UPPER YORK Sewage Solutions

YORK DURHAM SEWAGE SYSTEM FORCEMAIN TWINNING AND TOTAL PHOSPHORUS OFF-SETS PROGRAM STATUS UPDATE

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AGENDA

- 1. Upper York Sewage Solutions
 - Purpose
 - Key Elements
 - Project Update
- 2. York Durham Sewage System Forcemain Twinning
 - Forcemain Twinning Alignment
 - Key Design Features
 - Construction Methodologies
 - Potential Impacts and Mitigation Measures
 - Communications and Community Engagement
 - Future communication with the Town Council



- Program Overview
- 4. Next Steps



UPPER YORK SEWAGE SOLUTIONS: STATUS UPDATE

UPPER YORK SEWAGE SOLUTIONS PURPOSE



UPPER YORK SEWAGE SOLUTIONS KEY ELEMENTS

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



UPPER YORK SEWAGE SOLUTIONS PROJECT UPDATE

- Regional Council received a status update on the Upper York Sewage Solutions (UYSS) project in January 2018
- The Region received a Declaration Order for the York Durham Sewage System (YDSS) Forcemain Twinning from the province on March 7, 2018
 - Construction of the YDSS Forcemain Twinning project is scheduled to begin in the Town of Newmarket in 2019

YORK DURHAM SEWAGE SYSTEM FORCEMAIN TWINNING: STATUS UPDATE

YORK DURHAM SEWAGE SYSTEM FORCEMAIN TWINNING ALIGNMENT



- Installation of two new sanitary sewer forcemains
- Modifications to Newmarket and Bogart Creek Sewage Pumping Stations
- Project benefits include:
 - System redundancy and reliability during high flow conditions/ extreme wet weather events
 - Sewage service security for current and future residents



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KEY DESIGN FEATURES

- Over 5000 metres of trenchless construction from Newmarket
 Pumping Station to Aurora
 Pumping Station
- Approximately 530 metres of open-cut construction from Bogart Creek Pumping Station to the Newmarket sanitary sewer forcemain connection point at Fairy Lake Park
- > 10 Microtunnelling compounds
- 3 Railway Crossings
- 16 Water Crossings





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CONSTRUCTION METHODOLOGIES

- Open Cut Trench excavation providing adequate space to install infrastructure
- Requires road closures in order to excavate
- More surface area required compared to trenchless methods
- Microtunnelling Trenchless method to install pipes using a remote controlled tunnelling machine
- Requires sending and receiving shafts and compounds (work areas)
- Low impact to environment and surrounding community
- Minimal surface impacts



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TYPICAL MICROTUNNELLING COMPOUND LAYOUT



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POTENTIAL IMPACTS AND MITIGATION MEASURES

Potential Impacts	Recommended Mitigation Strategies
Construction Access and Egress	 Ensure flag persons are present to coordinate traffic where necessary Plan compound areas with a safe truck turning radius
Traffic	 Traffic management plan with designated truck routes to mainly use Regional roads Require flag persons or paid-duty officer to coordinate/direct traffic as required Restrict truck traffic during special Town events Schedule material deliveries during off-peak hours
Noise and Vibration	 Implement noise attenuation system at construction compounds Tighten specification requirements for equipment Implement noise and vibration monitoring program
Pedestrians and Trails	 Avoid trail systems wherever possible Provide signed detours where necessary Ensure safety provisions include temporary lighting and closures as required
Parking	 Minimize impact on parking lots wherever possible
Community Events	 Coordinate with Town staff to mitigate construction impacts during major events Proactive communication to residents

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COMMUNICATION AND COMMUNITY ENGAGEMENT

- Working Together Committee meetings with the Region's project team, Town staff and Lake Simcoe Region Conservation Authority (LSRCA)
- Dedicated Communication and Community Engagement Plan
- Project workshop with Town and LSRCA staff on June 27, 2018
- Town Council update in early 2019 on forcemain twining construction details





PROJECT SPECIFIC TOTAL PHOSPHORUS (TP) OFF-SETS PROGRAM

TP OFF-SETS PROGRAM DEVELOPMENT

- The Lake Simcoe Protection Act (LSPA) and associated Plan do not allow new wastewater treatment facilities in the Lake Simcoe watershed
- The Water Reclamation Centre was proposed to replace the existing Holland Landing Sewage Lagoons
- A project specific Total Phosphorus (TP) Off-sets Program is needed to meet the LSPA requirements

York Region has:

- Partnered with local municipalities to include concurrence of Principles of Agreement for the program
- Consulted with review agencies (MOECC, LSRCA)
- Notified adjacent property owners

The Total Phosphorus Off-setting Program is an integral component of UYSS



Require (40 MLD) Have)292 kg/yr 124 kg/yr
Difference	168 kg/yr
Need @ 3:1 ratio	504kg/yr

PROPOSED TP OFF-SETS PROGRAM

The proposed TP Off-sets Program includes:

Retrofitting seven existing stormwater management ponds in Aurora, East Gwillimbury and Newmarket

Installing low-impact development technology within a stormwater catchment area in Newmarket

Building a new stormwater management pond in Georgina

This program will improve water quality and quantity of downstream watercourses that ultimately flow into Lake Simcoe





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POTENTIAL ENVIRONMENTAL ASSESSMENT APPROVAL CONDITIONS

- TP Off-Sets Program performance monitoring:
 - Two stormwater management facilities
 - One year pre-construction and one year post-construction monitoring
- Contingency Planning:
 - Contingency measures in case the proposed ponds do not achieve the required phosphorus off-set amount
- A long-term maintenance program required for all facilities
- Commissioning the Water Reclamation Centre would be contingent on delivering the Total Phosphorus Off-sets Program





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TP OFF-SETS PROGRAM DELIVERY STRATEGY

- A Total Phosphorus Removal Demonstration project will better prepare the Region to deliver the Total Phosphorus Off-Sets Program upon Upper York Sewage Solutions Environmental Assessment approval
- Collaboration with local municipalities and LSRCA is the key to delivering the Total Phosphorus Off-sets Program in a timely manner

Benefits include:

- Leveraging LSRCA expertise in TP removal through stormwater management pond retrofits
- Executing a TP transfer agreement between the Region and local municipalities
- Providing upfront investment for municipalities to maintain ponds in the program



York Region Total Phosphorus Offset SWM Pond Retrofits Pilot Project

Technical Brief - Phase 1:

- SWM Pond retrofits Opportunities and Constraints Assessment; and
- Performance Monitoring and Maintenance Work Plan

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UKD_2017_003 2 Copies - Town of Newmarket 2 Copies - MOECC - Environmental Approvals Access and Service Integration Branch 2 Copies - MOECC - District Office 2 Copies - MOECC - District Office 2 Copies - INSECA

FRAMEWORK OF TP OFF-SET PROGRAM

Region's Responsibilities	Municipalities' Responsibilities		
 Plan, design and construct stormwater management pond retrofits Fund the capital costs of the retrofit works Engage municipalities during planning and design of retrofit project - including long- term maintenance programs Responsible for any shortfall in TP reduction target of a retrofitted facility 	 Transfer to the Region TP off-sets credit from the retrofit works in perpetuity Operate and maintain the retrofitted stormwater management ponds in perpetuity and in accordance with minimum standards to ensure TP off-sets are enduring Will not sell or transfer the stormwater management ponds Maintain the ponds in accordance with the Environmental Compliance Approval (ECA) for the facility 		
The Design and the municipalities will is in the select design concepts to keep any increases in future			

- The Region and the municipalities will jointly select design concepts to keep any increase in future maintenance burden to a reasonable level
- If regulatory changes require amendments to the facilities ECA, the Region and municipalities may revisit the TP transfer agreement

The Region has been working closely with local municipal staff to develop the program framework.



EVOLUTION OF STORMWATER MANAGEMENT POND MAINTENANCE WITHIN THE WATERSHED

- Unmaintained stormwater management ponds across the watershed
 - Increased Ministry scrutiny to ensure provisions of approval (ECA) are met
 - Can no longer ignore stormwater pond maintenance
 - Municipalities recognize the requirements to maintain stormwater ponds
- Watershed municipalities are adopting utility fees as the funding mechanism for stormwater pond maintenance
- TP Off-Sets Program will provide significant opportunities for municipalities to partner with the Region to establish a regular stormwater pond maintenance programs





NEXT STEPS

> Upper York Sewage Solutions Environmental Assessment

- Continue working with the Ministry in anticipation of Environmental Assessment approval
- Advance all aspects of the project to be ready to implement upon approval
- Review interim service capacity options

> York Durham Sewage System Forcemain Twinning Project

- Secure all permits and approvals
- Secure all properties
- Work closely with the Town to deliver the project
- Proactively communicate and engage stakeholders and the community
- Update the Town Council in early 2019 on forcemain construction details

> TP Off-Sets Program

- Consult with the Ministry
- Environmental Compliance Approval application for selected ponds
- Municipal partners to provide a funding mechanism to support long-term maintenance requirements
- Execute the TP Transfer Agreement for the program

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THANK YOU

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