Upper York Sewage Solutions Project Update

Town of Newmarket
Committee of the Whole

April 28, 2014

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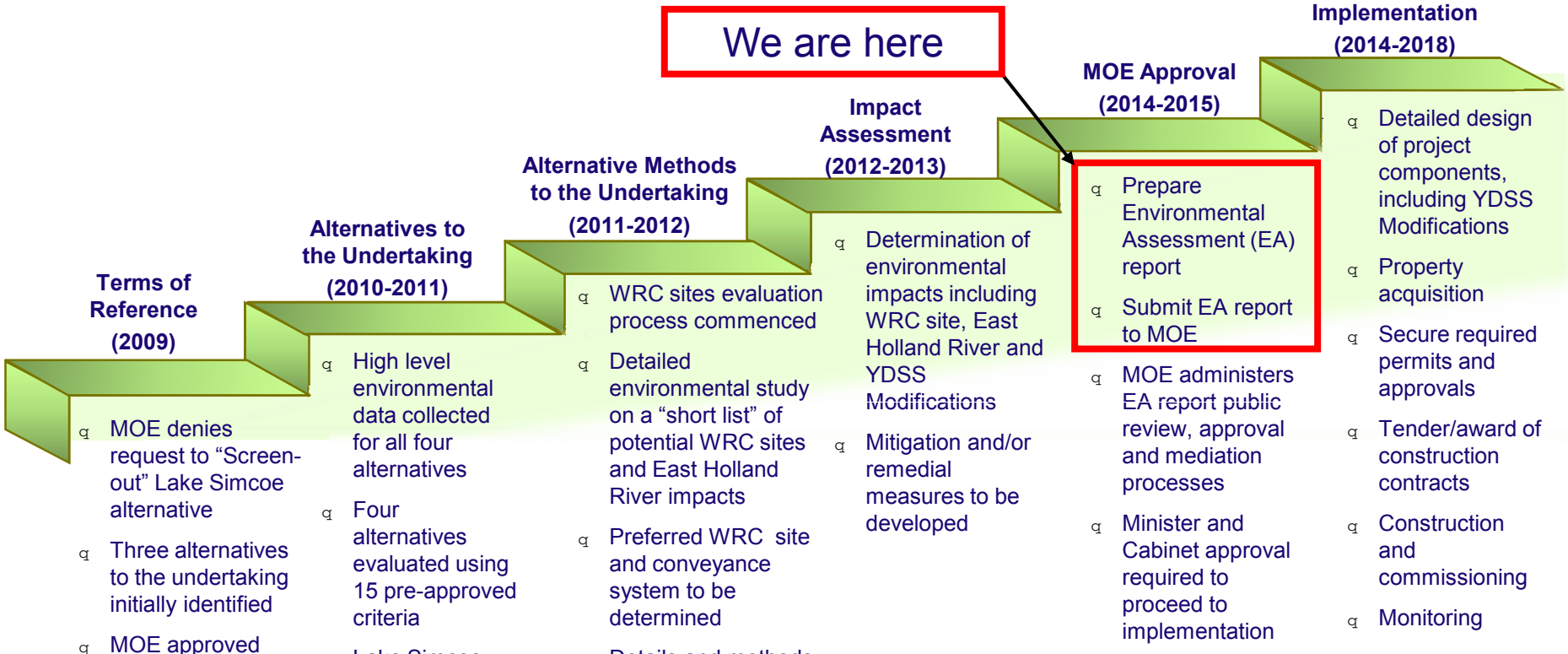
Senior Project Manager

Presentation Summary

- Project Background
- Proposed Project Components
  - Water Reclamation Centre and Outfall
  - Modifications to York Durham Sewage System
  - Phosphorous Off-Setting Program
- Ongoing Communications
- Next Steps

Upper York Sewage Solutions
Individual Environmental Assessment Process

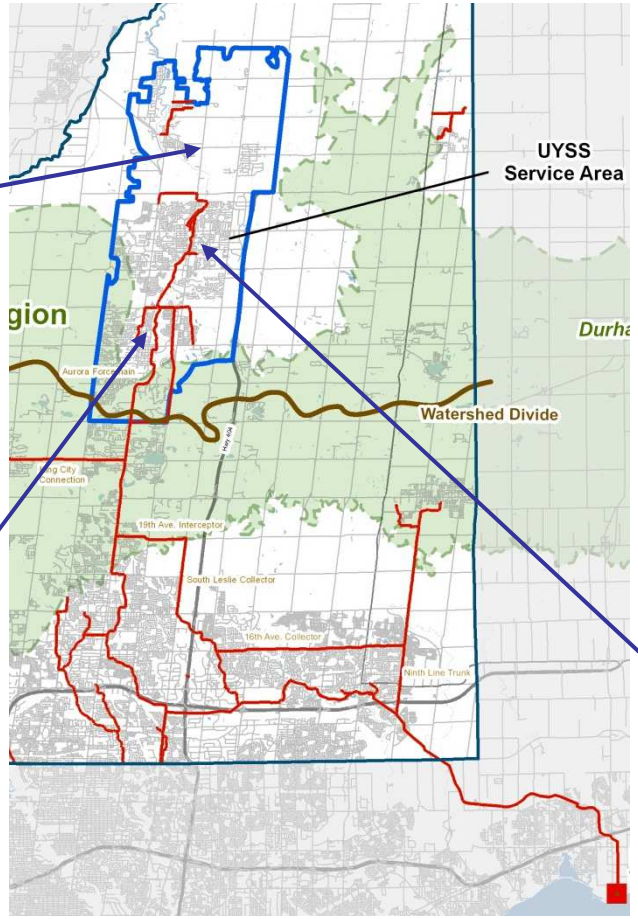


Consultation to date includes over 80 points of contact with individuals, groups, general public, review agencies and aboriginal communities

Upper York Sewage Solutions
Purpose/Opportunity

EAST GWILLIMBURY
Popⁿ & Emp 91,500
Sewage Flow 28 MLD

AURORA
Popⁿ & Emp 34,500
Sewage Flow 11 MLD



NEWMARKET
Popⁿ & Emp 27,000
Sewage Flow 8 MLD

To develop a sustainable sewage servicing solution to accommodate forecasted growth in the UYSS service area

47 million litres per day (MLD) additional capacity required to 2031

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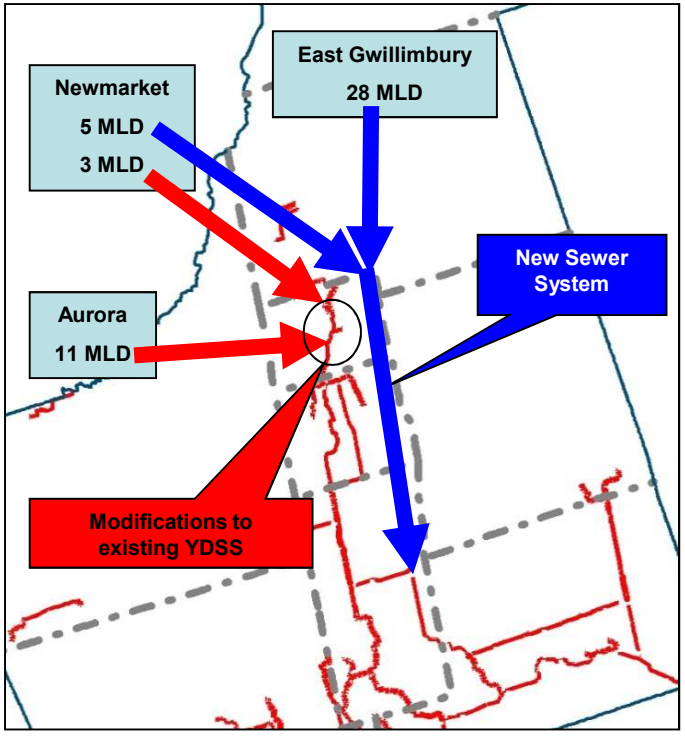
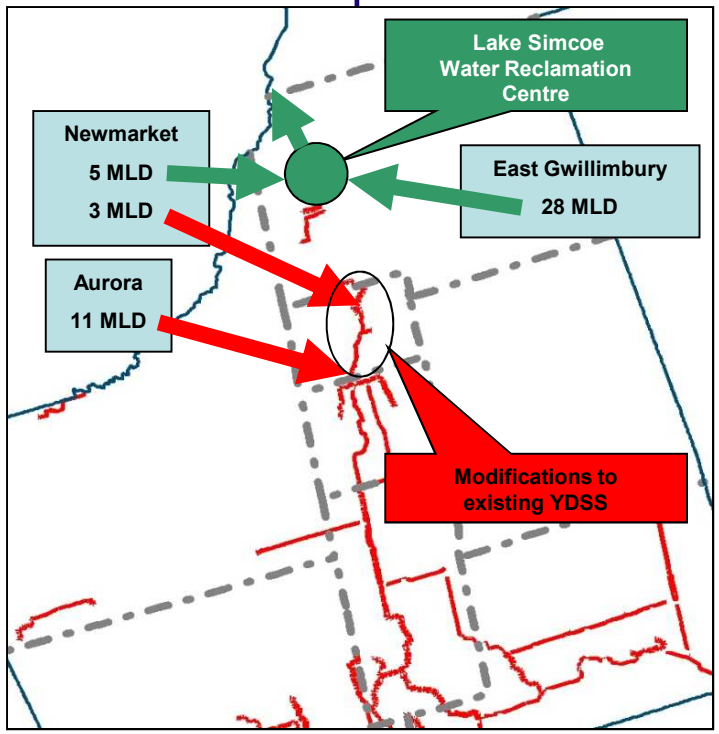
Two Viable Alternatives

The Individual Environmental Assessment project team completed a detailed assessment of the two viable alternatives:

1. Discharge to Lake Ontario



2. Lake Simcoe Water Reclamation Centre and YDSS Improvements



Preferred Alternative

Water Reclamation Centre with Reclaimed Water & Discharge to the East Holland River

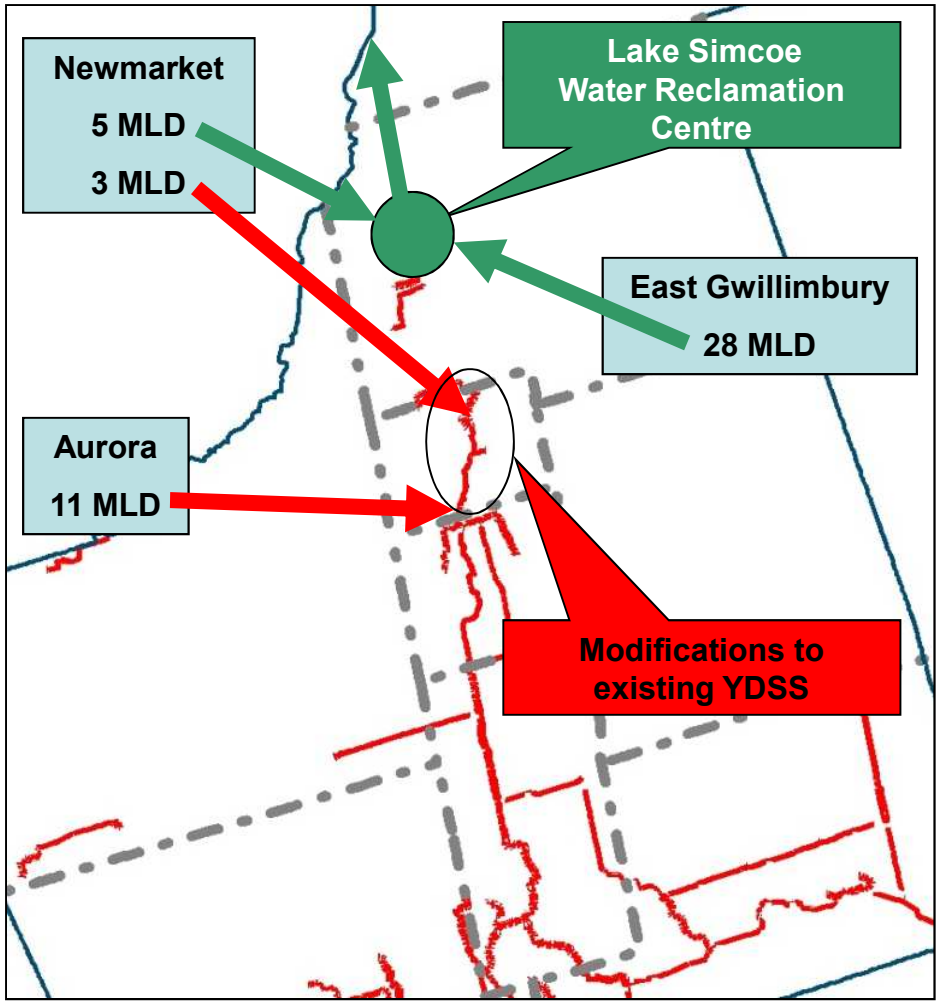
Clean treated effluent for discharge into the East Holland River and reclaimed water applications.

Modifications to the Existing York Durham Sewage System

System reliability & security and protection against severe peak flows

Project Specific Phosphorus Off-Setting Program

A net reduction of phosphorus into the Lake Simcoe watershed



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Water Reclamation Centre Area

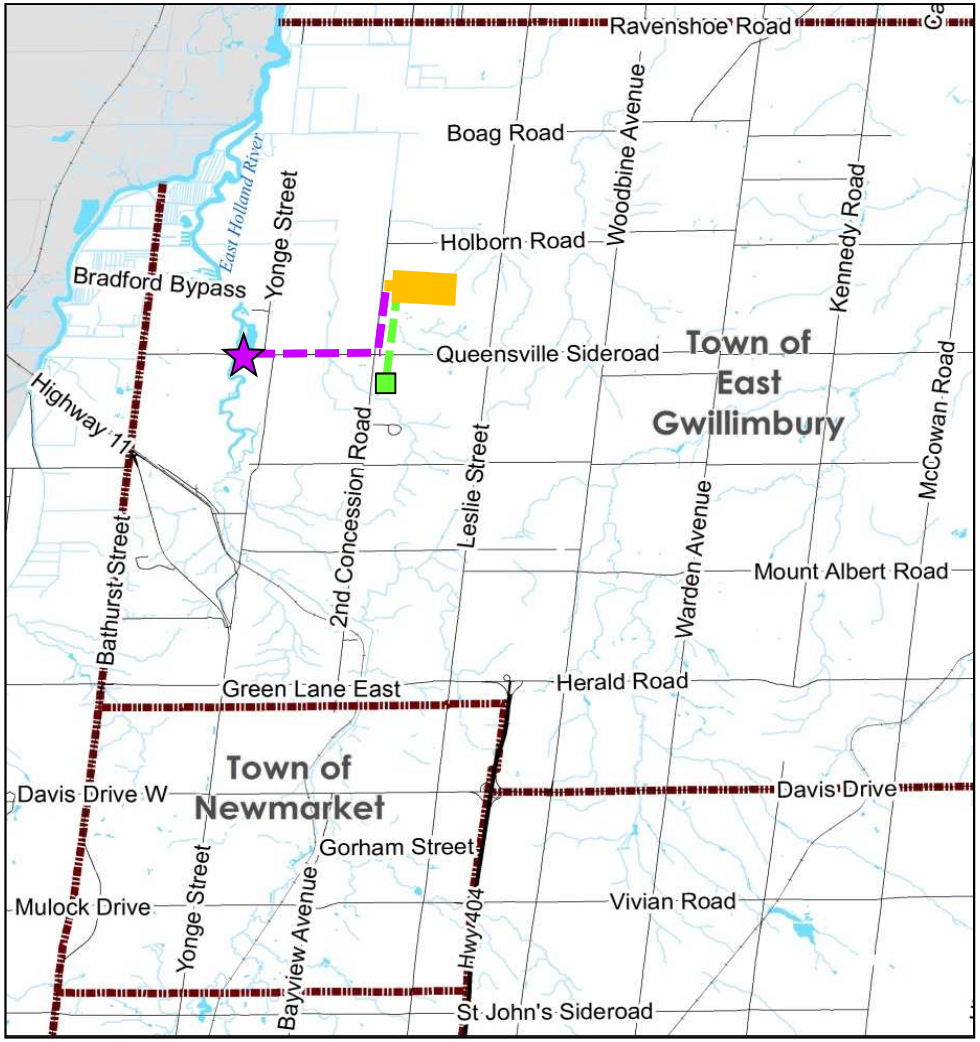
Proposed Water Reclamation Centre Site

Approved Queensville West Pumping Station

Proposed Outfall Location

Conveyance to the Water Reclamation Centre

Conveyance from the Water Reclamation Centre



4 Kilometers

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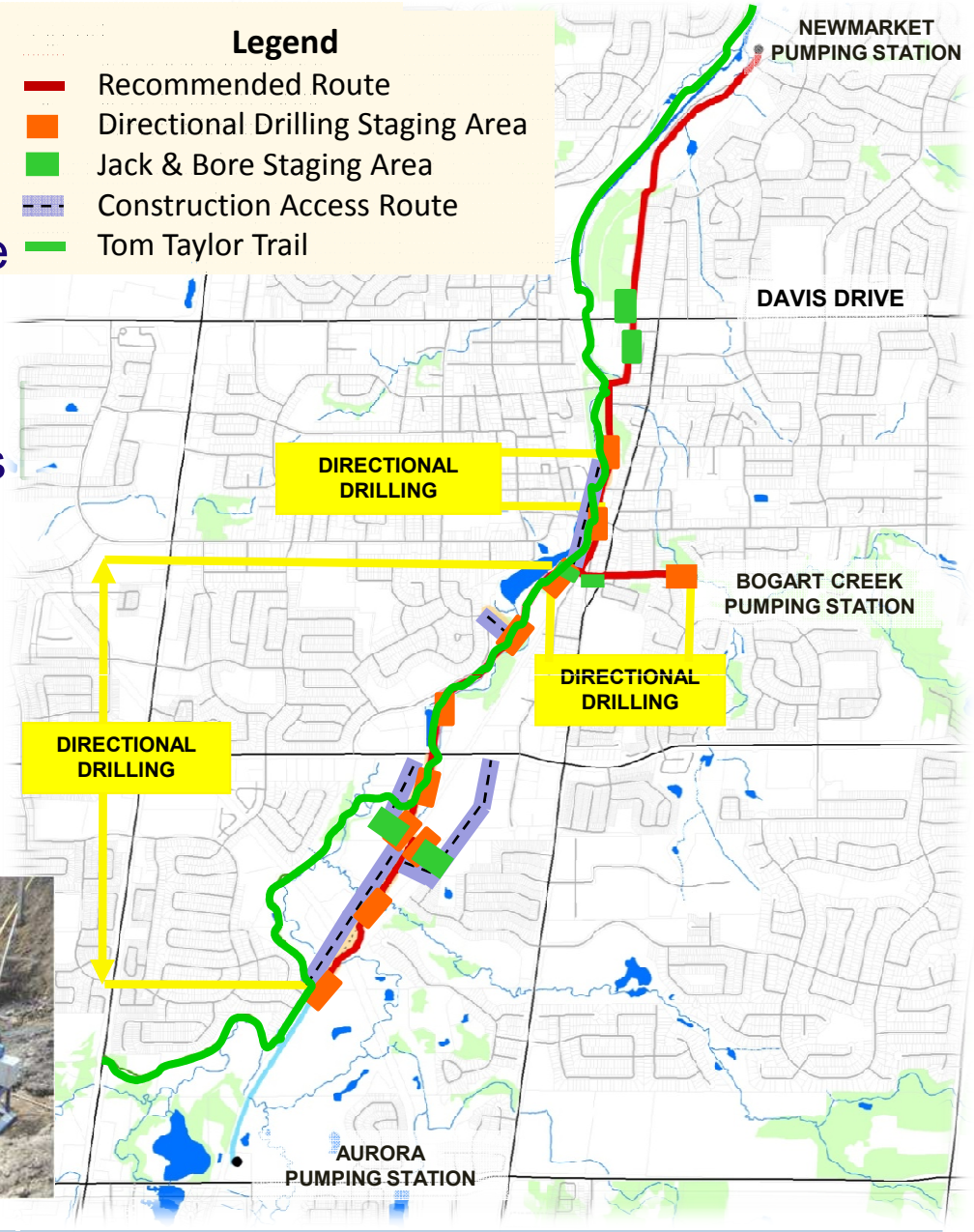
YDSS Modifications

- Accommodation of wastewater from growth in Aurora and a portion of Newmarket plus additional system security
- A second new forcemain to convey wastewater from the existing Newmarket Pumping Station to the existing gravity sewer that discharges to the Aurora Pumping Station
- A second new forcemain to convey wastewater from the existing Bogart Creek pumping station to the new Newmarket forcemain
- Modifications to the Newmarket and Bogart Creek pumping stations for connection of the new forcemains

Mitigation of Impacts During Construction:

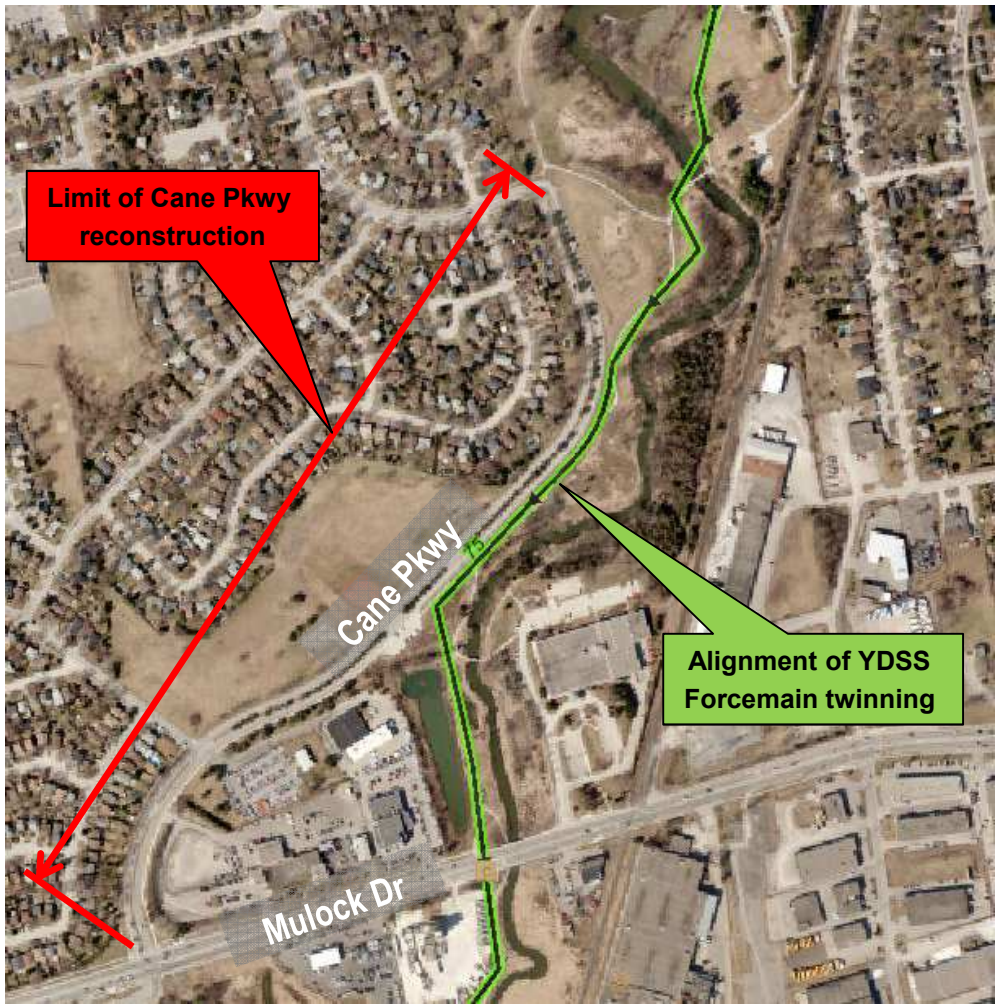
- Jack and Bore under Davis Drive
- Directional drilling along Tom Taylor Trail
- Staging areas and access routes located to avoid sensitive areas
- Construction through park areas completed during winter months



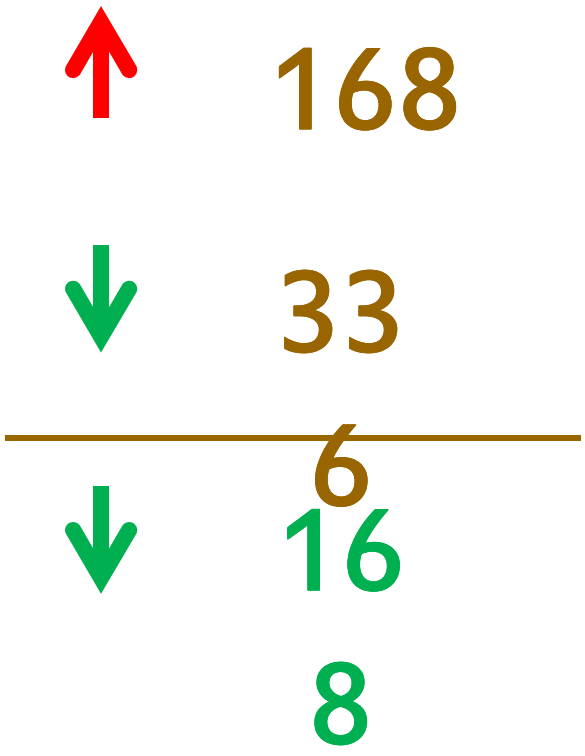
Coordination with Reconstruction of Cane Parkway

The following mitigation measures have been included in the IEA report for impacts of twinning the YDSS forcemain through Newmarket:

- Newmarket's planned reconstruction of Cane Parkway will be coordinated with the Region's tender
- This will enable the new YDSS forcemain in this area to be constructed via open-cut
- Realized saving in open-cut will be contributed to the Cane Parkway reconstruction



Phosphorus Off-setting Program



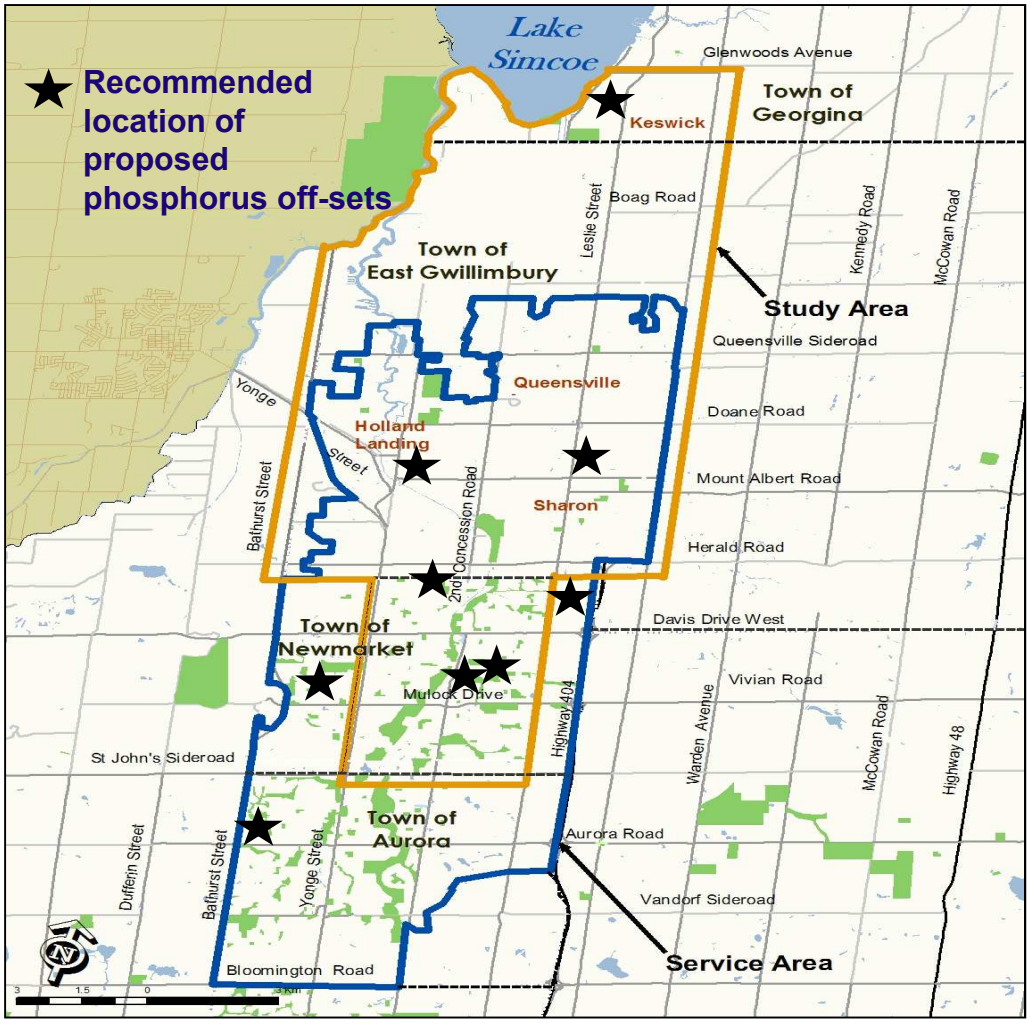
- Proposed Water Reclamation Centre will discharge approximately 168 kg/yr of new phosphorus to the Lake Simcoe watershed
- Based on discussions with MOE, a project specific phosphorus off-setting program will address this increase through removal of other phosphorus sources at an approximate ratio of 2:1

Result will be a net reduction of approximately 168 kg/yr of total phosphorus in the Lake Simcoe watershed

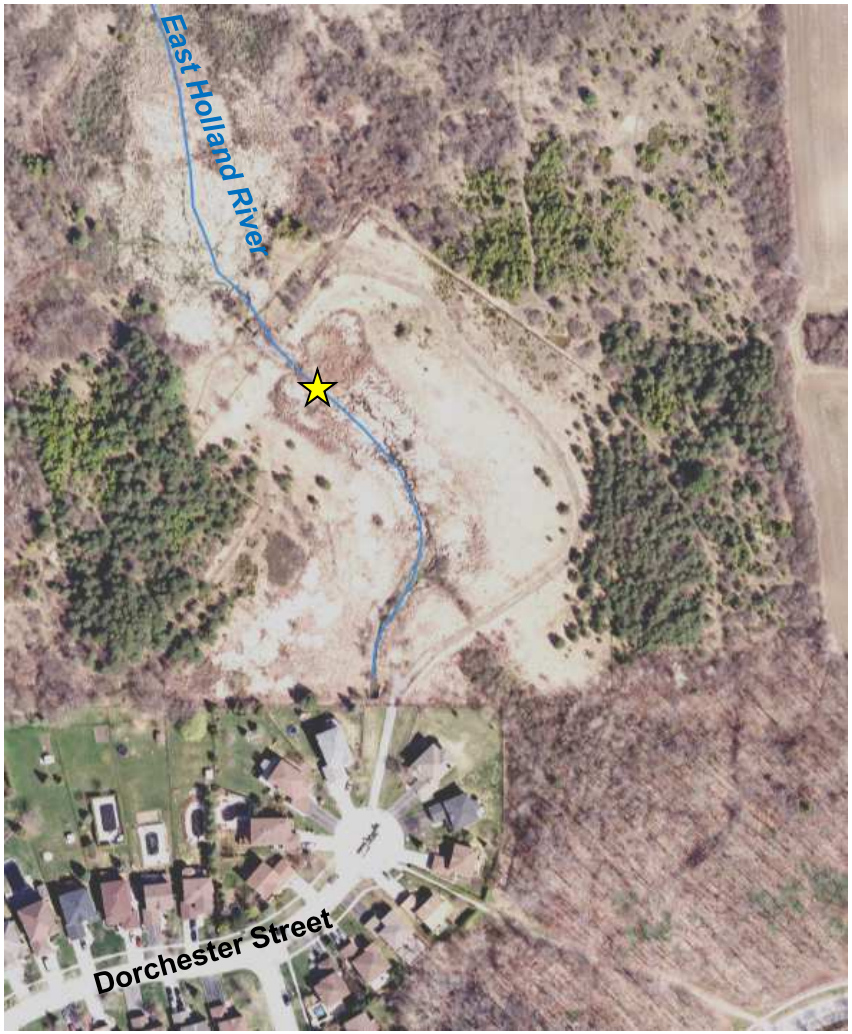
Recommended Phosphorus Off-sets

- Total of nine stormwater management improvements proposed in Aurora, East Gwillimbury Georgina and Newmarket
- Proposed works in Newmarket involve retrofitting four existing stormwater management ponds and installing one low impact development technology

Proposed off-sets will improve the water quality and quantity of the downstream watercourses that ultimately flow into Lake Simcoe.



Proposed Stormwater Management Pond Retrofit – Dorchester St



Catchment	Area (ha)	77
	Type	Residential
	TP Export Coefficient (kg/ha/yr)	1.32
	TP Load (kg/yr)	102
Existing Conditions	SWM Facility/ LID	Quantity Control Dry Pond
	TP Reduction (kg/year)	10
Proposed Conditions	Proposed Retrofit	Level 1 Wet Pond
	Proposed Retrofit TP Reduction (kg/year)	66
	Net TP Reduction (kg/yr)	56
	TP Off-Sets Ratio	2.0:1
	TP Credit Received (kg/yr)	28
Conceptual Design	Proposed Works	forebay and wet pond
	Surface Area (m^2)	17,084
	Volume (m^3)	40,304
	Depth (m)	3
	Potential for Contaminated Sediments	Yes
Conceptual Costs	Capital Construction Costs	$2,645,125.00

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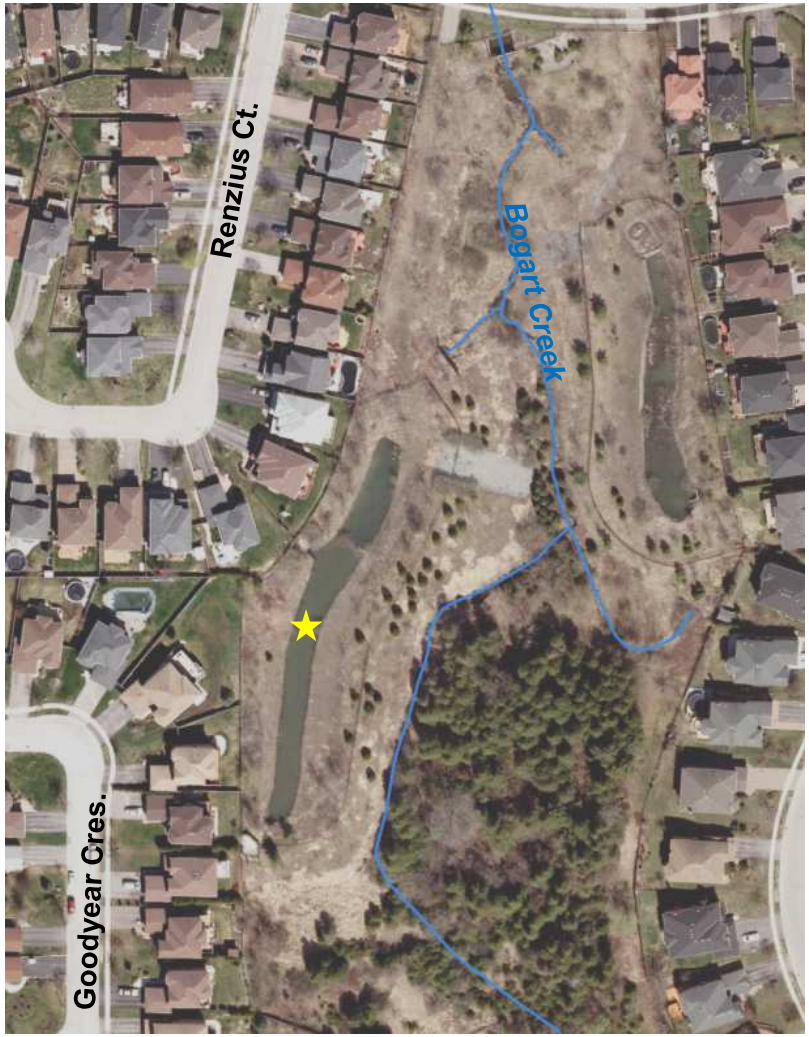
Proposed Stormwater Management Pond Retrofit – Eagle St.

Catchment	Area (ha)	212
	Type	Residential
	TP Export Coefficient (kg/ha/yr)	1.32
	TP Load (kg/yr)	280
Existing Conditions	SWM Facility/ LID	Quantity Control Dry Pond
	TP Reduction (kg/year)	28
Proposed Conditions	Proposed Retrofit	Level 2 Wet Pond or Wetland
	Proposed Retrofit TP Reduction (kg/year)	160
	Net TP Reduction (kg/yr)	132
	TP Off-Sets Ratio	2.0:1
	TP Credit Received (kg/yr)	66
Conceptual Design	Proposed Works	forebay and wet pond
	Surface Area (m^2)	11232
	Volume (m^3)	29601
	Depth (m)	3
	Potential for Contaminated Sediments	No
Conceptual Costs	Capital Construction Costs	$1,812,265.63

Proposed Stormwater Management Pond Retrofit – College Manor Dr.

Catchment	Area (ha)	47
	Type	Residential
	TP Export Coefficient (kg/ha/yr)	1.32
	TP Load (kg/yr)	62
Existing Conditions	SWM Facility/ LID	Quantity Control Wet Pond
	TP Reduction (kg/year)	12
Proposed Conditions	Proposed Retrofit	Level 2 Wet Pond or Wetland
	Proposed Retrofit TP Reduction (kg/year)	35
	Net TP Reduction (kg/yr)	23
	TP Off-Sets Ratio	2.0:1
	TP Credit Received (kg/yr)	12
Conceptual Design	Proposed Works	forebay and wet pond
	Surface Area (m^2)	2,543
	Volume (m^3)	5,317
	Depth (m)	2.5
	Potential for Contaminated Sediments	Yes
Conceptual Costs[1]	Capital Construction Costs	$ 1,127,910

Proposed Stormwater Management Pond Retrofit – Renzius Ct.



Catchment	Area (ha)	51
	Type	Residential
	TP Export Coefficient (kg/ha/yr)	1.32
	TP Load (kg/yr)	67
Existing Conditions	SWM Facility/ LID	Quantity Control Wet Pond
	TP Reduction (kg/year)	13
Proposed Conditions	Proposed Retrofit	Level 2 Wet Pond or Wetland
	Proposed Retrofit TP Reduction (kg/year)	38
	Net TP Reduction (kg/yr)	25
	TP Off-Sets Ratio	2.0:1
	TP Credit Received (kg/yr)	13
Conceptual Design	Proposed Works	forebay and wet pond
	Surface Area (m^2)	3,369
	Volume (m^3)	6,684
	Depth (m)	2.5
	Potential for Contaminated Sediments	Yes
Conceptual Costs[1]	Capital Construction Costs	$1,313,086

Proposed Low Impact Development Technology – Harry Walker Pkwy

Catchment	Area (ha)	40
	Type	Industrial
	TP Export Coefficient (kg/ha/yr)	1.82
	TP Load (kg/yr)	72
Existing Conditions	SWM Facility/ LID	Dry Grassed Swales
	TP Reduction (kg/year)	0
Proposed Conditions	Proposed Retrofit	Perforated pipes in grassed swales
	Proposed Retrofit TP Reduction (kg/year)	35
	Net TP Reduction (kg/yr)	35
	TP Off-Sets Ratio	2.0:1
	TP Credit Received (kg/yr)	18
Conceptual Design	Proposed Works	Perforated pipes in existing swales in roadside stormwater ditches along Stellar Dr, Pony Dr, and on the existing stormwater easement located between Harry Walker Pkwy and Pony Dr
	Pipe Diameter	600mm diameter
	Length	1800m
	Potential for Contaminated Sediments	No
Conceptual Costs	Capital Construction Costs	$4,158,712.50

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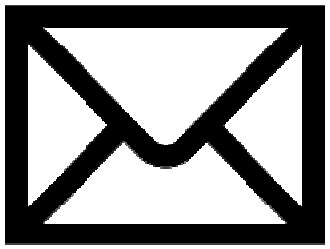
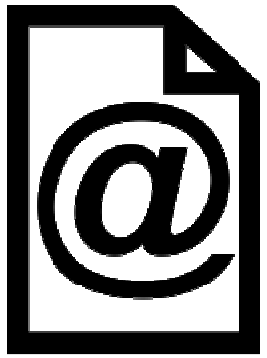
Ongoing Communications

During the Detailed Design...

- Direct notification by mail to all residences/businesses adjacent to all project components
- Direct personal letters by mail to all property owners where a temporary or permanent easement is required.



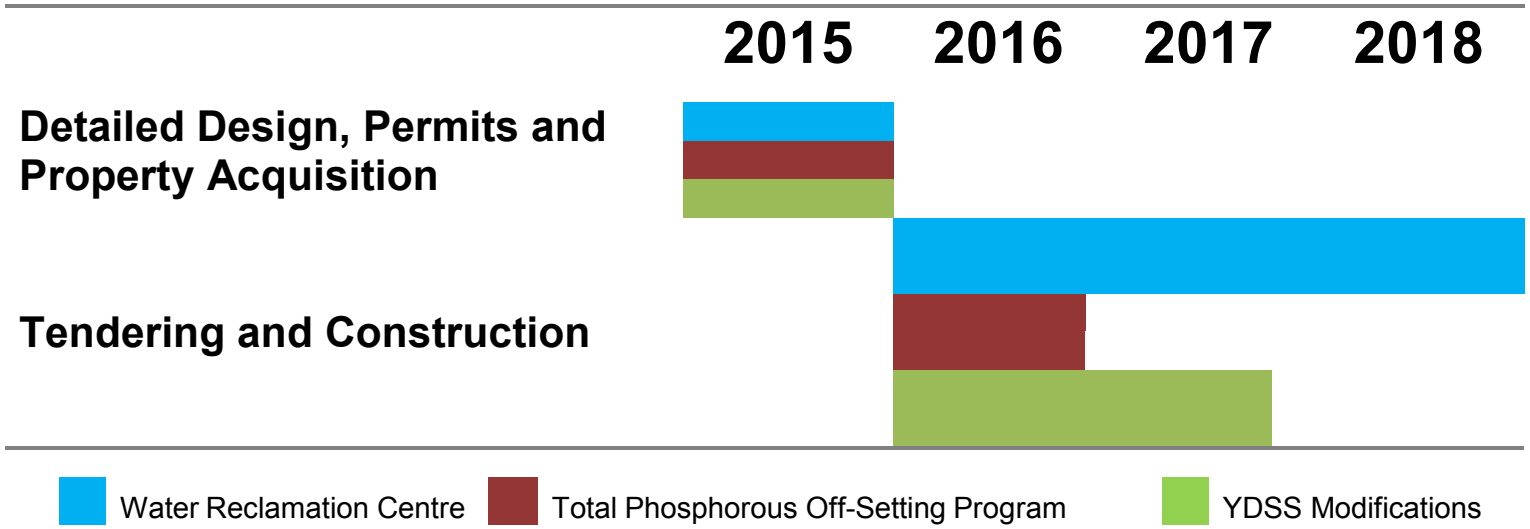


During construction...

- Advance notifications of construction
- Complaint Management System for issue tracking/resolution
- Local and toll free numbers provided

Next Steps and Implementation Schedule

- Comments on draft Environmental Assessment report currently being reviewed for incorporation in final report
- Submission of final Environmental Assessment report - late May 2014
- Award of detailed design & construction administration engineering assignment – considered at June Council



For More Information

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