



Middlesex Centre Official Plan Review

Discussion Paper 3

Natural Heritage & Hazards

Winter 2020



Cover image sourced from: Middlesex County (2020)



TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
1 INTRODUCTION.....	3
1.1 Study Work Program.....	3
1.2 Purpose of this Discussion Paper.....	4
2 PLANNING POLICY CONTEXT	6
2.1 Planning Act	6
2.2 Other Relevant Legislation	6
2.3 Provincial Policy Statement, 2020	7
2.4 Natural Heritage Reference Manual.....	8
2.5 Source Protection Plans	9
2.6 Conservation Authorities.....	9
2.6.1 Watershed Report Cards	12
2.7 Middlesex County.....	14
2.7.1 Middlesex County Official Plan.....	14
2.7.2 Middlesex Natural Heritage Systems Study	18
2.8 Municipality of Middlesex Centre	19
2.8.1 Official Plan.....	19
2.8.2 Official Plan Amendment 44 – Drinking Source Water Protection	20
2.8.3 Middlesex Centre Zoning By-law.....	24
2.8.4 Site Plan Control By-law 2003-035 & Site Plan Manual	25
3 KEY ISSUES AND OPPORTUNITIES	26
3.1 Natural Heritage System Approach.....	26
3.1.1 Natural Heritage System Mapping	26
3.1.2 Significant Wetlands.....	28
3.1.3 Significant Woodlands	29
3.1.4 Significant Valleylands	30
3.1.5 Significant Wildlife Habitat	30



3.1.6	Significant Areas of Natural and Scientific Interest (ANSI)	31
3.1.7	Fish Habitat.....	32
3.1.8	Significant Habitat of Endangered / Threatened Species	32
3.1.9	General Natural Heritage System Policy Considerations	33
3.2	Hazard Lands.....	34
3.3	Relationship to Agriculture.....	35
4	CONCLUSION & NEXT STEPS.....	36

EXECUTIVE SUMMARY

The Municipality of Middlesex Centre is undertaking a review and update of its Official Plan. The primary purpose of this Official Plan Review is to ensure consistency and conformity with applicable Provincial and County of Middlesex policies and legislation. Since launching the Official Plan Review, a high-level Background Report has been prepared and several consultation opportunities have been provided to hear from the community, Municipal Council, and Staff.

The purpose of this Discussion Paper is to provide an overview of the natural heritage and hazards-related matters to be considered through the Official Plan Review. Building on the previously completed Background Report, this Discussion Paper summarizes relevant policy and legislation related to Natural Heritage Systems, explores issues to be addressed in the new Official Plan, and presents preliminary options and recommendations to address these key issues.

This Discussion Paper considers several critical policies and plans including the Provincial Policy Statement (2020), the Middlesex County Natural Heritage Systems Study, Source Protection Plans, and Watershed Report Cards, to understand how the Middlesex Centre Official Plan can address the most recent natural heritage and hazards policy updates and mapping.

Based on the findings of the policy review, the Discussion Paper explores three core issues and opportunities in detail: the approach to the Natural Heritage System; hazard lands; and the relationship between agriculture and the Natural Heritage System.

It was determined that the Official Plan will need to be updated based on updated mapping to follow a systems-based approach to protect natural heritage features and connecting linkages, and ensure floodplains and flood prone areas are accurately delineated. The Discussion Paper notes that a balance is required between agricultural areas and the Natural Heritage System to support the continuation of existing agricultural uses and the protection of natural features.

The next step of the Middlesex Centre Official Plan Review involves the preparation of a Policy Directions and Recommendations Report which will translate the findings of this Discussion Paper into specific policy updates to the Official Plan. Further public and stakeholder consultation will take place following the completion of the Policy Directions and Recommendations Report to introduce and confirm the proposed policy updates.

1 INTRODUCTION

The Municipality of Middlesex Centre (“the Municipality”) is undertaking a review and update of its Official Plan. The Official Plan is a long-term planning policy document that guides growth, development, and overall use of land within the Municipality. It also establishes the goals, objectives, and land use policies to ensure that the future needs of the Municipality and its community are met.

The Municipality’s current Official Plan was adopted in 2000 and approved with modifications in 2002. Since then, there have been a total of 52 amendments. The last municipal comprehensive review and major policy update to the Middlesex Centre Official Plan occurred in 2011. The primary purpose of this Official Plan Review (“OPR”) is to ensure consistency and conformity with applicable Provincial and County of Middlesex policies and legislation. A review of the Municipality’s Official Plan is required to identify updates required to implement the Provincial Policy Statement (“PPS”), and the Middlesex County Official Plan in accordance with Section 27 of the *Planning Act*. It is not the intent of the OPR to consider requests for site-specific amendments to the Municipality’s Official Plan, which would be better addressed through supporting justification and planning analysis undertaken through a site-specific Official Plan Amendment process.

In accordance with the *Planning Act*, all updates to the Official Plan must be consistent with the PPS in effect at the time of adoption. This Discussion Paper represents the policies in effect at the time of its writing, and may be supplemented with updated memos at later dates, if necessary.

1.1 STUDY WORK PROGRAM

The Official Plan Review is being undertaken in four phases, as follows:



Phase 1

Project Initiation



Phase 2

Background
Reports & Studies

WE ARE HERE



Phase 3

Directions &
Recommendations
Report



Phase 4

Official Plan
Amendment(s)

The five Discussion Papers form part of Phase 2 – Background Reports and Studies. Following the completion of the series of four Discussion Papers, a Policy Directions and Recommendations Report will be developed and shared with the community and stakeholders in Spring 2021. Together, these reports and papers will inform changes to the Official Plan

which will be introduced through one or more Official Plan Amendments for consideration by Council.

1.2 PURPOSE OF THIS DISCUSSION PAPER

The purpose of this Discussion Paper is to provide an overview of the natural heritage and hazards-related matters to be considered through the OPR. Building on the previously completed Background Report, the Discussion Paper will summarize relevant policy and legislation related to Natural Heritage Systems, explore issues to be addressed in the new OP, and present preliminary options and recommendations to address these key issues.

The protection of natural heritage, as well as hazard lands (e.g., flood prone areas), is paramount to the continued sustainability of Middlesex Centre. These areas provide clean air and water, assist with regulating water levels, and support a healthy agricultural system. A healthy natural environment, both in Middlesex Centre and more broadly, supports a high quality of life, human health, and thriving rural and tourism sectors. The Middlesex County Natural Heritage System Study, as well as their ongoing Municipal Comprehensive Review, will also impact the Natural Heritage System for the Municipality of Middlesex Centre.

This Discussion Paper will consider several critical policies and plans – including the Provincial Policy Statement (2020), the Middlesex County Natural Heritage Systems Study, and Source Protection Plans, to understand how the Middlesex Centre OP can address the most recent policy updates and mapping. Section 3.0 and Schedule B of the Municipality’s current Official Plan are the primary sections of the Plan which deal with matters of natural heritage and hazards; however, the various land use schedules and other supporting policies may be directly impacted by updates to the policies and mapping of the natural heritage system and hazards.

This Discussion Paper is one of five papers that will serve as the basis for developing policy directions and recommendations. It is not the intent of this Discussion Paper to outline all the issues and specific policy changes to be made, but rather outline key issues and changes that are required, based on the Background Report, public consultation, and input from Municipal Staff and stakeholders. Additional necessary changes to policies will be explored across the various Discussion Papers and as the OPR advances. Further, as the various schedules of the OP are reviewed in subsequent stages of the OPR the County Natural System will be compared against the Municipality’s existing Natural System to identify discrepancies and address gaps.

This Discussion Paper is organized to address matters of natural heritage and hazard lands in Middlesex Centre. The following topics are addressed in this Discussion Paper:

Section 1: Introduction– Introduces the OPR project, locates the Discussion Paper in the context of other deliverables and establishes the purpose and structure of the Discussion Paper.

Section 2: Planning Policy Context– Outlines the relevant policy context at the Provincial, County, and Municipality levels with respect to natural heritage and hazards. This section identifies the more straightforward updates that may be required to the OP, whereas more complex issues are discussed in Section 3.

Section 3: Key issues and Opportunities– Explores the key issues and opportunities to be addressed through the OPR as they relate to the approach to delineating a natural heritage system, source water protection, and mapping options for the natural heritage system.

Section 4: Conclusion and Next Steps– Discusses the next steps in the OPR and how the Discussion Paper will be leveraged in subsequent phases of the Project.

2 PLANNING POLICY CONTEXT

The Background Review Report provided a general overview of the various policies, plans, strategies and reports that inform this Official Plan Review. This section takes a closer look at the specific direction provided by these Provincial, County, and local documents as they relate to natural heritage and hazard lands.

2.1 PLANNING ACT

The *Planning Act* provides the legislative basis for, among other things, preparing official plans and planning policies that will guide future development in Ontario. Sections 16(1) and 16(2) respectively describe what an official plan must contain, and what it may include. Section 26 prescribes certain conformity requirements for municipal official plans, requiring that they be reviewed at least every 5 years. Section 27 requires a lower-tier municipality (e.g., the Municipality of Middlesex Centre) amend its official plan to conform to upper-tier official plans (i.e., the Middlesex County).

Section 26(1) of the *Planning Act* states that official plans shall have regard for matters of Provincial Interest, further described in Section 2 of the *Act*, which includes:

- The protection of ecological systems, including natural areas and features;
- The conservation of features of significant architectural, cultural, historical, archaeological or scientific interest; and,
- The appropriate location of growth and development.

The emphasis on the protection of ecological systems underscores the Provincial direction for a broad systems-based approach to natural heritage protection, and represents a departure from a purely features-based regime, to that which considers interconnected systems.

2.2 OTHER RELEVANT LEGISLATION

In addition to the *Planning Act*, there are other pieces of Federal and Provincial legislation that relate to the protection of the natural environment and resources. These include the:

- *Federal Fisheries Act (2019)*;
 - Under the *Federal Fisheries Act*, Federal and Provincial governments and other agencies (e.g., the Conservation Authorities) are directed to collaborate in the review of projects that may affect fish and fish habitat. Policies of the 2020 PPS and definitions for fish and fish habitat require that the *Act* and Provincial requirements (e.g., lake trout lakes) serve as the basis for protection of fish and fish habitat. The protection of fish and fish habitat is a Federal responsibility and is administered by Fisheries and Oceans Canada (DFO).

- *Endangered Species Act (2007)*;
 - The habitat protections offered under both the PPS and the *Act* are very similar and are complementary to each other. Under the *Act*, no person shall damage or destroy the habitat of an endangered or threatened species. The *Act* sets of a framework for identifying habitats and regulating activities related to these areas.
- *Clean Water Act (2006)*.
 - The Province introduced the *Clean Water Act, 2006* to protect existing and future sources of municipal drinking water throughout Ontario. Source protection plans, approved under the *Act*, establish a locally driven, science-based, approach for protecting drinking-water sources and promoting stewardship.

2.3 PROVINCIAL POLICY STATEMENT, 2020

The current Provincial Policy Statement (PPS), effective from May 2020, replaced the PPS issued April 2014. The PPS is issued under the authority of Section 3 of the *Planning Act* and provides direction on matters of Provincial interest related to land use planning and development. It sets out policies concerning the creation of healthy communities, wise use and management of resources, and protection of public health and safety.

Sections 2.1 and 2.2 of the PPS focus on the protection of natural heritage and hazard lands. The Middlesex Centre Official Plan must be consistent with the PPS, and may go beyond the minimum standards of the PPS for the protection of the local natural heritage system (NHS) in balance with all land use requirements.

Section 4.5 of the PPS requires that official plans identify Provincial interests and set out appropriate land use designations and policies, and to evaluate the significance of some natural features or other resources.

The Provincial Policy Statement (2020) defines a natural heritage system as:

*“...a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and **support natural processes** which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include **natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features**, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that **enable ecological functions to continue**. The Province has a recommended approach for identifying natural heritage systems, but municipal approaches that achieve or exceed the same objective may also be used.”*

The PPS requires that natural heritage systems be identified in Ecoregions 6E and 7E (which includes all of southern Ontario) to recognize that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas (Section 2.1.3). Section 2.1.9 notes that the above policies are not intended to limit the ability for agricultural uses to continue.

The PPS also specifies areas where development and site alteration are prohibited and areas where negative impacts must be avoided or mitigated. These areas include:

- Provincially Significant Wetlands (PSWs) (Section 2.1.4a);
- Significant Woodlands (Section 2.1.5b);
- Significant Valleylands (Section 2.1.5c);
- Significant Wildlife Habitat (Section 2.1.5d)
- Significant Areas of Natural and Scientific Interest (Section 2.1.5e); and,
- Fish Habitat (Section 2.1.6)

The PPS further recognizes that there may be impacts from development and site alteration on adjacent lands. Section 2.1.8 stipulates that development and site alteration is not permitted unless the ecological function of the adjacent lands is evaluated and it can be demonstrated that there will be no negative impacts. The Natural Heritage Reference Manual (discussed later), provides guidance on identifying adjacent lands and processes for studying potential impacts on natural heritage features.

The PPS speaks to both, individual features (e.g., PSWs, significant woodlands etc.), and the importance of connections, linkages and systems (Section 2.1.2).

2.4 NATURAL HERITAGE REFERENCE MANUAL

The Natural Heritage Reference Manual, prepared by the Province of Ontario, provides guidance for interpreting the Provincial Policy Statement policies on natural heritage. The document includes an appendix outlining a recommended approach to natural heritage system planning. Specifically, the Reference Manual recommends that a NHS should be identified using a comprehensive approach that evaluates the contribution of all land cover and habitats to the ecological function and biodiversity of landscapes and examines deficiencies that should be rectified to address diversity and connectivity. This comprehensive approach recognizes that individual natural areas and features have strong ecological ties to one another, as well as ecological interdependencies within the larger landscape. The comprehensive approach emphasizes the maintenance and enhancement of ecological functions (e.g., corridors, linkages) that sustain biodiversity rather than solely serving to protect individual features or patches of habitat. The Reference Manual further provides a recommended approach for identifying adjacent lands to natural features, and the requirements for an Environmental Impact Study (EIS) – referred to as a Development Assessment Report (DAR) in the Middlesex Centre OP, that are intended to be implemented through Official Plan policies.



The Reference Manual was used to inform the approach to the Middlesex County Natural Heritage Systems Study.

2.5 SOURCE PROTECTION PLANS

A key deliverable required under the *Clean Water Act, 2006* is a source water protection plan, which is undertaken to: protect existing and future drinking water sources in the source protection area; and, for every area identified as an area where an activity is or would be a threat to drinking water, ensure the activity never becomes a threat, or ceases to be one. Section 40 of the *Act* requires municipalities to bring their Official Plan into conformity with the relevant policies and map schedules of those Source Protection Plans (SPPs) that regulate their municipal drinking water systems.

SPPs are developed for a watershed area (as delineated in the *Act*) from a scientific and technical foundation to eliminate or reduce the risks posed by drinking water threats. Assessment Reports provide the technical background upon which SPPs are prepared. Assessment Reports describe the local watershed, assess the available water supplies, map vulnerable areas and identify drinking water threats in the vulnerable areas that pose a risk to municipal drinking water systems.

The development of Assessment Reports and SPPs is led by a Source Protection Committee formed for each Source Protection Region, in conjunction with the Municipality, County, and Conservation Authorities. There are 24 Source Protection Regions and corresponding Source Protection Plans in effect across the Province. The following SPPs are applicable to Middlesex Centre:

- Thames-Sydenham and Region Source Protection Plan
- Kettle Creek Source Protection Plan
- Ausable Bayfield Source Protection Plan

There are four Municipal Drinking Source Water Systems that have Wellhead Protection Areas (“WHPA”) located throughout Middlesex County. Two of the Wellhead Protection Areas, Birr and Melrose, are owned and operated by the Middlesex Centre and are regulated by the Thames-Sydenham and Region Source Protection Plan.

Section 2.8.2 of this Discussion Paper explores the topic of Source Protection Plans within the context of the Middlesex Centre OP and their considerations through the OPR.

2.6 CONSERVATION AUTHORITIES

Conservation Authorities are public sector organizations that develop and implement programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario. Conservation Authorities are governed under the *Conservation Authorities Act*, which is administered by the Ministry of Natural Resources and Forestry (MNRF). Conservation Authorities provide advice to municipalities on natural hazard management and help to regulate development and other activities in areas affected by water-

based natural hazards through a permit process. In Middlesex Centre, Conservation Authorities play a critical role in undertaking natural heritage reviews.

Under the *Act*, Conservation Authorities are granted permitting authority within their regulated area (**Figure 1**) to ensure that development does not have an adverse effect on natural features and will not be at risk from natural hazards. It is noted that Conservation Authorities may experience significant changes under the proposed Bill 229 (*Protect, Support and Recover from COVID-19 Act*), 2020 introduced by the Province. This omnibus Bill introduces changes to the *Conservation Authorities Act*, amongst other pieces of legislation. Under Schedule 6 of the proposed Bill 229, the Conservation Authorities' role to manage watershed natural resources and natural hazards could be removed and/or hindered. The potential impacts of Bill 229 will be monitored throughout the OPR.

Natural hazard lands located within Middlesex Centre fall under the jurisdiction of five Conservation Authorities, which include:

- Ausable Bayfield Conservation Authority (ABCA)
- Kettle Creek Conservation Authority (KCCA)
- Lower Thames Valley Conservation Authority (LTVCA)
- St. Clair Region Conservation Authority (SCRCA)
- Upper Thames River Conservation Authority (UTRCA)

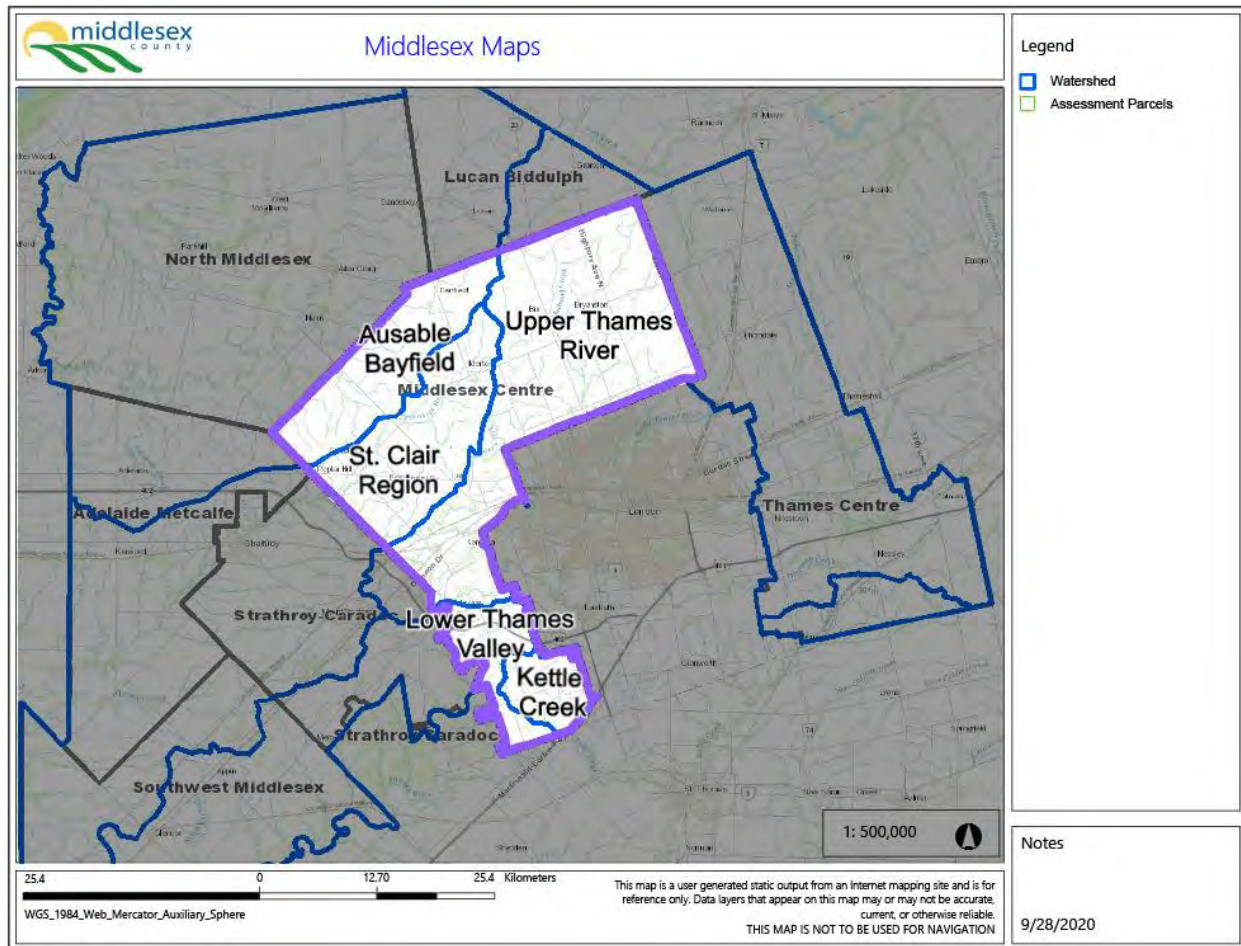


Figure 1 - Conservation Authority Regulated Areas (delineated in blue) within Middlesex Centre

The various Conservation Authorities maintain their own Operation Guidelines, procedures, and policies that provide direction on matters of importance for municipal official plans and zoning by-laws, where appropriate. Some of these matters include:

- The need for official plans and zoning by-laws to include floodproofing elevations. If a municipality does not wish to include these elevations within the documents, the LTVCA, for example, may request that all building permit applications in flood prone areas be directed to them prior to issuance.
- Municipalities are further encouraged to direct development applicants within flood prone areas to consult with the respective Conservation Authority to ensure that appropriate floodproofing elevations can be obtained;
- Erosion prone areas, alteration of watercourses, and interference with wetlands, amongst others. For example, in the case of Provincially Significant Wetlands (PSWs), the regulated adjacent land is 120 m from the PSW and for other regulated wetlands the regulated adjacent land is 30 m. The Guidelines reiterate that development and site alterations are not permitted within PSWs, and establishes a limited list of conservation and infrastructure uses that are permitted, subject to an Environmental Impact Study (EIS); and.

- For example, the Wetland Policy of the SCRCA reiterates the prohibition of development and site alteration within a wetland. Within these regulated areas and their adjacent areas of interference, development or site alteration that is consistent with the underlying land use designation may only be permitted, if prior approval is received from the Conservation Authority.

2.6.1 WATERSHED REPORT CARDS

Ontario's Conservation Authority Report cards provide information related to the protection and enhancement of watershed resources, which are based on standards that were developed for consistent reporting across Ontario.

The report cards provide a 'grade' for four consistent metrics: groundwater quality, surface water quality, forest conditions, and wetland cover. The following is a summary of the key findings from the respective 2018 report cards for the ABCA, KCCA, LTVCA, SCRCA and UTRCA.

- **Ausable Bayfield Conservation Authority (ABCA)**

Within the Nairn Creek sub-watershed, the following grades have been assigned:

- A 'poor' D grade was assigned to forest conditions, as forests are growing slowly. The Report Card notes that it is important to value and protect existing forests as the high agricultural productivity of, and demand for, much of the land means that forest cover may remain limited.
- A 'fair' C grade was assigned to surface water quality, which is generally consistent for the whole watershed.
- A 'less than A' grade was assigned to the monitoring well in the Municipality, which suggests that nitrate and chloride approached or exceeded the drinking water standard for nitrate / chloride.

- **Kettle Creek Conservation Authority (KCCA)**

Within the Dodd Creek sub-watershed, the following grades have been assigned:

- A 'poor' D grade was assigned to forest conditions, as forest cover is being lost faster than it can be replaced. The Report Card recommends that restoration and protection of natural habitats should be encouraged, particularly existing large forest patches, to maintain ecosystem integrity.
- A 'poor' D grade was assigned to surface water quality, which is generally consistent for the whole watershed. This is due to phosphorus concentrations exceeding acceptable limits.
- A 'very poor' F grade was assigned to wetland cover. The Dodd Creek sub-watershed (which covers the Municipality) has the least wetland cover with less than 0.5% of wetland cover and should be an area of priority for restoration and wetland creation.

- **Lower Thames Valley Conservation Authority (LTVCA)**

Within the sub-watershed which covers Middlesex Centre, the following grades have been assigned:

- A 'fair' C grade was assigned to forest conditions. The Report Card notes that tree planting continues to balance forest losses and is important, but that new plantings cannot replace the ecological function of mature forests.
- A 'poor' D grade was assigned to surface water quality. This reflects that water quality within watercourses is not meeting the Provincial water quality objectives for phosphorus or E. Coli.
- A 'poor' D grade was assigned to wetland cover due to the low wetland cover within the sub-watershed.

- **St. Clair Region Conservation Authority (SCRCA)**

Within the Sydenham Headwaters sub-watershed, the following grades have been assigned:

- A 'poor' D grade was assigned to forest conditions, as there is a lack of forest interior. In many areas only small, fragmented woodlots exist that do not provide undisturbed areas for wildlife.
- A 'poor' D grade was assigned to surface water quality, which is generally consistent for the whole watershed. The Report Card notes that surface water quality in each sub-watershed is influenced by the land use. Protection and enhancement of wetlands, forests, and riparian buffers can help to improve water quality.
- A 'very poor' F grade was assigned to wetland cover due to a lack of wetland cover (less than 1%). The Report Card notes that Environment Canada recommends a minimum of 10% wetland cover.
- An 'excellent' grade was assigned to the monitoring well in the Municipality, which suggests that nitrate and chloride are within acceptable levels.

- **Upper Thames River Conservation Authority (UTRCA)**

Within the sub-watersheds within Middlesex Centre, the following grades have been assigned:

- A range of 'fair' C and 'poor' D grades were assigned to forest conditions which reflects changes in forest cover.
- A range of 'fair' C and 'poor' D grades were assigned to surface water quality. The Report Card notes that water quality was best within the Komoka Creek sub-watershed.
- 4.9% of the watershed is within wetland cover, which is below the 10% guideline recommended by Environment Canada.

Based on the grading score from the 2018 Report Cards provided by the ABCA, KCCA, LTVCA, SCRCA and UTRCA, the following are outlined (on a Province-wide basis) which could inform the principles of the OP:

- Conservation Authorities' watershed management programs help to target action and restore, enhance and protect our natural resources;
- Conservation Authorities track local conditions by monitoring both water and land natural resources, often in partnership with the Province and others;
- Conservation Authorities protect water quality by using stormwater management techniques such as low impact development and green infrastructure to reduce runoff and improve infiltration; and,
- Conservation Authorities protect and manage the impacts on green spaces such as conservation areas.

2.7 MIDDLESEX COUNTY

The Municipality of Middlesex Centre is one of eight municipalities in Middlesex County. As the upper-tier government, one of the County's functions is to provide planning direction to its local municipalities in their preparation of local Official Plans and to establish a coordinated approach to major infrastructure projects and the protection of the agricultural community. The following County documents and studies have been reviewed to understand their implications on the Middlesex Centre OPR.

2.7.1 MIDDLESEX COUNTY OFFICIAL PLAN

The Middlesex County Official Plan ("County OP") sets out the planning framework, general policies and land use policies for the County and its local municipalities, with a planning horizon to 2026. All lower-tier Official Plans are required to conform to the County Official OP. The County OP identifies and establishes policies for the protection of the Natural System (referred to as a "Natural Heritage System" by the PPS) and directs local municipalities to identify Provincial, County, and locally significant elements of the Natural System.

Natural System Components

The County OP is organized into a multi-layer approach for the identification of its Natural System, while recognizing that each layer is inter-connected and functionally important. Most features are identified as an overlay with policy triggers to ensure development is either prohibited within significant natural heritage features, or required to demonstrate there will be no negative impacts on the natural heritage features. The four components of the Natural System are:

- 1 **Natural Hazards:** steep slope hazards, unstable soils, and fill regulated areas (overlay);
- 2 **Natural Environmental Areas:** floodplains, flood regulated watercourses, and wetlands (designation) and habitat of endangered and threatened species (not mapped);

- 3 **Natural Heritage Features:** significant woodlands, wildlife habitat, endangered and threatened species habitat, river / stream / ravine / upland corridors, aggregate resource areas, petroleum resource pool areas, and areas of natural & scientific interest (overlay);
- 4 **Groundwater Features:** groundwater recharge areas, groundwater discharge and headwater areas, and well head protection areas (overlay).

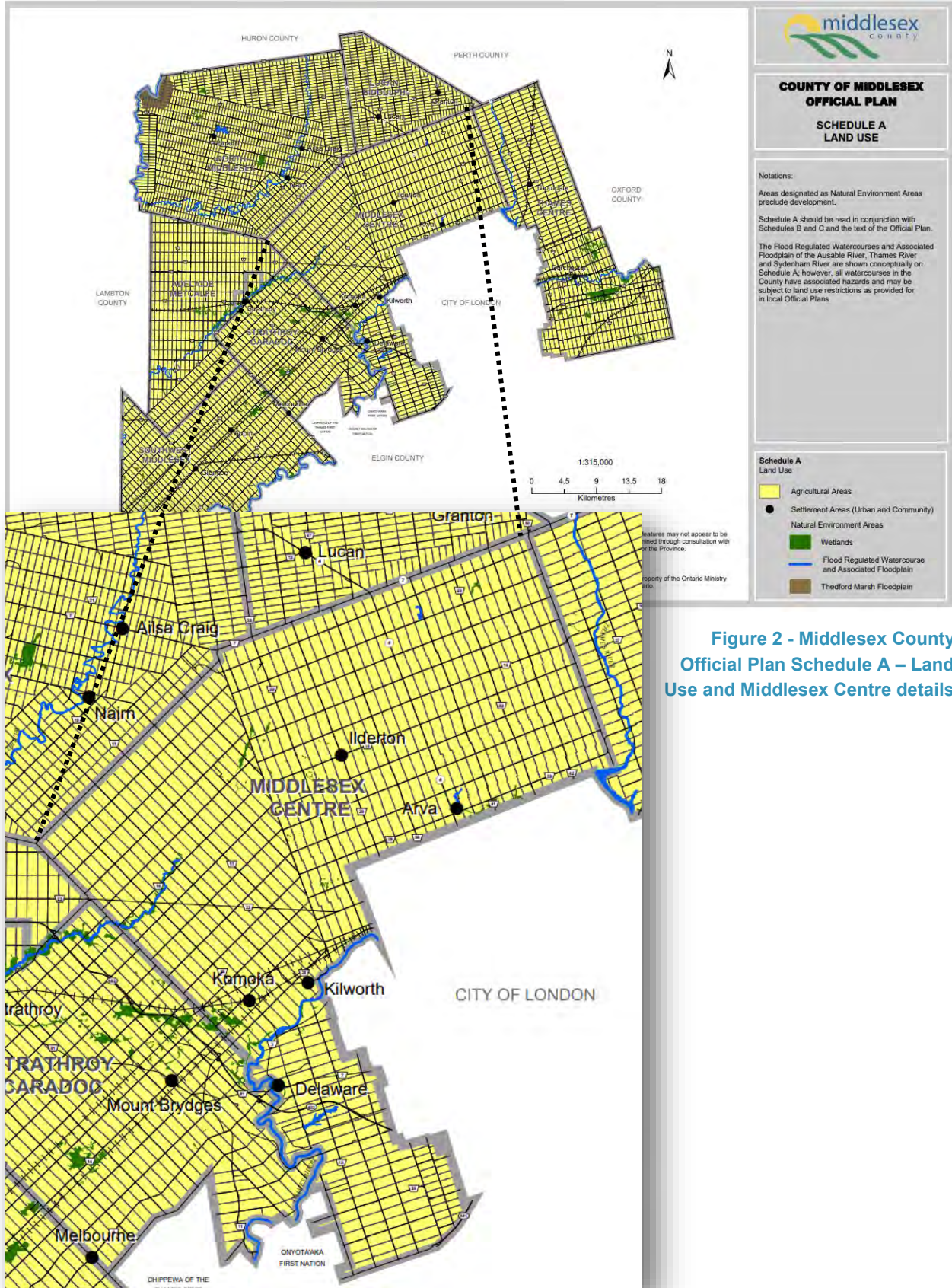
Through thoughtful consideration, the establishment of a NHS in Middlesex Centre can build upon the direction provided by the County OP; however, a lower-tier OP can go above and beyond what is identified in the upper-tier Official Plan.

Section 3.4 of the County Official Plan establishes the detailed land use policies for the Natural Environment Areas. The uses permitted within this designation, as outlined in Section 3.4.2, include:

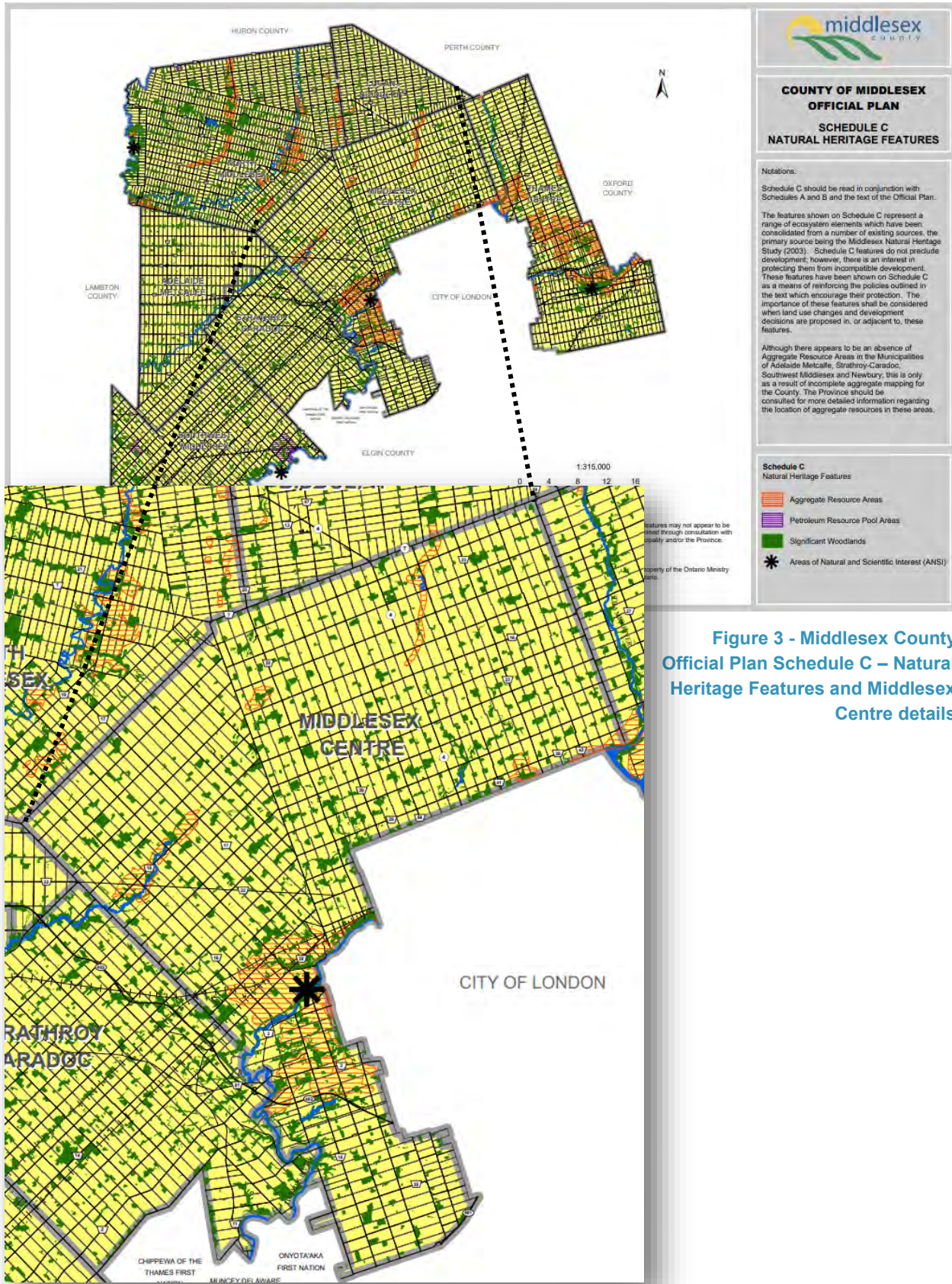
- Existing uses (including limited expansion where such expansion will have no overall negative impact on the Natural System);
- Agriculture;
- Conservation;
- Forestry;
- Wildlife areas;
- Passive recreation;
- Public parks; and
- Horticulture.

Within the Natural Environment Areas shown on Schedule A (**Figure 2**), buildings and structures are generally not permitted (Section 3.4.2). The County OP notes that in the absence of engineered flood line mapping, an Official Plan Amendment will not be required for minor adjustments to the boundaries of the Natural Environmental Areas, provided the abutting land use remains the same (Section 3.4.3).

Regarding wetlands, it is the policy of the County OP that all local official plans will prohibit new development within wetlands (Section 3.4.4.1). The County uses a singular definition of wetlands, which encompasses both Provincially Significant Wetlands and otherwise significant wetlands. The completion of a Development Assessment Report (DAR) is required for any proposed development within the adjacent lands within 120 m of a wetland area (Section 3.4.4.1).



**Figure 2 - Middlesex County
Official Plan Schedule A – Land
Use and Middlesex Centre details**



**Figure 3 - Middlesex County
Official Plan Schedule C – Natural
Heritage Features and Middlesex
Centre details**

The lands shown on Schedule C of the County OP do not prohibit development; however, within or adjacent to the Natural Heritage Features shown in Schedule C (**Figure 3**), a DAR is required (Section 2.2.1.2).

The features identified on Schedule C represent a range of ecosystem elements which have been consolidated from several existing sources. Information obtained from the previous 2003 Middlesex Natural Heritage Study (MNHS) was the primary source for the woodland mapping on Schedule C – the MNHS was most recently updated in 2014.

Section 2.2.1.2 of the County OP also permits the adjustment of the boundaries shown on both Schedule A and C based on additional details revealed through a DAR, in consultation with the Province, the Conservation Authorities, and local municipalities.

2.7.2 MIDDLESEX NATURAL HERITAGE SYSTEMS STUDY

In 2014, the Upper Thames River Conservation Authority completed the Middlesex Natural Heritage System Study (the “MNHSS”) to provide information on the state of the County’s natural areas, and to provide a landscape-level assessment of natural heritage features and functions. The MNHSS used the most current information from the Ministry of Natural Resources to identify areas that met the PPS definition of “significant” and mapped the Natural Heritage System (NHS) for Middlesex County and the City of London. The Middlesex County Official Plan relies on the previous 2003 iteration of the MNHSS.

Through its comprehensive analysis, the MNHSS found that 15.5% of the land area in Middlesex Centre contains ‘vegetation patches’ that have been deemed significant in accordance with the PPS (**Figure 4**). Following the one-criterion approach, any vegetation patch which met at least one of the criteria is considered significant. The MNHSS recommends that the County Official Plan and local official plans refer to the new 2014 MNHSS as it identifies these significant features and areas, and the NHS for the County.

To help refine the high-level mapping of the MNHSS and identify possible impacts, it further recommends that smaller scale, site-specific development could consider the preparation of a Development Assessment Report (DAR) or edge management planning process. Larger-scale developments and settlement area boundary expansions should be assessed at a sub-watershed scale of study and include the integration of natural heritage features.

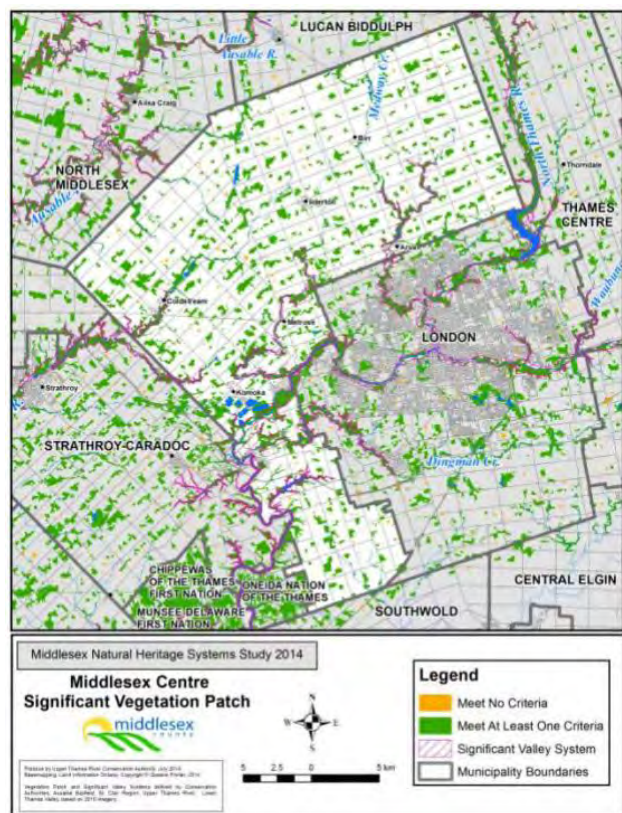


Figure 4 - Middlesex Natural Heritage System Study – Middlesex Centre (Significant Vegetation Patch)

The MNHSS recommends that official plan policies be updated to encourage protecting the natural heritage system, in lieu of singular features. The MNHSS provides a strong basis to inform policy and mapping updates in the Middlesex Centre OP. The findings of the MNHSS is discussed further in Section 3.1 of this Discussion Paper.

2.8 MUNICIPALITY OF MIDDLESEX CENTRE

The Municipality of Middlesex Centre has authority to pass by-laws, adopt policies and administer programs that can affect natural heritage features and areas in many ways. This section discusses the Official Plan, various amendments to be consolidated as part of the OPR, the Zoning By-law and the Site Plan Control By-law.

2.8.1 OFFICIAL PLAN

As discussed in previous sections of this paper, there are certain Provincial or County policies the Middlesex Centre Official Plan must implement, and others where there is greater flexibility. It is also important that the OP reflect the present-day vision, goals and values of the Municipality. This section discusses the specific policies of the OP that will need to be updated for consistency and conformity with higher-order policies, and where there are opportunities to provide locally relevant policy direction. Specific changes and policy directions will be explored in the subsequent Policy Directions and Recommendations Report.

The natural area policies of Section 3.2 of the OP relate to an overall Municipal natural system, including Natural Areas and Natural Hazard Areas. The OP works to conserve natural features and functions, and considers natural functions to be as important as the features themselves (Section 3.1).

The OP separates natural features into three categories:

- **Natural Environmental Areas:** Areas where development is prohibited within their boundaries (Schedule A) including wetlands, significant habit of endangered or threatened species, and floodplains and flood prone areas mapped by the Conservation Authorities;
- **Greenland Features Overlay:** Areas where development and site alteration may be permitted within their boundaries subject to the findings of a development assessment report (DAR) (Schedule B) including significant woodlands.
- **Areas where preservation is generally encouraged:** Including woodlots within the Municipality that are not considered significant; and road side and fence-line tree plantings.

Section 3.5 of the OP outlines a scoped range of uses which are permitted within the Natural Environment Areas and Greenland Overlay without the need for a DAR (e.g., maple syrup production, trails, existing agricultural uses, etc.).

Regarding hazard lands, the Municipality follows a “one zone” floodplain mapping system (Section 3.6), which means that the entire area within the flood hazard limit is considered to be a floodplain. The one zone concept is the most restrictive and clearly manages flood hazards

from a risk management and interpretation perspective. The OP divides natural hazard features into two categories:

- **Floodplain Areas**, including floodplains, flood prone areas, and slope hazards mapped by the Conservation Authorities (Schedule A); and
- **Natural Hazard Areas**, including steep slopes or fill line conditions (Schedule C).

Section 3.6 requires that a DAR be completed before development proposed to occur within a Floodplain Area is approved. Section 3.6.1 and 3.6.2 establish specific requirements for the completion of a DAR outside of and within identified settlement areas, respectively. Specifically, Section 3.6.1 and 3.6.2 contemplate the establishment of a “two-zone” floodplain mapping system through the DAR process to identify the floodway and flood fringe for lands both outside of and within settlement areas, respectively. Within the floodway, all development is prohibited; however, within the flood fringe amenity uses may be permitted.

This approach appears to align with Policy 3.1.6 of the 2020 PPS which permits development and site alteration within the flood fringe; however, there may be a need to introduce language regarding floodproofing standards through the OPR to implement the policies of the PPS.

Section 3.7 speaks to the additional Natural Hazard Areas and outlines the requirement for a DAR to permit new development. The section also notes that where there is an overlap between the Natural Hazard Features and Greenland Features, that the DAR will also consider the form and functions of the natural features.

2.8.1.1 KOMOKA-KILWORTH SECONDARY PLAN

In addition to the Municipality-wide policies established in Section 3.0 of the OP, Section 5.7.9 of the OP establishes Natural Environment, Natural Heritage Enhancement Area, and Natural Hazard policies for the Komoka-Kilworth Secondary Plan area.

The Natural Environment and Natural Heritage Enhancement Areas are shown as land use designations, while the Natural Hazard areas are shown as an overlay on Schedule A-2.

The Natural Heritage Enhancement Areas are intended to be areas for the maintenance and enhancement of linkages to the natural system. They are subject to further refinement through a DAR, and are subject to agreements with landowners. The approach to these areas appears to align with the principles of establishing a natural heritage system which protects linkages and promotes the maintenance and improvement of linkages.

2.8.2 OFFICIAL PLAN AMENDMENT 44 – DRINKING SOURCE WATER PROTECTION

OPA 44 established a new policy section which is related to source water protection. This OPA provides additional source water protection terminology to the list of definitions, and includes new schedules outlining Source Protection Areas and Wellhead Protection Areas. The details of OPA 44 are discussed in detail in Section 3.2 of this Discussion Paper. It is anticipated that there will be opportunities to consolidate the policy outcomes of the comprehensive review through the OPR.

Following the completion of a source water protection plan policy implementation study, a series of amendments to the County Official Plan and the lower-tier Official Plans and Zoning By-laws was undertaken. Middlesex Centre Official Plan Amendment (OPA) 44 was adopted by Municipal Council in April 2019 to implement policies and provide a regulatory framework related to the protection of water resources and ground water features, under the requirements of the *Clean Water Act*.

The Source Protection Plans identify four types of vulnerable areas that affect drinking water quality within Middlesex County:

- **Wellhead Protection Areas (“WHPA”)** are areas that are related to a wellhead and within which land use activities have the potential to affect the quality and quantity of groundwater that is able to flow into the well.
- **Highly Vulnerable Aquifers (“HVA”)** are areas underground that are highly saturated with water – enough water that it can be drawn for human use;
- **Intake Protection Zones (“IPZ”)** are the areas on the water and land surrounding a municipal surface water intake; and
- **Significant Groundwater Recharge Areas (“SGRA”)** are areas on the landscape that are characterized by porous soils, such as sand or gravel, that allows the water to seep easily into the ground and flow to an aquifer.

Vulnerable areas are those areas that are susceptible to contamination from a threat to a drinking water supply. OPA 44 introduced a new Section 9.9 – Source Water Protection and Schedule F to the Municipality’s Official Plan. These changes identify the WHPAs where the prescribed drinking water threat would be significant and conform to the policies of the SPPs. This includes the indication that within vulnerable areas, any land use or activity that may be a significant drinking water threat is required to conform to all applicable SPP policies, and may be prohibited or otherwise regulated.

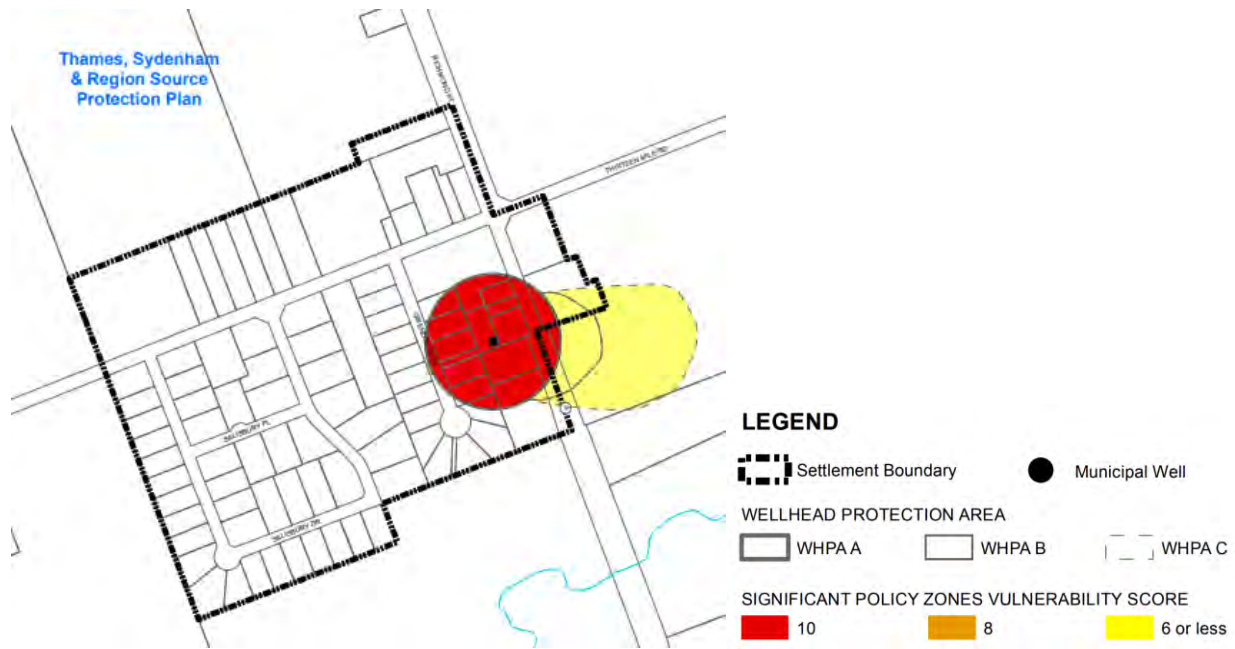


Figure 5 - Schedule F-2 - Birr WHPA (Municipality of Middlesex Centre Official Plan)

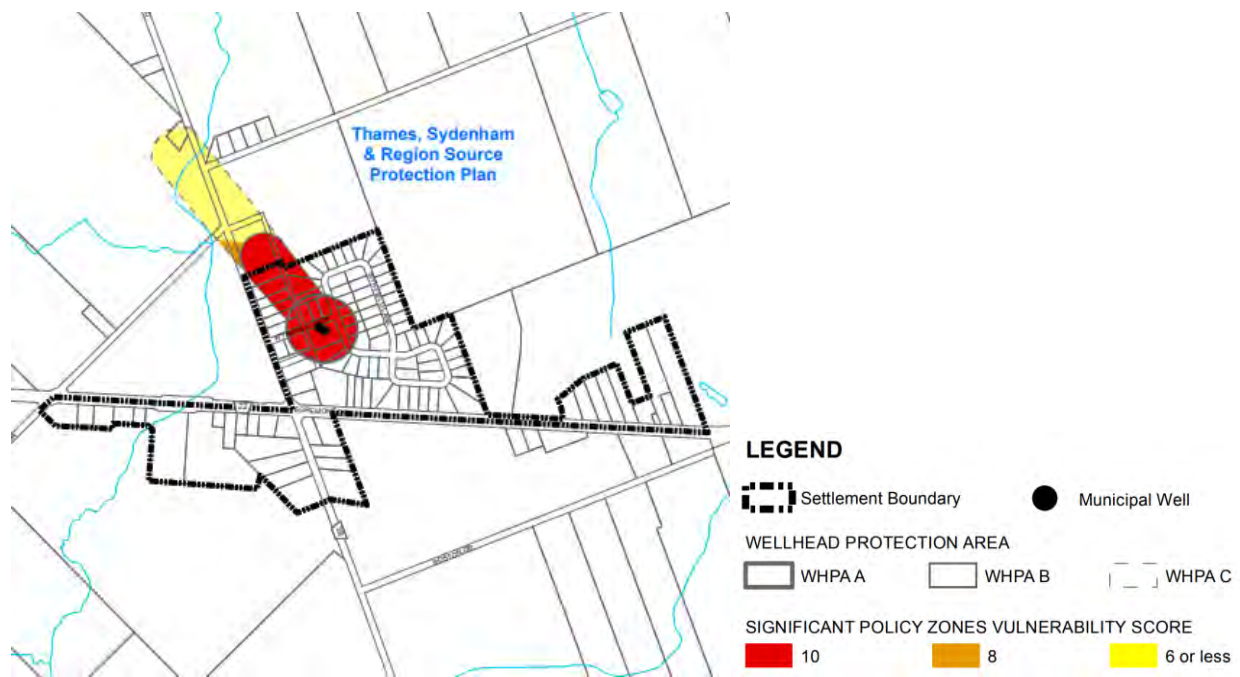


Figure 6 - Schedule F-1 – Melrose WHPA (Municipality of Middlesex Centre Official Plan)

The ‘vulnerability score’ shown in **Figure 5** and **Figure 6** for each WHPA identifies the degree to which a WHPA in the Municipality is vulnerable to contamination. The vulnerability score of a WHPA can range from 1 to 10, with 10 being the most vulnerable.

OPA 44 also introduced a series of new defined terms to Section 12.0 of the OP, including:

- Activity;
- Assessment Report;
- Drinking Water Threat;
- Highly Vulnerable Aquifer;
- Section 59 Notice;
- Septic System;
- Significant Drinking Water Threat;
- Significant Groundwater Recharge Area;
- Source Protection Plan;
- Vulnerable Area; and,
- Wellhead Protection Area

Section 10.20.3 of the OP identifies the types of reports and studies that may be required as part of a planning application to address different matters / issues. This section may be updated to refer to the requirement for a Section 59 Notice in accordance with the *Clear Water Act*, as outlined in Section 9.9.

The County is currently undertaking Source Protection Plan implementation as part of its Municipal Comprehensive Review (MCR) which will, in part, add mapping that identifies applicable Source Protection Plan Areas within the County and will provide a general policy framework related to source water protection. The County's Official Plan will contain guiding policies that outline how the Municipality's OP should be amended to implement any updated SPP policies, beyond those introduced through OPA 44.

Given that OPA 44 was introduced in April 2019 and informed by relevant studies and coordinated with the County, it is not anticipated that significant changes to these policies and mapping will be introduced through the OPR.

2.8.3 MIDDLESEX CENTRE ZONING BY-LAW

The Municipality's Zoning By-law 2005-005 sets out the detailed regulations and controls for land use and development within the Municipality and is intended to implement the objectives and policies of the Municipality's Official Plan. The Zoning By-law contains provisions and regulations which implement the policies of the OP relating to natural systems and hazard lands, including:

- **Section 4.17 – Minimum Setbacks from Municipal Drains and Natural Watercourses:** The By-law establishes a series of setbacks from the top-of-bank of a municipal drain and from the centreline of a municipal tile drain.
- **Section 4.8 – Hazard Lands:** The By-law prohibits buildings and structures (except those used for flood or erosion control purposes) to be erected within hazard lands as mapped on Schedule A to the By-law.

- The By-law does not establish any floodplain-specific zones, rather it delineates the approximate extent of watercourses and Hazard Lands on Schedule A (**Figure 7**), and relies upon the base zoning to determine the permitted uses (e.g., agricultural, residential etc.). This approach clearly articulates those lands in the Municipality where development is prohibited, across multiple zone categories and helps directly implement the Natural Environment Area policies of the OP which prohibit development in floodplains and flood prone areas.

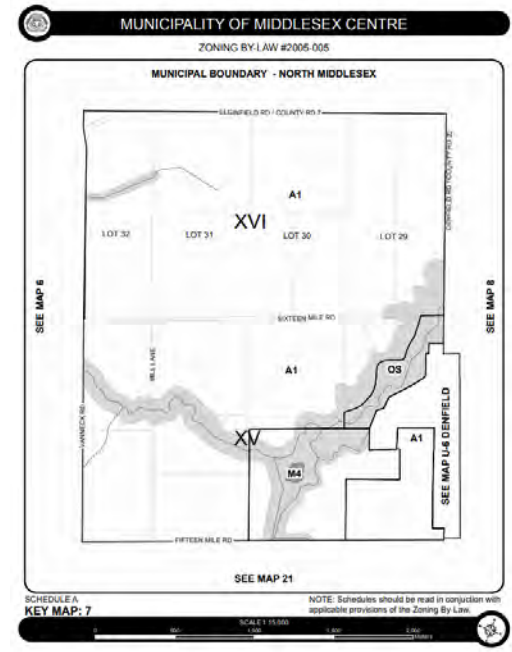


Figure 7 - Zoning By-law 2005-005 - Schedule A (showing extent of Hazard Lands in light grey)

Further, the Zoning By-law does not contain any conservation or environmental protection-specific zones; however, the Open Space (OS) zone appears to be used in some instances to protect natural areas. The OS zone permits a range of conservation, agriculture, and passive recreational uses (e.g., public park) and does not permit the construction of buildings and structures.

Given that the Zoning By-law relies upon the mapping of floodplain areas on Schedule A of the Official Plan, any updated flood plain mapping for the Official Plan should then be implemented in the Zoning By-law. A more detailed discussion of any updates to By-law 2005-005 that may be required will be included in the Policy Directions and Recommendations Report to be completed in Phase 3 of the project.

2.8.4 SITE PLAN CONTROL BY-LAW 2003-035 & SITE PLAN MANUAL

Site plan control ensures that development proposals are aligned with Municipal policies, by-laws, guidelines and standards prior to issuance of a building permit. A Site Plan Manual was prepared by the Municipality to guide applicants through the requirements of the site plan approval process.

The Municipality's Official Plan contains site plan control policies, in accordance with Section 41 of the *Planning Act*. The OP designates the Municipality as a whole as a site plan control area, where the Site Plan Control By-law (2003-035) applies. The following types of development are **excluded** from the site plan control process:

- Developments related to farm operations, farm buildings and the residence of a farm operator;
- Single detached dwellings, semi-detached dwellings and duplexes, except those permitted **within or contiguous to natural environmental areas**, or where units form part of a zero-lot line, linked housing, or similar innovation in housing development.

As it relates to lands within the natural heritage systems and hazard areas, the Site Plan Control By-law applies to the development of those dwellings that are otherwise excluded. This provides an opportunity for the Municipality and other agencies to comment on potential impacts of development. A DAR may be required for a development that does not require any other planning approvals (i.e. plan of subdivision, consent, zoning by-law amendment). The DAR results in specific delineation of features and buffers which may be implemented through Site Plan.

3 KEY ISSUES AND OPPORTUNITIES

Section 3 of the Discussion Paper explores a series of key issues and opportunities related to natural heritage and hazard lands for consideration in the OPR, including:

- Natural Heritage System Approach;
- Hazard Lands; and,
- Relationship to Agriculture.

Each sub-section provides context into each matter and provides recommendations, where appropriate, for policy directions to be considered through the OPR.

3.1 NATURAL HERITAGE SYSTEM APPROACH

The Middlesex Natural Heritage System Study (“MNHSS”) used a local approach to identify elements of the Natural Heritage System (NHS). This approach is in line with the policies of the PPS which permit the use of municipal approaches that achieve or exceed the same objectives of the PPS.

A comprehensive approach to protecting and enhancing the NHS is a key climate change adaptation and mitigation tool. A strong NHS helps maintain more resilient landscapes and environments, can account for increased flooding impacts, and help the Municipality respond to more extreme weather events. The retention of natural areas and greenspaces helps protect wildlife habitat & biodiversity, and acts as a carbon sink to reduce greenhouse gas emissions.

The following sections outline mapping considerations, the current approach to natural heritage policies in the current Official Plan, and the approach taken in the County’s Official Plan, and policy options to consider through the OPR.

3.1.1 NATURAL HERITAGE SYSTEM MAPPING

Middlesex County is required to identify and map a Natural Heritage System (NHS), which at a minimum addresses the requirements of the PPS; however, there is some flexibility at a municipal level for the mapping of these features. The County’s NHS Study recommends that the choice to apply designations or constraint overlays (or a combination of the two) should be assessed through the OPR process.

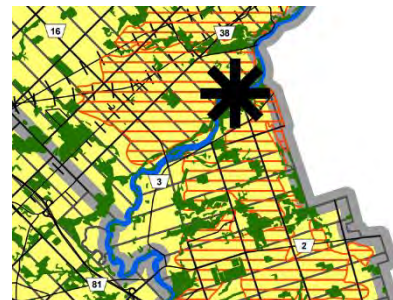
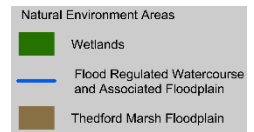
As previously discussed, the Province’s Natural Heritage Reference Manual provides guidance on the identification of an NHS – with cores and linkages as the building blocks of the NHS.

Through the OPR, any discrepancies between the mapping of the County Official Plan and the Municipality’s OP will be addressed in drafting the updated schedules. There appears to be general alignment between the two mapping sets; however, this will be confirmed in detail through the development of OP schedules. The mapping of the Municipality’s OP will also be confirmed against the MNHSS to confirm the most recent boundaries of mapped features, as well as the updated Conservation Authority mapping and Provincially Significant Wetland mapping developed by the Province.

COUNTY OFFICIAL PLAN MAPPING

The County's current Official Plan shows the various elements of the NHS as designated features for all lands in the County. The County OP is organized into a multi-layer approach for the identification of its Natural System.

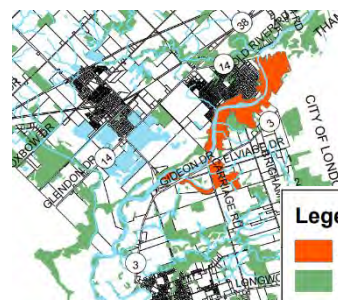
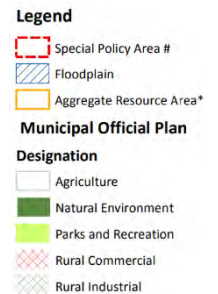
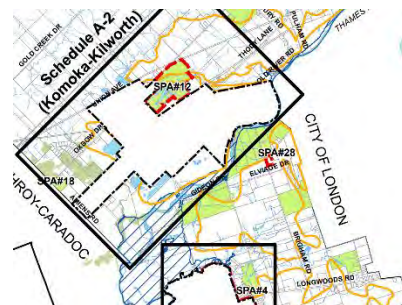
- **Schedule A – Land Use Designations**
 - Schedule A designates the various components of the **Natural Environmental Areas** (including floodplains, flood regulated watercourse, and wetlands) where development is prohibited.
- **Schedule C – Natural Heritage Features**
 - Schedule C places an overlay over the land use designations in Schedule A to identify the **Natural Hazards, Natural Heritage Features, and Groundwater Features** where a DAR is required prior to development or site alteration.



MUNICIPALITY OF MIDDLESEX CENTRE OFFICIAL PLAN MAPPING

The current approach to mapping the NHS in the Middlesex Centre OP follows that of the County, which involves a multi-layer approach.

- **Schedule A – Natural Environment Areas**
 - Schedule A designates **Natural Environment Area** lands where development is prohibited, including wetlands, significant habit of endangered or threatened species, and floodplains and flood prone areas mapped by the Conservation Authorities.
- **Schedule B – Greenland Features Overlay**
 - Schedule B places an overlay over the land use designations in Schedule A to identify the various other elements of the NHS where a DAR is required prior to development or site alteration.



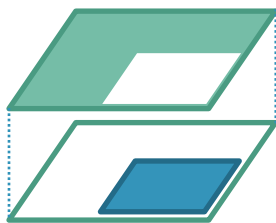
OVERLAY MAPPING

Overlays can act as a screening tool which flags the presence of features; however, more information is often required before policies are applied. This would typically trigger the need for a DAR to confirm the extent of the feature and whether any buffers or other mitigation are necessary. The underlying land use designation (e.g., agricultural, rural, residential) would continue to apply under the overlay. The use of overlays is also a commonly followed approach in the County.

Overlays also allow the Municipality to map other features such as enhancement areas or linkages, which may have minimal impact on development rights, subject to a DAR. The differences between an overlay and land use designations should be clearly spelled out in the OP to provide clarity for landowners.

The current approach to mapping involves an overlay of the Greenland Features including elements of the NHS outside of the Key Features (i.e., Natural Environment Areas). The Natural Environment Areas are then shown as a land use designation visible through the overlay.

This approach clearly distinguishes between the Natural Environment Areas where development is prohibited, and those areas where there is greater flexibility in land use permissions. A drawback to this approach is that it does not depict the NHS as a system-based approach since there are two separate layers of the schedules.



Greenland Features (Overlay)

Existing OP Elements: Greenland Features (Schedule B)

Natural Environment Areas (Land Use Designation)

Existing OP Elements: Natural Environmental Areas (Schedule A)

It is recommended that the current overlay approach to mapping the NHS be carried forward through the OPR, as it clearly identifies those areas where development is prohibited and those where greater flexibility is offered.

3.1.2 SIGNIFICANT WETLANDS

Wetlands are deemed to be “Provincially Significant” if they meet the criteria of the Ontario Wetland Evaluation System and are confirmed by the Ministry of Natural Resources and Forestry. Municipalities may also define and identify locally significant wetlands, including those wetlands that may not have been evaluated.

The County OP establishes that wetlands within the Natural System preclude development and it requires that local official plans include policies which preclude development within wetlands. The Middlesex Centre OP also prohibits development within wetlands, and reiterates the County’s requirements for a Development Assessment Report (DAR) within 120 m of the feature, but does not distinguish between evaluated and unevaluated wetlands. The wetlands layer in the MNHSS includes both evaluated wetlands and unevaluated wetlands (greater than 0.5 ha. in area).

The Middlesex Centre OP considers all types and sizes of wetlands to be significant and in need of protection from development or site alteration. This approach is proactive and precautionary in that all wetlands are protected – including those unevaluated wetlands. The requirement to require the completion of a DAR within 120-m of all wetlands appears to exceed that of the Conservation Authorities which generally establish a 120-m buffer around PSWs, and 30-m buffer around other wetland classifications. The drawback to this approach is that even small wetlands (e.g., those along the roadside), which for example may not represent all wetland values, are protected – placing a restriction on property development potential that may not be justified in all cases.

The Municipality's OP may continue to offer protection to all wetlands (both Provincially and locally significant wetlands) from future development encroachment. The mapping and restrictions for Provincially Significant Wetlands are provided by the Province and serve as a sound basis for delineating these features. Unevaluated wetlands can be identified on the mapping schedules, with policies provided for their protection per the County OP. The MNHSS can provide direction on the types of natural heritage features which can be classified as unevaluated wetlands. The OP should also contain policies which require the evaluation of any unevaluated wetlands to determine their significance and subsequent protection (either as a locally or Provincially significant wetland). All evaluated and unevaluated wetlands should form part of the NHS.

There is also an option to establish a minimum size of a wetland which is offered protection. For example, a minimum size (e.g., 0.5 hectares) could be established through a policy which exempts those wetlands less than the minimum size from the restrictions on development. However, this approach may not recognize the ecological value and function of some smaller wetlands. Should the Municipality wish to offer some flexibility in the OP, it is recommended that the policy continue to view all wetlands as significant, with the caveat that certain wetlands (e.g., below a minimum size threshold) may be exempted subject to a site-specific DAR.

3.1.3 SIGNIFICANT WOODLANDS

The PPS defines significant woodlands 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.

The County OP includes significant woodlands within the Natural Heritage Feature component of the County's Natural System shown on Schedule C. Schedule C is not a land use designation schedule, therefore the use of land within these features shall proceed with the underlying land use designation on Schedule A. The OP does not place restrictions on the normal and traditional use of significant woodlands. Such uses include forestry, cutting of firewood, conservation, and maple syrup production.

Significant woodlands are also included as part of the Greenland Features on Schedule B, which serves as an overlay to the land use designations on Schedule A. The OP requires the completion of a DAR for development within 50 m of the feature, but provides an exemption for a limited range of uses (e.g., forest management, maple syrup production, recreational trails). The OP does not establish a minimum size of woodlands for them to be deemed significant.

The new OP for Middlesex Centre should continue to offer protections to all significant woodlands. There is also an opportunity to introduce size criteria for the determination of woodland significance, based on the Provincial Natural Heritage Reference Manual and MNHSS. The MNHSS used a 4-hectare threshold to determine woodland significance, whereas the Reference Manual establishes a tiered approach to size classification. Applying this size limitation may necessitate remapping of the Greenland Features on Schedule B and the Natural System on Schedule C.

3.1.4 SIGNIFICANT VALLEYLANDS

The PPS defines “Valleylands” as a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year. “Significant Valleylands” are considered to be “ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system”. The PPS definition underscores that it is “a natural area that occurs in the valley”, which suggests that it is not the landform itself that is the subject of the policy, but the natural feature within the landform.

The County OP includes significant valleylands within the Natural Heritage Feature component of the County’s Natural System shown on Schedule C, but does not distinguish this feature in mapping or establish specific policy. Schedule C is not a land use designation schedule, therefore the use of land within these features shall proceed with the underlying land use designation on Schedule A. The current Middlesex Centre OP does not provide any specific identification of significant valleylands. Policy 3.1.f establishes that it is a goal to retain and enhance significant valleylands in their natural state in terms of ecological function, and natural and scenic quality, and Section 3.4 requires the completion of a DAR within 50 m of the feature.

These features should be identified on Schedule C of the OP within the NHS based on the mapping provided through the MNHSS.

3.1.5 SIGNIFICANT WILDLIFE HABITAT

The PPS defines “Wildlife Habitat” as “areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations”. “Significant Wildlife Habitat” is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of the natural heritage system. Municipalities are encouraged to identify significant wildlife habitat or to protect areas that qualify as significant wildlife habitat through official plan policies. This approach is described in the Natural Heritage Reference Manual which recommends the process for identifying and confirming the occurrence of significant wildlife habitat as part of development applications.

The County OP includes significant wildlife habitats within the Natural Heritage Feature component of the County's Natural System shown on Schedule C, but does not distinguish this feature or establish specific policy. Schedule C is not a land use designation schedule, therefore the use of land within these features shall proceed with the underlying land use designation on Schedule A. The current Middlesex Centre OP does not provide any specific identification of significant wildlife habitat, nor does it define the term. Section 3.4 requires the completion of a DAR within 50 m of the feature.

The MNHSS does not map significant wildlife habitat. The identification of significant wildlife habitat is provided through site-specific assessments (i.e., a DAR) and as information becomes available. Therefore, the OP should be updated as this additional information becomes available, including updates to the mapping of the NHS. The Middlesex Centre OP can consider establishing policy protections for these features as detailed become available.

3.1.6 SIGNIFICANT AREAS OF NATURAL AND SCIENTIFIC INTEREST (ANSI)

Areas of Natural and Scientific Interest (ANSI) play an important role in the protection of Ontario's natural heritage, since they best represent the full spectrum of biological communities, natural landforms and environments across Ontario outside of Provincial parks and conservation reserves. There are two types of ANSIs, life science and earth science both of which are defined by the Province.

Life science ANSIs are significant representative segments of Ontario's biodiversity and natural landscapes, including specific types of forests, valleys, prairies, savannahs, alvars and wetlands, their native plants and animals, and their supporting environments. They contain relatively undisturbed vegetation and landforms and their associated species and communities. Provincially significant life science ANSIs include the most significant and best examples of the natural heritage features in the province, and many correspond to other significant features and areas such as wetlands, valleylands and woodlands. Regionally significant life science ANSIs are also important components of natural heritage features in a particular life science region.

Earth science ANSIs are geological in nature, consist of some of the most significant representative examples of the bedrock, fossils and landforms in Ontario, and include examples of ongoing geological processes.

The Municipality of Middlesex Centre contains two Provincially significant earth science ANSIs – Elginfield Lake (Lots 13-24, Concessions 14-16) and Komoka Lake Maumee II (Lots 1 and 2, Concession 4) (Section 3.2.i) (**Figure 8**). These features include much of the Komoka Provincial Park lands, which is covered by both ANSIs.

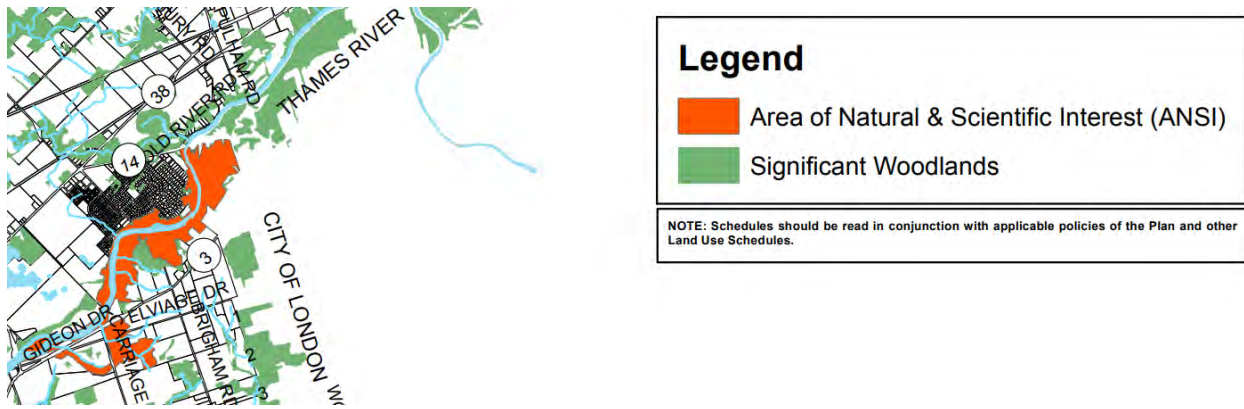


Figure 8 - Middlesex Centre Official Plan, Schedule B - ANSIs (shown in orange)

The County OP identifies ANSIs on Schedule C as a symbol as part of Natural Heritage Feature component of the County’s Natural System, but does not distinguish this feature or establish specific policy. The Middlesex Centre OP should continue to delineate these features based on the latest mapping from the Province and include related policies.

3.1.7 FISH HABITAT

The PPS defines fish habitat in accordance with the Federal *Fisheries Act* to mean the 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. This includes not only the waterbody or watercourse, but also the associated adjacent land habitat which provides an adequate width and quality of riparian corridors, which can be defined as lands within 30 m of the fish habitat.

The County OP includes fish habitat within the Natural Heritage Feature component of the County’s Natural System shown on Schedule C, but does not distinguish this feature or establish specific policy. Schedule C is not a land use designation schedule, therefore the use of land within these features shall proceed with the underlying land use designation on Schedule A. Both the County OP and the current Middlesex Centre OP prohibits development within fish habitats, and require the completion of a DAR within 30 m of the feature.

The MNHSS does not include fish habitat, as this feature is mapped by the Federal Department of Fisheries and Oceans (DFO). Fish habitat is not explicitly mapped on the land use schedules in either the County or Municipal OP. Therefore, the OP should be updated as this additional information becomes available, including updates to the mapping of the NHS. The Middlesex Centre OP can consider establishing policy protections for these features as details become available.

3.1.8 SIGNIFICANT HABITAT OF ENDANGERED / THREATENED SPECIES

The PPS states that no development or site alteration shall be permitted in significant habitat of endangered or threatened species, except in accordance with Provincial or Federal requirements (Policy 2.1.7). The exact location of these species and their associated habitats may not be appropriate to identify in the OP as this information can be classified as sensitive. Defining the extent of this habitat is the responsibility of the Ministry of Natural Resources and

Forestry and planning authorities should have access to mapping to assist in their review of development applications.

The County OP prohibits all development or site alteration with this feature, and notes that the Province should be consulted regarding these habitats. The Middlesex Centre OP prohibits development within significant habitats of threatened or endangered species which are a component of the Natural Environment Areas designation, and reiterates the County's requirements for a Development Assessment Report (DAR) within 50 m of the feature.

The current approach in the OP exceeds the minimum standard established by the PPS which may allow development or site alteration in accordance with Provincial and Federal Requirements. In cases where a development proponent has obtained a permit under the *Endangered Species Act* it may be necessary to apply for an Official Plan Amendment to proceed with their proposal. The policies and definitions of the Municipality's OP should be updated to reflect the 2020 PPS.

3.1.9 GENERAL NATURAL HERITAGE SYSTEM POLICY CONSIDERATIONS

The identification and delineation of a natural heritage system within Middlesex Centre requires an approach that is consistent with the Provincial direction provided in the 2020 PPS and the Middlesex County Official Plan. A robust NHS, which is supported by a strong policy framework in the OP supports the implementation of the OP and review of development applications, and promotes resilient communities.

It is recommended that the Municipality follow a comprehensive approach to the NHS which follows a method for protecting valued natural features and establishing a functioning natural heritage system. The policies of the 2020 PPS support the application of a comprehensive approach to natural heritage planning by providing a tiered level of protection to both a natural heritage system and to individual natural heritage features.

The OPR will confirm the boundaries of the NHS as identified in the Middlesex Natural Heritage System Study to identify the location of the proposed natural heritage system, determine appropriate priorities for the existing natural heritage features and recommend how the existing system can be created, maintained and improved.

The following general NHS policy considerations should inform the development of the Policy Directions & Recommendations Report:

- Consideration should be given to going above and beyond the PPS policy 2.1.3 that requires the identification of natural heritage systems. Specifically, the Municipality should consider affording policy protection for the natural heritage system features and linkages in addition to the existing protection provided to existing natural heritage features. This approach is similar to that used in the Komoka-Kilworth Secondary Plan.
- Consideration should be given to introduce a policy which addresses and protects features, functions, and linkages not otherwise identified in the OP. This direction recognizes that the NHS is dynamic and that municipal resources for mapping these features may not be sufficient for capturing all information at the time of preparing the OP. This satisfies the PPS requirement that features should be protected regardless of

OP mapping. Further studies and assessments may identify these features in greater detail, and it may be appropriate to introduce these boundaries by way of a future Official Plan Amendment.

- Consideration should be given to review the policies of Section 3.8 of the OP regarding the requirements of Development Assessment Reports (DAR) to ensure they align with those of the County and continue to ensure the adequate protection of the NHS.
 - Policy may require the consideration of the role and importance of lands adjacent to the NHS, an analysis of the impacts of development proposals, and the establishment of appropriate ecological buffers and setbacks.
 - If it is determined, through a DAR and natural heritage evaluation, that development can proceed, the proponent can be required to prepare a protection and mitigation plan (see Policy 3.8.e of the OP).
- Continue to protect the identified NHS by limiting permitted uses to forest / wildlife management practices, low intensity / passive recreation, maple syrup production and flood or erosion control projects, except where a DAR demonstrates no negative impacts on the system, the feature and the ecological functions that maintain them.
- Protect the NHS from impacts of public infrastructure projects wherever possible, primarily limited to crossings (i.e., gas line, electricity lines, etc.). Infrastructure may be permitted within the natural heritage system provided impacts are minimized and sensitive features are avoided to the extent possible.
- Policy may require monitoring of the ecological health of the natural heritage system.
- Policy should ensure the integration of natural heritage systems planning at multiple levels: regional, watershed, sub-watershed and/or secondary plan level.
- Terminology, such as DAR/EIS and Natural System/Natural Heritage System, should be standardized for consistency with the PPS.

3.2 HAZARD LANDS

The 2020 PPS includes updated policy to show the linkage between land use planning and natural hazard management. Section 3.0 of the 2020 PPS outlines policies which emphasize the avoidance of natural and human-made hazards and directs development away from areas where there is a risk to public health and safety or property damage, and not create a new or aggravated hazard. Within the context of the PPS, natural hazards include hazardous lands, flooding hazards, erosion hazards, dynamic beach hazards, and wildland fire.

Natural Hazards form part of the County's Natural System, and includes steep slope hazards, unstable soils, and fill regulated areas. Within Natural Hazards, development is not prohibited, and there is a need to protect these features from incompatible land uses (Section 2.2.1.3)

Conservation Authorities have been delegated responsibility by the Province to represent Provincial interests regarding natural hazards encompassed by Section 3.1 of the 2020 PPS under the *Conservation Authorities Act*. These delegated responsibilities require Conservation

Authorities to review and provide comments on municipal policy documents, such as this new Official Plan, and development applications.

Section 2.3.11 of the Middlesex County Official Plan prohibits new buildings and structures in areas subject to the Conservation Authorities' Fill, Construction and Alteration to Waterways Regulations. There is an exception for buildings, structures or fill that are intended for flood or erosion control or maintenance and management of the natural environment, recreational purposes or non-residential accessory farm buildings such as a sugar shack; and are approved by the County and the Conservation Authority.

Schedule A of the Municipality's OP designates Natural Environment Area lands where development is prohibited, including floodplains and flood prone areas mapped by the Conservation Authorities. Section 3.4 requires the completion of a DAR within 50 m of a floodplain and / or flood prone areas to permit development with areas adjacent to the feature.

There is an opportunity to confirm the mapped boundaries of the existing floodplains and flood prone areas as delineated by the Conservation Authorities to ensure that the OP reflects the most updated features. This is a key tool to help the Municipality respond to climate change, the growing frequency of extreme weather events, and shifting flood patterns. Municipal staff have noted that this will be particularly important in the community of Delaware. It is expected that natural hazards will continue to be mapped as a land use designation to regulated development (i.e., not within an overlay). The policies of the OP should be confirmed against the 2020 PPS.

3.3 RELATIONSHIP TO AGRICULTURE

When determining the appropriate approach to mapping the Natural Heritage System and Hazard Lands in the OP, it is important to recognize that these features often co-exist with agricultural lands and require a balance to this relationship. The outcomes from both agricultural policies and NHS policies should closely align to ensure effective implementation.

The close relationship between the NHS and agricultural lands can lead to confusion regarding the expectations and priorities for certain lands. The current Middlesex Centre Official Plan provides some guidance to address this relationship. Section 3.2 a) establishes that existing agricultural uses are permitted to continue within or adjacent to Natural Areas and Natural Hazards, subject to specific criteria.

Section 3.1.1 of this Discussion Paper discusses the approach to mapping the NHS within the new Official Plan for Middlesex centre, including the use of an overlay. Certain features, such as Provincially Significant Wetlands, will explicitly prohibit development or site alteration – including agriculture; however, much of the remaining NHS (e.g., woodlands) will be within an overlay. Given the porous nature of agricultural areas, it is common practice to only designate linkages and enhancement areas at the time of development applications. The overlay will require further study and confirmation of the boundary of features prior to the approval of development applications and site alteration, but does not prevent existing agriculture / farm uses from continuing.

4 CONCLUSION & NEXT STEPS

This Discussion Paper provides a detailed summary of policies, plans, and studies related to the natural heritage system and hazard lands that will help inform the Draft Policy Directions and Recommendations Report. That Report will identify outstanding policy gaps or issues, as well as specific policy changes, that need to be incorporated in the updated Official Plan.

The key findings of this Discussion Paper, including and major policy updates that may be required include:

- The Source Water Protection policies of the Municipality's OP were introduced in April 2019 and therefore remain relevant for the purposes of the OPR. However, the County will be updating Source Water Protection policies through its ongoing MCR. The directions and outcomes should be considered through the OPR when available.
- The 2018 Watershed Report Cards identify that there is a need to protect forest cover, particularly large forest patches, and increase wetland cover to help achieve Environment Canada's target of 10% wetland coverage. The Report Cards also underscore the importance of improving groundwater quality.
- It is recommended that the OP follow a systems-based approach regarding the Natural Heritage System, which protects both the features and the connecting linkages / features.
- The mapping of the NHS will be updated in accordance with the features identified in the Middlesex Natural Heritage System Study, following the current overlay approach used in the County and Municipal OP.
- A strong NHS is a key tool to respond to climate change from both an adaptation and mitigation perspective.
- The mapped boundaries of the existing floodplains and flood prone areas as delineated by the Conservation Authorities should be confirmed against the existing feature mapping.
- There is a need to consider balancing the relationship between agricultural areas and the NHS of the OP, and the continuation of existing agricultural / farming uses.
- For each element of the NHS, as listed in the Provincial Policy Statement, the proposed mapping direction, policies, and other considerations are identified.

The findings of this Discussion Paper should be confirmed with the Municipality, the Conservation Authorities, and the Province to ensure that the approach to the NHS and natural hazards is appropriate and conforms to the respective plans and policies.

Discussion Papers detailing each of the OPR Focus Areas can be accessed online:

<https://middlesexcentre.on.ca/town-hall/official-plan-review>

Provide Your Comments:

Comments and feedback on the Discussion Papers can be provided through the webpage or emailed to: planning@middlesexcentre.on.ca

