January 10, 2024



Municipality of Strathroy – Caradoc

Water, Wastewater and Stormwater Master Plan and Pollution Prevention Control Plan

Public Information Centre #1

Glen Oak



Mt Brydges

Caradoc



Komoka

PURPOSE OF MEETING

- Introduce you to the study
- Provide an overview of the study process
- Identify the issues and reason for this study
- Summarize the Municipality's water, wastewater and stormwater systems
- Present information on what we have found to date

We want to hear from you!

- Do you have any observations that you would like to share?
- Do you have any questions regarding the study?
- Do you have any questions regarding the Master Plan process?







Background – Strathroy-Caradoc

- Formed in 2001 from an amalgamation of the Town of Strathroy and the Township of Caradoc
- Covers an area of approximately 27,000 ha.
- Urban-rural municipality with large agricultural areas and a few urban settlements.
- 2021 Census population 23,871 residing in 9,695 private dwellings.
- Two main urban settlement areas Strathroy and Mount Brydges – and smaller settlements comprising of Melbourne, Campbellville, and Delaware West.
- The Master Plan focuses on the municipal services in the two urban settlement areas (Strathroy and Mount Brydges).







An Official Plan is a legal policy that guides the short-term and long-term development in your community. The plan is developed through a public and legislative process in accordance with the Ontario Planning Act, and the community input helps ensure that future planning and development will meet the specific needs of your community.

Some policies that Official Plans deals with include:

- Where new housing, industry, offices and shops will be located;
- What services like roads, watermains, sewers, parks and schools will be needed;
- When, and in what order, parts of your community will grow; and
- Community improvement initiatives.

Once an Official Plan is in effect, it guides all Municipal planning decisions, meaning:

- The local council and municipal officials must follow the Plan;
- All new services, sewer or watermains etc. must conform to the Plan; and
- All bylaws must conform to the official plan.





- Under the Municipality's Official Plan, Strathroy, Mount Brydges and Melbourne are designated as settlement areas.
- Only settlements of Strathroy and Mount Brydges are fully serviced by both Water Distribution System and Wastewater Collection & Treatment System.
- Service-Related Policies:
 - By-Law No. 14-20 mandates connection to municipal WDS of all housing units including buildings fronting or adjacent to watermain, and water consumption to be metered. Once connection is established, alternative water supply cannot be used and cannot enter municipal sanitary sewer system.
 - By-Law 64-14 mandates connection to sanitary sewer mains of housing units including \bullet buildings, provided treatment capacity is available. Sewage entering sewer may only contain water originating from municipal WDS (except for homes connected prior to enactment of this by-law, and for commercial/industrial properties that have entered a discharge agreement.



Master Plan and PPCP Purpose and Objectives

Master Plans rely on the analysis and detailed policies developed in municipal Official Plans such as speed of growth, growth location, and types of growth to determine infrastructure needs.

Master Planning provides a basis for integrating water, wastewater and stormwater infrastructure requirements for existing and future land uses as follows:

- Provides the Municipality the benefit of reducing time and costs associated with undertaking specific studies to support individual project planning; and
- Projects may be proposed in this Master Plan and some may require additional investigation (Schedule B and C projects) per the Municipal Class Environmental Assessment (MCEA) process.

A Pollution Prevention Plan (PPCP) is:

- Intended to be a part of the Municipality's ongoing efforts to improve the performance of sanitary and storm sewer infrastructure; and
- The aim is to minimize the discharge of untreated or partially treated wastewater during extreme weather events.





Summary of Differences between Official Plan and Master Plan

Official Plan (OP)

- The local council and municipal officials must follow the Plan;
- All new services, sewer or watermains etc. must conform to the Plan;
- All bylaws must conform to the official plan; and
- An OP deals mainly with issues such as:
 - where new housing, industry, offices and shops will be located,
 - what services like roads, watermains, sewers, parks and schools will be needed,
 - when, and in what order, parts of your community will grow.

Master Plan (MP)

- Governed by Environmental Assessment Act;
- Build upon the analysis and detailed policies developed through OP;
- Plans on how to service growth detailed in the OP in municipal servicing (roads, water, wastewater, stormwater);
- No policies/bylaws created; and
- Can be undertaken:
 - As a high-level review for planning infrastructure services and support future planning of specific projects based on OP (MCEA Approach 1),
 - In conjunction with OP, Secondary Plans, or subdivision plans and/or include planning of specific infrastructure (MCEA Approaches 2 and 3).





an (MP) ental Assessment Act; and detailed policies ; e growth detailed in the ing (roads, water,

CLASS EA / MASTER PLAN PROCESS

EXHIBIT A.2. MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the MCEA







The Strathroy-Caradoc Master Plan will be developed following Approach #1 of the MCEA process, which entails:

- Phase 1 Identification of problem (deficiency) or opportunity;
- Phase 2 Identification of alternative solutions to address the problem or opportunity; and
- Provide the public and review agency the opportunity for comments prior to being finalized.

The Master Plan would therefore become the basis for and be used in support of future investigations for the specific Schedule B and C projects identified within it.





The final WWSMP and PPCP deliverables are generally described as to:

- Conduct a high-level validation of water demand and wastewater flow design criteria;
- Propose projects for the 20-year WWWSWM Capital Implementation Plan (2025 to 2046) detailed in five-year horizons - 2025-2029, 2030-2034, 2035-2039 and 2040-2046;
- Identify future Class EA Study requirements for applicable water wastewater and stormwater capital projects; and
- Establish a framework from which development infrastructure can be appropriately identified, costed and phased in Development Charges according to DC policies.





Master Plan Problem and Opportunity Statement

- As the first step in Phase 1 of the Class EA process, the proponent (the Municipality) must identify and describe the problem or opportunity that the project is intended to address.
- The Problem and Opportunity Statement outlines the need for the project and establishes the general parameters of the study.
- The Municipality has chosen the following as its statement of the Problem and Opportunity Statement to be addressed by the Master Plan/PPCP:

To identify preferred water and wastewater serving strategies to meet the Municipality of Strathroy-Caradoc's growth needs to 2046 as well as provide effective on-going continuity to existing serviced community areas across the Municipality of Strathroy-Caradoc as appropriate.





Master Plan Charter Principles

#	Principle	#	Prir
1	The Master Plan and PPCP should be informed by the Strathroy- Caradoc's Strategic Plan.	8	Proven, cost effective technologie and are capable of continuous im
2	The Master Plan and PPCP should support the Strathroy-Caradoc's Official Plan and Green Initiatives and other initiatives to address Climate Change.	9	Consider solutions that build upo are still viable over the horizon of
3	Master Plan and PPCP solutions should suit the Strathroy- Caradoc's Growth Plan – If Strathroy-Caradoc wishes growth in an area, the Master Plan would not prevent it.	10	Recommended Master Plan solut ensure that there is expandability life expectancy of the infrastructu
4	Preference should be for long term servicing solutions over interim solutions.	11	PPCP solutions should be long te issue.
5	All services to be fully funded through adequate planning, budgeting and identified revenue streams.	12	Synergy - Look for synergies with infrastructure requirements with o systems if this is in the best interest.
6	Master Plan and PPCP solutions should be developed which minimize risk to the Strathroy-Caradoc, users, and others during construction, commissioning, and operation of the upgrades.	13	Minimize Complexity – Examples components and pumping.
7	The PPCP solution should integrate the collection system, pumping stations and the WWTPs to achieve the F-5-5-5 requirements.		





nciple

es that should be in long term use provement should be utilized.

on the current assets provided they the Master Plan.

tion be 20-year solutions and to 40-years, if possible (or to the ure).

erm solutions that "fix" the pollution

h current or potential future other municipalities and regional est of the Strathroy-Caradoc.

include minimizing mechanical

Master Plan/PPCP Implementation Framework







Input Into Master Plan







Municipal, **Elected &** Local Agencies

Natural Environment

- Land Use within the Strathroy portion of the Study Area is generally:
 - Urban (residential, commercial, industrial);
 - Wetland and woodland features within the valley lands of the Sydenham River and its tributaries; and
 - Agricultural lands to the south.
- Strathroy portion of the Study Area is in the St. Clair Region Conservation Authority watershed.











MUNICIPAL BOUNDARY SETTLEMENT AREA BOUNDARY

Natural Environment

- Land Use within the Mount Brydges portion of the Study Area is generally Urban (residential, commercial, industrial).
- Mount Brydges portion of the Study Area is within the following watersheds:
 - St. Clair Regional Conservation Authority;
 - Upper Thames River Conservation Authority; and
 - Lower Thames Valley Conservation Authority.







2022 Residential Lands Needs Assessment Study (RLNA) prepared by Waterson & Associates Economists Ltd.

Year Population	2021	2026	2031	2036	2041	2046
Strathroy-Caradoc	24,700	27,030	30,190	32,400	33,960	35,360

Town of Strathroy:

- Total population of 23,900 by 2046, with an average annual growth rate of 1.5%; and
- 3,920 additional houses at an annual growth rate of approximately 157 houses, bringing the total to 10,480 by 2046.

Town of Mount Brydges:

- Will have a total population of 7,500 by 2046, with an average annual growth rate of 3.3%; and
- It will also see 1,750 additional houses at an annual growth rate of approximately 70 houses, bringing the total to 2,940 by 2046.







Strathroy – Water Distribution System

- Zone 1 located south of the booster pumping station with lower elevations; and
- Zone 2 which is located north of the booster pumping station and is on higher elevated ground.
- Second Street pumping station which has a 3-celled storage reservoir, each of volume 3,750 m³ for a total capacity of $11,250 \text{ m}^3$;
- One elevated water tower with a total volume of 1,900 m³; and
- Approximately 107 km of watermains and 685 fire hydrants.

	Supplied (m ³)	Billed (m ³)	Non-Revenue Volume (m ³)	Distribution (% of supplied volume)		
Year				Billed	Non-Revenue Volume	
2022 - 2023 July-Jun.	964,812	898,462	66,350	93	7	







Strathroy Water Demand Projection







Rated Capacity to be confirmed in Water Master Plan

Strathroy – Wastewater Collection and Treatment System

Collection System:

- Nine (9) sanitary pump stations;
- 90 km of gravity sewers and 6 km of forcemains; and
- 1,236 maintenance holes.

Wastewater Treatment Plant

- Mechanical treatment plant with a design rated capacity of 10,000 m³/day.
- Liquid train comprises of mechanical screening, one aeration basin, chemical phosphorus removal, two secondary clarifiers, filtration and UV disinfection.
- Sludge storage is provided by an onsite lagoon.









Mount Brydges – Water Distribution System

- The Glendon Drive High Lift PS (HLPS) that has an underground 2-celled storage reservoir with total capacity of 1,630 m³. The HLPS has back-up power;
- Oriole Drive Monitoring and Re-chlorination Facility (Monitoring Station #3) that also has backuppower;
- Water Tower with a total volume of 720 m³; and
- The system consists of 45 km of watermains and 179 fire hydrants.

Voor	Supplied (m ³)	Billed (m ³)	Non-Revenue Water	Distribution (% of supplied volume)	
rear			Volume (m ³)	Billed	Non- Revenue
2022 - 2023 July-Jun.	179,504	173,883	5,621	97	3









Rated Capacity to be confirmed in Water Master Plan





Mount Brydges – Wastewater Collection and Treatment System ST

Collection System:

- 11 km of gravity sewers and 2 km of forcemains; and
- 145 maintenance holes and two (2) sanitary pump stations.

Wastewater Treatment Plant

- Rotating Biological Contactor (RBC) based WWTP.
- Liquid train comprises of an inlet flow distribution chamber, two rotating biological contactor units, two secondary clarifiers, three continuous backwash filters, chemical addition, and UV disinfection. The rated capacity of the plant is 825 m³/day.
- Some areas of Mount Brydges remain serviced by private on-site sewage disposal systems.









- SWM facilities are generally required for new development and are intended to protect the environment by:
 - Matching post development to predevelopment flow rates (quantity treatment), Providing water quality treatment primarily through sediment removal with some biological
 - treatment (depending on time of year); and
 - Providing other benefits such as thermal control of runoff and environmental enhancement.
- Quantity facilities were first installed in 1980's and Quantity/Quality facilities in the 1990's
- Like water and wastewater systems, SWM facilities are regulated by the MECP
- MECP's Environmental Compliance Approval for a Municipal Stormwater Management System ECA Number: 058-S701, Issue Number: 1 dated February 8, 2023, Schedule B, identifies nine SWM facilities (SWMP 01 to 09)
- Agnes Drive Roadway Extension SWM Pond in Strathroy is a future SWMP-10 currently under review by MECP.





SWM Facilities







Project Schedule

- Undertake PIC # 1- January 10, 2024
- Completion of water modeling February 2024
- Completion of wastewater modeling March 2024
- Develop Water System Master Plan January to April 2024
- Develop Wastewater System Master Plan– January to April 2024
- Develop Stormwater Master Plan January to April 2024
- Undertake Pollution Prevention Plan– January to April 2024
- Council Presentation of Master Plan Progress (Council Presentation # 1) February 2024 if required
- Undertake PIC # 2 June 2024
- Municipality Council Presentation of Master Plan Report (Council Presentation # 2) July 2024
- Municipality Issues Notice of Completion July 2024
- Master Plan Completed (following 30-day review period) August 2024





Strathroy – Caradoc W/WW SWM MP





Thank you for attending this meeting.

Material on this meeting will be posted on the **News & Public Notices Page**:

https://www.strathroy-caradoc.ca/en/city-hall/water-wastewater-and-stormwater-master-plan-and-pollution-preventioncontrol-plan.aspx

Please feel free to ask a question or submit your comments via email or phone a member of the study team

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