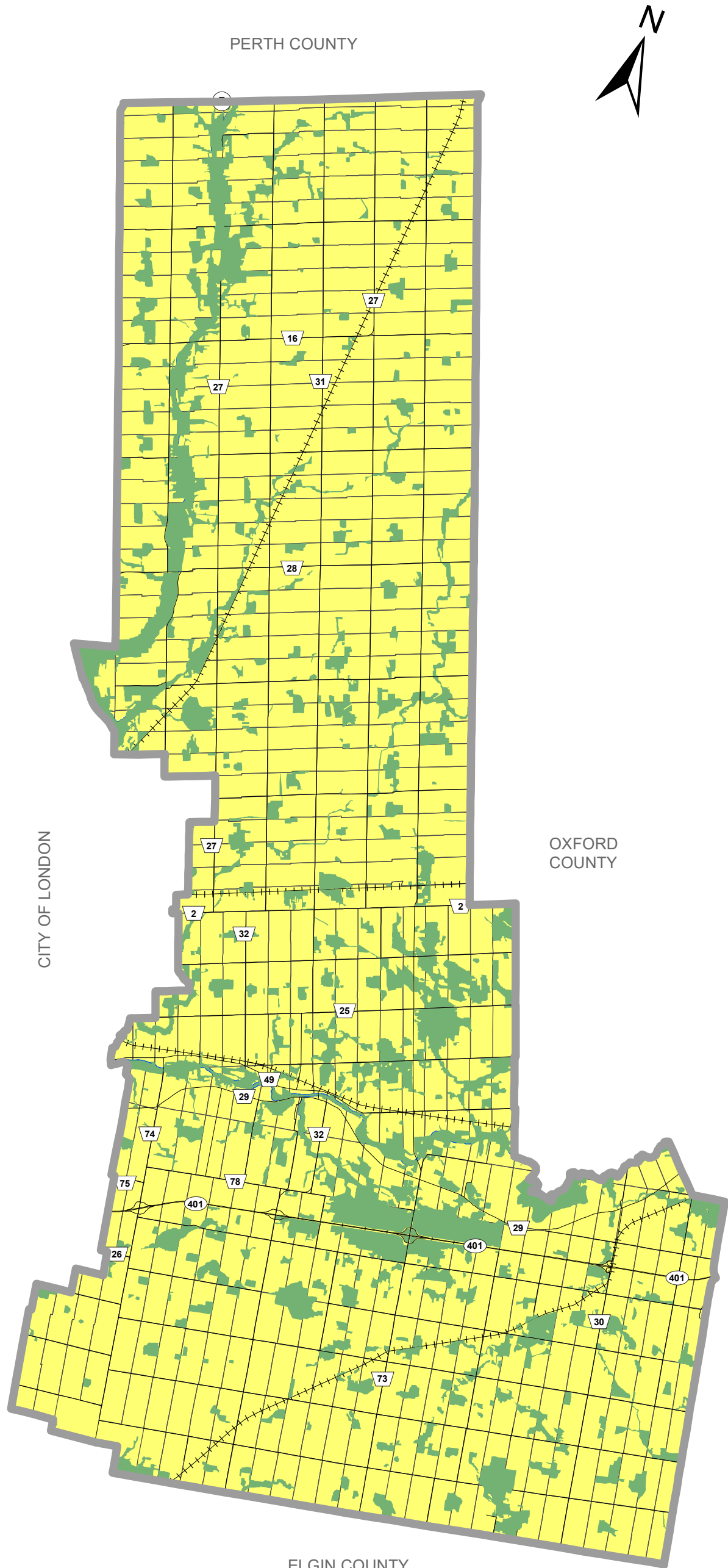



**COUNTY OF MIDDLESEX
OFFICIAL PLAN DRAFT FOR
CONSULTATION ONLY
PART OF SCHEDULE C
NATURAL HERITAGE SYSTEM**

Notations:

Due to the size and scale of the Schedules, the boundaries of features may not appear to be precise; therefore, the limits of these features should be determined through consultation with the County, appropriate Conservation Authority, local municipality and/or the Province.

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 Natural Heritage System

**Figure 3-
Schedule D, Natural Hazard Areas, County OP**

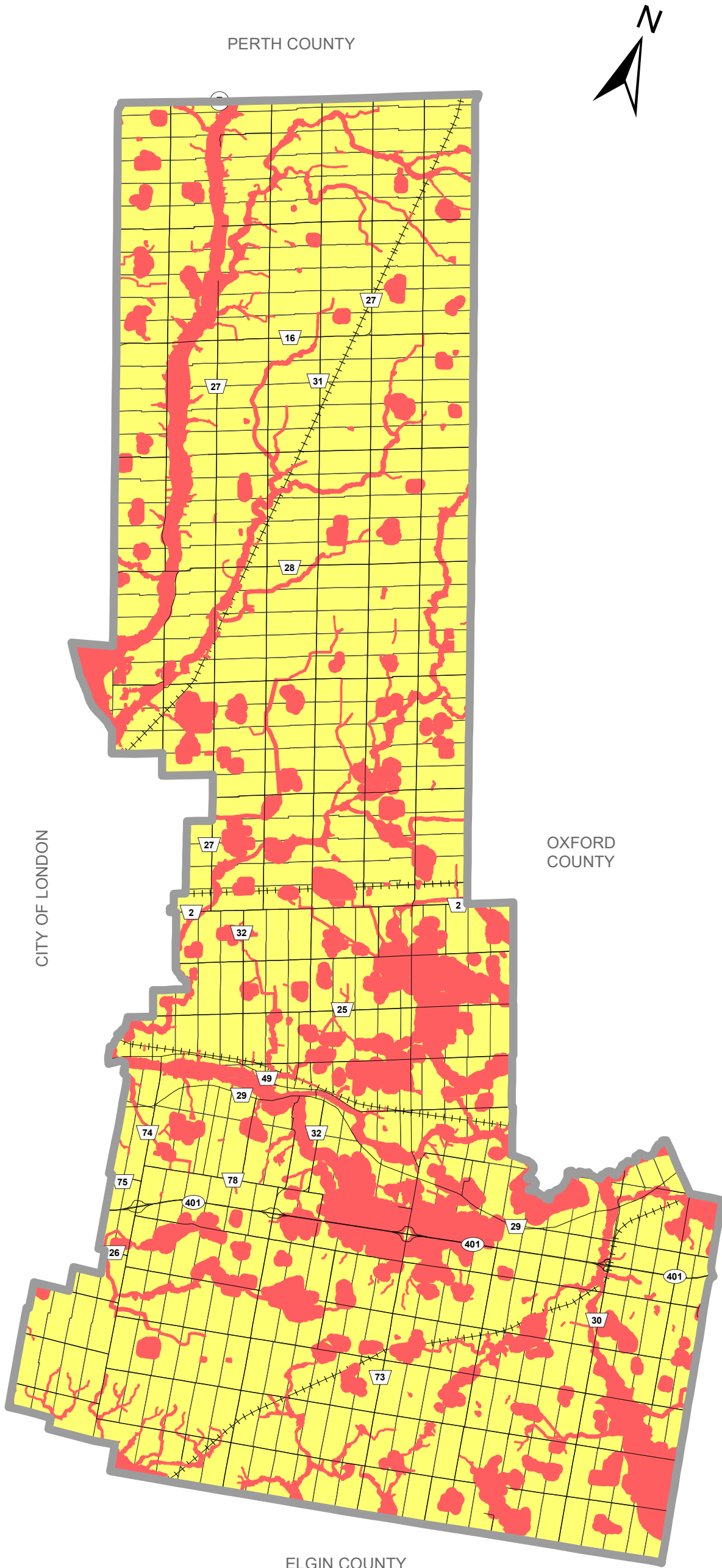



**COUNTY OF MIDDLESEX
OFFICIAL PLAN DRAFT FOR
CONSULTATION ONLY
PART OF SCHEDULE D
NATURAL HAZARD AREAS**

Notations:

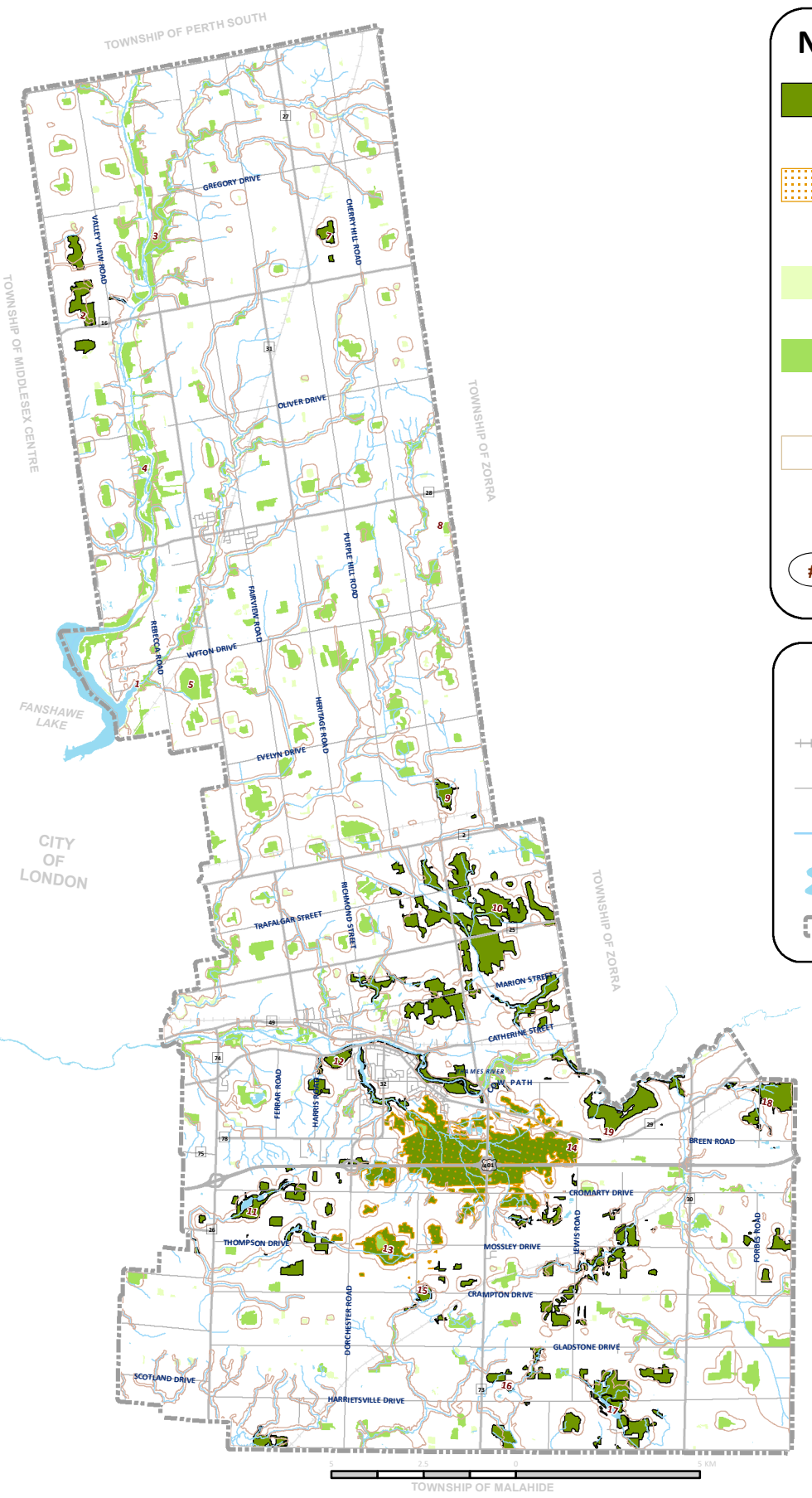
Due to the size and scale of the Schedules, the boundaries of features may not appear to be precise; therefore, the limits of these features should be determined through consultation with the County, appropriate Conservation Authority, local municipality and/or the Province.

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 Conservation Authority Regulation Limits






Proposed County policy requires local municipalities to “*identify Provincial, County, and locally significant elements of the Natural Environment in their Official plans... and develop policies to ensure their protection, maintenance and where necessary, rehabilitation*” (County of Middlesex, 2021). The Thames Centre OP includes mapping regarding natural heritage features, specifically **Figure 4** shows Appendix 1 (Part A). The map indicates where provincially and regionally significant wetlands, woodlands, life science ANSIs, as well as maximum hazard limits.



NATURAL HERITAGE

-  PROVINCIAL & REGIONALLY SIGNIFICANT WETLAND
-  PROVINCIAL & REGIONALLY SIGNIFICANT LIFE SCIENCE AREA OF NATURAL & SCIENTIFIC INTEREST (ANSI)
-  SIGNIFICANT WOODLAND (4 HECTARES OR GREATER IN AREA)
-  WOODLAND UNDER 4 HECTARES IN AREA
-  MAXIMUM HAZARD LIMIT (MAXIMUM LIMIT OF REGULATORY FLOODLINES AND AREAS SUSCEPTIBLE TO EROSION)
-  NATURAL HERITAGE SITES (SEE APPENDIX B FOR DESCRIPTIONS)

BASEMAP

-  RAILWAY
-  ROADWAY
-  WATERCOURSE
-  WATERBODY
-  MUNICIPAL BOUNDARY

APRIL 2022

NATURAL HERITAGE FEATURES

MUNICIPALITY OF THAMES CENTRE
OFFICIAL PLAN



To ensure that the Thames Centre OP is consistent with the PPS and in conformity with the County OP, it would be beneficial to utilize the information obtained from the MNHSS to help inform new policies for natural heritage system and ecological system based approaches. It would also be beneficial to include updated mapping based on the MNHSS for the natural heritage system and ecological systems within the OP.

Natural Heritage Features

Natural Hazards

The PPS along with the County OP both state that planning authorities must consider the potential impacts of climate change as it may increase the risks associated with natural hazards. The current Thames Centre OP does not address climate change and its relation to natural hazards. To be consistent with the PPS and in conformity with the County OP, it would be beneficial to include policy regarding the impacts that climate change could have on natural hazards within the Municipality.

Significant Wetlands

The PPS defines Significant wetlands as *“an area that is identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry using evaluation procedures established by the Province and amended from time to time”* (MMAH, 2020). The County OP requires a Development Assessment Report (DAR) to be conducted and submitted for any development applications for lands within or adjacent to natural environment areas, including significant wetlands. Thames



Centre’s current OP places provincially significant and regionally significant wetlands into two different groups, Group A and Group B features. Development and site alteration are generally prohibited within Group A features while development and site alteration within Group B features may be permit provided, that it can be demonstrated through environmental impact studies (EIS) that no negative impacts will occur on the features or their ecological functions.

Significant Woodlands

Significant woodlands are located throughout the County and throughout the Municipality. The PPS defines them as *“an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. These are to be identified using criteria established by the Ontario Ministry of Natural Resources and Forestry”* (MMAH, 2020). The County OP does not permit development within significant woodlands without demonstrating that no negative impacts will occur on the natural heritage system features or their ecological functions. Similarly, the current Thames Centre OP requires development proposals within Significant Woodlands to

demonstrate no negative impacts on features or their functions through an EIS. Based on the similarities between the PPS, the County OP, and the current Thames Centre OP, it appears that changes do not need to be made in regards to significant woodlands policies.

Significant Valleylands

Significant valleylands are considered ‘Natural Heritage Features and Areas’ in the PPS. For development or site alteration to occur within a significant valleyland, the PPS and the County OP requires demonstration that there will be no negative impacts on the natural heritage features or their ecological functions. The Thames Centre OP considers significant valleylands to be Group B features and may permit development subject to consultation with and approval by the appropriate conservation authority (with the assumption that there are no other natural heritage features, functions, or values present). It also appears that no changes need to be made in regards to significant valleylands policies as they are consistent with the PPS and in conformity with the County OP.

Significant Wildlife Habitat

Significant wildlife habitat is also considered ‘Natural Heritage Features and Areas’ in the PPS. The County OP also states that development and site alteration shall not be permitted within significant wildlife habitats unless it has been demonstrated that there will be no negative impacts on surrounding features or their ecological functions. The Thames Centre OP states that development may be permitted provided that an EIS demonstrates there will be no negative impacts on wildlife habitat requirements, including adjacent lands within 50 metres. It appears that no changes need to be made to the Thames Centre policies.

Areas of Natural and Scientific Interest

Areas of Natural and Scientific Interest (ANSI) are defined in the PPS as “*areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education*” (MMAH, 2020). The County OP also states that development and site alteration shall not be permitted within significant ANSIs unless it has been demonstrated that no negative impacts will occur on the significant ANSI and its ecological function. Provincially significant ANSIs and regionally significant ANSIs and environmentally significant areas (ESAs) are considered Group B Features in the Thames Centre Official Plan. Similar to the County OP, the Thames Centre OP requires demonstration through an EIS that no negative impacts will occur on the natural features or their ecological or hydrologic functions. This also applies to adjacent lands within 50 metres of the ANSIs. It appears that no changes need to be made to the Thames Centre policies.

Fish Habitat

As defined in the PPS and in the Fisheries Act, Fish habitat refers to “*spawning grounds and any other areas, including nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes,*” (MMAH, 2020.) The PPS states that development and site alteration are not permitted in fish habitat except in accordance with provincial and federal requirements. The County OP states that when development is to occur within fish habitat, the appropriate studies must be completed to ensure compliance with the Fisheries Act. The Thames Centre OP lists fish habitat as a Group A Feature and states that development and site alteration are not

permitted within the boundaries of fish habitat unless authorized by the Federal Department of Fisheries and Oceans (DFO). This includes land within 30 metres of cold water habitats and within 15 metres of warm water habitats. An EIS would be required to demonstrate no harmful alteration, disruption or destruction of fish habitats adjacent to watercourses or if the development is authorized by the DFO. It would be beneficial to review the policy for fish habitat within the Thames Centre OP to ensure that the wording is simplified and clear (the requirement of an EIS or DFO authorization may benefit from clarification).

Significant Habitat of Endangered/ Threatened Species

The PPS states that *“development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements”*. The County OP states that development and site alteration shall not be permitted within habitats of endangered species and threatened species except in accordance with provincial and federal requirements. The Thames Centre OP considers ‘significant portions of the habitat of endangered and threatened species’ a Group A feature and does not permit development or site alteration within the significant portions of these habitats unless an EIS demonstrates that there will be no negative impacts on surrounding features or their ecological or hydrologic functions including adjacent lands within at least 120 metres. It may be beneficial to revise this policy to remove the word “portions”.

Groundwater Features

In relation to natural heritage and ground water features, the PPS states that *“the diversity and connectivity of natural features in an area... should be maintained, restored, or where possible, improved recognizing linkages between and among natural heritage features and areas, surface water features and ground water features”*. Proposed County OP policies lists groundwater features as an element of Natural Heritage. This includes groundwater recharge areas, highly vulnerable aquifers, and wellhead protection areas. The proposed County OP policies states that significant ground water recharge areas, wellhead protection areas, and highly vulnerable aquifers will be protected and local municipalizes will use the information and mapping obtained from the applicable Source Protection Plans when reviewing development applications and preparing official plans and zoning by-laws.

Amendment No. 20 (OPA 20) to the Thames Centre Official Plan adopted and approved in 2019 brought the Thames Centre Official Plan into conformity with the sourcewater protection plans having jurisdiction in Thames Centre, being the Thames Sydenham and Region Source Protection Plan and the Kettle Creek Source Protection Plan. Through OPA 20, the Thames Centre OP includes additional policies and mapping schedules focused on ensuring the protection, restoration and maintenance of water resources within the Municipality and particularly with respect to municipal drinking water systems. As such, it appears that no changes need to be made to the Thames Centre policies.

Environmental Impact Studies

As previously mentioned, the PPS includes policy regarding development and site alteration within natural heritage features and the need to demonstrate that there will be no negative impacts on natural features or their ecological functions. Proposed County OP policies states that development applications within or adjacent to the natural environment require submission of a Development Assessment Report (DAR). The

DAR is required to provide a description of the development, description of natural hazards, natural heritage system features and their ecological functions, identification of potential impacts, and identification and recommendation of appropriate protection and mitigation measures (County of Middlesex, 2021).

The Thames Centre OP also includes similar policy for Environmental Impact Studies (EIS). The OP states that qualified individuals must evaluate new land use proposals and/or new development, site alteration, or lot creation wherever the proposals are within or near a Group A, B, or C feature. The EIS is required to provide the location of the proposal and usually includes completing an inventory of the life science, earth science and hydrogeology of the natural heritage feature or area to identify and provide a boundary for the feature or area. The EIS also needs to evaluate for the potential impacts (positive and negative) that may result from the development proposal. If it is anticipated that there will be negative impacts, the EIS must explain how the impacts can be mitigated. The OP also states that at the Municipality's discretion, a scoped EIS may be considered appropriate to satisfy the policies of the OP if it is felt that the impacts of the proposed development would be minimal. It may be beneficial to review the EIS policies, in particular, policy regarding scoped EIS to ensure that wording is clear on when a scoped EIS would be acceptable.

In the evaluation of an EIS, the Municipality generally relies on the assistance of the conservation authority to review such studies on behalf of Thames Centre. Considering the conservation authority has previously waived the need for the undertaking of the study based on existing conditions, existing Official Plan policies do not address these types of occurrences. It would be appropriate if a new policy was included to provide direction for such occurrences.

Definitions

The PPS and the proposed County OP policies both provide several new or revised definitions related to natural heritage. The definitions within the Thames Centre OP should be updated to be consistent with these definitions. New or revised definitions under consideration include but are not limited to conservation authority, endangered species, negative impacts, and natural heritage system.

Recommendations and Next Steps

This discussion paper has provided a background of the policies related to natural heritage and natural hazards to help inform draft official plan policies for the Thames Centre OP. The various updates and revisions that may be required include the following:

- It is recommended that the Thames Centre OP adopts a natural heritage/ ecological systems-based approach, as it is essential to protect and maintain ecological functions, ecological interactions and natural heritage features and areas.
- It is recommended that the Thames Centre OP incorporates updated mapping using the information obtained from the MNHSS. This includes mapping of the natural heritage system and its features.
- It is recommended that the Thames Centre OP includes policy regarding climate change and the impacts it may have on natural hazards

- It is recommended that specific policies, such as policies for Fish Habitat, Environmental Impact Studies are revised to provide clarity
- It is recommended that the definitions within the Thames Centre OP are revised if necessary and include new definitions that are laid out in the PPS and within the draft County OP.

The recommendations in this discussion paper should be confirmed with the Upper Thames River Conservation Authority and the Kettle Creek Conservation Authority to ensure the recommendations are appropriate and would ensure consistency and conformity to the PPS and proposed County OP policies.

Comments and questions can be submitted to mbancroft@thamescentre.on.ca.

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