Town of Essex

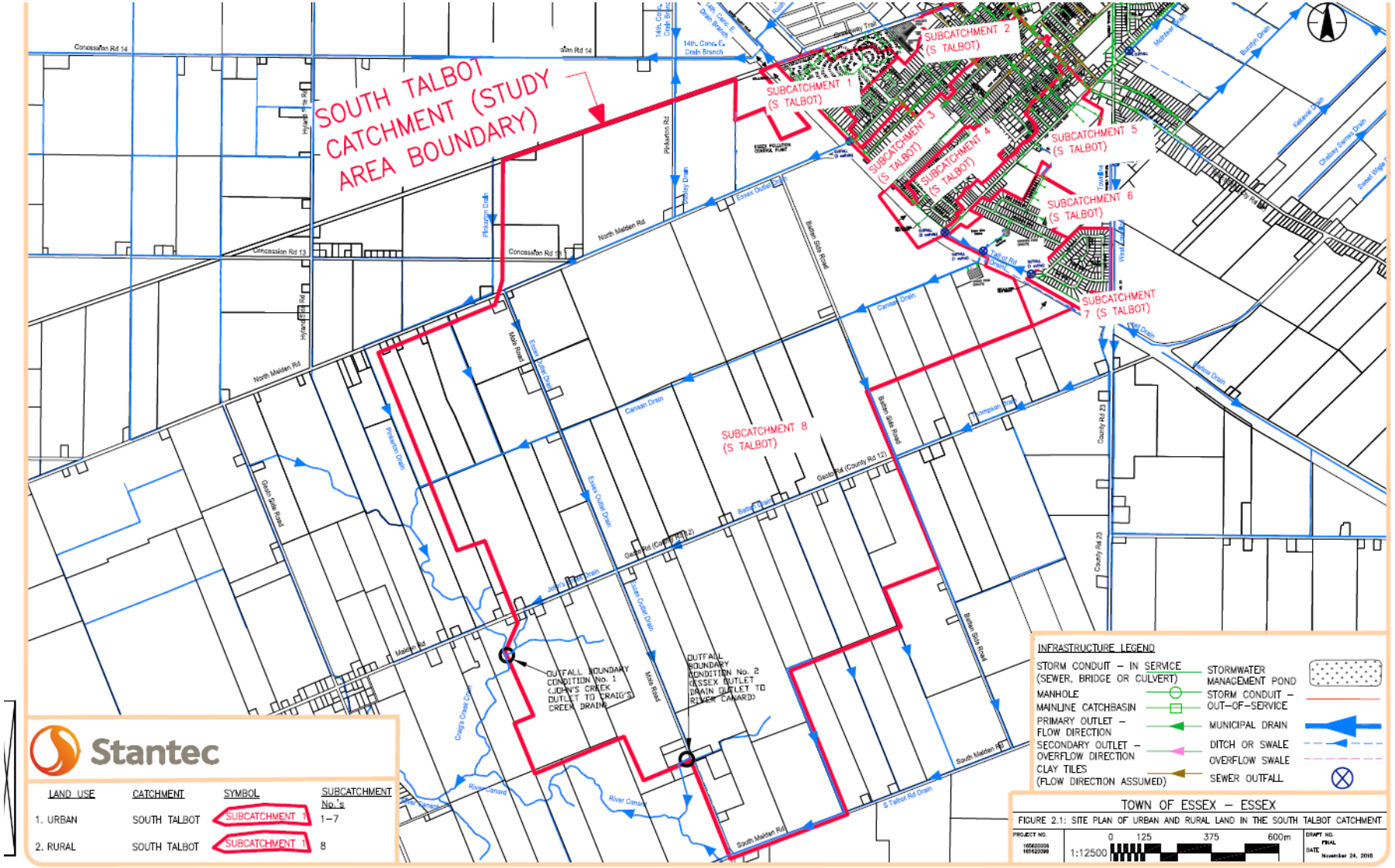
Improvements to Essex Ward 1 Southwest Storm Sewer System

Municipal Class Environmental Assessment

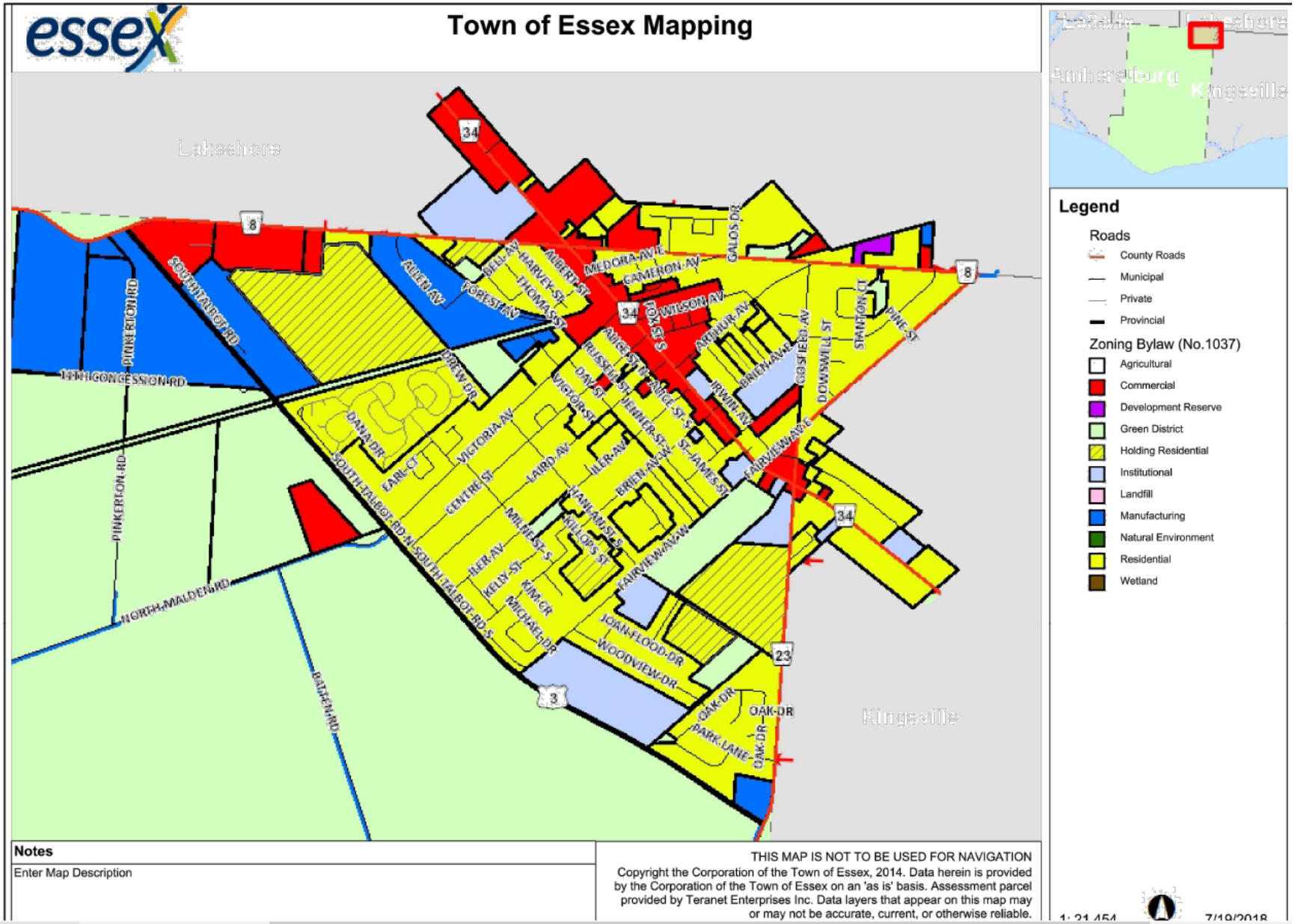
Phases 1 & 2 (Schedule B)

Background

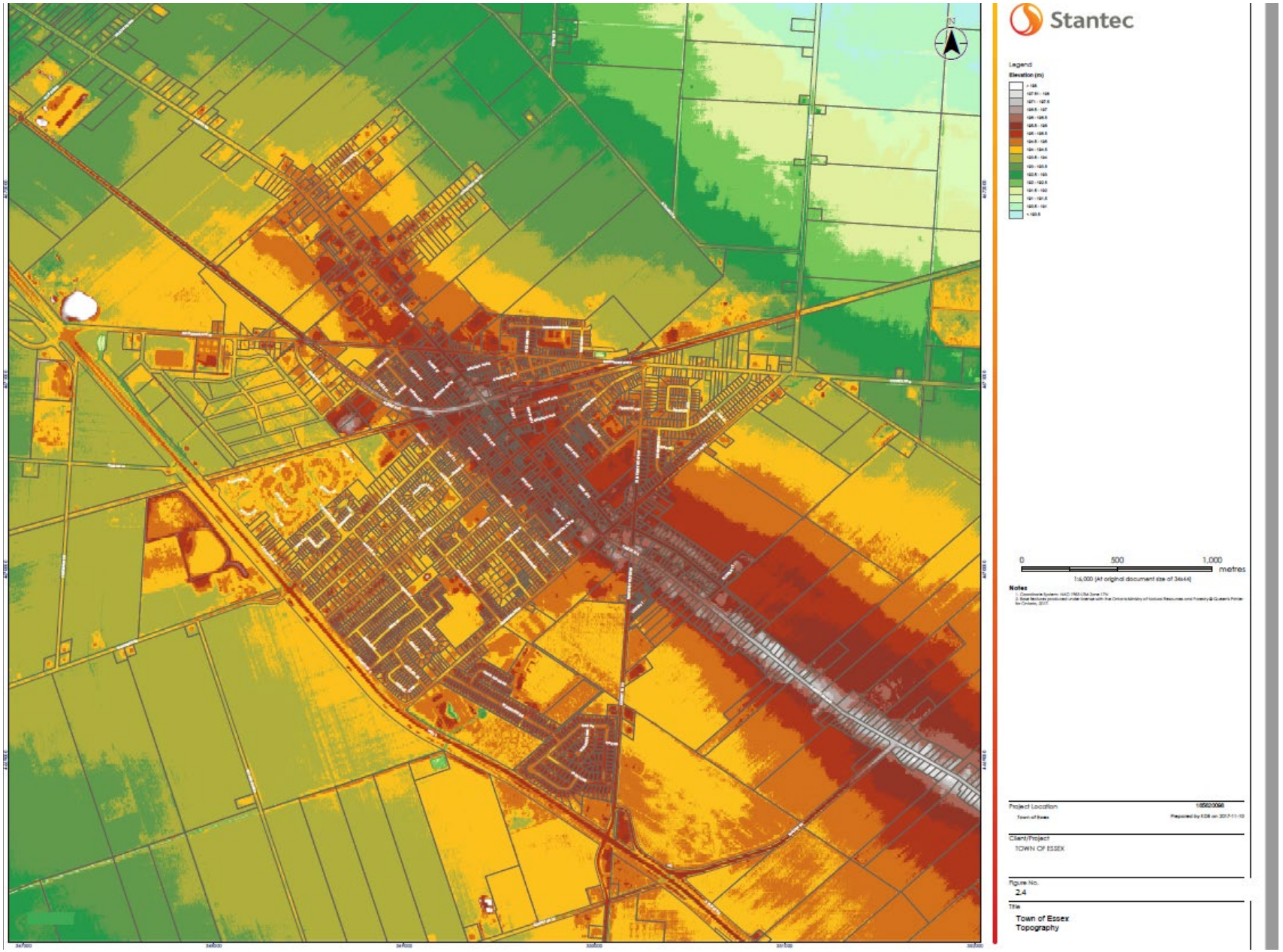
Essex Ward 1 Southwest Storm Sewer Servicing Area



Background – Zoning By-Law



Background – Topography



Problem Statement

- In recent years, the Town experienced widespread complaints as a result of street and basement flooding during extreme storm events. On August 11, 2014 and September 3, 2015, the Town received a record amount of rainfall. Hundreds of houses mostly located in Ward 1 Southwest drainage area were flooded during the two heavy rainfall events.
- Flood damage appeared to be caused by excessive runoff which the storm infrastructure is not designed to convey. Local drainage systems and storm sewers were designed for less extreme rainfall events. During extreme rainfall events significant amounts of stormwater pooling on Town streets and significant runoff from roof structures can drastically increase the volume of stormwater entering the Town's storm sewer system.
- To continue with future development, the existing storm sewer system needs to be evaluated to identify areas where improvements can be implemented to mitigate the risk of flooding and property damage and prepare the Ward 1 southwest drainage area for full future development.

Study Overview

- evaluate the existing storm system,
- identify improvements required to reduce the risk and extent of surface flooding and property damage, and
- accommodate future development through improvements to the storm sewer system in the Ward 1 Southwest drainage area.

This study requires hydrologic-hydraulic model development, calibration and confirmation of hydraulic capacity of the existing storm infrastructure.

Possible improvements to the storm sewer system include replacing and/or twinning sewers, construction of storm relief sewers and/or stormwater pumping stations, and stormwater storage facilities to store runoff during severe storm events.

KEY FEATURES OF THE CLASS EA PROCESS

The project is being conducted in accordance with the Class EA requirements for Schedule "B projects", which is to be approved subject to completion of Phase 1, 2 and 5 Class EA, including:

- *Phase 1 – Review and identify problem or opportunity*
- *Phase 2 – Alternative solutions to problem*
- ~~*Phase 3 – Alternative design concepts for the preferred solution*~~
- ~~*Phase 4 – Environmental Study Report*~~
- *Phase 5 – Implementation of the preferred design*

This project is to be completed in accordance with Phases 1 and 2 of the Class EA process.

The above Phases 1 and 2 are to be completed upon the acceptance of the Class EA study report and placed on the public record and issue notice of completion for the mandatory thirty-day review period.

Alternative Solutions

A comparative summary of the six standalone conceptual planning level alternative solutions and their ability to meet the needs is evaluated.

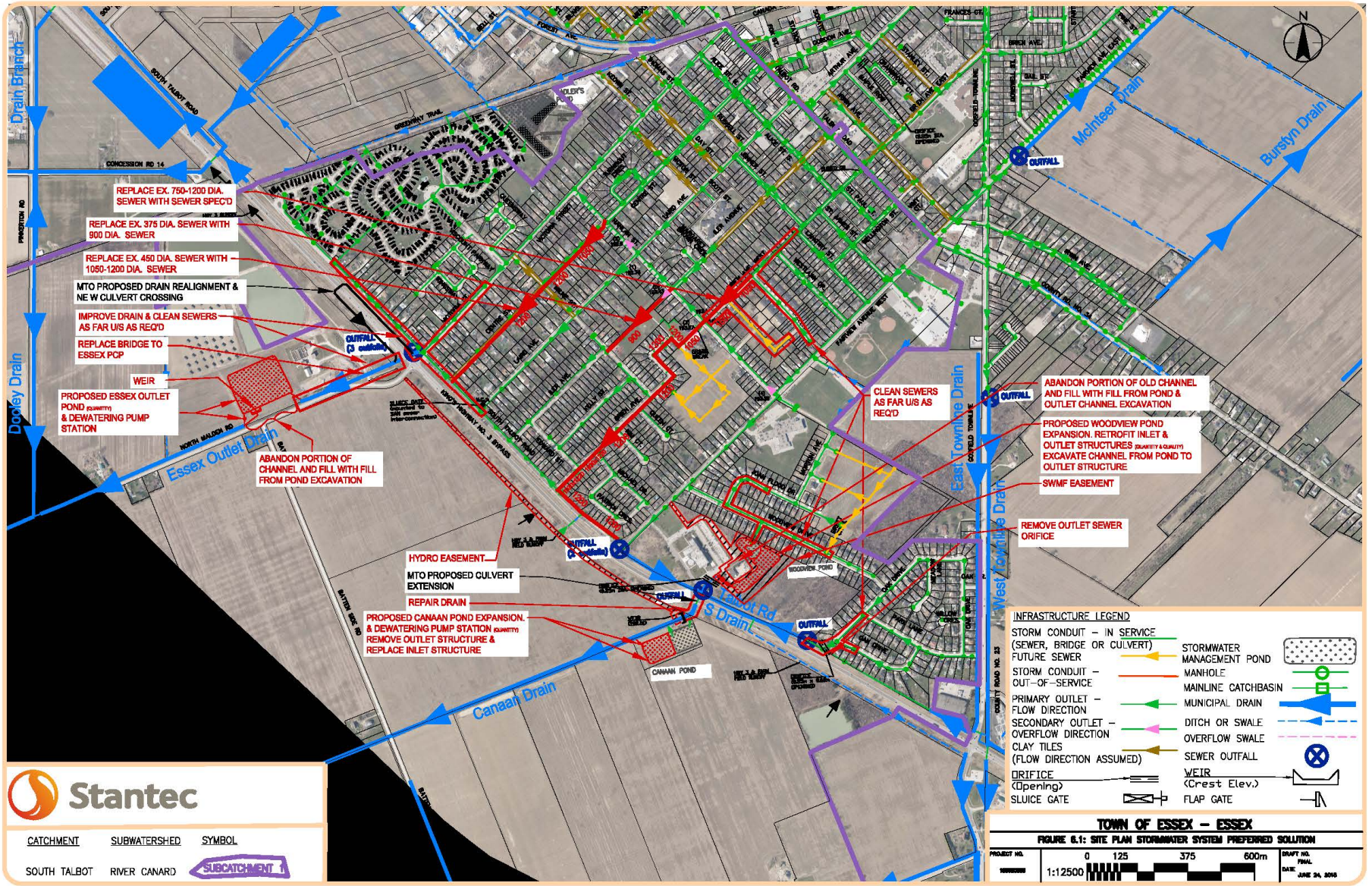
1. ***Do nothing***
2. ***Runoff reduction through Low Impact development (LID) and green infrastructure***
3. ***Field Inspection and General Maintenance***
4. ***Increasing hydraulic capacity of existing storm sewers***
5. ***Construction of stormwater management ponds***
6. ***A Combination of the Above Alternatives except "Do Nothing"***

Summary of Recommended Improvements

Improvements to the Ward 1 Southwest Storm Sewer system include the following:

- Increasing Hydraulic Capacity of Storm Sewers
  - Replace storm sewer along Centre Street between Hanlan Street and South Talbot Road to a provide proper outlet for service the Centre Street drainage area
  - Replace storm sewer in Optimist Park between Hanlan Street and Milne Street to provide a proper outlet for servicing Iler Ave drainage area
  - Replace storm sewer along Brien Ave West between Kimball Dr and South Talbot Rd and along South Talbot Rd from Brien Ave West to Fairview Ave West at the outfall
- Construction of Stormwater Management Ponds
  - Woodview Pond expansion
  - Canaan pond expansion
  - New Essex Outlet Pond on the west side of the Essex Pollution Control Plant

Summary of Recommended Improvements



OPINION OF PROBABLE COST

Phase	Item	Probable Cost	Class EA Schedule
1	Canaan Pond Expansion, dewatering pumping station & Drain repair	1,200,000	under the Drainage Act
	Sewer - Brien Ave W & Sewer Cleaning	4,100,000	A+, A
2	Woodview Pond expansion & Tulley Meadows Improvements Woodview development sewer cleaning	500,000	B A
3	Essex Outlet Pond, dewatering pumping station, Drain improvement Sewer cleaning near outfall	1,100,000	under the Drainage Act
	Essex PCP bridge replacement	400,000	A
4	Sewer - Centre St	1,700,000	A+
	Sewer - Iler Ave (Optimist Park)	580,000	A+
Sub-total Construction Cost		9,580,000	
Engineering Allowance (15%)		1,400,000	
TOTAL CAPITAL COST (excluded taxes)		10,980,000	

Next Steps and Recommendations

- Council endorsement of the Municipal Class Environmental Assessment Phases 1 & 2 (Schedule B) for the Improvements to Essex Ward 1 Southwest Storm Sewer System
- Notify the public and review agencies of completion of the Class EA
- File the ESR with the Municipal Clerk and place on the public record for at least 30 calendar days for review by the public and agencies
- Provision to request a Part II Order. If no request for an order is received by the Minister within the review period, then the Town to Phase 5 and implementation of the plant expansion.

Upon Completion of Class EA, move forward to Implementation Phase

- ***Complete contract drawings and tender documents for Phase 1 - Brien Ave West Sewer Upgrades***
- ***Proceed to construction and operation***
- ***Monitor for environmental provisions and commitments***