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BACKGROUND **REPORT**

SOURCE PROTECTION PLAN IMPLEMENTATION

MIDDLESEX COUNTY

Date:

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Prepared for:

Middlesex County

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Our File 1491B

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1.0

INTRODUCTION

MHBC Planning has been retained by Middlesex County to assist in the implementation of Source Protection Plan (SPP) policies through the preparation of new policy text that will form the basis of future Amendments to the County Official Plan and to the Official Plans and Zoning By-laws of lower-tier municipalities that have municipal drinking water systems that are regulated by a Source Protection Plan. As part of this undertaking, mapping to implement the policies of the Source Protection Plans applicable to the County and relevant local municipalities will be prepared. Zoning regulations and mapping will also be prepared for relevant local municipalities to implement the SPP and related Official Plan policy frameworks.

The following three (3) Source Protection Plans apply within Middlesex County:

- Thames, Sydenham & Region Source Protection Plan;
- Kettle Creek Source Protection Plan; and
- Ausable-Bayfield Source Protection Plan.

There are four (4) municipal drinking water systems located within Middlesex County as follows:

Thames Centre	Thorndale (2 wells)
	Dorchester (9 wells)
Middlesex Centre	Birr (1 well)
	Melrose (2 wells)

These municipal drinking water systems are owned and operated by the local municipalities and are regulated by the Thames Sydenham and Region Source Protection Plan.

A portion of the Wellhead Protection Area (WHPA) for the Belmont Water Supply located in Central Elgin is located within the municipal boundary of Thames Centre. This WHPA is regulated by the Kettle Creek Source Protection Plan and as such the applicable policies of this SPP to protect this drinking water system will need to be included in the policy framework of the Thames Centre Official Plan.

The Ausable-Bayfield Source Protection Plan does not regulate any drinking water systems within the County.

The preparation of a general water resources policy framework is also included as part of this work to ensure Official Plans of all lower-tier municipalities contain a broad policy approach for the protection, restoration and maintenance of water resources consistent with the Provincial Policy Statement, 2014.

The County will be undertaking SPP implementation in conjunction with its upcoming 5-year Official Plan Review required under Section 26 of the *Planning Act*. Lower-tier municipalities will be

implementing new SPP and general water resources policies through either their upcoming Official Plan Reviews or as stand-alone Amendments. As such, the purpose of this Background Report is to provide:

- a general overview of Source Protection Planning;
- the Source Protection Plan policies to be implemented through Official Plan policy, and subsequent Zoning By-laws (where applicable);
- a review of existing water resource/source water protection policies in the Official Plans of the County and lower-tier municipalities;
- a comparative analysis of Source Protection Plan and Official Plan policies;
- a comparative analysis of existing water resource policies in lower-tier municipal Official Plans;
- policy implementation options and recommendations for the source water policy framework of the County and lower-tier municipal Official Plans, taking into consideration requirements under the *Clean Water Act*, the applicable Source Protection Plans and the scope of the County Official Plan in comparison to local municipal Official Plans;
- zoning implementation options and recommendations for the Zoning By-laws of Thames Centre and Middlesex Centre, based on the Official Plan policy implementation options; and
- a recommended general water resource policy framework for inclusion in all lower-tier municipal Official Plans.

The recommendations contained in this report will form the basis of the draft Source Water Protection policy framework of the Middlesex County, Thames Centre and Middlesex Centre Official Plans, draft text of the Thames Centre and Middlesex Centre Zoning By-laws, and a general water resources policy framework for inclusion in the Official Plans of all local municipalities.

2.0

LEGISLATIVE & PROVINCIAL POLICY FRAMEWORK

2.1 The Clean Water Act, 2006 & Purpose of Source Protection Plans

The *Clean Water Act, 2006* (the “Act”) came into effect on July 3, 2007 and is intended to ensure the protection of municipal drinking water sources from rivers, lakes and groundwater, and subsequently human health and the environment. The *Act* sets out a risk-based process, on a watershed basis, to identify vulnerable areas and associated drinking water threats and issues through the preparation of Assessment reports, and the subsequent development of policies and programs to eliminate or reduce the risks posed by identified drinking water threats through the preparation of Source Protection Plans. This process is implemented on a watershed basis and involves a risk-based assessment approach to identify vulnerable areas and associated drinking water threats through the preparation of Assessment Reports. Assessment Reports form the scientific and technical foundation for the development of policies and programs to eliminate or reduce the risks posed by identified drinking water threats through the preparation of Source Protection Plans.

The *Act* divides southern Ontario and parts of Northern Ontario into 19 Source Protection Regions, which are further divided into 38 Source Protection Areas for the purposes of preparing Assessment Reports and Source Protection Plans. As shown in the table below, Middlesex County is located within three Source Protection Regions, five Source Protection Areas and subject to three Source Protection Plans.

Source Protection Region	Source Protection Area	Source Protection Plan
Thames-Sydenham	St. Clair Region Source Protection Area	Thames-Sydenham and Region
	Lower Thames Valley Source Protection Area	
	Upper Thames River Source Protection Area	
Lake Erie	Kettle Creek Source Protection Area	Kettle Creek
Ausable-Bayfield/Maitland Valley	Ausable-Bayfield Source Protection Area	Ausable-Bayfield

Source Protection Plan areas in Middlesex County are illustrated in **Figure 1**.

The overall objective of Source Protection Plans under Section 22(2) of the *Act* is to ensure that, for every area identified in an Assessment Report as an area where an activity is or would be a significant drinking water threat; the activity never becomes a significant drinking water threat. In the event the activity is occurring when the Source Protection Plan takes effect, policies of the source protection plan ensure that the activity ceases to be a significant drinking water threat. Drinking water threats are an activity or condition that adversely affects, or has the potential to adversely affect the quality or quantity of any water that is, or may be used, as a source of drinking water. Drinking water threats are prescribed by Regulations under the *Act*. Assessment Reports identify those drinking water threats that pose, or have the potential to pose, a significant threat to drinking water sources.

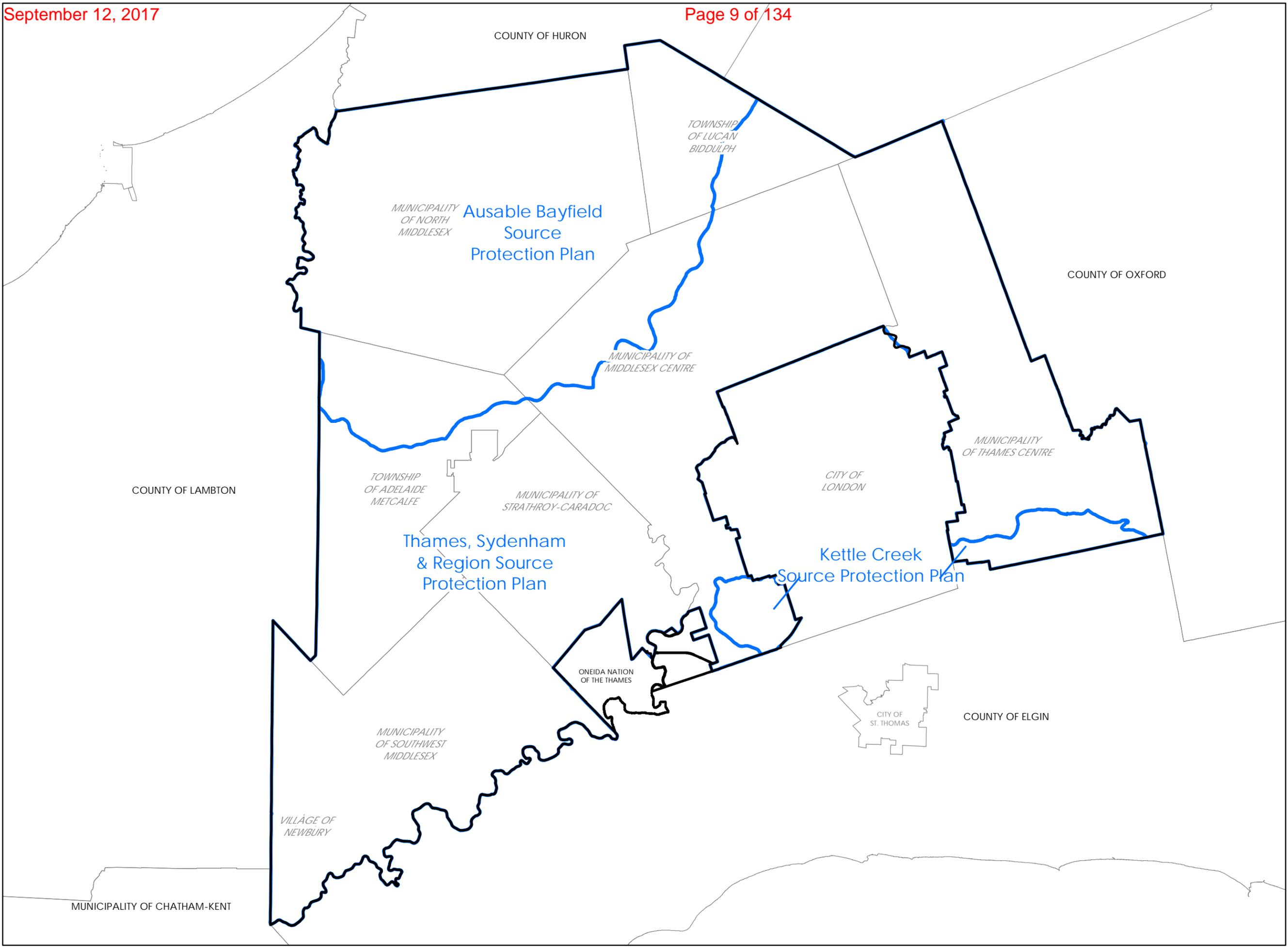
Drinking water threats may only be significant in *vulnerable areas*, which are defined by O.Reg 287/07 of the *Act* as follows:

- **Wellhead Protection Area (WHPA):** an area that is related to a wellhead and within which it is desirable to regulate and monitor drinking water threats.
- **Intake Protection Zone (IPZ):** in reference to a surface water intake protection zone. A surface water intake protection zone means an area that is related to surface water intake and within which it is desirable to regulate or monitor drinking water threats.
- **Highly Vulnerable Aquifer (HVA):** an aquifer on which external sources have or are likely to have a significant adverse effect, and include the land above the aquifer.
- **Significant Groundwater Recharge Area (SGRA):** an area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an aquifer.

Vulnerable areas are identified through the preparation of Assessment Reports.

With respect to land use planning, the *Act* provides direction on planning decisions within source protection areas where a source protection plan has taken effect. Under Section 39(1), a decision under the *Planning Act* or the *Condominium Act, 1998* shall conform to the significant threat policies and designated Great Lakes policies set out in the Source Protection Plan and have regard to other policies set out in the Source Protection Plan. In the case of conflict between the policies of the Source Protection Plan and Official Plans and Zoning By-laws, Source Protection Plan policies shall prevail as per Section 39(2) of the *Act*. In the case of conflict between the policies of the Source Protection Plan and those of a policy statement issued under Section 3 of the *Planning Act*, the policy that provides the greatest protection to the quality and quantity of any water that is or may be used as a source of drinking water prevails.

Sections 40 and 42 of the *Act* require the council of a municipality or municipal planning authority to amend its Official Plan and Zoning By-law to conform to the significant threat policies and designated Great Lakes policies set out in the Source Protection Plan. As such, **amending Official Plans and Zoning By-laws to conform to Source Protection Plan significant threat policies is not voluntary under the *Clean Water Act, 2006*.**



Source Protection Plan Areas

- Legend**
- Middlesex County
 - Source Water Protection Plan

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2.2 Provincial Policy Statement, 2014

Vulnerable areas identified in Assessment Reports and as defined in the *Clean Water Act* are *designated vulnerable areas* as defined in the Provincial Policy Statement, 2014 (PPS). Policy 2.2.1 of the PPS states the following:

2.2.1 *Planning authorities shall protect, improve or restore the quality and quantity of water by:*

...e. implementing necessary restrictions on development and site alteration to:

1. *protect all municipal drinking water supplies and designated vulnerable areas; and*
2. *protect, improve, restore vulnerable surface and groundwater, sensitive surface water features, and sensitive groundwater features, and their hydrologic functions;...*

To be consistent with the PPS, planning decisions, such as the implementation of Source Protection Plans through Amendments to municipal Official Plans and Zoning By-laws, should take into consideration information from the local Assessment Report. While a planning decision to protect drinking water sources could still be appealed to the Ontario Municipal Board, the Assessment Report can be used to support decisions to restrict new uses in vulnerable areas. Section 39(1) of the *Clean Water Act* also requires decisions of the Ontario Municipal Board to conform to the policies of the Source Protection Plan.

The Provincial Policy Statement, 2014 gives municipalities the authority to protect, improve and restore the quality and quantity of water resources.

3.0

UNDERSTANDING SOURCE PROTECTION PLANS

The County and the local municipalities of Thames Centre and Middlesex Centre are subject to policies of the Thames-Sydenham Region Source Protection Plan (“TSR SPP”), the Kettle Creek Source Protection Plan (“Kettle Creek SPP”) and the Ausable-Bayfield Source Protection Plan (“A-B SPP”). Municipal drinking water sources in the County that are regulated by Source Protection Plans are limited to Wellhead Protection Areas (WHPAs) for the following systems:

- **TSR SPP:** Thorndale, Dorchester (Thames Centre); Melrose, Birr (Middlesex Centre)
- **Kettle Creek SPP:** Belmont – for Central Elgin water supply (Thames Centre)

WHPAs in Middlesex Centre are regulated only by the TSR SPP. While the drinking water systems of Thames Centre are also regulated by the TSR SPP, the Kettle Creek SPP also applies to Thames Centre with respect to the Belmont drinking water system in Central Elgin (Elgin County) as the Belmont WHPA extends into Thames Centre.

While surface water intakes supply many municipal drinking water systems within the County (i.e. the Lake Huron Primary Intake supplies municipal drinking water systems in North Middlesex, Middlesex Centre, Lucan Biddulph, and Strathroy-Caradoc), these systems within the County are not regulated by a Source Protection Plan.

The TSR and A-B SPPs map Highly Vulnerable Aquifers (HVAs) and portions of Significant Groundwater Recharge Areas (SGRAs) that are located within the County. The Kettle Creek SPP does not map these specific vulnerable areas.

3.1 Vulnerable Areas in Middlesex

3.1.1 WHPA Delineation and Vulnerability

A Wellhead Protection Area is an area that is related to a wellhead and within which land use activities have the potential to affect the quality and quantity of groundwater that flows into the well. Generally, WHPAs are modelled based on two factors – the time related capture zones of each well and the vulnerability of the aquifer. The time related capture zones for wells located within the County include the following:

- a 100-metre radius surrounding the well (WHPA-A);
- a 2 year travel time for water to enter the well (WHPA-B);

- a 5 year travel time for water to enter the well (WHPA-C); and
- a 25 year travel time for water to enter the well (WHPA-D).

The “travel time” relates to the time it takes a particle of water already in the aquifer to reach the well.

The vulnerability of a WHPA is defined by the “vulnerability score”, with vulnerability being related to how easily a source of water can become contaminated. The vulnerability score is a function of the surficial geology underlying the WHPA. The vulnerability score of a WHPA can range from 1 to 10, with 10 being the most vulnerable. WHPAs that are considered to be the most vulnerable to certain land uses and activities are assigned a vulnerability score of 8 to 10, with the degree of vulnerability generally decreasing the further away from the wellhead. WHPA-As are the most vulnerable areas surrounding a well and are always assigned a vulnerability score of 10. The vulnerability score is used, together with the Table of Drinking Water Threats published by the Ministry of Environment and Climate Change, to determine whether a drinking water threat is significant, moderate or low.

Figure 2 illustrates the extent and vulnerability of WHPAs identified in the TSR and Kettle Creek SPPs.

WHPA-D areas are not mapped in Source Protection Plans as there are no significant drinking water threats that can occur in WHPA-D areas, based on their low vulnerability.

3.1.2 Highly Vulnerable Aquifers (HVAs) and Significant Groundwater Recharge Areas (SGRAs)

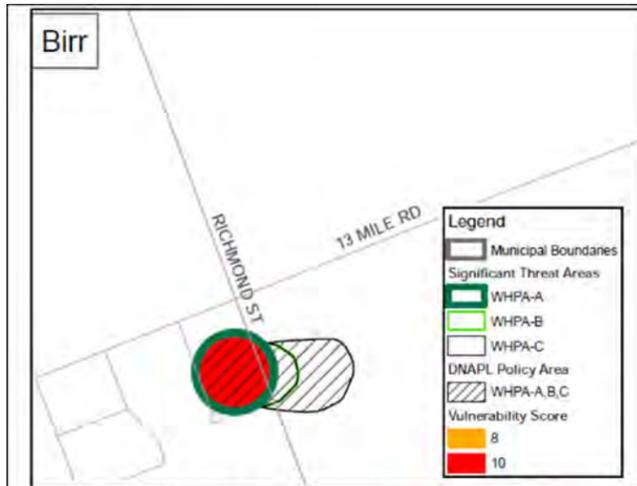
HVAs are an aquifer upon which external sources have or are likely to have a significant adverse effect, and include the land above the aquifer. SGRAs are a specific type of vulnerable area, which have a hydrologic connection to a surface body of water or an aquifer that is a source for a municipal drinking water system.

Similar to WHPAs, the vulnerability of an HVA or SGRA is defined by a vulnerability score, with vulnerability being related to how easily the source of water can become contaminated with a hazardous material. Under the Technical Rules prescribed by the *Clean Water Act*, HVAs located outside of WHPAs are assigned a vulnerability score of 6 (moderate vulnerability). SGRAs that overlay with HVAs are assigned a vulnerability score of 6 under the Technical Rules. All remaining SGRAs are assigned a vulnerability of 2 or 4 (low vulnerability).

HVAs and SGRAs cannot be classified as highly vulnerable areas under the *Clean Water Act*.

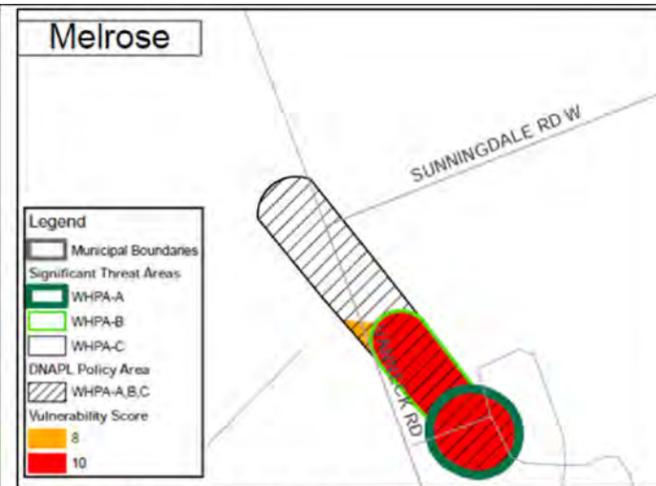
Similar to WHPAs, HVAs and SGRAs are initially mapped and evaluated in the Assessment Report. The TSR and A-B SPPs map HVAs and SGRAs with a vulnerability of 6 as illustrated in **Figures 3 and 4**. HVAs and SGRAs are located in all lower-tier municipalities, not just those with municipal drinking water systems.

The Kettle Creek SPP does not map HVAs and SGRAs.



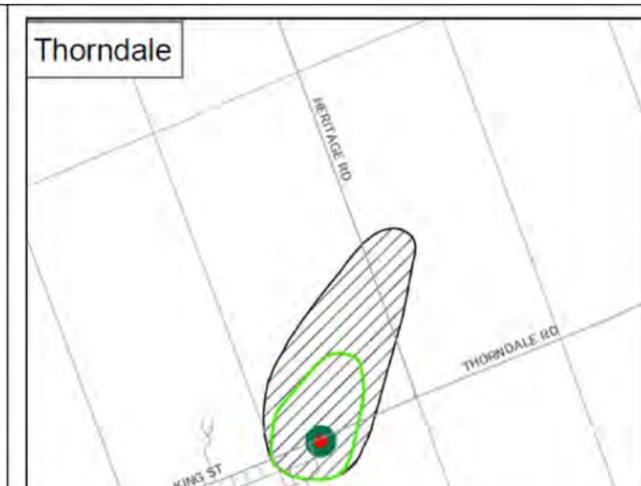
Birr WHPA as Identified in TSR SPP

The Birr WHPA contains one well and is located within the Hamlet of Birr. Only the WHPA-A is assigned a vulnerability score. Residential uses are located within the WHPA-A area. The WHPA is very compact.



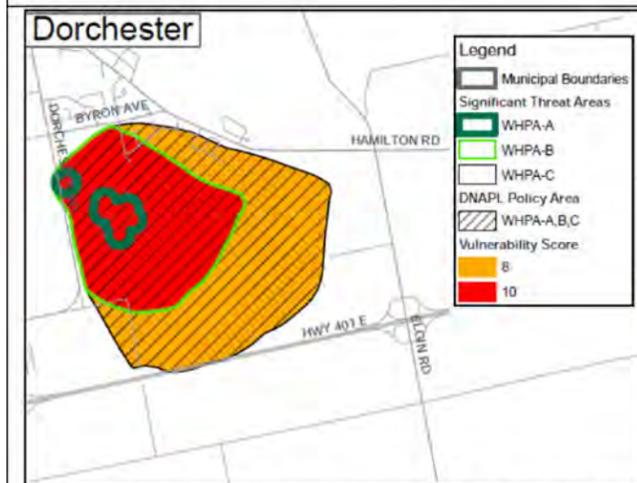
Melrose WHPA as Identified in TSR SPP

The Melrose WHPA contains two wells that are located within the Hamlet of Melrose. This WHPA is also compact and narrow. WHPA-A and B are assigned a vulnerability score of 10. Generally, residential uses are situated within the WHPA-A and B. An auto garage/repair shop is located in proximity to the WHPA-A area.



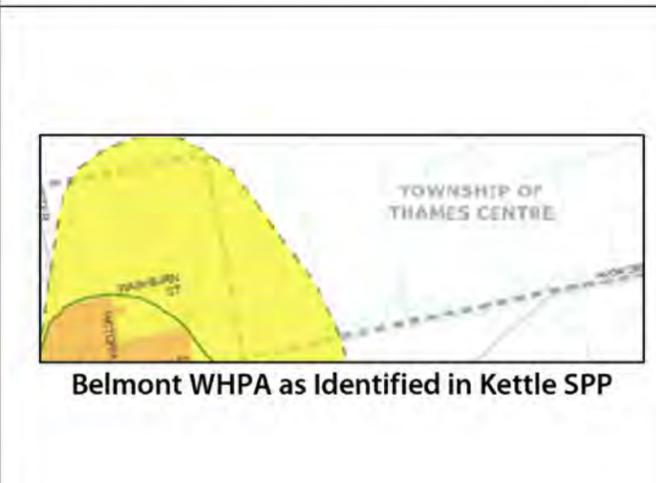
Thorndale WHPA as Identified in TSR SPP

The Thorndale WHPA is comprised of two wells located adjacent to the eastern limit of the Hamlet of Thorndale. While larger than the Birr and Melrose WHPAs, it is still relatively compact. Only WHPA-A is identified as having a high vulnerability. Residential and agricultural uses are located within the WHPA-A area.



Dorchester WHPA as Identified in TSR SPP

The Dorchester WHPA is comprised of nine wells and is located south of Dorchester. This is the largest and most vulnerable WHPA within the County, as the entire WHPA has been identified as highly vulnerable. Lands within the WHPA are generally residential or agricultural in nature.



Belmont WHPA as Identified in Kettle SPP

A portion of the WHPA-C area for the Belmont wells (Central Elgin water supply) is located within Thames Centre. Agricultural lands make up this portion of the WHPA-C.

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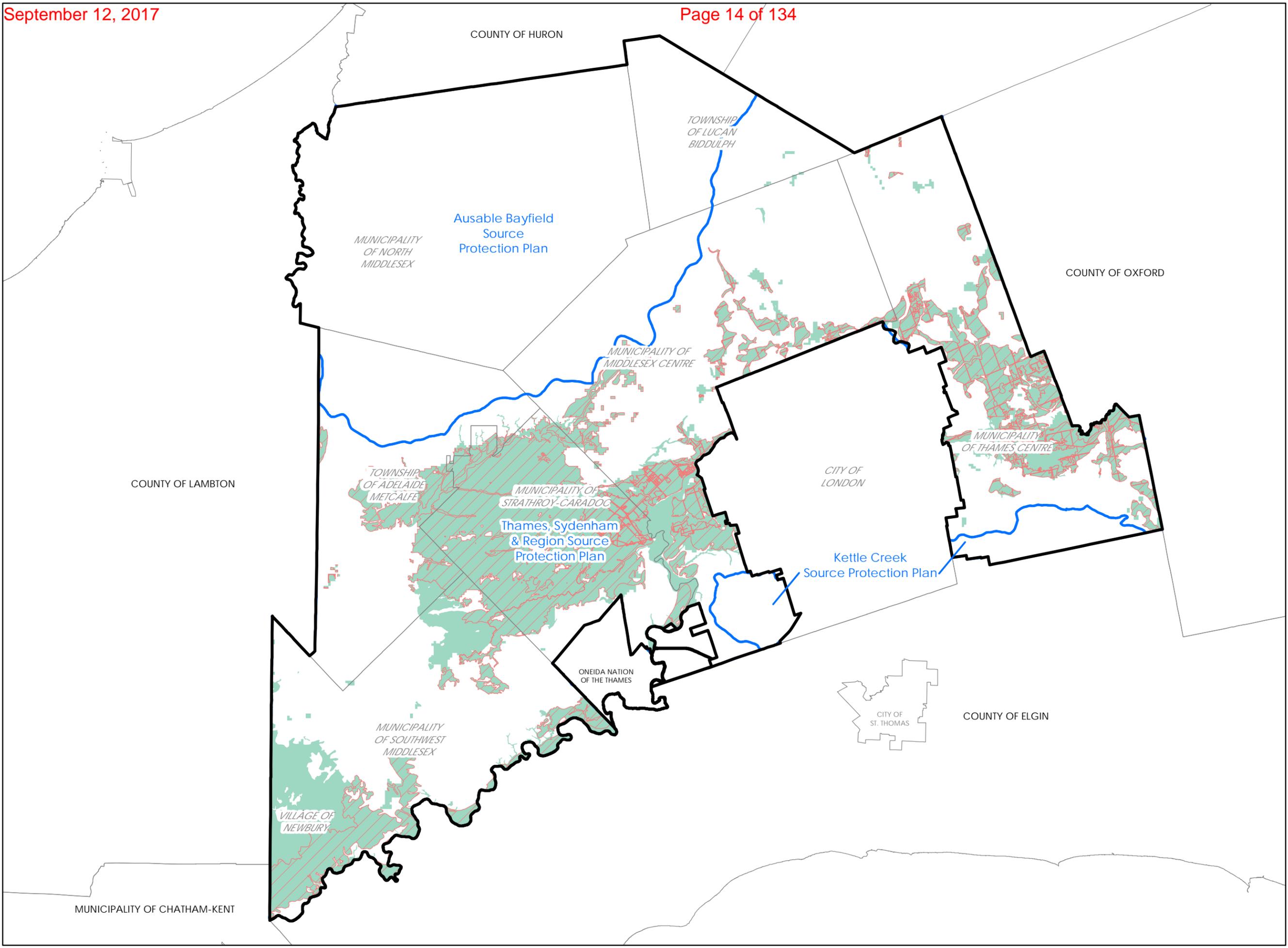
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HVAs and SGRAs in the Thames Sydenham and Region Source Protection Plan

Legend

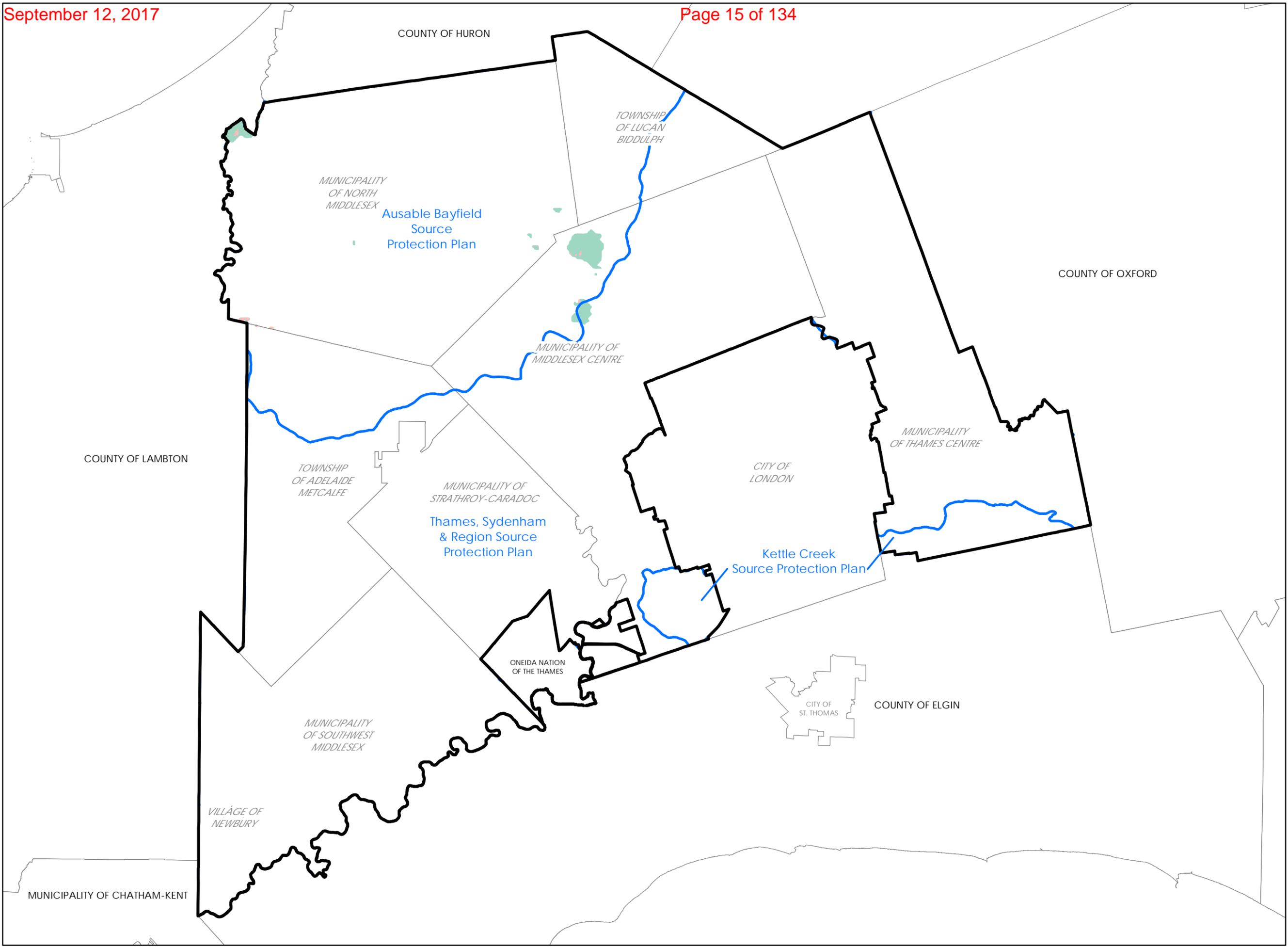
-  Middlesex County
-  Source Water Protection Plan
-  SGRAs
-  HVAs



Note:
 The HVAs and SGRAs as identified in this figure are referred to as "Moderate and Low Threat Policy Applicability Area" in the Source Protection Plan

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HVAs and SGRAs in the Ausable-Bayfield Source Protection Plan

- Legend**
- Middlesex County
 - Source Water Protection Plan
 - SGRAs
 - HVAs

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3.2 Prescribed Drinking Water Threat Activities & Significance

Land use activities which may pose a drinking water threat to municipal water supplies are defined by the *Clean Water Act* as an activity or condition that adversely affects, or has the potential to adversely affect, the quality and quantity of any water that is or may be used as a source or drinking water. Drinking water threat activities are prescribed by Ontario Regulation 287/07 of the *Clean Water Act* and include the following:

1. Waste disposal sites within the meaning of Part V of the Environmental Protection Act.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid (DNAPL).
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or farm-animal yard.

Threats 1 to 18 and 21 are threats to water *quality*, whereas threats 19 and 20 relate to water *quantity*. The significance of a prescribed drinking water threat activity listed above depends on the characteristics of the activity and where the activity is occurring within a vulnerable area (i.e. WHPA). The vulnerability score is used, together with a Table of Drinking Water Threats published by the Ministry of Environment and Climate Change, to determine whether a drinking water threat is either significant, moderate, or low. Significant drinking water threat activities most often occur closest to the wellhead (i.e. in WHPA-A and – B areas), with the highest vulnerability (i.e. vulnerability score of 8 to 10).

Drinking water threat activities cannot be classified as significant in HVAs or SGRAs and instead may only be classified as moderate or low threats.

3.3 Source Protection Plan Policies

With respect to WHPAs, the TSR and Kettle Creek SPPs employ a range of policy tools enabled under the *Clean Water Act* to protect municipal drinking water systems. Given these policy tools have varying levels of restriction, they can be categorized as Regulatory or Non-Regulatory. The policies in the SPPs apply to prescribed activities that are deemed significant drinking water threats through the preparation of Assessment Reports.

The SPPs generally have the same conformity requirements and require municipalities to amend Official Plans and Zoning By-laws to:

- Identify the vulnerable areas in which a significant drinking water threat can occur;
- Identify the *significant* drinking water threats and require that any use or activity that is, or would be, a significant drinking water threat, conform to all applicable Source Protection Plan policies and, as such, may be prohibited, restricted or otherwise regulated by the policies contained in the Source Protection Plan; and
- Incorporate any other Amendments required to conform to the threat-specific *land use* policies identified in the SPP.

The **TSR SPP** also requires the identification of significant drinking water threats that are prohibited through Prescribed Instruments or Section 57 of the *Clean Water Act* in accordance with the threat-specific policies of the SPP, and the incorporation of a cross-reference requiring a Section 59 Notice prior to an applicant proceeding with the filing of a planning application.

Considering the conformity requirements of the *Clean Water Act, 2006*, and applicable SPPs, Amendments to municipal Official Plans and Zoning By-laws to implement source protection policies are generally concerned with the following **regulatory** policies of the Source Protection Plans:

- **Section 57 (Prohibition) Policies:** under Part IV of the *Clean Water Act*, these policies prohibit existing and future activities that pose a significant threat to drinking water sources.
- **Section 58 (Risk Management Plan) Policies:** under Part IV of the *Clean Water Act*, these policies regulate existing and future activities through a Risk Management Plan. Risk Management Plans are to be negotiated between a Risk Management Official and a land owner. A Risk Management Plan may be imposed by a Risk Management Official where an agreement cannot be reached. Risk Management Plans are used to ensure that threats to drinking water sources do not become significant.
- **Section 59 (Restricted Land Uses) Policies:** under Part IV of the *Clean Water Act*, this policy tool is intended to function as a screening tool in order to ensure that activities do not occur within a specified area that have the potential to result in a significant drinking water threat.
- **Land Use Planning Approval Policies:** land use planning tools issued under the *Planning Act* and *Condominium Act* can be used to prohibit or regulate land uses. Land use planning policies of a Source Protection Plan must be implemented through Official Plans and in some cases, Zoning By-laws, as specified by the Source Protection Plan.

Source Protection Plans also use Prescribed Instrument policies, which are regulatory, as well as Specify Action policies, which can be regulatory. Furthermore, 'Education and Outreach', 'Incentive', and 'Monitoring' policies are the non-regulatory policies included in Source Protection Plans to address significant drinking water threats. The non-regulatory policies are not mandatory for inclusion in the Official Plan under the *Clean Water Act, 2006*.

The TSR and A-B SPPs also include "Moderate and Low" threat policies that apply to HVAs and SGRAs. These policies are only recommendations and do not have any legal effect under the *Clean Water Act* requiring municipalities, property owners and other implementing bodies to comply. However, when included in an SPP, implementing bodies, such as municipalities, should have regard for Moderate and Low threat policies. Moderate and Low threat policies are not required for inclusion in Official Plans or Zoning By-laws.

3.4 Purpose of Official Plan & Zoning By-law Amendments

Middlesex County is a two-tier municipality with in-effect Official Plans at the County and local municipal levels. The Middlesex County Official Plan establishes an upper-tier land use policy framework that provides guidance to local municipalities in the preparation of local Official Plans and Zoning By-laws. As such, the County Official Plan does not address those planning matters in any great detail that are better dealt with by the local municipality. Local Official Plans therefore complement the County Official Plan by providing more detailed strategies, policies and land use designations for planning and development at the local level.

Considering the role and function of the County and local Official Plans, the requirements of the *Clean Water Act*, and the relevant policies of the TSR and Kettle Creek SPPs, the policy of the draft Official Plan Amendments to implement Source Protection Plans **will need to address** the following:

For the County –

- Include mapping that identifies Source Protection Plan areas that apply within the County;
- Provide a general policy framework related to source water protection; and
- Provide the direction for Amendments to local municipal officials plans to implement SPP significant threat policies.

For Thames Centre and Middlesex Centre Official Plans –

- Include mapping that identifies the vulnerable areas (WHPAs) where the prescribed drinking water threats would be significant;
- Conformity to the significant threat policies of the Source Protection Plans, including an indication that within vulnerable areas, any use or activity that is, or would be, a significant drinking water threat is required to conform to all applicable Source Protection Plan policies and, as such, may be prohibited, restricted, or otherwise regulated by those policies.

Consideration will also be given to the moderate and low threat policies of the applicable Source Protection Plans given HVAs and SGRAs are included in the definition of “vulnerable areas” under the Provincial Policy Statement, 2014.

Based on the above, the implementing Official Plan Amendment policy frameworks for the lower-tier municipalities will primarily address the significant threat policies of the SPPs described in Section 3.3 of this Report, whereas the Amendment to the County Official Plan will contain general or ‘directive’ policies that outline how lower-tier Official Plans shall be amended to implement Source Protection Plan policies.

Amendments to the local municipal Zoning By-laws will implement the Official Plan Amendments to meet the conformity requirements of the SPPs.

Each Source Protection Plan identifies timelines in which Official Plans and Zoning By-laws must be amended to conform to the significant threat policies of that SPP. The timelines for Amendments to implement the SPPs applicable to Middlesex County are as follows:

SPP	Municipality	OP Conformity	ZBL Conformity
Thames, Sydenham & Region (effective 12/31/15)	Thames Centre	3 years from effective date or next OP Review, whichever is first (12/31/18)	3 years from passing of implementing OPA/OP
	Middlesex Centre		
Kettle Creek (effective 01/01/15)	Thames Centre	5 years from effective date or next OP Review (01/01/20)	5 years from effective date or next conformity exercise (01/01/20)
Ausable-Bayfield (effective 04/01/15)	Does not regulate any drinking water systems	5 years from effective date (04/01/20)	5 years from effective date (04/01/20)

4.0

ANALYSIS & OPTIONS FOR THE OPA FRAMEWORKS

The policy structure and framework for the Official Plan Amendments will need to consider the *Clean Water Act* Section 57, 58 and 59 and land use policies of both Source Protection Plans, the current policies of the Official Plan that is being amended, and the function of the Official Plan document (County Official Plan vs. Local Official Plan). Consideration is also given to moderate and low threat policies of the TSR and A-B SPPs as HVAs and SGRAs are identified as “vulnerable areas” in the Provincial Policy Statement, 2014.

The following provides a review of the relevant policies of the SPPs, County and Local Municipal Official Plans, and an analysis of available policy implementation options that form the basis of the policy recommendations in Section 5 of this report.

4.1 Section 57 and 58 Policies

The TSR SPP identifies those existing and future uses and activities that are either prohibited or regulated (require Risk Management Plans) based on the degree of vulnerability of WHPAs within the County. Only future threat policies were reviewed as these are the only policies that can be regulated and/or managed through land use planning tools such as the Official Plan. The charts contained in **Appendix A** illustrate the application of the Section 57 and 58 policies (and other regulatory tools) in the TSR SPP for future threats by vulnerable area to which they apply (i.e. WHPA-A, WHPA-B v.10, WHPA-B v.8, etc.). Note the WHPA-C chart also includes the Section 57 and 58 policies of the Kettle Creek SPP, to address the WHPA-C area of the Belmont WHPA in Thames Centre. The following conclusions were drawn from the Section 57 and 58 policy analysis:

- The greatest range of threats regulated by Section 57 or 58 are in WHPA-A and WHPA-B v.10, which are the most vulnerable areas in the Source Protection Plan;
- Some significant threats are prohibited or require management under different circumstances (i.e. the storage and handling of snow is only prohibited in aggregate operations);
- A limited number of threats are regulated by Section 57 or 58 in the less vulnerable areas (i.e. WHP-B v.8 and WHPA-C); and
- There is a difference in the application of Section 57 and 58 with respect to DNAPLs in WHPA-C areas between the Kettle Creek and TSR SPPs – the Kettle Creek SPP prohibits the storage and handling of DNAPLs, whereas this activity only requires an RMP under the TSR SPP. This is significant for Thames Centre, which contains WHPA-C areas for two of its wells as well as the Belmont well in Central Elgin.

Section 57 and 58 policies must be implemented through Official Plans and Zoning By-laws.

4.2 Section 59 Policy

Each SPP contains a *Restricted Land Uses (RLU)* that applies within vulnerable areas and requires the issuance of a written Notice from the Risk Management Official prior to approval of any Building Permit, *Planning Act*, or *Condominium Act* application. The policy is intended to function as a screening tool in order to ensure that activities do not occur within a specified area that have the potential to result in a significant threat, allowing for development applications to be reviewed by a Risk Management Official prior to being approved by the planning or building authority. As such a Section 59 Notice is required from the Risk Management Official before a planning or building application can be approved. The RLU Policy was developed to integrate the issuance of the Section 59 Notice with the existing review functions of a municipal planning or building department.

The Restricted Land Use Policy of the Thames-Sydenham SPP excludes residential uses from requiring a Section 59 Notice. In contrast, the Kettle Creek RLU policy designates all land uses as Restricted Land Uses and requires a Section 59 Notice prior to any building permit or *Planning Act* approval. This distinction between the Kettle and TSR SPPs will need to be addressed in the Thames Centre Official Plan.

The Section 59 Policy does not apply to HVAs and SGRAs. **The Section 59 Policy must be implemented through Official Plans and Zoning By-laws.**

4.3 Land Use Planning Policies

There is one (1) land use policy that applies within the County from the applicable SPPs. This policy is contained in the TSR SPP and applies to WHPA-A and B areas with a vulnerability score of 10 and involves septic systems. Policy 2.15 of the TSR SPP reads as follows:

2.15 Future Septic Systems – Prohibition (Land Use Planning)

For new septic systems or new septic system holding tanks, with the exception of:

- *those required for a municipal water supply well;*

where these activities would be a significant drinking water threat, Municipalities shall amend their Official Plan and Zoning By-laws to prohibit uses, buildings or structures that would require a new septic system of septic system holding tank to be located within the [WHPA-A and WHPA-B v.10] areas so that these activities never become significant drinking water threats.

The Kettle Creek SPP does not contain any Land Use Planning policies.

The Land Use Policy must be implemented through Official Plans and Zoning By-laws.

4.4 Discretionary and Moderate & Low Threat Policies

SPPs include non-regulatory (discretionary) policies related to education and outreach, incentives, specific actions and monitoring. These are discretionary policies that are part of the SPP but have no

legal effect and are not required for implementation through Official Plans and Zoning By-laws. However, some discretionary policies may complement existing Official Plan policy frameworks and can be related to best management practices, specific land use matters and considerations, and stewardship efforts, and could be considered for inclusion in the Official Plans of lower-tier municipalities with municipal drinking water systems.

The Thames-Sydenham SPP contains the following discretionary policies:

- **Policy 1.01:** Municipalities shall develop and implement education and outreach programs designed to increase awareness and understanding of drinking water threats and promote best management practices in collaboration with Conservation Authority and Provincial partners.
- **Policy 4.01:** Municipalities should consider incorporating the location of WHPAs and IPZs and related spill considerations into their emergency response plans.
- **Policy 4.05:** Municipalities should consider including, as a condition for approval on relevant development applications, a record of the decommissioning of unused wells in accordance with O.Reg. 903 of the Ontario Water Resources Act.
- **Policy 4.05:** Municipalities should consider the development of municipal by-laws to restrict private wells and septic systems where prescribed drinking water threats would be significant and municipal servicing is in place to provide an option for water and sewage other than the creation of potential transport pathways.
- **Policy 4.11:** Municipalities should consider the effect of municipal infrastructure and development servicing on the vulnerability of a Wellhead Protection Area in order to ensure such transport pathways are appropriately managed and/or designed so that they do not increase the risk to municipal drinking water.

The Kettle Creek SPP contains the following discretionary policies:

- **Policy KCSPA-NB-1.15:** Central Elgin, Thames Centre and Malahide should review and update Emergency Management Plans as necessary to identify vulnerable areas and include requirements to contain firefighting run off and responses to spills from septic haulage, highway accidents and railway derailments.

The TSR and A-B SPPs also include moderate and low threat policies. These policies address activities that have been identified as moderate or low threats within vulnerable areas, including HVAs and SGRAs. These policies are optional for inclusion in Source Protection Plans under the *Clean Water Act*, and are not required for implementation through Amendments to Official Plans and Zoning By-laws. However, if moderate and low threat policies are included in a Source Protection Plan, implementing bodies should have regard to these policies.

Like discretionary policies, some moderate and low threat policies may complement existing Official Plan policy frameworks and can be related to best management practices, specific land use matters and considerations, and stewardship efforts, and could be considered for inclusion in the Official Plans of lower-tier municipalities with municipal drinking water systems.

The TSR SPP contains moderate and low threat policies related to the following:

- Under the authority of the Ontario Building Code, the local approval agency of septic systems should consider including these systems as part of the discretionary sewage system

maintenance inspection program, with priority given to areas where septic systems are known to fail and where older systems predominate (Policy 3.01).

- The Ministry of Environment should consider reviewing and, if necessary, amending Pesticide Permits under the *Pesticides Act*, to incorporate conditions to address the protection of municipal drinking water sources where the application of pesticides is or would be a low or moderate drinking water threat (Policy 3.02).
- To reduce the risk to municipal drinking water sources from new activities that would be subject to one or more Prescribed Instruments [i.e. Nutrient Management Plan, Pesticide Permit, Environmental Compliance Approval, etc.] in an area where the activity would be a moderate or low drinking water threat, the province should consider incorporating terms and conditions that, when implemented, should manage the activity such that it does not become a significant drinking water threat (Policy 3.03).

The Ausable-Bayfield SPP contains moderate and low threat policies related to the following:

- Environmental Compliance Approvals (ECAs) for new or replacement septic systems in HVAs and SGRAs, where they would be a moderate or low drinking water threat, should include terms and conditions which when implemented will adequately manage the risk to sources of municipal drinking water (Policy R.1.8, Policy A.1.8, Policy C.1.8).
- Where a waste disposal site, under the meaning of Part V of the *Environmental Protection Act*, which is a moderate or low drinking water threat, the MOECC is requested to alert the Source Protection Authority annually of any environmental problems or concerns at respective sites (Policy A.5.8).
- Within one year of the SPP coming into effect, the conservation authority should commence an outreach and education program to assist landowners and developers in understanding the impacts of land uses and activities on areas identified as HVAs and SGRAs in the Assessment Report (Policy O.11.1, Policy O11.2).

The discretionary and moderate and low threat policies apply to a range of significant drinking water threats and utilize a variety of tools available under the *Clean Water Act*, such as education and outreach monitoring and prescribed instruments (ECAs). It is important to note the difference in the responsible implementing body between the two sets of policies – municipalities are generally the implementing body for the discretionary policies, whereas the majority of the moderate and low threat policies are to be implemented by provincial ministries and conservation authorities and *not* the municipality. This will be considered in the policy implementation analysis contained in Section 4.6 of this Report.

4.5 Upper and Lower-Tier Official Plans

4.5.1 County of Middlesex Official Plan

Generally, the purpose of the County of Middlesex Official Plan is to establish an upper-tier policy framework that provides guidance to the preparation of local municipal Official Plans and Zoning By-laws. Section 2.4.7 of the Official Plan contains the policy framework related to groundwater management and protection within the County. These policies require local municipalities to address the following within their Official Plans and Zoning By-laws:

- Water conservation;

- Efficient/sustainable use of water resources;
- Encouraging the use of low impact development stormwater management practices; and
- Protection of municipal drinking water sources and sensitive groundwater features through restrictions on development and site alteration.

The remainder of the policy framework in Section 2.4.7 discusses the preparation and role of the 2004 Middlesex-Elgin Groundwater Study in identifying potential risks to groundwater sources and the identification of wellhead protection areas. This Study was to be used by local municipalities as the foundation for establishing groundwater protection-related policies in Official Plans. This groundwater study predated source protection planning under the *Clean Water Act*.

Groundwater features – specifically groundwater recharge, discharge, headwater and wellhead protection areas – are identified as part of the County's Natural System in Section 2.2.1.1. Section 2.2.1.2 contains the general policies related to the Natural System and requires local municipalities to identify the significant elements of the Natural System in their official and secondary plans, which would include wellhead protection areas and sensitive groundwater features identified in the 2004 Groundwater Study. The policies of Section 2.2.1.2 also call for the protection of ground and surface water from degradation and require local municipalities to utilize information and mapping from the 2004 Groundwater Study in the review of development applications and preparation of Official Plans and Zoning By-laws. Where mapping is not available, the County is to work with Conservation Authorities, local municipalities and the Province to identify other sensitive areas and provide adequate protection.

The County Official Plan does not contain any mapping related to delineation of WHPAs or other sensitive groundwater features that may have been identified through the 2004 Groundwater Study.

Other related policies in the County Official Plan include the following:

- Section 2.4.5 – Sanitary Sewers and Water: contains high-level policies that encourage new development on full services, ensuring proper maintenance of existing systems, use of Low Impact Development (LID) stormwater management measures, and outlines requirements for servicing reports for new development.
- Section 1.4 – Basis of the Plan: the 2004 Middlesex-Elgin Groundwater Study is cited as background information to the Official Plan.
- Glossary – 'groundwater', 'groundwater recharge area', 'head-water' and 'linkages' are defined terms in the Official Plan.

4.5.2 Official Plan of the Municipality of Middlesex Centre

The Official Plan of the Municipality of Middlesex Centre does not contain a specific policy section related to the protection of water resources and groundwater features. Some policies related to water and groundwater resource protection are contained in Section 3.0, which provides the policy framework for natural areas and natural hazard areas. Improvements to water quality is identified a goal of the policy framework of this section. Generally, applicable policies in Section 3.0 speak to the protection and enhancement of groundwater and surface water resources from an environmental perspective.

Section 9.3 contains the policies for municipal services as well as other infrastructure. The policies within this section outline the servicing approach for various settlement areas, generally require new development on full municipal services, and speak to monitoring of municipal services with respect to

treatment capacities and operational effectiveness. Holding tanks are prohibited for new development in non-settlement areas, and are only permitted in those circumstances where a problem exists with an existing septic tank system and there is no other alternative (Policy 9.3.2 f).

Section 10.20.3 identifies the types of reports and studies that may be required to be submitted as part of Complete Application requirements under the *Planning Act*. Specific report types (i.e. functional servicing report, planning justification report, noise study, etc.) are not listed and instead general studies and reports that address 'planning matters', 'environmental and natural matters', 'transportation matters', 'servicing and infrastructure matters', 'financial and market impact assessment matters', 'urban design and cultural matters', and 'nuisance and hazard matters' are outlined in this Section.

The Official Plan does not contain any mapping/schedules that identify sensitive groundwater features or wellhead protection areas that may have been identified through the County's 2004 Groundwater Study.

4.5.3 The Municipality of Thames Centre Official Plan

Policy 2.10 of the Municipality of Thames Centre Official Plan contains the policy framework related to source water protection within the municipality. These policies are located within the Development Policies section (Section 2) of the Official Plan. Policy 2.10 provides a description of, and/or direction with respect to, the following:

- A description of WHPAs within the municipality, including a portion of the Belmont WHPA in Central Elgin;
- The role of Source Protection Plans under the *Clean Water Act*, and which source protection areas apply to the Municipality;
- The general prohibition, restriction or regulation of activities that would be a significant drinking water threat within WHPAs;
- A future Amendment to the Official Plan to implement required policies of SPPs (note, 'having regard to' low and moderate threat policies of the SPP are identified as being part of the implementing Official Plan Amendment in the policy text);
- The issuance of a Notice under the *Clean Water Act* by the municipality's Risk Management Official (i.e. Section 59 Notice) prior to the approval of planning or building permits;

Policy 2.10 also pays specific attention to HVAs and SGRAs, indicating that the municipality may require the submission of a hydrogeology report in advance of a change of use on the property. The hydrogeology report is required to disclose the proposed use and identify the use and/or storage of any chemicals on site and measures for spill containment, as well as include a threats inventory, vulnerability analysis, risk analysis, and an analysis of risk management measures to mitigate risks to drinking water sources. This report as described in the policy text is similar to 'Disclosure Reports' required by some other municipalities outside of the County in support of new land uses within vulnerable areas. The requirement for this hydrogeological report is only applicable in the HVAs and SGRAs.

WHPAs A through E for Dorchester and Thorndale are mapped in Schedule A-12 and A-13 of the Thames Centre Official Plan as per the mapping of the applicable Assessment Reports prepared as the basis of the TSR and Kettle Creek SPPs. HVAs and SGRAs are not currently mapped in the Official Plan.

Section 2.4 provides policies related to water supply and sewage disposal within the municipality. Policy 2.4.2 requires connection to piped systems when available and phasing policies for sanitary allocations

for new development. Policy 2.4.3 permits development on individual on-site sewage treatment systems where public systems are not available, and identifies on-site treatment as the primary means of servicing in agricultural and hamlet areas. The requirements for communal systems are also outlined in this policy.

'Areas above sensitive groundwater resources', as defined by the 2004 Middlesex-Elgin Groundwater Study, are identified as a 'Group C Feature Environmental Area' in Table 1: EIS Standards of the Official Plan. Under Policy 3.2.3.1 – Environmental Impact Studies, development that uses large amounts of water or disposes of large amounts of liquid wastes are not permitted without technical approval from the Ministry of Environment and Middlesex Public Health within areas above sensitive groundwater resources. Cross-reference to Section 2.10 is also made within Table 1 with respect to sensitive groundwater features. Development and site alteration may be permitted within Group 'C' Features where it can be demonstrated that the proposal meets the natural heritage and natural hazards policies of Thames Centre Official Plan.

Policy 7.32.1 outlines the supporting studies that may be required as part of a complete application. A hydrogeological report is included in the list. 'Other' reports to be specified are also included.

4.6 Policy Implementation Analysis

The policy implementation options presented below takes into consideration the requirements of the *Clean Water Act* and applicable SPPs; the existing policy framework of the County, Middlesex Centre and Thames Centre Official Plans; and the best practices review of other municipalities that have implemented Source Protection Plan policies through Amendments to their Official Plans as identified in **Appendix B**.

4.6.1 Section 57, 58 and 59 Policies

As previously indicated, the Section 57 and 58 policies of the TSR apply to all WHPAs within the County with the exception of the WHPA-C associated with the Belmont well that extends into the Municipality of Thames Centre, which is regulated by the Kettle Creek SPP. There are three approaches to implementing Section 57 and 58 policies. These approaches are as follows:

Option 1. Prohibit all uses associated with significant drinking water threat activities through the OP policy framework. This approach attempts to mimic the pre-SPP approach to regulating uses in WHPAs found in OP policy frameworks of municipalities such as the Region of Waterloo, County of Oxford, and County of Wellington, among others. This approach would involve specifically identifying prohibited uses in WHPAs and require the development of a comprehensive list of land uses that could involve a prescribed drinking water threat.

The challenge with preparing such a list is that some land uses will ultimately be missed. A notwithstanding clause would need to be included in the policy framework in the event a use associated with a prescribed drinking water threat is mistakenly excluded.

Another challenge is that a given land use may or may not be associated with a significant drinking water threat based on the nature of the use, the details of the operation, and the activities associated with the operation. For example, a car dealership with a service bay that provides a rust-proofing service could be considered a significant threat depending on

its location within a WHPA and its associated vulnerability score. The car dealership and service bays (the use) may not be an issue however the activities within the use (i.e. rust proofing/handling and storage of organic solvents) may be a significant drinking water threat. Therefore, to prohibit a land use that may or may not be associated with a threat activity could be considered overly restrictive because the use is being prohibited whether or not a significant threat activity is being undertaken in a specific case.

The Best Practices review of other conformity Amendments undertaken by other municipalities did not reveal any municipality that is taking this approach through their approved or draft Official Plan Amendments for SPP implementation.

Option 2. Identify specific threat activities that are prohibited by Section 57, prohibited by prescribed instrument, or managed by vulnerable area (i.e WHPA-A, B, C, IPZ) as prescribed by the relevant SPP. This approach involves identifying how individual threats are regulated by the SPP within each vulnerable area. The threats, regulatory approach (Section 57 or Section 58), and vulnerable area could be arranged in a quick reference table within the policy framework as follows:

WHPA-A v.10		
Section 57 Prohibit	Prescribed Instrument Prohibit	Section 58 Risk Management Plan
Storage/Handling of Commercial Fertilizer	Discharge of stormwater from a SWM facility	Application of Pesticide
Application of NASM	Sewage/Septic Systems – Storage of Sewage	Use of land as livestock grazing/pasturing land

**not a complete list*

This approach would allow readers to understand how individual threats are regulated without having to refer to the appropriate SPP. Official Plan policy could describe what each regulatory approach is and how it is applied. The WHPA-C application of Section 57 and 58 differs between the Thames-Sydenham and Kettle Creek SPPs as they apply in Thames Centre and therefore would have to be distinguished in the reference table.

The Best Practices review did not reveal any municipality that is taking this approach through their approved or draft OPAs for SPP implementation.

Option 3. Establish a general policy that defers determination as to whether a land use is restricted or prohibited to the Risk Management Official and establish 'notwithstanding' policies and defer/refer directly to relevant SPP. This approach involves listing the prescribed significant drinking water threat activities and outlining the process requirements for the RMP review and its relationship to the planning application process. The Section 59 Notice could be identified as a requirement prior to an application being deemed complete or required prior to the approval of an application. This option would capture the inclusion of the Restricted Land Use Policy in the OP framework. The Thames Centre policy framework currently achieves this to some degree; however the policy needs to be updated.

Based on our review of other jurisdictions, the Town of Innisfil and Town of Midland have taken this approach in their OP policy frameworks.

The notwithstanding policy could address both prohibited and restricted uses. An additional policy statement would direct plan readers to the appropriate SPP based on geographic location (such as through an Official Plan Schedule) in Thames Centre. Notwithstanding policies could read as follows:

“Notwithstanding the land use activities permitted by the underlying land use designations, land use activities which have been identified by a Source Protection Plan as being prohibited within vulnerable areas shall not be permitted.” (Prohibited Uses)

“Notwithstanding the uses permitted by the underlying land use designations, uses/activities may only be permitted within vulnerable areas if the applicant demonstrates to the satisfaction of the lower tier municipality that the proposed use/activity is in conformity with the policies contain within the relevant Source Protection Plan.” (Restricted/RMP uses)

This approach is taken in the County of Lennox & Addington and Wellington County Official Plans. Lennox & Addington is an upper-tier municipality that is subject to three different SPPs, whereas Wellington, also an upper-tier municipality, is subject to five SPPs. This approach is also taken in the Norfolk County draft OPA. Norfolk County is a single-tier municipality.

Recommendation:

In our opinion, Option 3 may be the most desirable option for addressing the Section 57 and 58 policies of the individual SPPs at the Official Plan level. This opinion considers the complexity of Options 1 and 2 and the responsibility of the local municipalities under the *Clean Water Act* with respect to the amending of Official Plans and Zoning By-laws to conform to SPPs. Option 3 also appropriately addresses the Thames Centre situation of having WHPAs regulated by different Source Protection Plans.

The **Section 59** policy can be built into the Section 57 and 58 policy implementation approach, requiring the issuance of a Notice to Proceed from the Risk Management Official prior to an application under the *Planning Act* being deemed complete by the local municipalities.

4.6.2 Land Use Planning Policies

There is only one land use planning policy from the TSR SPP to be implemented in the Official Plans and Zoning By-laws of the municipalities of Middlesex Centre and Thames Centre. This land use policy must be included in the Official Plans and Zoning By-laws of each municipality.

4.6.3 Discretionary Policies

There are a number of discretionary policies in the TSR and Kettle Creek SPPs that relate to education and outreach, updating of emergency management/response plans, decommissioning of abandoned wells, and encouraging connection to municipal services where available. The policies differ somewhat between the SPPs.

Option 1. Include discretionary policies of each SPP in the Official Plan policy framework for each respective municipality. This approach involves including the following discretionary policies for each respective local municipality:

- Thames Centre: Thames-Sydenham SPP and Kettle Creek SPP
- Middlesex Centre: Thames-Sydenham SPP

The discretionary policies are not onerous on the municipality or landowner and represent best practices that could be undertaken for the protection and improvement of drinking water sources.

A number of municipalities included in the best practices review included some discretionary policies of SPPs in the OP frameworks.

Option 2. Do not include discretionary policies in the Official Plan framework. The discretionary policies are non-regulatory and municipalities are not required to include them in Official Plans under the *Clean Water Act*.

Recommendation:

Whether the discretionary policies of the SPPs are implemented in the Official Plan should be left to the discretion of the municipality. Under the *Clean Water Act*, municipalities shall have regard to the discretionary policies of the Source Protection Plan in their decision-making processes. Furthermore, the discretionary policies discussed in Section 4.4 of this Report relate to other municipal and legislative processes that are not necessarily addressed by Official Plans.

4.6.3 Highly Vulnerable Aquifers (HVAs) and Significant Groundwater Recharge Areas (SGRAs) and Associated Moderate and Low Threat Policies

The TSR and A-B SPPs map HVAs and SGRAs and include moderate and low threat policies for these areas. As discussed previously, SPPs do not include significant threat policies for HVAs and SGRAs and Section 40 of the *Clean Water Act* requires that Official Plans and Zoning By-laws be amended to conform only to the significant threat policies set out the SPP. The province has not provided any direction, policy or otherwise, on how to implement or use the HVA and SGRA mapping outside of the applicable policy of the PPS. However, municipalities shall have regard to any moderate and low threat policies that are included in an individual SPP, whether or not they are included in the Official Plan.

Option 1. Map HVAs and SGRAs at the County level only, with a placeholder policy in the event SPPs are amended in the future to include significant threat policies for these areas. This could be applied at the local municipal level as well. This approach would involve including the HVA and SGRA mapping from the TSR and A-B SPPs and Kettle Creek Assessment Report. A 'placeholder' policy can be included within the Official Plan that states the County and local Official Plans will be amended when policies specific to these vulnerable areas are added to Source Protection Plans. General policies based on the policy framework of Section 2.2 of the PPS could also be included. This approach would require additional mapping and directive policies in the County Official Plan.

The Township of Huron Kinloss has taken this approach to HVAs and SGRAs in their Official Plan.

Option 2. Include moderate and low threat policies of the TSR and A-B SPPs for HVAs and SGRAs in local municipal plans. This approach would be combined with Option 1 and apply to all lower-tier municipalities, as the HVA/SGRA mapping affects all lower-tier municipalities.

Option 3. Map HVAs and SGRAs at the County level for information purposes only. Local municipal plans could also include this mapping. This approach is similar to Option 1

but would not involve the inclusion of a placeholder policy. The Schedule would be referenced in Official Plan text only.

Bluewater and Innisfil take this approach in their Official Plan frameworks.

Option 4. Do not include HVA/SGRA mapping. The purpose of amending the Official Plan is to ensure conformity with the significant threat policies and mapping of Source Protection Plans. The inclusion of HVAs and SGRAs are not required under the *Clean Water Act* as there are no 'significant threat' policies associated with these vulnerable areas.

Recommendation:

It is recommended that HVA/SGRA mapping not be included at this time. In addition to the reasons for excluding HVA/SGRA mapping provided above, the inclusion of these vulnerable areas is more representative of a conformity exercise with the PPS. As such, if the intent is to implement SPP policy through a stand-alone SPP conformity Official Plan Amendment, then the HVA/SGRA mapping does not need to be included to meet the minimum requirements of the *Clean Water Act*. If SPP implementation is to occur through a 5-year review of the Official Plan, then the review process also constitutes a conformity exercise under the PPS and as such the Ministry of Municipal Affairs and Housing may require the inclusion of these vulnerable areas in the new Official Plan. If this does occur, the respective municipality can re-evaluate the implementation options presented above.

4.6.3 Considerations from Existing Official Plan Policy Frameworks

The Thames Centre Official Plan contains existing policies related to source water protection. Some of the existing policies in this Official Plan are similar to those in other municipalities that have implemented SPP policies through Official Plan Amendments (although these existing policies will require modification) and represent a best practice approach that goes beyond the requirements of the *Clean Water Act*. As such some of these policies could be considered for implementation in the Middlesex Centre and County of Middlesex Official Plans and include the following:

Option 1. Retain existing Official Plan policies regarding the need for the submission of a Disclosure Report, and apply to WHPAs. Requiring the submission of a Disclosure Report as part of a complete application for development or site alteration within WHPAs would provide detailed information to the RMO and local municipality in evaluating proposals within these vulnerable areas. Requirements for Disclosure Reports are already established in the Thames Centre Official Plan, albeit only with respect to HVAs and SGRAs. Many other municipalities in their SPP implementation policy frameworks include requirements for Disclosure Reports, such as County of Wellington, Norfolk County, Barrie and Niagara Region. The submission of a Disclosure Report could be considered a best practice approach to implement in applicable local municipalities.

The need to submit a Disclosure Report in SGRAs and HVAs in Thames Centre could remain in the policy framework or be deleted. A requirement for Disclosure Reports could also be extended to Middlesex Centre.

Option 2. Include within the policy framework a description of WHPAs, vulnerability scores, source water protection and SPPs, assessment reports, etc. in policy text. SPPs are science based and difficult to read/interpret for the average person. Conversely, the Official Plan is a much more reader-friendly document that is referenced by a wide range of people including professionals, politicians and members of the public, among others and is the most-referenced document with respect to land use planning. The Official Plan therefore provides an opportunity to explain in simple terms the role of SPPs, their effect on land use and their relation to development and site alteration regulated by the Official Plan and familiarize the process for Plan readers and users.

Recommendation:

Implementing both options identified above are recommended at this time. The requirement for a Disclosure Report is already established in the Thames Centre Official Plan, can easily be adopted by Middlesex Centre, and is a best management practice used by many other municipalities. The submission of a Disclosure Report would also assist the Risk Management Official in their responsibilities of issuing Section 59 Notices and preparing Risk Management Plans. Including a plain language description of source protection planning in Official Plans and defining key terms assists in framing Source Protection Plan policies, providing background information as to their effect and purpose and increases understanding of the overall process.

4.6.3 SPP Implementation at County vs. Local Municipal Level

Generally, applicable SPPs require Amendments to local municipal Official Plans and Zoning By-laws to conform to Source Protection Plan policy. However, the function of County Official Plan as a policy guidance document and the function of local municipal Official Plans as containing detailed land use policies must also be considered. As such, two general options are presented with respect to SPP implementation at the County level:

Option 1. Minimal policy framework at the County level, and include the mapping of Source Protection Plan Areas and WHPAs. This approach involves limiting the policy framework of the Middlesex County Official Plan to including general policies related to source protection planning and providing direction with respect to establishing detailed SPP implementation policies at the local Official Plan level. New schedules would be introduced that map the Source Protection Plan Area boundaries as they apply to the County and existing WHPAs primarily for information purposes.

Option 2. Policy framework at the County level to include a detailed implementation of relevant SPP policies. This approach involves establishing the detailed policy framework at the County level to implement Source Protection Plans. Local municipal Official Plans would include schedules/mapping identifying WHPA and IPZ area(s) within their boundaries and refer to appropriate section(s) and policies of the County Official Plan.

Recommendation:

To maintain consistency with the format of the existing County Official Plan framework, Option 1 is recommended. Mapping the boundaries of SPP areas within the County will assist in navigating what SPP(s) are applicable within which lower-tier municipalities, as this consolidated mapping can be difficult to find on provincial and conservation authority websites given the information is usually fragmented.

4.6.3 Official Plan Schedules

New Schedules to Official Plans will be required to meet the implementation requirements of the SPPs and serve as a reference for the new policy framework. Considering the policy implementation options presented above, these schedules should:

- **For Middlesex County, identify the boundaries of the Thames-Sydenham & Region, Kettle Creek, and Ausable-Bayfield Source Protection Plans as they apply to the County and the location and extent of WHPAs within Thames Centre and Middlesex Centre.**
- **For Thames Centre and Middlesex Centre, identify the vulnerable areas (WHPAs) as delineated in the SPPs and their associated vulnerability scores.**
- **For Thames Centre and Middlesex Centre, identify the boundaries of the applicable Source Protection Plan Areas.** Including a reference schedule that identifies what Source Protection Plan applies to certain areas of the municipality will assist in referring Plan users to the appropriate Source Protection Plan and implementing the SPP-specific land use policies through the Official Plan. This is especially important for Thames Centre, which contains WHPAs regulated by two different SPPs with differing policies related to WHPA-C areas.

5.0

ANALYSIS & CONSIDERATIONS FOR THE ZBA FRAMEWORKS

The Zoning By-laws of Thames Centre and Middlesex Centre do not contain any zoning schedules, regulations or appendices related to groundwater or source water protection and as such, new regulations and schedules will need to be added to each Zoning By-law. This 'clean slate' starting point allows for a consistent approach to zoning implementation.

A best practices review has been undertaken of zoning implementation approaches being employed by lower-tier municipalities in the implementation of SPP policies and is enclosed as **Appendix C**. Most examples reviewed are still in a draft stage. Some municipal Zoning By-laws have been reviewed that currently implement the former approach to groundwater protection, pre-Source Protection Plan. The specific nature of the regulations included in the zoning frameworks that were reviewed reflects the structure and content of the Official Plan Amendment policy framework. The following were common characteristics between the zoning frameworks reviewed:

- A zoning overlay is established to identify WHPAs, either in the Schedule A zoning maps or as a separate schedule to the Zoning By-law; and
- The regulatory framework that applies to the overlay is located in the General Provisions Section of the Zoning By-law.

Unique characteristics between the zoning frameworks reviewed include:

- Listing of the significant drinking water threats and deeming any non-residential use that involves a significant drinking water threat as prohibited until it is demonstrated to the Risk Management Official that the use does not represent a significant threat to drinking water;
- Requirement of a Disclosure Report prior to the issuance of a Building Permit
- Regulations provide that any application under the *Planning Act* cannot be made within WHPAs until the issuance of a Section 59 Notice to Proceed; and
- Applying a Holding Provision to uses and activities associated with the significant drinking water threats on lands within a WHPA, to be lifted following confirmation from the Risk Management Official that the use does not represent a significant threat to drinking water.

Generally, specific regulations are implementations of the Official Plan policy framework and as such are unique to individual municipalities.

The zoning overlay approach is currently being used by all municipalities included in the best practices review. It is noted that the Source Protection Plan is intended to be a restrictive policy document that regulates uses and activities within vulnerable areas in the interest of protecting drinking water sources. Zoning By-laws are also considered restrictive planning documents. The degree to which the implementing Zoning By-law regulations are restrictive can be addressed in the structure of the regulatory framework and is ultimately determined by the structure of the Official Plan Amendment. Our opinion is that the zoning overlay approach is a well-used approach in other municipalities and as such it is recommended as the most appropriate option to implement the new Official Plan source protection policies within the Thames Centre and Middlesex Centre Zoning By-laws.

The more 'unique' characteristics of individual zoning frameworks listed above also present options for SPP implementation in the Zoning By-laws. Generally, the regulatory frameworks of the Zoning By-law Amendments will need to conform to the requirements of the Thames Sydenham and Region and Kettle Creek SPPs, meaning the Amendments will need to:

- Identify the vulnerable areas in which a significant drinking water threat can occur;
- Identify the *significant* drinking water threats and require that any use or activity that is, or would be, a significant drinking water threat, conform to all applicable Source Protection Plan policies and, as such, may be prohibited, restricted or otherwise regulated by the policies contained in the Source Protection Plan; and
- Incorporate any other Amendments required to conform to the threat-specific *land use* policies identified in the SPP.

The Zoning By-law Amendments will therefore have to include the Section 57, 58 and 59 policies of the TSR and Kettle Creek SPPs and the land use policy related to septic systems in the TSR SPP, at a minimum, in addition to carrying forward the mapping of WHPAs within the two municipalities.

It is not recommended that the holding provision approach employed in the Township of Tiny be considered as a zoning implementation option for Thames Centre or Middlesex Centre given:

- The added process to remove the holding provision once a Section 59 Notice is issued;
- The potential for appeal;
- Zoning regulations can be structured to achieve the same outcome with requiring the need for a holding provision if so desired and/or required by the Source Protection Plan; and
- Challenges of removing a hold on a property that may have multiple significant drinking water threats over time.

6.0

RECOMMENDED POLICY FRAMEWORK & SCHEDULES

The Official Plan is the land use policy document that landowners, businesses, professionals, and other members of the public are most familiar with when trying to determine the policies governing the use of particular piece of land within the County. A policy framework that both properly implements the policies of the SPP and provides general information on source protection planning in the County will generate greater awareness about source protection and vulnerable areas while also conforming to the requirements of the *Clean Water Act* and the TSR and Kettle Creek SPPs.

Considering that planning decisions must conform with the significant threat policies of the Source Protection Plan, and the Source Protection Plan prevails in the case of conflict with Official Plans and Zoning By-laws, there is no need to duplicate source protection policies, or process, through the Official Plan policy framework beyond what is required by the *Clean Water Act, 2006* and the individual SPPs. Instead, the Official Plan primarily becomes a policy document that directs readers to the appropriate Source Protection Plan(s) and defers to the policies of the SPP as required.

A meeting was held with the County's Director of Planning, planning staff from Thames Centre, as well as the Risk Management Officials for Thames Centre and Middlesex Centre in the afternoon of Friday, January 13th, 2017 to discuss the analysis and recommended policy options contained in this report. The primary purpose of this meeting was to obtain input from those staff members that are primarily responsible for the implementation of Source Protection Plans and Official Plans on the recommended policy implementation options and comments on the general proposed approach to the preparation of the draft Official Plan Amendments.

The range of policy options, mapping considerations and zoning approaches were presented and discussed with staff and general agreement was expressed, with a few exceptions, for the recommendations outlined in Section 4.6 and 5.0 of this report. As such, the preferred approach for the Official Plan and Zoning Amendment frameworks were determined to be as follows:

- The County Official Plan will contain a general policy framework related to source protection planning and groundwater protection, with Source Protection Plans being implemented through the Thames Centre and Middlesex Centre Official Plans.
- To implement Section 57 and 58 policies in the Official Plan, the policy framework will defer to the Risk Management Official to determine whether a land use is prohibited or restricted and refer directly to the applicable Source Protection Plan(s)

- A Section 59 policy will be implemented in Official Plan frameworks as written in the respective Source Protection Plans as this is required by the *Clean Water Act, 2006*.
- The land use policy of the Thames Sydenham & Region Source Protection Plan will be incorporated into the Official Plans and Zoning By-laws of Thames Centre and Middlesex Centre.
- Discretionary policies of the Source Protection Plans will not be included in Official Plan Policy.
- Significant Groundwater Recharge Areas and Highly Vulnerable Aquifers will not be mapped in Official Plans.
- Existing source water protection/groundwater policies in Official Plans will be retained to the greatest extent possible. 'Best Practice' policy with respect to water resource protection, conservation and enhancement will be extended through the policy framework of all Official Plans.
- Generally, the Official Plan policy frameworks will address the requirements of Section 2.2 of the Provincial Policy Statement, 2014.
- Official Plans will contain new and/or revised schedules to identify the applicable Source Protection Plans that apply within their jurisdiction.
- Zoning By-law Amendments will reflect the draft Official Plan Amendments and be limited to Section 57, 58, 59 and land use planning policies of the respective Source Protection Plans.
- A zoning overlay approach will be used to identify WHPAs and implement new regulations in municipal Zoning By-laws.

7.0

DRAFT OFFICIAL PLAN POLICY & ZONING BY-LAW TEXT

Based on the analysis of the policies of the applicable Source Protection Plans, the requirements for amending Official Plans and Zoning By-laws under the *Clean Water Act*, the content of existing Official Plan policies, and the feedback received from the January 2017 meeting with senior planning staff and Risk Management Officials of the County, proposed first drafts of the Source Protection Plan implementing Official Plan and Zoning By-law Amendments were prepared for Middlesex County, Middlesex Centre and Thames Centre Official Plans. A new 'Source Water Protection' regulatory framework for the Middlesex Centre and Thames Centre Zoning By-laws was also prepared. A workshop was held with the Director of Planning for Middlesex County and planning staff and Risk Management Officials for the Municipalities of Middlesex Centre and Thames Centre on February 23, 2017. The primary purpose of the workshop was to obtain input from staff on the first draft of Amendments and comments on the proposed policy and regulatory frameworks. Comments on the draft Amendments were minor and were limited to word changes and definitions contained in the proposed policy and regulatory text.

Following the February Workshop, the draft policy and zoning texts were refined and finalized, taking into consideration the input received from County and municipal staff. A Preamble for the future Official Plan Amendments was also prepared. The draft amendments were then circulated to the relevant Conservation Authorities for review and comment. Comments were received from the Thames Sydenham and Region Drinking Water Source Protection Coordinator and were also minor and the amendments were revised in response to these comments. It is intended that the finalized draft Official Plan and Zoning By-law texts, which are enclosed herein as **Appendices D** and **E** respectively, will serve as the basis of consultation with the public, relevant agencies, neighbouring municipalities (as required) and applicable Source Protection Authorities, when these Amendments are brought forward for inclusion in their respective Official Plans and Zoning By-laws. Details of each proposed policy text are discussed in the following subsections.

7.1 Middlesex County

Based on the recommended policy option approaches and input from County planning staff, the proposed implementing Official Plan Policy text will:

- Remove references to the 2004 Middlesex-Elgin Groundwater Study, which formed the basis of groundwater policies contained in the County Official Plan and some local municipalities;
- Revise Policy 2.2.1.1 to include 'highly vulnerable aquifers' to the Groundwater Features that make up the County's Natural System;
- Revise Policy 2.2.1.2 to reference the protection of significant groundwater recharge areas and highly vulnerable aquifers in addition to wellhead protection areas in accordance with the Thames Sydenham & Region, Kettle Creek and Ausable-Bayfield Source Protection Plans;
- Rename Section 2.4.7 to 'Water Resource and Source Protection' and modify policy to:
 - Describe the role of the *Clean Water Act, 2006* and the process of source protection planning;
 - Identify the Source Protection Plans that apply to the County;
 - Identify the location of municipal drinking water systems in the County that are regulated by a Source Protection Plan;
 - Expand general policies to provide guidance to local municipalities to amend their Official Plans to identify vulnerable areas (wellhead protection areas); conform to the significant drinking water threat policies and threat-specific land use policies as required by applicable Source Protection Plan(s); and encourage agricultural practices that protect water resources.
- Add the following terms within the Glossary Section:
 - Assessment Report
 - Drinking Water Threat
 - Highly Vulnerable Aquifer
 - Section 59 Notice
 - Significant Drinking Water Threat
 - Significant Groundwater Recharge Area
 - Source Protection Plan
 - Vulnerable Area
 - Wellhead Protection Area
- Add a new Schedule D – Source Protection Plan Areas, which identifies the limits of the three Source Protection Plan Areas within the County to facilitate Source Protection Plan reference within the Official Plan policy text.

The Official Plan policy text for Middlesex County is enclosed as **Appendix D1**.

7.2 Thames Centre

Based on the recommended policy option approaches and input from County planning staff and the Risk Management Official, the **proposed implementing Official Plan Amendment will:**

- Modify Section 2.10 Source Water Protection to:
 - Establish a general policy framework to ensure the protection, conservation, and enhancement of water resources;

- Describe the role of the *Clean Water Act, 2006* and the process of source protection planning;
- Describe vulnerable areas (WHPAs) and associated vulnerability scores;
- List the prescribed drinking water threats;
- Defer direction to the relevant Source Protection Plan where applicable through the use of a 'notwithstanding' policy, describe determination of prohibited and restricted uses to the Risk Management Official, and include Section 59 policies;
- Include the land use policy of the Thames Sydenham & Region Source Protection Plan regarding septic systems and apply to the drinking water systems of Dorchester and Thorndale; and,
- Require the submission of a Disclosure report as part of a complete application under the *Planning Act* within WHPAs, as the discretion of the Municipality.
- Modify Policy 2.12 Minimum Distance Separation – Livestock to remove reference to groundwater and wellhead protection, as Source Protection Plans contain policies related to this significant drinking water threat.
- Delete reference to 'Areas above sensitive groundwater resources' from the table entitled "Environmental Area ("Group C" features) of Policy 3.2.3.1 Environmental Impact Studies (EIS).
- Add the following terms to the Glossary:
 - 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
 - Wellhead Protection Area
- Add a new Schedule D – Source Protection Plan Areas, which identifies the limits of the Thames Sydenham & Region and Kettle Creek Source Protection Plan Areas to facilitate Source Protection Plan reference within the Official Plan policy text.
- Modify Schedules A-12 to A-14 as follows:
 - Schedule A-12 - Dorchester Wellhead Protection Area to be renumbered to Schedule D-1 and revised to remove the WHPA-D area from the Schedule and add vulnerability scores from the mapping of the Thames Sydenham & Region Source Protection Plan;
 - Schedule A-13 - Thorndale Wellhead Protection Area to be renumbered to Schedule D-2 and revised to remove the WHPA-D area from the Schedule and add vulnerability scores from the mapping of the Thames Sydenham & Region Source Protection Plan;

- Schedule A-12 - Belmont Wellhead Protection Area to be renumbered to Schedule D-3 and revised to remove the WHPA-D area from the Schedule and add vulnerability scores from the mapping of the Kettle Creek Source Protection Plan.

The Official Plan policy text for Thames Centre is enclosed as **Appendix D2**.

The **proposed draft Zoning By-law Amendment** will establish a new Sourcewater Protection Regulatory Framework (Section 4.26) that:

- Identifies and describes the vulnerable areas (WHPAs) within the municipality and their associated vulnerability score;
- Lists the prescribed drinking water threats;
- Prohibits any land use that involves a significant drinking water threat within a vulnerable area until it is determined by the Risk Management Official that the use does not represent a significant drinking water threat or a Section 59 Notice has been issued
- Implements the septic system land use policy of the Thames Sydenham & Region Source Protection Plan.
- Adds the following terms to the Definitions:
 - Drinking Water Threat
 - Section 59 Notice
 - Septic System
 - Significant Drinking Water Threat
- Revises Schedule A mapping by including an overlay that identifies the limits of the Dorchester, Thorndale and Belmont WHPAs and associated vulnerability scores.

The Zoning By-law for Thames Centre is enclosed as **Appendix E1**.

7.3 Middlesex Centre

Based on the recommended policy option approaches and input from County planning staff and the Risk Management Official, the **proposed implementing Official Plan Amendment will:**

- Establish a new policy section – Section 9.9 Source Water Protection that:
 - Includes a general policy framework to ensure the protection, conservation, and enhancement of water resources;
 - Describes the role of the *Clean Water Act, 2006* and the process of source protection planning;
 - Describes vulnerable areas (WHPAs) within the municipality and associated vulnerability scores;
 - Lists the prescribed drinking water threats;
 - Includes a ‘notwithstanding’ policy that defers determination of prohibited and restricted uses to the Risk Management Official, the Section 59 policy of the Thames Sydenham Source Protection Plan; and

- Includes the land use policy of the Thames Sydenham & Region Source Protection Plan regarding septic systems and apply to the drinking water systems of Dorchester and Thorndale.
- Add the following terms to the Glossary:
 - 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
 - Wellhead Protection Area
- Add a new Schedule E – Source Protection Plan Areas, which identifies the limits of the Thames Sydenham & Region, Kettle Creek and Ausable-Bayfield Source Protection Plan Areas.
- Add new Schedules as follows:
 - Schedule E-1 – Melrose Wellhead Protection Area to reflect WHPA-A, -B and -C areas and associated vulnerability scores delineated for the well as identified in the Thames Sydenham & Region Source Protection Plan; and
 - Schedule E-2 – Birr Wellhead Protection Area to reflect WHPA-A, -B and -C areas and associated vulnerability scores delineated for the well as identified in the Thames Sydenham & Region Source Protection Plan.

The Official Plan text for Middlesex Centre is enclosed as **Appendix D3**.

The **proposed draft Zoning By-law Amendment** will establish a new Sourcewater Protection Regulatory Framework (Section 4.28) that:

- Identifies and describes the vulnerable areas (WHPAs) within the municipality and their associated vulnerability score;
- Lists the prescribed drinking water threats;
- Prohibits any land use that involves a significant drinking water threat within a vulnerable area until it is determined by the Risk Management Official that the use does not represent a significant drinking water threat or a Section 59 Notice has been issued
- Implements the septic system land use policy of the Thames Sydenham & Region Source Protection Plan.
- Adds the following terms to the Definitions:
 - Drinking Water Threat
 - Section 59 Notice

- Septic System
- Significant Drinking Water Threat
- Revises Schedule A mapping by including an overlay that identifies the limits of the Dorchester, Thorndale and Belmont WHPAs and associated vulnerability scores.

The Zoning By-law text for Middlesex Centre is enclosed as **Appendix E2**.

8.0

GENERAL WATER RESOURCES POLICY FRAMEWORK

As part of our review and implementation of the applicable SPP policies in Middlesex County, we have also assessed the general water resources policy framework for all municipalities within the County to ensure a consistent policy framework between those municipalities that do and do not have municipal drinking water systems that are regulated by a Source Protection Plan. The following municipalities within Middlesex County do not have municipal drinking water systems that are regulated by a Source Protection Plan:

- Adelaide Metcalfe
- Lucan Biddulph
- Strathroy-Caradoc
- Southwest Middlesex
- North Middlesex
- Village of Newbury

Section 2.2 of the Provincial Policy Statement provides the policy guidance for water resource policies of municipal Official Plans and states:

2.2.1 *Planning authorities shall protect, improve or restore the quality and quantity of water by:*

- a) using the watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development;*
- b) minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts;*
- c) identifying water resource systems consisting of ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas, which are necessary for the ecological and hydrological integrity of the watershed;*
- d) maintaining linkages and related functions among ground water features, hydrologic functions, natural heritage features and areas, and surface water features including shoreline areas;*
- e) implementing necessary restrictions on development and site alteration to:*
 - 1. protect all municipal drinking water supplies and designated vulnerable areas; and*

2. *protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions;*
 - f) *planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality;*
 - g) *ensuring consideration of environmental lake capacity, where applicable; and*
 - h) *ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.*
- 2.2.2 *Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored. Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.*

The purpose of the general water resources policy framework is to ensure that the Official Plans of all local municipalities conform to Section 2.2 of the Provincial Policy Statement, 2014. The following was undertaken to prepare draft Amendments for the above-noted local municipalities to implement a general water resources policy framework:

1. Review of existing water/groundwater/water resource policies
2. Development of a 'list' of general water resource policies, based on the 'Water' policy framework of the Provincial Policy Statement, best practices review and existing policies of local municipal Official Plans; and
3. The preparation of draft Amendments to implement the general water resource policies 'list' in local municipalities, and modify/delete irrelevant or outdated policies

The following subsections outline the approach to the preparation of the general water resources policy framework and draft Official Plan Amendments for those municipalities that do not have municipal drinking water systems regulated by a Source Protection Plan within Middlesex County.

8.1 Existing Water Resource Policies

The existing water resource policies of Adelaide Metcalfe, Lucan Biddulph, Strathroy-Caradoc, Southwest Middlesex, and North Middlesex range with respect to breadth and depth in individual Official Plans and are compared in the chart enclosed as **Table 1**. The Village of Newbury Official Plan does not currently have a water resource policy framework. Generally, the Official Plan policy frameworks can be described as:

- Referencing the Middlesex-Elgin 2004 Groundwater Study (Adelaide Metcalfe, Southwest Middlesex)
- Conform to/implement some or all of the water resource policies of the Provincial Policy Statement, 2014
- Referencing source water protection/source water protection planning under the *Clean Water Act, 2006* (Strathroy-Caradoc, Southwest Middlesex)

Table 1. Existing Water Resource Policies of Official Plans of Other Local Municipalities

Adelaide Metcalfe	Lucan Biddulph	Strathroy-Caradoc	Southwest Middlesex	North Middlesex
<p>2.11 Groundwater Management and Protection Groundwater is a major source of water for domestic, industrial, commercial and agricultural uses in the Township of Adelaide Metcalfe and it is imperative that this resource be protected in order to ensure a sustainable and safe supply to those that rely on it. The Middlesex-Elgin Groundwater Study, Final Report July 2004 shall be utilized as a reference document for maintaining and protecting Groundwater. In addition, the Township shall encourage and support development and redevelopment that:</p> <p>a) Promotes water conservation practices, including the efficient and sustainable use of water resources,</p> <p>b) Provides stormwater management practices that minimize stormwater volumes and contaminant loads.</p>	<p>5.6.1 Water Policies This Plan shall endeavour to recognize the surface water features, ground water features, hydrologic functions, and areas which are necessary for the ecological and hydrological integrity of the watershed. These features shall be identified on Schedule "D" Constraints to the Plan upon their availability.</p> <p>i. The Township shall designate surface water features and ground water features in order to protect, improve, and restore the quality and quantity of water throughout the Township.</p> <p>ii. The Township shall encourage efficient and sustainable use of water resources including water conservation, sustaining water quality, and encouraging stormwater management practices which minimize water volume and contaminant loads while using increased vegetation and pervious surface materials.</p> <p>iii. The Township shall discourage development and site alteration on or adjacent to surface water features and ground water features. Any use or activity that is, or would be, a significant drinking water threat is required to conform with all applicable source water protection plan policies and, as such, may be prohibited, restricted or otherwise regulated by those policies</p>	<p>6.2 SOURCE WATER PROTECTION Although dependency on groundwater resources to supply the needs of Strathroy and Mount Brydges ceased when connections were made to the Lake Huron Primary Supply System, the protection of these resources is significant due to the number of existing residents and businesses in the rural areas of the Municipality that rely on these resources to satisfy their drinking water needs. The protection, improvement and restoration of ground and surface water features remains a priority for the Municipality.</p> <p>6.2.1 Protection of Water Resources The Municipality shall discourage development and site alteration on or adjacent to surface water and ground water features which poses any adverse impact from a water quality and/or quantity standpoint. Any use or activity that is, or would be, a significant drinking water threat may be prohibited or restricted.</p> <p>6.2.2 Source Water Protection Plan Upon the approval of the Source Water Protection Plan (SPP) for watersheds under the jurisdiction of the St. Clair Region Conservation Authority, the Lower Thames Valley Conservation Authority and the Upper Thames River Conservation Authority having application in the Municipality, this Official Plan may be amended by refinements to existing policies which may include mapping schedules. The Clean Water Act stipulates that once the SPP is approved and in effect, all land use planning decisions shall be in conformity with the policies of the SPP that address significant drinking water threats and have regard to those policies that address low and moderate drinking water threats.</p> <p>3.4.4.2 STORMWATER MANAGEMENT PLANS Stormwater Management Plans shall be prepared for undeveloped areas prior to development to effectively control stormwater runoff. Such plans shall be prepared, where appropriate to do so, on a sub-watershed basis as opposed to a land ownership basis and shall be required under the Secondary Plan process as required in Sections 3.3.3.4, 3.3.4.13, and 3.3.8. In the preparation and evaluation of such plans, the St. Clair Region Conservation Authority shall be consulted. Plans shall be approved by the Municipality, the Conservation Authority and, where required, the Ministry of the Environment.</p>	<p>2.8 SURFACE AND GROUNDWATER RESOURCES</p> <p>2.8.1 Goals and Objectives a) To improve the quality and quantity of the Municipality's surface and groundwater water resources; b) To promote the efficient and sustainable use of the Municipality's surface and groundwater resources; c) To ensure groundwater resources remain a safe and secure source of supply for those who depend on it.</p> <p>2.8.2 WATER QUALITY AND QUANTITY The Municipality shall utilize its best efforts and co-operate with the St. Clair Region Conservation Authority and the Lower Thames River Conservation Authority to implement cost-effective measures designed to protect, improve and restore the quality and quantity of its water resources by identifying surface water features, groundwater features, hydrologic functions and natural heritage features and areas which are necessary for the ecological and hydrological integrity of the watersheds which Southwest Middlesex lies within</p> <p>2.8.3 WATER CONSERVATION The Municipality shall identify and promote water conservation practices and implement a monitoring program to ensure their effectiveness.</p> <p>2.8.4 SOURCE WATER PROTECTION The Municipality shall actively participate in the preparation and implementation of a source water protection plan in accordance with the Clean Water Act and led by the conservation authority (ies) designated for these purposes.</p> <p>2.8.5 STORMWATER MANAGEMENT The Municipality shall promote storm water management practices that minimize the volume of runoff and contaminant loads and increase or maintain the amount of vegetative and pervious surfaces. Storm water management plans shall be prepared for undeveloped areas prior to development to effectively control the quantity and quality of storm water runoff. Such plans shall be prepared, where appropriate to do so, on a sub-watershed basis as opposed to a land ownership basis. In the preparation and evaluation of such plans, the conservation authority having jurisdiction shall be consulted. All design parameters for storm water management shall be approved by the Municipality, the Ministry of Environment and the conservation authority having jurisdiction. A Certificate of Approval shall be required from the Ministry prior to construction. Wetlands shall not be used for the purposes of stormwater management.</p> <p>7.2 GROUNDWATER SUSCEPTIBILITY AREAS Certain areas of the Municipality as shown on Schedule 'G have been identified by the Middlesex – Elgin Groundwater Study (2004) as being of moderate and high susceptibility to groundwater contamination from surface related activity. Development proposals or changes in use in these areas shall be scrutinized in terms of their potential adverse impact on the groundwater and appropriate mitigating measures imposed as a condition of approval.</p>	<p>7.2.1 General The Municipality of North Middlesex contains many streams and rivers, which, among other resources, support the natural environment and the existing community. Water management issues arise from the various forms of human activity that this Plan addresses. More demands are being placed on water resources; the effects of which contribute to degraded aquatic communities, the loss of well water supply, aquifer contamination, deteriorating water quality, flooding and erosion. Integrating land management and the protection of water allows for the continuance of a healthy environment, solid economic development and healthy communities. The protection of water resources from contamination and degradation associated with certain land uses and activities is an important element to maintaining the quality of life experienced by both existing residents and businesses, and to support future growth. Water resources will be protected through the stormwater management policies of Sections 8.3.5 and 9.7.3, and any other relevant policies of this Plan. The Municipality contains two major watershed systems – Parkhill Creek, which drains lands in the northwest and central portions of the Municipality; and the Ausable River, draining lands along the easterly, southerly and extreme westerly boundaries. The Ausable Bayfield Conservation Authority manages both watersheds. Appendix B to this Plan illustrates the major watershed and associated subwatersheds in North Middlesex.</p> <p>7.2.2 Policies The following policies relate to linkages between watershed management and the Official Plan. a) The Municipality will work cooperatively with the Conservation Authority in dealing with land management issues within the Ausable River Watershed that extend beyond the Municipal boundaries. b) The Municipality will encourage both the preparation of watershed and subwatershed management plans to assist in water resource and land use planning on an ecosystem basis. Council recognizes that development and land use change within the Municipality will also require consideration of other matters such as economic and growth management factors that may not be addressed in a watershed or subwatershed plan. c) The Municipality will encourage the protection of species at risk, either aquatic or terrestrial, and species recovery strategies. The Municipality will support the implementation of the relevant findings of recovery strategies. This may include amendments to this Plan. d) The Municipality will support the Conservation Authority in the preparation and implementation of the subwatershed studies. e) The Municipality will support initiatives of the County, the Conservation Authority and other agencies in identifying strategies to protect groundwater resources. To protect groundwater resources, certain uses may be restricted in identified areas of high groundwater vulnerability. An amendment to this Plan shall be required to address any use restrictions related to the protection of groundwater resources. f) Applications for proposals requiring access to significant amounts of groundwater or surface water from streams or ponds will only be considered by the Municipality where the applicant has illustrated that the Ministry of the Environment has been consulted, and that the Ministry is considering an application for a water taking permit. For the purposes of this policy, significant means water requirements that exceed what would be usually expected to sustain normal farming practices such as those found within the Municipality. Examples of such significant water users may include (but are not limited to) the following: golf course uses, commercial water bottling operations and intensive agricultural uses. Approvals may also be required from relevant agencies. g) Applications for development that need a private water source may be required to submit a detailed hydrogeological study to determine the suitability of the lands for groundwater extraction. The hydrogeological study will be prepared to the satisfaction of the Municipality, Conservation Authority and the County, in consultation with the Province.</p> <p>8.3.5 Stormwater Servicing Further to the policies of Section 7.2 of this Plan, applications for plans of subdivision and site plans shall be supported by stormwater management reports, prepared in accordance with the policies of 9.6.5 of this Plan. It is the policy of the Municipality to: a) use stormwater management measures to manage the storage and control the flow of water to receiving watercourses; b) use stormwater management measures which prevent siltation and erosion, and do not negatively impact the water quality of receiving watercourses; c) ensure that natural heritage features are avoided and that, where appropriate, consideration is given to enhancing vegetation, wildlife habitats and corridors in and along the storm water management system and the receiving watercourses; d) Employ the best available methods in the planning, construction and eventual use of the stormwater management systems; and e) ensure that the design of stormwater management facilities consider long-term maintenance and safety requirements. Further consultation may be required with the Conservation Authority relative to its policies and priorities.</p> <p>9.7.3 Stormwater Management Studies The Municipality may require a development proponent to submit studies of stormwater runoff and its impact on the water quality and quantity of receiving watercourses, and upstream and downstream properties. The Municipality, Conservation Authority and the Ministry of the Environment shall approve Stormwater Management studies. Proposals of development shall be required to: a) Use stormwater management measures to manage the storage and controlled flow of water to receiving watercourses; b) Use stormwater management measures that prevent siltation and erosion, and do not negatively impact the water quality of receiving watercourses; c) Consider, where appropriate, enhancing the vegetation, wildlife habitats and corridors in and along the stormwater management system and the receiving watercourses; d) Employ the best available methods in the planning, construction and eventual use of the stormwater management systems; and e) Consider long-term maintenance and safety requirements in the design of the stormwater management facility(ies).</p>

Note the Village of Newbury Official Plan text was not available for review as part of this project

8.2 General Water Resource Policy Framework

Based on the existing water resource policy frameworks described in Section 7.1 above, the best practices review summarized in **Appendix B** and the policy framework of Section 2.2 of the Provincial Policy Statement, 2014, a generic water resources policy framework was developed to incorporate into the individual Official Plans. The draft generic policy framework is as follows:

Water Resources

Surface water resources, including streams, lakes, ponds and wetlands are normally protected through their inclusion within the Natural Heritage System. Groundwater sources occur throughout the Town and are an essential resource for residents and businesses. It is the intent of this Plan that all development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Specifically, it is the Town's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge; impair groundwater or surface water quality, or negatively impact municipal groundwater supply. The Town recognizes a relationship between groundwater and surface water in terms of recharge and discharge functions. The policies of this Plan are intended to address both ground water and surface water protection.

With respect to water resources, the Municipality/Township shall endeavour to:

- (1) Ensure land use decisions advance water conservation efforts and support the efficient use of water resources.*
- (2) Promote efficient and sustainable use of water resources that maintain and enhance water quantity and quality through the retention of vegetation or through re-naturalization.*
- (3) Encourage agricultural practices that protect water resources.*
- (4) Promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control.*
- (5) Identify water resource systems consisting of groundwater features, hydrologic functions, natural heritage features and areas, and surface water features, which are necessary for the ecological and hydrological integrity of the watershed.*
- (6) Maintain linkages and related functions among groundwater features, hydrologic functions, natural heritage features and areas, and surface water features.*
- (7) Protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters.*
- (8) Work cooperatively with Conservation Authorities and Provincial Ministries regarding land management issues within the watersheds of the Municipality.*
- (9) Ensure that land use planning contributes to the protection, maintenance, and enhancement of water and related resources and aquatic systems on an integrated watershed management basis.*

- (10) *Ensure that development meets provincial water quality objectives;*
- (11) *Ensure levels of wastewater treatment that are appropriate for the size, location and scale of development anticipated.*
- (12) *Protect wetlands and areas that make significant contributions to groundwater recharge.*
- (13) *Ensure the base flow needed to protect streams, fisheries and wetlands are maintained.*
- (14) *Support sustainable stormwater management practices that protect, or where feasible, enhance water quantity and quality control.*

How the generic water resource policy framework is incorporated into the individual Official Plans of Adelaide Metcalfe, Lucan-Biddulph, Strathroy-Caradoc, Southwest Middlesex, Village of Newbury and North Middlesex is dependent on the structure of the existing water policy frameworks in these documents. A new water resource policy framework was developed for each of these municipal Official Plan using the generic policy framework provided above and taking into consideration existing policy texts of each Plan. Proposed new water resource policy frameworks for each municipality are enclosed as **Appendix F**.

It is noted that the generic water resource policy framework was incorporated, as appropriate, into the new Source Protection policy frameworks for the Thames Centre and Middlesex Centre Official Plans to ensure a degree of consistency in water resource policy between all local municipal Official Plans in Middlesex County.

9.0

SUMMARY & NEXT STEPS

The proposed new Source Protection Official Plan policy frameworks and Zoning By-law texts and associated Schedules for Middlesex County, Thames Centre and Middlesex Centre are included in Appendices D and E and reflect the policy text and Schedule revisions outlined in Section 7.0 of this Report.

The County and local municipalities will be undertaking their Official Plan and Zoning By-law Source Protection Plan conformity exercises either through stand-alone Official Plan Amendments or upcoming Official Plan Reviews, within the timeframes prescribed by the Thames Sydenham and Region and Kettle Creek Source Protection Plans. The draft policy and Zoning By-law text and associated Schedules will be used as the basis for the preparation of formal Amendments to individual Official Plans and Zoning By-laws. Once prepared, the Amendments will be circulated to the public, stakeholders, agencies, Conservation Authorities and Source Protection Authorities for review and comment. All comments received on individual Amendments will be recorded and considered in the preparation of the final Amendment(s), to be brought to applicable Committees and Councils for adoption.

With respect to the water resources policy frameworks developed for the remaining local municipalities within the County and enclosed herein as Appendix F, it is anticipated that the policy text will be further refined and incorporated into Official Plans through future Official Plan Reviews or housekeeping Amendments. At that time, the public, agencies and other stakeholders will have the opportunity to review and comment on the proposed water resources policies framework for each local municipality.

We believe the proposed Official Plan and Zoning By-law Amendment text enclosed herein for Middlesex County and local municipalities appropriately implements and considers the applicable Source Protection Plans and are consistent with the Provincial Policy Statement, 2014.

Respectfully submitted,

MHBC



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APPENDIX A

Summary Chart:
Section 57 and 58 Policies of the
Thames Sydenham Region and Kettle Creek
Source Protection Plans

Threat	TSR	
Waste Disposal Site subject to ECA	PI Prohibit ¹ /RMP ²	
Waste Disposal Site not subject to ECA	Prohibit ¹ /RMP ²	
Sewage/Septic Systems - Septics	PI Prohibit/LU Prohibit	
Sewage/Septic Systems - Storage of Sewage, Sewage Treatment Plant Effluent Discharges, Sewage Treatment Plant Discharge By-pass to Surface Water	PI Prohibit	
Sewage/Septic Systems - Sanitary Sewers & Related Pipes	-	
Sewage/Septic Systems - Industrial Effluent Discharge & Combined Sewer Discharge	-	
Discharge of Stormwater from a Stormwater Management Facility	PI Prohibit	
Application of ASM	RMP	
Storage/Handling of ASM	RMP	
Application of NASM	Prohibit	
Storage/Handling of NASM	Prohibit	
Application of Commercial Fertilizer	RMP	
Storage/Handling of Commercial Fertilizer	Prohibit	
Application of Pesticide	RMP	
Storage/Handling of Pesticide	RMP/Prohibit ³	
Application of Road Salt	-	
Storage/Handling of Road Salt	Prohibit	
Storage/Handling of Snow	RMP/Prohibit ⁴	
Storage/Handling of Fuel	Prohibit	
Storage/Handling of DNAPLs	Prohibit	
Storage/Handling of Organic Solvents	Prohibit	
Management of Runoff – Aircraft De-Icing Chemicals	RMP	
Use of Land as Livestock Grazing/Pasturing Land, Outdoor Confinement Area or Farm Animal Yard	RMP	
	¹ applies to all waste categories EXCEPT waste described in clauses p, q, r, s, t, u of definition of hazardous waste, clause d of liquid industrial waste definition, and storage of hazardous or liquid industrial waste	
	² applies to waste categories noted in (1) above	
	³ Prohibit for amounts greater than 2,500 kg	
	⁴ prohibit only in aggregate operations	

Threat	TSR	
Waste Disposal Site subject to ECA	PI Prohibit/RMP	
Waste Disposal Site not subject to ECA	Prohibit/RMP	
Sewage/Septic Systems - Septics	-	
Sewage/Septic Systems - Storage of Sewage, Sewage Treatment Plant Effluent Discharges, Sewage Treatment Plant Discharge By-pass to Surface Water	PI Prohibit ¹	
Sewage/Septic Systems -Sanitary Sewers & Related Pipes	-	
Sewage/Septic Systems - Industrial Effluent Discharge & Combined Sewer Discharge	-	
Discharge of Stormwater from a Stormwater Management Facility	-	
Application of ASM	-	
Storage/Handling of ASM	-	
Application of NASM	-	
Storage/Handling of NASM	-	
Application of Commercial Fertilizer	-	
Storage/Handling of Commercial Fertilizer	-	
Application of Pesticide	-	
Storage/Handling of Pesticide	-	
Application of Road Salt	-	
Storage/Handling of Road Salt	-	
Storage/Handling of Snow	-	
Storage/Handling of Fuel	-	
Storage/Handling of DNAPLs	RMP	
Storage/Handling of Organic Solvents	-	
Management of Runoff – Aircraft De-Icing Chemicals	-	
Use of Land as Livestock Grazing/Pasturing Land, Outdoor Confinement Area or Farm Animal Yard	-	
	¹ storage of sewage only	

Threat	TSR	Kettle Creek
Waste Disposal Site subject to ECA	PI Prohibit ¹	-
Waste Disposal Site not subject to ECA	Prohibit ¹	-
Sewage/Septic Systems - Septics	-	-
Sewage/Septic Systems -Storage of Sewage, Sewage Treatment Plant Effluent Discharges, Sewage Treatment Plant Discharge By-pass to Surface Water	PI Prohibit ²	-
Sewage/Septic Systems - Sanitary Sewers & Related Pipes	-	-
Sewage/Septic Systems -Industrial Effluent Discharge & Combined Sewer Discharge	-	-
Discharge of Stormwater from a Stormwater Management Facility	-	-
Application of ASM	-	-
Storage/Handling of ASM	-	-
Application of NASM	-	-
Storage/Handling of NASM	-	-
Application of Commercial Fertilizer	-	-
Storage/Handling of Commercial Fertilizer	-	-
Application of Pesticide	-	-
Storage/Handling of Pesticide	-	-
Application of Road Salt	-	-
Storage/Handling of Road Salt	-	-
Storage/Handling of Snow	-	-
Storage/Handling of Fuel	-	-
Storage/Handling of DNAPLs	RMP	Prohibit
Storage/Handling of Organic Solvents	-	-
Management of Runoff – Aircraft De-Icing Chemicals	-	-
Use of Land as Livestock Grazing/Pasturing Land, Outdoor Confinement Area or Farm Animal Yard	-	-
	¹ applies to all waste categories EXCEPT waste described in clauses p, q, r, s, t, u of definition of hazardous waste, clause d of liquid industrial waste definition, and storage of hazardous or liquid industrial waste	
	² storage of sewage only	

APPENDIX B

Best Practices Review Summary Official Plans

Best Practices – Official Plans

The municipal implementation of Source Protection Plans is growing but continues to be relatively limited to date in Ontario despite all Source Protection Plans receiving final approval from the Ministry of Environment and Climate Change. However, some municipalities have adopted an implementing Official Plan Amendment, or incorporated Source Protection policies through recent Official Plan Reviews.

The following sections provide examples of policies and policy frameworks in place or proposed in other jurisdictions currently implementing Source Protection policies.

City of Barrie

The City of Barrie is implementing the Source Protection Plan in two phases. The first phase, undertaken in 2013, involved updating the mapping and policies of the Official Plan based on the information contained in the approved Assessment Report. The City is in the process of preparing a draft Official Plan Amendment to implement applicable Source Protection Plan policies.

The policies reviewed below are associated with the amendment resulting from the first phase of implementation.

The Official Plan currently contains policies related to the protection of Wellhead Protection Areas (WHPAs), and utilizes a Schedule overlay to delineate those areas where drinking water sources are vulnerable. Relevant policies within Section 3.5.2.3.5.1(b) require that:

- Development or site alteration that involves the storage or manufacturing of pathogens, chemicals or dense aqueous phase liquids are prohibited in vulnerable areas where they would be a significant threat;
- The expansion, alteration or redevelopment of existing uses in an area where an activity is or would be a significant threat may be permitted if the Risk Management Official (RMO) is satisfied that the threat ceases to be significant;
- A Threats and Issues Assessment (Water Quality) study is required when it is necessary to determine if a proposed development or use would be a significant threat within a vulnerable area; and
- The Zoning By-law shall prohibit or restrict land uses that involve a significant threat.

Further to the above policies, the City's Official Plan also includes policies related to the application and development process within WHPAs. Key concepts include:

- Any development, site alteration, or Planning Act proposal within a vulnerable area must include a Source Water Information Form
- A Threats and Issues Assessment – Water Quality study is required when it is necessary to determine whether a proposal would be a significant drinking water threat
- The City will seek opportunities through conditions of planning applications, development plans, community improvement plans, or other means to acquire lands, register easements or apply other methods to control activities within lands identified as WHPA-A.

- All industrial, commercial, institutional, open space and high density residential areas within vulnerable areas are subject to Site Plan Control.

Town of Innisfil

The draft new Official Plan for the Town of Innisfil includes a new policy section “Source Water Protection” to implement and conform to the South Georgian Bay Lake Simcoe Source Protection Plan. The proposed Source Water Protection policies of the new Official Plan:

- Identify and describe the vulnerable areas (WHPAs and IPZs) within the Town, and map these areas in an Appendix to an Official Plan;
- List the prescribed drinking water threats that would be prohibited in a vulnerable area where they would be a significant drinking water threat (Policy 15.4.1);
- Require preconsultation with the Risk Management Official to determine whether a proposed development or site alteration would involve a significant drinking water threat (Policy 15.4.2);
- Require the issuance of a Notice to Proceed (Section 59 Notice) in order for an application to be deemed complete;
- Implement the applicable land use planning policies of the South Georgian Bay Lake Simcoe Source Protection Plan; and
- Direct that the implementing zoning by-law shall contain an overlay zone to identify vulnerable areas.

The Innisfil approach to implementing Section 57 and 58 policies (Policy 15.4.1) is an example of a more ‘flexible’ approach. The requirement to preconsult with the Risk Management Official prior to the issuance of a Section 59 Notice (Policy 15.4.2) is a unique approach among the other municipalities reviewed and provides an example of implementing Section 59 policies, the link to complete application requirements, and how Risk Management Plans can be integrated into the process.

Niagara Region

The Niagara Peninsula Source Protection Plan was approved by the Ministry of the Environment with an effective date of October 1, 2014. Niagara Region brought forward a final recommendation report for Regional Official Plan Amendment 5 (ROPA 5) regarding source water protection policies and it was adopted by Regional Council on April 22, 2015.

Niagara Region draws its drinking water from surface water sources and as such the policy framework is limited to intake protection zones. The amendment will create a new section in the “Natural Environment” chapter of the Official Plan. Existing policies related to water resources remain unchanged.

The majority of the policy is worded similarly as those of the Source Protection Plan and therefore represent a direct implementation of the Source Protection Plan document. The policies are organized by intake protection zone (i.e. water treatment plant) similar to the Source Protection Plan and include prohibition and restriction policies for significant drinking water threats. Some of the prohibition policies reference the specific tables of circumstances where the activity or use is considered a significant drinking water threat such as policy 7.F.1.3 (DeCew Falls Water Treatment Plant):

Policy 7.F.1.3 The discharge from wastewater treatment plants or combined sewer overflows, or discharge of industrial effluent is considered a significant threat as defined under the applicable circumstances in table 22 and table 48 in Appendix C of the Assessment Report (2013). Future

combined sewers, wastewater treatment facilities, and industrial effluent systems which meet these criteria are not permitted within the DeCew Falls Intake Protection Zone 1.

This approach is not taken for uses and activities requiring Risk Management Plans.

The amendment also includes an annual reporting/monitoring policy, which outlines the content to be contained in the annual report, as well as new definitions to the definitions section. Included in the amendment are the definitions of the significant drinking water threats identified in the policies of the amendment, to be read in conjunction with the policy framework.

The Niagara Peninsula Assessment Report contained the applicable Tables of Circumstances in an Appendix to the Report.

Niagara Region's approach to prohibition represents another manner in which to address prohibited uses in the Source Protection Plan by incorporating the applicable Tables of Circumstances. Defining threats in the policy framework provides an understanding of the nature of prohibited uses and activities without the need to consult the Source Protection Plan or Assessment Report. The County may want to consider this approach as a means to provide 'lay' information to the public through a document (the Official Plan) that is most often used by the public.

Town of Midland

The South Georgian Bay Lake Simcoe Source Protection Plan was approved in 2014 and came into effect July 1, 2015. Prior to the in effect date, the Town of Midland prepared official plan and zoning by-law amendments to implement relevant SPP policies which were approved by Council on November 24, 2014. Prior to the amendment, the Official Plan contained a policy section related to groundwater resources and addressed groundwater source protection, wellhead protection areas, groundwater discharge areas and water takings. The amendment involved replacing the majority of the policies in this section with policies from the Town of Midland Source Protection Plan. Generally, the policies:

- Provide a text description of vulnerable areas and delineate wellhead protection areas on the Land Use Plan;
- List the drinking water threats regulated through the *Clean Water Act* and require the Risk Management Official to determine whether uses and activities would be a significant drinking water threat and should be prohibited or require a Risk Management Plan;
- Update existing general policies to include source protection considerations;
- Modify community design policies to address specific SPP policies;
- Add a number of on-site sewage system and stormwater management-related policies that are specific to the Town of Midland SPP;
- Incorporate a Restricted Land Use policy under Section 59 of the *Clean Water Act*, which reads as follows:

No Planning Act Application may be made and no Building Permit or Change of Use Permit under the Ontario Building Code may be issued to establish the following uses:

- *Application of agricultural source material to land*
- *Handling and storage of agricultural source material*
- *Application of non-agricultural source material*
- *Handling and storage of non-agricultural source material*

- *Application of commercial fertilizer to land*
- *Handling and storage of commercial fertilizer*
- *Application of pesticide to land*
- *Handling and storage of pesticide*
- *Application of road salt*
- *Handling and storage of road salt*
- *Storage of snow*
- *Handling and storage of fuel*
- *Handling and storage of DNAPLs*
- *Handling and storage of organic solvents*
- *Use of land for livestock grazing, pasturing land, an outdoor confinement, or farm animal yard,*

unless a Risk Management Official has issued written notice under Subsection 59(2) of the Clean Water Act and the planning approval authority or building official is satisfied that:

- a) The application complied with circumstances specified in the written notice from the Risk Management Official; and*
- b) The applicant has demonstrated that a significant drinking water threat activity designated for the purposes of Section 57 or 58 will not be engaged in, or will not be affected by the application.*

- Establishes the following policies in their Implementation and Administration section:
 - Requirements for a site plan control agreement where a use or activity may be a significant drinking water threat;
 - Education and outreach policies for individual threats grouped by broader categories (i.e. agriculture-related, chemical-related, weather-related and infrastructure-related threats)

It is noted that in the Midland approach to the implementation of SPP policies, the drinking water threats are referred to as ‘uses’ and the policy framework does not expressly prohibit uses that may be associated with prescribed drinking water threats in vulnerable areas. Instead, the policy leaves the determination of whether a use should be prohibited or requires a Risk Management Plan to the Risk Management Official. An example of the policy language with respect to prohibited uses is as follows:

7.3.2.3 The following uses and activities are prohibited in accordance with Section 57 and Section 59 of the Clean Water Act, where they are or would be a significant threat to drinking water as determined by the Risk Management Official, or another professional duly qualified through the Clean Water Act...If the Risk Management Official or another person duly qualified through the Clean Water Act determines that there is no significant risk, then a use listed above may be permitted without the need for an amendment to this Plan where such use would otherwise be permitted.

7.3.2.4 The following existing uses and activities are designated for the purpose of Section 58 of the Clean Water Act, and require a risk management plan there they are a significant drinking water threat, as determined by the Risk Management Official, or another professional duly qualified through the Clean Water Act...

The Midland policy approach provides another implementation option with respect to prohibited uses and uses requiring a Risk Management Plan that could be considered as an approach for new Source Protection policies in the County and local municipal Official Plans.

County of Lennox & Addington

The first draft of the County's Official Plan was released in November 2014; it was approved by County Council on September 30, 2015 and approved by the Ministry of Municipal Affairs and Housing with modifications on March 9, 2016. The effective date of the Official Plan is April 5, 2016.

The Official Plan contained policies for Water Resources. Contained in the Plan are policies that apply restrictions to development and site alteration in Source Protection Areas.

The Development and Site Alteration policies in Section D2.2 state the following:

- a) *Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.*
- b) *Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.*

With respect to Source Protection Plans, proposed policy D2.3.2 directs readers of the Official Plan to the relevant Source Protection Plan(s) for specific policies that may "restrict or prohibit certain existing and future land uses or activities."

Section D2.3.3 provides policies for the protection of WHPAs and IPZs and relies on 'notwithstanding' policies to indicate that uses may be prohibited or restricted. These policies read as follows:

- a) *Notwithstanding the land use activities permitted by the underlying land use designations, shown on the Schedules to this Plan, land use activities which have been identified by a Source Protection Plan as being prohibited within SPP Policy Applicable Areas shall not be permitted.*
- b) *Notwithstanding the uses permitted by the underlying land use designations shown on the Schedules to this Plan, uses/activities may only be permitted within the SPP Policy Applicable Area if the applicant demonstrates to the satisfaction of the lower tier municipality that the proposed use/activity is in conformity with the policies contained within the relevant Source Protection Plans.*

The policy framework of Section D2.3.3 also addresses existing uses as follows:

- c) *Legally existing uses that are located within a SPP Policy Applicable Area, but which are regulated by the provisions of a Source Protection Plan policy and/or are incompatible with the provisions of this section of the Official Plan may be permitted to expand subject to the policies of this Official Plan and the relevant Source Protection Plan. Such uses shall be required to undertake measures that would protect municipal drinking water sources in the SPP Policy Applicable Area.*

This policy approach represents the simplest and most straightforward implementation of relevant source protection policies through the Official Plan.

Township of Huron-Kinloss

The Township of Huron-Kinloss adopted a new Official Plan in 2016. The Source Protection policy framework of the new Plan implements the relevant policies of the Maitland Valley and Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Plans and includes the following:

- An overview of Source Protection Planning;
- The identification of vulnerable areas in the Township, including the mapping of Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas for information purposes only (i.e. no policies are provided for these vulnerable areas);
- The list of prescribed drinking water threats;
- The Section 59 and land use policies of the relevant Source Protection Plans;
- Includes the discretionary policies of the Source Protection Plans; and
- Incorporates the Zoning By-law conformity policy of the Source Protection Plans and provides guidance for the development of the implementing Zoning By-law Amendment.

Unique to other examples reviewed, the Huron-Kinloss Official Plan maps highly vulnerable aquifers (HVAs) and significant groundwater recharge areas (SGRAs) consistent with the 'vulnerable areas' definition of the Provincial Policy Statement, 2014. It is noted that Source Protection Plan conformity was undertaken as part as an Official Plan Review under the Planning Act as opposed to a stand-alone conformity amendment.

Municipality of Callander

The North Bay-Mattawa Source Protection Area Source Protection Plan was approved by the Minister of the Environment and Climate Change on March 5, 2015 and came into effect on July 1, 2015. Shortly after the plan came into effect, the Municipality of Callander approved Official Plan and Zoning By-law Amendments implementing the policies of the Source Protection Plan.

The Official Plan Amendment included establishing long term protection of drinking water through prohibitive policies where a threat was identified and the addition of a new schedule. New sections were added to the Official Plan which introduced policies relating to vulnerable areas within the municipality: Source Water Protection Zone One (SW IPZ-1), Source Water Intake Protection Zone One and Two (SW IPZ-1 and -2) and the Source Water Callander Issue Contributing Area (SW ICA). In addition to the policies, two accompanying Schedules were also introduced.

The new policy framework for the source water intake protection zones provides that:

4.21.5 *On the lands identified as hatched on Schedule "C" as Source Water Intake Protection Zone One (SW IPZ-1) the Municipality shall prohibit the future establishment of a land use that involves facilities for the storage of pesticides including the retail sale, manufacturing, processing and wholesaling thereof where the threat from the storage of pesticides is significant. Further the Municipality shall prohibit the future establishment of a salt storage facility greater than 5,000 tonnes where is stored in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt, as the threat from the open storage of road salt and, as a snow storage facility or snow dump (areas where snow is likely to be transported from offsite) where the threat from their establishment could be significant..*

4.21.6 *On the lands identified as cross-hatched on Schedule "C" as Source Water Intake Protection Zone One and Two (SW IPZ-1 and -2) the Municipality shall prohibit the future uses specifically including facilities for the storage of agricultural source material, facilities for the storage or handling of non-agricultural source material, facilities for the storage or handling of commercial fertilizer, and, the use of land as livestock grazing or pasturing land, an outdoor confinement area or farm – animal yard, as the threat from such uses would be significant.*

Furthermore, a policy with respect to Callander's issue contributing area was also added:

4.21.7 *On the lands identified as hatched on Schedule "C1" as Source Water Callander Issue Contributing Area (SW ICA), the Municipality shall prohibit the future use of land as storage of tailings from a mine or mine tailings pond, only if related to a circumstance containing phosphorus.*

The policy framework represents a direct implementation of the relevant Source Protection Plan policies.

County of Wellington

The County is a unique area with regards to source water protection as it is governed by a number of source water protection plans including Grand River; Credit Valley, Toronto and Region and Central Lake Ontario (CTC); Saugeen, Grey Sauble, Northern Bruce Peninsula; Halton Region-Hamilton Region; and Maitland Valley Source Protection Plans. In addition to ensuring that Official Plan policies conform to the applicable significant threats and land use policies set out in the individual source protection plans, the Official Plan Amendment for the County of Wellington also established a new "Communal Well Policy Area" to protect and maintain existing communal wells in the Township of Puslinch, as these wells were not assessed or addressed through Source Protection planning.

A number of new Official Plan policies were introduced as part of the amendment which was adopted by County Council on May 26, 2016. The amendment identified the vulnerable areas located in the County including Wellhead Protection Areas (WHPAs), Surface Water Intake Protection Zones (IPZs) and Issue Contributing Areas (ICAs). The amendment also provided the list of prescribed drinking water threats from the *Clean Water Act, 2006*. Applications within vulnerable areas are to be deferred to the Risk Management Official and a Section 59 Notice is required as part of a complete application.

The Amendment also incorporated the applicable land use planning policies of the five Source Protection Plans. An Appendix to the Official Plan was used to refer users to the appropriate Source Protection Plan Area within the County and therefore the appropriate land use policies of a specific Plan.

Furthermore, a number of sections of the existing County Official Plan were modified or deleted by the amendment including policies related to large-scale development on private communal or individual on-site sewage services, small scale residential development on individual on-site sewage services within WHPAs, mineral aggregate resources, communal well policies and implementation. General water resource policies were expanded to address Source Protection and matters addressed by Section 2.2 Water of the Provincial Policy Statement, 2014.

Local municipalities will be responsible for amending their respective Zoning By-laws in accordance with the applicable source protection plans.

The County of Wellington implementing Official Plan Amendment is one of the more recent examples of Source Protection Plan implementation under the Clean Water Act, 2006, having been reviewed by the Ministry of Municipal Affairs and Housing and ultimately adopted by County Council.

Town of Carleton Place

The Mississippi-Rideau Source Protection Plan was approved on August 27, 2014 and came into effect on January 1, 2015. The Source Protection Plan conformity amendment added policies regarding the Town's Intake Protection Zone (IPZ) and included the following:

- 4.3.13
- a. *All development in the IPZ 10 area designated on Schedule A must be connected to municipal services.*
 - b. *Lands shown as Intake Protection Zone on Schedule A are areas where Planning Act and Building Code Act applications shall require a clearance notice from the Risk Management Official.*
 8. *By January 1, 2016, Council shall initiate an education and outreach program for residents within the IPZ areas to raise awareness about drinking water sources and good stewardship practises. This education program shall be ongoing.*

This policy approach is a straight forward implementation of applicable Source Protection Plan policies under the Clean Water Act, 2006, and also implements a discretionary policy of the Source Protection Plan.

Municipality of Bluewater

The Municipality of Bluewater is subject to the Ausable Bayfield Source Protection Plan, which was approved by the Ministry of the Environment and Climate Change on January 19, 2015 and came into effect on April 1, 2015. As part of its Official Plan Review, the municipality incorporated new policies with respect to source water protection through a new section in the Official Plan.

The policies reference that there are four types of vulnerable areas within Huron County including Wellhead Protection Areas, Intake Protection Zones, Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas. The policies pledge to protect, improve and restore municipal drinking water resources and the components of the municipality's strategy will include the following:

- Education and Outreach;
- Prohibiting activities that are hazardous to the drinking water supply (OCWA Section 57);
- Developing and Implementing Risk Management Plans (OCWA Section 58);
- Restricted Land Use Notices (OCWA Section 59); and
- Addressing the 21 Drinking Water Threats identified in the OCWA.

The amendment also included policies with respect to private septic systems and municipal sanitary servicing on those properties located within wellhead protection areas and the vulnerability score is 10, which is a direct implementation of the land use planning policies of the Source Protection Plan.

In addition to implementing the significant threat policies of the relevant Source Protection Plan under the Clean Water Act, 2006, the Bluewater Amendment also recognizes the discretionary policies of the Ausable-Bayfield Source Protection Plan and identifies Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas in Official Plan mapping as 'vulnerable areas' under the Planning Act.

York Region

The South Georgian Bay Lake Simcoe Source Protection Plan came into effect on July 1, 2015 and the Credit Valley, Toronto and Region Central Lake Ontario Drinking Water Source Protection Plan came into effect on December 31, 2015. York Region is subject to the policies contained in both source protection plans.

In anticipation of the approved Assessment Reports and Source Protection Plans, placeholder policies were included in the ROP in 2010. As early as 2005, the York Regional Official Plan included wellhead

protection policies and mapping to be consistent with the Oak Ridges Moraine Conservation Act and the Greenbelt Act. In 2005, the policies were restricted to wellhead protection areas located on the Oak Ridges Moraine but in 2010, the policies and mapping in the ROP encompassed all wellhead protection areas to protect all municipal drinking water supplies. These were temporary measures until the Assessment Reports and subsequently the Source Protection Plans were complete.

In 2013 and in advance of the source protection plans coming into effect, staff proposed a draft amendment to the York Region Official Plan (ROP) 2010, Regional Official Plan Amendment 5, to update the mapping and policies in a number of areas. Policy amendments were required to ensure that policies implemented the mapping information found in the Assessment Reports and to improve policy wording that better reflected the intent of the Clean Water Act. In addition to the changes to the existing mapping, ROPA 5 also introduced two new maps which identified Significant Groundwater Recharge Areas and Highly Vulnerable Aquifers which were not previously identified on existing mapping.

Now that the source protection plans have been approved, a second ROPA will be required to bring the ROP into conformity with the Source Protection Plans. This Amendment has not yet been initiated.

Norfolk County

Norfolk County is a single-tier municipality and is subject to the Long Point Region Source Protection Plan. Draft amendments to the County's Official Plan and Zoning By-law have been prepared as part of the County's Source Protection Plan conformity exercise to incorporate the significant threat policies of the Long Point Region Source Protection Plan.

The draft Official Plan Amendment will update the County's existing Source Protection/Water Resource policy framework that:

- Identifies the vulnerable areas (WHPAs, IPZs and ICAs) within the County and maps each vulnerable area on a separate schedule to the Official Plan;
- Identifies the prescribed drinking water threat activities and defers the determination of whether a land use activity is a significant drinking water threat to the Risk Management Official;
- Implements the land use planning policies of the Long Point Region Source Protection Plan;
- Updates existing water resource policies with the discretionary policies of the Source Protection Plan (i.e. education and outreach, monitoring); and
- How the Official Plan is to be amended when the Source Protection Plan is reviewed and updated.

The draft Official Plan Amendment has many similar characteristics to those of other municipalities that have implemented Source Protection Plans within their jurisdiction. The Norfolk is somewhat unique in that the policy framework will implement some of the discretionary policies of the Long Point Region Source Protection Plan. It is noted that the Norfolk Official Plan contained policies regarding education and outreach and monitoring in its water resource policy section prior to undertaking the Source Protection Plan conformity exercise.

Township of Tiny

The Township of Tiny's Source Protection conformity Amendment takes a similar approach to that of the Town of Midland and expressly prohibits uses and activities involving the prescribed drinking water threats where they are or would be a significant threat to drinking water under Section 57 and 59 of the Clean Water Act. Similarly, the prescribed drinking water threats are again listed in the Official Plan policy

framework, and applied to the requirement of Risk Management Plans under Section 58 of the Clean Water Act. Determination as to whether a land use or activity is a significant drinking water threat is deferred to the Risk Management Official, or “another professional duly qualified through the *Clean Water Act*” (Policy C4.1.2 and C4.1.4). The policy framework implements the applicable significant threat and land use planning policies of the South Georgian Bay Lake Simcoe Source Protection Plan, as well as a number of discretionary policies related to education and outreach, incentives, and specific actions.

Vulnerable Areas (WHPAs) and Issue Contributing Areas (ICAs) are mapped as a policy overlay on existing Official Plan Schedules. The full extent of WHPAs, including WHPA-D areas, are mapped in the Official Plan, despite there being no significant threat policies associated with these areas.

Summary of Best Practices

Municipal approaches to the preparation of Official Plan policy frameworks to implement Source Protection Plan policies under the *Clean Water Act, 2006* varies between municipalities and is dependent on the structure of existing official plan policy and the significant threat policies of the applicable Source Protection Plan(s). With respect to specific policy approaches, the following is noted from the best practices review:

- Some municipalities take a more restrictive approach to significant drinking water threats by prohibiting or restricting specific uses in vulnerable areas, whereas others take a more permissive approach by deferring to the Risk Management Official or to the relevant Source Protection Plan in the policy framework;
- In some cases, individual significant drinking water threats are defined within the source protection policy framework or glossary of the Official Plan, whereas in others the prescribed drinking water threats are simply listed without further definition in the Official Plan;
- Land use planning policies of the relevant Source Protection Plan(s) are directly implemented through Official Plan policy text;
- A schedule is included in the Official Plan where multiple Source Protection Plans apply and is referenced in the policy text to appropriately apply different policies of multiple Source Protection Plans within one municipality;
- Some municipalities map WHPA-D areas even though there are no significant threat policies for these areas contained in Source Protection Plans;
- Vulnerable Areas (WHPAs, IPZs) are either mapped in Official Plans on dedicated Schedules or as policy overlays on existing Official Plan Schedules;
- Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas are mapped for information purposes only in Official Plans where Source Protection Plan conformity amendments are undertaken as part of an Official Plan Review;
- Required studies related to source water protection in vulnerable areas are defined or described within the framework of the Official Plan; and
- The Tables of Circumstances are cited in Official Plan policy, such as in the case of Niagara Region.

APPENDIX C

Best Practices Review Summary Zoning By-laws

Best Practices – Zoning By-laws

Only a few best practice examples of Source Protection Plan conformity Zoning By-law Amendments are currently available. As such, these examples, as well as some zoning regulations that implement existing source water protection Official Plan policies (which were established pre-*Clean Water Act*), were examined to understand what, if any, innovative regulatory approaches exist to implement source protection Official Plan policies in a general sense. Existing By-laws that took a two-tier approach to regulating uses in WHPAs were the focus of the review. The following provides examples of how new zoning regulations to implement Source Protection Plan policies could be structured and therefore inform the preparation of Source Protection conformity Zoning By-law Amendments for local municipal Zoning By-laws.

Township of Zorra

The Township of Zorra has provisions within Section 5.1.2 of Zoning By-law 35-99 related to the protection of Groundwater Recharge Areas. Through these provisions (as associated mapping of such recharge areas on their Zoning Schedules), the Township uses a two-tiered approach to protect such areas. First, permitted uses are outlined as those uses that existed as of the date of the passing of the By-law. Furthermore, all uses permitted within the underlying zone are also permitted, with the exception of a list of uses that are deemed a threat to groundwater resources.

Those uses that are restricted by the By-law, when permitted in an underlying zone, require a Disclosure Report and/or Contingency Report prior to issuing a building permit, and also require the proponent to enter into a Site Plan Control agreement.

The Zoning By-law currently implements the water resource policies of the County of Oxford, which were established pre-*Clean Water Act*.

Town of Midland

The Town of Midland has prepared a draft Zoning By-law Amendment to implement the draft policies of the new Official Plan with respect to source water protection under their respective Source Protection Plan. The amendment involves establishing a Wellhead Protection Area Overlay Zone and a regulatory framework that restricts non-residential uses or activities associated with non-residential uses that involve any of the significant drinking water threats identified in the *Clean Water Act* until it is demonstrated to the satisfaction of the Risk Management Official, or other qualified professional, that the use does not represent a significant threat to drinking water within the overlay zone.

The amendment also establishes a Wellhead Protection Area *Quantity* Overlay Zone that prohibits non-residential uses that have the potential to impact the supply of water by removing water from an aquifer without returning it to the same aquifer unless it has been demonstrated to the satisfaction of the Risk Management Official, or other qualified professional, that the use does not represent a significant threat to drinking water within the overlay zone.

The Amendment implements the Section 57, 58 and 59 policies of the Source Protection Plan, as well as applicable land use planning policies.

Town of Innisfil

Section 3.53.1 of the Town of Innisfil Zoning By-law 080-13 contains provisions that prohibit uses in wellhead protection areas and intake protection zones that are identified in the current policy framework of the Official Plan. Wellhead protection areas and intake protection zones are shown on all zoning maps that form Schedule A to the By-law as opposed to being provided on a separate schedule to the Zoning By-law.

Section 3 is the General Provisions section of the Zoning By-law.

Township of Tiny

The Township of Tiny had approved a draft Zoning By-law Amendment for comment that implements the source protection policies of the South Georgian Bay Lake Simcoe Source Protection Plan and proposed source water policies of the Township's Official Plan. A new section is to be added to the Zoning By-law through the proposed amendment that regulates or prohibits uses in source protection areas. The By-law uses an overlay zone approach to identify water quality and water quantity WHPAs and establishes a holding zone for uses involving the prescribed drinking water threats, which are listed in the amendment. The holding zone is only to be lifted upon confirmation from the Risk Management Official, or other duly qualified professional, that the use does not represent a significant drinking water threat. The same approach to the holding provision is used for drinking water quantity threats.

The overlay zone does not distinguish individual limits of WHPA-A, -B or -C areas, or associated vulnerability scores. New regulations are contained in the General Provisions section of the Zoning By-law.

Norfolk County

A draft Zoning By-law Amendment has been prepared for Norfolk County to implement the proposed Source Protection Plan conformity Official Plan Amendment and meet the statutory requirements of the *Clean Water Act, 2006*. The draft Amendment replaces the existing Wellhead Protection (Section 3.35) regulations of the By-law (note existing regulations based on the current source protection policy framework of the Official Plan, which was established pre-*Clean Water Act*, and includes the following from the draft Official Plan Amendment:

- Identifies vulnerable areas and describes vulnerability scores;
- Incorporates the Section 59 policy
- Uses the notwithstanding provision to prohibit any land use that may involve a prescribed drinking water threat until it is determined that the use does not represent a significant drinking water threat or a Section 59 Notice has been issued
- Incorporates the land use planning Source Protection Plan policies related to large and small septic systems and holding tanks.

The existing Wellhead Protection Schedule series to the Zoning By-law (Schedule B) will be replaced through the draft amendment with the mapping of vulnerable areas from the Source Protection Plan. Different line types/thicknesses are used to identify the limits of WHPA-A, B and C areas as well as IPZs. Various shades of grey tones are used to identify the vulnerability scores of the WHPAs and IPZ. WHPA limits and vulnerability scores are included in the Schedule mapping to assist in the interpretation of the proposed zoning regulations, mainly the direct implementation of land use planning policies from the Long Point Region SPP.

Source Protection regulations are contained in the General Provisions section of the Zoning By-law.

Summary

The zoning approach is generally consistent between all reviewed municipal zoning by-laws – an overlay is established, either in individual zoning maps or as a separate schedule to the By-law, and the regulatory framework applying to the overlay is contained in the General Provision section of the Zoning By-law.

The specific regulations are implementations of the Official Plan policy framework and as such are unique to individual municipalities.

The Township of Tiny takes a unique approach by establishing a holding provision on lands within vulnerable areas associated with the prescribed drinking water threats. The use of a holding provision is not recommended as it:

- Continuously requires amendments to the Zoning By-law to remove the holding provision for uses associated with prescribed drinking water threats where they do not constitute a *significant* drinking water threat, resulting in an overlap of process where such overlap is not required; and
- Puts the decision-making power to Council or Committee with respect to permitting the use, through the lifting of the holding provision, where the Risk Management Official is to determine whether the use is permitted subject to the *Clean Water Act* and applicable Source Protection Plan, provide the use is permitted by the underlying land use designation/zoning category.

Regulatory examples from the reviewed Zoning By-laws-noted By-laws that could be applied to the Zoning By-laws of local municipalities within the County include:

- The listing of the prescribed drinking water threats and deferring determination of whether use/activity is permitted to the Risk Management Official (Town of Midland and Norfolk County example);
- Direct implementation of Source Protection Plan land use planning policies; and
- Requirement of a Disclosure Report prior to the issuance of a Building Permit (Zorra example).

The recommended framework for the implementing Zoning By-law Amendment to be undertaken by local municipalities will be further assessed as the structure and content of individual Official Plan Amendments are prepared and refined in consultation with County and municipal staff.

APPENDIX D

Draft Official Plan Policy Text Source Protection Plan Implementation

1. Middlesex County
2. Municipality of Thames Centre
3. Municipality of Middlesex Centre

THE PREAMBLE

PURPOSE

The purpose of the proposed amendment is to establish a policy framework in the County Official Plan that provides direction to local area municipalities in amending their Official Plans to establish a comprehensive policy framework to protect water resources and conform to applicable Source Protection Plans that regulate their municipal drinking water sources.

Middlesex County is subject to three Source Protection Plans, being the Thames, Sydenham and Region Source Protection Plan, the Kettle Creek Source Protection Plan, and the Ausable-Bayfield Source Protection Plan.

Section 40 of the *Clean Water Act, 2006* requires municipalities to bring their Official Plan into conformity with the relevant policies and map schedules of those Source Protection Plans that regulate their municipal drinking water systems. The Municipalities of Thames Centre and Middlesex Centre have municipal drinking water systems that are regulated by the Thames, Sydenham and Region Source Protection Plan. In addition, a portion of the Wellhead Protection Area associated with the Belmont drinking water systems in the neighbouring Municipality of Central Elgin, Elgin County is located within the Municipality of Thames Centre and as such the Municipal Official Plan must also be amended to conform to the relevant policies and map schedules of the Kettle Creek Source Protection Plan that regulate this system.

Remaining municipalities within Middlesex County – being the Township of Adelaide Metcalfe, Township of Lucan Biddulph, Municipality of Northwest Middlesex, Municipality of Southwest Middlesex, Municipality of Strathroy-Caradoc, and Village of Newbury – do not have municipal drinking water systems that are regulated by a Source Protection Plan. However, the extent of existing policies related to the protection of water resources varies between the Official Plans of these municipalities. Providing direction to these municipalities for the establishment of a comprehensive water resources policy framework ensures that water resources are afforded the same level of protection across all municipalities within the County whether or not their drinking water systems are regulated by a Source Protection Plan.

This Amendment includes a new Schedule to the County Official Plan, which identifies the Source Protection Plan Area boundaries of the Thames, Sydenham and Region; Kettle Creek; and Ausable-Bayfield Source Protection Plans as they apply to Middlesex County.

LOCATION

The Amendment affects all municipalities within Middlesex County.

BACKGROUND

Section 2.2 of the Provincial Policy Statement, 2014 (PPS) establishes a policy framework that provides direction to municipalities in the protection, improvement and restoration of water quality and quantity. Vulnerable areas related to municipal drinking water resources that are delineated through the Source Protection Planning process under the *Clean Water Act, 2006* meet the definition of *designated vulnerable areas* under the PPS. Policy 2.2.1 of the PPS gives municipalities the authority to protect, improve and restore the quality and quantity of water by implementing necessary restrictions on development and site alteration.

THE POLICIES

2.2.1 Natural System

2.2.1.1 Introduction

The County's Natural System includes the following elements which, while listed separately for convenience, are inter-connected and functionally interdependent:

- Groundwater Features
 - significant groundwater recharge areas
 - highly vulnerable aquifers
 - well head protection areas

2.2.1.2 General Policies

Significant groundwater recharge areas, well head protection areas and highly vulnerable aquifers will be protected as a means of protecting groundwater and surface water from degradation. When reviewing development applications, and preparing official plans and zoning by-laws, local municipalities shall utilize information and mapping found in the Thames Sydenham & Region, Kettle Creek, and Ausable-Bayfield Source Protection Plans, as applicable. The Source Protection Areas within the County of Middlesex are shown in Schedule D to this Plan.

2.4.7 Water Resource and Source Protection

Groundwater is a major source of water for domestic, industrial, commercial and agricultural uses in Middlesex County and it is imperative that this resource be protected in order to ensure a sustainable and safe supply to meet the current and future needs of those residents and businesses that rely on it.

The *Clean Water Act, 2006* ensures the protection of municipal drinking water supplies by outlining a risk-based process on a watershed basis to identify vulnerable areas (i.e. wellhead protection areas) and associated drinking water threats through the preparation of Assessment Reports, and develop policies and programs to eliminate or reduce the risks posed by identified drinking water threats through the preparation of Source Protection Plans. This process is otherwise known as Source Protection Planning.

The science-based Assessment Report is the technical basis upon which a Source Protection Plan is prepared. The Source Protection Plan contains policies to address the drinking water threats identified in the Assessment Report. There are three Source Protection Plans that apply within the Middlesex County: Thames Sydenham and Region Source Protection Plan; Kettle Creek Source Protection Plan; and Ausable-Bayfield Source Protection Plan. The boundaries of these Source Protection Plans as they apply to Middlesex County are identified in Schedule D to the Official Plan.

Assessment Reports and Source Protection Plans may be amended from time to time in accordance with the Clean Water Act, 2006.

The Municipalities of Middlesex Centre and Thames Centre have drinking water systems that are regulated by The Thames, Sydenham and Region Source Protection Plan, whereas all municipalities within the County rely on surface and groundwater sources for a range of applications and uses.

The following general policies will provide guidance with respect to the protection and management of groundwater resources and the implementation of Source Protection Plans. To implement Source Protection Plan policies and ensure the protection, improvement and restoration of the quality and quantity of groundwater resources, local municipalities shall amend their official plans, and where required, zoning by-laws to:

- (a) promote water conservation practices, including the efficient and sustainable use of water resources;
- (b) encourage stormwater management practices that minimize stormwater volumes and contaminant loads in order to enhance water quality and quantity control,
- (c) implement restrictions on development and site alteration to protect all municipal drinking water supplies and sensitive groundwater features;
- (d) encourage agricultural practices that protect water resources;
- (e) identify the vulnerable areas in which a significant drinking water threat could occur as specified in the applicable Source Protection Plan(s); and
- (f) conform to significant drinking water threat policies and threat-specific land use policies as required by applicable Source Protection Plans(s).

The following terms are to be added to the Glossary:

ACTIVITY:

Means one or a series of related processes that occurs within a geographical area and may be related to a particular land use.

ASSESSMENT REPORT:

means a scientific-based document that forms the basis of the Source Protection Plan, by identifying vulnerable areas, assessing vulnerability, identifying source water quality issues, identifying threats to the drinking water, and assessing the risk due to threats.

DRINKING WATER THREAT:

Means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat.

HIGHLY VULNERABLE AQUIFER:

Means an aquifer on which external sources have or are likely to have a significant adverse effect, and includes the land above the aquifer.

SECTION 59 NOTICE:

Refers to the requirements under Section 59 of the Clean Water Act, which requires issuance of a notice from the Municipality's Risk Management Official before permitting an *activity* that is considered a restricted land use as identified in the *Source Protection Plan*.

SIGNIFICANT DRINKING WATER THREAT:

Means a drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk.

SIGNIFICANT GROUNDWATER RECHARGE AREA:

Means an area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an aquifer.

SOURCE PROTECTION PLAN:

Means a drinking water source protection plan prepared under the Clean Water Act, 2006. A Source Protection Plan contains policies to reduce the threats (identified in the Assessment Report) to drinking water sources.

SURFACE WATER INTAKE PROTECTION ZONE:

Means an area that is related to a surface water intake and within which it is desirable to regulate or monitor drinking water threats. (Ontario Regulation 287/07 under the Clean Water Act, 2006)

VULNERABLE AREA:

Means a significant groundwater recharge area, a highly vulnerable area, a wellhead protection area, surface water intake protection zone, or a wellhead protection area.

WELLHEAD PROTECTION AREA

Means an area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats.

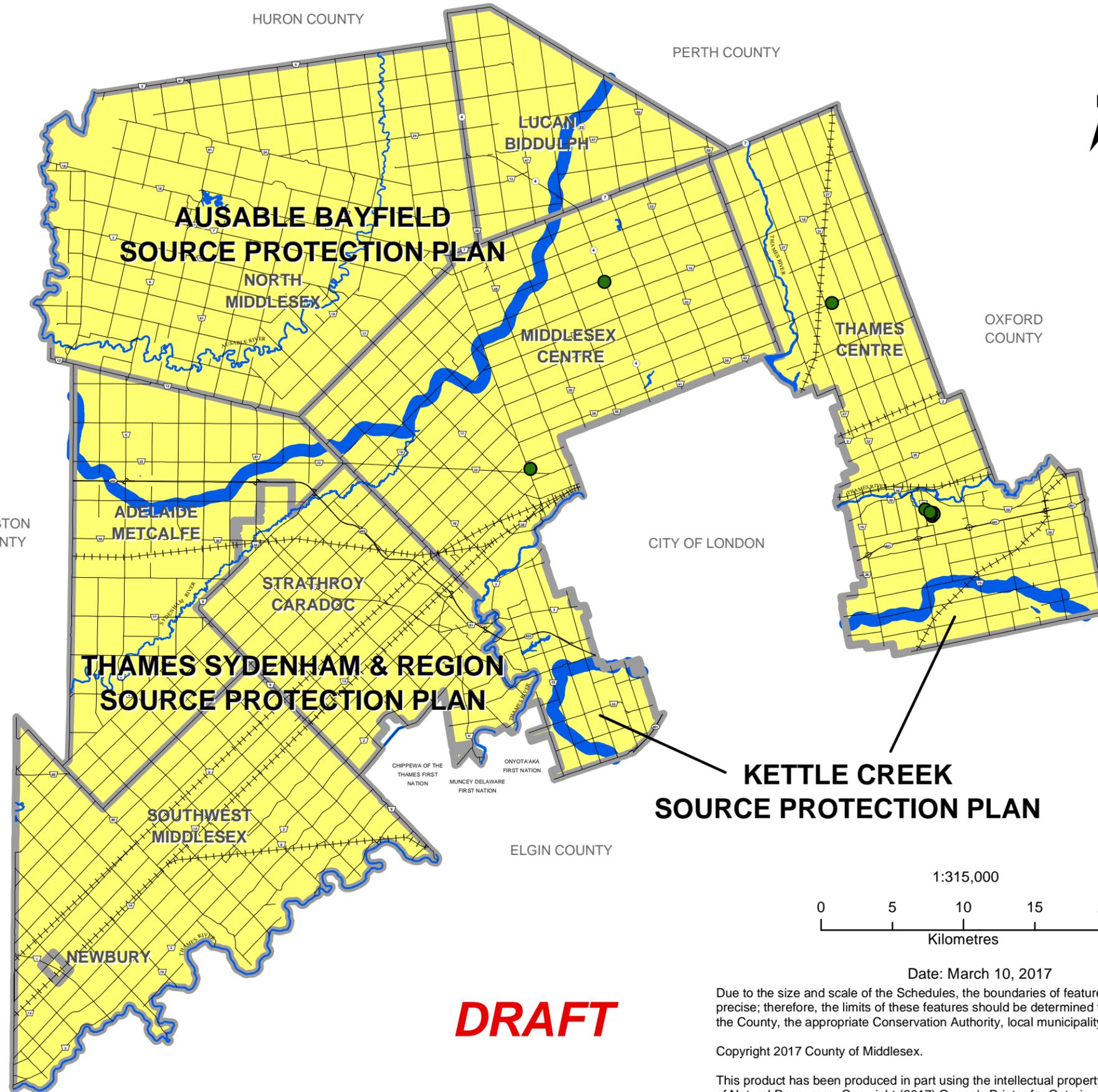


COUNTY OF MIDDLESEX
OFFICIAL PLAN
SCHEDULE D
SOURCE WATER PROTECTION
AREAS

Notations:

Schedule D
Source Water Protection Areas

-  Municipal Drinking Water Systems
-  Source Water Protection Area



DRAFT

Date: March 10, 2017

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, the appropriate Conservation Authority, local municipality and/or the Province.

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CHATHAM
- KENT

THE PREAMBLE

PURPOSE

In accordance with Section 40 of the *Clean Water Act, 2006*, the purpose of the proposed amendment is to bring the Municipal Official Plan into conformity with the relevant policies and map schedules of the Thames, Sydenham and Region and Kettle Creek Source Protection Plans as they apply to the Municipality of Thames Centre. Specifically, the Municipal Official Plan is required to conform to the applicable significant threat and land use policies set out in these Source Protection Plans.

This Amendment includes revised Schedules to the Municipal Official Plan, which identify Wellhead Protection Areas (WHPAs) for the Dorchester and Thorndale municipal water supply sources, as mapped in the Thames, Sydenham and Region Source Protection Plan as well as a portion of the Wellhead Protection Area (WHPA) for the Belmont municipality water supply source in the Municipality of Central Elgin, which extends into the Municipality of Thames Centre. A new Schedule to the Municipal Official Plan, which identifies the Source Protection Plan Area boundaries of the Thames, Sydenham and Region and Kettle Creek Source Protection Plans, as they apply to the Municipality, is also included.

LOCATION

The Wellhead Protection Areas are identified on Schedule A and affect the Thorndale and Dorchester Wellheads, two municipal drinking water supply sources in the Municipality, as well as the Belmont Wellhead, a municipal drinking water supply source in the Municipality of Central Elgin.

BACKGROUND

The *Clean Water Act, 2006* introduced a new level of protection for Ontario's drinking water resources and establishes requirements for protecting vulnerable drinking water resources at-source. The Act establishes roles and responsibilities for the Province, municipalities, and landowners in protecting drinking water resources for current and future generations. The process identified in the *Clean Water Act, 2006* is commonly referred to as 'Source Protection Planning'.

Municipalities are a key partner in Source Protection Planning and are represented on Source Protection Committees. Source Protection Committees lead the process of implementing the *Clean Water Act, 2006* through the preparation of Assessment Reports and Source Protection Plans for the areas they represent.

The preparation of Assessment Reports is required under the *Clean Water Act, 2006*, and form the scientific basis for the preparation of Source Protection Plans. Source Protection Plans contain the policies to address the drinking water threats identified in the Assessment Report. The two main objectives of Source Protection Plans are:

1. To protect existing and future drinking water sources in the source protection area; and
2. To ensure that, for every vulnerable area identified in an Assessment Report as an area where an activity is or would be a significant drinking water threat, the activity never becomes a significant drinking water threat, or if the activity is occurring when the source protection plan takes effect, the activity ceases to be a significant drinking water threat.

Vulnerable areas related to municipal drinking water resources that are delineated in Assessment Reports (i.e. Wellhead Protection Areas and Intake Protection Zones) meet the definition of *designated vulnerable areas* under the Provincial Policy Statement, 2014 (PPS). Policy 2.2.1 of the PPS gives municipalities the authority to protect, improve and restore the quality and quantity of water by implementing necessary restrictions on development and site alteration.

Numerous public information sessions and open houses were held by individual Source Protection Committees when preparing the Assessment Reports and subsequent Source Protection Plans that apply to the Municipality of Thames Centre. Sessions were also held to present and receive feedback on the proposed Source Protection Plan policies prior to final approval by the Ministry of Environment and Climate Change. Individual property owners within vulnerable areas were also notified directly by the respective Source Protection Authorities throughout the approval process of the Assessment Reports and Source Protection Plans. Additional property owner contact is conducted through the threat activity verification process and/or Risk Management planning process, as required.

THE POLICIES

2.10 SOURCE WATER PROTECTION

Thames Centre is highly dependent on groundwater for its domestic water requirements. As such, it is the intent of the Municipality that land use and activities throughout Thames Centre shall not negatively impact vulnerable areas, impair groundwater or surface water quality, overtax groundwater supply or significantly reduce groundwater recharge.

With respect to water resources, the Municipality shall endeavor to:

- (1) ensure that land use decisions advance water conservation efforts and support the efficient use of water resources;
- (2) encourage the reduction of water consumption levels through the promotion of the efficient use of water;
- (3) encourage agricultural practices that protect water resources;
- (4) promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control;
- (5) ensure that land use planning contributes to the protection, maintenance, and enhancement of water and related resources and aquatic systems on an integrated watershed management;
- (6) ensure that development meets provincial water quality objectives; and
- (7) protect surface and groundwater quality through the use of regulatory and voluntary means of prohibiting, restricting, or influencing land uses and activities within vulnerable area, and overlying vulnerable aquifers.

The Municipality recognizes and supports the need to protect municipal drinking water sources. The Clean Water Act, 2006 is intended to ensure the protection of municipal drinking water supplies by setting out a risk-based process to identify vulnerable areas and associated drinking water threats and issues through the preparation of Assessment Reports, and develop policies and programs to eliminate or reduce the risks posed by identified drinking water threats through the preparation of Source Protection Plans. This process is otherwise known as Source Protection Planning.

The science-based Assessment Report is the technical basis upon which a Source Protection Plan is prepared. The Source Protection Plan contains policies to address the drinking water threats identified in the Assessment Report. Two Source Protection Plans apply within the Municipality of Thames Centre – The Thames, Sydenham & Region Source Protection Plan and the Kettle Creek Source Protection Plan.

The boundaries of these Source Protection Plans as they apply to the Municipality are identified on Schedule D to this Plan. Assessment Reports and Source Protection Plans may be amended from time to time in accordance with the Clean Water Act, 2006.

Identified vulnerable areas within the Municipality include the Wellhead Protection Areas (WHPAs) surrounding the municipal drinking water supply wells servicing the Urban Settlement Areas of Dorchester and Thorndale as well as the Wellhead Protection Area surrounding the municipal drinking water well of Belmont in the adjacent Municipality of Central Elgin. The on- going protection of these systems from contamination will ensure a sustainable and safe water supply to meet the current and future needs of those residents, businesses and users that rely on them. Schedules D1 to D3 of this Plan identify

the vulnerable areas for each of these municipal water supply sources and their associated vulnerability score, as mapped in the applicable Source Protection Plan.

A Wellhead Protection Area is an area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats because land use activities in these areas have the potential to affect the quality of water that flows into the well. WHPAs associated with water quality are identified on Schedules D1 to D3 as Wellhead Protection Areas A, B, and C. WHPA-Ds are not identified on Schedules D1 to D3 as there are no significant drinking water threat policies identified in the applicable Source Protection Plans for these WHPAs. The time related capture zones associated with each WHPA are summarized as follows:

- a) WHPA A: 100 metre radius surrounding the well.
- b) WHPA B: 2 year travel time for water to enter the well.
- c) WHPA C: 5 year travel time for water to enter the well.

The ‘vulnerability score’ for each WHPA illustrated on Schedules D1 to D3 identifies the degree to which a WHPA within the Municipality is vulnerable to contamination. The vulnerability score of a WHPA can range from 1 to 10, with 10 being the most vulnerable. The vulnerability score is used, together with a table of drinking water threats published by the Ministry of Environment and Climate Change, to determine whether a drinking water threat is significant, moderate or low.

Land use activities which may pose a drinking water threat to municipal water supplies are defined by the Clean Water Act, 2006 as an activity or condition that adversely affects, or has the potential to adversely affect, the quality and quantity of any water that is or may be used as a source of drinking water. Drinking water threats include the following as prescribed by Ontario Regulation 287/07 of the Clean Water Act, 2006 and further defined by the circumstances outlined in the table of drinking water threats, as may be amended from time to time:

1. Waste disposal sites within the meaning of Part V of the Environmental Protection Act.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.

16. The handling and storage of a dense non-aqueous phase liquid (DNAPL).
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or surface water body without returning the water to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or farm-animal yard.

Significant drinking water threats within vulnerable areas are either prohibited or regulated by Source Protection Plan policies. The significance of a prescribed drinking water threat depends on the characteristics of the activity and where the activity is occurring within a vulnerable area. Schedule D to this Plan identifies where the Thames, Sydenham and Region and Kettle Creek Source Protection Plans apply within the Municipality.

Notwithstanding the land uses permitted by the underlying land use designation in this Plan, the following policies shall apply within vulnerable areas:

- (1) Permitted land uses that involve a significant drinking water threat within a WHPA identified in Schedules D1 to D3 to this Plan may be either prohibited or regulated by the applicable Source Protection Plan.
- (2) Within the Thames Sydenham and Region Source Protection Plan Area, an application for development, redevelopment, or site alteration for any land use, with the exception of residential uses, within a WHPA that may involve a significant drinking water threat shall only be deemed complete under the Planning Act if the Risk Management Official has issued a Section 59 Notice in accordance with the Clean Water Act, 2006, where applicable in accordance with the Thames, Sydenham and Region Source Protection Plan.
- (3) Within the Kettle Creek Source Protection Plan Area, an application for development, redevelopment, or site alteration for any land use within a WHPA that may involve a significant drinking water threat shall only be deemed complete under the Planning Act if the Risk Management Official has issued a Section 59 Notice in accordance with the Clean Water Act, 2006, where applicable in accordance with the Kettle Creek Source Protection Plan.
- (4) The Municipality's Risk Management Official shall determine whether a new land use or activity is, or involves, a significant drinking water threat in accordance with the Clean Water Act, 2006 and whether the use or activity is prohibited or regulated through a Risk Management Plan in accordance with the applicable Source Protection Plan.
- (5) The Risk Management Official may provide guidance to the Municipality in screening applications for development, redevelopment or site alteration within WHPAs.
- (6) Within the Thames Sydenham and Region Source Protection Plan Area, locating new septic systems shall be prohibited within a WHPA with a vulnerability score of 10.

This policy shall not apply to those new septic systems that are required for a municipal water supply well.

- (7) The Municipality may request a Disclosure Report as part of a complete application under the Planning Act for development, redevelopment or site alteration of non-residential uses within a Wellhead Protection Area. The report shall disclose the proposed use, details of operation, whether any prescribed drinking water threats are expected to occur on the property, and specify if any chemical substances would be used or stored on site and the measures proposed for spill containment to the satisfaction of the Risk Management Official. The report shall also include a threats inventory, a vulnerability analysis, a risk analysis and, where applicable, an analysis of risk management measures which may be applied to mitigate the risks to the drinking water sources. The Disclosure Report may be used by the Risk Management Official to determine whether proposed activities associated with a Planning Act application are prohibited or regulated by the applicable Source Protection Plan. The Disclosure Report may also be used by the Risk Management Official to prepare a Risk Management Plan, if required under Section 58 of the Clean Water Act, 2006.

The following terms are to be added to the Glossary:

Activity - means one or a series of related processes that occurs within a geographical area and may be related to a particular land use.

Assessment Report - means a scientific-based document that forms the basis of the Source Protection Plan, by identifying vulnerable areas, assessing vulnerability, identifying source water quality issues, identifying threats to the drinking water, and assessing the risk due to threats.

Drinking water threat – means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat.

Highly Vulnerable Aquifer – means an aquifer on which external sources have or are likely to have a significant adverse effect, and includes the land above the aquifer.

Risk Management Official – means the risk management official appointed under Part IV of the Clean Water Act, 2006.

Section 59 Notice - refers to the requirements under Section 59 of the Clean Water Act, which requires issuance of a notice from the Municipality's Risk Management Official before permitting an *activity* that is considered a restricted land use as identified in the *Source Protection Plan*.

Septic System - shall mean a private sewage disposal system that stores and/or treats liquid or waterborne waste of industrial, commercial or domestic origin onsite and shall include but not be limited to grey water systems, cesspools, leaching bed systems and associated treatment units and holding tanks and shall not include sewage treatment plants.

Significant Drinking Water Threat – means a drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk.

Significant Groundwater Recharge Area – means an area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an aquifer.

Source Protection Plan – means a drinking water source protection plan prepared under the Clean Water Act, 2006. A Source Protection Plan contains policies to reduce the threats (identified in the Assessment Report) to drinking water sources.

Surface Water Intake Protection Zone – means an area that is related to a surface water intake and within which it is desirable to regulate or monitor drinking water threats. (Ontario Regulation 287/07 under the Clean Water Act, 2006)

Vulnerable Area – means a significant groundwater recharge area, a highly vulnerable area, a wellhead protection area, surface water intake protection zone, or a wellhead protection area.

Wellhead Protection Area – means an area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats.

OTHER POLICY MODIFICATIONS

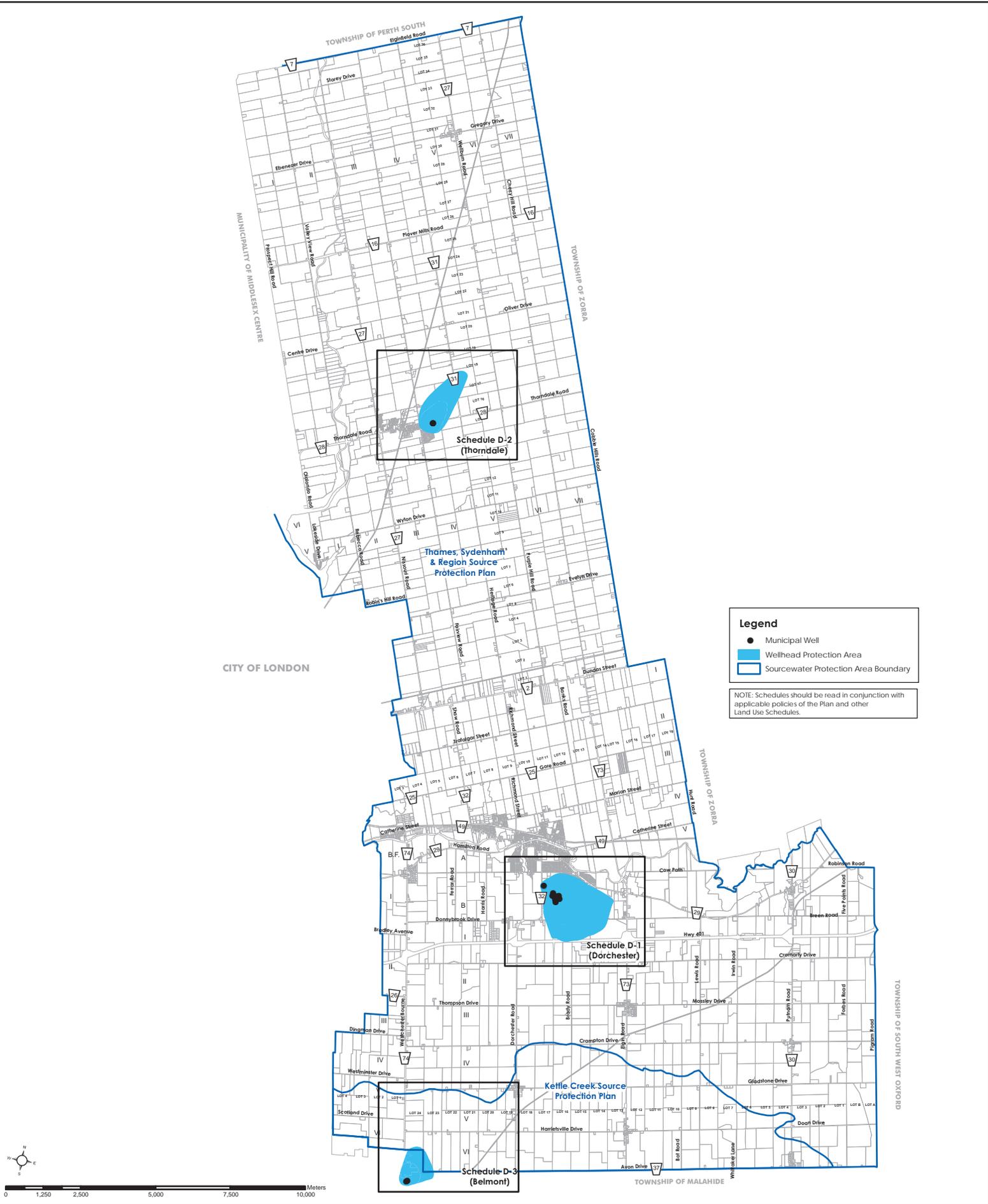
2.12 MINIMUM DISTANCE SEPARATION - LIVESTOCK

To reduce incompatibility issues such as odour and to ensure greater protection to the groundwater and wellhead areas, the Zoning By-law will ensure that a buffer area is maintained between intensive livestock operations and other sensitive uses. To achieve this, the location of new and the expansion of existing livestock operations shall comply with the appropriate minimum distance separation (MDS) formula. To ensure that appropriate separation occurs, setbacks may be used reciprocally (i.e., at the time of applications for Consent to Sever, Zoning By-law Amendments, and/or Official Plan Amendments). Livestock operations will also be protected from encroachment by residential and other types of uses in the Zoning By-law through the use of the appropriate minimum distance separation (MDS) formula.

3.2.3.1 Environmental Impact Studies (EIS)

ENVIRONMENTAL AREA ("Group C" features)				
Development and site alteration maybe permitted where compliance can be demonstrated with the objectives for natural heritage policies and natural hazard policies within Section 3.2.7				
Natural Area or Feature:	Boundaries defined by:	Development constraint within boundaries:	Extent of adjacent lands:	Development and site alteration on adjacent lands may be permitted where:
Natural corridors among Group A and/or Group B features	Watercourses, swales, fence lines, and similar linear features with predominantly natural vegetation	Development is subject to normal official plan policies	Not normally applicable. Development is not normally constrained adjacent to natural corridors.	Development within a natural corridor may be permitted where an EIS demonstrates no impacts or that impacts will be mitigated.
Flood plains, flood prone areas, areas within the 100 Year Erosion Limit, and other erosion prone areas mapped and/or regulated by a Conservation Authority	Conservation Authority regulations and/or mapping. Some natural hazards may not be mapped and, in these cases, it is the responsibility of the proponent to undertake the necessary studies to identify the hazard to the satisfaction of the Conservation Authority	Development is not permitted in flood plains, flood prone areas, and erosion prone areas unless otherwise permitted by a Conservation Authority. In general, new development is required to be located to avoid the natural hazard and avoid it. Additions to existing development or redevelopment must characterize the hazard and address it.	Minimum of 50 metres	The hazard is appropriately avoided or mitigated, does not aggravate the hazard, and safe access is available for vehicles and people.

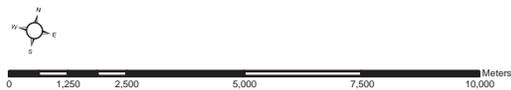
MUNICIPALITY OF THAMES CENTRE OFFICIAL PLAN



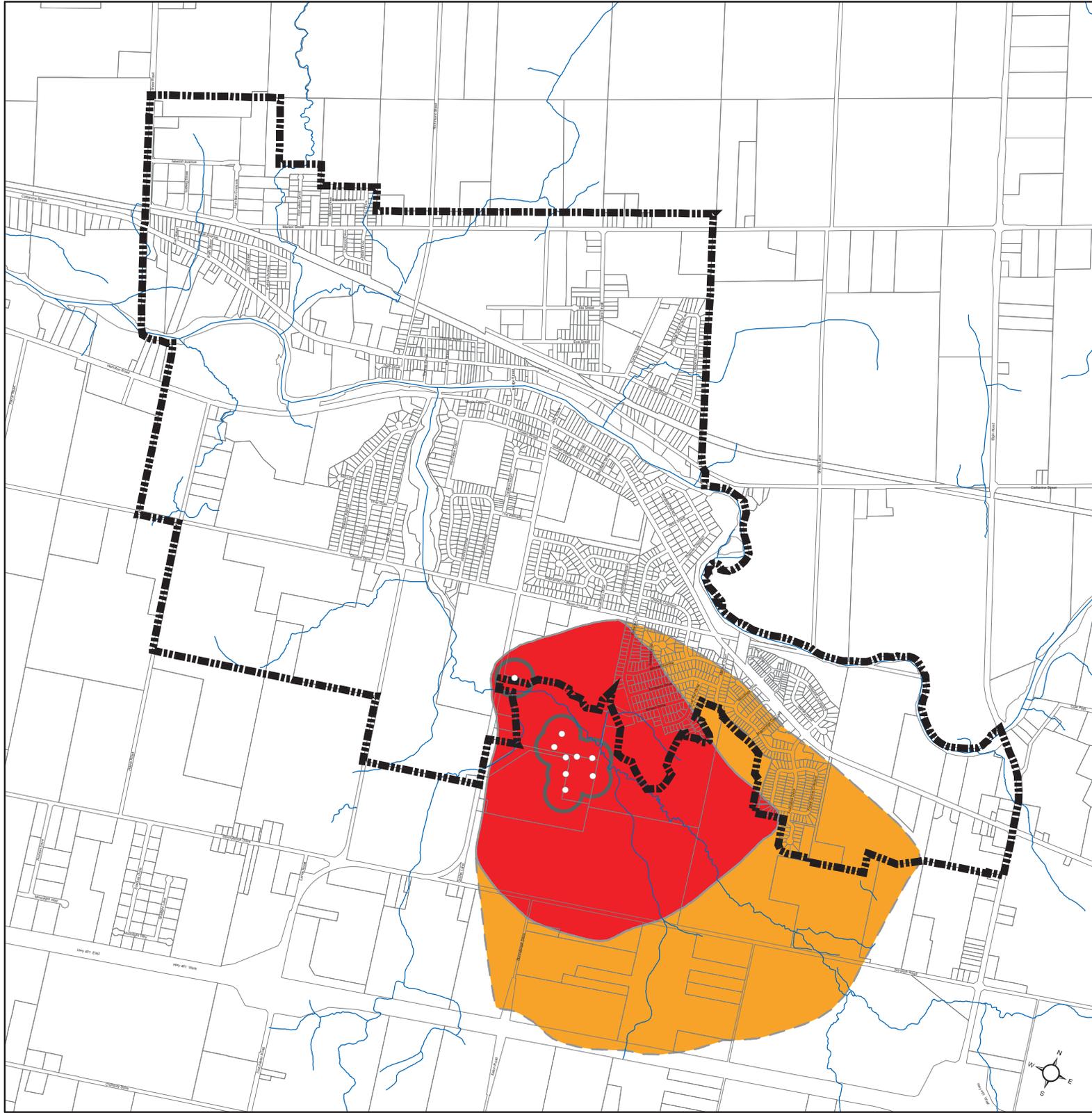
Legend

- Municipal Well
- Wellhead Protection Area
- Sourcewater Protection Area Boundary

NOTE: Schedules should be read in conjunction with applicable policies of the Plan and other Land Use Schedules.



MUNICIPALITY OF THAMES CENTRE OFFICIAL PLAN



LEGEND

Settlement Boundary Municipal Well

WELLHEAD PROTECTION AREA

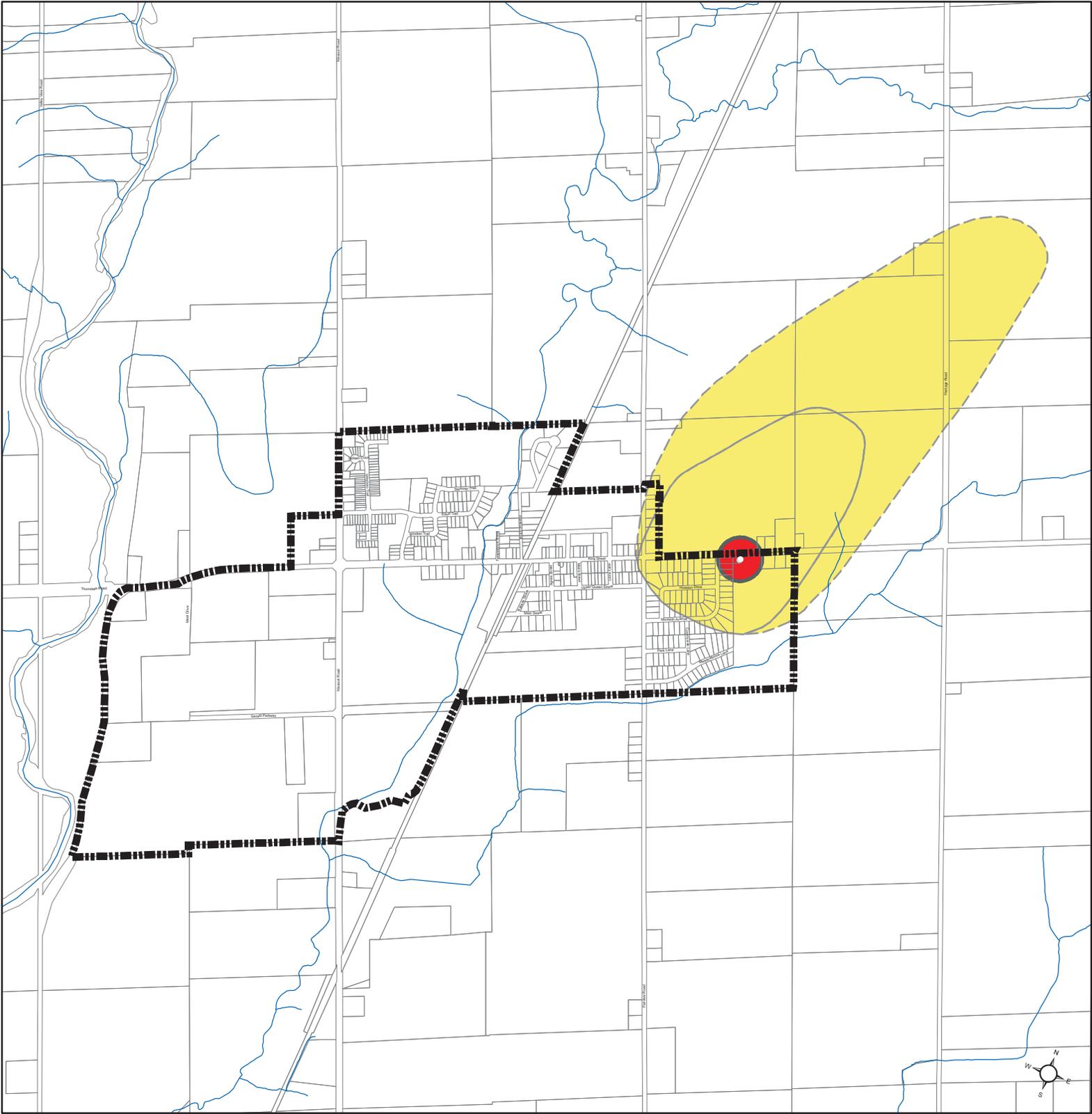
WHPA A WHPA B WHPA C

SIGNIFICANT POLICY ZONES VULNERABILITY SCORE

10 8 6 or less



MUNICIPALITY OF THAMES CENTRE OFFICIAL PLAN

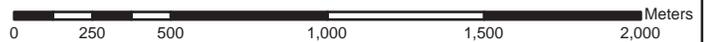


LEGEND

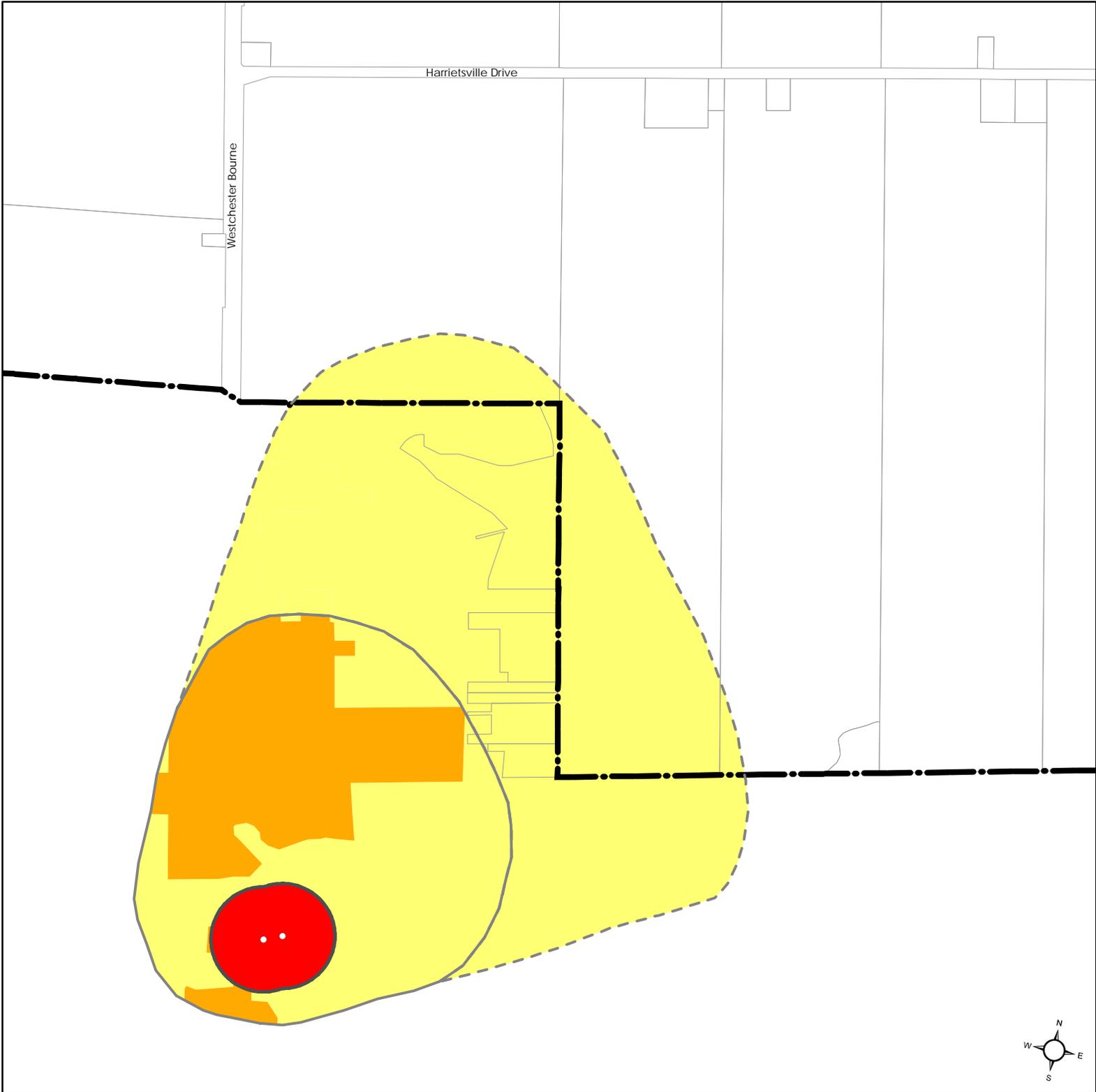
Settlement Boundary Municipal Well

WELLHEAD PROTECTION AREA
WHPA A WHPA B WHPA C

SIGNIFICANT POLICY ZONES VULNERABILITY SCORE
10 8 6 or less



MUNICIPALITY OF THAMES CENTRE OFFICIAL PLAN



LEGEND

—•— Municipal Boundary ○ Municipal Well

WELLHEAD PROTECTION AREA

█ WHPA A █ WHPA B █ WHPA C

SIGNIFICANT POLICY ZONES VULNERABILITY SCORE

█ 10 █ 8 █ 6 or less



THE PREAMBLE

PURPOSE

In accordance with Section 40 of the *Clean Water Act, 2006*, the purpose of the proposed amendment is to bring the Municipal Official Plan into conformity with the relevant policies and map schedules of the Thames, Sydenham and Region, Kettle Creek, and Ausable-Bayfield Source Protection Plans as they apply to the Municipality of Middlesex Centre. Specifically, the Municipal Official Plan is required to conform to the applicable significant threat and land use policies set out in the Thames, Sydenham and Region Source Protection Plan. It is noted that the Municipality of Bayham is also located within boundary of the Kettle Creek and Ausable-Bayfield Source Protection Plan Areas; however these Source Protection Plans do not contain policies for any municipal drinking water systems within the Municipality of Middlesex Centre.

This Amendment includes new Schedules to the Municipal Official Plan, which identify the Source Protection Plan Area boundaries of the Thames, Sydenham and Region; Kettle Creek; and Ausable-Bayfield Source Protection Plans as they apply to the Municipality and the Wellhead Protection Areas (WHPAs) for the Melrose and Birr municipal water supplies.

LOCATION

The Wellhead Protection Area identified on Schedule A affects the Melrose and Birr Wellheads, municipal drinking water supply sources in the Municipality.

BACKGROUND

The *Clean Water Act, 2006* introduced a new level of protection for Ontario's drinking water resources and establishes requirements for protecting vulnerable drinking water resources at-source. The Act establishes roles and responsibilities for the Province, municipalities, and landowners in protecting drinking water resources for current and future generations. The process identified in the *Clean Water Act, 2006* is commonly referred to as 'Source Protection Planning'.

Municipalities are a key partner in Source Protection Planning and are represented on Source Protection Committees. Source Protection Committees lead the process of implementing the *Clean Water Act, 2006* through the preparation of Assessment Reports and Source Protection Plans for the areas they represent.

The preparation of Assessment Reports is required under the *Clean Water Act, 2006*, and form the scientific basis for the preparation of Source Protection Plans. Source Protection Plans contain the policies to address the drinking water threats identified in the Assessment Report. The two main objectives of Source Protection Plans are:

1. To protect existing and future drinking water sources in the source protection area; and
2. To ensure that, for every vulnerable area identified in an Assessment Report as an area where an activity is or would be a significant drinking water threat, the activity never becomes a significant drinking water threat, or if the activity is occurring when the source protection plan takes effect, the activity ceases to be a significant drinking water threat.

Vulnerable areas related to municipal drinking water resources that are delineated in Assessment Reports (i.e. Wellhead Protection Areas) meet the definition of *designated vulnerable areas* under the Provincial Policy Statement, 2014 (PPS). Policy 2.2.1 of the PPS gives municipalities the authority to protect, improve and restore the quality and quantity of water by implementing necessary restrictions on development and site alteration.

Numerous public information sessions and open houses were held by individual Source Protection Committees when preparing the Assessment Reports and subsequent Source Protection Plans that apply to the Municipality of Middlesex Centre. Sessions were also held to present and receive feedback on the proposed Source Protection Plan policies prior to final approval by the Ministry of Environment and Climate Change. Individual property owners within vulnerable areas were also notified directly by the respective Source Protection Authorities throughout the approval process of the Assessment Reports and Source Protection Plans. Additional property owner contact is conducted through the threat activity verification process and/or Risk Management planning process, as required.

THE POLICIES

9.9 SOURCE WATER PROTECTION

Surface water sources, including streams, lakes, ponds, and wetlands are protected through their inclusion within the Natural System. Groundwater sources occur throughout the Municipality and are an essential resource for urban and rural water supplies, agricultural production and the maintenance of the natural system. It is the intent of this Plan that all development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Specifically, it is the Municipality's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge, impair groundwater or surface water quality, or negatively impact municipal groundwater supply.

Maintaining a sustainable groundwater supply is a priority to meet the needs of current and future residents. With respect to water resources, the Municipality shall endeavor to:

- (a) ensure that land use decisions advance water conservation efforts and support the efficient use of water resources;
- (b) encourage the reduction of water consumption levels through the promotion of the efficient use of water;
- (c) encourage agricultural practices that protect water resources;
- (d) promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control;
- (e) ensure that land use planning contributes to the protection, maintenance, and enhancement of water and related resources and aquatic systems on an integrated watershed management;
- (f) ensure that development meets provincial water quality objectives; and
- (g) protect surface and groundwater quality through the use of regulatory and voluntary means of prohibiting, restricting, or influencing land uses and activities within vulnerable area, and overlying vulnerable aquifers.

Middlesex Centre is dependent on groundwater and surface water for its domestic water requirements and recognizes and supports the need to protect municipal drinking water sources.

The Clean Water Act, 2006, is intended to ensure the protection of municipal drinking water supplies by setting out a risk-based process to identify vulnerable areas and associated drinking water threats and issues through the preparation of Assessments Reports; and develop policies and programs to eliminate or reduce the risks posed by identified drinking water threats through the preparation of Source Protection Plans. This process is otherwise known as Source Protection Planning.

The science-based Assessment Report is the technical basis upon which a Source Protection Plan is prepared. The Source Protection Plan contains policies to address the drinking water threats identified in the Assessment Report. There are three Source Protection Plans that apply within the Municipality of Middlesex Centre— The Thames, Sydenham & Region Source Protection Plan Area, the Ausable-Bayfield Source Protection Plan Area, and the Kettle Creek Source Protection Plan Area.

The boundaries of these Source Protection Plans as they apply to the Municipality are identified on

Schedule E to this Plan. Assessment Reports and Source Protection Plans may be amended from time to time in accordance with the Clean Water Act, 2006.

Identified vulnerable areas within the Municipality include the Wellhead Protection Areas (WHPAs) surrounding the municipal drinking water supply systems servicing the Hamlets of Melrose and Birr. The on-going protection of these systems from contamination will ensure a sustainable and safe water supply to meet the current and future needs of those residents and businesses that rely on them. Schedules E-1 and E-2 identify the vulnerable areas for these two municipal drinking water supply sources and their associated vulnerability score, as mapped in the Thames, Sydenham and Region Source Protection Plan.

A Wellhead Protection Area is an area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats because land use activities in these areas. WHPAs associated with water quality are identified on Schedules E-1 and E-2 to this Plan as Wellhead Protection Areas A, B, and C. WHPA-Ds are not identified on Schedules E-1 and E-2 as there are no significant drinking water threat policies identified in the Thames, Sydenham and Region Source Protection Plan for these WHPAs. The time related capture zones associated with each WHPA include the following:

- a) WHPA A: 100 metre radius surrounding the well.
- b) WHPA B: 2 year travel time for water to enter the well.
- c) WHPA C: 5 year travel time for water to enter the well.

The ‘vulnerability score’ for each WHPA illustrated on Schedules E-1 and E-2 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. The vulnerability score is used, together with a table of drinking water threats published by the Ministry of Environment and Climate Change, to determine whether a drinking water threat is significant, moderate or low.

Land use activities which may pose a drinking water threat to municipal water supplies are defined by the Clean Water Act, 2006 as an activity or condition that adversely affects, or has the potential to adversely affect, the quality and quantity of any water that is or may be used as a source of drinking water. Drinking water threats include the following as prescribed by Ontario Regulation 287/07 of the Clean Water Act, 2006 and further defined by the circumstances outlined in the table of drinking water threats, as may be amended:

1. Waste disposal sites within the meaning of Part V of the Environmental Protection Act.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.

11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid (DNAPL).
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or surface water body without returning the water to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or farm-animal yard.

Significant drinking water threats within the WHPAs are either prohibited or regulated by the Thames, Sydenham and Region Source Protection Plan. The significance of a prescribed drinking water threat depends on the characteristics of the activity and where the activity is occurring within the WHPA.

Notwithstanding the land uses permitted by the underlying land use designation in this Plan, the following policies shall apply within vulnerable areas:

- (1) Permitted land uses that involve a significant drinking water threat within a WHPA identified on Schedules E-1 and E-2 to this Plan may be either prohibited or regulated by the Thames, Sydenham & Region Source Protection Plan.
- (2) An application for development, redevelopment, or site alteration for any land use, with the exception of residential uses, within a WHPA that may involve a significant drinking water threat shall only be deemed complete under the Planning Act if the Risk Management Official has issued a Section 59 Notice in accordance with the Clean Water Act, 2006, where applicable in accordance with the Thames, Sydenham and Region Source Protection Plan.
- (3) The Municipality's Risk Management Official shall determine whether a new land use or activity is, or involves, a significant drinking water threat in accordance with the Clean Water Act, 2006 and whether the use or activity is prohibited or regulated through a Risk Management Plan in accordance with the Thames, Sydenham and Region Source Protection Plan.
- (4) The Risk Management Official may provide guidance to the Municipality in screening applications for development, redevelopment or site alteration within WHPAs.
- (5) Locating new septic systems shall be prohibited within a WHPA with a vulnerability score of 10. This policy shall not apply to those new septic systems that are required for a municipal water supply well.

The following definitions are to be added to the Glossary of Terms:

Activity - means one or a series of related processes that occurs within a geographical area and may be related to a particular land use.

Assessment Report - means a scientific-based document that forms the basis of the Source Protection Plan, by identifying vulnerable areas, assessing vulnerability, identifying source water quality issues, identifying threats to the drinking water, and assessing the risk due to threats.

Drinking water threat – means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat. (Clean Water Act, 2006)

Highly Vulnerable Aquifer – means an aquifer on which external sources have or are likely to have a significant adverse effect, and includes the land above the aquifer. (Ontario Regulation 287/07 under the Clean Water Act, 2006)

Risk Management Official – means the risk management official appointed under Part IV of the Clean Water Act, 2006.

Section 59 Notice - refers to the requirements under Section 59 of the Clean Water Act, which requires issuance of a notice from the Municipality's Risk Management Official before permitting an *activity* that is considered a restricted land use as identified in the *Source Protection Plan*.

Septic System - shall mean a private sewage disposal system that stores and/or treats liquid or waterborne waste of industrial, commercial or domestic origin onsite and shall include but not be limited to grey water systems, cesspools, leaching bed systems and associated treatment units and holding tanks and shall not include sewage treatment plants.

Significant drinking water threat – means a drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk. (Clean Water Act, 2006)

Significant Groundwater Recharge Area – means an area within which it is desirable to regulate or monitor drinking water threats that may affect the recharge of an aquifer. (Ontario Regulation 287/07 under the Clean Water Act, 2006)

Source Protection Plan – means a drinking water source protection plan prepared under the Clean Water Act, 2006. A Source Protection Plan contains policies to reduce the threats (identified in the Assessment Report) to drinking water sources.

Surface Water Intake Protection Zone – means an area that is related to a surface water intake and within which it is desirable to regulate or monitor drinking water threats. (Ontario Regulation 287/07 under the Clean Water Act, 2006)

Vulnerable Area – means a significant groundwater recharge area, a highly vulnerable area, a wellhead protection area, surface water intake protection zone, or a wellhead protection area. (Clean Water Act, 2006)

Wellhead Protection Area – means an area that is related to a wellhead and within which it is desirable to regulate or monitor drinking water threats. (Ontario Regulation 287/07 under the Clean Water Act,

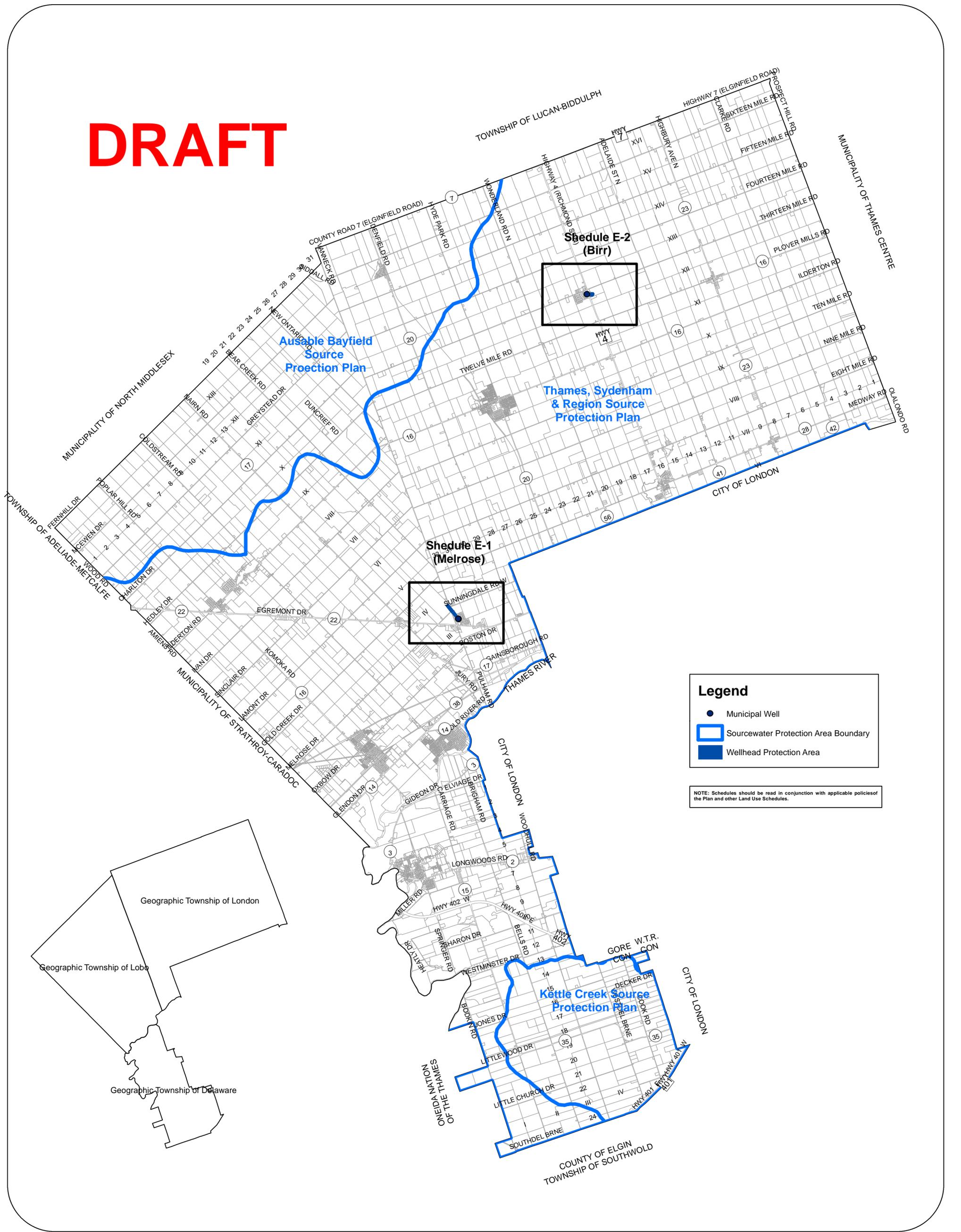
2006)



SCHEDULE 'E' - SOURCEWATER PROTECTION AREAS

MUNICIPALITY OF MIDDLESEX CENTRE OFFICIAL PLAN

DRAFT



Legend

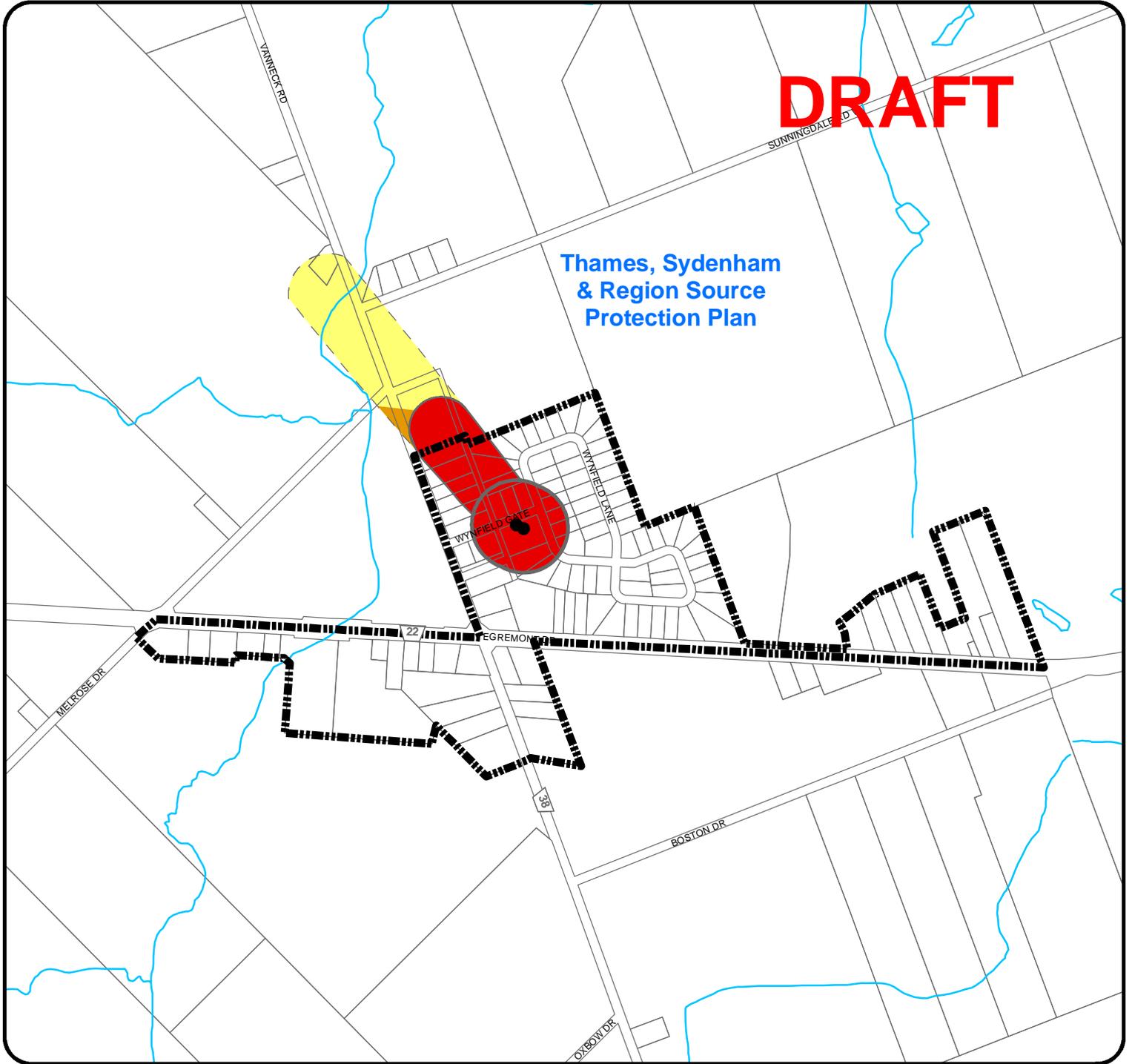
- Municipal Well
- Sourcewater Protection Area Boundary
- Wellhead Protection Area

NOTE: Schedules should be read in conjunction with applicable policies of the Plan and other Land Use Schedules.



SCHEDULE E-1: MELROSE WHPA

MUNICIPALITY OF MIDDLESEX CENTRE OFFICIAL PLAN



DRAFT

Thames, Sydenham
& Region Source
Protection Plan

WYFIELD GATE

LEGEND

Settlement Boundary
 Municipal Well

WELLHEAD PROTECTION AREA

WHPA A
 WHPA B
 WHPA C

SIGNIFICANT POLICY ZONES VULNERABILITY SCORE

10
 8
 6 or less

NOTE: Schedules should be read in conjunction with applicable policies of the Plan and other Schedules

SCALE 1:12,500

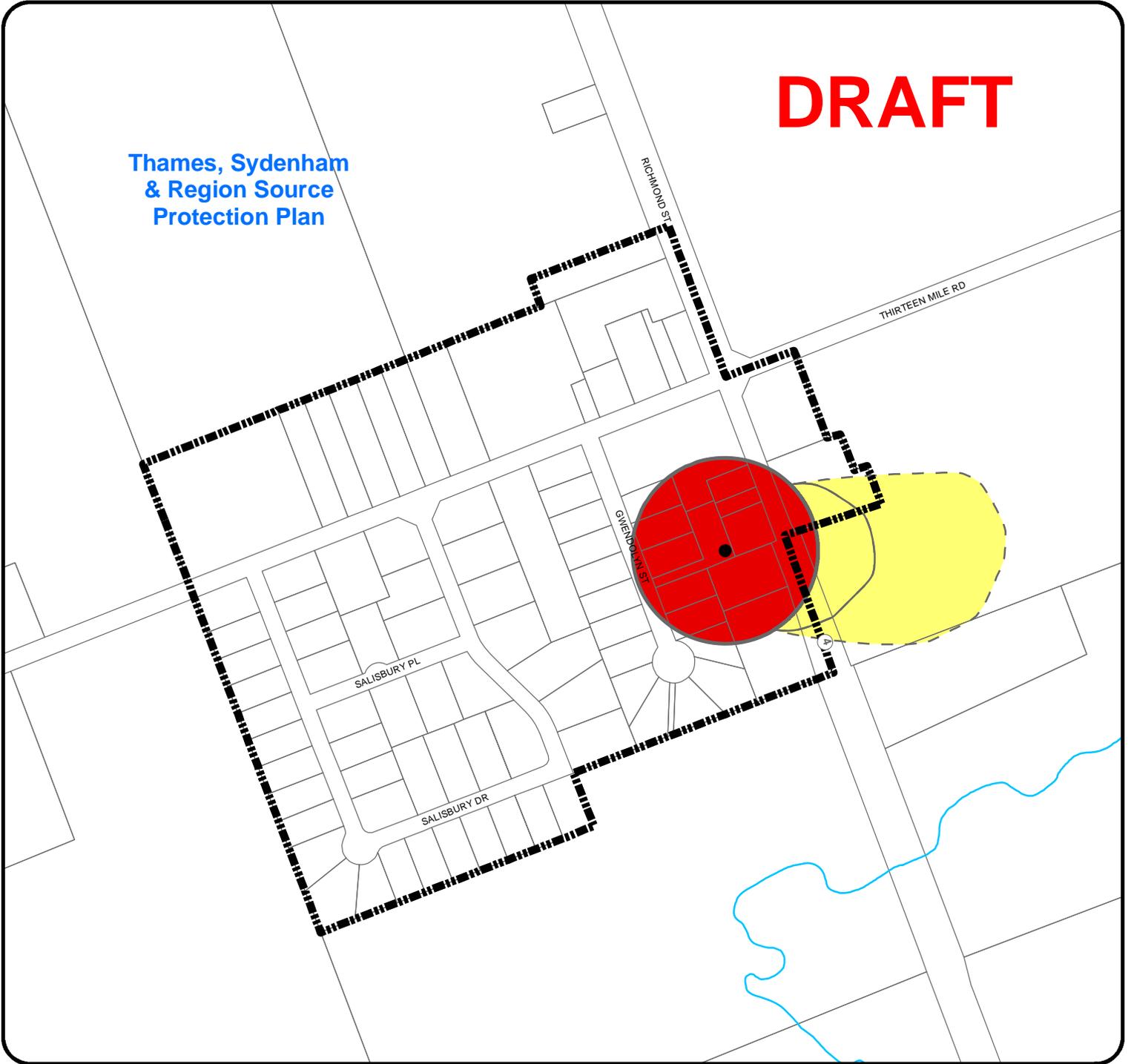


SCHEDULE E-2: BIRR WHPA

MUNICIPALITY OF MIDDLESEX CENTRE OFFICIAL PLAN

DRAFT

Thames, Sydenham
& Region Source
Protection Plan



LEGEND

- Settlement Boundary
- Municipal Well

WELLHEAD PROTECTION AREA

- WHPA A
- WHPA B
- WHPA C

SIGNIFICANT POLICY ZONES VULNERABILITY SCORE

- 10
- 8
- 6 or Less

NOTE: Schedules should be read in conjunction with applicable policies of the Plan and other Schedules

SCALE 1:6,000



APPENDIX E

Draft Zoning By-law Text Source Protection Plan Implementation

1. Municipality of Thames Centre
2. Municipality of Middlesex Centre

4.26 SOURCEWATER PROTECTION

4.26.1 IDENTIFICATION OF VULNERABLE AREAS

- 1) Vulnerable Areas shown on Schedule A to this By-law represent Wellhead Protection Areas (WHPAs) and the associated level of vulnerability for municipal water sources serving the Municipality as well as Central Elgin in Elgin County.
- 2) A WHPA illustrates three time-related capture zones including a 100-metre radius surrounding the well (WHPA-A), 2 year travel time for water to enter the well (WHPA-B), and 5 year travel time for water to enter the well (WHPA-C).
- 3) The degree of vulnerability of a WHPA is represented in Schedule A by a vulnerability score. The vulnerability score can range from 1 to 10, with 10 being the most vulnerable.

4.26.2 USE PROHIBITIONS AND REGULATIONS WITHIN VULNERABLE AREAS

- 1) Notwithstanding the land uses permitted by the underlying zone category in this By-law, any land use, except a solely residential land use within the Thames, Sydenham and Region Source Protection Area, that involves one of the following significant drinking water threats activities within vulnerable areas identified on Schedule A to this By-law, shall be prohibited until it is determined by the Municipality's Risk Management Official that the use does not represent a significant drinking water threat or a Section 59 Notice has been issued in accordance with the Clean Water Act, 2006:
 - i. Waste disposal sites within the meaning of Part IV of the Environmental Protection Act.
 - ii. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
 - iii. The application of agricultural source material to land.
 - iv. The storage of agricultural source material.
 - v. The management of agricultural source material.
 - vi. The application of non-agricultural source material to land.
 - vii. The handling and storage of non-agricultural source material.
 - viii. The application of commercial fertilizer to land.
 - ix. The handling and storage of commercial fertilizer.
 - x. The application of pesticide to land.
 - xi. The handling and storage of pesticide.

- xii. The application of road salt.
- xiii. The handling and storage of road salt.
- xiv. The storage of snow.
- xv. The handling and storage of fuel.
- xvi. The handling and storage of a dense non-aqueous phase liquid (excluding incidental volumes for personal/domestic use).
- xvii. The handling and storage of an organic solvent.
- xviii. The management of runoff that contains chemicals used in the de-icing of aircraft.
- xix. The use of land as livestock grazing or pasturing land, an outdoor confinement area or farm-animal yard.
- xx. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
- xxi. An activity that reduces the recharge of an aquifer.

4.26.3 SEPTIC SYSTEMS WITHIN VULNERABLE AREAS

- 1) Notwithstanding any other provision of this By-law to the contrary, the following shall apply to WHPAs with a vulnerability score of 10 as identified on Schedule A:
 - i. Any use, building or structure that requires a new septic system to be located within a WHPA with a vulnerability score of 10 shall be prohibited.
 - ii. 4.26.3 1) i. shall not apply to new septic systems required for a municipal water supply well.

The following terms are to be added to “Section 2. Definitions”:

DRINKING WATER THREAT, means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat.

SECTION 59 NOTICE, refers to the requirements under Section 59 of the Clean Water Act, which requires issuance of a notice from the Municipality’s Risk Management Official before permitting an activity that is considered a restricted land use as identified in the Thames Sydenham & Region or Kettle Creek Source Protection Plan, whichever is applicable.

SEPTIC SYSTEM - shall mean a private sewage disposal system that stores and/or treats liquid or waterborne waste of industrial, commercial or domestic origin onsite and shall include but not be limited to grey water systems, cesspools, leaching bed systems and associated treatment units and holding tanks and shall not include sewage treatment plants.

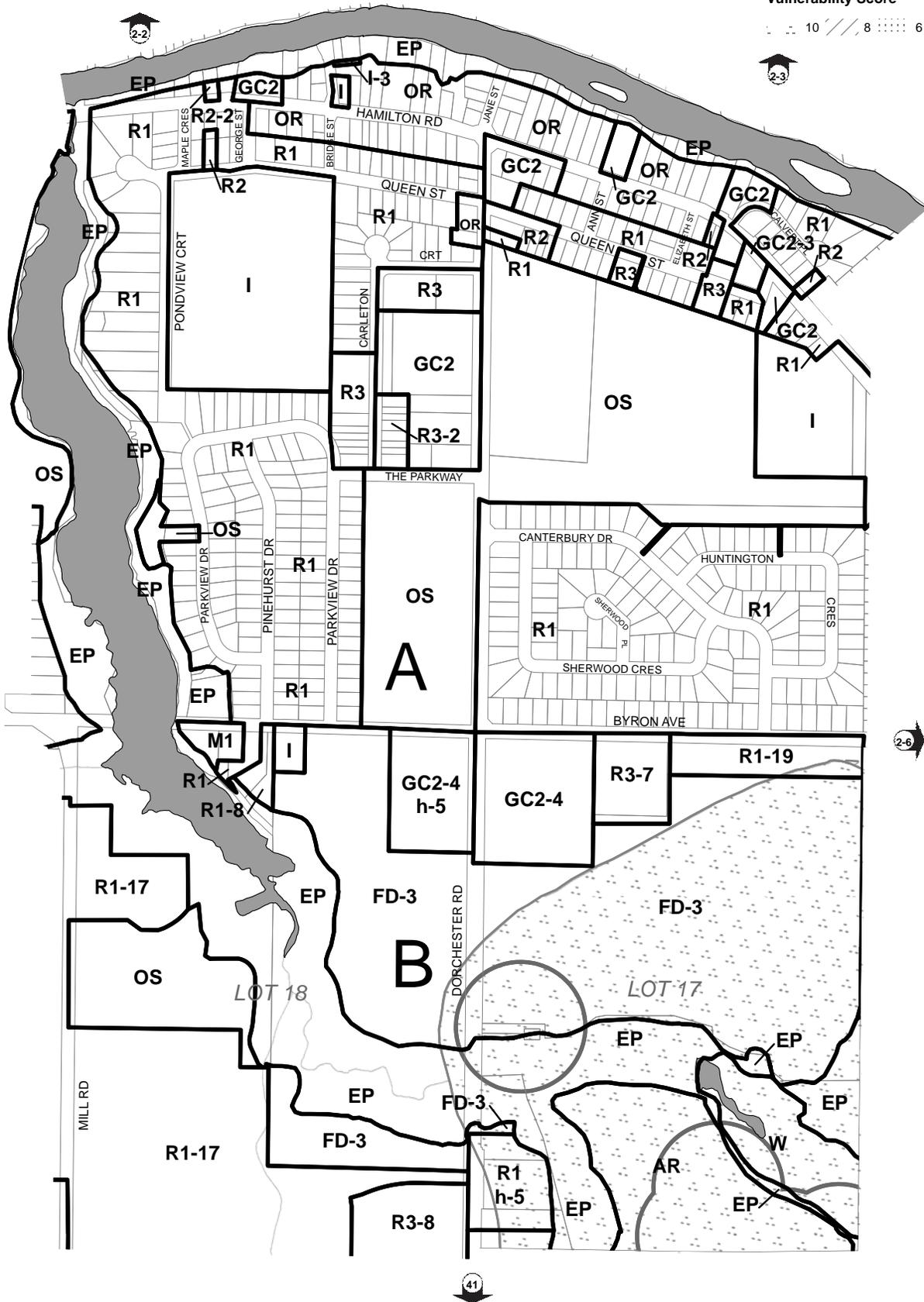
SIGNIFICANT DRINKING WATER THREAT, means a drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk.

Wellhead Protection Area

WHPA A | WHPA B | WHPA C

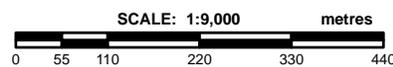
Vulnerability Score

10 | 8 | 6 or less



MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

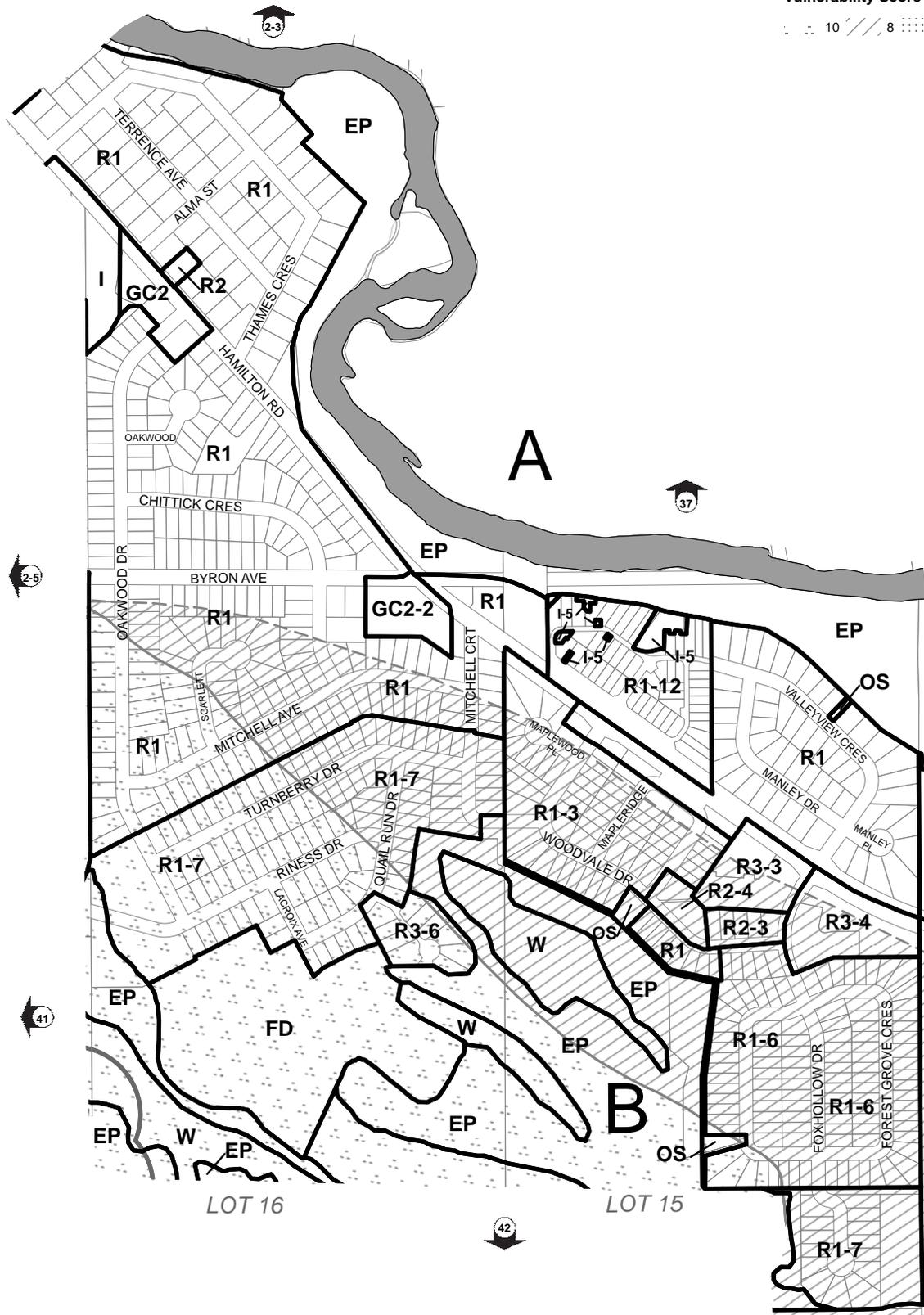
2-5

Wellhead Protection Area

WHPA A | WHPA B | WHPA C

Vulnerability Score

10 | 8 | 6 or less



MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

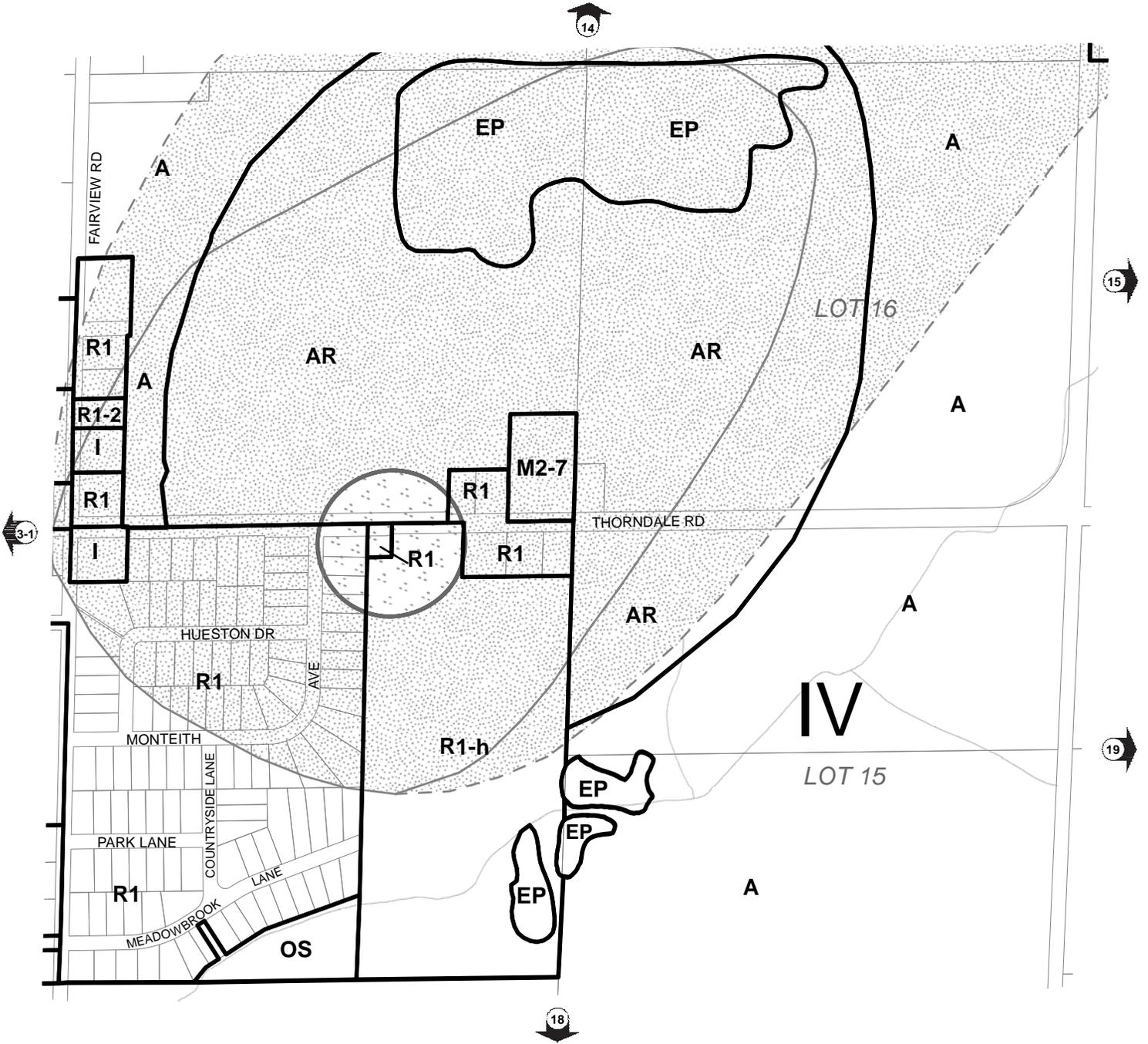
2-6

Wellhead Protection Area

WHPA A WHPA B WHPA C

Vulnerability Score

10 8 6 or less



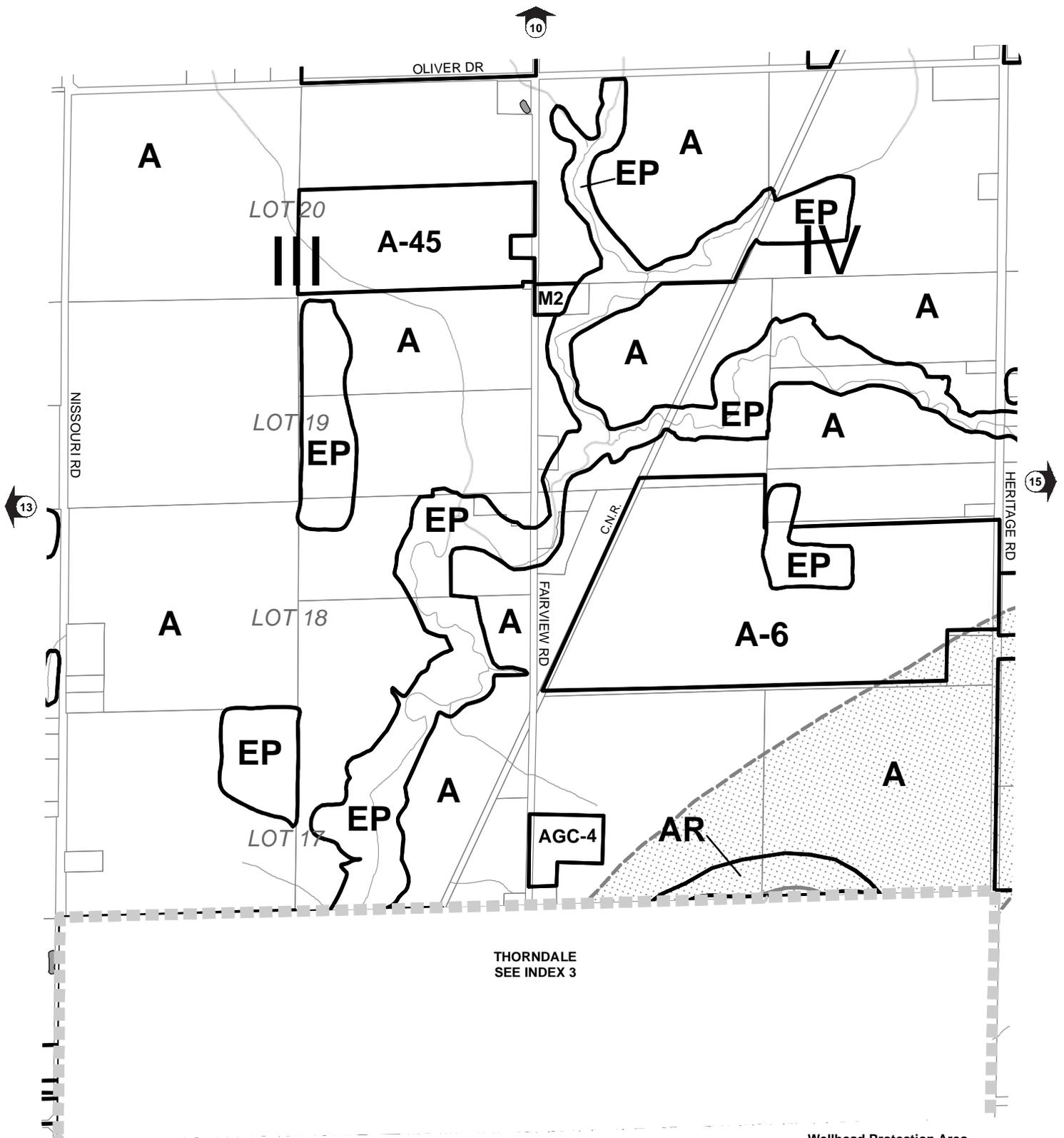
MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

3-2



THORNDALE
SEE INDEX 3

Wellhead Protection Area

- WHPA A
- WHPA B
- WHPA C

Vulnerability Score

- 10
- 8
- 6 or less



MUNICIPALITY OF THAMES CENTRE

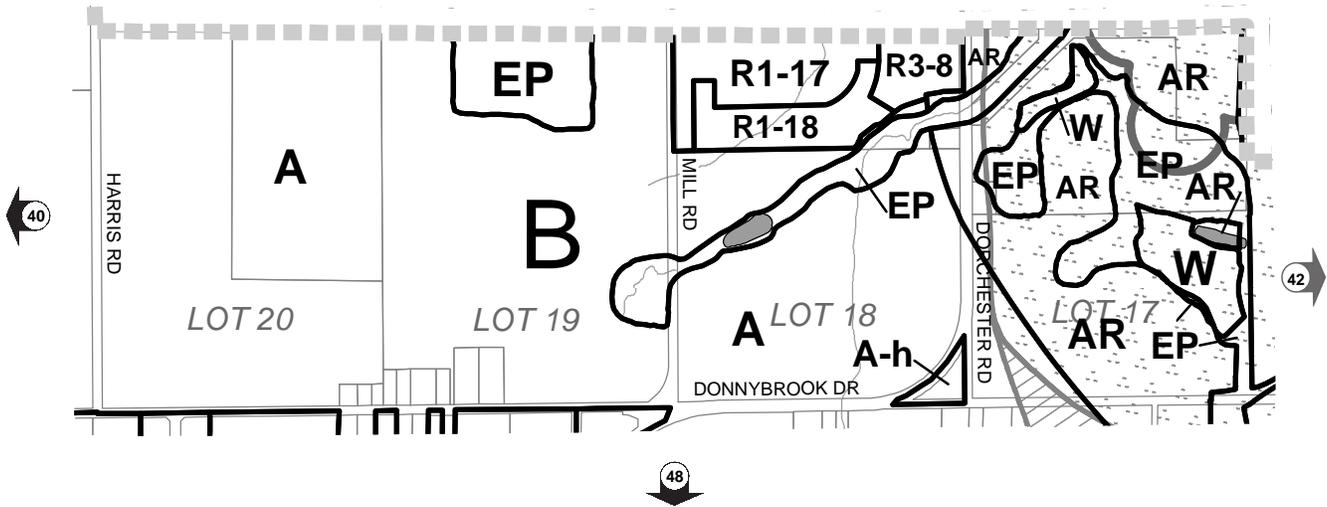
ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

14

DORCHESTER
SEE INDEX 2

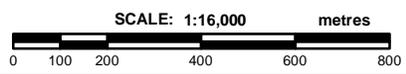


Wellhead Protection Area
 [Solid Box] WHPA A [Dotted Box] WHPA B [Cross-hatched Box] WHPA C
Vulnerability Score
 [Dotted] 10 [Diagonal] 8 [Cross-hatched] 6 or less



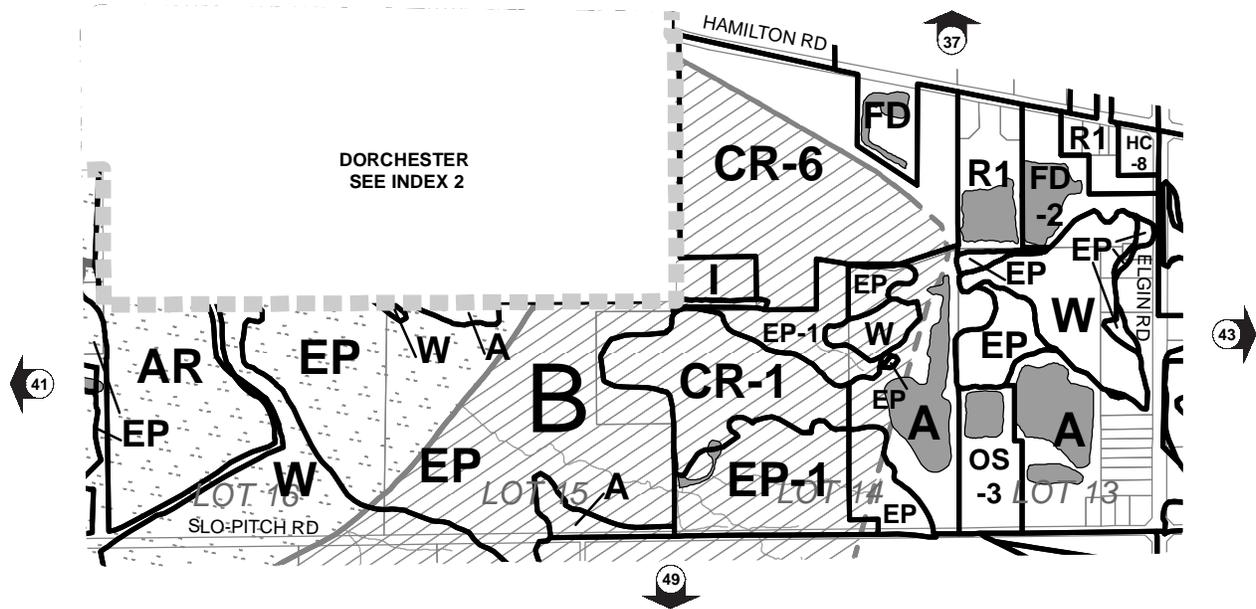
MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

41



Wellhead Protection Area
 [Solid Box] WHPA A [Dotted Box] WHPA B [Diagonal Box] WHPA C
Vulnerability Score
 [Dotted] 10 [Diagonal] 8 [Stippled] 6 or less



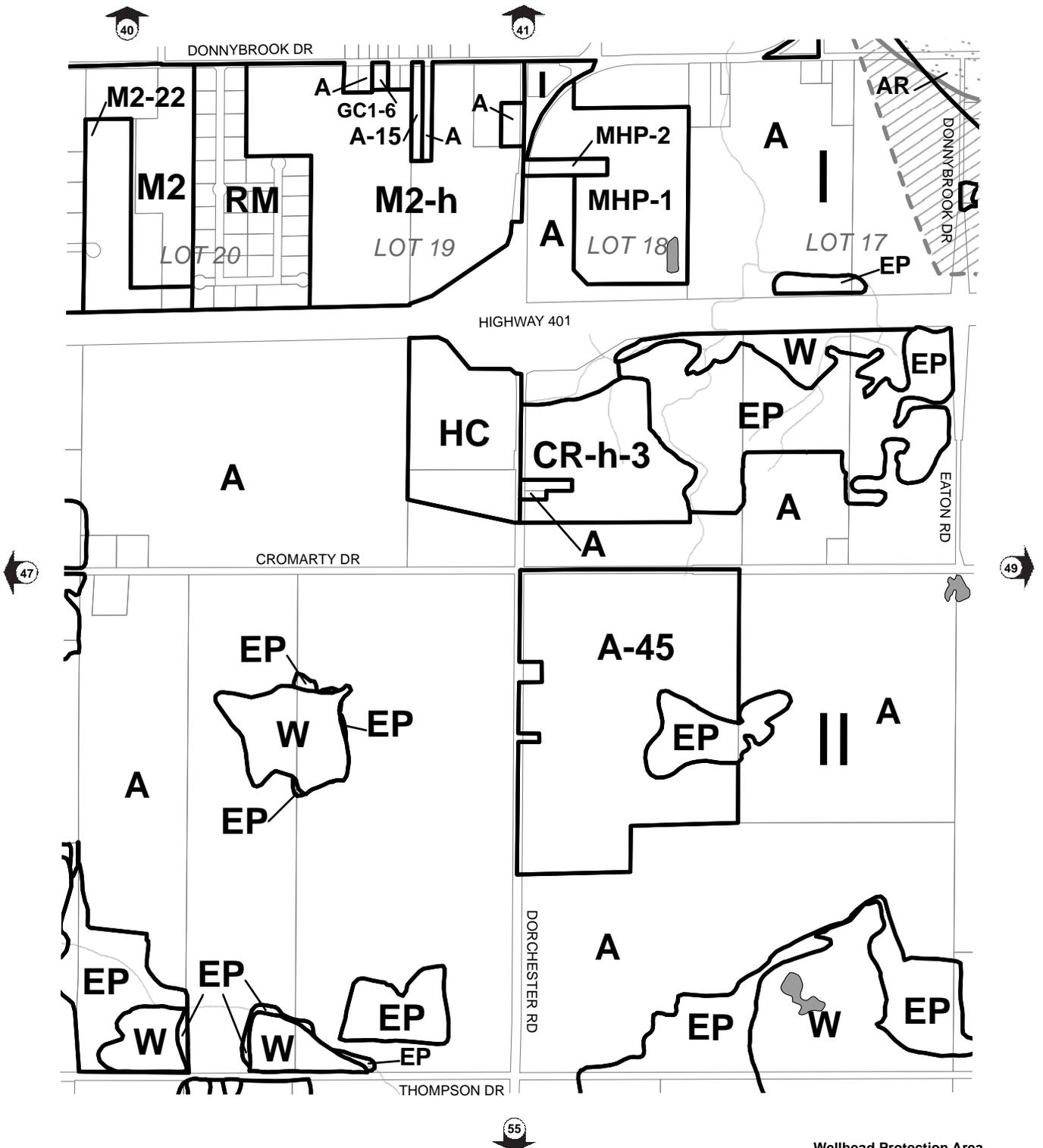
MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
 MAP NO.

42

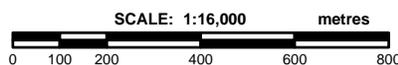


Wellhead Protection Area
 WHPA A (solid grey) WHPA B (light grey) WHPA C (dotted)
Vulnerability Score
 10 (dotted) 8 (diagonal lines) 6 or less (dotted)



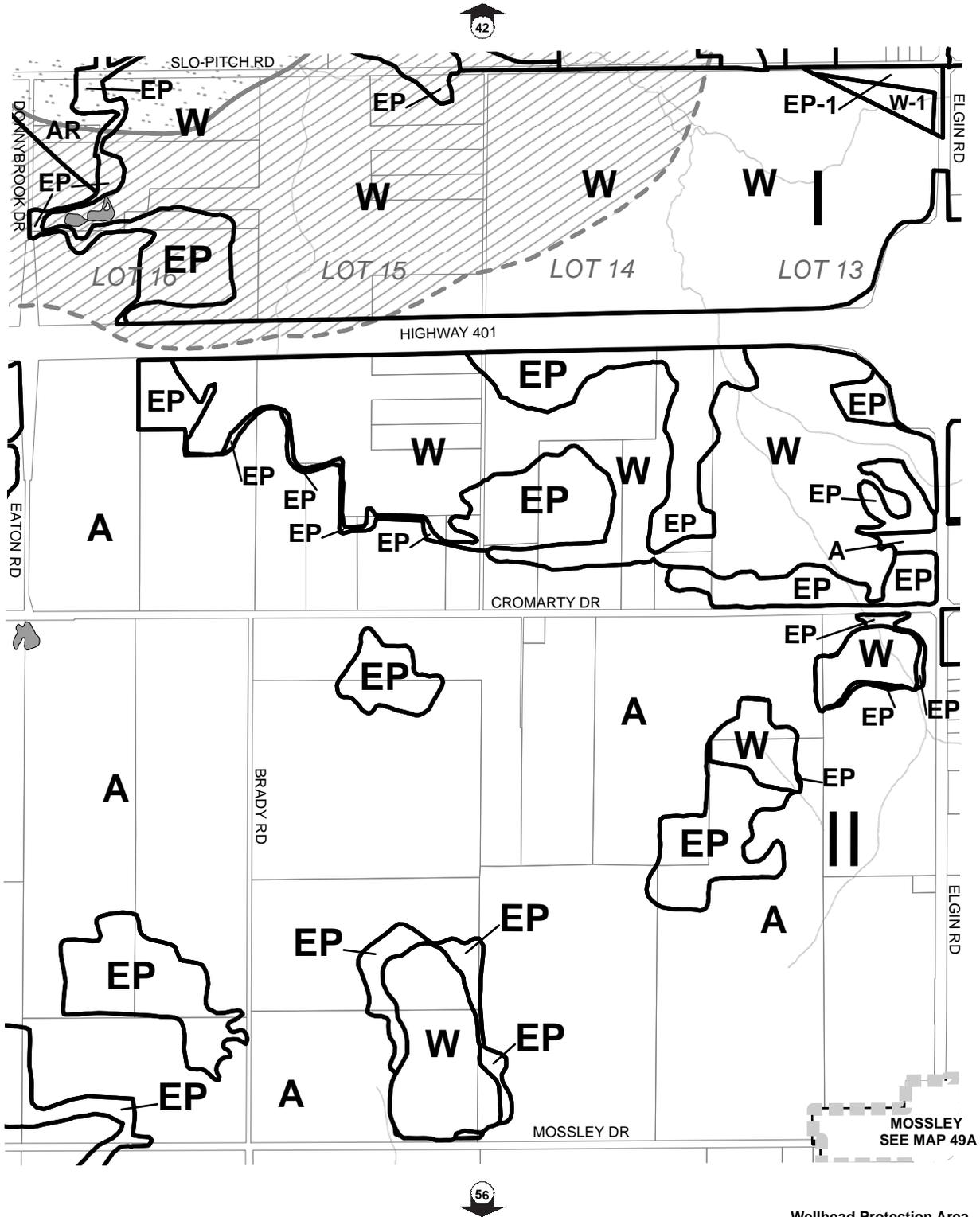
MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



**SCHEDULE A
MAP NO.**

48



Wellhead Protection Area
 [Solid Line] WHPA A [Dashed Line] WHPA B [Dotted Line] WHPA C
Vulnerability Score
 [Dotted] 10 [Hatched] 8 [Dotted] 6 or less



MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

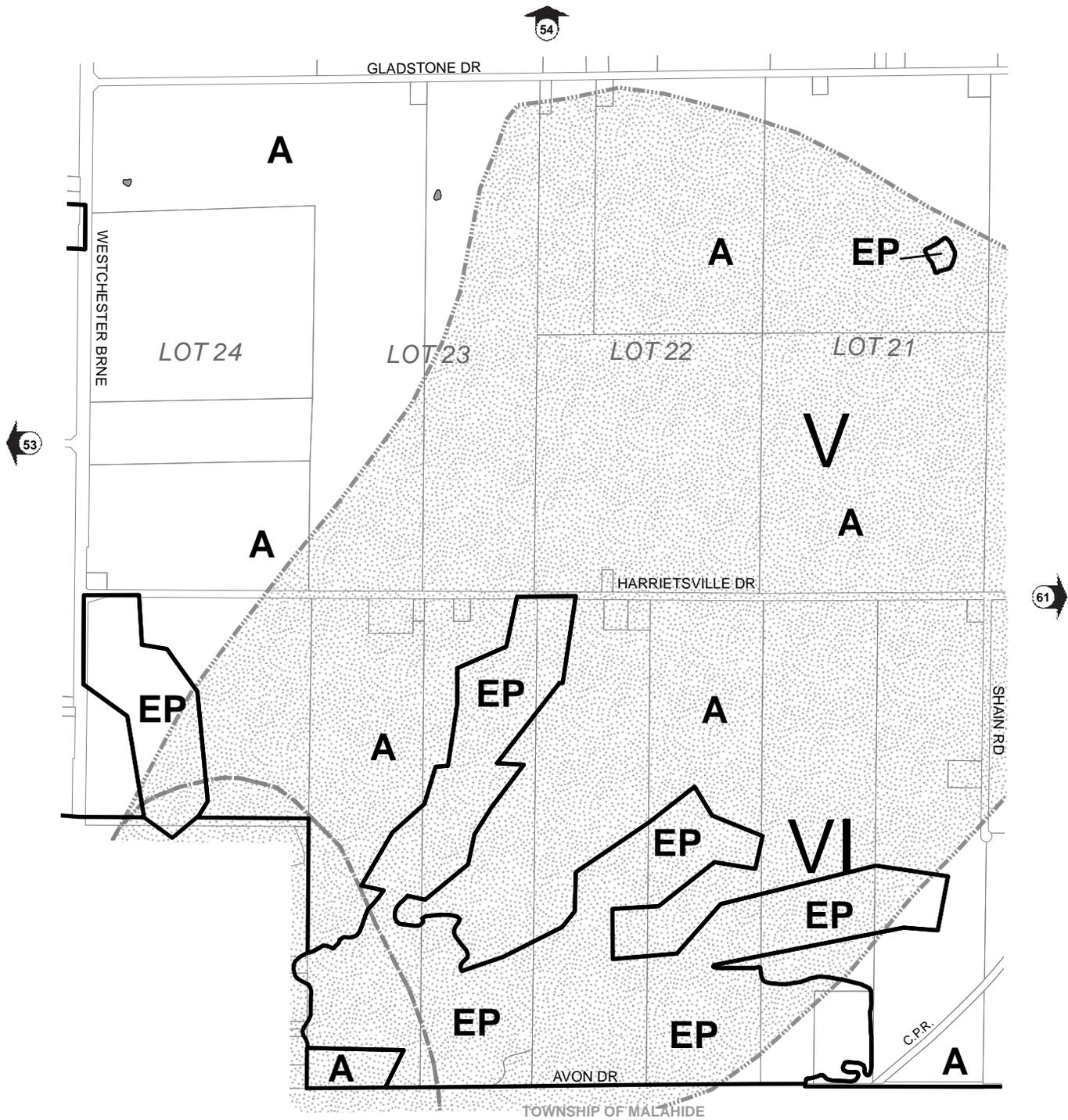
49

Wellhead Protection Area

WHPA A WHPA B WHPA C WHPA D

Vulnerability Score

10 8 6 or less



MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

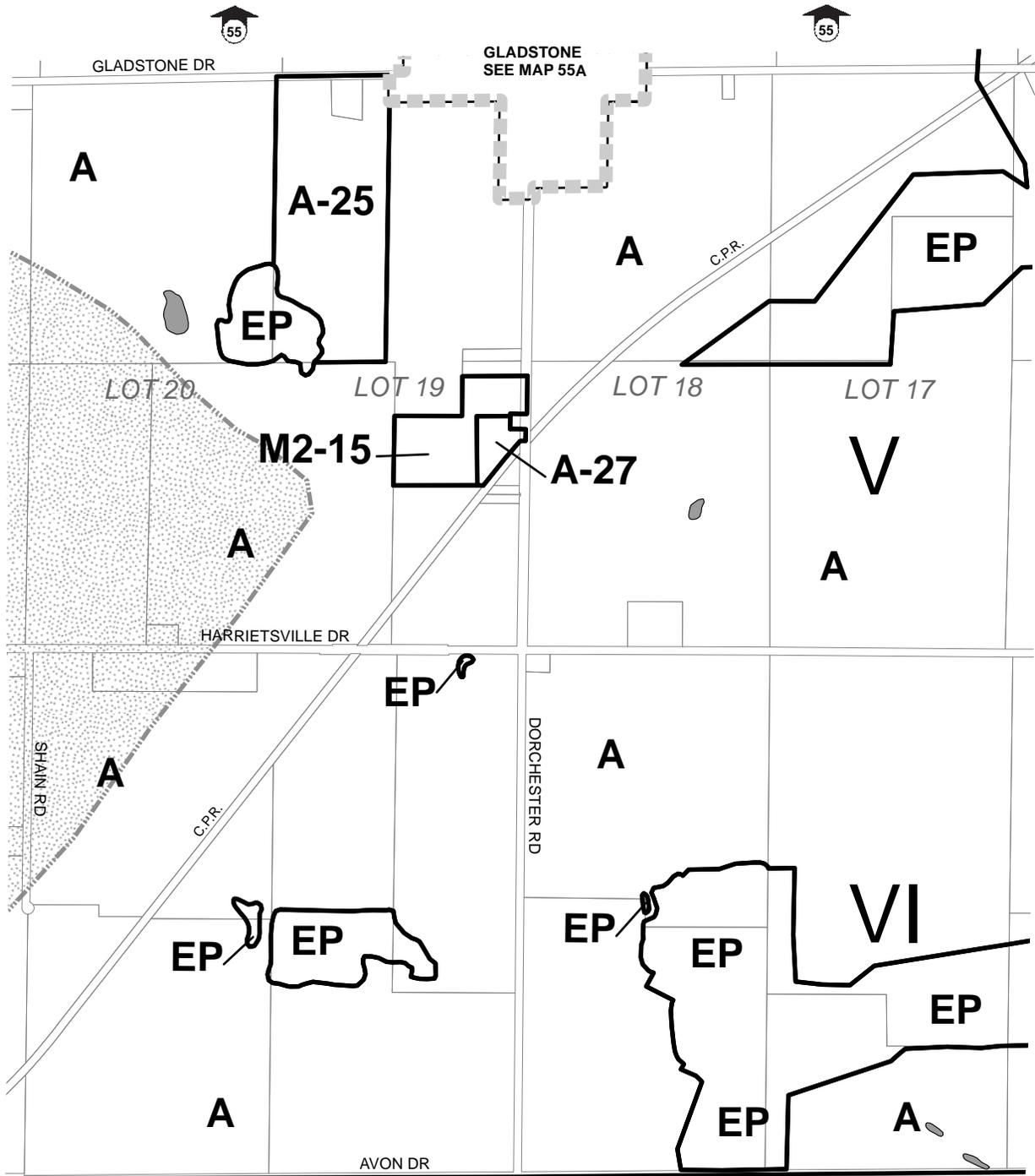
60

Wellhead Protection Area

WHPA A WHPA B WHPA C WHPA D

Vulnerability Score

10 8 6 or less



TOWNSHIP OF MALAHIDE



MUNICIPALITY OF THAMES CENTRE

ZONING BY-LAW NO. 75-2006



SCHEDULE A
MAP NO.

61

4.28 SOURCEWATER PROTECTION

(a) IDENTIFICATION OF VULNERABLE AREAS

- i. Vulnerable Areas shown on Schedule A represent Wellhead Protection Areas (WHPAs) and the associated level of vulnerability for municipal water sources serving the Municipality.
- ii. A WHPA illustrates three time-related capture zones including a 100-metre radius surrounding the well (WHPA-A), 2 year travel time for water to enter the well (WHPA-B), and 5 year travel time for water to enter the well (WHPA-C).
- iii. The degree of vulnerability of a WHPA is represented in Schedule A by a vulnerability score. The vulnerability score can range from 1 to 10, with 10 being the most vulnerable.

b) USE PROHIBITIONS AND REGULATIONS WITHIN VULNERABLE AREAS

- i. Notwithstanding the land uses permitted by the underlying zone category in this By-law, any land use, except a solely residential land use, that involves one of the following significant drinking water threats activities shall be prohibited until it is determined by the Municipality's Risk Management Official that the use does not represent a significant drinking water threat or a Section 59 Notice has been issued in accordance with the Clean Water Act, 2006:
 1. Waste disposal sites within the meaning of Part IV of the Environmental Protection Act.
 2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
 3. The application of agricultural source material to land.
 4. The storage of agricultural source material.
 5. The management of agricultural source material.
 6. The application of non-agricultural source material to land.
 7. The handling and storage of non-agricultural source material.
 8. The application of commercial fertilizer to land.
 9. The handling and storage of commercial fertilizer.

10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid (excluding incidental volumes for personal/domestic use).
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. The use of land as livestock grazing or pasturing land, an outdoor confinement area or farm-animal yard.
20. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
21. An activity that reduces the recharge of an aquifer.

(c) SEPTIC SYSTEMS WITHIN VULNERABLE AREAS

- 1) Notwithstanding any other provision of this By-law to the contrary, the following shall apply to WHPAs with a vulnerability score of 10 as identified on Schedule A:
 - i. Any use, building or structure that requires a new septic system to be located within a WHPA with a vulnerability score of 10 shall be prohibited.
 - ii. 4.28.3 (c) 1) i. shall not apply to new septic required for a municipal water supply well.

The following terms are to be added to “Section 2.0 Definitions”:

DRINKING WATER THREAT, means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulations as a drinking water threat.

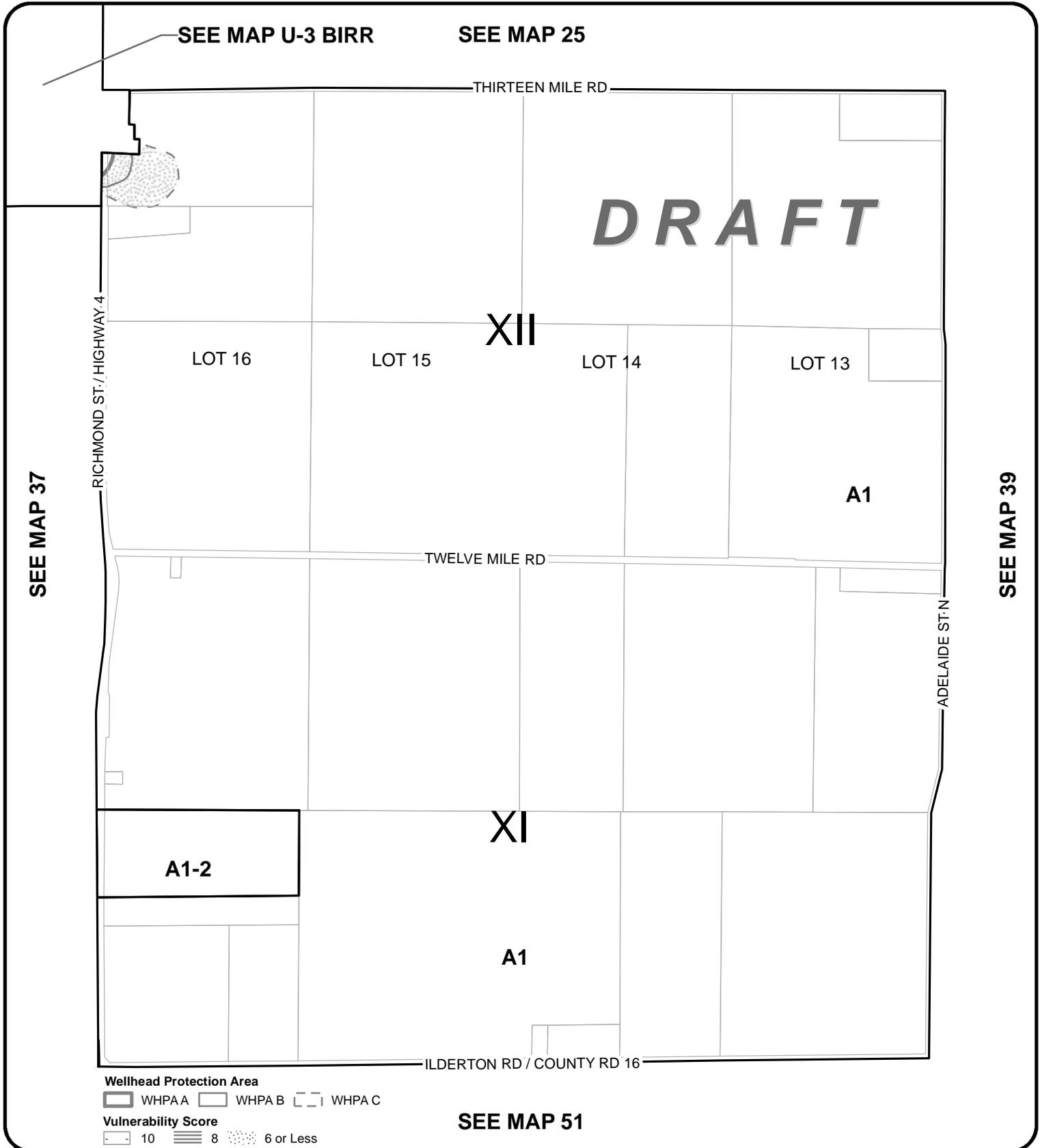
SECTION 59 NOTICE, refers to the requirements under Section 59 of the Clean Water Act, which requires issuance of a notice from the Municipality’s Risk Management Official before permitting an activity that is considered a restricted land use as identified in the Thames Sydenham & Region or Kettle Creek Source Protection Plan, whichever is applicable.

SEPTIC SYSTEM - shall mean a private sewage disposal system that stores and/or treats liquid or waterborne waste of industrial, commercial or domestic origin onsite and shall include but not be limited to grey water systems, cesspools, leaching bed systems and associated treatment units and holding tanks and shall not include sewage treatment plants.

SIGNIFICANT DRINKING WATER THREAT, means a drinking water threat that, according to a risk assessment, poses or has the potential to pose a significant risk.

MUNICIPALITY OF MIDDLESEX CENTRE

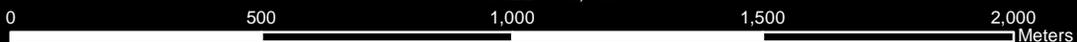
ZONING BY-LAW #2005-005



SCHEDULE A
KEY MAP: 38

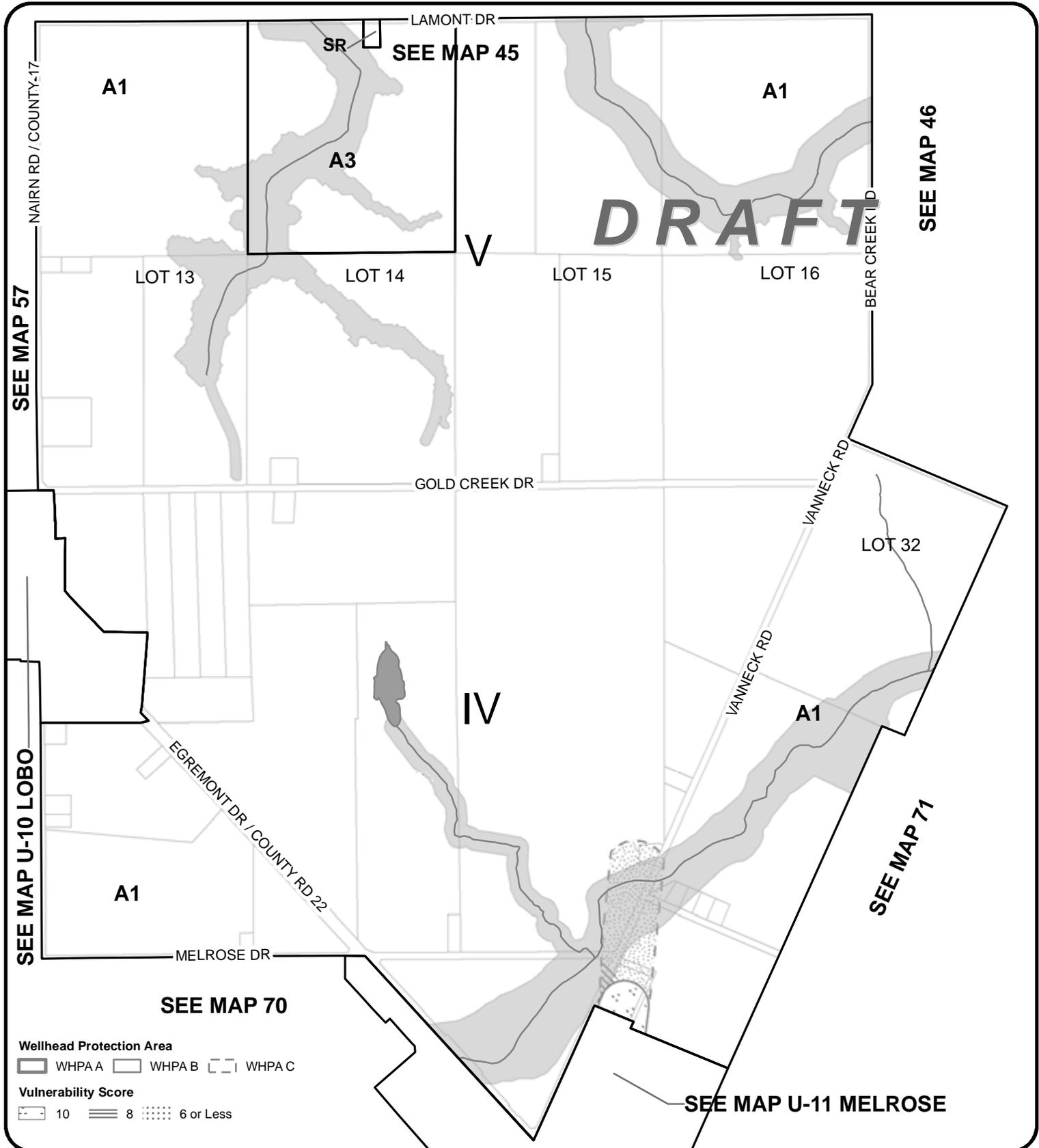
NOTE: Schedules should be read in conjunction with applicable provisions of the Zoning By-Law.

SCALE 1:15,000



MUNICIPALITY OF MIDDLESEX CENTRE

ZONING BY-LAW #2005-005



SCHEDULE A
KEY MAP: 58

NOTE: Schedules should be read in conjunction with applicable provisions of the Zoning By-Law.

SCALE 1:15,000



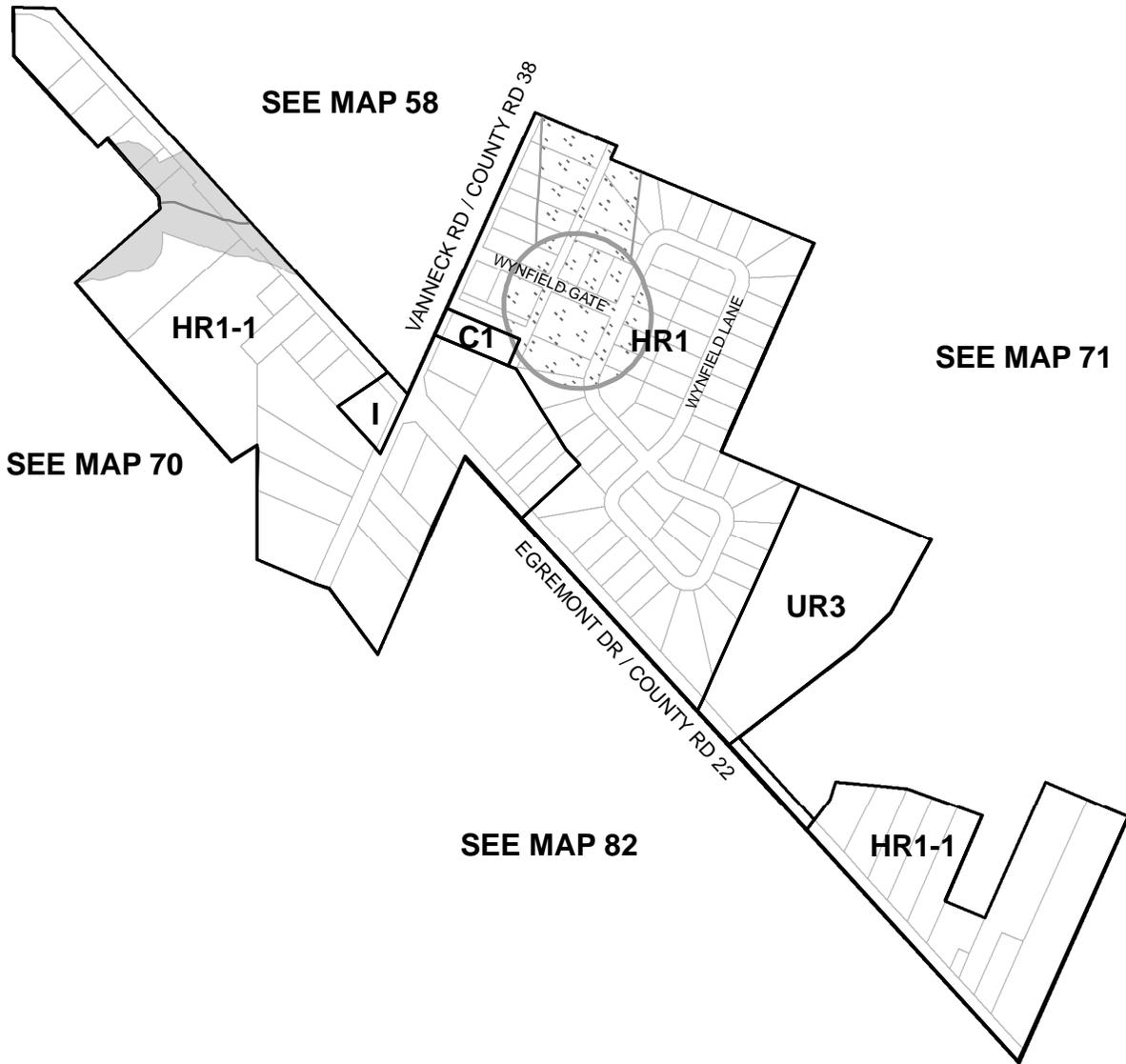


MUNICIPALITY OF MIDDLESEX CENTRE

ZONING BY-LAW #2005-005

MELROSE

DRAFT



Wellhead Protection Area
 WHPAA WHPAB WHPAC

Vulnerability Score
 10 8 6 or Less

SCHEDULE A
KEY MAP: U-11

NOTE: Schedules should be read in conjunction with applicable provisions of the Zoning By-Law.

SCALE 1:10,000



MUNICIPALITY OF MIDDLESEX CENTRE

ZONING BY-LAW #2005-005

BIRR

SEE MAP 24

SEE MAP 25

SEE MAP 24

DRAFT

EU

HR1

HIGHWAY 4

HR1

C1

HR1 (t-2)

HR1

HR1

THIRTEEN MILE RD

I

C1

I

HR1

GWENDOLYN ST

SALISBURY PL

SEE MAP 38

RICHMOND ST

SEE MAP 37

SALISBURY DR

Wellhead Protection Area

WHPA A WHPA B WHPA C

Vulnerability Score

10 8 6 or Less

SEE MAP 37

SCHEDULE A
KEY MAP: U-4

NOTE: Schedules should be read in conjunction with applicable provisions of the Zoning By-Law.

SCALE 1:4,000

0 100 200 300 400 500 Meters



APPENDIX F

Draft General Water Resources Policy Framework

1. Township of Adelaide Metcalfe
2. Township of Lucan Biddulph
3. Municipality of North Middlesex
4. Municipality of Southwest Middlesex
5. Municipality of Strathroy-Caradoc
6. Village of Newbury

2.11 Groundwater Management and Protection

Groundwater is a major source of water for domestic, industrial, commercial and agricultural uses in the Township of Adelaide Metcalfe and it is imperative that this resource be protected in order to ensure a sustainable and safe supply to those that rely on it.

It is the intent of this Plan that all development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Specifically, it is the Township's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge; impair groundwater or surface water quality; or negatively impact municipal groundwater supply.

Maintaining a sustainable groundwater supply is a priority of the Township, and as a result, the Township shall endeavour to:

- a) Ensure land use decisions advance water conservation efforts and support the efficient and sustainable use of water resources,
- b) Promote efficient and sustainable use of water resources that maintain and enhance water quantity and quality through the retention of vegetation or through re-naturalization,
- c) Encourage agricultural practices that protect water resources,
- d) Promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control; minimize stormwater volumes and contaminant loads; and maintain or increase the extent of vegetative and pervious surfaces,
- e) Identify water resource systems consisting of groundwater features, hydrologic functions, natural heritage features and areas, and surface water features, which are necessary for the ecological and hydrological integrity of the watershed,
- f) Maintain linkages and related functions among groundwater features, hydrologic function, natural heritage features and areas, and surface water features,
- g) Protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters,
- h) Work cooperatively with Conservation Authorities and Provincial Ministries regarding land management issues within the watersheds of the Municipality,
- i) Ensure that land use planning contributes to the protection, maintenance and enhancement of water and related resources and aquatic systems on an integrated watershed management basis,
- j) Ensure that development meets provincial water quality objectives,
- k) Ensure levels of wastewater treatment that are appropriate for the size, location and scale of development anticipated,
- l) Protect wetlands and areas that make significant contributions to groundwater recharge,
- m) Ensure the base flow needed to protect streams, fisheries and wetlands are maintained,
- n) Implement necessary restrictions on development and site alteration to protect municipal drinking water supplies, vulnerable areas, and sensitive surface and groundwater features,

- o) Improve or restore sensitive surface and groundwater features through restrictions on development and site alteration and low impact development approaches, where necessary.

5.6 WATER POLICIES

This Plan shall endeavour to protect and improve the surface water features, ground water features, hydrologic functions, and areas which are necessary for the ecological and hydrological integrity of the watershed. Surface water sources, including streams, lakes, ponds and wetlands are normally protected through their inclusion within the natural heritage system. Groundwater sources occur throughout the Township and are an essential resource for urban and rural water supplies, agricultural production and the maintenance of the natural heritage system. It is the intent of this Plan that all development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Specifically, it is the Township's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge, impair groundwater or surface water quality, or negatively impact municipal groundwater supply. Maintaining a sustainable groundwater supply is a priority to meet the needs of current and future residents.

5.6.1 Water Resource Policies

- i. The Township shall identify water resource systems consisting of surface water features, ground water features, hydrologic functions, natural heritage features and areas which are necessary for the ecological and hydrologic integrity of the watershed and in order to protect, improve, and restore the quality and quantity of water throughout the Township.
- ii. The Township shall encourage efficient and sustainable use of water resources including water conservation, sustaining water quality, and encouraging stormwater management practices which protect for and enhance water quality and quantity; minimize water volume and contaminant loads; and use increased vegetation and pervious surface materials. Land use decisions shall advance water conservation efforts and support the efficient use of water resources.
- iii. The Township shall encourage agricultural practices that protect water resources.
- iv. The Township shall maintain linkages and related functions among groundwater features, hydrologic functions, natural heritage features and areas, and surface water features.

- v. The Township shall protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters.
- vi. The Township shall work cooperatively with Conservation Authorities and Provincial Ministries regarding land management issues within the watersheds of the Municipality.
- vii. The Township shall ensure that land use planning contributes to the protection, maintenance and enhancement of water and related resources and aquatic systems on an integrated watershed management basis.
- viii. The Township shall ensure that development meets provincial water quality objectives.
- ix. The Township shall ensure levels of wastewater treatment are appropriate for the size, location and scale of development anticipated.
- x. The Township shall protect wetlands and areas that make significant contributions to groundwater recharge.
- xi. The Township shall ensure the base flow needed to protect streams, fisheries and wetlands are maintained.
- xii. The Township shall implement necessary restrictions on development site alteration to protect municipal drinking water supplies, vulnerable areas, and sensitive surface and groundwater features.
- xiii. The Township shall improve or restore sensitive surface and groundwater features through restrictions on development and site alteration and low impact development approaches, where necessary.

5.6.2 Implementation

The Township may utilize any of the following planning tools to protect, improve, or restore the water resources of the Township:

- i. conditions of consent and subdivision approval and consequent agreements;
- ii. provisions related to site plan control; and,

- iii. standards, definitions and regulations in the Township's Zoning By-law.

5.6.3 Development Applications

Council shall circulate all development plans to the applicable Conservation Authority, for their review and comments related to any potential impact on designated surface water features or ground water features.

Development or site alteration shall not be permitted on or adjacent to designated surface water features or ground water features where it will negatively impact the hydrological functions of the features.

7.2 WATERSHED MANAGEMENT POLICIES

7.2.1 General

The Municipality of North Middlesex contains many streams and rivers, which, among other resources, support the natural environment and the existing community. Water management issues arise from the various forms of human activity that this Plan addresses. More demands are being placed on water resources; the effects of which contribute to degraded aquatic communities, the loss of well water supply, aquifer contamination, deteriorating water quality, flooding and erosion. Integrating land management and the protection of water allows for the continuance of a healthy environment, solid economic development and healthy communities.

Groundwater resources occur throughout the Municipality and are an essential resource for urban and rural water supplies, agricultural production and the maintenance of the natural heritage system. The protection of water resources from contamination and degradation associated with certain land uses and activities is an important element to maintaining the quality of life experienced by both existing residents and businesses, and to support future growth. It is the Municipality's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge, impair groundwater or surface water quality, or negatively impact municipal groundwater supply. All development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Water resources will also be protected through the stormwater management policies of Sections 8.3.5 and 9.7.3, and any other relevant policies of this Plan.

The Municipality contains two major watershed systems – Parkhill Creek, which drains lands in the northwest and central portions of the Municipality; and the Ausable River, draining lands along the easterly, southerly and extreme westerly boundaries. The Ausable Bayfield Conservation Authority manages both watersheds. Appendix B to this Plan illustrates the major watershed and associated subwatersheds in North Middlesex.

7.2.2 Policies

With respect to water resources, the Municipality shall endeavour to:

- a) Ensure land use decisions advance water conservation efforts and support the efficient use of water resources.
- b) Promote efficient and sustainable use of water resources that maintain and enhance water quantity and quality through the retention of vegetation or through re-naturalization.
- c) Encourage agricultural practices that protect water resources.
- d) Promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control.
- e) Identify water resource systems consisting of groundwater features, hydrologic functions, natural heritage features and areas, and surface water features, which are necessary for the ecological and hydrological integrity of the watershed.

- f) Maintain linkages and related functions among groundwater features, hydrologic functions, natural heritage features and areas, and surface water features.
- g) Protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters.
- h) Ensure that land use planning contributes to the protection, maintenance, and enhancement of water and related resources and aquatic systems on an integrated watershed management basis.
- i) Ensure that development meets provincial water quality objectives.
- j) Ensure levels of wastewater treatment that are appropriate for the size, location and scale of development anticipated.
- k) Protect wetlands and areas that make significant contributions to groundwater recharge.
- l) Ensure the base flow needed to protect streams, fisheries and wetlands are maintained.
- m) Implement necessary restrictions on development and site alteration to protect municipal drinking water supplies, vulnerable areas, and sensitive surface and groundwater features.
- n) Improve or restore sensitive surface and groundwater features through restrictions on development and site alteration and low impact development approaches, where necessary.

The following policies relate to linkages between watershed management and the Official Plan.

- a) The Municipality will work cooperatively with the Conservation Authority in dealing with land management issues within the Ausable River Watershed that extend beyond the Municipal boundaries.
- b) The Municipality will encourage both the preparation of watershed and subwatershed management plans to assist in water resource and land use planning on an ecosystem basis. Council recognizes that development and land use change within the Municipality will also require consideration of other matters such as economic and growth management factors that may not be addressed in a watershed or subwatershed plan.
- c) The Municipality will encourage the protection of species at risk, either aquatic or terrestrial, and species recovery strategies. The Municipality will support the implementation of the relevant findings of recovery strategies. This may include amendments to this Plan.
- d) The Municipality will support the Conservation Authority in the preparation and implementation of the subwatershed studies.
- e) The Municipality will support initiatives of the County, the Conservation Authority and other agencies in identifying strategies to protect groundwater resources.
- f) Applications for proposals requiring access to significant amounts of groundwater or surface water from streams or ponds will only be considered by the Municipality where the applicant

has illustrated that the Ministry of the Environment has been consulted, and that the Ministry is considering an application for a water taking permit. For the purposes of this policy, significant means water requirements that exceed what would be usually expected to sustain normal farming practices such as those found within the Municipality. Examples of such significant water users may include (but are not limited to) the following: golf course uses, commercial water bottling operations and intensive agricultural uses. Approvals may also be required from relevant agencies.

- g) Applications for development that need a private water source may be required to submit a detailed hydrogeological study to determine the suitability of the lands for groundwater extraction. The hydrogeological study will be prepared to the satisfaction of the Municipality, Conservation Authority and the County, in consultation with the Province.

2.8 SURFACE AND GROUNDWATER RESOURCES

Surface water sources, including streams, lakes, ponds and wetlands are normally protection through their inclusion within the Natural Heritage System. Groundwater sources occur throughout the Municipality and are an essential resource for urban and rural water supplies, agricultural production and the maintenance of the natural heritage system. It is the intent of this Plan that all development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Specifically, it is the Municipality's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge, impair groundwater or surface water quality, or negatively impact municipal groundwater supply.

Maintaining a sustainable groundwater supply is a priority to meet the needs of current and future residents. The following policies are intended to address both ground water and surface water protection.

2.8.1 GOALS AND OBJECTIVES

- a) To improve the quality and quantity of the Municipality's surface and groundwater water resources;
- b) To promote the efficient and sustainable use of the Municipality's surface and groundwater resources;
- c) To ensure groundwater resources remain a safe and secure source of supply for those who depend on it.

2.8.2 WATER RESOURCE POLICIES

With respect to water resources, the Municipality shall endeavour to:

- a) Identify water resource systems consisting of groundwater features, hydrologic functions, natural heritage features and areas, and surface water features, which are necessary for the ecological and hydrological integrity of the watershed.
- b) Maintain linkages and related functions among groundwater features, hydrologic functions, natural heritage features and areas, and surface water features.
- c) Protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters.
- d) Work cooperatively with Conservation Authorities and Provincial Ministries regarding land management issues within the watersheds of the Municipality.

- e) Ensure that land use planning contributes to the protection, maintenance and enhancement of water and relate resources and aquatic systems on an integrated watershed management basis.
- f) Ensure that development meets provincial water quality objectives.
- g) Ensure levels of wastewater treatment that are appropriate for the size, location and scale of development anticipated.
- h) Protect wetlands and areas that make significant contributions to groundwater recharge.
- i) Ensure the base flow needed to protect streams, fisheries and wetlands are maintained.
- j) Implement necessary restrictions on development and site alteration to protect municipal drinking water supplies, vulnerable areas, and sensitive surface and groundwater features.
- k) Improve or restore sensitive surface and groundwater features through restrictions on development and site alteration and low impact development approaches, where necessary.

2.8.3 WATER CONSERVATION

The Municipality shall identify and promote water conservation practices and implement a monitoring program to ensure their effectiveness. The Municipality will ensure that land use decisions will advance water conservation efforts and support the efficient use of water resources and promote the sustainable use of water resources that maintain and enhance water quantity and quality through the retention of vegetation or through re-naturalization. Agricultural practices that protect water resources will be promoted.

2.8.5 STORMWATER MANAGEMENT

The Municipality shall promote storm water management practices that minimize the volume of runoff and contaminant loads and increase or maintain the amount of vegetative and pervious surfaces in order to protect for an enhance water quality and water quantity control. Storm water management plans shall be prepared for undeveloped areas prior to development to effectively control the quantity and quality of storm water runoff. Such plans shall be prepared, where appropriate to do so, on a sub-watershed basis as opposed to a land ownership basis. In the preparation and evaluation of such plans, the conservation authority having jurisdiction shall be consulted. All design parameters for storm water management shall be approved by the Municipality, the Ministry of Environment and the conservation authority having jurisdiction. A

Certificate of Approval shall be required from the Ministry prior to construction. Wetlands shall not be used for the purposes of stormwater management.

Note: Deletion of Schedule 'G' of Official Plan is required, as it currently illustrates the 'Groundwater Susceptibility Areas' identified in the 2004 Middlesex-Elgin Groundwater Study.

6.2 WATER RESOURCE PROTECTION

Although dependency on groundwater resources to supply the needs of Strathroy and Mount Brydges ceased when connections were made to the Lake Huron Primary Supply System, the protection of these resources is significant due to the number of existing residents and businesses in the rural areas of the Municipality that rely on these resources to satisfy their drinking water needs. The protection, improvement and restoration of ground and surface water features remains a priority for the Municipality and the following policies are intended to address the protection of water resources.

6.2.1 Water Resource Policies

With respect to water resources, it is the intent of the Municipality that development of public and private uses will not significantly alter groundwater recharge or discharge, impair groundwater or surface water quality, or negatively impact municipal groundwater supply. To achieve this, the Municipality shall endeavour to:

- a) Ensure land use decisions advance water conservation efforts and support the efficient and sustainable use of water resources,
- b) Promote efficient and sustainable use of water resources that maintain and enhance water quantity and quality through the retention of vegetation or through re-naturalization,
- c) Encourage agricultural practices that protect water resources,
- d) Promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control; minimize stormwater volumes and contaminant loads; and maintain or increase the extent of vegetative and pervious surfaces,
- e) Identify water resource systems consisting of groundwater features, hydrologic functions, natural heritage features and areas, and surface water features, which are necessary for the ecological and hydrological integrity of the watershed,

- f) Maintain linkages and related functions among groundwater features, hydrologic function, natural heritage features and areas, and surface water features,
- g) Protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters,
- h) Work cooperatively with Conservation Authorities and Provincial Ministries regarding land management issues within the watersheds of the Municipality,
- i) Ensure that land use planning contributes to the protection, maintenance and enhancement of water and related resources and aquatic systems on an integrated watershed management basis,
- j) Ensure that development meets provincial water quality objectives,
- k) Ensure levels of wastewater treatment that are appropriate for the size, location and scale of development anticipated,
- l) Protect wetlands and areas that make significant contributions to groundwater recharge,
- m) Ensure the base flow needed to protect streams, fisheries and wetlands are maintained,
- n) Implement necessary restrictions on development and site alteration to protect municipal drinking water supplies, vulnerable areas and sensitive surface and groundwater features, and
- o) Improve or restore sensitive surface and groundwater features through restrictions on development and site alteration and low impact development approaches, where necessary

X.X WATER RESOURCES

- x.x.1 Surface water sources, including streams, lakes, ponds and wetlands are normally protected through their inclusion within the Natural Heritage System. Groundwater sources occur throughout the Village and are an essential resource for urban and rural water supplies, agricultural production and the maintenance of the natural heritage system. It is the intent of this Plan that all development shall be subject to the following policies to ensure that water quality and quantity are not adversely affected. Specifically, it is the Village's intent that the development of public and private uses will not significantly alter groundwater recharge or discharge; impair groundwater or surface water quality; or negatively impact municipal groundwater supply.
- x.x.2 Maintaining a sustainable groundwater supply is a priority to meet the needs of current and future residents. The Village recognizes a relationship between groundwater and surface water in terms of recharge and discharge functions. The policies of this Plan are intended to address both ground water and surface water protection.
- x.x.3 With respect to water resources, the Village shall endeavour to:
- a) Ensure land use decisions advance water conservation efforts and support the efficient use of water resources.
 - b) Promote efficient and sustainable use of water resources that maintain and enhance water quantity and quality through the retention of vegetation or through re-naturalization.
 - c) Encourage agricultural practices that protect water resources.
 - d) Promote sustainable stormwater management practices that protect for, or where feasible, enhance water quality and water quantity control.
 - e) Identify water resource systems consisting of groundwater features, hydrologic functions, natural heritage features and areas, and surface water features, which are necessary for the ecological and hydrological integrity of the watershed.
 - f) Maintain linkages and related functions among groundwater features, hydrologic functions, natural heritage features and areas, and surface water features.
 - g) Protect or enhance the function of sensitive groundwater recharge areas, discharge areas, aquifers and headwaters.
 - h) Work cooperatively with Conservation Authorities and Provincial Ministries regarding land management issues within the watersheds of the Village.
 - i) Ensure that land use planning contributes to the protection, maintenance, and enhancement of water and related resources and aquatic systems on an integrated watershed management basis.

- j) Ensure that development meets provincial water quality objectives.
- k) Ensure levels of wastewater treatment that are appropriate for the size, location and scale of development anticipated.
- l) Protect wetlands and areas that make significant contributions to groundwater recharge.
- m) Ensure the base flow needed to protect streams, fisheries and wetlands are maintained.
- n) Support sustainable stormwater management practices that protect, or where feasible, enhance water quantity and quality control.
- o) Implement necessary restrictions on development and site alteration to protect municipal drinking water supplies, vulnerable areas, and sensitive surface and groundwater features.
- p) Improve or restore sensitive surface and groundwater features through restrictions on development and site alteration and low impact development approaches, where necessary.