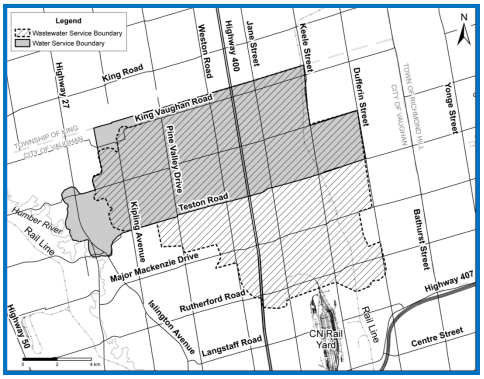
NORTHEAST VAUGHAN WATER AND WASTEWATER SERVICING PROJECT

Technical Advisory Committee Meeting No. 2



April 8, 2015
2:00 p.m. to 4:30 p.m.
Vaughan City Hall
Committee Room 246

York Region

Introduction and Purpose

Meeting Purpose:

- To obtain feedback on the recommended water and wastewater servicing solutions and potential water and wastewater infrastructure sites and routes prior to Public Consultation Centre No. 1

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Meeting Outline

1. Introductions
2. Water and Wastewater Service Areas
3. Water and Wastewater Servicing Solutions

4a. New Water Infrastructure

BREAK

4b. New Wastewater Infrastructure

5. Proposed Evaluation Methodology and Criteria for Assessing Alternative Sites/Routes
6. Public Consultation Centre No. 1
7. Project Status and Schedule
8. Next Steps and Future Meetings
9. Homework, Additional Questions and Discussion

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1. Introductions

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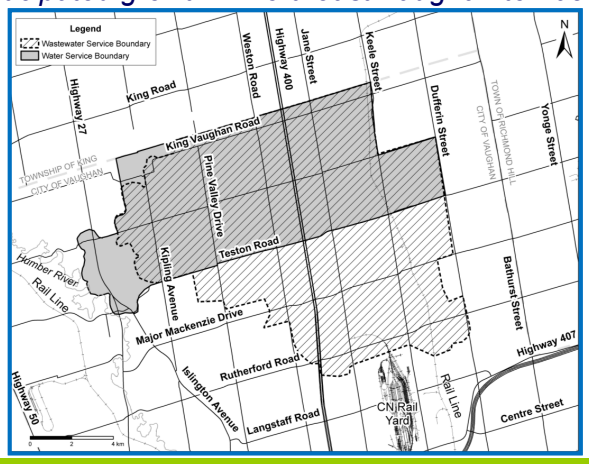
TAC Meeting No. 1 Recap

Project Purpose:

To identify the water and wastewater infrastructure needed to service anticipated growth in northeast Vaughan to 2051



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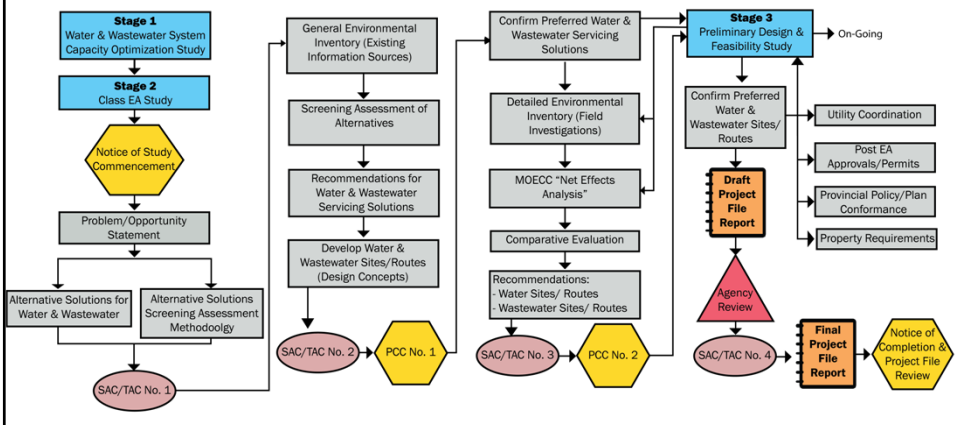
Project Road Map



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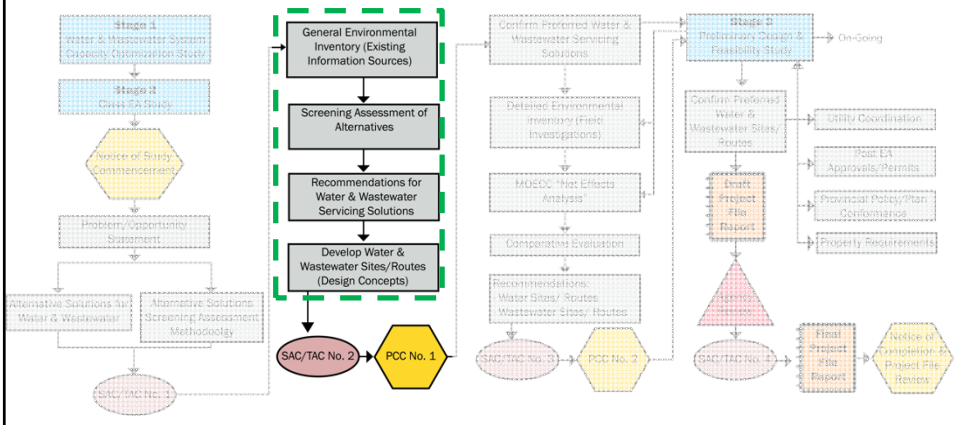
Project Road Map



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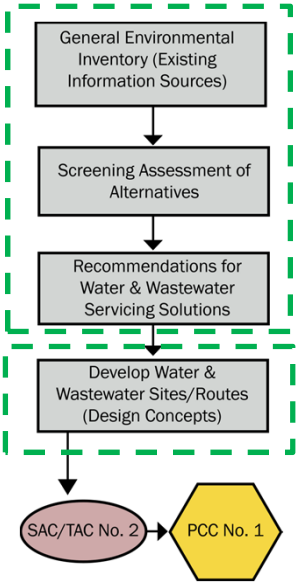
Project Road Map



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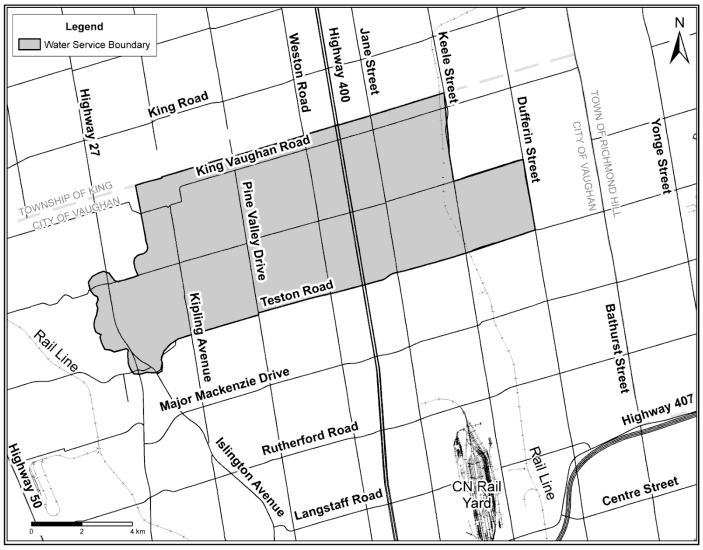
Homework Review

Study Area Considerations

Images from NounProject.com

2. Water and Wastewater Service Areas

Water Service Area



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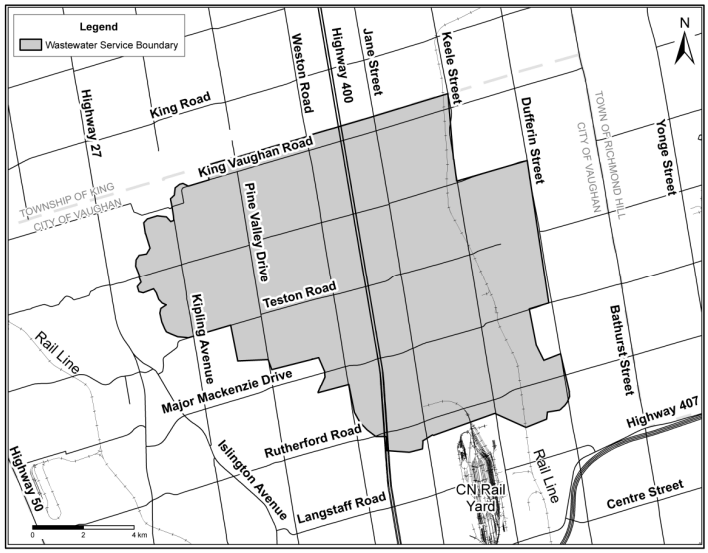
Wastewater Service Area



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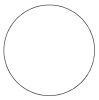
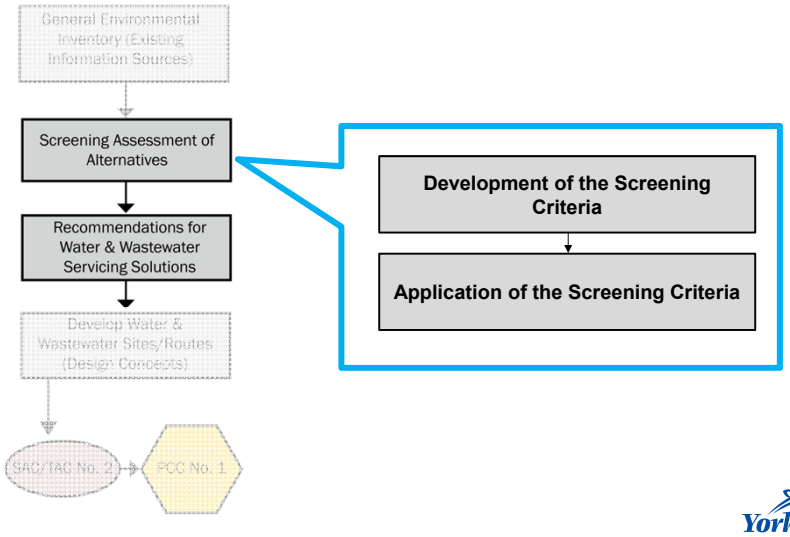
3. Water and Wastewater Servicing Solutions

Alternative Solutions Considered

	Water Alternatives	Wastewater Alternatives
	Do Nothing	Do Nothing
	Optimize Existing Water System Performance	Optimize Existing Wastewater System Performance
	Upgrade and/or Expand Existing Water Infrastructure	Upgrade and/or Expand Existing Wastewater Infrastructure
	Construct New Water Infrastructure	Construct New Wastewater Infrastructure

Choosing a Preferred Solution



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Screening Criteria for the Alternatives

Problem / Opportunity Statement	**1**	Can the alternative satisfy the problem/opportunity statement?
Provincial Growth, Environmental Policies and Legislation	**2**	Is the alternative able to meet the purpose of the Environmental Assessment Act?
	3	Is the alternative consistent with the Provincial Policy Statement?
	4	Is the alternative consistent with the Growth Plan for the Greater Golden Horseshoe?
	5	Is the alternative consistent with the Greenbelt Plan?
	6	Is the alternative consistent with the Oak Ridges Moraine Conservation Plan?
Regional / Municipal Plans, Strategies and Programs	**7**	Is the alternative consistent with York Region's Official Plan?
	8	Is the alternative consistent with York Region's 2009 Water and Wastewater Master Plan Update?
	9	Is the alternative consistent with York Region's Sustainability Strategy for Water and Wastewater Servicing (2008)?
	10	Is the alternative consistent with the City of Vaughan's 2014 Water and Wastewater Master Plan?
Proven Technology / Technical Feasibility	**11**	Does the alternative represent proven technology?
	12	Is the alternative constructible?
Financial Viability / Ability to Implement	**13**	Is the alternative financially viable?
	14	Is the alternative within the ability of York Region to implement?

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Screening Assessment Results - Water

	Alternative No. 1: Do Nothing	Alternative No. 2: Optimize Existing Water System Performance	Alternative No. 3: Upgrade and/or Expand Existing Water Infrastructure	Alternative No. 4: Construct New Water Infrastructure
Problem / Opportunity Statement	✗	✓/✗	✓/✗	✓
Provincial Growth, Environmental Policies and Legislation	✗	✓/✗	✓/✗	✓
Regional / Municipal Plans, Strategies and Programs	✗	✓/✗	✓/✗	✓
Proven Technology / Technical Feasibility	N/A	✓	✓	✓
Financial Viability / Ability to Implement	✓	✓	✓	✓

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Screening Assessment Results - Wastewater

	Alternative No. 1: Do Nothing	Alternative No. 2: Optimize Existing Wastewater System Performance	Alternative No. 3: Upgrade and/or Expand Existing Wastewater Infrastructure	Alternative No. 4: Construct New Wastewater Infrastructure
Problem / Opportunity Statement	✗	✓/✗	✓/✗	✓
Provincial Growth, Environmental Policies and Legislation	✗	✓/✗	✓/✗	✓
Regional / Municipal Plans, Strategies and Programs	✗	✓/✗	✓/✗	✓
Proven Technology / Technical Feasibility	N/A	✓	✓	✓
Financial Viability / Ability to Implement	✓	✓	✓	✓

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Recommended Water and Wastewater Solutions

Alternative 2: Optimization + Alternative 3: Upgrades/ Enhancements + Alternative 4: Construct New Infrastructure

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Recommended Water and Wastewater Solutions

Alternative 2: Optimization + Alternative 3: Upgrades/ Enhancements + Alternative 4: Construct New Infrastructure

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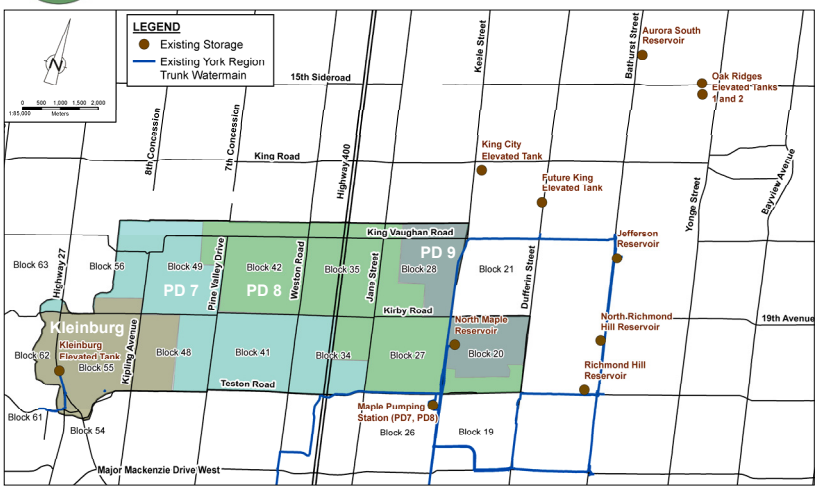
Alternative 2 - Water Optimization



PD = Pressure District

Adjust operational controls in the system to allow for interim pumping of additional storage.

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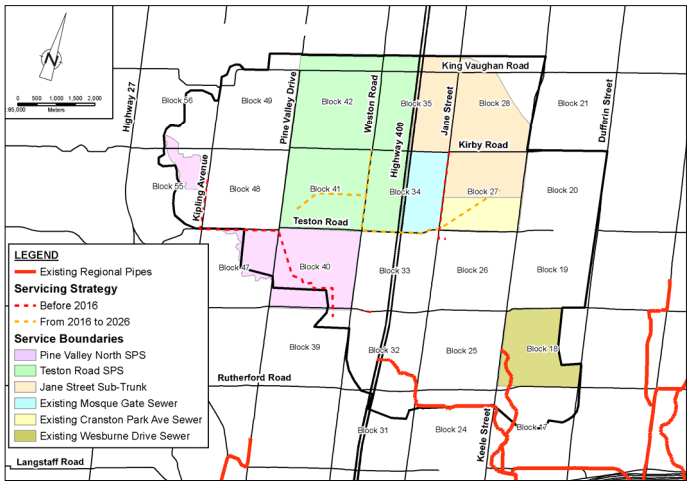
Alternative 2 - Wastewater Optimization



There are no optimization opportunities in the Regional sewage system. However, there may be opportunities for optimization in the local infrastructure.

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Recommended Water and Wastewater Solutions

Alternative 2: Optimization + **Alternative 3: Upgrades/ Enhancements** + Alternative 4: Construct New Infrastructure

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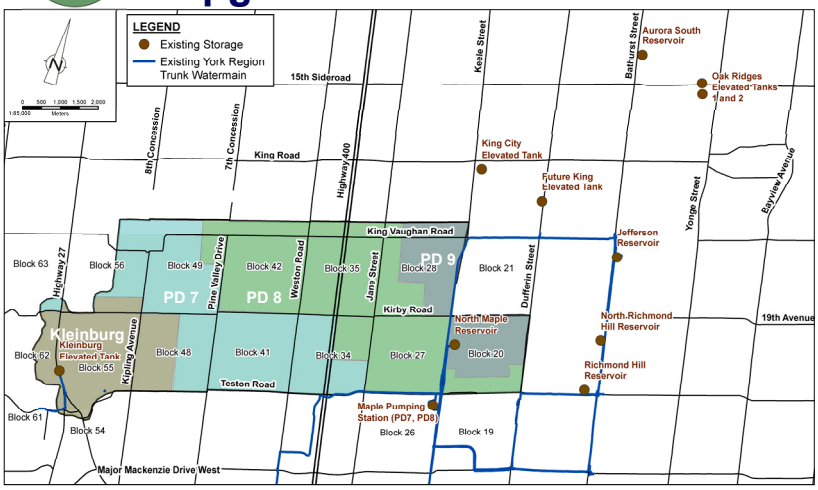
Alternative 3 - Water Upgrades/ Enhancements



Minor facility upgrades and advancement of new pump at Maple PS may be possible.

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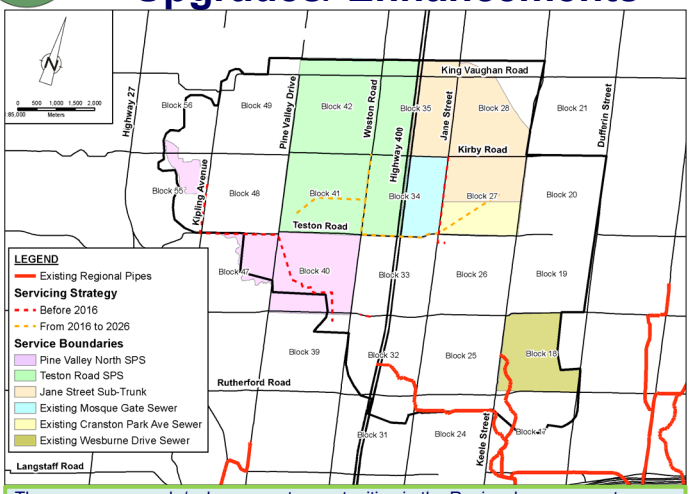
Alternative 3 - Wastewater Upgrades/ Enhancements



There are no upgrade/enhancement opportunities in the Regional sewage system. However, there may be opportunities for upgrades/enhancements to the local infrastructure.

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4a. New Water Infrastructure

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Recommended Water and Wastewater Solutions

Alternative 2: Optimization + Alternative 3: Upgrades/ Enhancements + **Alternative 4: Construct New Infrastructure**

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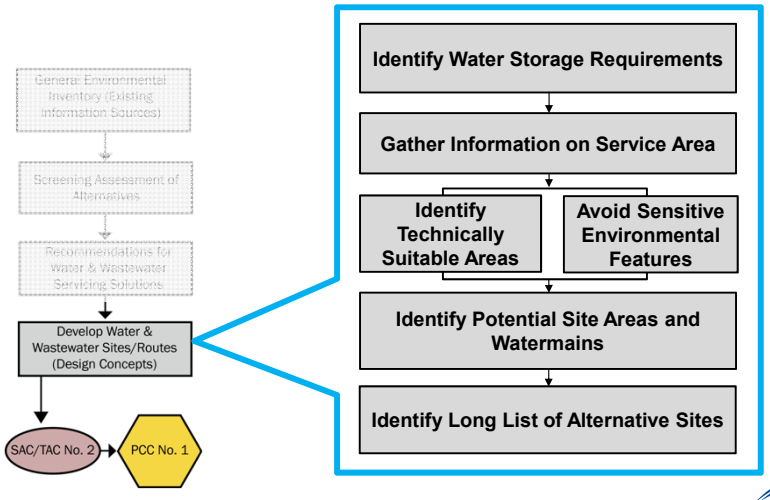
Approach for Developing Water Storage Sites and Watermain Routes



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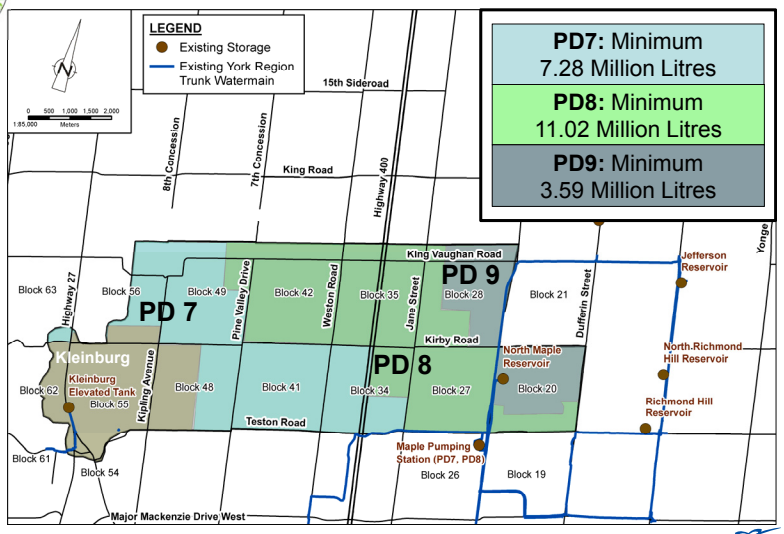
Water Storage Requirements



PD = Pressure District

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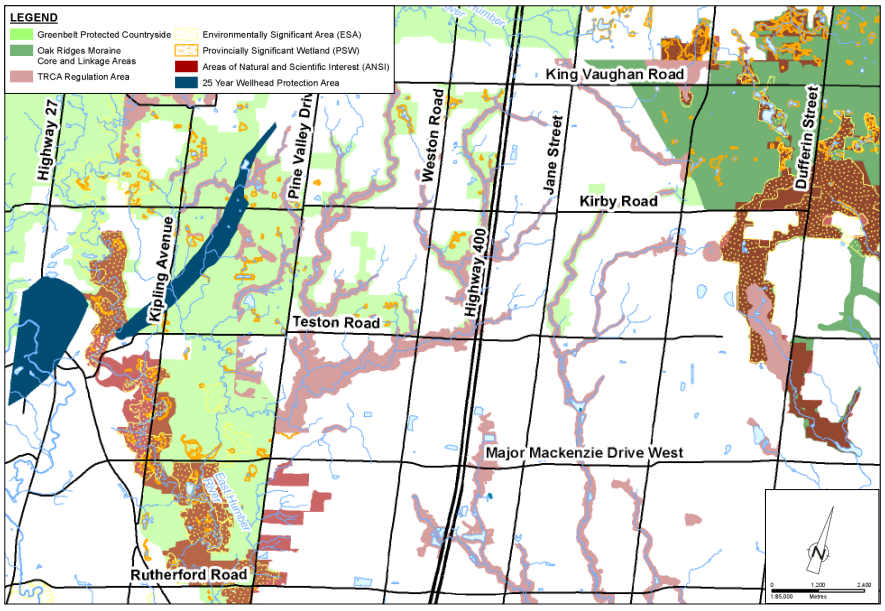
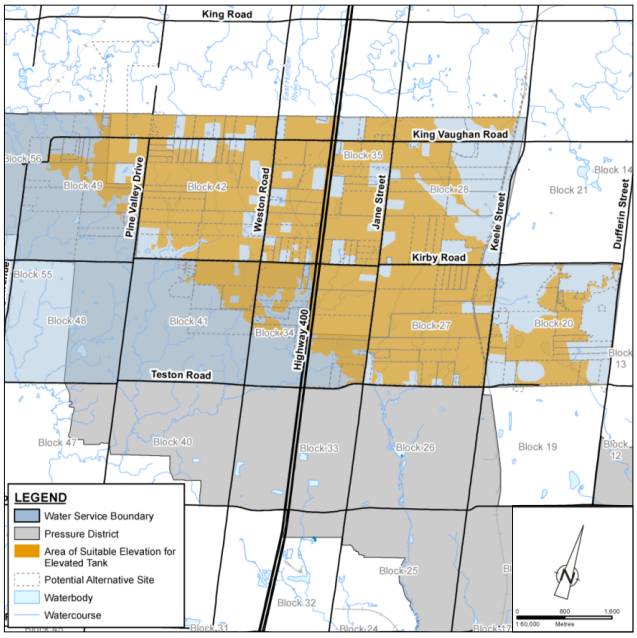
Gathered Information - Natural Heritage

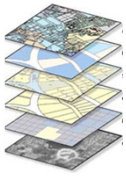


MNRF NRVIS, 2015. Produced by CRA under licence from Ontario Ministry of Natural Resources and Forestry, © Queen's Printer 2015



Identify Technically Suitable Areas

(PD7 example)



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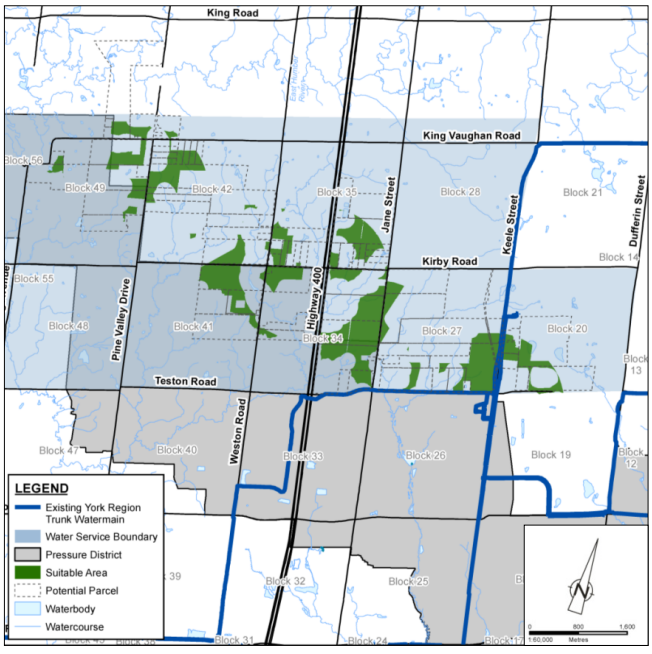

Avoid Sensitive Environmental Features

(PD7 example)

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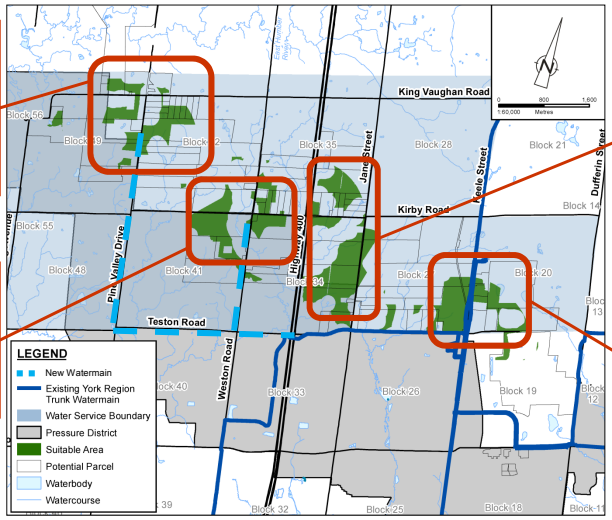
Pressure District 7 – Potential Site Areas

Area 1
Requires 4 kilometres (km) of new watermain to connect to existing 600mm watermain on Teston Road

Area 2
Requires 2km of new watermain to connect to existing 600mm watermain on Teston Road



Area 3
Requires 0.5km of new watermain to connect to existing 900mm watermain on Teston Road

Area 4
Requires less than 0.1km of new watermain to connect to existing 900mm on Keele, (connect to North Maple Reservoir)

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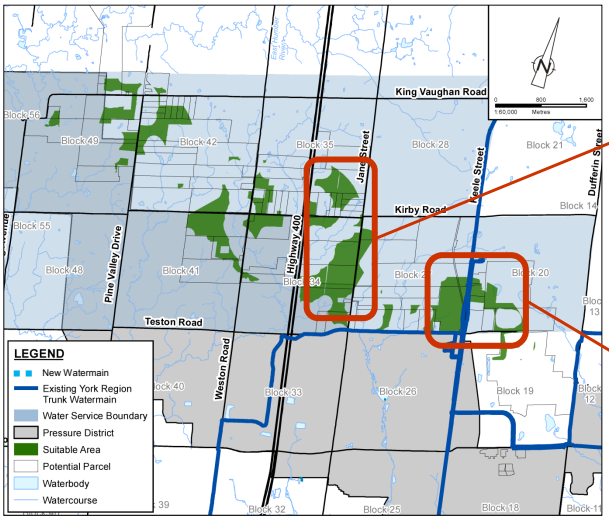
Pressure District 7 – Long List of Alternative Sites

Area 1
Requires 4 kilometres (km) of new watermain to connect to existing 600mm watermain on Teston Road

Area 2
Requires 2km of new watermain to connect to existing 600mm watermain on Teston Road



Area 3
Requires 0.5km of new watermain to connect to existing 900mm watermain on Teston Road

Area 4
Requires less than 0.1km of new watermain to connect to existing 900mm on Keele, (connect to North Maple Reservoir)

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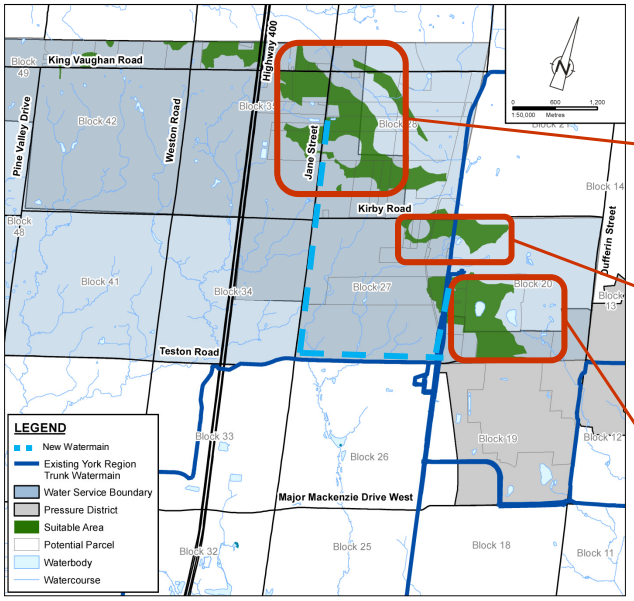
Pressure District 8 – Potential Site Areas



Area 1
Requires 6 kilometres (km) of new watermain to connect to Existing Maple Pumping Station

Area 2
Requires 2km of new watermain to connect to existing Maple Pumping Station

Area 3
Requires 1.3km of new watermain to connect to existing Maple Pumping Station

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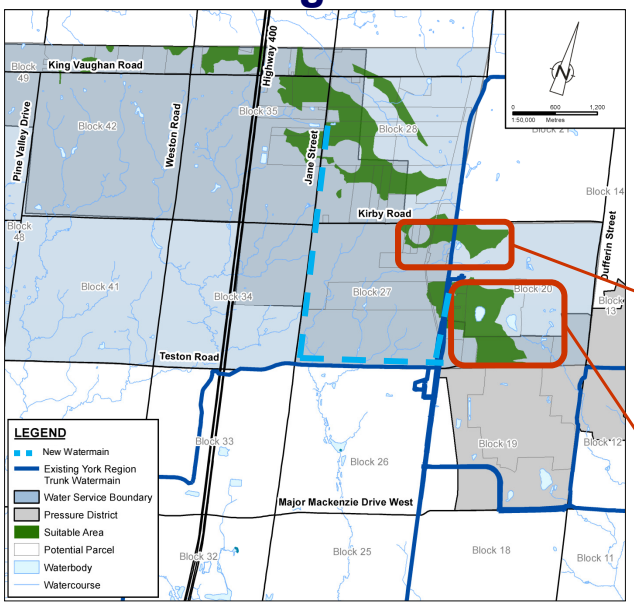
PD8 – Long List of Alternative Sites



Area 1
Requires 6 kilometres (km) of new watermain to connect to Existing Maple Pumping Station

Area 2
Requires 2km of new watermain to connect to existing Maple Pumping Station

Area 3
Requires 1.3km of new watermain to connect to existing Maple Pumping Station

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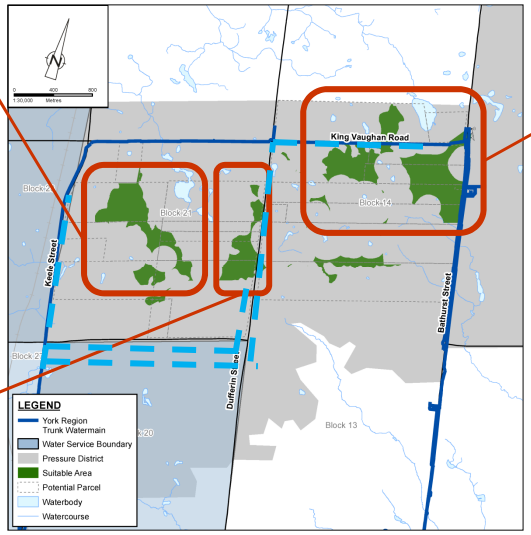
Pressure District 9 – Potential Site Areas

Area 1
Requires 2km of new watermain to connect to existing North Maple Reservoir (New Pumping Station Required)

Area 2
Requires 4km of new watermain to connect to existing North Maple Reservoir (New Pumping Station Required)

Area 3
Requires 7.5km of new watermain to connect to existing North Maple Reservoir (New Pumping Station Required)



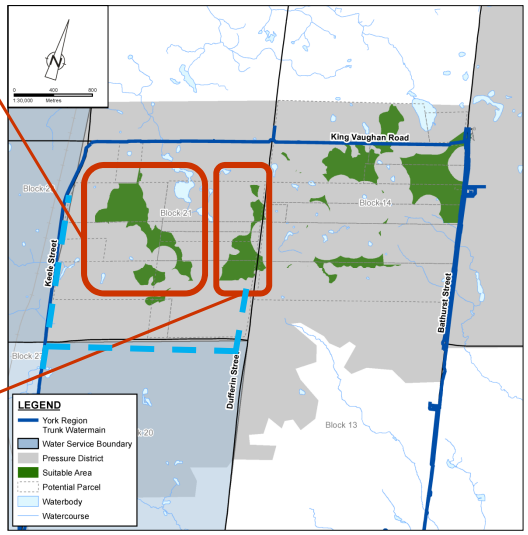
York Region

PD9 – Long List of Alternative Sites

Area 1
Requires 2km of new watermain to connect to existing North Maple Reservoir (New Pumping Station Required)

Area 2
Requires 4km of new watermain to connect to existing North Maple Reservoir (New Pumping Station Required)

Area 3
Requires 7.5km of new watermain to connect to existing North Maple Reservoir (New Pumping Station Required)



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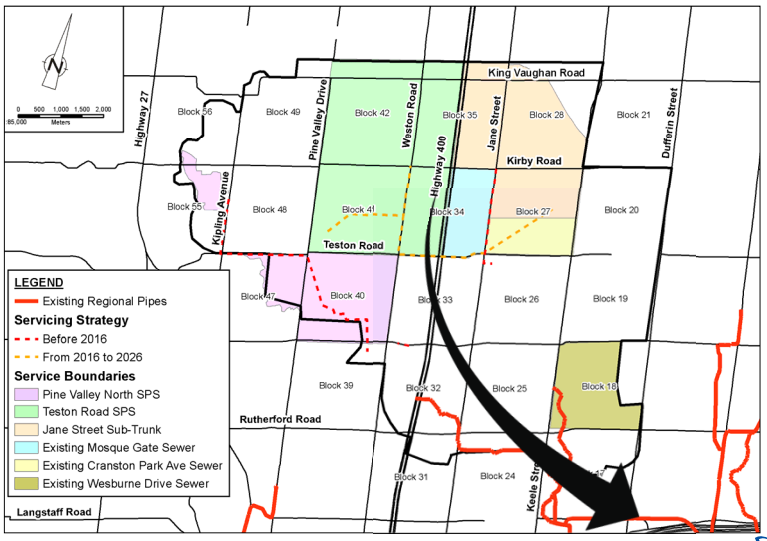
BREAK

4b. New Wastewater Infrastructure

New Wastewater Infrastructure



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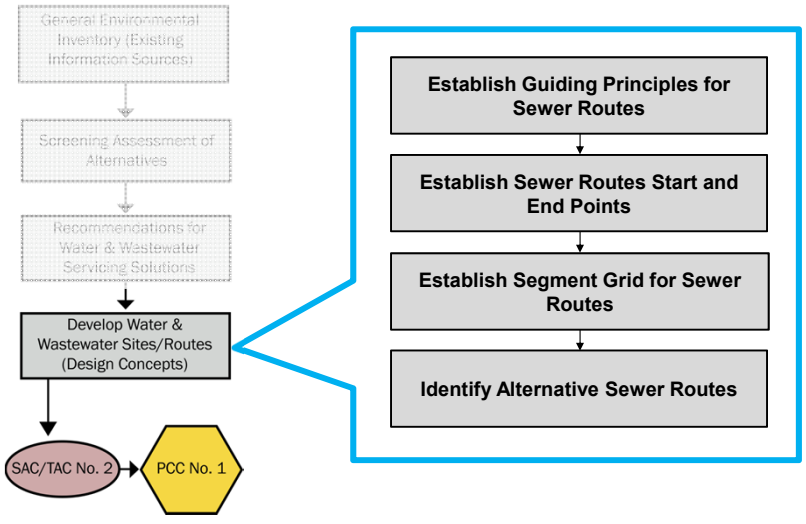
Approach for Developing Sewer Routes



Guiding Principles for Developing Sewer Routes

Principle 1	Gravity based sewer system
Principle 2	Sewage flow will be from northwest to southeast direction
Principle 3	Starting point for conveying sewage flow on Teston Road
Principle 4	Connection into York Durham Sewage System (YDSS) at first available point with sufficient downstream capacity to service approved growth to 2051 or beyond

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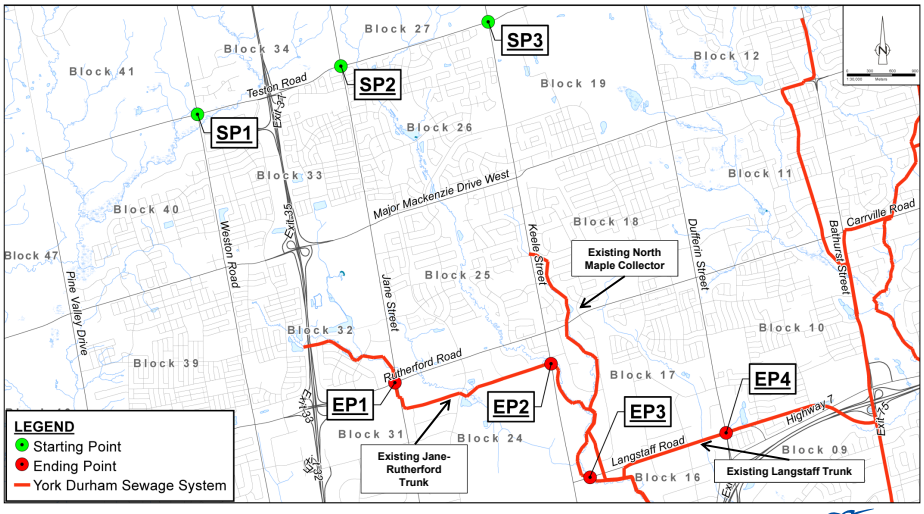
Developing Sewer Routes - Start and End Points



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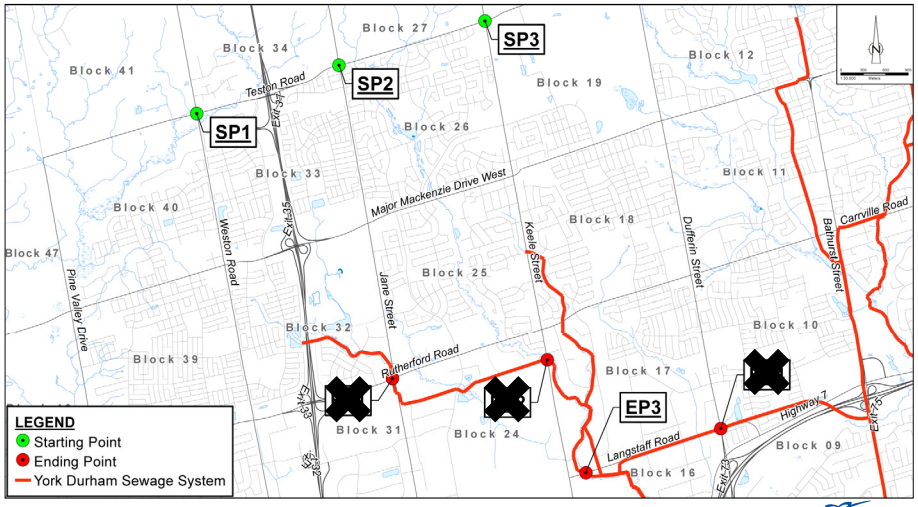
Developing Sewer Routes – Eliminated End Points



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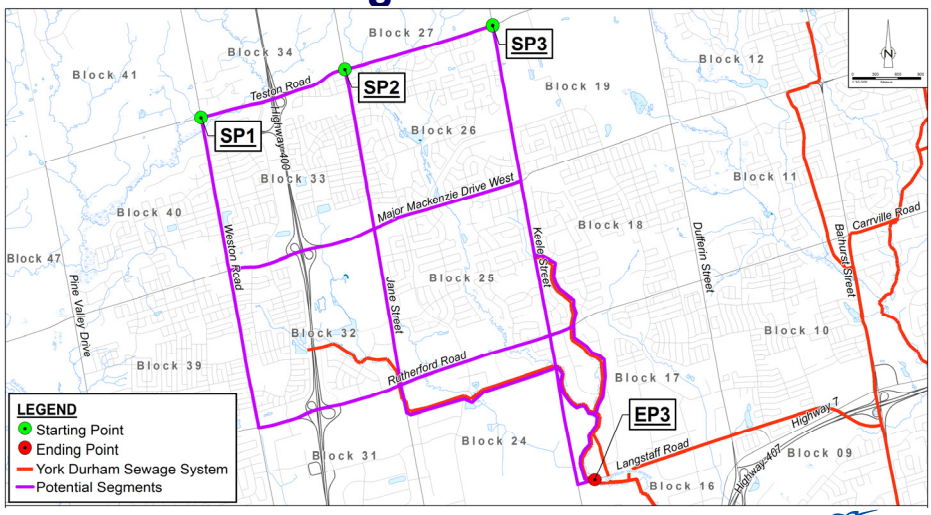
Developing Sewer Routes – Segment Grid



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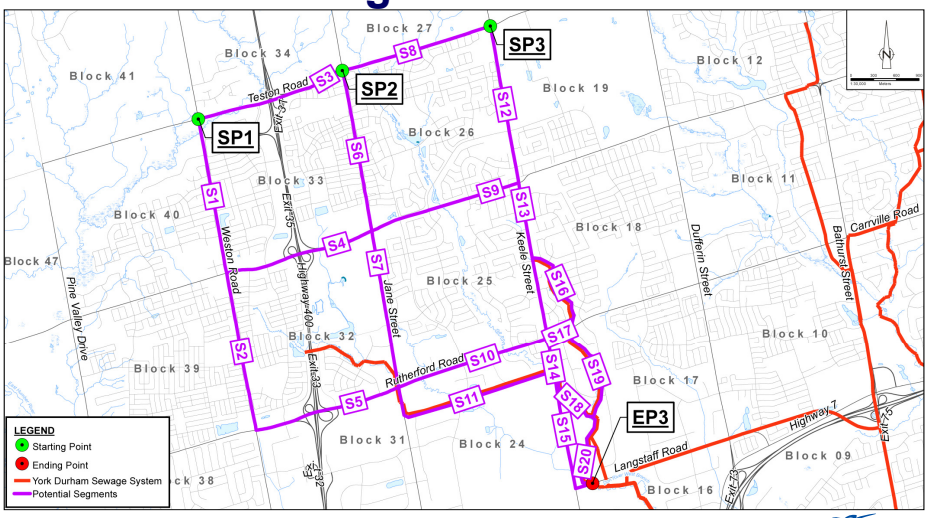
Developing Sewer Routes – Segment Grid



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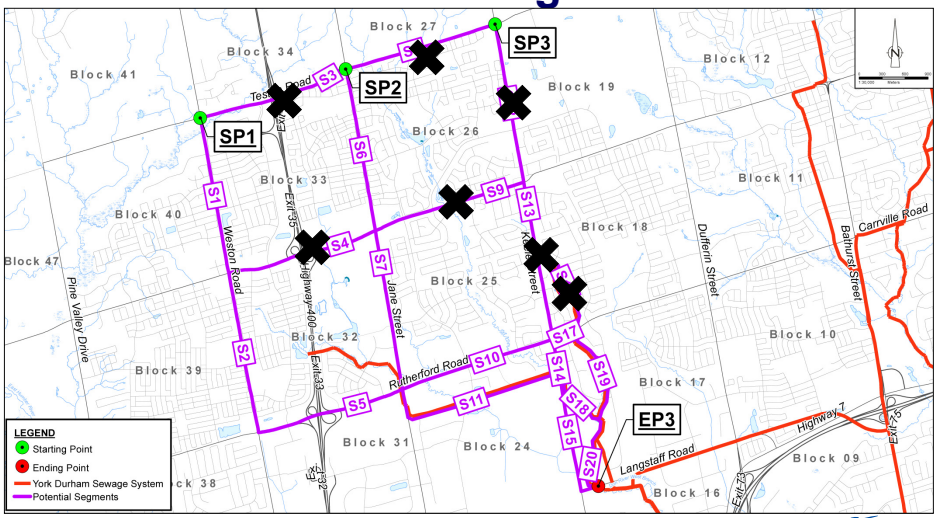
Developing Sewer Routes – Eliminated Segments



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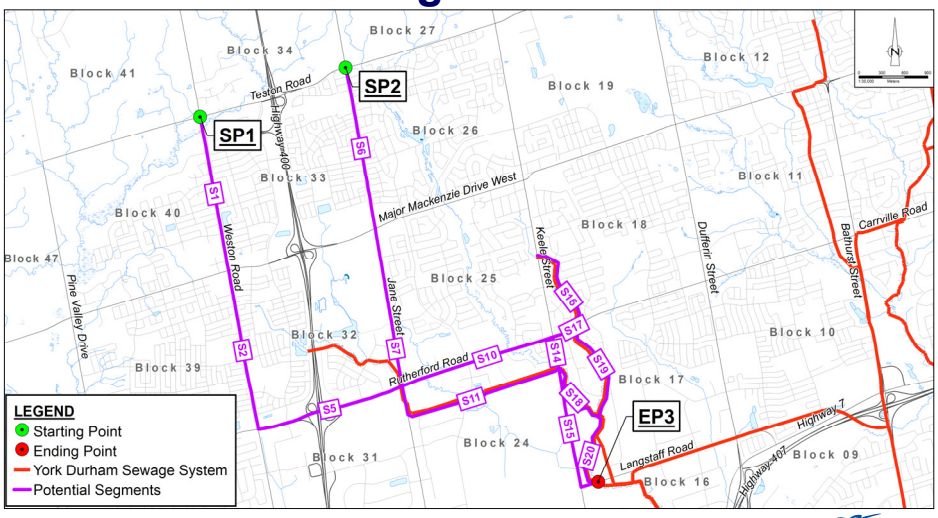
Developing Sewer Routes – Segments



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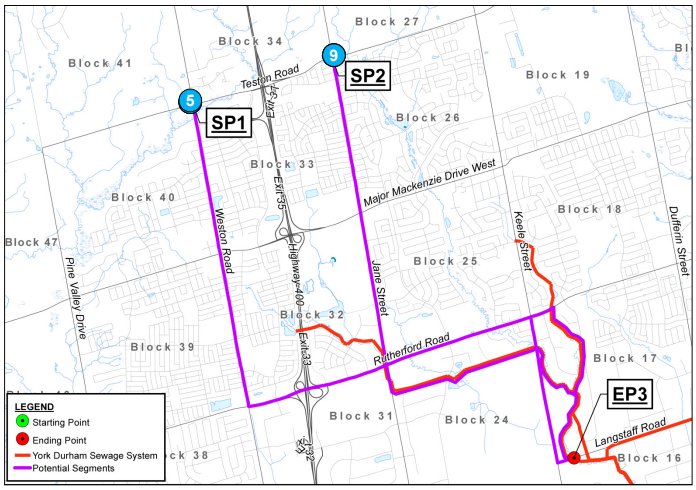
Ten Alternative Sewer Routes



- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8
- Route 9
- Route 10

Next Slide

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5. Proposed Evaluation Methodology and Criteria for Assessing Alternative Sites/Routes

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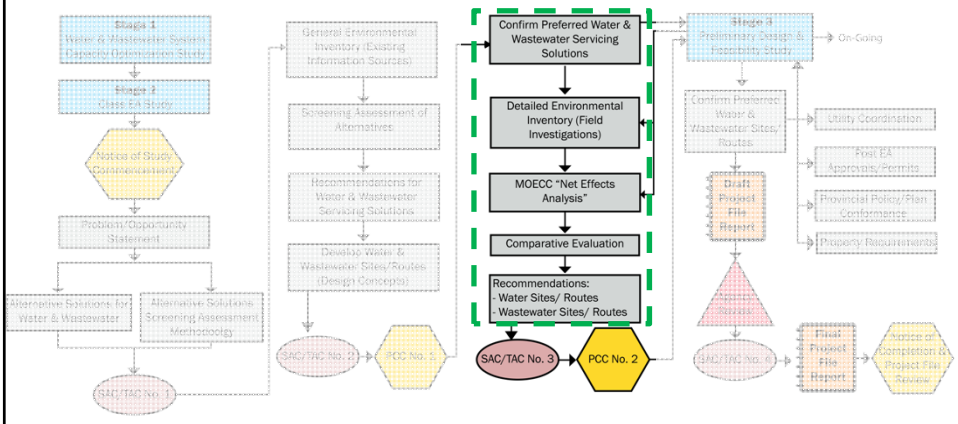
Project Road Map



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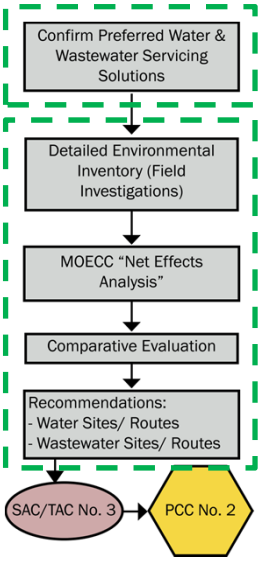
Project Road Map



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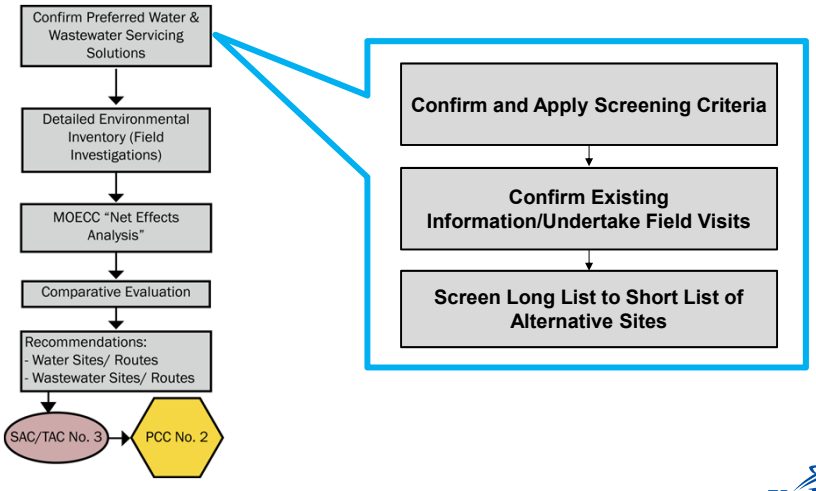
Identification of Recommended Water Storage Sites and Watermain Routes



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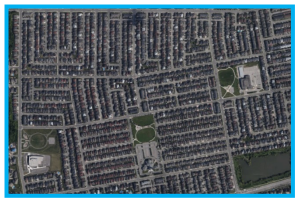
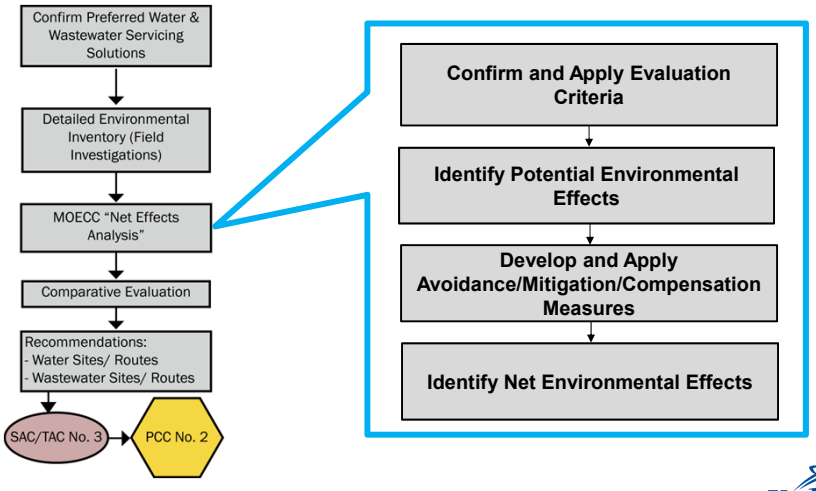
Preliminary Screening Criteria for Water Storage Sites

- Presence of development
- Proximity to sensitive land uses (including viewshed)
- Presence of local environmental features


York Region

Identification of Recommended Water Storage Sites and Watermain Routes



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Preliminary Evaluation Criteria

CATEGORY	EVALUATION CRITERIA
Technical	▪ Constructability
Natural Environment	▪ Effect on groundwater ▪ Effect on surface water ▪ Effect on aquatic habitat ▪ Effect on stream geomorphology ▪ Effect on aquatic species including species at risk, species of local concern, native and invasive species ▪ Effect on groundwater recharge and discharge areas in relation to aquatic/wetland habitat ▪ Effect on terrestrial habitat or functions ▪ Effect on terrestrial species including species at risk, species of local concern, native and invasive species, and area-sensitive species ▪ Effect on groundwater recharge and discharge areas in relation to terrestrial habitat
Built Environment	▪ Effect on agricultural operations and capital investment related to agriculture ▪ Effect on existing residences, businesses, and/or community, institutional, and recreational facilities ▪ Effect of vibration on existing buildings ▪ Effect on property ▪ Effect on existing roadway/utility infrastructure ▪ Effect on traffic
Social Environment	▪ Effect on wells ▪ Effect of noise on sensitive receptors ▪ Effect of perceptible vibration levels on sensitive receptors ▪ Effect of odours on sensitive receptors from current conditions ▪ Effect on existing views
Economic Environment	▪ Effect on approved/planned land uses ▪ Effect on agricultural soil resources
Cultural Environment	▪ Effects on known or potential significant archaeological resources ▪ Effects on built heritage resources and cultural heritage landscapes
Financial	▪ 25-year Net Present Worth Costs

Assessment of Alternative Sites/Routes

Potential Effects

Net Effects

Avoidance/Mitigation/Compensation

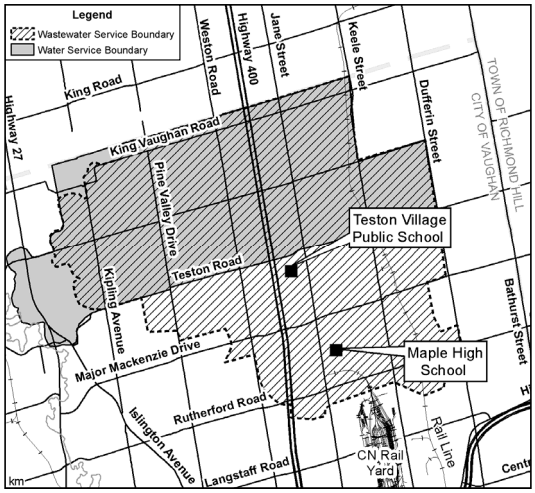
York Region

6. Public Consultation Centre No. 1

Public Consultation Centre No. 1

Monday, April 27, 2015
Teston Village Public School
80 Murray Farm Lane, Maple
Time: 6 p.m. to 9 p.m.
Presentation: 7 p.m.

Wednesday, April 29, 2015
Maple High School
50 Springside Road, Maple
Time: 6 p.m. to 9 p.m.
Presentation: 7 p.m.



7. Project Status and Schedule

Project Stages and Schedule

PROJECT STAGES AND MILESTONES	MILESTONE DATES
Stage 1: Water and Wastewater System Capacity Optimization Study	Jan to Dec 2014
Stage 2: Class EA Study Public Consultation Centre No. 1 Public Consultation Centre No. 2	Jun 2014 to Mar 2016 Apr 2015 Sep 2015
Stage 3: Preliminary Design and Feasibility Study	May 2015 to Apr 2016

8. Next Steps and Future Meetings

Upcoming Project Activities

- Confirm long list of alternative water storage sites and alternative sewer routes
- Undertake field investigations
- Assess alternative sites and routes
- Identify recommended water storage sites and sewer route

9. Homework, Additional Questions and Discussion

Thank You!