THE CORPORATION OF THE TOWN OF ST. MARYS

DISCUSSION PAPER #3 (update)

Transportation and Servicing

- DRAFT -

Presented to the Town of St. Marys Planning Advisory Committee on
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Introduction

The Town of St. Marys Official Plan was adopted by Council on September 22, 1987. The Official Plan was approved in part by the Minister of Municipal Affairs and Housing on February 2, 1993 with 15 modifications and two deferrals. Final approval from Minister of Municipal Affairs and Housing was received on April 30, 1999. Following a five-year review of the document, Council approved the current consolidated copy of the Official Plan on October 1, 2007.

This is the third of a series of Discussion Papers prepared to assist in the 5-year review of the Town of St. Marys Official Plan as per the Planning Act Section 26(1). The purpose of a Section 26 review is to ensure that the Official Plan conforms with provincial plans (or does not conflict with them), has regard to matters of provincial interest and is consistent with policy statements, such as the Provincial Policy Statement which was updated in 2014. In addition to meeting statutory requirements under the Planning Act, this review is also intended to ensure that the policies in the Official Plan are in keeping with the goals and objectives of the community and provides the opportunity to identify opportunities and issues that can be addressed through the Official Plan.

This Discussion Paper will identify areas and topics as they relate to the transportation and servicing, including roads, railroads, water supply, sanitary sewage disposal, storm drainage, electric power and landfills.

Background

Provincial Policy Statement

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest for land use planning and development. The PPS also sets out policy for the development of infrastructure, public service, sewer/water services, and transportation facilities. The Town of St. Marys Official Plan must be consistent with the PPS, which provides policy direction on the provision of services systems and transportation systems.

The following is a summary of relevant PPS policies with the complete sections of the PPS provided in Appendix A.

- Infrastructure and electricity generation facilities and transmission and distribution systems, shall be provided in a coordinated, efficient and cost-effective manner that considers impacts from climate change while accommodating projected needs (1.6.1)
- Before consideration is given to developing new infrastructure and public service facilities, the use of existing infrastructure and public service facilities should be optimized (1.6.3)
- Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs (1.6.7.1)
- 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)
- Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs (1.6.8.1)
- Planning for land uses in the vicinity of 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)
- Planning authorities 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) and promote renewable energy systems and alternative energy systems, where feasible, in accordance with provincial and federal requirements (1.6.11.2)

Green Energy Act

In 2009, the Province enacted the Green Energy Act (GEA) regarding renewable energy projects throughout Ontario. The GEA amended a number of other pieces of legislation, including the Planning Act and had the effect of centralizing the approval authority for large scale projects with the Ministry of Environment and Climate Change through the newly created renewable energy approvals process. The GEA also amended the Planning Act to remove the authority of municipalities to regulate renewable energy projects through their planning documents.

Ontario Clean Water Act and Thames Sydenham and Region Source Protection Plan

The Ontario Clean Water Act (2006) and related regulations (2007) were introduced with the goal of protecting existing and future sources of drinking water. The regulations require Conservation Authorities to prepare Source Protection Plans that are intended to be implemented through the policies and development criteria of municipal Official Plans. The Thames Sydenham and Region Source Protection Committee has created a Source Protection Plan applicable to their member municipalities which includes the Town of St. Marys. The Thames Sydenham and Region Source Protection Plan has now been approved by the Ministry of Environment and Climate Change and came into effect December 31, 2015. The Town and the Upper Thames River Conservation Authority have been working together to implement and administer Source Protection Policies contained within the plan.

Town Master Servicing Study 2012

R.J. Burnside & Associates Limited was retained by the Town to prepare a Master Servicing Study (MSS) for the purpose of identifying the infrastructure requirements needed to meet 2031 population projections. The MSS was approved by Town Council and was prepared strictly as a technical document to be used as an overall long term infrastructure planning document, as well as to confirm and address future servicing needs as new development applications are received by the Town.

Section 3.0 of the MSS provides technical information on existing, proposed, and forecasted transportation needs. Accordingly, revisions to the Town's Official Plan regarding roads and transportation, as well as other matters dealing with infrastructure and public servicing must be made in cohesion with the findings, projections and recommendations of the MSS.

The MSS found that the planning rationale completed during the Town's previous Official Plan review regarding roads has been for the most part successful and little change may be required to the current functional classification of roads in the Town. The MSS does have suggestions in other areas, specifically with bridges and crossings.

The MSS included forecasting models for the Town's future water, wastewater, and stormwater servicing requirements, as well as conclusions and recommendations that are referenced in this paper. Further, the MSS has provided a general summary of transportation conclusions and recommendations, provided in Appendix B, which can be reviewed for informational purposes.

Discussion and Recommendations

This section provides recommended changes to specific policies in the existing Transportation and Services policies (Section 5) of the Town's Official Plan. Referenced policies are listed below and are indented and *italicized* to limit confusion.

Section 5 – Transportation & Services

The topic of roads appears in two separate sections of the Official Plan. Section 5.3 "Roads" outlines general policies as they relate to the road network within the Town. Section 7.6 "Site Plan Control" states the policy that gives the Town the authority to request widening of specific roads during the site plan control process. Section 5.1 of the current Official Plan sets out the following two objectives related to transportation and services in the Town:

> *5.1.1 To establish a transportation system capable of providing for the safe and efficient movement of people, goods, and services including the collection of garbage, the removal of snow, and the movement of emergency vehicles.*
>
> *5.1.2 To provide a system of municipal services and public utilities capable of satisfying the various needs of the community while at the same time taking into consideration the Municipality's financial capacity, the avoidance of any adverse environmental impacts, and the use of innovative techniques and efficiency in design.*

Recommendation: Minor adjustments to Objective 5.1.2 that incorporate the protection of the health and safety of the community, which could read as follows:

> ***5.1.2** To provide a system of municipal services and public utilities that protects the health and safety of the community, and is adequately capable of meeting the various needs of the community. Such municipal services will be provided in a manner that takes into consideration the Municipality's financial capacity, the avoidance of any adverse environmental impacts, and the use of innovative techniques and efficiency in design.*

Roads – Section 5.3

The introduction to Section 5.3 reads as follows:

> *The Road policies are to be read in conjunction to the information shown on Schedule "B" to this Official Plan.*

Recommendation: Minor modification to text of Section 5.3 to read "…in conjunction **with** the information…".

Road Classifications

The Town's existing road network is comprised of an established hierarchy of road types, each providing a different level of service for the transportation needs of residents, businesses and visitors, as outlined in Section 5.3.1 of the current Official Plan. This hierarchy is separated into three distinct

road classifications: arterial (5,000 to 30,000 vpd - vehicles per day), collector (1,000 to 12,000 vpd), and local (low traffic, no set standard). The benefits of a hierarchical system include better transportation planning, enhanced road design and maintenance, as well as improved traffic and road operations.

Section 5.3.1 of the current Official Plan is provided in Appendix C of this paper. The following chart provides a summary comparison of arterial, collector and local roads as outlined in the current Official Plan.

	ARTERIAL ROADS	COLLECTOR ROADS	LOCAL ROADS
Function	• Major routes designed to carry high volumes of traffic from one area of Town to another • Connect to other Arterial Roads, Collector Roads and some Local Roads	• Collect traffic from Local Roads and distribute it to other Local Roads and Arterial Roads • Connect to all other roads	• Collect traffic from lands that are adjacent to the roads. • Local Roads connect primarily Collector Roads and other Local Roads.
Vehicle Types	• All types with a larger amount of transports using Arterial Roads instead of Collector and Local Roads	• All types of traffic utilize these roads although trucks are typically service types	• Carry low volumes of traffic (with no set standard) since most of the traffic on a local road will have its origin or destination to be to the lands that lie alongside the road
Right-of-way Width	30 metres	26 metres	20 metres
Access and Parking	• Direct access limited • On-street parking prohibited except within the Downtown Core	• Direct access and on-street parking regulated	• Direct access and on-street parking permitted
Sidewalks	• Provided on both sides of road	• Provided on both sides of road	• Provided on one side of road

The hierarchical structure of roads is successfully serving the growth of St. Marys, including James Street North where significant residential development is occurring, James Street South where employment lands (existing and planned) are located, and the Downtown Core which holds the Town's primary commercial needs.

As reported in the MSS, the current daily traffic volumes on the arterial and collector roads are well within the ranges specified, with the highest traffic demand on arterial roads presently being about 11,000 vpd (i.e., Queen Street East in the commercial core) and the highest traffic demand on collector roads being about 3,500 vpd (i.e., Wellington Street South to the south of the commercial

core). There are no existing identified concerns found with respect to traffic volumes on local roads within the Town.

Recommendation: No changes to Section 5.3.1 are recommended however, changes to Schedule B are required as a result of physical changes to the road network since the last Official Plan review, as provided in Appendix D of this paper.

Future Roads

Section 5.3.12, Future Roads, of the current Official Plan states the following:

> *To meet the needs for the growing community, Council may need to extend existing roads or construct new roads or bridges. The location of new or extended roads and proposed roads are shown on Schedule "B". The locations shown on Schedule "B" are to be considered as approximate and not absolute.*

The section of Water Street North between Queen Street and Emily Street is currently identified as a collector road. As a result of capital works over the past five years and the following other factors, it is no longer appropriate for this section of road to be considered a collector:

- the reclassification of Emily Street from Water Street to Glass Street from collector to local road during a previous Official Plan review;
- the planned extension of Wellington Street North to Glass Street as a collector;
- rehabilitation of the Water Street bridge with a single lane; and,
- the narrowing of the Emily Street overpass, and the reconstruction of the Emily/Glass Street intersection to influence traffic easterly onto Glass Street.

Recommendation: That the Town give consideration to the reclassification of Water Street North from Queen Street to Emily Street from collector road to local road.

Improvements of and development along roads

Sections 5.3.2 to 5.3.9 of the current Official Plan provides policies respecting road improvements and development along roads in the Town, and are provided in Appendix D. At this time no changes to these sections are recommended.

Bridge Improvements

St. Marys is connected to London, Stratford, Waterloo Region, and other municipalities primarily through Highway 7. Water Street South (via Perth Rd 123), James Street South (via Perth Rd 120A), and Queen Street (via Perth Rd 139 & Perth Line 9) all connect to Highway 7. A series of raised structures such as bridges, trussels, and underpasses have benefitted the residents of St. Marys for decades by providing almost un-obstructed access to all parts of the Town.

Section 5.3.10, Bridge Improvements, in the current Official Plan reads as follows:

It is intended that as traffic and safety conditions warrant, improvements shall be made to existing bridges requiring upgrades and that these improvements will meet the appropriate current or forecasted road classification. Any bridge that is in need of repair may be subject to studies to evaluate the cost to improve or replace. Decisions will be made in the public best interests.

In those cases where a bridge has been designated under the Ontario Heritage Act or is subject to an easement agreement with the Ontario Heritage Trust, a heritage impact study may be required to be completed prior to the commencement of any bridge improvement project.

In its review of the bridges in St. Marys, the MSS summarized the current conditions and provided recommended actions for each of the three structures spanning Trout Creek. Further investigations since the completion of the MSS altered the recommended actions with respect to maintenance or replacement of two of the three structures.

Water Street Bridge1 – At the time of the MSS, the Water Street Bridge was recommended to be converted to a crossing for pedestrians and cyclists only. However, it was later determined that the Town wished to maintain the single lane of vehicular traffic on the bridge and the structure was subsequently rehabilitated in 2016. The rehabilitation should allow the structure to continue operation for at least 20 years.

***Wellington Street Bridge*[2] –** At the time of the MSS the Wellington Street Bridge was recommended to be rehabilitated to extend the useful life of the structure for an additional 20 years. Upon further investigation, it was determined to be in need of complete replacement with the abutments and pier being beyond salvage. The bridge was reconstructed in 2017 with an estimated 70-year useful life.

[1] Image Source: http://www.flickriver.com/places/Canada/Ontario/St.+Marys/recent/
[2] Image Source: http://images.ourontario.ca/Partners/stmarys/

***Church Street Bridge*[3] –** It was concluded that this structure may continue to function adequately for the next 20 years, assuming repair work is completed as such needs arise. By horizon year 2031, the traffic volumes using this crossing are forecast to be 5,800 vehicles per day on a daily basis and 315 vehicles per hour per lane in the peak direction in the peak hour. These traffic volumes will continue to be within the typical capacities for an arterial road.

Information for the Town's other bridge and culvert structures is found in an "Ontario Structure Inspection Manual – Inspection Form" completed for each of these bridges. These reports have been provided by the Town's Public Works Department and were completed by B.M. Ross and Associates Ltd. in 2015. These reports indicate that no replacement schedule is required at this time for the other structures.

Future Bridges

Further to the findings reported on the existing bridges in the Town, the MSS also recommended the consideration of a new bridge over Trout Creek. Originally discussed in a 2001 Delcan report titled "The St. Marys Traffic Study", the MSS has found, based on an account of current and projected traffic forecasts, that acceptable operations, although congested, can be maintained in the core area and across the existing crossings of Trout Creek, without the addition of a new crossing, at least for the 20-year time horizon. It must be noted, however, that lands located north of Widder Street are currently designated residential in the Official Plan. These lands lack a secondary access and are thus constrained from development. A new crossing over Trout Creek to this area will relieve secondary access issues on Widder Street, and create a new north/south collector road that can reduce the potential congestion in the core, particularly at the intersections of Queen Street/Church Street and Queen Street/Wellington Street. It was suggested in the Delcan report that a Class EA should consider protecting a corridor for such a connection near the Town's eastern limits, possibly in the area of Arthur Street.

Recommendation: That Council give consideration to the construction of a new bridge over Trout Creek, with the purposes of relieving existing secondary access issues to existing residents on Widder Street, and relieving traffic flows in the Downtown Core.

[3] Image Source: http://www.flickriver.com/places/Canada/Ontario/St.+Marys/recent/

Additional Recommendations to Section 5.3 - Roads

Public Transit/Downtown Core Parking

The Provincial Policy Statement promotes providing for a range of efficient transportation options, including public transportation. As explained in section 3.9 of the MSS, the existing transit services in St. Marys include a small mobility bus and van that is operated by St. Marys and Area Mobility Services, a non-profit agency. This service provides transportation for seniors and people with varying abilities, and can be accessed seven days a week. There currently is no conventional bus service in the Town. The MSS also assumes that conventional bus service will not be introduced within the Town in the 20-year timeframe considered in the study.

Policies encouraging less car dependence, shared parking, carpooling, etc., can also be considered that will promote St. Marys as a more sustainable community from social, economic and environmental perspectives. Discussion Paper #8, Recreation and Parkland, already recommends policies related to the future preparation of an Active Transportation Master Plan to assist with long-term implementation of the conceptual active transportation network contained in the Town's Recreation and Leisure Master Plan.

Emergency Access

It is recommended that the Town consider including a new policy section titled "Emergency Access". An example of the type of policy that would be included after section 5.3.8 can be as follows:

> *"At the expense of the developer, the Town will require as a condition of development or site plan approval, the submission of detailed drawings indicating the emergency access to be provided at all phases of the development for review and approval by the Town's Fire Chief."*

Railways – Section 5.4

The GEXR Guelph Subdivision Rail Line runs between Georgetown, connecting to CN's Halton Subdivision, to London, connecting to CN's Dundas Subdivision. The line was previously operated by CN with regular CN freight trains and VIA/AMTRAK service. Since 1998, the Goderich-Exeter has operated on this line after previously taking over the CN Goderich and CN Exeter Subdivisions. Daily Goderich Exeter freight trains and VIA passenger train utilize the GEXR Guelph Subdivision, with regular stops along the line. Up until March 2004 the Amtrak International ran on the GEXR Guelph Subdivision. The Goderich-Exeter operates out of Kitchener on the GEXR Guelph Subdivision.[4]

Section 5.4.1 of the current Official Plan states the following:

> *"Where residential and other noise sensitive uses are proposed within 300 metres of any railway line, the owner or the developer is required to conduct a noise and vibration impact assessment which shall include measures necessary to achieve acceptable attenuation levels*

[4] http://www.niagararails.com/guelph.phtml

in accordance with the Ministry of the Environment and the Railway criteria. The measures may take the form of fencing, increased setbacks, earthberms, tree planting, acoustical insulation, site plans or combinations thereof in order to minimize potential safety hazards and visual, noise and vibration impacts, to the satisfaction of the Town and the Ministry of the Environment, and in consultation with the appropriate Railway".

Recommendation: As the Ministry of the Environment is no longer the approval authority for development proposed in the vicinity of existing rail lines, reference to the MOE in this policy should be replaced with reference such as "….in accordance with applicable Provincial standards and/or guidelines to the satisfaction of the Town and any appropriate Provincial ministry and/or appropriate railway authority….".

Water Supply – Section 5.5

Sections 5.5.1 and 5.5.2 of the current Official Plan set out the following policies with respect to water supply requirements for new development and upgrades to the system.

5.5.1 No development will be approved which cannot be adequately serviced from the Town's municipal water supply system unless specifically identified as being permitted with on-site services.

5.5.2 The Town of St. Marys will continue to upgrade the existing water supply distribution system in St. Marys.

The following information has been primarily drawn from the Environmental Assessment completed for the municipal drinking water system for the Town entitled "Town of St. Marys Municipal Class Environmental Assessment for Water System Upgrades – Screening Report" dated July 12, 2016. Further information has been drawn from the Master Servicing Study (2012) and the 2016 Annual Monitoring Report of the Drinking Water System.

The raw source water supply for the Town of St. Marys is drawn from three drilled bedrock wells, each equipped with pumping, treating and monitoring components. The system is supplemented by one elevated reservoir (the water tower) and an emergency booster pumping station located on James Street South. These facilities are documented in Appendix E herein. The Ministry of Environment and Climate Change (MOECC) has classified all three (3) wells as "GUDI" (Groundwater Under the Direct Influence of Surface Water) with effective in-situ filtration. The water system currently provides potable water to approximately 3,100 customers, ranging from residential, industrial, commercial and institutional serving approximately 7,200 individuals.

TABLE 1: Permitted Pumping Rates vs. Actual Pumping Rates for 2016

Source Name	Max. Taken per Minute (m^3)	Max. Hours per Day	Max Taken per Day (m^3)	Max. Number of Days per Year	2016 Actuals
Well No. 1	3.6	24	5,184	365	1,798
Well No. 2A	3.6	24	5,184	365	1,672
Well No. 3	3.6	24	5,184	365	943
Total Permitted Daily Takings:			**10,368[1]**		
Actual Daily Average Takings (2016):					**3,104[2]**

Notes:

1. **Total permitted daily takings based on assumption of 2 wells operational, and third well for standby capabilities.**
2. **Average daily takings based on total of all three wells, divided by 365**

The actual average consumption rate in 2016 was 3,104 m^3 per day. Data provided by the Town for the year 2016 reports a slight increase in water consumption from all sources from water from the municipal wells when compared to consumption from the year 2012 (2,887 m^3/day). This consumption trend reports a significant decrease from the early 2000s when consumption data reports approximately 4,000 m^3/day were being used. The consumption decrease from the early 2000s to 2012 can be attributed to the implementation of water meters across the Town in circa 2003.

In accordance with the Towns MOECC Permit to Take Water (PTTW), the drinking water system shall not operate in excess of the rated capacity of 10,368 m^3 per day with any one well not contributing more than the approved takings of 5,184 m^3 per day. The current actual average pumping rates are below the PTTW limits at this time.

The Environmental Assessment (EA) completed for the water system in 2016 identified a water storage deficiency for the Town based on the current firm capacity of the wells (2 operational plus 1 standby), existing demands, estimated future demands and current storage capabilities of treated, potable water.

TABLE 2: Current Water Supply and Future Water Demands

Details	Demands
Current System Firm Capacity (2 Wells Operational + 1 Standby)	10,368 m^3
Current Water System Storage (Water Tower)	1,820 m^3
Existing Demand – Maximum Daily Flow	4,910 m^3
Future Demand – Maximum Daily Flow	6,989 m^3
Future Storage Projection (2064)	4,208 m^3

As the forecasted demands suggest, the existing water supply network, consisting of three drilled bedrock wells appears to be sufficient to continue to supply the Town through to 2064. This is based

on the assumption that the existing well network will continue to function as it currently exists, where water levels, production and quality will remain unchanged over the planning period.

The current water storage of 1,820 m^3 in the water tower is not sufficient to fulfill the current MOECC guidelines. An additional storage volume of 1,229 m^3 would be required to meet the MOECC design guidelines for the Town as of 2016. Total additional storage of 2,389 m^3 would be required for the Town to meet 2064 requirements. Design of a ground level water storage reservoir was commissioned by the Town in 2017 and according to the Town's 2018 draft Budget Report, may be constructed in 2018.

The conclusions of the EA state that based on forecasted water demands, the existing well supply has adequate firm pumping capacity to meet the 2064 demands, provided that current production and quality conditions remain. It is assumed that, should unforeseen conditions change the current system capacity, additional well capacity would need to be developed to meet existing or future demands. An expansion of an existing water system would require a Schedule B Municipal Class EA to be completed to identify the preferred method of providing this additional supply capacity should it be required. As previously documented, the Town currently has a water storage deficiency, and through the completion of a Municipal Class EA in 2016 identified a ground level reservoir as the preferred alternative located at the existing Well No. 1 Site. The facility shall be adequately sized to provide sufficient storage capacity for the Town to meet existing storage requirements (2016) while also being designed to be expandable to meet projected requirements through 2064.

Recommendation: a policy located after Section 5.5.2 that may read as follows:

> *"The Town of St. Marys may take appropriate measures to increase the existing Water Supply through necessary means such as increasing the Town's well capacity, and /or construction of new water storage facilities".*

Source Water Protection

The Clean Water Act, 2006, (CWA) places new obligations on municipalities to protect sources of drinking water through the planning process. On the date a Source Protection Plan (SPP) comes into effect, all municipal decisions under the Planning Act and Condominium Act must conform to the Significant Drinking Water Threat (SDWT) policies and have regard for the Moderate & Low Drinking Water Threat (M/LDWT) policies of the SPP. Further, in designated areas and for designated land uses, before an application may be made for an approval under the Planning Act, the applicant must first obtain a notice from the Risk Management Official which indicates Sections 57 & 58 do not apply or a Risk Management Plan has been agreed to or established. Similarly, for a building permit to be issued in areas and for land uses which Section 59 applies, the applicant must first obtain a notice from a Risk Management Official. The CWA also requires that municipalities update their Official Plans (OP) and Zoning By-laws (ZBL) to conform with SDWT policies and have regard for the M/LDWT policies of the SPP.

The policies in the current Official Plan with respect to water supply protection are as follows:

> *5.5.3 St. Marys municipal water supply is obtained from three (3) groundwater wells referred to by the Town as Well No. 1, Well No. 2 and Well No. 3 – their locations are found on Schedule "C". The Town is currently reviewing issues regarding municipal water supply and Well Head Protection.*
>
> *Preliminary Well Head Protection Area mapping that models the movement of groundwater through the aquifer to the Wells over a defined period of time has been completed. This mapping is a surface representation of the capture area (zone) of water that finds its way into the well. The defined capture zones found in Appendix "A" indicate the best estimates for the time for groundwater to move within the aquifer to the municipal wells.*
>
> *Council intends further study to determine which capture zone is most appropriate for the Town to formulate development policies to minimize potential impacts on the Town's water sources.*

The Source Protection Plan (SPP) for the Thames – Sydenham and Region, in which the Town of St. Marys is located was approved by the Ministry of Environment and Climate Change (MOECC) in September 2015 and subsequently came into effect on December 31, 2015. The SPP contains various policies as a result of a science based approach to identify vulnerable areas and the risks posed to the municipal drinking water system.[5] The Town of St. Mays has designated various Source Protection authorities to the Upper Thames River Conservation Authority (UTCRA). The UTCRA has been working with the Town and various land owners where source protection policies apply on implementation of the SPP since its approval.

Recommendation: That Council include policies in the Official Plan to implement the Source Protection Plan (SPP) for the Thames – Sydenham and Region.

> ***SOURCE WATER PROTECTION***
>
> ***Introduction***
> *The Ontario Clean Water Act, 2006 is intended to ensure the protection of municipal drinking water supplies through the development of local, watershed-based assessment reports and source protection plans. Assessment reports identify vulnerable areas, and threats to municipal drinking water sources, and source protection plans set out policies to eliminate or reduce the risks posed by those identified threats. Within the Town of St. Marys, the Thames-Sydenham Region Source Protection Plan (SPP), which came into effect on December 31, 2015 applies to land use activity. All planning decisions shall have regard for the policies of the SPP, as may be amended from time to time, to address low and moderate municipal drinking water threats in accordance with Section 39 (1)(b) of the Clean Water Act, which*

[5] Thames – Sydenham and Region Source Protection Plan, Volume 1 – Introduction and Background, November 14, 2014

speaks to decisions under the Planning Act conforming with the significant threat policies set out in Source Protection Plan (SPP).

In conformity with the Clean Water Act, 2006, and the Thames-Sydenham Source Protection Plan, it is the intent of this Plan to protect existing and future sources of drinking water. In cases of conflict between the policies and direction of this Official Plan and any of the SPPs, the policies of the SPP shall prevail.

Objectives

To protect existing and future sources of drinking water.

To identify vulnerable areas, uses or activities that are, or would be, a significant drinking water threat or where a significant drinking water threat could occur.

To identify uses prohibited uses within Well Head Protection Areas which have a high Vulnerability Score.

To educate and raise public awareness for Source Water Protection.

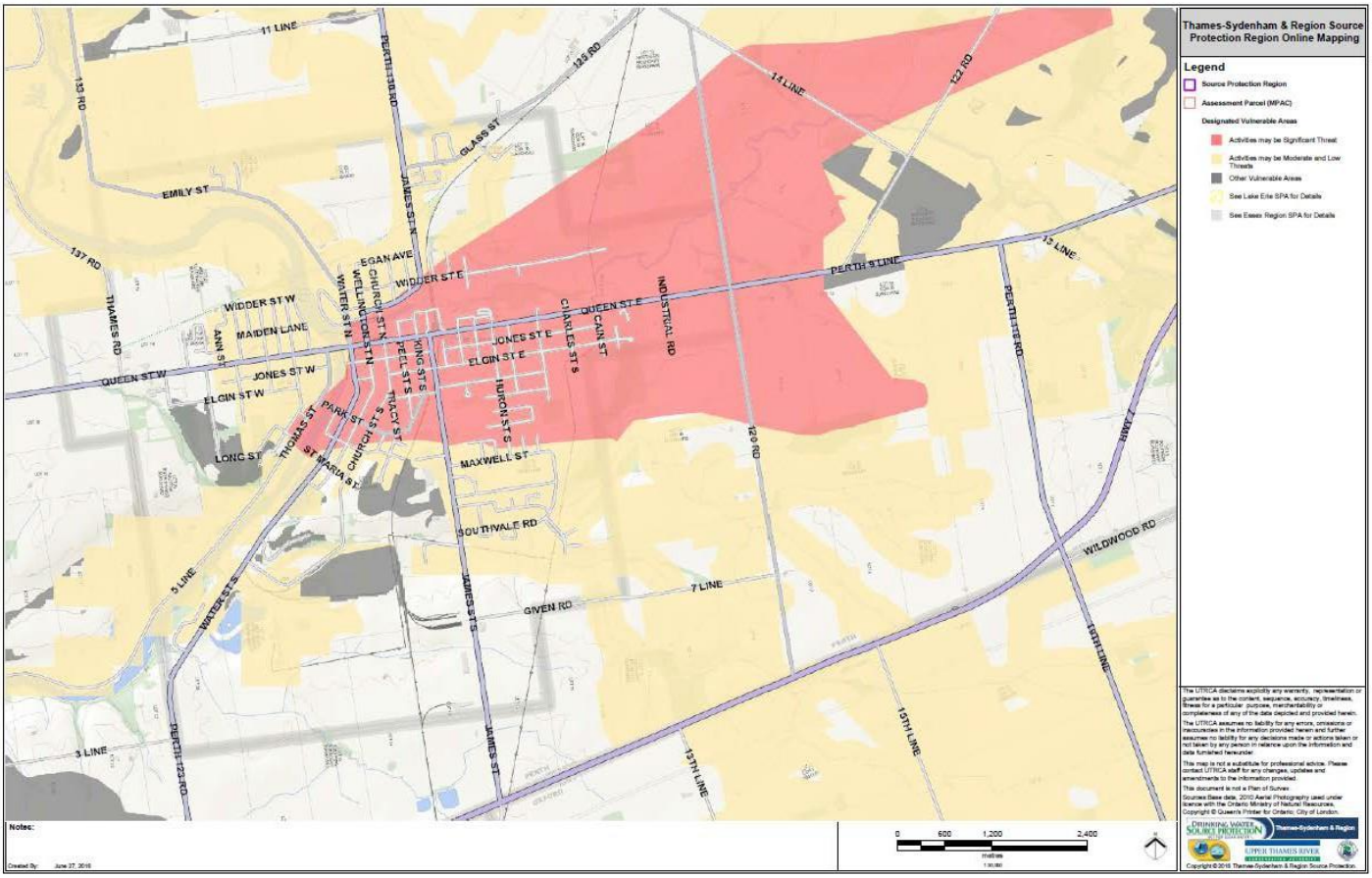
Policies

Policies for the "Source Water Protection" overlay shall apply to the area shown as Well Head Protection Areas (WHPAs) on Schedule "E" to this Official Plan. These areas are site specific in nature.

Lands within a Wellhead Protection Area (WHPA) and their applicable vulnerability scores are shown on Schedule "E" of this plan. These lands, shown as an overlay, may have special policy direction applied to them. Coordinated efforts between the Town and the Upper Thames River Conservation Authority will mitigate any potential land use, and land activity conflicts within these areas.

Vulnerable areas in which a significant drinking water threat could occur are identified on Schedule "E" as "Significant Threat Areas". The mapping of vulnerable areas is provided for information purposes only. For accuracy and more detailed information, reference should be made to the Thames-Sydenham Source Protection Plan and the detailed mapping in the related Assessment Report.

The wellheads throughout the Town act as the source of groundwater for the water supply systems. These water supplies must be protected from contamination associated with certain land uses in order to secure the long-term protection of our potable water supply for existing and future residents, businesses and the natural environment. This can be achieved by permitting only those land uses which represent a low level of risk to groundwater quality within the WHPAs.



Within the vulnerable areas identified in the Thames-Sydenham Source Protection Plan (SPP), any use or activity that is, or would be, a significant drinking water threat is required to conform with all the applicable SPP policies and, as such, may be prohibited, restricted, or otherwise regulated by those policies. Significant drinking water threats which are prohibited shall be those identified in accordance with the significant drinking water threat specific policies of the SPP. Vulnerable areas include wellhead protection areas, significant groundwater recharge areas and highly vulnerable aquifers.

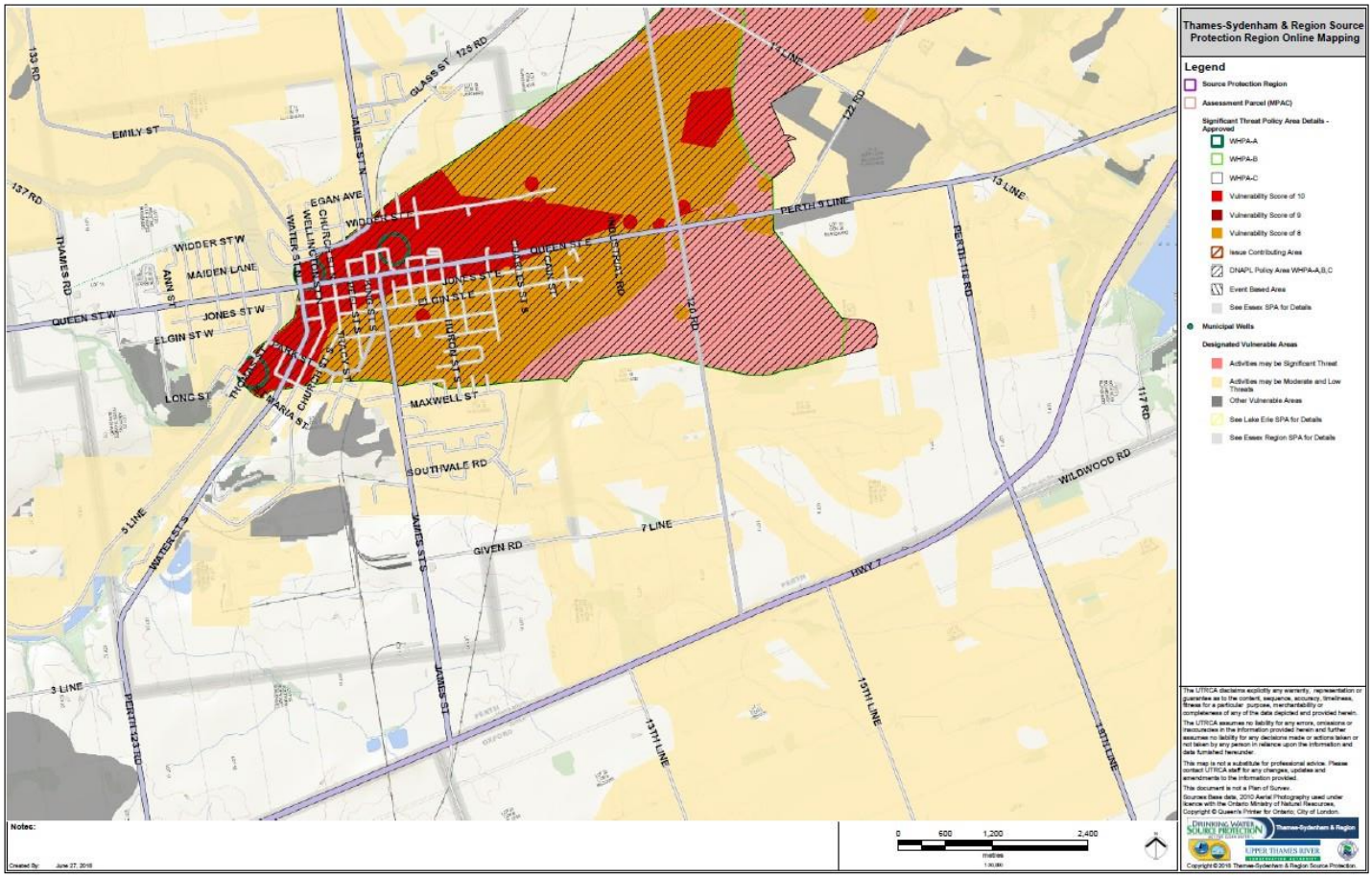
Future (Prohibited) Activities

The policies of the Thames-Sydenham Region Source Protection Plan include a number of prohibited uses within WHPA's which have a Vulnerability Score of 8 or 10. While existing uses may require a Risk Management Plan, any new or future uses within highly vulnerable (8 or 10) areas shall be prohibited. Specific activities relating to the following future uses trigger a Section 57 prohibition under the Clean Water Act, 2006, and thus, are prohibited through the policies found within this Official Plan:

- *Fuel storage (>250L below ground) in WHPA A or B with a score of 10*

- *Fuel storage (>2500L) in WHPA A or B with a score of 10*
- *Handling and storage of dense non-aqueous phase liquids (DNAPLs)(>25L) in WHPA A B and C*
- *Handling and storage of organic solvents (<250L below ground) with score of 10*
- *Handling & storage of organic solvents (>2500L above ground) with a score of 10*
- *Agricultural source materials (application or storage) application prohibited in A and future storage prohibited in A or B with score of 10*
- *Non-agricultural source materials (NASM) future application prohibited in A, future storage prohibited in A or B with a score of 10*
- *Commercial fertilizer storage prohibited in A or B with score of 10*
- *Pesticides storage prohibited in A or B with a score of 10*
- *Grazing, pasturing and outdoor confinement yards prohibited in A or B with a score of 10*
- *Septic systems for new lots prohibited in A or B with score of 10 unless septic is outside of the WHPA zone*
- *Sewage systems prohibited in A or B with a score of 8 or 10 of storm water management, sewage treatment plants, treatment or holding tank*
- *Waste disposal prohibited in A or B with a score of 8 or 10*
- *Small amounts of hazardous waste in A or B with score of 10 where there is no ECA*
- *Snow storage in A or B with a score of 8 or 10*
- *Road salt storage in A or B with a score of 8 or 10*

For the list of the specific prohibited activities occurring under each of the abovementioned uses, refer to the applicable Source Protection Plan.



Prescribed Drinking Water Threats

The Ministry of the Environment and Climate Change (MOECC), in collaboration with a Technical Experts Committee, identified 21 land use activities that have the potential to contaminate or deplete sources of drinking water. These activities are designated as prescribed drinking water threats under Ontario Regulation 287/07:

- *The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.*
- *The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.*
- *The application of agricultural source material to land.*
- *The storage of agricultural source material.*
- *The management of agricultural source material.*
- *The application of non-agricultural source material to land.*
- *The storage and handling of non-agricultural source material to land.*

- *The application of commercial fertilizer to land.*
- *The handling and storage of commercial fertilizer.*
- *The application of pesticide to land.*
- *The handling and storage of pesticide.*
- *The application of road salt.*
- *The handling and storage of road salt.*
- *The storage of snow.*
- *The handling and storage of fuel.*
- *The handling and storage of a dense non-aqueous phase liquid (DNAPLs).*
- *The handling and storage of an organic solvent.*
- *The management of runoff that contains chemicals used in the de-icing of aircraft.*
- *An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.*
- *An activity that reduces the recharge of an aquifer.*
- *The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.*

Restricted Land Use Policy

In accordance with Section 59(1) of the Clean Water Act, all land uses set out within the Official Plan or Zoning By-law for the Town where this Source Protection Plan is in effect, are designated as restricted land uses in all areas where designated threats are or would be significant. In effect, a person shall not construct or change the use of a building in any location, or make an application under the Planning Act or Condominium Act where Section 57 (Prohibition) or Section 58 (Risk Management Plan) applies unless the risk management official issues a notice under s. 59 to the person.

For the purpose of Section 59(1) of the Clean Water Act, 2006, the date for the policies regarding restricted land uses came into full force and effect is the same date that the Source Protection Plan came into full force and effect, December 31, 2015.

In certain instances, moderate and low threat septic systems may exist within the Source Protection Area. The Conservation Authority, in collaboration with the Town, shall address these systems through Education and Outreach measures.

The Town may elect to post signage which helps to raise awareness for the travelling public. Such signage will be provided from the Ministry of Transportation and will help to identify the various Wellhead Protection Areas within the Source Protection Areas within the Town.

Zoning By-law

Within two years of the coming into force of these policies, the Town will amend the implementing Zoning By-law in order to protect WHPAs in accordance with the policies of this section. The Zoning By-law shall incorporate appropriate requirements to implement the policies for wellhead protection. More specifically, the Zoning By-law shall implement the use of prohibitions, performance requirements and other policies described in the appropriate Source Protection Plan.

Sanitary Sewage Disposal – Section 5.6

Within the Town of St. Marys, wastewater flows from homes, industry and other buildings into the sanitary collection system (sewers) that lead to the Wastewater Treatment Plant (WWTP) located on Thomas Street. The WWTP has an average daily capacity of 5,560 cubic metres per day (m^3/day) and the ability to accommodate peak flows of 14,250 m^3/day. MOECC standards have a requirement that once the WWTP reaches 90% of its average daily capacity, then upgrades / expansion(s) are required and new development may be limited.

Although the St. Marys WWTP provided effective wastewater treatment in recent years with average daily flows ranging from 60%-90% capacity as illustrated in Figure 1 below, the MSS as well as engineering reviews suggest a future expansion of the WWTP will be required.

As reported in the annual report for the WWTP (2016), the average daily flow for the Town was 3,995m^3 per day. Considering that the MOECC Design Guidelines recommend 450 L/Capita/day as a design flow at the high end of the spectrum, 3,995 m^3/day translates to approximately 554 L/capita/day. This is a slightly higher per capita flow than suggested, and implies that the system may be experiencing higher than average inflow and infiltration rates during wet weather events which would have a negative impact on the hydraulic capacity of the WWTP. Forecasting models used in the MSS has determined that the potential for future development will be limited in part, by the capacity of the WWTP.

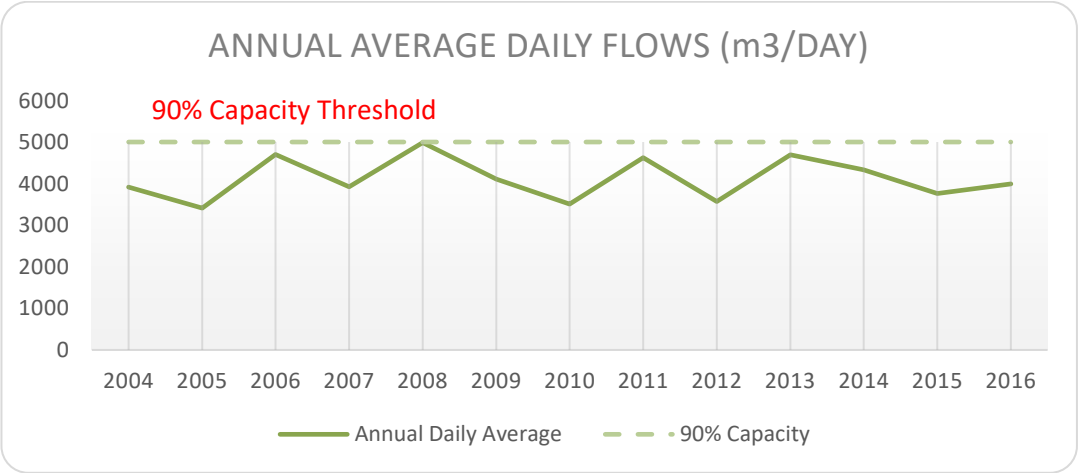


Figure 1 – Annual Average Daily Flow (m^3/day)

In 2012, the Town of St. Marys commissioned an EA related to the wastewater system to determine future needs, preferred options and timeline projections for growth related requirements. Significant data was compiled in relation to the WWTP as well as a review and consideration of the MSS conclusions and recommendations. Through a detailed review of the WWTP, it was determined that an EA was not required for WWTP expansion over the next 10+ years, and the decision was made to ultimately terminate the EA prior to completion.

In 2012, the Town also launched a detailed Inflow and Infiltration (I&I) investigation aimed at identifying and eliminating non-sanitary sources of water into the sanitary collection system. The intent of this program is to alleviate flows to the collection system and ultimately regain hydraulic capacity at the WWTP which can be re-used for future development. Furthermore, in 2015, the Town completed a detailed Optimization Study of the WWTP which assessed treatment capacities, not only hydraulic, but loading to better understand actual capacity constraints within the WWTP to guide future plant operation and growth.

Current policy:

> *5.6.1 The Municipality, in conjunction with the Ontario Ministry of Environment, will closely monitor the remaining treatment capacity available in the Town's sanitary sewage system, and take whatever action is appropriate to increase the capacity of the system to meet the needs of the Town.*

Recommendation: That Policy 5.6.1 be amended that may read as follows:

> *The Municipality will closely monitor the available treatment capacity of the Towns sanitary sewage system and shall take appropriate actions as may be necessary to ensure that sufficient capacity of the system is available to continue to meet the needs of the Town.*

Recommendation: a policy located after Section 5.6.3 that may read as follows:

> *The Town of St. Marys may take appropriate measures to investigate, identify and mitigate Inflow and Infiltration issues within the sanitary sewer system as may be necessary to limit or eliminate non-sanitary sources of water from the system.*

Storm Drainage – Section 5.7

St. Marys is fortunate to have a geomorphology that allows, for the most part, natural-drainage of stormwaters through the Town. Higher areas of the Town drain naturally to the core area where Trout Creek and the Thames River flow through towards London. The Town has two major trunk drains. The first originates in the east ward on Brock Street between Elgin Street and Elizabeth Street. It follows a natural low course through the north property of the collegiate, through the southeast edge of Cadzow Park, to outlet at Thames River between Park Street and Victoria Street. The second

trunk storm originates behind Memorial Hospital, follows a natural course through a low area across Elgin Street west between Salina Street and Ontario Street, under the south end of the Day Care property, and outlets into the Thames River just south of the Park Street Bridge.

The Town of St. Marys current Stormwater Management Policy (SWM) provides some basic guidance with respect to the design of Stormwater Management Systems. Refer to Appendix F for a copy of the existing stormwater management policy.

Concerning the existing stormwater system, it is understood that the Town is supportive of using existing facilities to the extent possible, or retrofitting, in an effort to minimize the number of facilities. If a proponent is not able to use an existing facility, guidelines are provided herein to assist with the design of a comprehensive stormwater management system which will complement the development, protect the natural environment and provide the municipality with the tools necessary to operate and maintain the facilities effectively.

Traditionally, stormwater management has focused on controlling runoff in a pond environment to reduce peak flows and to provide specified levels of water treatment, according to the sensitivity of the receiving water body. In recent years, however, the practice of stormwater management has evolved to include water balance in an effort to maintain predevelopment infiltration volumes; multi-phased erosion and sediment control plans to help protect the receiving watercourses during all phases of construction; and many new design attributes to facilitate pond maintenance.

In general, stormwater management alternatives need to be evaluated based on the topographic character of the area, the sensitivity of the receiving watercourse(s), the surrounding land uses and general site constraints. The preferred stormwater management strategy should be technically feasible, cost effective and as least disruptive to the natural environment as possible.

The stormwater management areas should be designed to service the largest area possible to ensure optimal performance and to minimize the maintenance responsibilities for the Town. If the facility services more than one development, cost-sharing agreements can be established to ensure that the costs are apportioned properly to all benefitting parties.

Recommendation: that the Town update their current SWM Policy to include evolving Low Impact Development strategies (LIDs), also referred to as Stormwater Management Practices (SWMPs).

Recommendation: that SWM Policy should be reviewed every five years or updated as new provincial or conservation authority policies are developed.

Electric Power – Section 5.8

Section 5.8 of the current Official Plan provides the following policies with respect to electric power in the Town:

5.8.1 The Town of St. Marys in cooperation with Festival Hydro and with Ontario Hydro will endeavour to provide a satisfactory level of electric power to meet the existing and future needs of the Town.

5.8.2 New electric power sub-stations may be located in any area designated on Schedule "A" subject to the following provisions:

5.8.2.1 buildings or structures are designed and maintained in general harmony with the character of the area designated;

5.8.2.2 site landscaping and buffering is undertaken and maintained;

5.8.2.3 any outside storage of goods, materials and equipment in an area designated "residential" does not occur; and

5.8.2.4 all relevant provisions of the Zoning by-law are complied with.

5.8.3 The Municipality shall require underground wiring of low voltage lines for all new development to improve the overall appearance of the community and to minimize failures due to inclement weather.

Recommendation: No changes to this policy section

Wind Energy Systems – 5.8.4

In response to the 2009 Green Energy and Green Economy Act, most planning approval requirements, including municipal official plans, no longer apply to renewable energy projects. It is recommended that a policy be inserted that will provide Council authority in a case where potential changes to the 2009 Green Energy and Green Economy Act legislation would provide Planning Approval Authorities with the ability to regulate such alternative energy installations.

Recommendation: Such a policy could read:

"Council for the Town of St. Marys will not permit the installations of Alternative Energy Sources until an amendment to this plan is made."

Landfill Site

The landfill site is located on Part of Lot 36 on the Thames Concession in the Town of St. Marys, municipally known as 1221 Water Street South. The Town operates the landfill on a 37 hectare site, of which 8 hectares has been approved for landfilling in accordance with Certificate of Approval No. A150203, as amended. The site has a current approved capacity of 411,950 m^3 and serves the residents and IC&I sectors within the Town.

The Site is permitted to conduct the following operations:

- Final disposal of solid, non-hazardous waste;
- Collection and storage for diversion from final disposal of recyclable waste;
- Accept, store, package and bulk municipal hazardous and special waste (MHSW); and,
- Collect and compost leaf and yard waste for use on the Site as a soil amendment.

The following Figure illustrates the annual volumetric fill rates for the St. Marys Landfill Site as well as historical averages, design rates and population growth and projections.

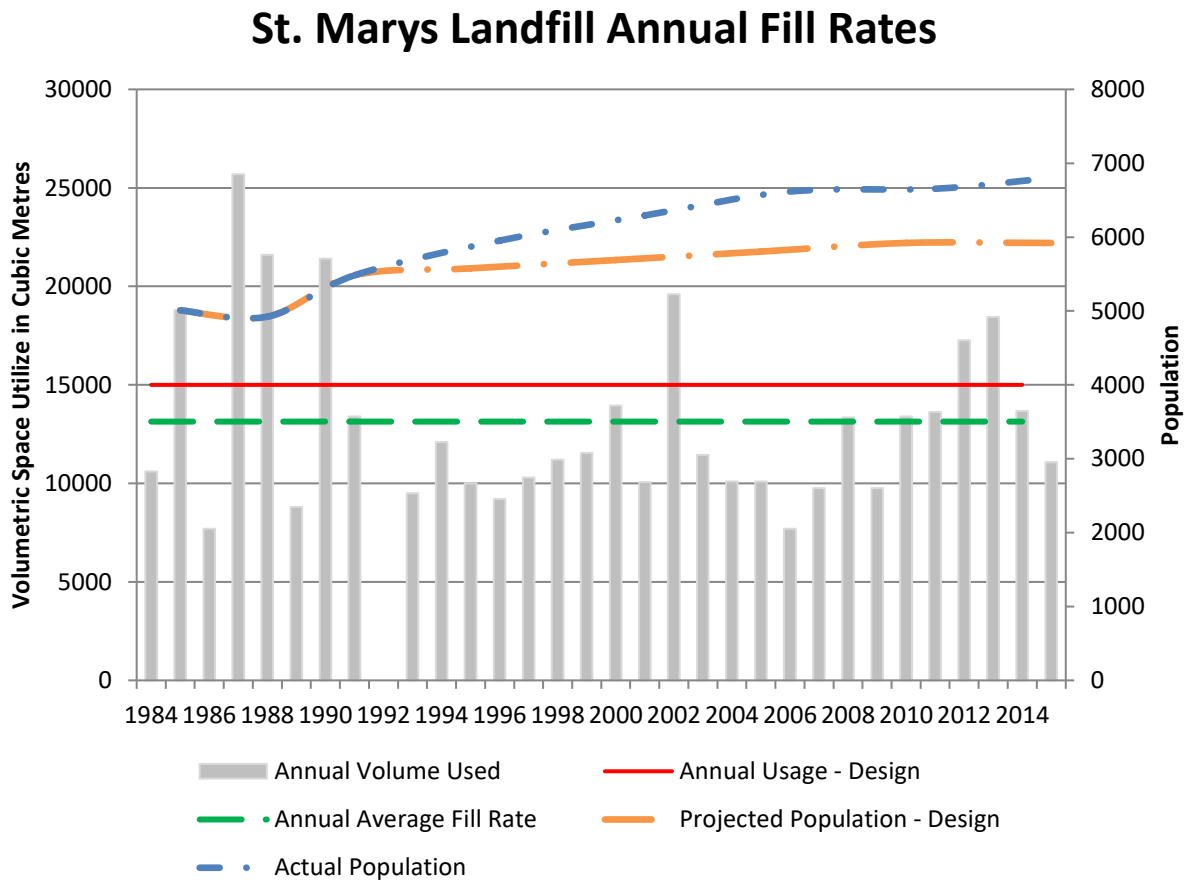


Figure 1 – Historical fill rates for the St. Marys Landfill Site.

Currently, the landfill site is operating under interim capacity approval (Notice No. 4) as the Town continues efforts on an individual EA for future solid waste management needs. The approved Terms of Reference, and subsequent EA recommendations suggest a capacity expansion of the existing landfill site to accommodate a proposed volumetric increase of 708,000 m^3, based on a 40 year planning period. The EA, and recommended expansion shall require the appropriate approvals from the MOECC.

The Town has a number of waste diversion operations to reduce the amount of waste landfilled and prolong the life of the Site, including Blue Box recyclables, leaf and yard (L&Y) wastes for composting, L&Y materials, including chipped brush, are composted for use as organic cover material at the Site. Waste wood collected at the Site is chipped and used for daily cover at the Site. Cardboard, E-waste, and household hazardous waste can be dropped-off at the landfill by residents and placed into the weatherproof containers in the drop-off area.

Policies in the current Official Plan are located in the Environmental Constraint section under 3.6.2.7, *"Additional Facilities"*.

Recommendation: No changes to this policy section.

Appendix A

Provincial Policy Statement Extracts

1.1.1 Healthy, liveable and safe communities are sustained by:

e) promoting cost-effective development patterns and standards to minimize land consumption and servicing costs;
g) ensuring that necessary infrastructure, electricity generation facilities and transmission and distribution systems, and public service facilities are or will be available to meet current and projected needs;

1.1.3.2 Land use patterns within settlement areas shall be based on:

a) densities and a mix of land uses which:
1. efficiently use land and resources;
2. are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion;
3. minimize negative impacts to air quality and climate change, and promote energy efficiency;
4. support active transportation;
5. are transit-supportive, where transit is planned, exists or may be developed; and
6. are freight-supportive

1.6.1 Infrastructure, electricity generation facilities and transmission and distribution systems, and public service facilities shall be provided in a coordinated, efficient and cost-effective manner that considers impacts from climate change while accommodating projected needs.

Planning for infrastructure, electricity generation facilities and transmission and distribution systems, and public service facilities shall be coordinated and integrated with land use planning so that they are:
a) financially viable over their life cycle, which may be demonstrated through asset management planning; and
b) available to meet current and projected needs.

1.6.2 Planning authorities should promote green infrastructure to complement infrastructure.

1.6.3 Before consideration is given to developing new infrastructure and public service facilities:

a) the use of existing infrastructure and public service facilities should be optimized; and
b) opportunities for adaptive re-use should be considered, wherever feasible.

1.6.5 Public service facilities should be co-located in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration, access to transit and active transportation.

1.6.6.1 Planning for sewage and water services shall:

a) direct and accommodate expected growth or development in a manner that promotes the efficient use and optimization of existing:

1. municipal sewage services and municipal water services; and
2. private communal sewage services and private communal water services, where municipal sewage services and municipal water services are not available;

b) ensure that these systems are provided in a manner that:
1. can be sustained by the water resources upon which such services rely;
2. is feasible, financially viable and complies with all regulatory requirements; and
3. protects human health and the natural environment;

c) promote water conservation and water use efficiency;
d) integrate servicing and land use considerations at all stages of the planning process; and
e) be in accordance with the servicing hierarchy outlined through policies 1.6.6.2, 1.6.6.3, 1.6.6.4 and 1.6.6.5.

1.6.6.2 Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas. Intensification and redevelopment within settlement areas on existing municipal sewage services and municipal water services should be promoted, wherever feasible.

1.6.6.3 Where municipal sewage services and municipal water services are not provided, municipalities may allow the use of private communal sewage services and private communal water services.

1.6.6.7 Planning for stormwater management shall:

a) minimize, or, where possible, prevent increases in contaminant loads;
b) minimize changes in water balance and erosion;
c) not increase risks to human health and safety and property damage;
d) maximize the extent and function of vegetative and pervious surfaces; and
e) promote stormwater management best practices, including stormwater attenuation and re-use, and low impact development.

1.6.7.1 Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.

1.6.7.2 Efficient use shall be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible.

1.6.7.3 As part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.
1.6.7.4 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.

1.6.7.5 Transportation and land use considerations shall be integrated at all stages of the planning process.

1.6.8.1 Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.

1.6.8.3 Planning authorities shall not permit development in planned corridors that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.

New development proposed on adjacent lands to existing or planned corridors and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities.

1.6.8.4 The preservation and reuse of abandoned corridors for purposes that maintain the corridor's integrity and continuous linear characteristics should be encouraged, wherever feasible.

1.6.8.5 When planning for corridors and rights-of-way for significant transportation, electricity transmission, and infrastructure facilities, consideration will be given to the significant resources in Section 2: Wise Use and Management of Resources.

1.6.9.1 Planning for land uses in the vicinity of airports, rail facilities and marine facilities shall be undertaken so that:

a) their long-term operation and economic role is protected; and

b) airports, rail facilities and marine facilities and sensitive land uses are appropriately designed, buffered and/or separated from each other, in accordance with policy 1.2.6.

1.6.10.1 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. Planning authorities should consider the implications of development and land use patterns on waste generation, management and diversion.
Waste management systems shall be located and designed in accordance with provincial legislation and standards.

1.6.11.1 Planning authorities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, to accommodate current and projected needs.

1.6.11.2 Planning authorities should promote renewable energy systems and alternative energy systems, where feasible, in accordance with provincial and federal requirements.

Appendix B

St. Marys Master Servicing Study Extracts

Table 3.7 Summary of Transportation Conclusions and Recommendations

Transportation Issue	Conclusions and Recommendations	Time Horizon	Cost Estimate
Transportation Model	The transportation model (i.e., assignment and distribution of traffic) has assumed that Park Street will be extended, between King St and James Street, and that the Water Street bridge will be converted to a 'pedestrian/cyclist-only" crossing.	1 to 5 years	Park Street extension - $733,000 (D.C. estimate) Water Street bridge (see below)
Roadway Functional Classifications and Link Capacities	The existing functional classifications of the roads in St. Marys meet the operational requirements and traffic volumes forecast for the Town.	20 year	
External Arterial Road Connections	The external County Road connections can accommodate forecast traffic demands, with significant reserve capacity. Improvements proposed to Highway 7 are not expected to significantly impact travel patterns or traffic volumes in St. Marys.	20 year	
Jones Street Traffic Volumes	Jones Street, between Water Street and Wellington Street, presently carry over 200 vph in the peak direction, during peak periods. Considering that this street is located in the commercial core, and that it is desirable to limit traffic infiltration through the residential areas to the east, it is suggested that this street continue to be designated as a local road.		

Transportation Issue	Conclusions and Recommendations	Time Horizon	Cost Estimate
Queen Street / Wellington Street Signalized Intersection	Queuing on the westbound approach is forecast to be congested, during peak periods, however improvements in the downtown core are limited by physical constraints. Over the longer term, improvements to the transportation system in the broader study area should be considered to divert traffic away from the core area.	10 to 20 year	Development of long term bypass to core area (See New Crossing of Trout Creek, below).
Queen Street / Church Street Signalized Intersection	Queuing on the eastbound approach and westbound approach is forecast to be congested, during peak periods, however improvements in the downtown core are limited by physical constraints. Over the longer term, improvements to the transportation system in the broader study area should be considered to divert traffic away from the core area. For the westbound approach, consideration may be made to reducing queuing through the addition of a westbound right turn lane. However, the impact of removal of parking (i.e., servicing the Town Hall), would need to be assessed, to determine if this alternative is preferred. It is recommended that traffic operations at this intersection continue to be monitored, as growth occurs.	10 to 20 year	Development of long term bypass to core area (See New Crossing of Trout Creek, below).

Queen Street / James Street Unsignalized Intersection	Northbound movements are forecast to experience long delays, during peak periods, in the 5 year horizon period, and to be significantly over-capacity in the 20 year horizon period. The westbound left turn traffic volumes and eastbound right turn traffic volumes (i.e., from Queen onto James) presently meet the MTO warrants for exclusive turning lanes. Signalization is forecasted to be warranted at this intersection in the 5 to 10 year time horizon. Considering the physical constraints to adding a westbound left turn lane (i.e., due to the proximity of the railway overpass), it is recommended that signalization be considered as the preferred alternative. Considering the traffic volumes/queuing for the eastbound approach, it is recommended that an exclusive eastbound right turn lane be included with the signalization of this intersection. It is recommended that traffic operations continue to be monitored at this intersection, as growth occurs, with implementation of traffic signals once warrant volumes have been met.	5 to 10 years	Signalization plus addition of exclusive eastbound right turn lane - $300,000
Water Street Bridge	The poor condition of the Water Street bridge limits its ability to continue to accommodate vehicular traffic beyond horizon year 2013, without significant rehabilitation. Considering the forecast traffic increases in this area, replacement of this structure, with a new two-lane structure, is preferred over the long term. However, in the short term, it is recommended that this structure be rehabilitated to accommodate only pedestrian/cyclist traffic. It is recommended that this structure be evaluated for its heritage value, in accordance with the requirements of the Ministry of Tourism and Culture.	1 to 5 years (rehabilitation) 10 to 20 years (new upgraded structure)	Rehabilitation - $250,000. New Upgraded Structure - $1.8M
Wellington Street Bridge	The previous bridge study recommends replacement of this structure in the 5 year horizon period. However, the age of this structure, as well as its general condition, indicate that rehabilitation to achieve an additional 20 year service life may be preferred. It is recommended that a detailed deck survey and load capacity evaluation be undertaken, as well as a screening to establish heritage value, to confirm rehabilitation requirements.	1 to 5 years (evaluation and rehabilitation) 10 to 20 years (replacement)	Detailed condition evaluation and heritage evaluation of bridge - $30,000 to $45,000 Rehabilitation - $280,000 Replacement - $1.45M

Appendix C

Section 5.3.1 – Road Classifications (current Official Plan)

5.3.1 ROAD CLASSIFICATIONS

Each road classification has different functions and as a result will have different characteristics. The importance of classifying roads accurately is to keep the movement of traffic within the Town efficient and safe for pedestrians and vehicular traffic. Any changes to traffic patterns may require new road developments to occur and/or updates to existing roads to meet the demands and pressures that the traffic will place on the road network. In the Town of St. Marys there are three relevant road classifications: Arterial Roads, Collector Roads, and Local Roads.

5.3.1.1 Arterial Roads

Arterial Roads are the major routes in the road network that are designed to carry high volumes of traffic from one area of Town to another. (Schedule "B" illustrates the roads that are classified as Arterial Roads.)

Arterial Roads connect to other Arterial Roads, Collector Roads, and some Local Roads. As a principal route in the road network, an Arterial Road has the capacity to carry the largest amounts of traffic and acts as a connector to the residential, industrial and commercial centres. All types of vehicles travel along Arterial roads with a larger amount of transports using these roads over Local or Collector. The right-of-way for Arterial Roads is generally 30 metres, with direct access limited and on street parking prohibited, except within the Downtown Core. Generally, sidewalks are provided on both sides of the road.

5.3.1.2 Collector Roads

The Collector Roads collect traffic from the Local Roads and distribute it to the other Local Roads and to the Arterial Roads. (Schedule "B" of the Official Plan illustrates the roads that are currently classed as Collector Roads.)

Collector roads connect to all other roads. All types of traffic utilize these roads although trucks are typically service types. Traffic flow is interrupted by stop conditions and turning at land access points. The right-of-way for Collector Roads is generally 26 metres, with direct access and on street parking regulated. Generally, sidewalks are provided on both sides of the road.

5.3.1.3 Local Roads

The Local Roads collect traffic from lands that are adjacent to the roads. They carry low volumes of traffic (with no set standard) since most of the traffic on a local road will have its origin or destination

to be to the lands that lie alongside the road. (Schedule "B" of the Official Plan illustrates the roads that are currently classed as the Local Roads.)

Local roads connect primarily Collector roads and other local roads. The traffic flow is interrupted frequently as vehicles are turning into driveways. The right-of-way for Local Roads is generally 20 metres with direct access and on street parking both being permitted. Generally, sidewalks are provided on one side of the road.

Sections 5.3.2 to 5.3.9 – Improvements of and development along roads (current Official Plan)

5.3.2 The Municipality will continue to improve and upgrade the existing road network in accordance with a five-year program. Priority for road improvements may be given where local residents are prepared to assist the Municipality under The Local Improvement Act, or where it is desirable to undertake improvements in conjunction with other public works projects.

5.3.3 Road alignments, widths, layout and construction standards will be appropriate to the functional classification of the road, projected traffic volumes, and emerging design guidelines and safety standards. Restrictions to on-street parking and access may be imposed on roads to protect their primary traffic function and to increase their traffic carrying capacity.

5.3.4 The Municipality may establish standards and regulations with respect to minimum setbacks from roads, off-street parking, off-street loading, and driveways in its Zoning By-law.

5.3.5 Development on private roads shall not be permitted unless such roads meet the requirements of the Municipality and satisfy Provincial Policy and are registered as private roads under the provisions of the Condominium Act, R.S.O. 1998.

5.3.6 Development of new roads will generally occur through plan of subdivision/condominium with new roads created as a result of a plan of subdivision/condominium or land severance being constructed to the standards of the Municipality prior to their assumption by the Municipality. Any new Local, Collector or Arterial Roads must meet the applicable minimum road standards, except when permitted by Council.

5.3.7 When a road allowance does not meet minimum Town's standards, it may, through plan of subdivision/condominium, consent, site plan agreement or other legislative means, be improved. Where additional land is required for roadway widenings, extensions or Right of Ways such land will be obtained through Plan of subdivision/condominium, Consents, and/or Site Plan Agreements.

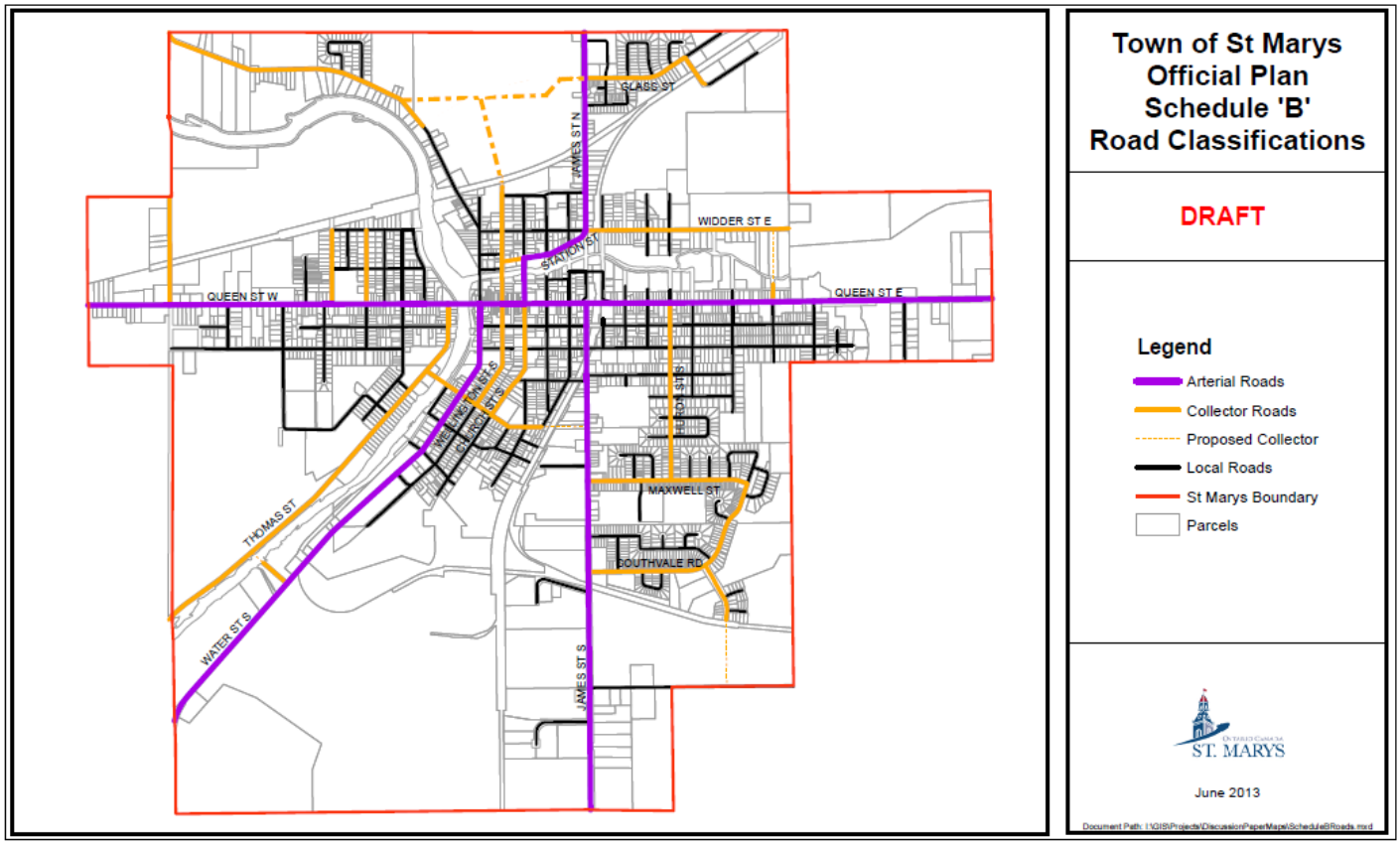
5.3.8 All new developments must front on and have access to a public road, which is constructed to meet the minimum standards established by Council. New development or redevelopment proposals of more than thirty (30) dwelling units shall incorporate at least two points of public road access. Council will not approve infilling development in areas served by only one public road if those areas

currently exceed thirty (30) dwelling units or where such infilling development will increase the number of dwelling units beyond thirty (30) dwelling units.

5.3.9 Access driveways should not create traffic hazards. The driveways should be limited in number and designed to minimize dangers to pedestrians and vehicles. Council may regulate the number of driveway access as a function of the road classification.

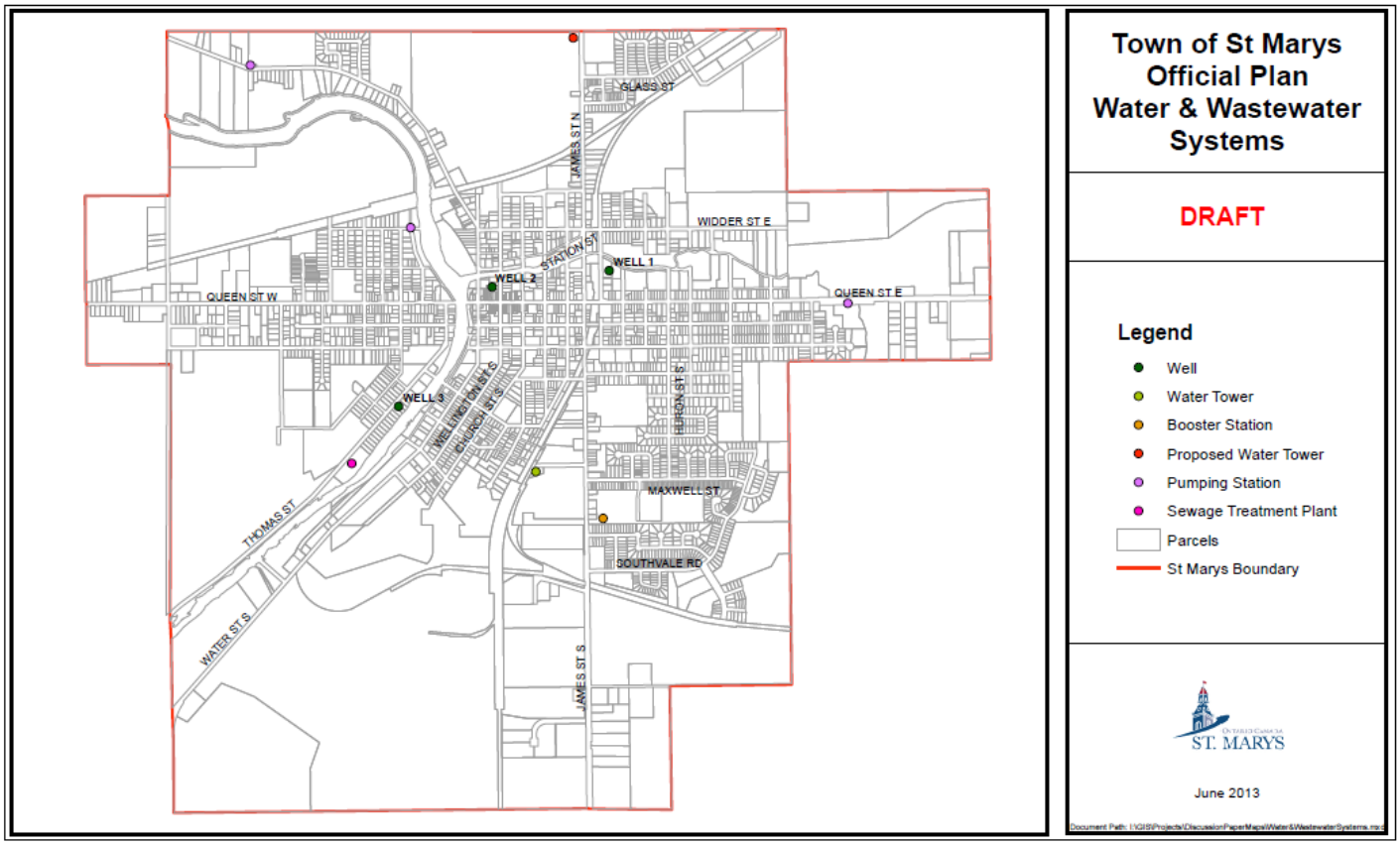
Appendix D

Draft Schedule 'B'



Appendix E

Town of St. Marys Water Supply Facilities



Appendix F

Town of St. Marys Storm Water Management Policy

TOWN OF ST. MARYS

STORMWATER MANAGEMENT POLICY

The Stormwater Management Criteria is determined by the product of the property size in hectares and the average runoff coefficient of the property. The attached table contains the runoff coefficients for the Town of St. Marys.

1. If the product is equal to, or less than 0.65:

   The subject property shall require a site plan including grading and drainage patterns. Best Engineering and Management Practices shall be implemented.

2. If the product is between 0.65 and 2:

   The subject property shall submit a Stormwater Management Report that satisfies the following criterion:

   - Quality Control:
     - Level 1 (enhanced level) of treatment as per the MOE Stormwater Management Planning and Design Manual 2003 is required.
     - A maintenance and monitoring plan shall be provided.
   - Quantity Control:
     - Rainfall intensity – duration - frequency values shall be for Stratford, Ontario supplied by the Atmospheric Environment Service Branch, Environment Canada.

2

- 100 year post-development flows shall be controlled to 5 year pre-development flows. It is noted that the capacity of the Municipal Storm Sewer System may be more limiting.
- Controls shall be implemented to ensure that the 250 year storm event does not negatively affect the proposed building or adjacent properties and buildings.
- All extraneous flows shall be controlled on site
- Quantity control facilities are to be designed at minimum in accordance with the MOE Stormwater Management Planning and Design Manual, 2003.

- Water Balance:
  - Reasonable attempt shall be made to match post-development infiltration volumes to pre-development levels. Infiltration targets may be achieved through the incorporation of a variety of best management practices including: reduced lot grading, roof leaders discharging to ponding areas or soak away pits, infiltration trenches, grassed swales/enhanced grassed swales and catch basin systems.
- Erosion and Sediment Control:
  - Erosion and sediment control plans shall be developed and implemented with consideration for in-stream requirements. Additional measures may be required for catchments entering Trout Creek and the North Thames River above the St. Marys Mill Dam.

3. If the product is greater than 2:

3

The subject property shall be required to submit a Stormwater Management Report to both the Upper Thames River Conservation Authority and the Town of St. Marys for approval. The requirements for properties exceeding a product of 2 shall be determined by the Upper Thames River Conservation Authority.

Environmental solutions (ie/ green roofs) are encouraged to aid in Stormwater Management.

4

TOWN OF ST. MARYS
STORMWATER MANAGEMENT RUNOFF COEFFICIENTS

Character of Surface	Run off Coefficient
Pavement	
Asphaltic and Concrete	0.95
Brick	0.85
Roofs	0.95
Lawns, Sandy Soil	
Flat, 2 percent	0.10
Average, 2 to 7 percent	0.15
Steep, 7 percent	0.20
Lawns, Heavy Soil	
Flat, 2 percent	0.17
Average, 2 to 7 percent	0.22
Steep, 7 percent	0.35