



Middlesex Centre Official Plan Review

Discussion Paper 2

Infrastructure

Spring 2021

FINAL DRAFT





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EXECUTIVE SUMMARY

The Municipality of Middlesex Centre is undertaking a review and update of its Official Plan. The primary purpose of this Official Plan Review is to ensure consistency and conformity with applicable Provincial and County of Middlesex policies and legislation and to guide future growth in the Municipality. Since launching the Official Plan Review earlier in 2020, a high-level Background Report has been prepared and several consultation opportunities have been held to hear from the community, Municipal Council, and Staff.

The purpose of this Discussion Paper is to provide an overview of the infrastructure-related matters to be considered through the Official Plan Review. Building on the previously completed Background Report, this Discussion Paper summarizes relevant policy, legislation, and technical studies / infrastructure projects which need to be considered in the Official Plan. Based on the foregoing, the Discussion Paper summarizes the infrastructure capacity stormwater in the Municipality and presents preliminary options and recommendations to address these key issues.

This Discussion Paper considers several critical policies and plans including the Provincial Policy Statement (2020), various Master Plans, Class Environmental Assessments, and infrastructure projects to understand how the Middlesex Centre Official Plan can support future growth and development opportunities. Roads, municipal sewer and water services, stormwater management and other hard infrastructure must be planned and appropriately sized to allow for the safe and efficient growth of the community.

Based on the findings of the policy and background review, the Discussion Paper explores four core issues and opportunities in detail: infrastructure capacity; servicing hierarchy policies; stormwater management; and subdivision design requirements. It was determined that the servicing policies of the Official Plan should be updated for consistency with the Provincial Policy Statement and the County Official Plan, particularly as they relate to opportunities for private communal and partial servicing. Further, the Municipality is undertaking a number of infrastructure projects in the communities of Arva and Delaware to increase or transition the existing service conditions which will impact future development opportunities. The Discussion Paper also find that the stormwater policies and subdivision design requirements of the Official Plan be reviewed and updated based on current practices.

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

1 INTRODUCTION

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

The Municipality’s current Official Plan was adopted in 2000 and approved with modifications in 2002. Since then, there have been a total of 52 amendments. The last municipal comprehensive review and major policy update to the Middlesex Centre Official Plan occurred in 2011. The primary purpose of this Official Plan Review (“OPR”) is to ensure consistency and conformity with applicable Provincial and County of Middlesex policies and legislation. A review of the Municipality’s Official Plan is required to identify updates required to implement the Provincial Policy Statement (“PPS”), and the Middlesex County Official Plan in accordance with Section 27 of the *Planning Act*.

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

1.1 STUDY WORK PROGRAM

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



Phase 1

Project Initiation



Phase 2

Background
Reports & Studies

WE ARE HERE



Phase 3

Directions &
Recommendations
Report



Phase 4

Official Plan
Amendment(s)

The series of 5 Discussion Papers form part of Phase 2 – Background Reports and Studies. Following the completion of the series of four Discussion Papers, a Policy Directions and Recommendations Report will be developed and shared with the community and stakeholders in Spring 2021. Together, these reports and papers will inform changes to the Official Plan

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

1.2 PURPOSE OF THIS DISCUSSION PAPER

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

The infrastructure needs of the Municipality are tied to the amount and location of growth projected to occur during the life of the Official Plan. Roads, municipal sewer and water services, stormwater management and other hard infrastructure must be planned and appropriately sized to allow for the safe and efficient growth of the community. This Discussion Paper will consider several critical policies and plans – including the 2020 Provincial Policy Statement (2020 PPS) and the Municipality’s Settlement Area Stormwater Master Plan, the Delaware Community Settlement Area Stormwater Master Plan, the Road Needs Study, and the Master Servicing Plan.

It is not the intent of this Discussion Paper to provide an exhaustive exploration of all the issues and specific policy changes related to infrastructure to be made, but rather to outline key issues and changes that are required, based on the Background Report, public consultation, and input from Municipal Staff and stakeholders. Additional necessary changes to policies will be explored during the OPR and will be proposed in the final phases of the project.

The following topics are addressed in this Discussion Paper:

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

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

Section 3: Key Issues and Opportunities – Explores the key issues and opportunities to be addressed through the OPR as they relate to infrastructure, including infrastructure capacity, servicing hierarchy policies, and subdivision design requirements.

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

2 PLANNING POLICY CONTEXT

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

2.1 PLANNING ACT

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

Section 26(1) of the *Planning Act* states that official plans shall have regard for matters of Provincial Interest, further described in Section 2 of the *Act*, which includes the adequate provision and efficient use of communication, transportation, sewage and water services, and waste management system. The Official Plan is the primary tool in implementing these Provincial interests in a manner that is appropriate and meaningful to the Municipality.

2.2 PROVINCIAL POLICY STATEMENT, 2020

The current Provincial Policy Statement (PPS), effective from May 2020, was issued under the authority of Section 3 of the *Planning Act* and provides direction on matters of Provincial interest related to land use planning and development. It sets out policies concerning the creation of healthy communities, wise use and management of resources, and protection of public health and safety. The PPS also establishes policy for the provision of infrastructure, public services, sewer/water services, and transportation facilities. The Middlesex Centre Official Plan is required to be consistent with the PPS.

The PPS envisions healthy, livable, and safe communities that are sustained through the integration of land use planning, growth management, transit-supportive development, intensification and infrastructure planning to achieve cost-effective development patterns and standards to minimize land consumption and servicing costs (1.1.1(e)).

Regarding growth management, the PPS directs that sufficient land be made available for a time horizon of up to 25 years and permits infrastructure planning to be conducted beyond the 25-year time horizon (1.1.2). Overall, land use patterns within settlement areas and new development in designated growth areas should allow for the efficient use of infrastructure (1.1.3.2(b), 1.1.3.6). Further, the PPS requires that municipalities establish phasing policies to

ensure orderly progression of development and the timely provision of infrastructure to meet current and project needs (1.1.3.7).

The 2020 iteration of the PPS establishes new policies related to the expansion or adjustment of settlement areas (1.1.3.8, 1.1.3.9) and requires, in part, that municipalities demonstrate that the planned infrastructure is suitable over the long term.

Section 1.6 of the PPS contains specific policies as they relate to infrastructure and public service facilities. The following provides a summary of key infrastructure-related matters:

- Infrastructure and public service facilities systems, shall be provided in a coordinated integrated, and financially viable manner that considers impacts from a changing climate, while accommodating projected needs (1.6.1);
- The use of existing infrastructure should be optimized before considering the development of new infrastructure (1.6.3);
- Municipal sewage services and water services are the preferred form of servicing for settlement areas. Within settlement areas with existing municipal sewage and water services, intensification and redevelopment shall be promoted where feasible (1.6.6.2);
- Where municipal services are not available, private communal sewage services and water services are the preferred form of servicing for multi-unit/lot development (1.6.6.3);
- At the time of the official plan review, municipalities should assess the long-term impacts of individual on-site sewage and water services on the environmental health and character of rural settlement areas (1.6.6.4);
- Partial services shall only be permitted in certain circumstances (1.6.6.5);
- Stormwater management shall be integrated with planning for sewage and water services over the long term and prepare for the impacts of a changing climate and the use of green infrastructure (1.6.6.7);
- Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs and efficiently uses existing and planned infrastructure (1.6.7.1, 1.6.7.2);
- A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation (1.6.7.4);
- Municipalities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems, and major goods movement facilities to meet current and projected needs (1.6.8.1);

- Municipalities shall not permit development in planned corridors. New development proposed on adjacent lands should support the long-term function and purpose of the corridor (1.6.8.3);
- Planning for land uses near airports, rail facilities and marine facilities shall be undertaken so that their long-term operation and economic role is protected, and airports, rail facilities and marine facilities and sensitive land uses are appropriately designed, buffered and/or separated from each other (1.6.9.1)
- Waste management systems need to be provided that are of an appropriate size and type to accommodate present and future requirements, and facilitate, encourage and promote reduction, reuse and recycling objectives (1.6.10.1); and,
- Municipalities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, to accommodate current and projected needs (1.6.11.1).

The current policies of the existing Official Plan will be reviewed for consistency with the above and updated, as necessary.

2.3 MIDDLESEX COUNTY

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

2.3.1 MIDDLESEX COUNTY OFFICIAL PLAN

The Middlesex County Official Plan ("County OP") was adopted in 1997 and approved in 1999. It was then most recently comprehensively amended by Official Plan Amendment No. 2 in 2006. It sets out the planning framework, general policies and land use policies for the County, with a planning horizon to 2026. The policy framework provides direction to lower-tier municipalities on matters including managing growth, protecting resources and natural heritage, and coordination between municipalities on cross-boundary (inter-municipal) issues such as servicing and infrastructure. All lower-tier Official Plans are required to conform to the County OP. The County OP gives specific direction on a matter through the use of the term "shall"; while some policies use enabling or supportive language, such as "should," "promote" and "encourage." The choice of language is intended to distinguish between the types of policies and the nature of implementation.

2.3.1.1 *PHYSICAL SERVICE & UTILITIES*

Section 2.4 – Physical Service & Utilities is the primary section of the County OP that gives direction related to infrastructure. It addresses transportation, communications and transmission infrastructure, waste management, sanitary sewers and water, alternative and renewable energy systems, and groundwater management and protection. The following provides an overview of the key policies related to each of these areas.

Transportation

- The transportation network within the County includes a system of roads, highways and railways that are owned and operated by the Federal Government, the Province, the County, local municipalities, other agencies and the public. Schedule "B" shows the County Transportation Network (2.4.2.1).
 - Transportation policies **should** be included in local official plans to protect the integrity of the local municipality's transportation network. Based on the volumes, types and nature of the traffic, municipal roads **may** be classified as arterial, collector, or local roads in the local official plan (2.4.2.1.c).
- The County **shall** encourage integration of transportation facilities provided by local municipalities, adjacent municipalities and the Province (2.4.2.2.c).
- The County **shall** limit direct access to County Roads where access is available by local road (2.4.2.2.f). Section 2.4.2.5 further notes that access to County roads will be strictly enforced and any new development proposed adjacent to a County road will require approval of the County Roads Department.
- The County **shall** address the matter of cross boundary traffic with the City of London, adjacent Counties, and municipalities by establishing a planned network of roads which considers and coordinates the road hierarchy across municipal boundaries (2.4.2.2.j).

Communication & Transmission Infrastructure

- The County **shall** cooperate with local municipalities, the business community and other agencies to establish high quality electronic communication networks including fibre optics, and telecommunications (2.4.3.1.a).

Waste Management

- The County **shall** require new waste disposal facilities to proceed by way of an amendment to the local official plan (2.4.4.1.b).
- The County **shall** require development proposals generally within 500 metres of either an active or closed landfill site to be accompanied by a study prepared by the proponent which evaluates the presence and impact of environmental contaminants including methane gas, leachate in soils and groundwater. The study shall address any mitigation measures which may be required (2.4.4.1.c).

- The County **shall** require all local Official Plans to identify all known closed, abandoned and active waste disposal sites and provide policies for development in proximity to such sites (2.4.4.1.d).

Sanitary Sewers & Water

The County OP notes that the County does not fund or maintain sanitary sewer or water systems; however, it promotes efficient and environmental responsible development which is supported on the basis of appropriate types and levels of water supply and sewage disposal.

- The County **encourages** new development to proceed on the basis of full municipal services. Where partial municipal services are considered, the supporting studies **shall** address all servicing options (2.4.5).
- The County **shall** encourage development on municipal water and sanitary sewer systems. Where local municipalities do not provide or demonstrate a strong potential to provide full municipal water and sewage treatment facilities, development other than infilling will require a Settlement Capability Study (2.4.5.1.a).
- The County **shall** encourage improvement of existing systems and the installation of new systems in Settlement Areas throughout the County, where technically and financially feasible (2.4.5.1.c).
- The County **shall** require site specific development proposals to be accompanied by an evaluation of servicing options within the Settlement Areas. The evaluation shall address the County's preferred servicing hierarchy: (2.4.5.1.e)
 - i) extension from existing municipal system;
 - ii) extension from existing communal system;
 - iii) new municipal or communal system; and,
 - iv) individual septic systems and private wells.
- The County **shall** encourage local municipalities to implement suitable and economically viable methods of reducing urban storm water runoff and to improve its quality (2.4.5.1.j)

Alternative & Renewable Energy Systems

- The County **shall** encourage the development of alternative and renewable energy systems as a source of energy for the economic and environmental benefit of the County. The County **encourages** the use of wind, water, biomass, methane, solar, and geothermal energy (2.4.6).
- The County supports the development of Wind Energy Generation Systems (WEGS).
 - Small Wind Energy Generation Systems (SWEGS) generally produce electricity only for the on-site domestic consumption of the property owner. The establishment of a SWEGS is generally considered to be an accessory use to the

principal use of the property and therefore **may** be permitted, subject to the provisions of the municipal zoning by-law.

- Commercial Wind Energy Generation Systems (CWEGS) are a more intensive land use and usually comprise more than one generating unit. CWEGS are intended to be connected to the Provincial electrical transmission grid. The establishment of a CWEGS will not require an amendment to the County Official Plan. The establishment of a CWEGS **may** require an amendment to the local official plan.

Groundwater Management and Protection

- The Middlesex-Elgin Groundwater Study **should** be cited in local official plans as a reference document that is applicable to this region. Local municipalities **shall** address the following in their official plans and zoning by-laws: (2.4.7)
 - (a) promotion of water conservation practices, including the efficient and sustainable use of water resources;
 - (b) encourage stormwater management practices that minimize stormwater volumes and contaminant loads; and,
 - (c) implementation of restrictions on development and site alteration to protect all municipal drinking water supplies and sensitive groundwater features.

The Municipality's OP will incorporate policies which direct growth and multi-lot development to fully serviced areas of Middlesex Centre. The Municipality's OP will consider the introduction of stormwater management (SWM) policies which apply on a Municipal-wide basis to address the impacts of development on stormwater runoff, water quality (contaminant loads), erosion and sedimentation, and environmental features.

The County has initiated the process of undertaking its own Municipal Comprehensive Review of its Official Plan. Some of the key topics that will be explored through the County's OP Review including matters related to Drinking Source Water and Transportation. As the County's OP Review advances, there may be an opportunity to consider further issues and policy recommendations as it relates to infrastructure in Middlesex Centre.

2.3.1.2 GROWTH MANAGEMENT

Section 2.3 of the County Official Plan establishes growth management policies which project population and employment growth forecasts until 2026. As part of the County's ongoing Official Plan Review, the County will extend the population forecast and identify a new planning horizon.

The County Official Plan recognizes that growth must be managed, in part, to coincide with the availability of appropriate types and levels of services. Section 2.3.2 establishes the County's Growth Management Hierarchy which consists of several settlement area types – the focus areas for growth and development. The Hierarchy includes the three following components:

- **Urban Areas:** These are areas of the County which will accommodate future growth through population projections and must either have full municipal services or demonstrate the potential to provide full municipal services.
- **Community Areas:** These are areas of the County which will accommodate future projected population growth and must currently serve a community function and demonstrate the potential to provide a level of servicing to support future growth.
 - Schedule A – Land Use of the Official Plan identifies Ilderton, Arva, Komoka, Kilworth, and Delaware as Settlement Areas (Urban & Community) within Middlesex Centre.
- **Hamlets in Agricultural Areas:** These are existing local designated hamlets not identified as Urban or Community Areas. It is assumed that municipal services will not be provided in these areas; therefore, future growth shall match that level of service (e.g., private/individual services).

Overall, it is the goal of the County Official Plan to direct future development within settlement areas on the basis of full municipal services, with consideration for other methods of servicing (e.g., partial services) permitted on an interim basis where justified.

2.3.2 MIDDLESEX COUNTY CYCLING STRATEGY

The Middlesex County Cycling Strategy (2018) was developed for the purpose of growing and enhancing active transportation – with a focus on cycling, across Middlesex County, the Local Municipalities, and other partners. The Cycling Strategy includes a long-term, county-wide strategy to be used to guide planning, design, implementation, and operation of cycling infrastructure and programming.

The Cycling Strategy identifies several short and long-term infrastructure improvements within the Municipality of Middlesex Centre, including key routes such as the London, Komoka, & Kilworth Connection and the Komoka to Poplar Hill Connection (**Figure 1**).

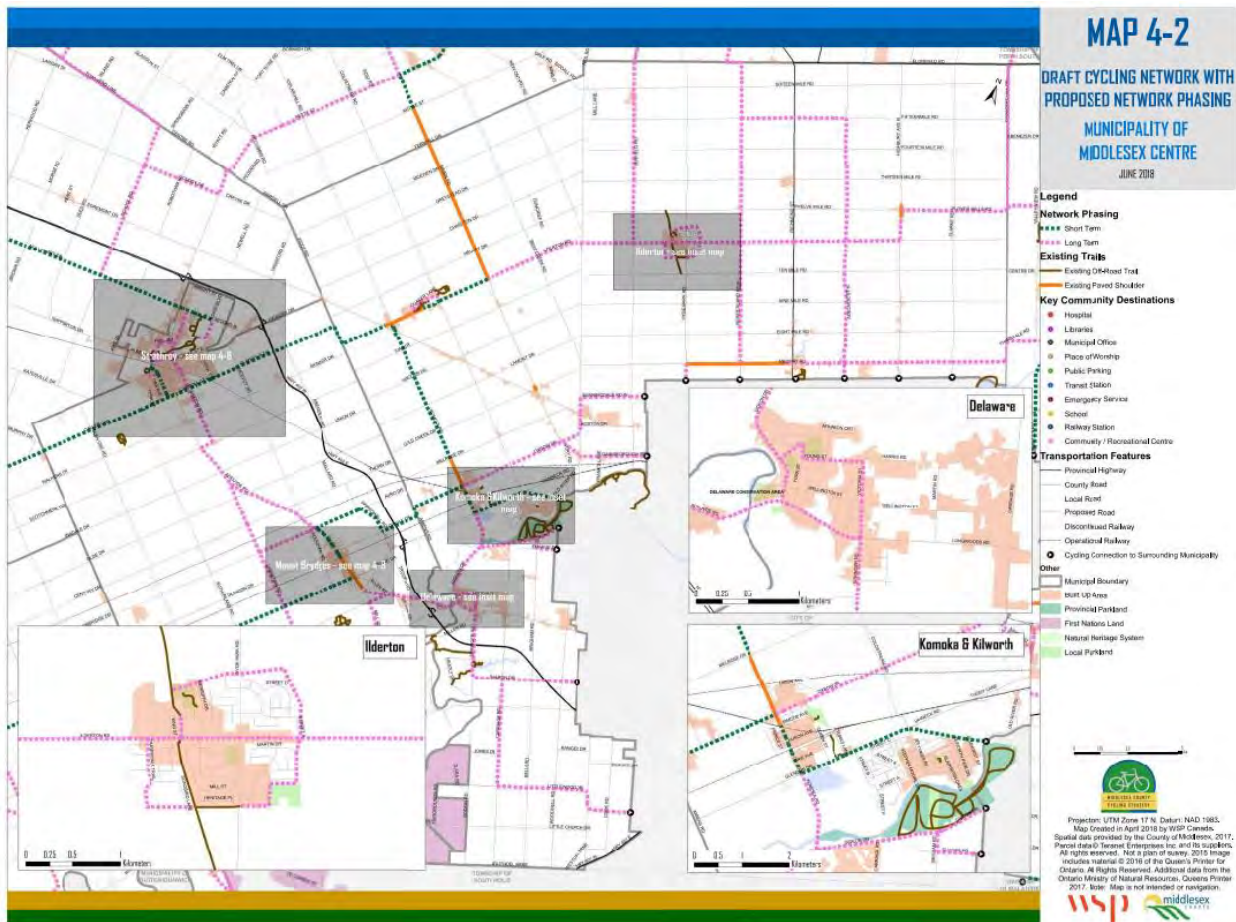


Figure 1 - Middlesex County Cycling Strategy (Map 4-2 – Municipality of Middlesex Centre)

In addition to a recommended network, the Cycling Strategy identifies a series of recommendations to support the overall implementation of the cycling network. Some of these recommendations can be considered through the Middlesex Centre OPR, as follows:

- **Recommendation 7** encourages local municipalities to consider a Complete Streets approach when redeveloping roads.
- **Recommendation 8** of the Cycling Strategy notes that local municipalities should develop appropriate policies to ensure that on-road cycling routes and off-road trails are incorporated into new neighbourhoods and communities as an integral part of the land development process.

ADDITIONAL POLICY OPTIONS

In addition to the recommendations from the Cycling Strategy, there are additional policy options that the Municipality may consider ensuring consistent support for cycling and active transportation throughout municipal land use and infrastructure policies. Overall, the Municipal OP and other implementing policy documents (e.g., secondary plans, community improvement plans) should support active modes. There are three overarching policy areas of the OP which

can directly build upon the recommendations of the Cycling Strategy: visioning, a dedicated policy section, and integrated policy throughout the Official Plan.

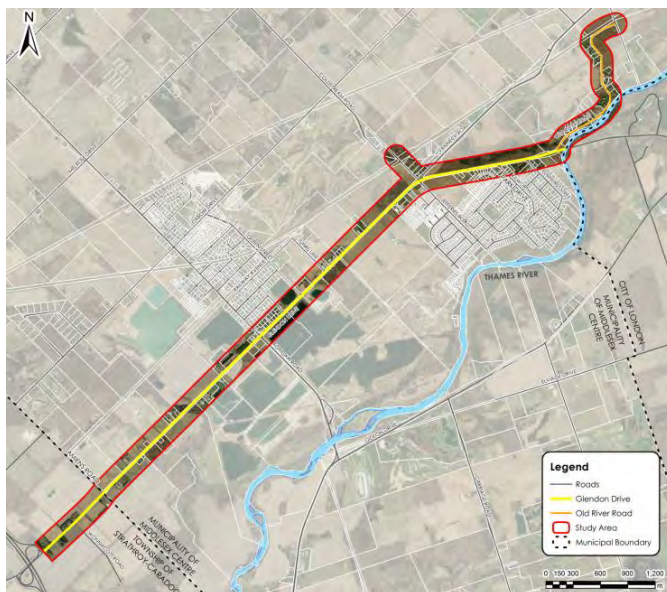
It is beneficial to have elements of each of the three areas to ensure the Official Plan is a robust policy tool that achieves a municipality's active transportation objectives.

- 1 **Visioning:** The visioning category includes motherhood statements or preamble text which are incorporated throughout the Official Plan.
- 2 **A Dedicated Section:** A dedicated section means a section within the Official Plan, as identified in the Table of Contents, dedicated to active transportation policies.
- 3 **Integrated Policy:** There is an opportunity to have specific policies that speak to active transportation throughout the various infrastructure and land use policies in an Official Plan.

The Municipality's OP addresses cycling through a number of sections across the OP, including Section 9.4.6 – Policies for Multi-Use Trails, area specific policies for Komoka-Kilworth, Section 6.2 – Design Policies (Plans of Subdivision), and Section 1.7 – Municipal General Objectives. These various sections of the OP align with each of the three categories noted above; however, there may be an opportunity to review these policies and mapping against the Cycling Strategy and its proposed routes to best support its implementation.

One additional opportunity for the Municipality's OP is the inclusion of a paved shoulder policy which directs the Municipality to consider constructing a paved or gravel shoulder along key Municipal roads identified in the County's Cycling Strategy. Through the Municipality's capital works program and ongoing road reconstruction / rehabilitation program, there may be an opportunity to support the implementation of rural cycling routes through paved shoulders.

2.3.3 GLENDON DRIVE ENVIRONMENTAL ASSESSMENT



The County of Middlesex, in partnership with the Municipality of Middlesex Centre, completed the “Glendon Drive EA”, a Municipal Class Environmental Assessment – Class C in 2018 for improvements to the Glendon Drive corridor from the City of London boundary at the Thames river, to the Highway 402 interchange. The Glendon Drive EA recommends the widening of the road to 4-5 lanes, the construction of new roundabouts and signalized interchanges, and the installation of bicycle lanes and pedestrian facilities. Together, these improvements will support the role of Glendon Drive as an east-west arterial

Figure 2 - Glendon Drive Class EA Study Area

road that provides local connectivity between the communities of Kilworth and Komoka, inter-County traffic, as well as a main commuter route between the City of London and Highway 402. A key consideration of the EA process was a review of the current and planned land uses along the corridor.

The Study Area (**Figure 2**) for the Glendon Drive EA runs through the Komoka-Kilworth Secondary Plan Area (Section 5.7, Schedule A-2) of the Middlesex Centre Official Plan. Recent Official Plan Amendments introduced Special Policy Areas (SPA #22-25), near the Komoka Wellness Centre, to the OP which recognize the evolution of Glendon Drive to a Village Main Street and as such promotes the safe passage of pedestrians and cyclists.

The Glendon Drive EA also provided recommendations for the re-alignment of Coldstream Road to improve operations of the roadway and intersection safety (**Figure 3**). The proposed alignment considers, in part, environmental constraints, as well as future development opportunities. This should be considered in reviewing the Transportation network for the Komoka-Kilworth Secondary Plan (Schedule A-2), as well as the land use configuration shown in the Secondary Plan.

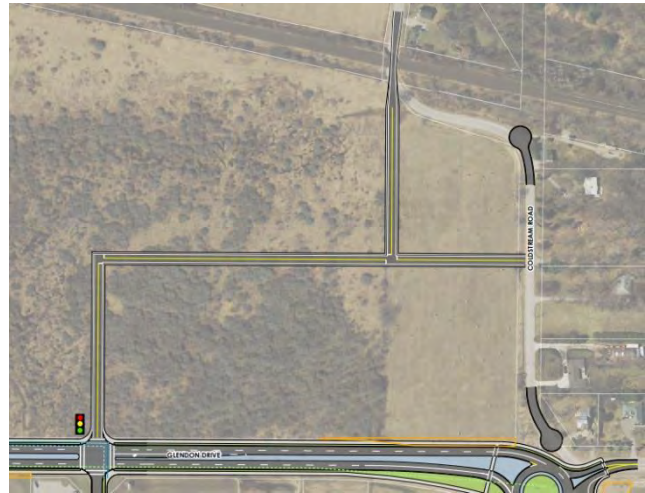


Figure 3 – Proposed re-alignment of Coldstream Road

2.4 MUNICIPALITY OF MIDDLESEX CENTRE

The Municipality of Middlesex Centre administers a range of policies, master plans, and by-laws which stem from the Middlesex Centre Official Plan, and which have bearing on the OPR. This section explores the various Municipal documents as they relate to infrastructure to identify considerations for the OPR.

2.4.1 MIDDLESEX CENTRE OFFICIAL PLAN

As discussed in previous sections of this Discussion Paper, there are certain Provincial or County policies that the Middlesex Centre Official Plan must implement, and others where there is greater flexibility. It is also important that the OP reflect the present-day vision, goals and values of the Municipality. This section discusses the specific policies of the OP, with an emphasis on Section 9.0, related to infrastructure that will need to be updated, and where opportunities exist to provide locally relevant policy direction. Specific changes and policy directions will be explored in the subsequent Policy Directions and Recommendations Report.

Infrastructure policy will form a critical component of the Official Plan, reflect the interconnectedness of servicing and land use planning decisions, and determine if the growth

forecasted can be accommodated. These policies will ultimately assist the Municipality in determining what, if any, upgrades are required to the system.

The continued growth and prosperity of the Municipality is predicated on the efficiency and continued availability of high quality transportation infrastructure, municipal services, water, wastewater, and stormwater. The following subsections provide an overview of local policies with respect to infrastructure, as well as some high-level recommendations for the OP in the following areas:

- Municipal Infrastructure and Servicing;
- Transportation and Utilities; and,
- Alternative and Renewable Energy Systems.

2.4.1.1 *MUNICIPAL INFRASTRUCTURE AND SERVICING*

The topic of municipal infrastructure and services – including sanitary sewer and water servicing is generally contained in Section 9.3 of the OP. The Municipality’s current servicing areas, as articulated in Sections 9.3.1(a) and 9.3.1(b), include:

- **Sanitary Sewer Servicing:** Arva, Ilderton, and Komoka-Kilworth
- **Full Water Servicing:** Ilderton, Komoka-Kilworth, Delaware, Arva, Denfield, and Ballymote
- **Partial Water Servicing:** Melrose and Birr

The Municipality’s Official Plan provides direction that future development within settlement areas proceed on the basis of full municipal services. Section 9.3.1(c) notes that partial services may be considered on an interim basis subject to proper justification.

Section 9.3.1(a) notes that the establishment of sanitary sewer infrastructure in Delaware is possible within the planning horizon. This would make Delaware the fourth fully serviced area of Middlesex Centre. Special Policy Area (SPA) #3 applies to the Delaware Community Settlement Area and notes the Municipality’s commitment to the provision of municipal sewage services to service existing and future development per the Delaware Water and Wastewater Servicing Study prepared in 2005. Following the introduction of full servicing in Delaware, restrictions which limit development to lands located on existing road rights-of-way shall be removed. The timing for full servicing in Delaware will be confirmed in the Master Servicing Plan. Further, SPA #4 notes that lands adjacent to SPA #4 are encouraged to be developed on municipal water services through an extension of these services.

The Municipality’s servicing hierarchy and infrastructure will be reviewed against the findings of the various studies and master plans (outlined in Section 2.4.6 of this Discussion Paper).

Section 10.20.3 lists the types of reports and studies which are required to accompany development applications, including those to address servicing and infrastructure matters. Where new infrastructure is required or an expansion of the existing infrastructure is necessary,

the required studies/reports must demonstrate that the improved infrastructure will be adequate to accommodate the proposed development.

Section 9.3 of the OP notes that Arva, Ilderton, and Komoka-Kilworth are generally serviced by municipal sanitary sewer systems and that establishment of sanitary sewer infrastructure in Delaware is possible within the planning horizon of the Plan. The servicing capacity of the Community Settlement Areas is discussed further in Section 3.1 of this Discussion Paper.

Within agricultural areas, septic tank and weeping tile systems will be the primary means of sewage disposal (9.3.2(a)), and the OP directs the zoning by-law to establish minimum lot requirements for new development where septic systems are proposed (9.3.2(b)).

Policy 9.3.1(d) notes that the Municipality will undertake the preparation of Community Stormwater Management Studies in settlement areas. Section 2.4.6.1 and 2.4.6.2 of this Discussion Paper explore these Settlement Area Stormwater Management Master Plans.

2.4.1.2 TRANSPORTATION AND UTILITIES POLICIES

Section 9.4 of the OP establishes policies related to transportation systems and utilities in the Municipality – including roads, railway operations, and utility corridors. The general transportation system is shown on Schedule D of the OP. Policy 9.4.2 establishes the hierarchy of Municipal roads, and notes that Municipal Roads are intended to carry low volumes of traffic, and provide access to abutting properties. Section 9.4.3 includes a series of transportation-related policies, including:

- The development of new Municipal roads shall generally occur through the plan of subdivision process. Design relating to the orientation of Municipal roads shall consider the design policies included in Section 6.0 and Section 10.5 of this Plan.
- All new development in the Municipality must front onto a public road which is constructed to a minimum standard established by the Municipality and is maintained on a year-round basis.
- The location of access driveways should not create a visual traffic hazard due to concealment or visual obstructions. Access driveways should be limited in number and be designed to minimize the dangers to pedestrian and vehicular traffic. In the planning and design of plans of subdivisions, the use of noise barriers or the back-lotting of residential lots onto Municipal Roads shall be discouraged.

Schedule D further delineates the oil pipelines, gas lines, and hydro lines which traverse the Municipality – referred to as major utility corridors in Section 9.4.5. These corridors are protected from encroachment and only open space and certain recreational uses are permitted within these corridors.

2.4.1.3 ALTERNATIVE AND RENEWABLE ENERGY SYSTEMS

Section 9.8 speaks to alternative and renewable energy sources, such as wind, water, biomass, methane, solar, and geothermal within the Municipality.

Regarding wind energy generation system, the OP establishes two classifications of these system – small systems (SWEGS) and commercial systems (CWEGS). Small systems are considered accessory to the principal use of the property and may be permitted subject to the provisions of the Municipality’s Zoning By-law. Commercial systems are permitted in agricultural areas, subject to a zoning by-law amendment and site plan control.

On December 6, 2018, the Province repealed the *Green Energy Act, 2009* and amended the *Electricity Act, 1998*, the *Planning Act*, and other Provincial statutes. The *Green Energy Act* was originally enacted in 2009 to facilitate the establishment of renewable energy projects across the Province. The *Act* defined green energy to include wind, solar, biomass, and biogas where these energy sources were used to create electricity. Under the *Act*, municipalities were not permitted to pass by-laws that could restrict green energy projects, including zoning regulations to prohibit solar farms and wind turbines. Bill 34 (*Green Energy Repeal Act, 2018*) amended several provisions of the *Planning Act* which now allow for regulations to permit or restrict these types of uses through *Planning Act* applications. The *Planning Act* has also been amended to prohibit an appeal to the Local Planning Appeal Tribunal (LPAT) of a Council decision to approve a renewable energy undertaking or refusal or failure to approve a requested amendment.

Given the recent changes enacted through Bill 34, there is now an opportunity for the Municipality to consider policy and zoning regulations relating to the development of renewable energy projects including renewable energy uses and accessory structures. Considerations relating to alternative energy systems can include siting considerations, community energy needs, community acceptance of a given project and Province-wide energy needs.

2.4.1.4 KOMOKA-KILWORTH SECONDARY PLAN

Section 5.7 of the OP contains policies for the Komoka-Kilworth Secondary Plan Area. Komoka-Kilworth is one of the primary areas to accommodate urban growth in Middlesex Centre, as such it requires a tailored suite of policies to guide future development. As it relates to infrastructure and transportation, Sections 5.7.11 and 5.7.12 outline servicing and transportation policies for Komoka-Kilworth. The Secondary Plan provides direction on transportation, including active transportation, for Komoka-Kilworth, such as the layout and configuration of the street network. The policy approach of this Secondary Plan will be reviewed for applicability in other areas of Middlesex Centre.

Schedule A-2 also identifies existing and conceptual locations of stormwater management ponds within the Settlement Area. As discussed in Section 2.4.6.1 of this Discussion, these locations should be reviewed against the Settlement Area Stormwater Master Plan.

2.4.2 OFFICIAL PLAN AMENDMENTS TO BE CONSOLIDATED

As discussed in Section 2.4.1, Special Policy Areas (SPA) #3 and #4, introduced through Official Plan Amendments 17 and 5 respectively, deal with servicing matters in Delaware. SPA #3 applies broadly to the Delaware Community Settlement Area, whereas SPA #4 applies on a site-specific basis (**Figure 4**). Through the OPR, there may be an opportunity to consolidate these policies into the OP and address the Municipality's plans for servicing Delaware. This opportunity will be discussed in greater detail in Section 3.1.

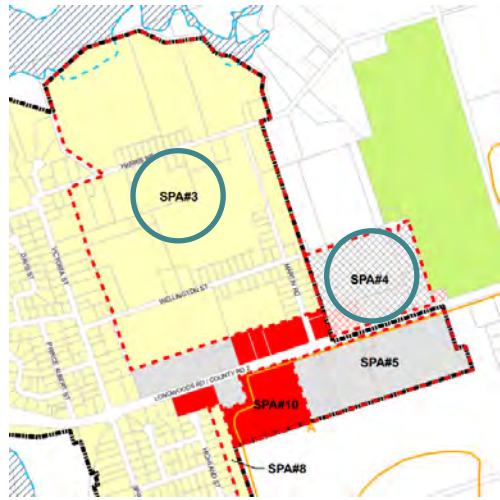


Figure 4 - Delaware Community - SPA #3 and #4

Official Plan Amendment (OPA) 28 was introduced in April 2012 to implement the recommendations of the Municipality's most recent OP review and the preparation of the Komoka-Kilworth Secondary Plan. The OP review recommended that re-allocating the supply of vacant land amongst the various settlement areas is warranted on the basis of directing growth to locations that support, in part, full municipal servicing as the preferred means of servicing. It is anticipated that there will be opportunities to consolidate the policy outcomes of the comprehensive review through the OPR.

2.4.3 MIDDLESEX CENTRE ZONING BY-LAW

The Municipality's Zoning By-law 2005-005 sets out the detailed regulations and controls for land use and development within the Municipality, and is intended to implement the objectives and policies of the Municipality's Official Plan.

While the Zoning By-law does not contain specific zone categories that directly impact the provision of infrastructure, its role in implementing the policies of the Official Plan is critical. Section 4.26 notes that the provisions of the By-law do not apply to the use of land or the construction of a building or structure that is owned by the Municipality; however, these uses are required to meet a series of lot and building requirements.

Section 4.29 regulates the use of telecommunication transmitting facilities and towers – including establishing a 2.0-hectare minimum lot area, prohibiting the use in any residential zone, and establishing a minimum separation distance of 150 metres from any residential zone or dwelling on a separate lot. The Official Plan does not currently establish policies related to telecommunication facilities and towers.

Further, within each zone category, the Zoning By-law contains lot and building requirements (e.g., minimum lot area, setbacks) based on the availability of public sanitary sewage and water supply systems, as well considerations related to nitrate levels from private septic systems. For

example, where private servicing is required, the Zoning By-law requires a larger minimum lot area in part to accommodate space needed for private water and septic facilities. Should the servicing standards of the Official Plan change, there may be a need to review the relevant standards of the Zoning By-law.

A more detailed discussion of any updates that may be required to By-law 2005-005 will be included in the Policy Directions and Recommendations Report.

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

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

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

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

Site plan control permits the Municipality to review a development proposal as it relates to the widening of public roads, grading and site drainage, and the provision for disposal of storm, surface, and waste water. Appendix K of the Site Plan Manual speaks to the requirement for appropriate grading and disposal of storm water, surface and wastewater including requirements for connections, monitoring, certification, and future connections. Appendix P of the Site Plan Manual lists the various policies from the OP as they relate to Site Plan Control. It appears that some policy references in the Site Plan Manual are outdated (e.g., referring to a "Township") and could be updated to reflect any policy changes introduced through the OPR.

2.4.5 MIDDLESEX CENTRE TRAILS MASTER PLAN

The Municipality's Trails Master Plan (2014) guides the development of future trails and supporting amenities in Middlesex Centre. The Master Plan focuses on pedestrian pathways within municipal parks and settlement areas, sidewalks in new and existing development, and trail connections.

In October 2017, Official Plan Amendment No. 39 (OPA 39) was presented to Municipal Council to implement the recommendations of the Trails Master Plan. OPA 39, which was adopted by Council 2018, introduced the following changes to the OP:

- Established a definition for multi-use trails;
- Introduced a new series of schedules (Schedule E to E-7) illustrating the existing and proposed trail network;
- Ensured alignment with the Secondary Plan policies for Komoka-Kilworth (Section 5.7); and,
- Established a new section (Section 9.4.6) in the Official Plan to address multi-use trails, including principles and policies for planning, constructing, and maintaining multi-use trails.

Given that the Official Plan was recently brought into alignment with the recommendations of the Trails Master Plan through OPA 39, it is not anticipated that significant changes will be made to these policies or schedules through the OPR.

2.4.6 INFRASTRUCTURE IMPROVEMENTS

The Municipality of Middlesex Centre has undertaken a number of critical infrastructure studies to review servicing capacity across the settlement areas and identify required infrastructure improvements. The following sub-sections summarize these key studies to identify inconsistencies between the Municipality’s OP (including its schedules) and planned infrastructure. These studies include the:

- Middlesex Centre Settlement Area Stormwater Master Plan;
- Delaware Community Settlement Area Stormwater Master Plan;
- Delaware Servicing Municipal Class Environmental Assessment;
- Ilderton Wastewater Treatment Facility Class Environmental Assessment;
- Arva Community Wastewater Treatment Municipal Class Environmental Assessment;
- Middlesex Centre Road Needs Study; and,
- Middlesex Centre Master Servicing Plan.

2.4.6.1 MIDDLESEX CENTRE SETTLEMENT AREA STORMWATER MASTER PLAN

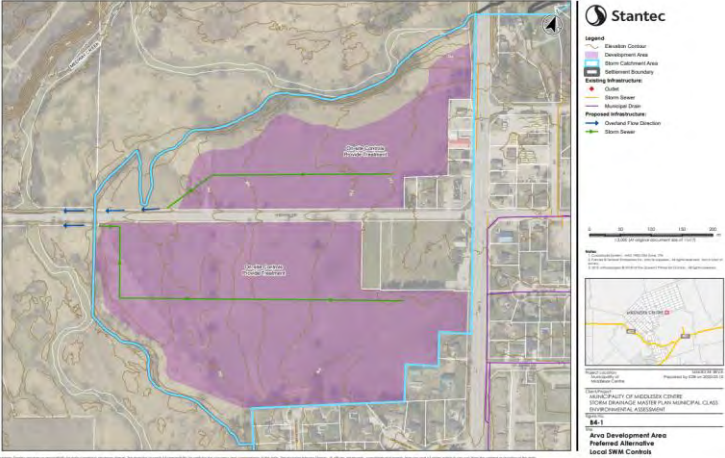
The Middlesex Centre Settlement Area Stormwater Master Plan (the “Stormwater Master Plan”) was finalized in July 2020 to provide a cohesive strategy for stormwater management (SWM) which efficiently services the existing communities and provides opportunities to service future growth. The study area for the Stormwater Master Plan includes the settlement areas of Arva, Birr, Ballymote, Coldstream, Denfield, Ilderton, Kilworth, Komoka, Melrose, Poplar Hill, Bryanston, and Lobo. The Stormwater Master Plan assesses the existing drainage conditions throughout these settlement areas, and in part addresses existing issues and accommodates future growth.

The OP Land Use Schedules represent an important consideration of the Stormwater Master Plan. Land use designations within each designated Settlement Area were reviewed to identify areas of future development and the nature of future development. The Stormwater Master Plan only considered the existing settlement area boundaries in Middlesex Centre; therefore, any future settlement area boundary adjustments or expansions will have to consider how any expansion or adjustment will affect infrastructure servicing.


The following table summarizes the preferred stormwater management alternatives for the various settlement areas to understand possible considerations for the OPR (**Table 1**), including any required updates to mapping:

Table 1 - Summary of Preferred Alternatives with OPR Considerations

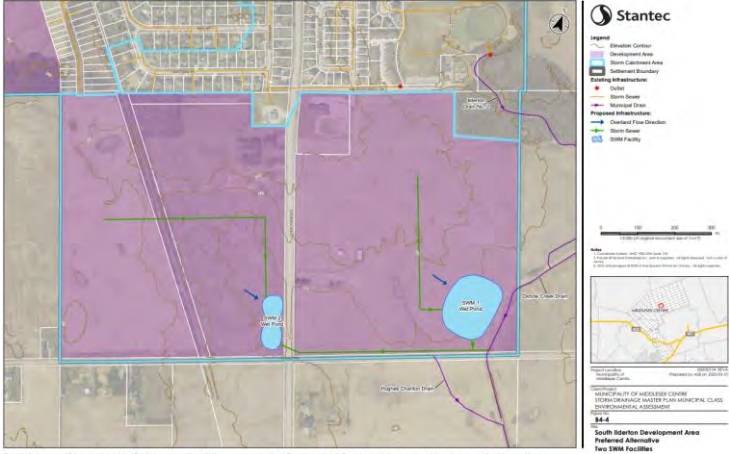
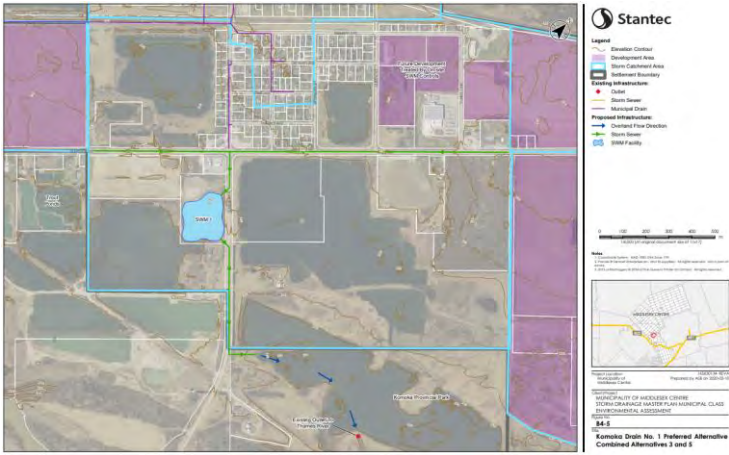
SETTLEMENT AREA	PREFERRED ALTERNATIVE	OPR CONSIDERATIONS
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<p>Arva</p>	<p>Local SWM Controls</p>	<p>All stormwater treatment to runoff from future development in Arva is managed through local SWM controls. The developer will be responsible for selecting the at-source control measures to treat runoff from development.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>
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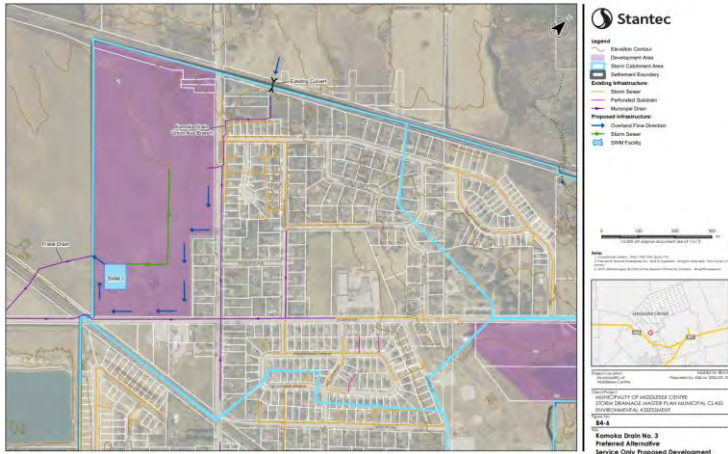
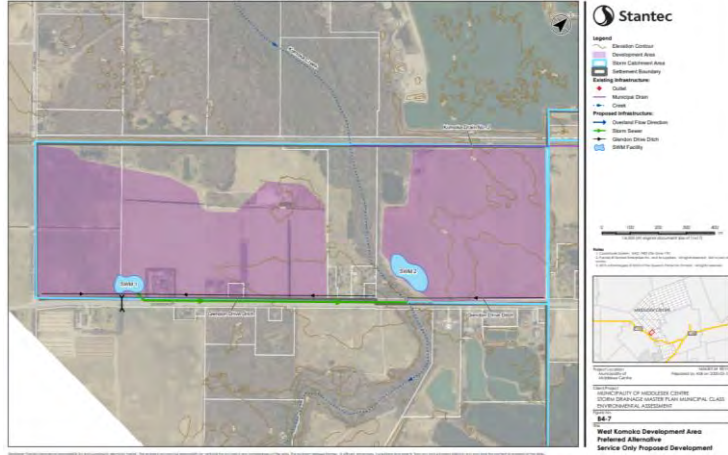
SETTLEMENT PREFERRED
 AREA ALTERNATIVE OPR CONSIDERATIONS

<p>Ballymote</p>	<p>On-Site SWM Controls</p>	<p>Stormwater treatment from all proposed development will be controlled by on-site SWM controls which should be located in front yards to reduce the risk of future home improvements (e.g., pools, patios) from interfering with their operation. The existing municipal drains will be realigned around the perimeter of Ballymote.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>
<p>Ilderton Drain No. 2</p>	<p>Drain Improvements</p>	<p>Recommended replacement of the existing 400mm drain to a 600mm drain within the existing Municipal Drain limits. The report also recommends the completion of a wet weather sanitary sewer capacity analysis to identify any potential infiltration problems with the Willowcreek Subdivision in response to flooding complaints.</p>

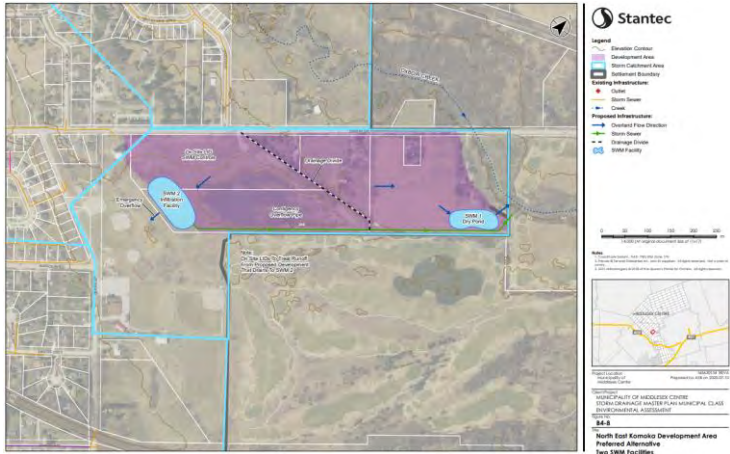
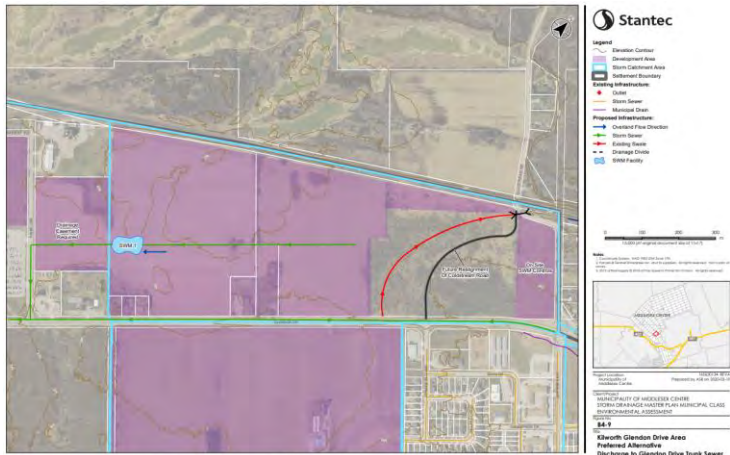
SETTLEMENT PREFERRED
 AREA ALTERNATIVE OPR CONSIDERATIONS

<p>South Ilderton Development Area</p>	<p>Two SWM Facilities</p>	<p>Two regional SWM facilities are proposed to service the South Ilderton Development Area to provide flexibility for development phasing, amongst other benefits.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>
<p>Komoka Drain No. 1</p>	<p>Hybrid</p>	<p>Stormwater treatment for the Komoka Drain #1 is provided by a proposed SWM pond located on the west side of Komoka Road in a former gravel pit. This will serve the Komoka Drain No. 1 drainage area, the proposed Glendon Dr. improvements, and existing commercial / residential development located southwest of the Komoka Rd. / Glendon Dr. intersection.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>

SETTLEMENT PREFERRED
 AREA ALTERNATIVE OPR CONSIDERATIONS

<p>Komoka Drain No. 3</p>	<p>Service Only Proposed Development</p>	<p>A proposed stormwater management facility located on the north side of Oxbow Drive and east of the CN railway line will provide all necessary stormwater treatment to the runoff from the proposed development located west of Komoka Road.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>
<p>West Komoka Development Area</p>	<p>Service Only Proposed Development</p>	<p>The future land use identified in the OP in this catchment area is Settlement Employment. Runoff from this future development is treated by two proposed SWM facilities.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>

SETTLEMENT PREFERRED
 AREA ALTERNATIVE OPR CONSIDERATIONS

<p>Northeast Komoka Development Area</p>	<p>Two SWM Facilities</p>	<p>Runoff from future development in the Northeast Komoka Development Area will be treated by two proposed SWM facilities.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>
<p>Kilworth Glendon Drive Area</p>	<p>Discharge to Glendon Drive Storm Sewer</p>	<p>The proposed Glendon Drive streetscape improvements include a proposed trunk storm sewer to collect and convey minor flows from the proposed right-of-way westward to a future outlet. This proposed trunk storm sewer will provide the outlet from future development located north of Glendon Drive.</p>  <p>Source: Settlement Area Stormwater Master Plan (Stantec, 2020)</p>

SETTLEMENT PREFERRED

AREA ALTERNATIVE OPR CONSIDERATIONS

Kilworth East	SWM Strategy per Glendon Drive EA	In accordance with the recommendations of the Glendon Drive Streetscape EA, all runoff from this portion of the Glendon Drive improvements is collected and treated by a proposed enhanced grass swale located on the north side of the Glendon Drive right-of-way.
Melrose	Relocate Drainage System	The existing municipal drains located in the residential rear yards are abandoned and replaced with rear yard catch basins with leads that connect to the local storm sewers located in the municipal rights-of-way.

Alternative and preferred solutions were not identified for the remaining settlement areas as they were screened out during the issues evaluation phase of the Stormwater Master Plan.

2.4.6.2 DELAWARE COMMUNITY SETTLEMENT AREA STORMWATER MASTER PLAN

The Delaware Community Settlement Area Stormwater Master Plan was completed in 2016 to identify necessary storm drainage system improvements to better service the existing community and to provide a drainage servicing strategy to accommodate future growth and development within Delaware. The Master Plan provides a series of preferred alternatives for the various catchment areas of municipal drains and municipal storm sewers.

Based upon a review of the Municipality’s Official Plan and planning documents, the Master Plan identified several areas of “Potential Future Development” (shown in orange) and “Future Development Serviced by Stormwater Management Infiltration Measures” (shown in teal) in **Figure 5**, below.

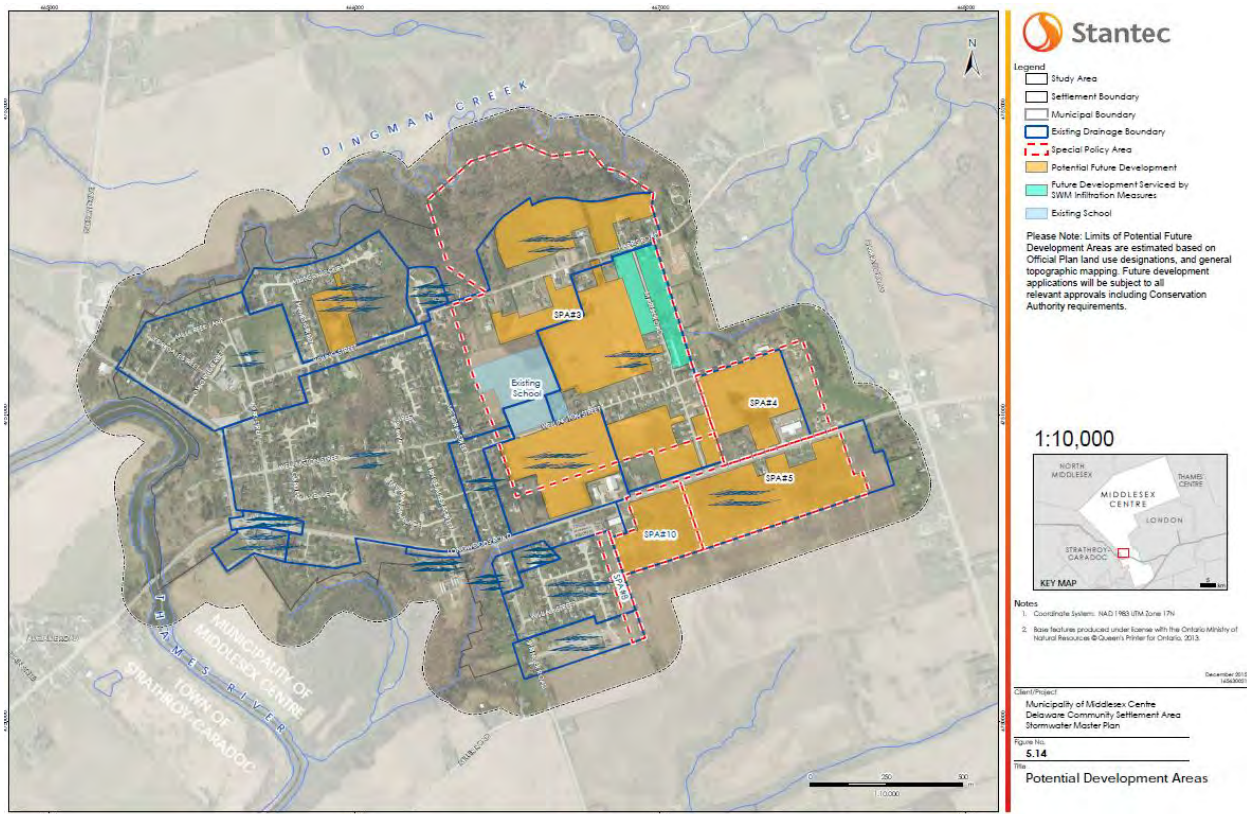

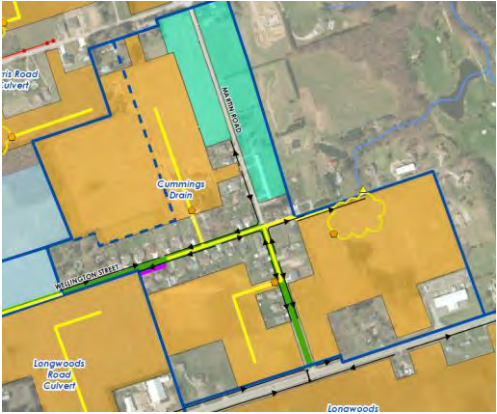




Figure 5 - Potential Development Areas (Delaware) – Stormwater Master Plan

The preferred alternatives identified through this Stormwater Master Plan concluded with several matters to be considered as it relates to the OPR to address and incorporate the future need for stormwater servicing.

Table 2 summarizes several of the preferred alternatives within Delaware, including the key considerations for the OPR in terms of land use, future development opportunities, and the development of urban rights-of-way.

Table 2 - Summary of Preferred Alternatives with OPR Considerations

CATCHMENT AREA	PREFERRED ALTERNATIVES	OPR CONSIDERATIONS
<p>Mill Street Development Storm Sewer</p>	<p>Alternative 2: Improve Major System</p>  <p>Source: Delaware Stormwater Master Plan (Stantec, 2016)</p>	<p>Capacity issues caused by future development are addressed by providing on-site SWM controls.</p>
<p>Cummings Municipal Drain</p>	<p>Alternative 2: Urban Right of Way within Future Development Areas and Dry SWM Pond</p>  <p>Source: Delaware Stormwater Master Plan (Stantec, 2016)</p>	<p>Future development areas (excluding approved Draft Plans of Subdivision along Martin Rd.) will incorporate an urban right-of-way to convey minor and major flows. Flows from future development areas will be conveyed by propose storm sewers along Wellington St. and Martin Rd. A SWM pond is proposed at each of the development lands.</p> <p>This drain aligns with SPA #3 and SPA #4 of the Municipality’s Official Plan.</p>

<p>Longwoods Road Culvert</p>	<p>Alternative 3: Urban Right of Ways within Future Development Areas and Dry SWM Pond</p>  <p>Source: Delaware Stormwater Master Plan (Stantec, 2016)</p>	<p>An urban right-of-way within the future development area incorporates SWM control measures to allow for development to proceed with minimal impact to the ravine or existing properties. A proposed dry SWM pond and OGS provides the required stormwater treatment and quantity control.</p>
<p>Longwoods Commercial Lands</p>	<p>Alternative 3: Dry SWM Pond</p>  <p>Source: Delaware Stormwater Master Plan (Stantec, 2016)</p>	<p>Flows from the Longwoods Road roadside ditches are conveyed through the development lands through a drainage easement. Quality and Quantity controls are provided by proposed OGSs within the future development area, and a dry SWM pond located within the development lands or potentially within the existing buffer lands (Special Policy Area #8) subject to approval/acquisition of land from the current landowner and municipal approval to address current SPA designation/development constraints</p> <p>This drain aligns with SPA #5, SPA #8 and SPA #10 of the Municipality’s Official Plan.</p>

CATCHMENT AREA

PREFERRED ALTERNATIVES

OPR CONSIDERATIONS

Harris Road Culvert

Alternative 2A: Urban Right of Way and Dry SWM Ponds within Future Development Areas



Source: Delaware Stormwater Master Plan (Stantec, 2016)

An urban ROW within the future development areas incorporate SWM control measures to allow for development to proceed with minimal impact to the ravine or existing properties.

This alternative manages capacity issues in the existing system and addresses stormwater servicing for the future development areas with less impact to existing residences (tree removal, road reconstruction), and is consistent with the Municipality's intention to ensure new development meets the urban ROW standard.

This drain aligns with SPA #3 of the Municipality's Official Plan.

CATCHMENT AREA

PREFERRED ALTERNATIVES

OPR CONSIDERATIONS

**Thompson
Municipal Drain**

Alternative 3: Proposed Storm Sewer



Source: Delaware Stormwater Master Plan (Stantec, 2016)

The storm sewer along Victoria Street is replaced with a new storm sewer within the right of way, and a portion of sewer currently draining to the Davis Street system is connected to proposed Victoria Street sewer to alleviate impacts on the adjacent Forsythe System. The urban right-of-way proposed for Victoria Street has the benefit of preserving a greater number of trees than would a semi-urban right of way. During detailed design, however, it is recommended that a Tree Preservation Plan be completed to document and assess any impact on existing trees along the right of way, and to identify appropriate mitigation measures for any trees requiring removal.

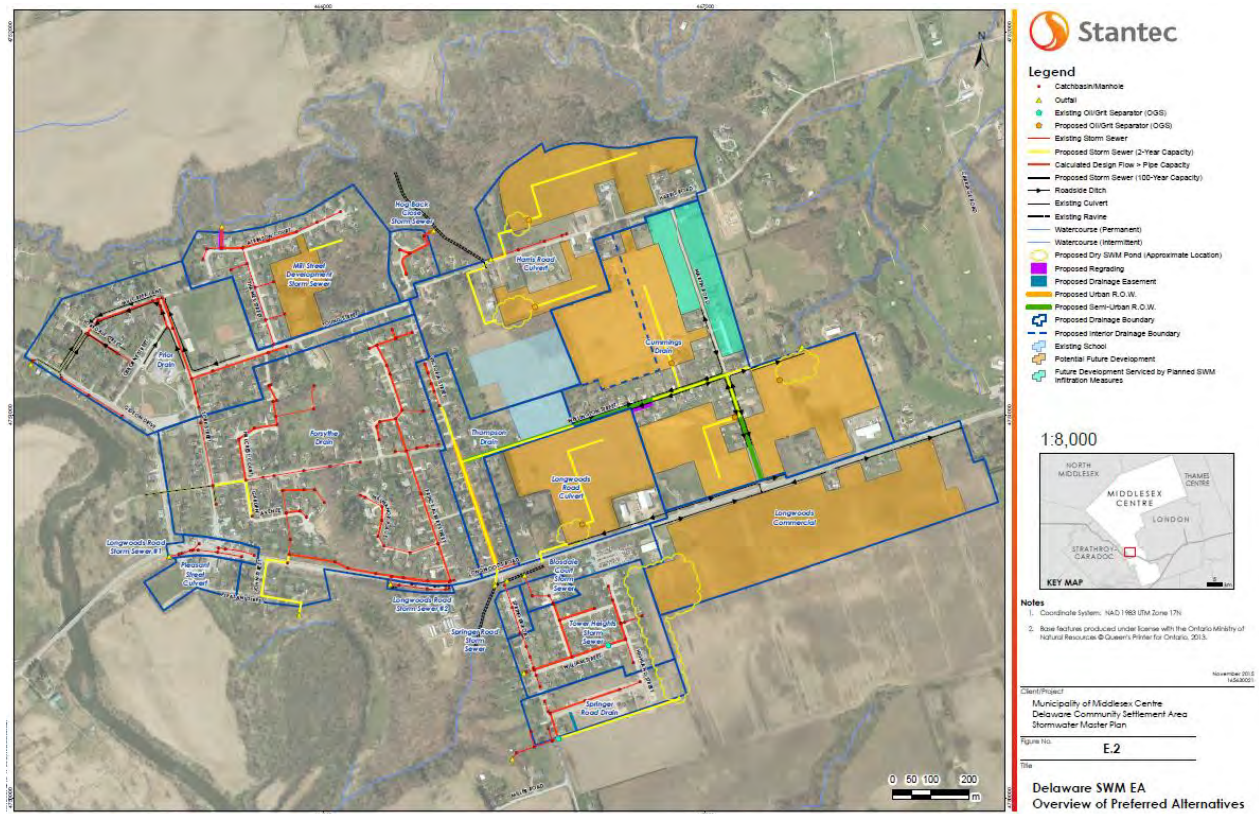


Figure 6 - Overview of Preferred Alternatives (Delaware) – Stormwater Master Plan

2.4.6.3 DELAWARE SERVICING MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

The Delaware Water Servicing Municipal Class Environmental Assessment was completed in 2017 to identify necessary water supply and storage solutions to best service and accommodate future growth and development in Delaware.

The EA found that the community of Delaware receives water via a connection to the City of London distribution system. This connection was limited to 591 m³ /day. The water system included a re-chlorination facility at the point of entry of the water supply into Delaware and a standpipe within the distribution system with an active storage capacity of 664 m³ which is in place to address high demand and emergency flow requirements. The previous standpipe is under capacity to meet the needs of the community and requires extensive maintenance.

Excluding minor residential infill/intensification developments, the majority of developable land in Delaware is designated as Residential, located with Special Policy Area #3 (SPA #3) which states that development of these lands is restricted to the existing road rights-of-way until such time that full municipal servicing (sanitary and water servicing) is available.

Water is conveyed to Delaware via a 600-mm diameter asbestos coated steel watermain from the City of London distribution system. The EA found that based on anticipated and draft plan

approved residential and commercial developments, this watermain likely requires replacement to a larger pipe diameter in the next 12-24 months.

WATER SUPPLY

The water supply alternatives carried forward for further evaluation included:

- Alternative 1 - “Do Nothing” - Under such alternative, no improvements would be identified to address the existing conditions;
- Alternative 4 – “Maintain/Upgrade Existing Water Source (City of London) and System” - This alternative would involve maintaining the existing connection to the City of London water distribution system, and renegotiation of the permitted water taking and servicing limits to provide capacity and flexibility for future development; and,
- Alternative 6 – “Connect to a Neighbouring Water Source” – The nearest available water system is the Komoka-Kilworth water distribution system within Middlesex Centre, which is fed by a 450 and 400 mm diameter transmission mains from the Lake Huron Primary Water Supply System.

The EA recommended that the Municipality maintain the existing City of London connection until such time that additional supply is triggered by future development. This would trigger the Municipality to proceed with the construction of a watermain connection to the Komoka-Kilworth water distribution system. Water supply improvements and alternatives have started to be implemented and will be complete in early 2021.

WATER STORAGE

The water storage alternatives carried forward for further evaluation included:

- Alternative 1 - “Do Nothing” - Under such alternative, maintenance/repairs would undertake on a reactive basis, capacity deficiencies would not be addressed, and capacity provisions to support future development would not be available;
- Alternative 2 – “Rehabilitate Existing Standpipe” - This alternative would involve significant maintenance, including repainting and replacement of some system components. Such alternative does not increase existing storage capacity, and may only extend the service life an additional 5-10; and,
- Alternative 3 – “Construct New Facility (existing property or new location)” – This alternative provides the ability to increase storage capacity and represents a higher capital cost, but significantly lower operating and maintenance costs and provides a service life of 50-60 years.

The EA recommended that the Municipality construct a new standpipe water storage facility on the existing property. Water storage improvements and alternatives have started to be implemented and will be complete in early 2021.

2.4.6.4 ILDERTON WASTEWATER TREATMENT FACILITY CLASS ENVIRONMENTAL ASSESSMENT

The Middlesex Centre Master Servicing Plan identified a need to expand wastewater treatment in Ilderton to serve additional future growth within the Ilderton growth area within a 10-year time frame. The Ilderton Wastewater Treatment Facility Class Environmental Assessment Report, completed in March 2015, was prepared to scope this expansion both in terms of a medium-term solution (20-years) and longer-term solution (40-years).

The Ilderton WWTF EA identified a preferred solution to expand the current facility to allow for a 20-year wastewater flow and for future expansion capability. Phase 1 of the approach includes the re-rating of the facility capacity to approximately 1,300 m³/day annual average flow and additional upgrades to unit processes. Phase 2 involves a facility expansion to 1,800 m³/day.

This added capacity (through both Phase 1 and 2) is designed to meet the estimated wastewater flows for Ilderton as identified through Official Plan Amendment 28. The EA notes that if the Settlement Employment/Strategic Employment Area lands identified in the Official Plan are to be serviced in the future, there will be a need for future phasing at the Ilderton WWTF to accommodate these flows.

Construction of the Phase 1 upgrades was completed in 2019 to serve additional future proposed growth within Ilderton.

2.4.6.5 ARVA COMMUNITY WASTEWATER TREATMENT MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (IN PROGRESS)

In April 2010, a Master Servicing Plan Class EA was completed in Middlesex Centre in accordance with the requirements of phases 1 and 2 of the Municipal Class EA. The Study reviewed municipal services including water, sanitary, storm, transportation and solid waste for both existing and future developments in the Municipality. The Master Plan reviewed Arva's current wastewater treatment and identified that the cap on increased sanitary servicing in the current agreement with the City of London and the lack of an Arva wastewater treatment facility ("WWTF") both limit the total potential growth and rate of growth in Arva.

The preferred option recommended to amend the agreement with the City of London. Following significant work by Municipal staff and council, the City of London proposed a minor amendment to the agreement to amend the annual cap of 10 units per year; however, the agreement continues to cap growth at 50 units in each five-year period and did not include an increase to the permitted capacity.

The Municipality is now proceeding with a Schedule C Municipal Class EA for a new wastewater treatment facility to support future growth.

2.4.6.6 MELROSE WATER SUPPLY MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

The Melrose Water Supply Municipal Class Environmental Assessment was completed in 2017 to assess the various water supply alternatives to meet the long-term servicing needs of Melrose. The Melrose Water Treatment Facility (MWTF) currently services the existing Wynfield

Estates Subdivision. The remainder of the Hamlet is serviced by private well systems. The MWTF is currently supplied by two deep groundwater wells that pump raw water into the facility – which was built as part of the subdivision construction.

The Melrose Water Supply Class EA identified a preferred alternative to interconnect with the Komoka – Mt. Brydges Secondary Transmission Main. This option would in part address water quality and quantity issues including increased available storage for supply. The existing primary treatment facility at the Melrose MWTF would be decommissioned.

2.4.6.7 MIDDLESEX CENTRE ROAD NEEDS STUDY

The Municipality of Middlesex Centre Road Needs Study was completed in November 2019. The Study includes a review of the Municipality’s road network definition, assessment of current road condition, and an analysis related to the improvement of the road network based on predicted performance. The local road network in Middlesex Centre is predominantly rural in nature (i.e., two-lane rural roads), with 77% of roads being classified as rural, while 8% and 15% of roads are classified as semi-urban and urban, respectively.

The Road Needs Study does not contain any specific direction regarding the Official Plan or OPR, however it provides a classification of the Municipality’s road network based on length, presence of servicing, and adjacent land use. Semi-urban and urban roads have the greatest potential to support future growth areas as they both support servicing and higher volumes of traffic. The policies of Section 9.4.2 and 9.4.3 of the OP will be reviewed against these classifications to confirm that the transportation system is meeting the demands of future growth – both from a transportation perspective and ability to include municipal water / wastewater services within the right-of-way.

2.4.6.8 MIDDLESEX CENTRE MASTER SERVICING PLAN

The Middlesex Centre Master Servicing Plan was completed in 2010 to provide a framework for the provision of municipal services including water, sanitary, storm, transportation, and solid waste management over a 20-year horizon. It is anticipated that the Master Servicing Plan will be updated in 2021/2022.

WASTEWATER SERVICING

With respect to wastewater servicing, the Master Servicing Plan determined servicing areas for the settlement areas of Ilderton, Arva, Komoka-Kilworth. Since the completion of the Master Servicing Plan, several settlement area boundaries were adjusted through Official Plan Amendment #28 (OPA 28). The comprehensive review recommended re-allocating the supply of vacant land among the various settlement areas.

The following are the key wastewater servicing findings as they relate to growth and development in the Master Servicing Plan:

- **Ilderton:** The Master Plan concluded that much of the 20-year growth could be allocated within the 2010 settlement area boundary. OPA 28 expanded the settlement area boundary to include those areas deemed “suitable for service extension with few

constraints”. Several additional areas were identified in the southwest quadrant and to the east of the settlement area where additional further growth could be directed, beyond those lands added through OPA 28. The Master Plan notes that there is a need to expand wastewater treatment capacity to serve additional future growth within a 10-year time frame – this is discussed further in the Ilderton Water & Wastewater Servicing Class Environmental Assessment (Section 2.4.6.5).

- **Arva:** Middlesex Centre has an agreement with the City of London that allows the Municipality to collect and pump their sewage to London for treatment. This limits growth potential in Arva as the agreement controls the amount sewage that is accepted. Within the 2010 settlement area boundary, which was adjusted through OPA 28, the areas west of Richmond Street were identified as feasible locations for future growth and service extension. The area identified in the Master Plan where a servicing extension would face some issues (in the northeast quadrant) was removed from the settlement area through OPA 28. The Master Plan recommends amending the agreement with the City of London to increase sanitary servicing capacity in Arva.
- **Delaware:** OPA 28 contemplates the future expansion of the Delaware settlement area boundary through a subsequent Official Plan Amendment, and notes that sanitary services will be provided at the Komoka WWTF when justified on land needs. A pumping station would be required to transport Delaware’s sanitary sewage to the Komoka WWTF.
- **Komoka-Kilworth:** The Master Servicing Plan precluded the completion of the Komoka-Kilworth Secondary Plan, which was also introduced through OPA 28. The Master Plan notes that upgrades to the Komoka pumping station will be required to handle increased sanitary flows. Once capacity has been reached in the Kilworth WWTF, a future trunk sanitary sewer will be required to handle sewage to the Komoka WWTF. To-date, the Kilworth WWTF has been closed and a new pumping station now pumps flows from Kilworth to the Komoka WWTF.

The Master Servicing Plan does not recommend the development of new or expanded wastewater treatment infrastructure to service the Hamlet areas.

WATER SERVICING

- **Ilderton:** The Master Plan found that there were little to no issues with system performance in Ilderton and that additional looping of the existing network would be beneficial to provide additional security to the distribution system.
- **Arva:** Given that Arva receives treated water from the City of London, any increases in water supply (and equal wastewater flows) would have to be accepted by the City through a separate agreement.
- **Delaware:** Delaware receives water via a connection to the City of London distribution system which is limited to 560 m³/day. The new Komoka Booster Pumping Station (BPS)

will address the long-term servicing needs to Delaware. As demand and population in Delaware increases, further upgrades to the system in the form of an inline booster pump station and eventually pressure zone separation will be required to service existing and new developments.

- **Komoka-Kilworth:** Kilworth and Komoka underwent upgrades to their water supply and distribution system. A new supply, which came into service in 2010, via the Komoka – Mt. Brydges Water Supply provides potable water. In addition to the supply, a booster pumping station, intermediate pumping station, and storage facility were built. These upgrades are projected to provide services to not only Kilworth and Komoka, but also to Delaware for the next 20 years before further upgrades are required.
- **Denfield:** Denfield underwent upgrades to its water distribution system to provide a new BPS and water storage facility to meet the current ultimate build-out of the community.
- **Melrose:** Melrose is situated close to the Komoka – Mt. Brydges Water Transmission Main with Middlesex Centre having ownership of extra capacity in the system. As the well system ages and reaches the end of its lifecycle, becoming inefficient to operate, it is anticipated that a Class EA will be undertaken to investigate future servicing options. This Class EA was completed in 2017 and construction is anticipated to occur within the next 5 years to connect Melrose to the Water Transmission Main.

The Master Servicing Plan does not recommend the development of new or expanded water infrastructure to service the Hamlet areas not listed above.

OTHER MUNICIPAL-WIDE MATTERS

The Master Servicing Plan also explored matters related to stormwater management, transportation, biosolids management, and solid waste management. There were no significant recommendations as they relate to the OPR, and the Master Plan recommended further plans / policies to address these infrastructure matters in Middlesex Centre.

3 KEY ISSUES AND OPPORTUNITIES

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

- Infrastructure Capacity;
- Servicing Hierarchy Policies;
- Stormwater Management; and,
- Subdivision Design Requirements.

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

3.1 INFRASTRUCTURE CAPACITY

The OP should promote the development of sewage and water service systems that facilitate the conservation and protection of ground and surface water quality and quantity and natural heritage features and ecological functions. The preferred method of servicing settlement areas and other multi-lot developments is full municipal sewage services and full municipal water services. The OP should consider policies that ensure the Municipality is not unduly burdened by a proposed development, in accordance with Provincial Policy, and that intensification and redevelopment within settlement areas is promoted, wherever feasible.

Section 1.6.6.4 of the 2020 Provincial Policy Statement (PPS) requires that at the time of an official plan review or update (such as this OPR), the upper-tier municipality (i.e., the County) should work with lower-tier municipalities to assess the long-term impacts of individual on-site sewage services and individual on-site water services on the environmental health and character of rural settlement areas. Given the servicing responsibilities in place in the County, much of this work has been delegated to local municipalities, such as Middlesex Centre.

This section summarizes the servicing capacity conclusions from the various infrastructure master plans and Class Environmental Assessments discussed in Section 2 of this Discussion Paper. For the various Settlement Areas across Middlesex Centre, significant servicing constraints are identified that may impact the growth and development potential. The findings from Sections 3.1.1 through 3.1.4 are summarized in **Table 3** under Section 3.1.5.

3.1.1 ILDERTON

WATER SERVICING

The 2010 Master Servicing Plan indicated that Ilderton was deficient in water storage. For the most part, the community is well looped providing redundancy and pumping efficiency in the distribution system. Subsequently, the Municipality undertook the construction of a new elevated water tower in Ilderton, which entered service in 2015, with a capacity of 2,000 m³ which is capable of sustaining the community's water demand for six days.

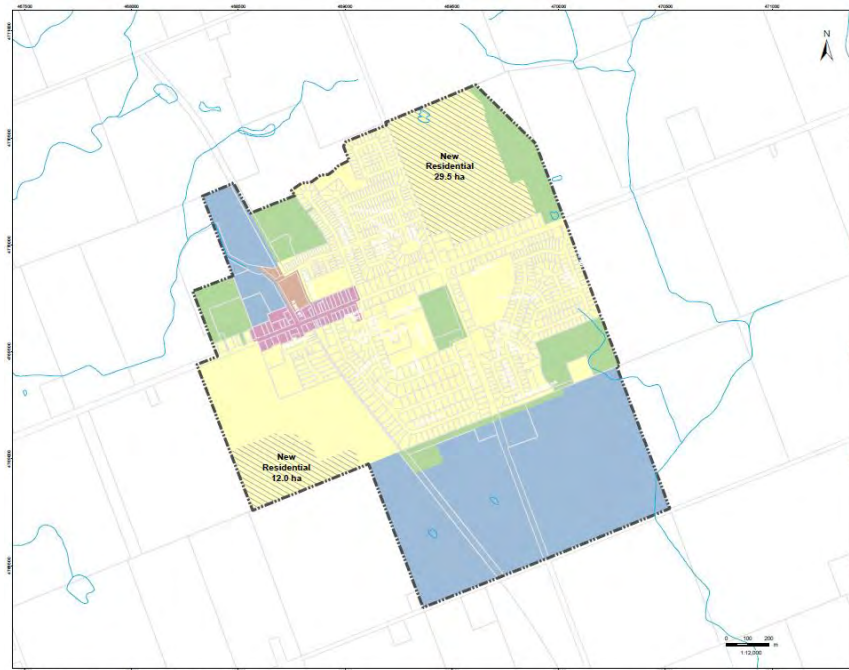


Figure 7 - Residential areas added to the Ilderton Settlement Area through OPA 28

WASTEWATER SERVICING

The 2010 Master Servicing Plan found that most of the Ilderton Wastewater Treatment Facility (WWTF) capacity was been committed to proposed development; however, actual flow rates were much less than the rated WWTF capacity, subject to this development proceeding. Subsequently, the Ilderton Wastewater Treatment Facility Class Environmental Assessment Report, completed in March 2015, was prepared to scope an expansion to meet this need both in terms of a medium-term solution (20-years) and longer-term solution (40-years).

The Ilderton WWTF EA identified a preferred solution to expand the current facility to allow for a 20-year wastewater flow and for future expansion capability. Phase 1 of the approach includes the re-rating of the facility capacity to approximately 1,300 m³/day annual average flow and additional upgrades to unit processes. Phase 2 involves a facility expansion to 1,800 m³/day.

This added capacity (through both Phase 1 and 2) is designed to accommodate future development potential within the existing settlement area boundary and commensurate estimated wastewater flows for Ilderton as identified through Official Plan Amendment 28.

Construction of the Phase 1 upgrades was completed in 2019 to serve additional future proposed growth within Ilderton.

3.1.2 KOMOKA-KILWORTH

WATER SERVICING

The Komoka – Mt. Brydges Water supply, which came into service in early 2010, provides potable water to Komoka-Kilworth. In addition to the supply improvements, a booster pumping station, intermediate pumping station, and storage facility were also built, entering service in early 2010. The 2010 Master Servicing Plan states that these upgrades

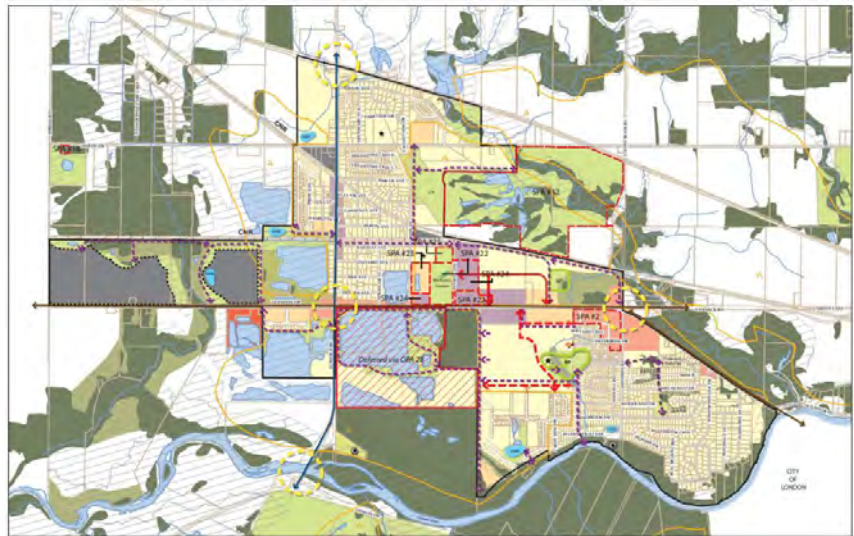


Figure 8 - Schedule A-2: Komoka-Kilworth Secondary Plan

were intended to provide services to not only Kilworth and Komoka, but also to Delaware for the next 20 years before further upgrades are required.

WASTEWATER SERVICING

The Komoka-Kilworth Secondary Plan includes recommendations to implement the findings from the Master Servicing Plan regarding wastewater servicing. This includes two projects – the Komoka Treatment Plant Environmental Assessment and the Kilworth to Komoka Trunk Sewer / Force Main. A new pumping station and force main was required to support future growth in Kilworth which will ultimately be pumped to the expanded Komoka WWTF (initially completed in 2011). The Komoka-Delaware Municipal Servicing Implementation Study Class EA identified the need to further expand the Komoka WWTF. The expansion to treatment capacity is necessary to service future development, and to accommodate future flows for Kilworth and Delaware.

The Municipality undertook construction of the Kilworth Booster Pumping Station (BPS) and force main in 2018 / 2019 which facilitated the ultimate decommissioning of the Kilworth Wastewater Treatment Facility.

It has been previously identified that areas within the growth boundary west of the Kilworth WWTF service area are to be serviced by the Komoka WWTF. The Komoka PS is rated for a peak flow of approximately 3,000 m³/day. Once sanitary flows at the WWTF exceed 800 m³/day average flow, upgrades may need to occur at the pumping station.

Further, the Master Servicing Plan identified that areas within the growth boundary west of the Kilworth WWTF service area are to be serviced by the Komoka WWTF. There appears to be sanitary sewer deficiencies along Komoka Road, north and south of the pumping station that could inhibit future development from outside the current sanitary sewer boundary. Any land that falls outside this boundary would have to be examined to determine if the existing trunk sewers

can support the proposed future development. It is anticipated that design options for the Komoka Pumping Station will be undertaken in 2021.

3.1.3 ARVA

Arva is dependant on the City of London for both water and wastewater servicing secured through an agreement originally entered into in 2000. Arva's wastewater treatment capacity is currently capped through this agreement which limits the potential growth of Arva. The 2010 Master Servicing Plan completed by the Municipality identified three options for increasing this capacity, discussed in Section 2.4.6.4 of this Discussion Paper, including: do nothing, amend the City of London agreement, or construct a new municipal wastewater treatment facility for Arva. The preferred alternative was to amend the City of London agreement to address sanitary capacity issues.

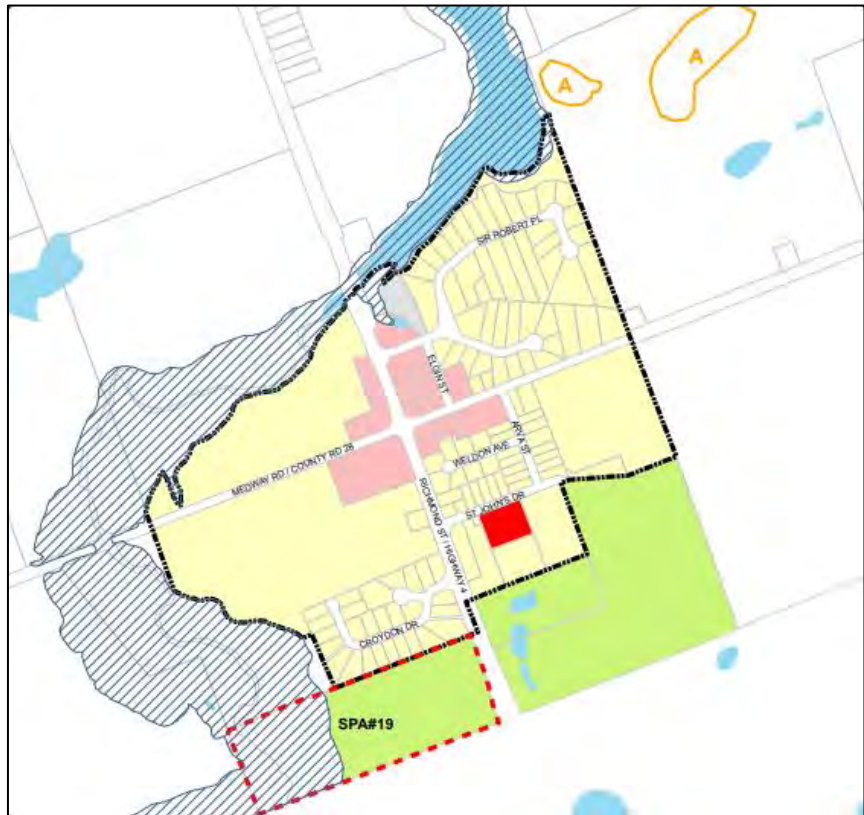


Figure 9 - Arva Community Settlement Area

WASTEWATER SERVICING

In April 2019, Municipal Council received a staff report with information regarding the potential need for the Municipality to proceed with the third option of the Master Servicing Plan to undertake an Environmental Assessment to build a new Arva Community Wastewater Treatment Facility. The following are key matters highlighted in the staff report:

- Between 2010 and 2015, Middlesex Centre officials and Council engaged with the City of London to consider having the sanitary servicing agreement amended to increase the allowable amount of sanitary sewage flows directed from Arva into the City's sanitary collection and treatment system.
- In 2017, City of London planning staff presented City Council with a report following Middlesex Centre's request to amend the current servicing agreement. City Council

directed staff to draft an amendment to the agreement; however, this amendment would not include an increase to the permitted capacity. It would, however, remove the annual cap of 10 units per year but still retain a maximum of 50 units in each five-year period. At this time the agreement signed April 3, 2000 (subject to amending agreements signed in June 2000 and August 2001) is still in effect.

Therefore, in order to support growth in Arva, the Municipality is proceeding with a Schedule C Municipal Class Environmental Assessment for a new waste water treatment facility.

Under the current servicing agreement with the City of London, Arva's growth is restricted due to the lack of sanitary capacity. Therefore, Arva's settlement area boundary (**Figure 9**) is likely to be unchanged through the OPR due to servicing constraints.

Completion of the full Environmental Assessment would provide direction on the feasibility of constructing a WWTF in Arva and would help potentially support the justification for expanding Arva's current settlement area boundary. Should a servicing plan for Arva justify a boundary expansion, this can only be completed as part of a Comprehensive Review per Policy 1.1.3.9 of the 2020 PPS. Outside of a Comprehensive Review, the Municipality can consider a boundary adjustment, but not the addition of new lands. Pending the completion of the Schedule C EA for a WWTF and possible subsequent settlement area boundary expansion, there may be increased pressure to proceed with the construction of the WWTF.

WATER SERVICING

Given that Arva receives treated water from the City of London, any increases in water supply (and equal wastewater flows until such time as the potential WWTF is constructed) would have to be accepted by the City through a separate agreement.

3.1.4 DELAWARE

Delaware is currently provided municipal water servicing via the City of London, while wastewater is managed through private individual servicing. Section 9.3.1.a of the Municipality's Official Plan notes that the establishment of sanitary sewer infrastructure in Delaware is possible within the planning horizon. This would make Delaware the fourth fully serviced area of Middlesex Centre. A key policy consideration for Delaware will be the feasibility of establishing this sanitary sewer connection within the planning horizon. At a minimum, the policies of Special Policy Area #3 need to be reviewed and updated which allow development to occur on existing roads. A decision will need to be made regarding future development potential in Delaware and the possibility of holding development until such time as sanitary sewers, or an alternate approach is determined (e.g., private communal servicing). It is important to note that the extension of wastewater servicing to Delaware would be intended to support new development and infill development where the cost can be justified, and may not mean that servicing would be extended to existing development.

WASTEWATER SERVICING

Excluding minor residential infill/intensification developments, most of the developable land in Delaware is designated as Residential, located with Special Policy Area #3 (SPA #3) which states that development of these lands is restricted to existing road right of ways until such time that full municipal servicing (sanitary and water servicing) is available. The OP notes the Municipality's commitment to the provision of municipal wastewater services to Delaware.

The Municipality's intentions for providing municipal wastewater services to Delaware should be confirmed through the OPR. Per the 2019 Development Charges Study, it is anticipated that the Delaware Pumping Station and Force Main may be constructed in 2026. The Komoka-Delaware Municipal Servicing Implementation Study Class EA addressed the potential for implementation of full wastewater servicing in Delaware. If a communal wastewater system was to be constructed, sanitary flows would travel from a pumping station in Delaware via forcemain along Gideon Drive to the expanded Komoka WWTF. The possibility of communal wastewater servicing is being discussed by the Municipality along Longwoods Road.

WATER SERVICING IMPROVEMENTS

An approximately 4.9 km long, 150 mm diameter watermain with a capacity of 650 m³ /day extends from the re-chlorination facility (presently fed by the City of London distribution system) to the Community of Delaware's distribution system. The Delaware Servicing EA found that based on anticipated and draft plan approved residential and commercial developments, this watermain likely requires replacement to a larger pipe diameter in the next 12-24 months.

In July 2018, the Municipality approved the construction of the Delaware / Komoka Water Supply Interconnect project which will connect the existing Delaware water distribution system to that in Komoka.

In 2019, the new Delaware water standpipe / water tower was opened to provide additional water storage capacity to the Community. By the year 2029, Delaware will require approximately 1600m³ of further storage, while by the year 2049 the requirement will have increased to 2500m³ which will be accommodated through the new standpipe.

Following completion of these two projects, the existing agreement with the City of London will be terminated. Together, these projects will increase the future development potential in Delaware and should be considered through the OPR, included the review of Special Policy Areas #3 and #4.

STORMWATER MANAGEMENT

The Delaware Community Settlement Area Stormwater Management Plan identified a number of improvements and opportunities to improve stormwater management in Delaware. These recommendations will most likely be achieved through subsequent development application requirements.

3.1.5 SUMMARY OF CAPACITY CONSIDERATIONS

The following table summarizes the servicing status in the various settlement areas and lists the current and planned total servicing capacity (**Table 3**). Together with the growth management and population projections prepared through the OPR, this information will be used to help guide decisions around confirming or adjusting settlement area boundaries, as required or appropriate.

Table 3 - Summary of infrastructure capacity considerations

SETTLEMENT AREA	WATER	WASTEWATER	CURRENT TOTAL CAPACITY / PLANNED CAPACITY
Ilderton	Municipal water servicing.	Municipal wastewater system.	Water supply capacity: 34 L/s Elevated water tower storage capacity: 2,050 m ³ (capacity for approximately 3,825 people based on a per capita rate of 350 L/p/d)
Komoka-Kilworth	Municipal water servicing.	Municipal wastewater system.	Water supply capacity: 53.7 L/s
Arva	Municipal water servicing (via the City of London)	Municipal wastewater system (currently via the City of London) A Class EA is being undertaken to determine the viability of a new WWTF for Arva.	Growth is capped at 50 units per 5-year period. Pending the completion of the Schedule C EA for a WWTF, there will be possible subsequent settlement area boundary expansion potential.

SETTLEMENT AREA	WATER	WASTEWATER	CURRENT TOTAL CAPACITY / PLANNED CAPACITY
Delaware	Municipal water servicing.	Private wastewater system.	Improvements to the water servicing system and future plans for full municipal services (through a wastewater connection to the Komoka WWTF) in Delaware will increase future development potential.
Other Hamlet Areas	<p>Municipal water servicing. (Denfield, Ballymote)</p> <p>Partial municipal water servicing. (Melrose and Birr)</p> <p>Private water servicing. (Bryanston, Lobo, and Poplar Hill-Coldstream)</p>	Private wastewater system.	<p>Limited municipal services limit growth potential in these Hamlet Areas.</p> <p>Melrose: Construction of the connection to the Komoka-Mt. Brydges Secondary Transmission Main will supply existing development in the Wynfield Subdivision.</p> <p>Opportunities for communal servicing are discussed in Section 3.2 of this Discussion Paper which may increase development potential within other Hamlet Areas.</p>

3.2 SERVICING HIERARCHY POLICIES

Section 1.6.6 of the Provincial Policy Statement (PPS) prescribes a hierarchy for the preferred method of providing sewage, water, and stormwater services to new development. Generally, full municipal services are the most preferred form of servicing, followed by private communal services, individual on-site services, and partial services (i.e., a combination of municipal / communal and individual services) (**Figure 11**). This section discusses considerations related to Private Communal Servicing and Partial Servicing since these are less common than full municipal services and private individual services.

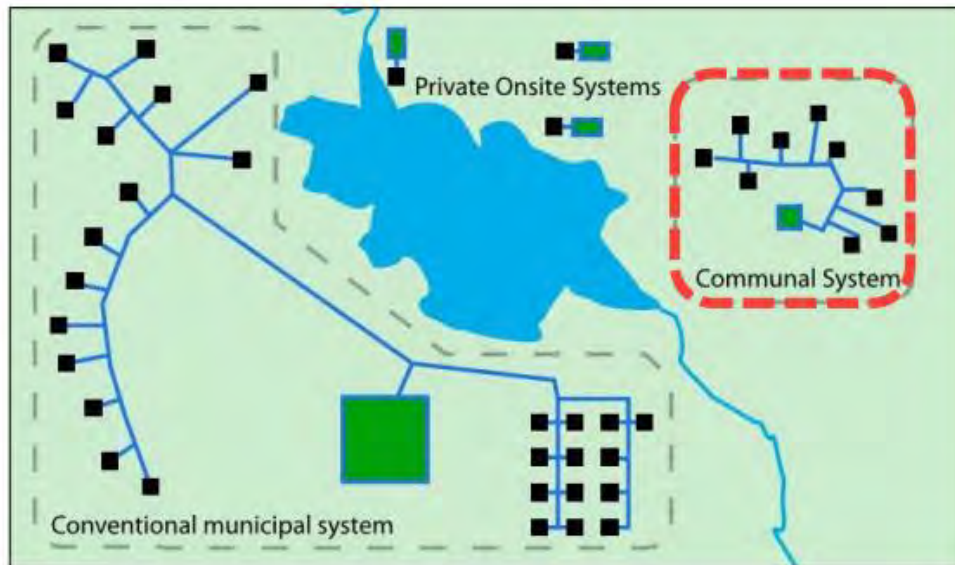


Figure 12 - Illustration of servicing hierarchy options

PRIVATE COMMUNAL SERVICING

Policy 1.6.6.3 of the PPS directs that where municipal services are not available, planned, or feasible, “private communal sewage services and private communal water services are the preferred form of servicing for multi-unit/lot development. This is a new policy direction established in the 2020 PPS. It replaced a more flexible policy that stated, “municipalities may allow the use of private communal sewage services and private communal water services”, where municipal services are not available, planned or feasible. The most important goals for sewage and water services are sustainability, feasibility and safety. Integration of servicing, land-use policy and development are critical to properly achieve these goals.

There are several community benefits of communal services, including the ability to service hard-to-serve areas experiencing increased development potential, and higher treatment standards compared to individual on-site systems. One of the challenges with private communal sewage services is the uncertainty of how to ensure ongoing maintenance of these facilities if they are neglected or abandoned by their private owners. This responsibility may fall to the local municipality, resulting in unanticipated public costs. Through Municipal Responsibility

Agreements (MRAs), municipalities are required to take responsibility for failed communal systems. One approach to this issue may be to require communal systems to be a common element as part of a plan of condominium, with stringent requirements concerning reserve funds for the upkeep and eventual replacement of the systems, condominium fees to be collected from owners, and other measures.

As shown in **Figure 5**, the development potential between individual servicing and communal servicing differs. Under an individual servicing arrangement, larger lot sizes are required to accommodate individual septic fields. Communal servicing, however, can support densities up to those supported by centralized municipal services in targeted areas at relatively low cost per unit.

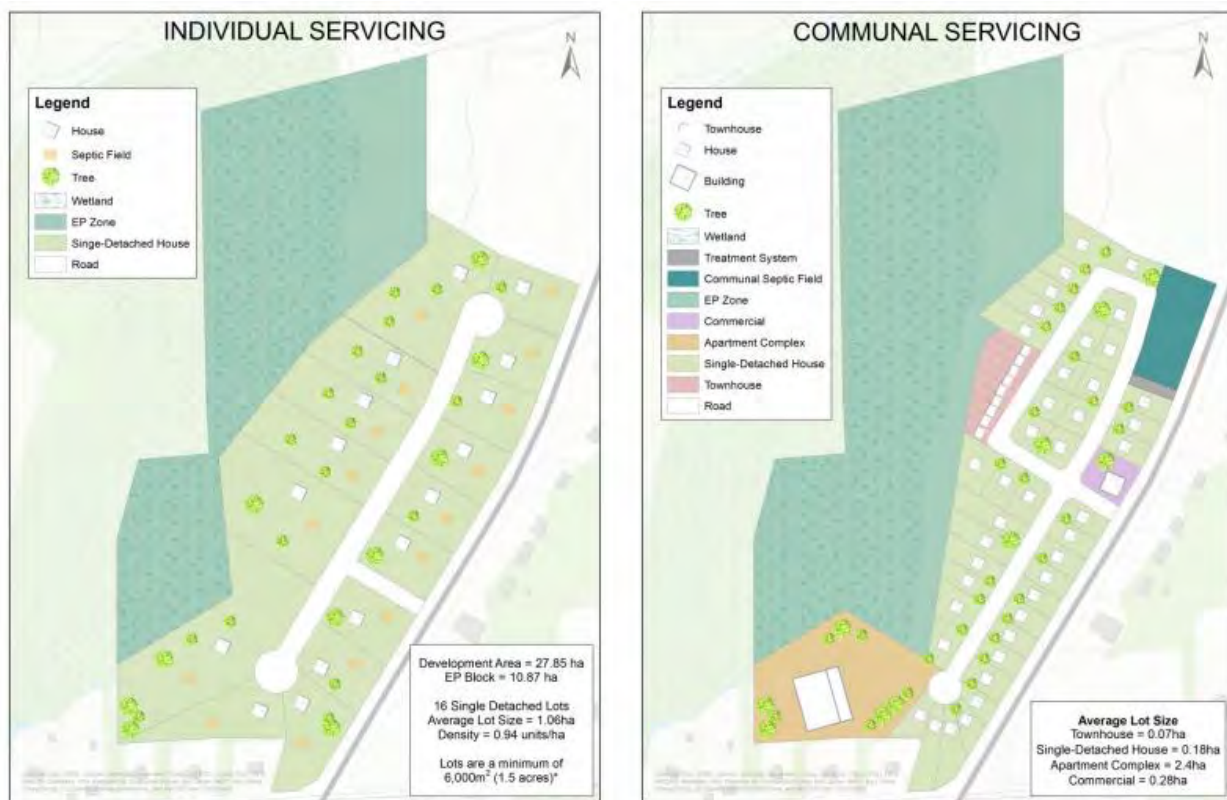


Figure 13 - Development potential comparison (Individual vs. Communal Servicing) (Source: County of Frontenac Communal Servicing Study, prepared by WSP)

The County of Middlesex Official Plan states that new development in Urban Areas shall be fully serviced by municipal or communal servicing systems (2.3.8.1), and that development in community areas is intended to take place on municipal or communal servicing (2.3.8.2). Further, Section 2.4.5.1 of the County's Official Plan establishes the County's preferred servicing hierarchy which supports the use of communal services:

- Extension from existing municipal services;
- Extension from existing **communal services**;

- New municipal or **communal system**; and,
- Individual septic systems and private wells.

Section 5.1.4 further expresses that wherever possible, development within settlement areas should proceed on full municipal services. In general, the amount, location and timing of development shall be dictated by the nature and availability of services necessary to support proposed development.

The servicing hierarchy prescribed in Sections 1.6.6.2 through 1.6.6.5 of the PPS and reinforced in other legislation, regulations and guidelines, distinguishes between municipally-owned services and private communal services, but does not define the type of municipal service. Therefore, municipally-owned or operated communal servicing may represent a preferred option to mitigate some of the financial risk associated with these types of privately-owned facilities, while providing a means for the Municipality to support development, for example, in the Hamlet Areas of Middlesex Centre.

Within the Municipality's two Community Settlement Areas of Arva and Delaware, Section 5.1.2 of the Middlesex Centre Official Plan states that:

“New development in Community Settlement Areas is intended to take place on municipal services. If such services are not available, **communal services** may be considered if appropriate justification is provided. Further, in areas where municipal or **communal services** are not available or will not be available in the immediate future, Council and staff may consider the approval of interim development on other than full municipal services, where provided for in a master servicing strategy component of a Settlement Capability Study or Environmental Assessment pursuant to the *Environmental Assessment Act*.”

Through the OPR, there is an opportunity to review this policy against the 2020 PPS to reflect the increased priority placed on communal services within the servicing hierarchy.

Consideration should be given to the balance between the Municipality's planned and recent investment in trunk infrastructure and the adoption of communal servicing, which could undermine the Municipality's investment, particularly in Arva and Delaware.

An additional potential issue is the question of parkland dedications and communal septic beds. The Middlesex Centre OP currently requires that 5% of lands to be developed or redeveloped for residential purposes be conveyed for public park or recreational purposes (Policy 8.4.c). This is relevant to communal servicing since a communal septic field could be covered by turf and may appear to be ideal for passive recreational uses and thus appropriate for parkland dedication purposes. For reference, parkland for stormwater ponds/facilities is generally not accepted as part of the 5% parkland dedication. Should the Municipality permit the conveyance of the land above a communal servicing facility for parkland dedication, options including privately-owned public space, accepting the land/risk/responsibility, and/or waiving the parkland requirement (which may incentivize the development of communal services) should be considered through the OPR.

PARTIAL SERVICING

Policy 1.6.6.5 of the PPS restricts the use of partial services (i.e., a combination of municipal / communal and individual services) where they are “necessary to address failed individual services in existing development or within settlement areas to allow for infill and minor rounding out of existing development. The policy also states that where partial services have been provided, infilling on existing lots of record in rural areas may be permitted. This policy could have implications on lot creation where partial services are provided.

While the majority of growth in Middlesex Centre is planned to occur in the Urban Settlement Areas, the Municipality does have several Community Settlement and Hamlet Areas which are serviced by private individual servicing, and in some cases partial services. While these areas are not major growth areas in the Municipality, they do represent important growth opportunity for the rural settlement areas.

The County Official Plan defines partial services to mean a connection to one communal service or full municipal service where the other connection will be to an individual on-site system. It also states that partial services may be permitted on an interim basis where proper justification is provided (Section 2.3.2).

The Middlesex Centre Official Plan states that where partial services are considered to support new development, supporting studies must address all applicable servicing options. Section 5.1.3 further iterates that significant or major new development in Hamlet Areas, such as the development of more than three new lots through a plan of subdivision, will require provision of full municipal services. It is noted that the Hamlet Areas of Melrose and Birr are on partial municipal water services. Within Settlement Areas, partial services are only potentially permitted on an interim basis subject to proper justification (9.3.1).

3.3 STORMWATER MANAGEMENT

The 2020 PPS directs that planning for stormwater management is to be integrated with planning for water and wastewater servicing, and to ensure that stormwater systems are optimized, feasible, and financially viable over the long term (1.6.6.7).

The Municipality’s 2020 Settlement Area Stormwater Master Plan provides some basic guidance with respect to the design of stormwater management infrastructure and systems. In reviewing the various Stormwater Master Plans prepared within the Municipality, it is understood that the Municipality is supportive of using existing facilities to the extent possible, or working to consolidate facilities to minimize the total number of facilities. The Master Plan also identifies opportunities for regional stormwater servicing options within Ilderton and Komoka-Kilworth. This will help the Municipality maintain the supply of lands for development. The Master Plan can also be used by the Municipality as a framework in reviewing future development applications to confirm the stormwater requirements.

The Komoka-Kilworth Secondary Plan (Section 5.7.1 of the Official Plan) contains detailed stormwater management requirements for the secondary plan area, including the conceptual location of stormwater management facilities on Schedule A-2, which should be reviewed against the Master Plan and the directions of the PPS.

Through the OPR, the Municipality's OP should be updated to reflect the integration of stormwater management with the planning for water and wastewater servicing in accordance with the PPS. The policies of the Komoka-Kilworth Secondary Plan may serve as a basis for these policy updates through the OPR. The OPR should also consider opportunities to mitigate against climate change events through innovative green infrastructure and low impact development to respond to more intense and frequent design storms.

3.4 SUBDIVISION DESIGN REQUIREMENTS

The Draft Plan of Subdivision process provides an opportunity for the Municipality to address or respond to certain infrastructure needs, such as stormwater management and transportation.

The Middlesex Centre OP should continue to apply stormwater management policies relating to development associated with new plans of subdivision and condominium, and other large-scale development in order to protect, improve, or restore the quality and quantity of water resources. The policies should consider the requirement for a Stormwater Management Report to address the impact of development on: stormwater runoff volumes; water quality; erosion and sedimentation; and environmental features, including fish habitat.

There is also an opportunity to encourage conditions for appropriate pedestrian circulation and trail integration through new subdivisions. The Municipality's OP should continue to identify the recommendations of the Middlesex Centre Trails Master Plan and encourage the development and enhancement of pedestrian and non-motorized trails and bicycle routes.

Further, the Delaware Community Settlement Area Stormwater Master Plan identifies, among other recommendations, a number of instances where an urban road right-of-way will be required to support the inclusion of stormwater management controls within future development areas. Further, the County Official Plan states that local official plans shall encourage stormwater management practices to minimize runoff volumes and contaminant loads. This will have implications on the overall right-of-way design as stormwater catch basins may be required.

Section 6.2 of the OP speaks to design policies for plans of subdivision. These policies do not speak specifically to stormwater management or the Municipality's requirements addressing stormwater quantity and quality management within new developments – particularly through the construction of new local roads.

Stormwater management facilities shall be designed to manage stormwater quality and quantity, at an appropriate level, as defined by the most current Ministry of Environment Stormwater Planning and Design Manual, and the Conservation Authorities. The OP should also include

policies to promote the integration of natural vegetative features adjacent to and within new facilities, and the naturalization of the periphery of the existing stormwater management facilities.

4 CONCLUSION & NEXT STEPS

This Discussion Paper provides a detailed summary of policies, plans, and studies related to infrastructure that will help inform the Draft Policy Directions and Recommendations Report. This Report will identify outstanding policy gaps or issues that need to be incorporated in the updated Official Plan. This Report will also address the growth management requirements of the Middlesex County Official Plan, which will in part be supported by the Municipality's infrastructure capacity and ability to service the various settlement areas.

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

- In preparing the Growth Management Strategy for Middlesex Centre, the existing and planned infrastructure capacity of the Urban and Community Settlement Areas should be confirmed and considered.
 - This is particularly relevant in the communities of Arva and Delaware where the Municipality is undertaking a number of initiatives to increase or transition the existing servicing conditions.
- The Servicing Policies of the OP should be updated for consistency with the servicing hierarchy of the Provincial Policy Statement and the County Official Plan, particularly as they relate to opportunities for private communal and partial servicing.
- Based on the review of stormwater policies and practices in the Municipality, the OP should encourage sustainable stormwater management techniques to encourage their uses and limit impacts on the existing Municipal drains and systems. The Komoka-Kilworth Secondary Plan contains a suite of stormwater management policies which may be applied to other areas of the Municipality.
- The subdivision design requirements of the Municipality's OP should be reviewed to confirm that they align with the preferred servicing directions for new development, such as the design of road rights-of-way and pedestrian connections.
- There is an opportunity to include updated policies to support the implementation of the County's Cycling Strategy.
- The OPR should also consider opportunities to mitigate against climate change events through innovative green infrastructure and low impact development to respond to more intense and frequent design storms.

Discussion Papers detailing each of the OPR Focus Areas can be accessed online: ADD <https://middlesexcentre.on.ca/town-hall/official-plan-review>

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

