

CLAIR-MALTBY

MASTER ENVIRONMENTAL SERVICING PLAN (MESP)

&

COMPREHENSIVE ENVIRONMENTAL IMPACT STUDY (CEIS)

1 PROBLEM/OPPORTUNITY STATEMENT

Problem

- The City of Guelph is undertaking the Clair-Maltby Secondary Plan and Master Environmental Servicing Plan (MESP) Study to comprehensively plan the last unplanned greenfield area within the city. The current study area does not have full municipal services to support future development.

Opportunity

- The Clair-Maltby Secondary Plan and the Master Environmental Servicing Plan (MESP) are being developed concurrently to provide an integrated planning approach to establish a plan for future urban development and full municipal services within this area.

2 GOVERNING PROVINCIAL LEGISLATION

Municipal Class Environmental Assessment Process (October 2000), as amended in 2007 & 2011)

- The Municipal Class Environmental Assessment (Class EA) process categorizes proposed municipal projects according to their anticipated environmental impact, and calls for increasingly stringent review requirements as the magnitude of the anticipated environmental impact increases.
- The Class EA defines a Master Plan as:
“A Long Range Plan, integrating infrastructure requirements for present and future land use with environmental planning principles. The Plan examines the whole infrastructure system in order to outline a framework for planning subsequent projects and/or developments (Class EA, October 2000, as amended in 2007 & 2011)”.

Planning Act

- The Planning Act sets out the ground rules for land use planning in Ontario and describes how land uses may be controlled, and who may control them.

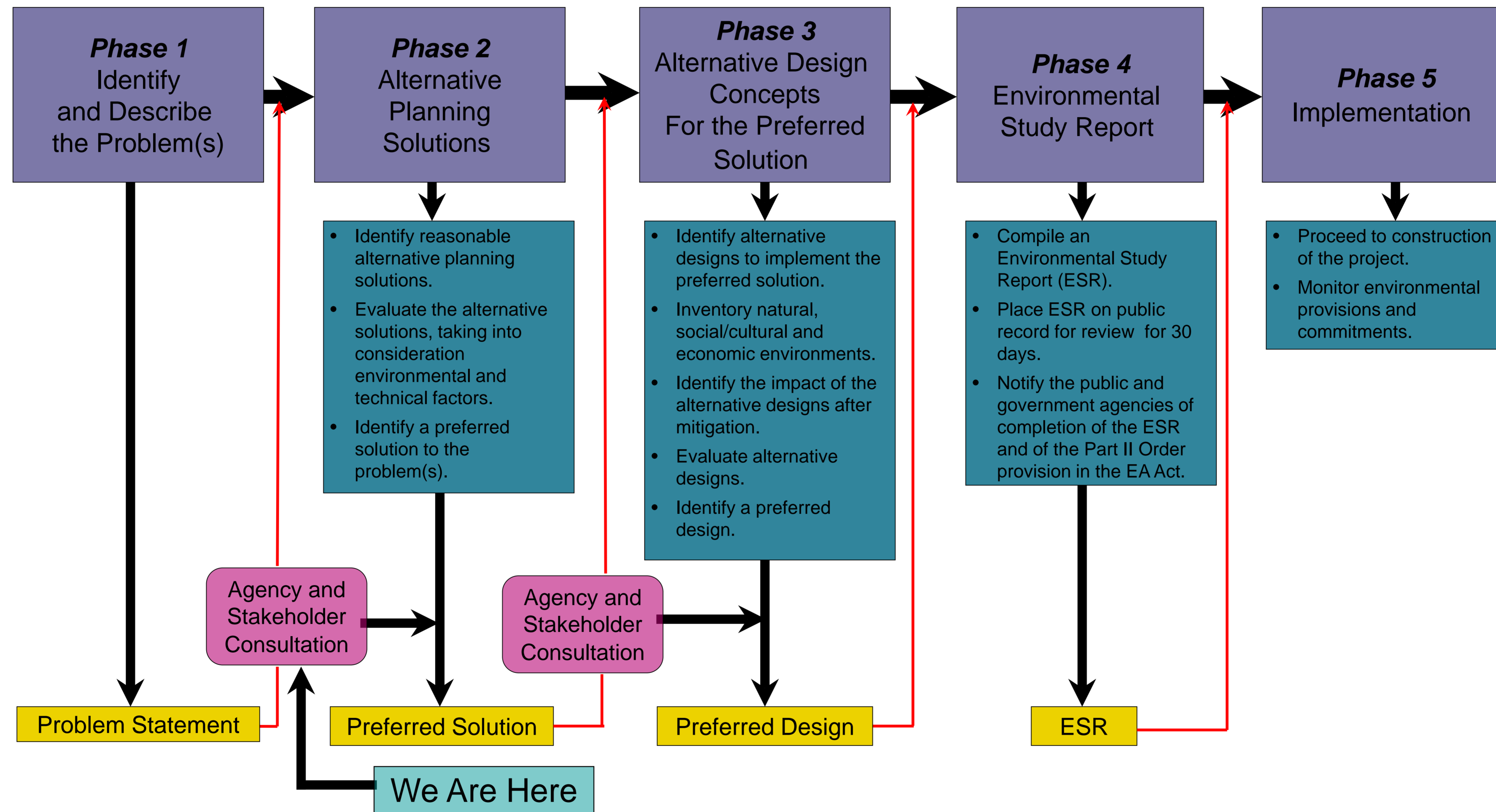
Provincial Policy Statement

- The Provincial Policy Statement contains clear, overall policy directions on matters of provincial interest related to land use planning and development.
- It promotes a policy-led planning system that recognizes there are complex inter-relationships among and between environmental, economic and social factors in land use planning.

The Master Environmental Servicing Plan (MESP) being prepared for the Clair-Maltby Community constitutes a municipal services plan (stormwater, wastewater, water and transportation) along with environmental management to support future urbanization.

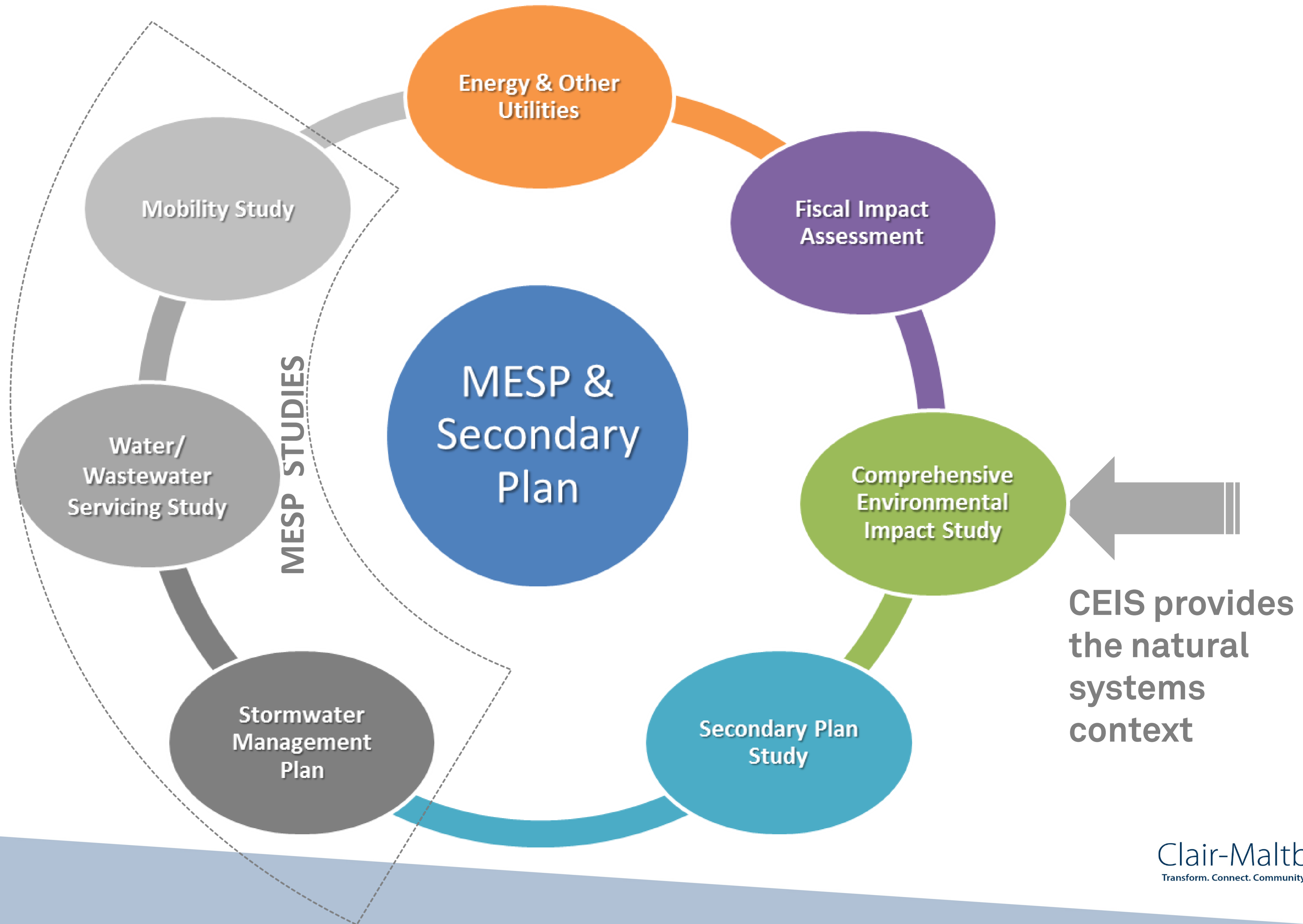
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MUNICIPAL CLASS EA PROCESS



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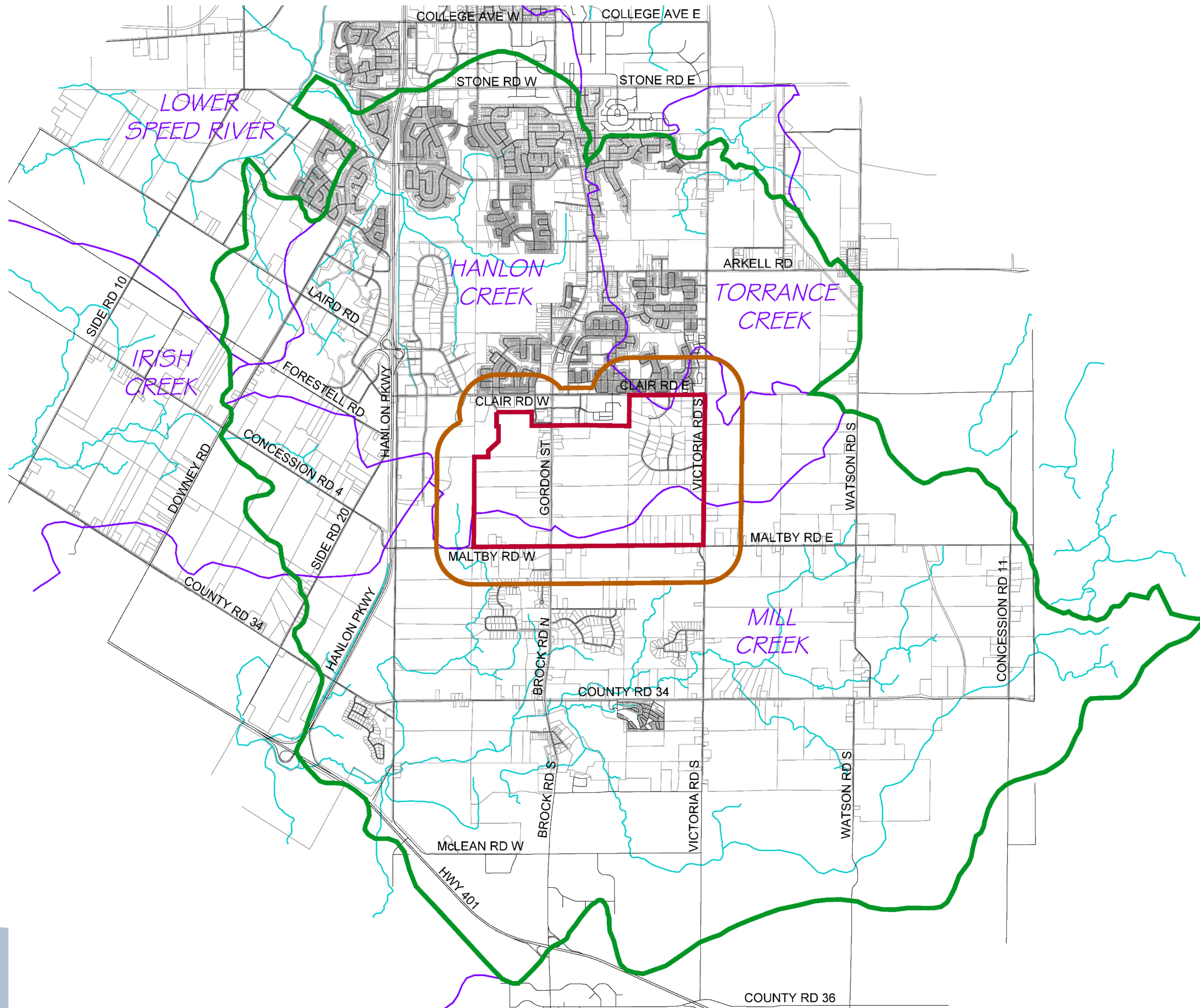
CLAIR-MALTBY SECONDARY PLAN PROCESS DIAGRAM



5 PURPOSE OF COMPREHENSIVE ENVIRONMENTAL IMPACT STUDY (CEIS)

- Technical basis for informing:
 - Potential land uses
 - Servicing and mobility infrastructure
 - Community Structure options
 - Preferred Community Structure Alternative
- Technical basis for Management Plan(s)
- Technical basis for Implementation and Monitoring Plan(s)
- Policies specific to the Secondary Plan Area

STUDY AREAS



Secondary Plan Area (SPA)

Primary Study Area (PSA)

Secondary Study Area (SSA)

7 COMPREHENSIVE ENVIRONMENTAL IMPACT STUDY (CEIS)

Key CEIS Tasks

- Verification / refinement / assessment of environmental features and functions
- Assessment of the role of water in the study areas to support natural systems (groundwater/surface water)
- Constraints and opportunities definition
- Assessment of impacts associated with different community structure options
- Establishment of integrated management strategies

Approach

- Review of background information
- Multi-year monitoring and field studies
- Modelling of surface and groundwater
- Refinement of Natural Heritage System
- Agency and stakeholder consultation

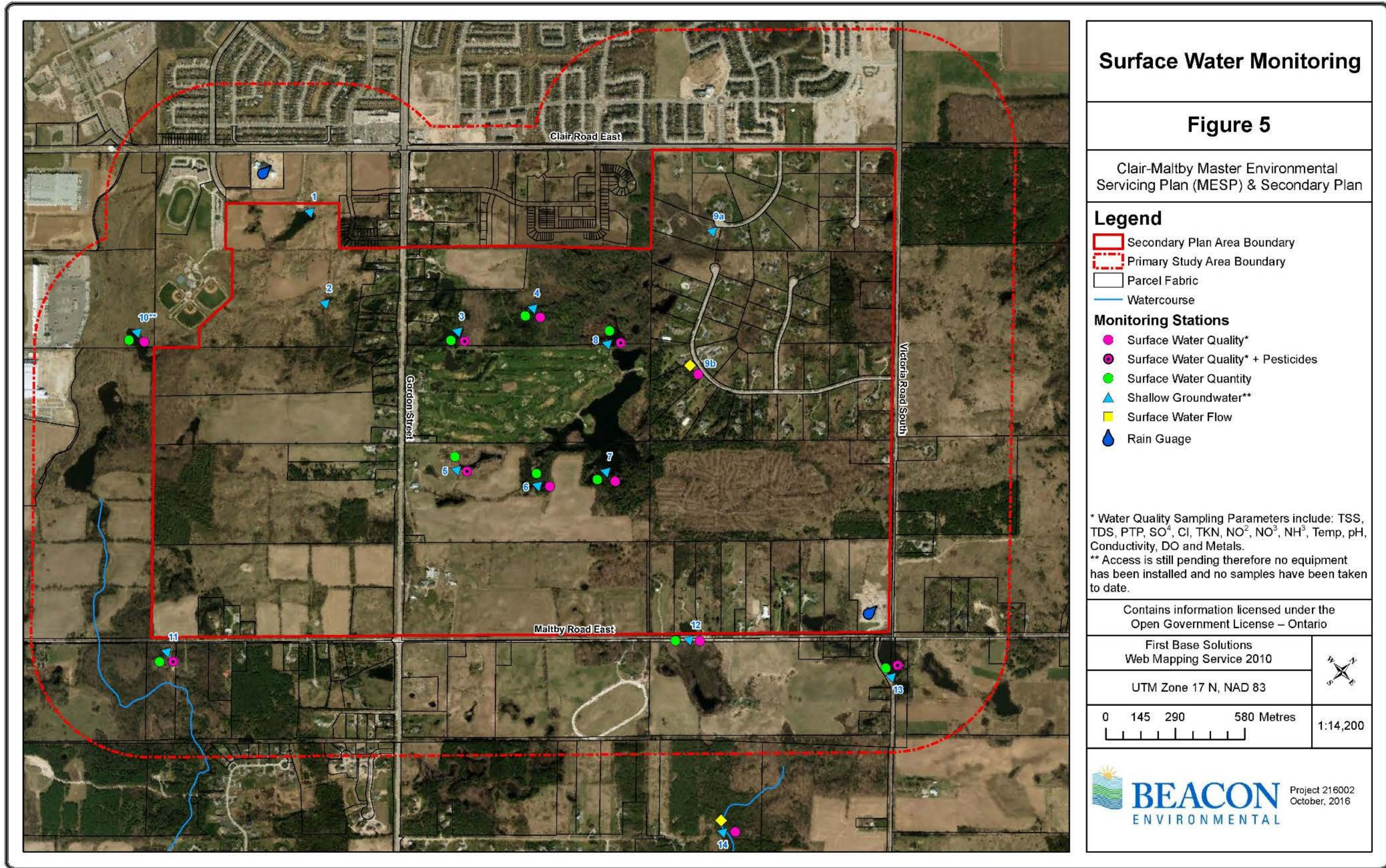
8 SURFACE WATER



Objective / Purpose

- Need to define runoff characteristics (peak and volume) in the study area
 - Headwaters of Mill, Hanlon and Torrance Creeks
- Assist in the definition of the role of water in supporting natural systems functionality
- Fundamental component of Stormwater Management Plan development

9 SURFACE WATER MONITORING



Surface Water Monitoring

Figure 5

Clair-Maltby Master Environmental Servicing Plan (MESP) & Secondary Plan

Legend

- Secondary Plan Area Boundary
- Primary Study Area Boundary
- Parcel Fabric
- Watercourse

Monitoring Stations

- Surface Water Quality*
- Surface Water Quality* + Pesticides
- Surface Water Quantity
- ▲ Shallow Groundwater**
- Surface Water Flow
- 💧 Rain Guage

* Water Quality Sampling Parameters include: TSS, TDS, PTP, SO⁴, Cl, TKN, NO², NO³, NH³, Temp, pH, Conductivity, DO and Metals.
 ** Access is still pending therefore no equipment has been installed and no samples have been taken to date.

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First Base Solutions Web Mapping Service 2010	
UTM Zone 17 N, NAD 83	
0 145 290 580 Metres 	1:14,200

Project 216002
 October, 2016

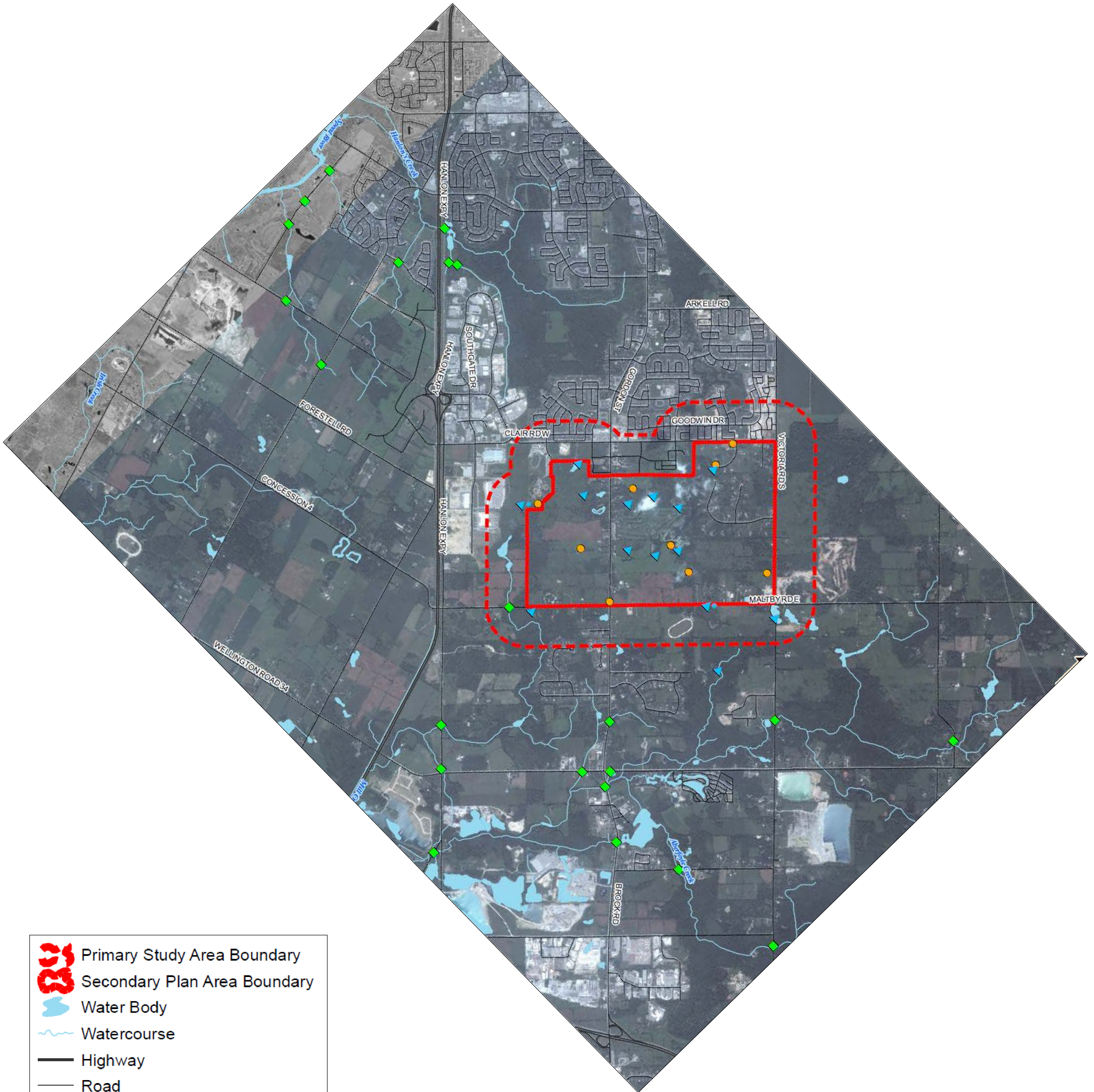
10 GROUNDWATER

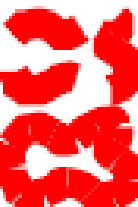




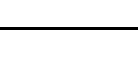

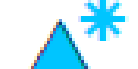
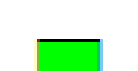

Objective / Purpose

- Hydrogeological characterization to establish baseline conditions within the SPA and PSA
- Field program will contribute to water balance, help identify constraints and opportunities, and establish ongoing monitoring locations
- Integrated modelling will quantify components of the existing and future conditions water budgets, assess impacts to surface and groundwater, and assess alternative management options

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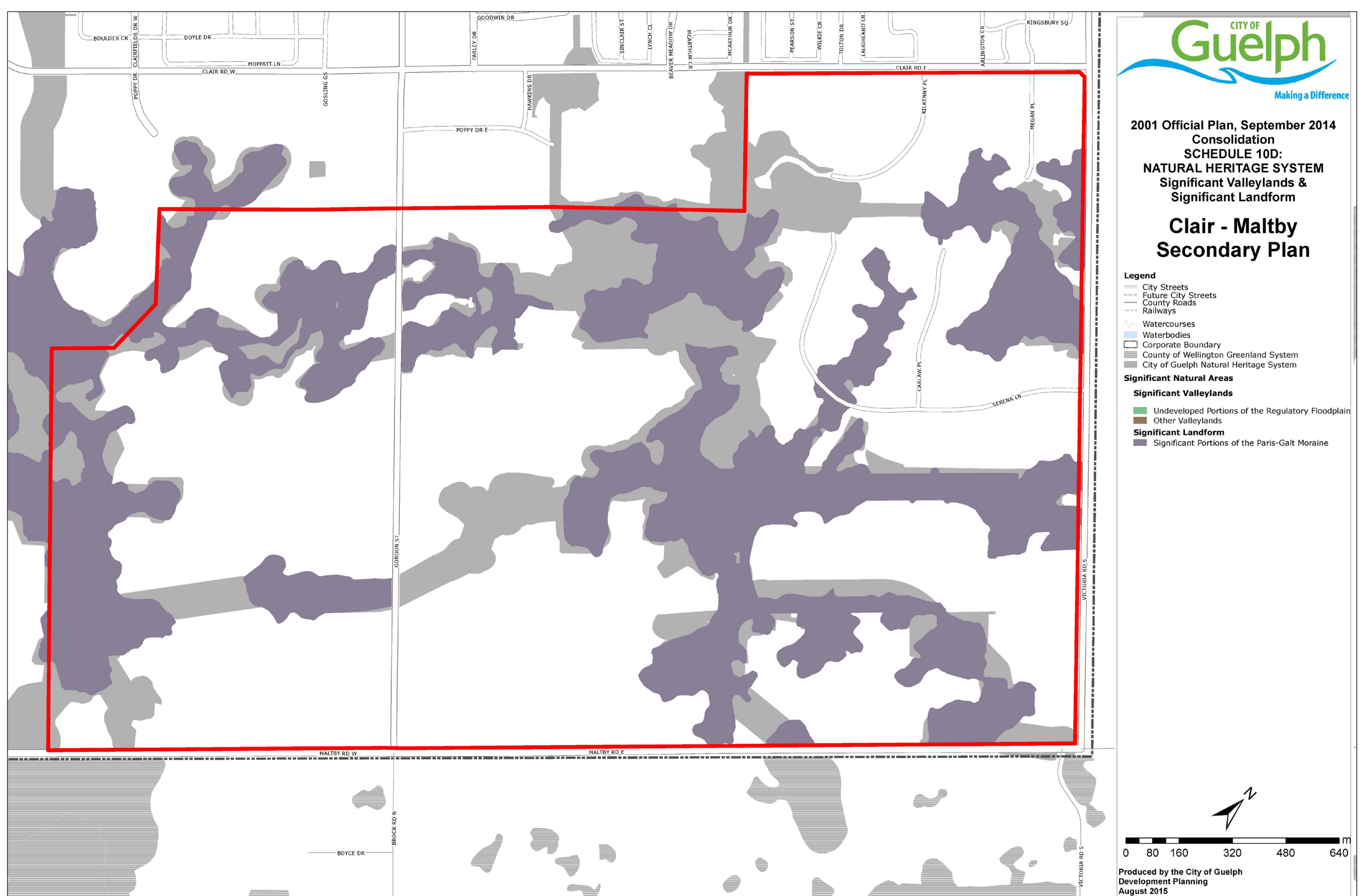
GROUNDWATER MONITORING



-  Primary Study Area Boundary
-  Secondary Plan Area Boundary
-  Water Body
-  Watercourse
-  Highway
-  Road
-  Mini Piezometer Installed
-  Mini Piezometer Proposed
-  Spotflow Station
-  Monitoring Well Nest

12 SIGNIFICANT LANDFORM

- Secondary Plan Area falls within Paris Moraine
- MNRF has identified a portion of this landform in an Earth Science ANSI just east of the Secondary Plan Area
- Significant Landform already defined and identified as part of the City's NHS
- CEIS work to focus on approaches for integration of this landform into the Secondary Plan through design and policy

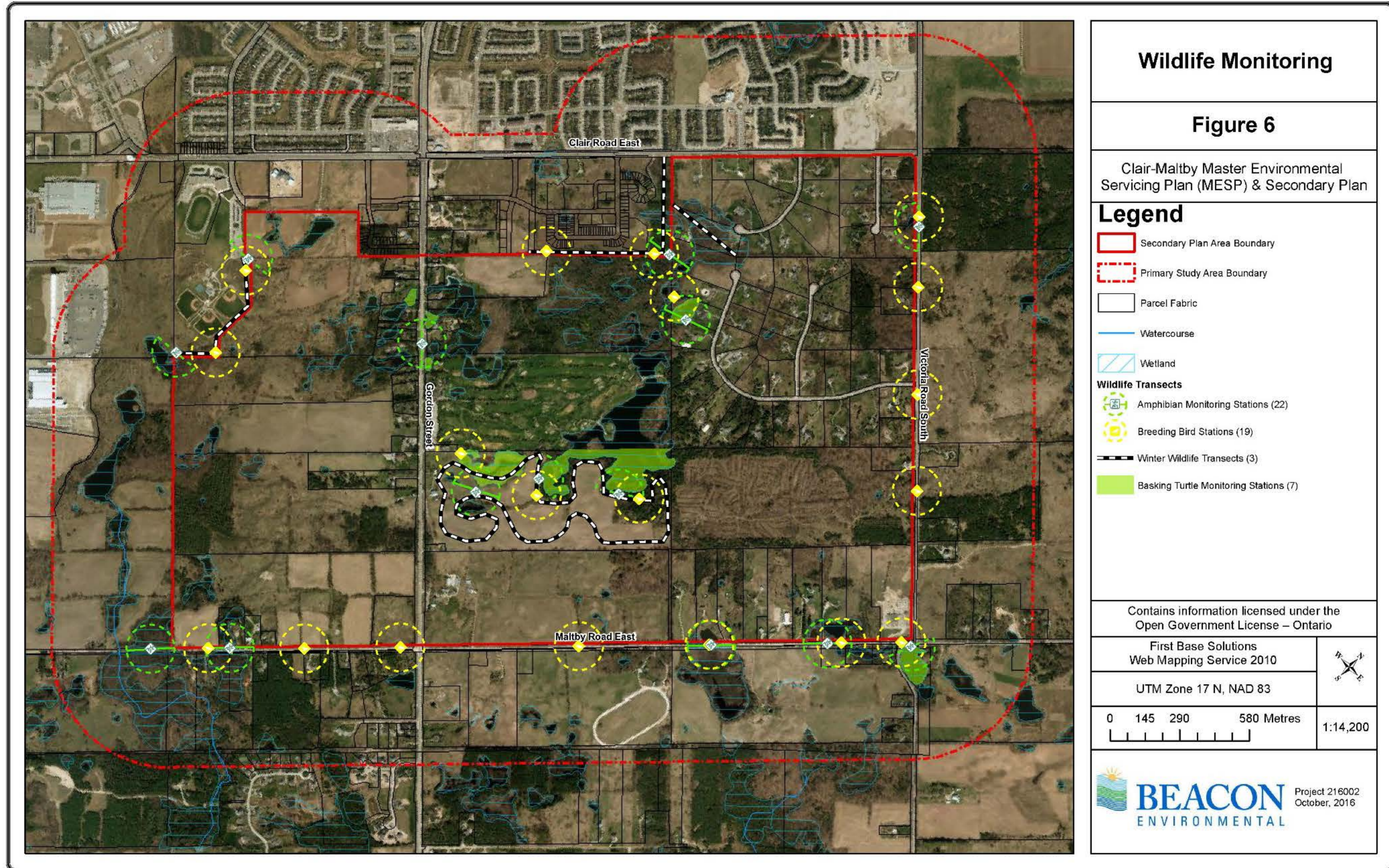


13 NATURAL SYSTEMS

Objective / Purpose

- Confirm and refine the Natural Heritage System (NHS)
- Update wetland mapping in consultation with GRCA and MNRF
- Develop a better understanding of how surface and groundwater support Natural Heritage System functions

WILDLIFE MONITORING



15 STORMWATER MANAGEMENT PLAN

- Fundamental component of the MESP studies
- Inherently linked to the CEIS:
 - Surface water modelling / monitoring
 - Ground water modelling / monitoring
- Hydrologic Model (PCSWMM) and Hydraulic Model (HEC-RAS) will be used to set targets and criteria for stormwater management (flooding and erosion) including water balance from the Groundwater Model (MIKE-SHE)

16 STORMWATER MANAGEMENT PLAN

- Three (3) Community Structure Alternatives will be analysed to determine impacts
 - Quantity (flooding and erosion)
 - Quality
 - Water Budget
- Assessment of Preferred Stormwater Management System
 - Traditional (end-of-pipe)
 - Innovative (LID BMPs)
 - Climate Change Influences
- Functional Planning of Stormwater Management System
 - Functional grading
 - Outlets
 - Major / Minor flow paths
 - Stormwater management practices

17 WATER INFRASTRUCTURE

Water Supply

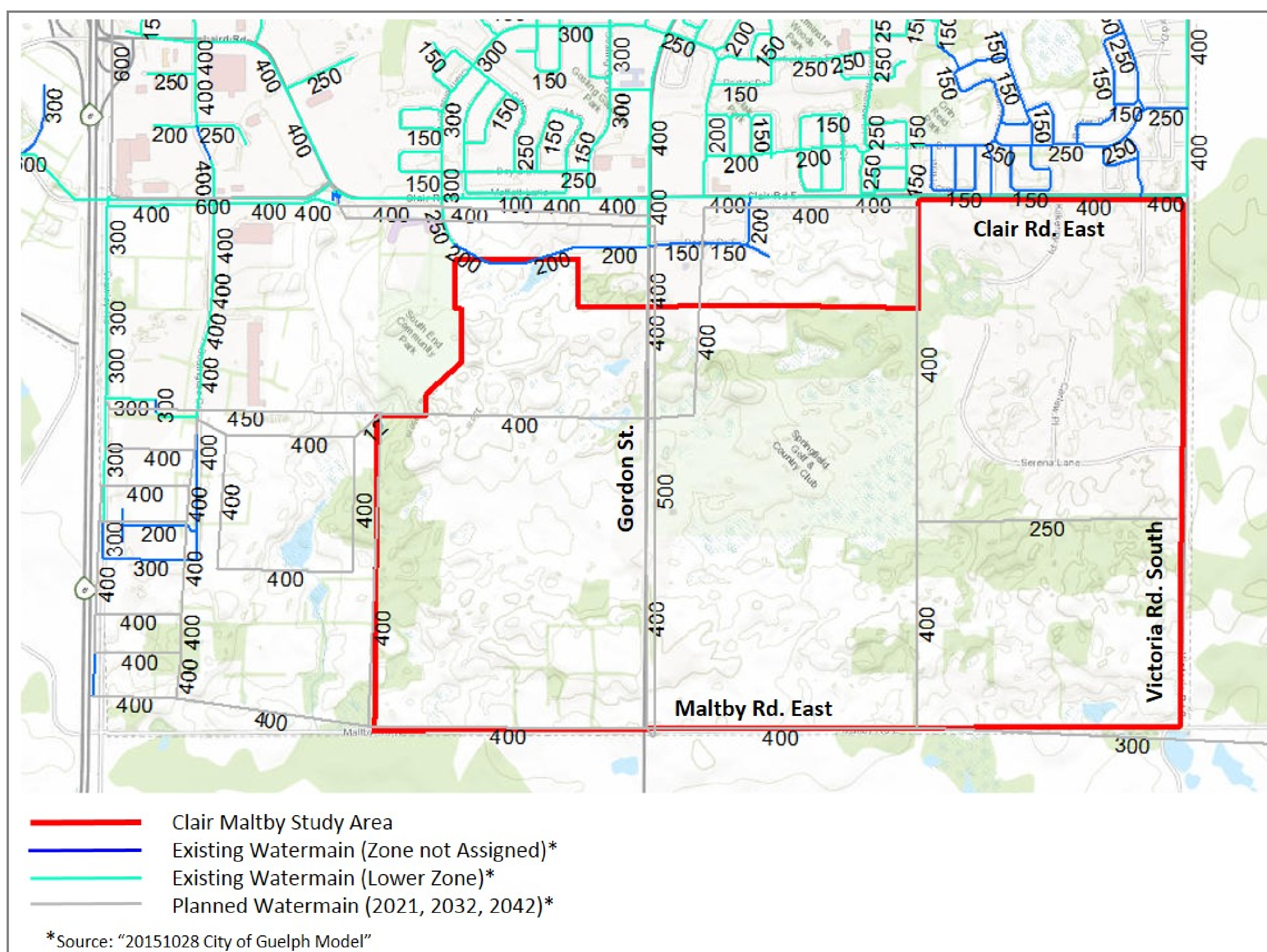
Guelph has completed a Water Supply Master Plan to address the needs related to future growth to the year 2038. Water supply alternatives to accommodate future growth within the City will primarily be achieved through the following measures:

- Conservation & Demand Management
- Groundwater: Existing Municipal Off-line Wells
- Groundwater: Municipal Test Wells
- Groundwater: New Well inside City

Water Distribution

There is currently no water distribution network in the Clair-Maltby Secondary Plan Area. These lands will be serviced via a recently established pressure zone called Zone 3.

Zone 3 is now functional since the commissioning of the Clair Road Booster Pumping Station (BPS). Additional components such as a storage facility (i.e. elevated tank or underground reservoir) and watermains will be required as the Clair-Maltby lands develop to complete the water distribution network for these lands.

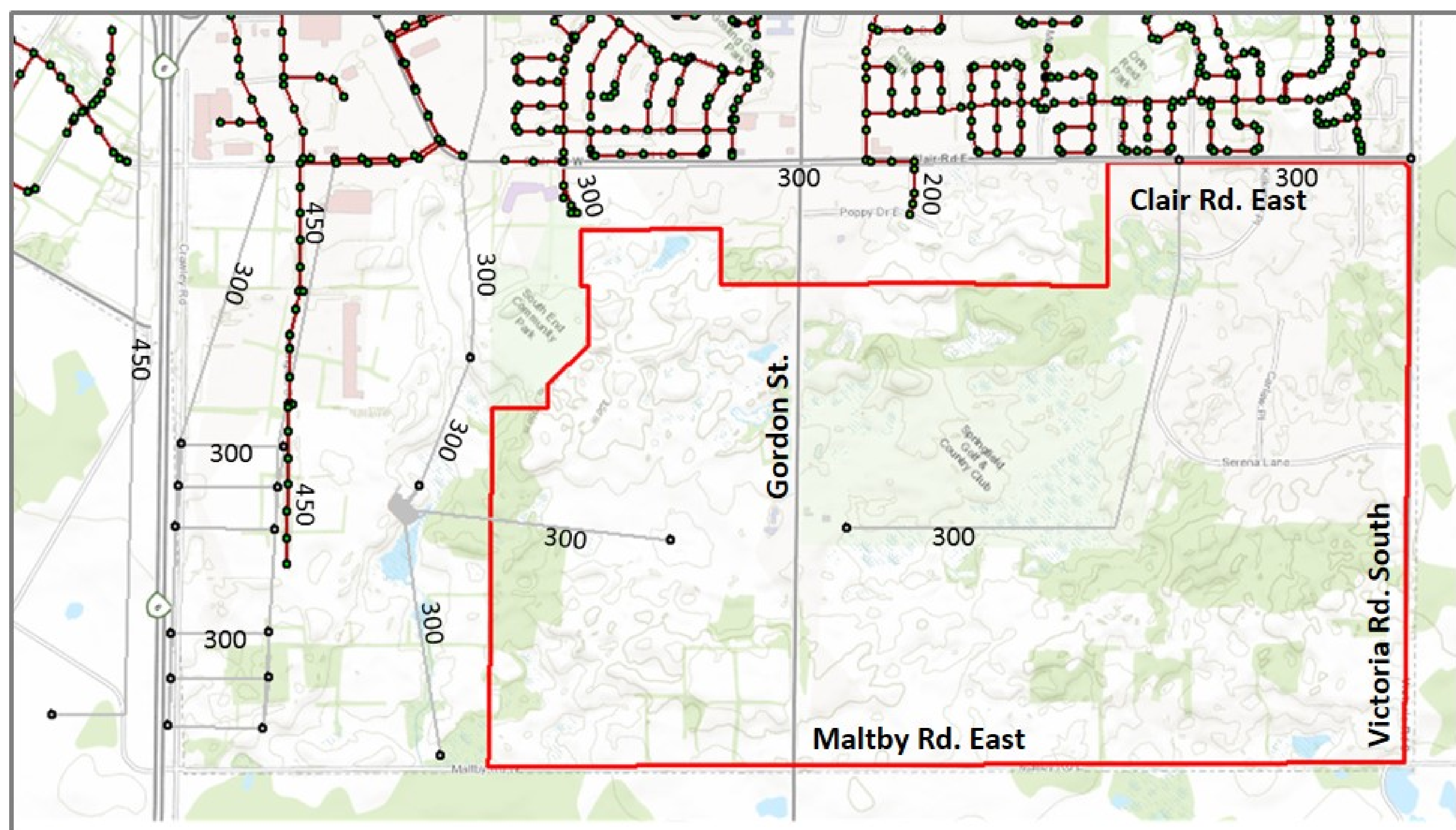


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WASTEWATER INFRASTRUCTURE

The Clair-Maltby Lands will be serviced by a trunk sewer system that is directed to the Guelph Wastewater Treatment Plant (WWTP). The lands are high such that gravity service to the WWTP is likely feasible through the existing trunk system north of Clair Road.

A review of the capacity of the trunk system to the WWTP is required to verify the available conveyance capacity.



- Clair Maltby Study Area
- Existing Wastewater*
- Planned Wastewater (2019, 2031..)*

*Source: "2013-11-21-Guelph_Sanitary Model-60298422"

Purpose

Identify a transportation network and design standards to ensure that the network meets the needs of all modes of transportation including walking, cycling, transit and vehicular traffic

Context

The Official Plan provides direction for the establishment of an integrated transportation system that:

- Places priority on walking, biking and transit
- Connects to the existing road system and provides linkages between existing and future developments
- Creates a modified grid system

Opportunities and Constraints

- Existing development pattern and limited opportunities for connections due to the extensive Natural Heritage System (NHS) and topography will make it challenging to fully achieve the City's objectives
- All opportunities to promote connectivity will be carefully assessed to ensure the community is connected, easy to navigate and facilitates walking, biking and transit