

Clause No. 27 in Report No. 13 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on September 11, 2014.

**27**  
**ENVIRONMENTAL SERVICES**  
**CAPITAL INFRASTRUCTURE STATUS UPDATE**

**Committee of the Whole recommends:**

- 1. Receipt of the presentation by Mike Rabeau, Director, Capital Planning and Delivery.**
- 2. Adoption of the following recommendation contained in the report dated August 13, 2014 from the Commissioner of Environmental Services:**

**1. RECOMMENDATION**

It is recommended that:

1. The Regional Clerk circulate this report to the Clerks of the local municipalities.

**2. PURPOSE**

This report updates Council on the status of key water and wastewater infrastructure projects required to meet system demands and identified as triggers for release of servicing capacity and associated approvals. This report also updates Council on the status of the Durham York Energy Centre.

**3. BACKGROUND**

**June 2013 Council Capacity Assignment supports growth to 2017 with assignment to 1,249,653 people**

With Regional capacity assignment in June 2013, assignment to local municipalities totals 1,249,653 people, supporting growth to 2017. As part of the multi-year capacity assignment process, trigger projects to unlock capacity are identified and included in the 10 Year Capital Plan.

Growth capacity assignment to 2017 still requires completion of five trigger projects to unlock 82,120 person capacity. A list of these specific trigger projects is provided in Table 1.

**Table 1**  
 Trigger Projects required to unlock assigned capacity

<b>Municipality</b>	<b>Total capacity to be unlocked by trigger projects (persons)</b>	<b>Trigger Project</b>	<b>Expected in-service date</b>
Aurora	3,099	Southeast Collector	Q4/2014
East Gwillimbury	16,395	Southeast Collector	Q4/2014
		YDSS Connection (Holland Landing/Queensville/Sharon)	Q4/2015
King (King City)	1,385	Southeast Collector	Q4/2014
King (Nobleton)	1,700	Nobleton Water Supply	Q3/2014
Markham	24,058	Southeast Collector	Q4/2014
		Leslie Street Pumping Station	*Q1/2015
		North Don Relief Sewer	Q4/2014
Newmarket	3,561	Southeast Collector	Q4/2014
Richmond Hill	7,326	Southeast Collector	Q4/2014
		Leslie Street Pumping Station	*Q1/2015
		North Don Relief Sewer	Q4/2014
Vaughan	18,614	Southeast Collector	Q4/2014
		Leslie Street Pumping Station	*Q1/2015
		North Don Relief Sewer	Q4/2014
Whitchurch-Stouffville (Stouffville)	5,982	Southeast Collector	Q4/2014
<b>Total</b>	<b>82,120</b>		

*\* Last reported Q4 2014 and is not anticipated to impact timing of approved development*

The last update to Council on the status of delivering key Environmental Services infrastructure projects was provided with Report No. 8 of the Committee of the Whole dated April 10, 2014. The next update is scheduled for Q2 2015.

#### **4. ANALYSIS AND OPTIONS**

##### **10 Year Capital Plan totals \$3.2 billion including key infrastructure projects for system capacity**

The 2014 approved budget identified a 10 Year Capital Plan totaling \$3.2 billion, which includes critical projects to unlock capacity required to support future growth. The following provides an update on key Environmental Services projects within the 10 Year Capital Plan. A project summary and location map are included in *Attachments 1 and 2*, respectively.

##### **All linear works for Queensville/Holland Landing/Sharon started following opening of Highway 404**

Funding requirements based on prepaid development charge credit agreements with the Queensville-Holland Landing-Sharon Developer Group and the Sharon Developer Group are in place. Construction works for six contracts are well underway with the three required pumping stations on schedule. Linear works on 2nd Concession have experienced a slight delay as the closure of 2nd Concession was subject to the opening of the Highway 404 extension. Based on the revised opening of the Highway 404 extension, the scheduled commissioning/in-service date for the capacity linked wastewater servicing works is Q3/Q4 2015 (last reported: Q2 2015).

A summary of the Queensville/Holland Landing/Sharon servicing projects is shown in Table 2.

**Table 2**  
 Queensville/Holland Landing/Sharon Project Status Summary

<b>Project</b>	<b>Status</b>	<b>Current Commissioning/ In-service Date</b>	<b>Last Reported Commissioning/ In-service Date</b>	<b>Contractor</b>
Queensville Elevated Tank No. 1	In Use	December 2013		Landmark Structures
Holland Landing Sewage Pumping Station*	Under Construction	Q2 2015	Q2 2015	Con-Drain Company
Queensville West Sewage Pumping Station*	Under Construction	Q2 2015	Q2 2015	Mettko Construction
2nd Concession Sewage Pumping Station*	Under Construction	Q2 2015	Q2 2015	Con-Drain Company
Holland Landing and Green Lane Force mains*	Under Construction	Q2 2015	Q2 2015	North Rock Group
Sharon Trunk Sewer*	Under Construction	Q2 2015	Q2 2015	Con-Drain Company
2nd Concession Linear				
• Capacity Linked Linear*	Under Construction	Q4 2015**	Q2 2015	Aecon Group Inc.
• Non-capacity Linked Linear	Under Construction	Q1 2016**	Q4 2015	Aecon Group Inc.

\*Capacity Linked Wastewater Servicing Works

\*\*In-service date subject to 2nd Concession road closure coordination with opening of Highway 404 extension. Full Queensville-Holland Landing-Sharon system will not be commissioned until completion of 2nd Concession linear works.

**Southeast Collector Trunk Sewer tunnel boring is complete and access shafts will be completed this fall**

Construction of the Southeast Collector Trunk Sewer continues and commissioning is forecasted for December 2014 (last reported: December 2014). Work includes:

- Phases 1 - 3 of Bob Hunter Memorial Park are complete
- Reconstruction and realignment of York-Durham Line is complete
- Construction continues at all shaft and mining site compounds
- All tunnel bores are complete

- Construction of the Odour Control Facility, two Air Handling Facilities, a Corrosion Control Facility and the Central Duffin Collector Metering Chamber are forecasted for completion in November 2014 (last reported: November 2014)

### **Commissioning complete for Duffin Creek Stage 3 Influent Pumping Station**

The new Duffin Creek Stage 3 Influent Pumping Station is required to facilitate connection of the new Southeast Collector Sewer to the existing York-Durham Sewage System and to prevent surcharge conditions during rehabilitation of Duffin Creek Stages 1 & 2 and for future flows. The main pumping station construction contract was awarded in December 2012 and commissioning commenced in May 2014 (last reported: Q2 2014). Substantial Performance was awarded in early Q3 2014 (last reported: Q3 2014).

### **Duffin Creek Stages 1 & 2 Upgrades construction on schedule for completion in 2017**

The Duffin Creek Stages 1 & 2 Upgrades include work that must be completed by 2017 as a condition of the Ministry of the Environment and Climate Change's Environmental Compliance Approval (ECA) for the Duffin Creek Water Pollution Control Plant Stage 3 Expansion as well as other required refurbishments and upgrades. The project is currently progressing as stated in Table 3:

**Table 3**  
 Contract Status for Duffin Creek Plant Stages 1 & 2 Upgrades

<b>Contracts</b>	<b>Last Reported Progress Update</b>	<b>Current Progress</b>
New Stages 1 & 2 Electrical Substation Construction and associated pre-purchase contracts for Generators, Switchgears and Transformers (\$32 M)	Construction contract awarded December 2012. Pre-purchase deliveries have been received on site. Progress on schedule for Substantial Performance in Q4 2014.	85% complete
Disinfection Facility Construction (\$9 M)	Construction contract awarded June 2013. Contractor currently behind schedule; schedule recovery efforts underway. Substantial Performance of this contract expected Q1 2015. Schedule delays not impacting 2017 ECA deadline.	60% complete
Preliminary Treatment and Influent Pumping Station Facility construction and associated pre-purchase contracts; Bio-filter and Sewage Pumps (\$85 M)	Construction contract awarded March 2014. Pre-purchase Request for Proposal for supply of bio-filter awarded and on schedule for delivery. Sewage pump pre-purchase contract awarded and on schedule for delivery.	10% complete
Refurbishment and Upgrade Construction contract and associated pre-purchase contract; Clarifier Bridge Mechanisms (\$29 M)	Construction contract awarded June 2014. Clarifier Bridge Mechanisms pre-purchase contract awarded and on schedule for delivery.	5% Complete

The contracts listed in Table 3 constitute the bulk of work to be accomplished in the Stages 1 & 2 Upgrades project and are necessary to satisfy Environmental Compliance Approval conditions. The complexity to coordinate the commissioning of these related projects has resulted in refinement to the overall schedule. Commissioning and overall substantial performance for the contracts are now expected in mid-2017 (last reported: late 2016) in time to meet the Environmental Compliance Approval deadline.

Implementation of the Odour Management Plan continues and the next major step is sampling and testing at completion of the Stage 1 & 2 works. This requirement is stipulated by the Environmental Compliance Approval and is scheduled to occur in 2017 (last reported: 2017).

### **Staff currently preparing response to Part II Order Requests for the Duffin Creek Plant Outfall**

York Region and Durham Region jointly initiated a Schedule 'C' Class Environmental Assessment study in December 2010 to identify the preferred solution for addressing limitations of the existing outfall and diffuser system at the Duffin Creek Plant. After a detailed evaluation process, the Schedule "C" Class Environmental Assessment determined the following recommended solution:

- Optimize operation of existing upgraded Duffin Creek Plant (Stages 1, 2 and 3)
- Modify existing outfall diffuser with a variable port technology to achieve outfall hydraulic capacity to 630 MLD

The Schedule "C" Class Environmental Study Report was issued November 19, 2013 and made available for public review for 91 days at the request of the Town of Ajax. The review period closed on February 18, 2014. A total of 90 responses were sent to the Minister of the Environment and Climate Change of which 75 were Part II Orders requesting the Minister to issue an order "bumping up" the Class Environmental Assessment to an Individual Environmental Assessment, the most rigorous type of environmental assessment.

### **Both Regions have made best efforts to work closely with Town of Ajax and City of Pickering**

York and Durham Regions have worked closely with the Town of Ajax and City of Pickering throughout the environmental assessment process to seek advice and input on the alternative solutions being considered. Notwithstanding these ongoing efforts, the Town of Ajax elected to file a Part II Order with the assistance of external legal counsel and a group of hired experts. A stakeholder group, Pickering Ajax Citizens Together to Protect Our Water (PACT POW), has worked with the Town of Ajax to organize Part II Order Requests with similar and overlapping issues to those raised by the Town of Ajax.

### **Regions have retained algae experts to assist with Part II Order responses**

Generally, the Part II Order issues relate to near shore water quality, algae (*Cladophora*) growth, wastewater treatment performance, zebra mussels, odour and fisheries issues. In many cases, these issues are outside the scope of the outfall Environmental Assessment, however, the Ministry has asked the Regions to prepare responses to these key Part II Order Request topics. The Regions have retained experts on algae (*Cladophora*) growth

and zebra mussels to assist with responses to the Part II Order Request topics. An interim submission was made to the Ministry of the Environment and Climate Change on June 30 and a complete response to the Part II Order topics is scheduled for September 30.

Since filing the Part II Order, the Town of Ajax mayor and councillors along with PACT POW have undertaken a public relations campaign selectively using incomplete information concerning the Duffin Creek Plant and the quality of the near shore water adjacent to the Ajax/Pickering shoreline. Specifically, PACT POW has misinformed the public that the Duffin Creek Plant is the sole cause of algae (*Cladophora*) washing up on the Ajax waterfront. This is not the case and, in fact, wastewater plants are a minor contributor to *Cladophora* growth. Latest studies are focusing on zebra mussels, surface run off and the natural levels of nutrients in the lake as the major reasons for resurgence in *Cladophora* growth. It is expected that the campaign of using incomplete information will continue up to the October 2014 municipal election.

### **Duffin Creek Plant is one of the best performing water pollution control plants on Lake Ontario**

The Duffin Creek Plant has very strict effluent requirements in comparison to all other plants discharging to the open waters of Lake Ontario. The estimated contribution of phosphorus to Lake Ontario from all wastewater treatment plants on Lake Ontario is approximately 10 per cent of total phosphorus loading to the lake. It is estimated that the Niagara River, New York and Ontario tributaries contribute approximately 80 per cent of total phosphorous loading with the remaining 10 per cent from other sources including storm sewers and air deposition. The Region has partnered with the Toronto and Region Conservation Authority for the past six years on a water quality sampling program for the near shore water adjacent to the Ajax/Pickering shoreline. Results of this sampling program are made public and confirm the high quality effluent discharged from the Duffin Creek Plant.

### **Two new pumps for the Leslie Street Sewage Pumping Station Upgrades have been delivered to the facility**

The Leslie Street Sewage Pumping Station collects wastewater flow from areas of Vaughan, Richmond Hill, Aurora, Newmarket and Markham. The facility pumps wastewater to the Duffin Creek Water Pollution Control Plant. The upgrade project will increase station pumping capacity to meet growth requirements and includes major electrical, Supervisory Control and Data Acquisition (SCADA) system, standby power and building envelope upgrades. Two new 1500 litre-per-second pumps were delivered to the facility during the month of June. Work required to complete pump installation and commission the new pumping capacity will take place over Q3 and Q4 2014, with commissioning expected in Q1 2015 (last reported: Q4 2014). The delay is due to project challenges in managing complexities of commissioning pumps in an operating facility.



The revised commissioning date is not anticipated to impact timing of approved development.

Building envelope upgrades to improve energy efficiency and lower operating costs are ongoing. The contract was awarded in December 2012 and construction commenced in January 2013. The entire project is scheduled for completion by Q1 2016 (last reported: Q1 2016).

### **Upper York Sewage Solutions project will provide sustainable sewage servicing for planned growth in the Towns of Aurora, East Gwillimbury and Newmarket**

The Upper York Sewage Solutions project will provide a local sustainable sewage servicing for planned growth of over 153,000 in population and employment to the year 2031 in the Towns of Aurora, East Gwillimbury and Newmarket. This project is key to unlocking capacity for planned servicing up to 91,500 persons in the Town of East Gwillimbury, 34,500 persons in the Town of Aurora and 27,000 persons in the Town of Newmarket.

The preferred servicing solution was established through an Individual Environmental Assessment study that commenced in 2009. Key design elements of the preferred solution include:

- Lake Simcoe Water Reclamation Centre and associated linear conveyance infrastructure
- Modifications to the existing York-Durham Sewage System between the existing Newmarket, Aurora and Bogart Creek Pumping Stations, which include new trunk sewer pipes adjacent to the existing forcemains
- Project-specific phosphorus off-setting program

The final Environmental Assessment report was submitted to the Minister of the Environment and Climate Change for approval on July 25, 2014. With the submission of the final report, the Ministry of the Environment and Climate Change will conduct its own internal review and public consultation process in accordance with regulatory guidelines. Regional staff anticipates this internal review to be completed and formal approval of the undertaking secured from the Minister in mid-2015.

### **Upper York Sewage Solutions Project currently in the early stages of detailed design and property acquisition**

The consultant assignment for detailed design, contract administration and site inspection services was approved for award by Council in June 2014. The project is currently in the early stages of detailed design and property acquisition. Commissioning of the Upper York Sewage Solutions Project is currently scheduled for the end of 2018 subject to funding adequacy (last reported: late 2018).

### **Kennedy Road Watermain tunnel contract underway with south tunnel completed and north tunnel actively being mined**

The Kennedy Road Watermain project involves construction of a 1500mm diameter watermain along Kennedy Road from the Milliken Pumping Station on 14th Avenue to Major Mackenzie Drive. The project is required to provide additional water from Toronto to Markham Pressure District 6 to meet long-term growth demands. Work is being completed under two contracts. The open-cut contract is complete. On the tunnelling contract currently in construction, watermain pipes are being installed in the completed south tunnel and the north tunnel is actively being mined. To date, approximately 1,900 metres of tunnel have been completed, representing 67 per cent of 2,825 metres of tunnel to be completed under this contract.

Commissioning of the entire watermain from Milliken Pumping Station to Major Mackenzie Drive is expected to be completed by Q2 2015 (last reported: Q4 2014). The two-quarter schedule change is due to unexpected difficult ground conditions consisting of cobbles and boulders, which required design and construction of an unplanned emergency access shaft for retrieval and subsequent retrofitting of the tunnel boring machine to handle the changed ground conditions. The revised completion date is not anticipated to delay or impact timing of approved development within the service area.

### **West Richmond Hill Pumping Station construction underway**

The West Richmond Hill Pumping Station is a new water pumping facility identified through the *2009 Water and Wastewater Master Plan Update* to service lands in the northeast portion of Vaughan, portions of Richmond Hill north of Major Mackenzie Drive and the northwest portion of Markham. Construction commenced in April 2014 and approximately 20 per cent of the work is completed. The project is expected to be commissioned in Q4 2015 (last reported: Q4 2015).

### **West Vaughan Water and Wastewater servicing projects underway to increase capacity through optimization and new infrastructure**

According to the Region's *2009 Water and Wastewater Master Plan Update* and *City of Vaughan's City Wide Official Plan*, West Vaughan is expected to grow significantly with 21,000 people and 27,000 jobs by 2031. The West Vaughan area is bound by Kirby Road in the north, Steeles Avenue West in the south, Kipling Avenue in the east and Highway 50 in the west. Two separate projects are underway to increase capacity in both the water and wastewater systems.

### **Detailed design for West Vaughan Sewage Servicing will commence Fall 2014**

The Environmental Assessment for the West Vaughan Sewage Servicing project, identified through the *2009 Water and Wastewater Master Plan Update* to provide sanitary sewage capacity to service growth in the West Vaughan area (area west of Highway 27 including Kleinburg-Nashville) was completed in 2013.

Request for Proposals from engineering firms to undertake detailed design, contract administration and site inspection services were received in June 2014. Staff has reviewed the proposals and is recommending award of the contract for detailed design and construction administration services for the West Vaughan Sewage Servicing project under a separate report to Council this month. Pending award of the contract, detailed design services are forecast for completion by Q4 2016. The schedule for completing the overall project is Q3 2020 (last reported: Q3 2020).

The Region is currently undertaking a project for electrical upgrades to the Humber Sewage Pumping Station to sufficiently increase the pumping station's servicing capacity to support growth in the interim until the West Vaughan Sewage Servicing project is completed.

### **Needs Assessment Study for the West Vaughan Water Servicing Project awarded in August 2014**

The Region intends to update the water servicing strategy for parts of West Vaughan including Kleinburg-Nashville through optimization of the existing system and identification of required infrastructure upgrades. This project is expected to be delivered in three phases:

- **Phase One** - Needs Assessment Study to review the existing system and assess the technical feasibility and timing of water servicing options to accommodate growth.
- **Phase Two** - Class Environmental Assessment Study to determine the preferred solution to address the project needs as per Municipal Class Environmental Assessment Process.
- **Phase Three** - Detailed Design, Contract Administration and Site inspection for implementation of the selected options.

The Region pre-qualified four firms to submit their proposal for phase one of this project. All four firms submitted their proposals June 2014. Once the proposals were reviewed, the project was awarded in August 2014. Phase 1 is expected to be completed by Q3 2015 and overall project timing will be established during the Phase 1 project.

### **Notice of Study Commencement published for Northeast Vaughan Water and Wastewater Servicing Class Environmental Assessment**

The Northeast Vaughan Water and Wastewater Servicing project (formally referenced as the East Vaughan Water and Wastewater Servicing Project) is progressing through the Water and Wastewater System Capacity Optimization Study, which is expected to be complete in Q4 2014. Results of the optimization work will inform the Needs Identification phase of the Class Environmental Assessment Study, which has commenced. The Notice of Study Commencement was published in June and July 2014, and the project webpage is live on the Region's website.

The Region has finalized the Project Management Plan, Communications and Consultation Plan, Preliminary Stakeholder List and Terms of Reference for the project Stakeholder Advisory Committee and Technical Advisory Committee. These advisory committees are an important part of the Region's strategy to ensure effective, ongoing engagement and collaboration with interested stakeholders and technical authorities. The Region will continue to facilitate individual stakeholder meetings throughout the project; pre-consultation meetings with the development community have recently been completed.

The Class Environmental Assessment is scheduled to be completed in early 2016 (last reported: Q1 2016) and the Preliminary Design and Feasibility Study for the Preferred Solutions are scheduled to be completed late 2016 (last reported: Q3 2016) and construction is estimated to be complete in 2021 (last reported: 2021).

### **Yonge Street/Highway 7 Regional Centre Class Environmental Assessment on track and preferred solutions have been determined**

The Region reviewed the preliminary alternative routes and selected the preferred solutions for new water and wastewater servicing at the Yonge Street/Highway 7 Regional Centre areas. The Region incorporated comments received from internal stakeholders and presented the preferred solutions to external key stakeholders in the months of June and July 2014. The Region plans to present the preferred solutions to the general public (after successfully collecting and consolidating comments from external key stakeholders) in September 2014. The Project File Report will be ready for public review in December 2014. As part of this Class Environmental Assessment Study assignment, preliminary design will commence in Q4 2014. The detailed design assignment will be procured in 2015 and design will commence immediately thereafter. Construction of the preferred solutions is planned to commence in 2019 (last reported: 2019).

### **North Don Sanitary Relief Sewer construction works completed on schedule**

The North Don Sanitary Relief Sewer will divert flows from the North Don Sewer at Carville Road to the Bathurst Collector Trunk Sewer to alleviate capacity constraints in the existing North Don Sewer system and support growth in Richmond Hill, Vaughan and Markham. The construction works for this project are on schedule with commissioning set for late Q4 2014 (last reported: Q4 2014).

### **Key component of Region's long-term servicing strategy is Peel and Toronto cost-shared projects**

Provision of water and wastewater services through partnerships with Toronto and Peel Region are a key component of the Region's long-term servicing strategy. Six water projects and four wastewater projects in the Region of Peel, and six water projects in the City of Toronto are currently underway to provide capacity to service growth in the Region, including nine in construction. Regional staff conducts regular meetings with Toronto and Peel staff to discuss issues regarding supply commitments, including cost-shared project delivery schedules. In February 2014, the amended water supply agreement with the Region of Peel was executed, which will decrease the 2031 water supply from Peel from 388 MLD to 331 MLD. Both the Region of Peel and the City of Toronto are on track to meet their long-term water supply agreement commitments to the Region.

### **Hanlan Feedermain project is in construction**

In 2009, the Region of Peel completed a Schedule 'C' Class Environmental Assessment study to identify the preferred route for the new 2400mm diameter Hanlan Feedermain, which will extend approximately 12 kilometres north from Lakeview Water Treatment Plant to Hanlan Pumping Station. York Region has secured 331 MLD in supply and transmission capacity from Region of Peel to year 2031. The water supply from the Region of Peel, combined with water supply from City of Toronto, services existing and future growth in Vaughan, King City, Kleinburg-Nashville, Richmond Hill and Markham to year 2031 and also provides redundancy to the existing feedermain. Contract No. 1 (tunnelling) closed September 2013, Contract No. 2 (open cut) closed October 2013 and Contract No. 3 (open cut/tunnelling) closed January 2014, which are all in construction. The project, in its entirety, will be completed in early 2017 (last reported: late 2016).

### **Durham York Energy Centre nearing completion of construction**

York Region and Durham Region have partnered to construct an energy-from-waste facility through a Design Build Operate arrangement. The facility, located in the Municipality of Clarington in Durham Region, will have initial capacity of 140,000 tonnes per year of which York has 30,000 tonnes per year. Future expansion contemplates an expansion to 250,000 tonnes per year and later, up to 400,000 tonnes per year. Oversizing items have been included in the existing contract to accommodate future expansion and are being cost shared 50/50 by York and Durham Regions. Council approved Covanta Energy as the preferred vendor in April 2009. Covanta continues to forecast project completion by the December 2014 service commencement date; construction is currently 90 per cent complete.

The first delivery of waste is scheduled for Q3/Q4 2014. This delivery starts the formal acceptance testing phase required under the Environmental Compliance Approval and Project Agreement. The Regions and HDR Inc. (the owner's consultant) will ensure all requirements of the Environmental Assessment and Environmental Compliance Approval are in place prior to delivering waste to the facility. An independent third-party audit will be conducted for the acceptance testing phase.

### **New Primary Trunk Sewer required to service future growth beyond 2026**

The Primary Trunk Sewer project involves constructing a new sewer along a yet-to-be-determined route, from the terminus of the Southeast Collector Trunk Sewer to the Duffin Creek Water Pollution Control Plant in the City of Pickering. The new primary trunk sewer will provide additional conveyance capacity and redundancy to the existing primary trunk sewer. The project is now scheduled for completion beyond 2026 (last reported: 2026) and timing will be reassessed through future condition assessment and infrastructure planning studies. An Environmental Assessment to select the preferred solution and alignment for the new primary trunk sewer will be determined through the Water and Wastewater Master Planning process.

### **Formal Notice of Commencement has been issued for York Region's 2015 Water and Wastewater Master Plan Update**

A master plan is a comprehensive long-range plan intended to set policy and guidelines for infrastructure planning to support approved growth under the *Regional Official Plan*. It is a blueprint for future infrastructure while supporting a vision that is embraced by the Region's policies, guidelines and priorities. Under the metric of Integrity, Innovation and Integration, the *2015 Water and Wastewater Master Plan Update* has three key objectives:

- Optimize integration of capital growth project programs, and asset replacement and rehabilitation programs
- Develop a comprehensive plan to inform infrastructure investment
- Promote environmental integrity and sustainability of Regional and local municipal assets

Working with the Region's nine local municipal partners, enhancing modelling, creating interconnected databases, aligning programs and policies to benefit local and Regional infrastructure, and asset management that manages the useful life of infrastructure – all roll into a mutually beneficial master planning process. Notice of Commencement for the Master Plan Update was issued in July 2014.

### **Link to Key Council-approved Plans**

Timely delivery of critical infrastructure projects identified in this report is essential to ensure that water and wastewater system capacity is available to service targeted growth of the *Regional Official Plan*. By prioritizing and integrating delivery of critical infrastructure projects with timing of planning approvals to address growth needs in an efficient manner, community benefit is being optimized in accordance with the goals of the *2011-2015 Strategic Plan* to continue to deliver and sustain critical infrastructure and support focused growth along Regional centres and corridors.

## **5. FINANCIAL IMPLICATIONS**

### **\$3.2 billion in capital works identified over the next ten years in the approved 2014 Environmental Services Budget and 10 Year Capital Plan**

The approved 2014 Environmental Services Budget and 10 Year Capital Plan includes \$3.2 billion in water, wastewater, waste management and forestry capital projects. Of the total \$3.2 billion of capital works in the capital program, \$2.1 billion or 66 per cent will be funded through development charges, \$800 million or 25 per cent through user rates, \$235 million or seven per cent from other sources including other municipal servicing partners and reserves with the remaining from tax levy. Total 2014 Capital Spending Authority for Environmental Services Capital is \$1.3 billion. Additional Capital Spending Authority will be requested as projects progress and defined requirements are established. The majority of these works are debt financed with debt repaid through development charges. As part of the annual budget process, associated funding and resource requirements for operations and asset management of expanded infrastructure systems continue to be an area of focus to inform financial implications of growth. A summary of infrastructure project costs is provided in Table 5.

**Table 5**  
 2014 Cost Estimates for Key Infrastructure Projects

<b>Project</b>	<b>Estimated Total Project Cost*</b>	<b>Remaining Estimated Cost in 10 Year Plan*</b>	<b>Completion Date</b>
Queensville/Holland Landing/Sharon York-Durham Sewage System Connection	\$150.1 M	\$115.7 M	2015
Southeast Collector Trunk Sewer	\$563.6 M	\$175.0 M	2014
Upper York Sewage Solutions	\$507.7 M	\$482.8 M	2018
Kennedy Road Watermain	\$73.7 M	\$31.4 M	2015
West Richmond Hill Pumping Station	\$48.4 M	\$45.9 M	2015
West Vaughan Sewage Servicing	\$248.2 M	\$244.8 M	2020
Leslie Street Pumping Station Upgrades	\$31.7 M	\$21.4 M	2016
Northeast Vaughan Servicing	\$170.6 M	\$170.5 M	2021
Yonge Street/ Highway 7 Regional Centre Servicing	\$44.7 M	\$44.2 M	2021
North Don Relief Sewer	\$17.5 M	\$14.2 M	2014
Toronto Cost Shared Projects	\$424.7 M	\$94.0 M	2021
Peel Water Cost Shared Projects	\$462.3 M	\$141.8 M	2021
Peel Wastewater Cost Shared Projects	\$55.8 M	\$43.4 M	2021
Duffin Creek Water Pollution Control Plant Outfall	\$11.5 M	\$9.3 M	2015
Duffin Creek Water Pollution Control Plant Stages 1 & 2 Upgrades	\$267.0 M	\$221.2 M	2017
<b>Subtotal</b>	<b>\$3,077.5 M</b>	<b>\$1,855.6 M</b>	
<b><u>Other Capital</u></b>			
Other Water Growth Capital Projects		\$263.5 M	
Other Wastewater Growth Capital Projects		\$231.4 M	
Water Rehabilitation / Replacement		\$235.2 M	
Wastewater Rehabilitation / Replacement		\$485.5 M	
Waste Management		\$72.6 M	
Forestry		\$21.0 M	
<b>TOTAL Approved 2014 Budget and 10 Year Capital Plan</b>		<b>\$3,164.8 M</b>	

*\*Estimated costs are as approved for the 2014 10 Year Plan. Estimates are subject to change as part of the 2015 budget process due to completed Environmental Assessments, advanced design and more detailed costing information.*



## **6. LOCAL MUNICIPAL IMPACT**

### **Staff continues to work closely with municipalities affected by capital works program to minimize impacts on planned community growth**

Priority projects detailed in this report are crucial to providing timely servicing capacity to municipalities. This water and wastewater capacity is necessary to meet growth expectations, while maintaining a high level of environmental and public health protection.

### **Additional servicing capacity for development is created through timely completion of key infrastructure projects**

Release of additional capacity, as well as granting of approvals in each phase of the approval process, is contingent on projects being completed as planned. Projects are continually monitored to ensure that risk of delay is minimized and capacity will be available as planned. Staff continues to collaborate with local municipalities affected by the capital works program to ensure impacts to planned community growth are minimized to the extent possible considering capacity constraints created by any delay of these projects. A collaborative approach with the local municipalities will continue to assist with reporting on their local capacity allocation in a timely manner to support Regional capacity assignment and ensure fiscal sustainability.

### **Reporting by local municipalities will continue to assist in monitoring system capacity**

Senior public works and planning staff from all local municipalities and from the Region will continue to work together on annual reporting of development applications and allocation of previously assigned servicing capacity. This information provides a clear understanding of available existing capacity and timing for anticipated servicing needs of planned and approved growth. Coordinated efforts with local municipalities will also continue on implementation of inflow and infiltration reduction and water conservation and efficiency programs to reduce flows, thereby better managing system risk while continuing to increase available system capacity.

## **7. CONCLUSION**

### **\$3.2 billion 10 Year Capital Plan includes required projects for current and future capacity assignments**

This report provides Council with a status of priority projects within the 10 Year Capital Plan and their relationship to timing of capacity availability. Continuing to monitor these projects will ensure that both capacity allocation and granting of planning approvals are

synchronized with project delivery schedules. The Approved 2014 10 Year Capital Plan includes critical projects required to unlock current and future capacity assignments. For more information on this report, please contact Mike Rabeau, Director, Capital Planning and Delivery, Environmental Services at (905) 830-4444 Ext. 75157 or Stephen Fung, Director, Infrastructure Asset Management at Ext. 73025.

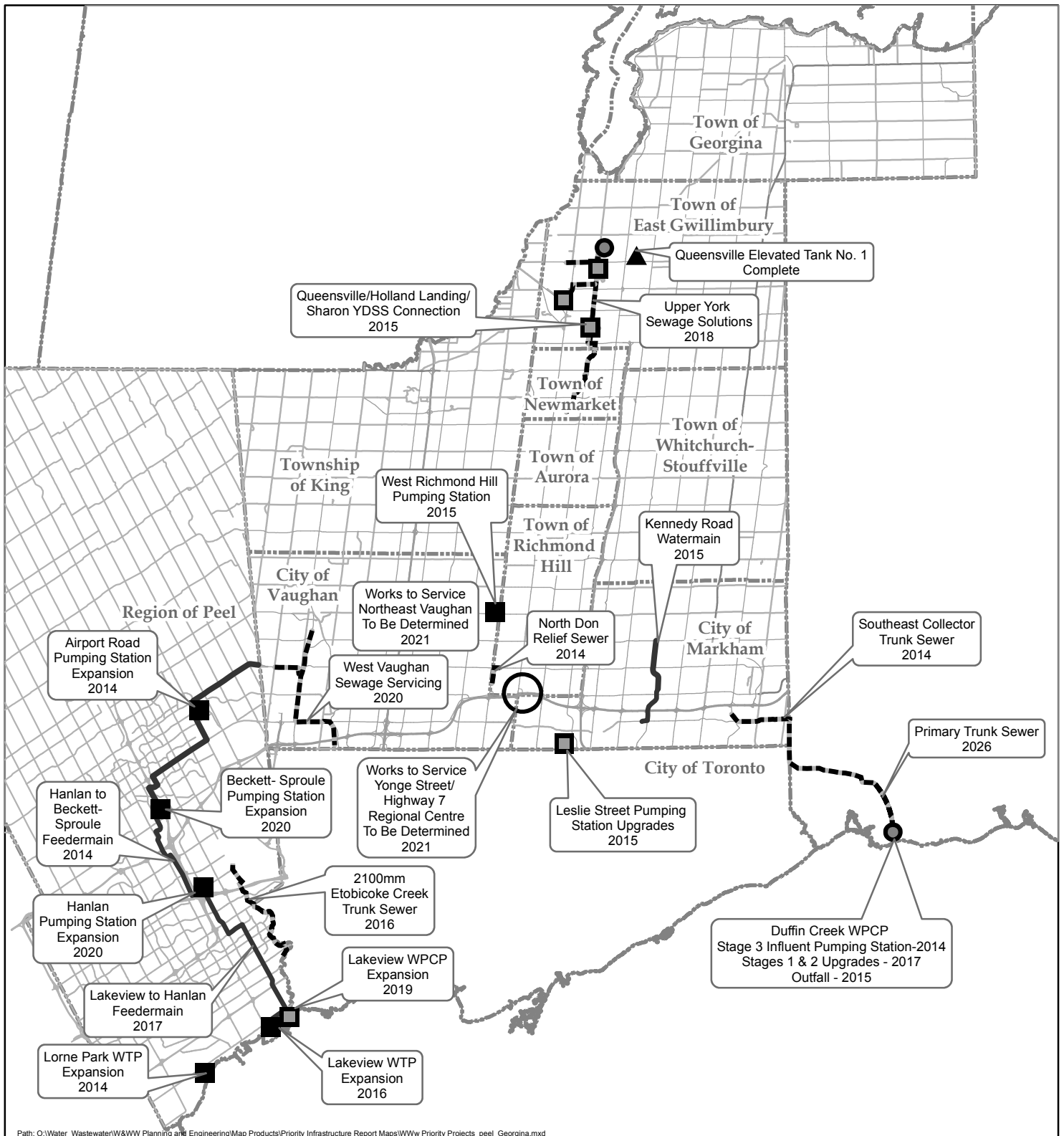
The Senior Management Group has reviewed this report.

*Attachment (2)*

## Status of Key Infrastructure Projects

Project Name	Description	Current Status	Expected Project Commissioning Date
Queensville/Holland Landing/Sharon Servicing	Elevated tank and new pumping stations and linear works	Construction	<b>Q4 2015</b> (last reported 2015)
Southeast Collector Sewer	Twinning of existing trunk sewer to provide additional conveyance capacity	Construction	Late 2014 (last reported: Late 2014)
Duffin Creek Stages 1 & 2 Upgrades	Upgrade and refurbish existing Stages 1 & 2	Construction	<b>Q2 2017</b> (last reported: 2016)
Duffin Creek Stage 3 Influent Pumping Station	New pumping station to convey sewage to Stage 3 Liquid Process Expansion	Commissioning	Q2 2014 (last reported: Q1 2014)
Duffin Creek Outfall	New outfall to address diffusion requirements and increase plant capacity to 630MLD	Class Environmental Assessment	2015 (last reported: 2015)
Upper York Sewage Solutions	Sanitary servicing solution to accommodate growth in Holland Landing, Queensville, Sharon, and parts of Aurora and Newmarket	Individual Environmental Assessment	Late 2018 (last reported: Late 2018)
Kennedy Road Watermain	Watermain along Kennedy Road from Milliken Pumping Station to Major Mackenzie Drive	Construction	<b>Q2 2015</b> (last reported: Q4 2014)
West Richmond Hill Pumping Station	New pumping station to pump water from Pressure District (PD) 6 to PD7 and PD8	Construction	Q4 2015 (last reported: Q4 2015)
West Vaughan Sewage Servicing	Sanitary servicing solution to accommodate growth in West Vaughan area	Class Environmental Assessment	Q3 2020* (last reported: Q3 2020)
Leslie Pumping Station Upgrades	Upgrades include pump replacement, electrical & standby power improvements	Construction	<b>Q1 2015</b> (last reported: Q4 2014)
Primary Trunk Sewer	New sewer to provide additional conveyance capacity	Project Initiation	After 2026 (last reported: After 2026)
North Don Relief Sewer	New sewer to provide relief for existing YDSS conveyance capacity	Under construction	Q4 2014 (Last reported: Q4 2014)
Yonge Street/Highway 7 Regional Centre	Water and wastewater servicing solution to accommodate growth	Class Environmental Assessment	2021 (Last reported: 2021)
Northeast Vaughan Servicing	Water and wastewater servicing solution to accommodate growth in East Vaughan	Class Environmental Assessment	2021 (last reported: 2021)

\*The Region has advanced upgrades at the Humber Sewage Pumping Station that will sufficiently increase the station's pumping capacity to support growth in the interim until West Vaughan Sewage Servicing project is complete



Path: O:\Water\_Wastewater\W&WW Planning and Engineering\Map Products\Priority Infrastructure Report Maps\WWw Priority Projects\_peel\_Georgina.mxd

# LOCATION PLAN Key Infrastructure Projects

Environmental Services Capital Infrastructure Status  
September 4, 2014



Produced by: Infrastructure Asset Management Branch  
Environmental Services Department  
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## Legend

- Priority Water Projects & Expected Commissioning Date
- Expected Commissioning Date
- Priority Wastewater Projects & Expected Commissioning Date
- Expected Commissioning Date

# **Capital Infrastructure Status Update**

**Committee of the Whole**

**Mike Rabeau  
Environmental Services  
September 4, 2014**

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# WHAT WE HAVE ACHIEVED IN THE LAST SIX MONTHS

## Water

### Tendered

- Nashville Watermain (Whisper Lane to Hwy 27)
- East Gwillimbury Water Meter Chamber
- Nobleton South Elevated Tank Recoating
- Deer Park Elevated Tank Recoating
- Aurora East Elevated Tank
- West Richmond Hill Watermains
- Black Creek Sewage Pumping Station
- Newmarket Sewage Pumping Station

### Commissioned

- Richmond Hill Pumping Station
- Elgin Mills Watermain
- London Road and Holland Landing West Elevated Tanks Recoating

## Wastewater

### Tendered

- Duffin Creek Stage 1 & 2 Upgrades and Refurbishment
- Sharon Trunk Sanitary Sewer

### Commissioned

- Duffin Creek Stage 3 Influent Pumping Station

### Environmental Assessments

- Upper York Sewage Solutions Submitted to MOECC



# WHAT WE WILL ACHIEVE IN THE NEXT SIX MONTHS

## Water

### Environmental Assessments

- Yonge Street / Highway 7 Regional Centre Water and Wastewater Servicing

### Tender / Award

- Sutton Water Servicing - Dalton Road Watermain
- Keswick Water Treatment Plant

### Commission

- Orchard Heights Booster Pumping Station
- West Park Heights Reservoir
- Nobleton Water Supply - Pumphouse and Well 5
- Glenway Reservoir Expansion
- Keswick Elevated Tank Reservoir Upgrades
- Bayview Avenue Watermain
- Oak Ridges Wells Decommissioning and Demolition

## Wastewater

### Tender / Award

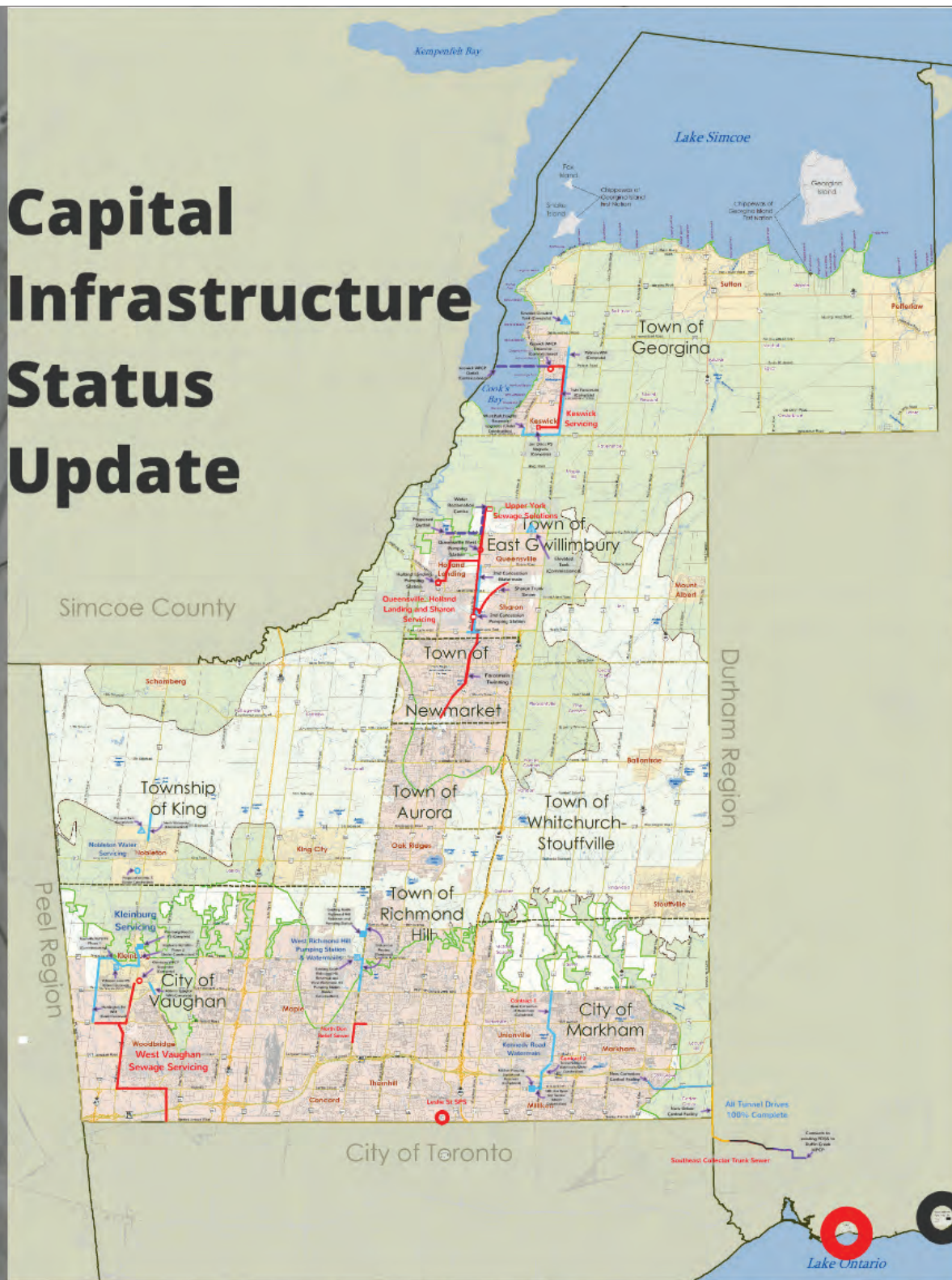
- Rehabilitation of Sewer Laterals for the Private Property Inflow and Infiltration Project
- Aurora Sewage Pumping Station Hauled Wastewater Receiving Upgrade
- Bogart Creek Sewage Pumping Station Upgrade
- Sutton Lagoon Diversion
- YDSS Rehabilitation in Aurora, Vaughan and Markham
- 16th Ave Sewer Rehabilitation
- Hound Trail Flume Meter Replacement

### Commission

- Duffin Creek Stage 1 & 2 Electrical Substation
- Duffin Creek Stage 1 & 2 Disinfection Facility
- North Don Relief Sewer
- Durham-York Energy from Waste Facility
- Southeast Collector Trunk Sewer
- Leslie Sewage Pumping Station (New Pumps)



# Capital Infrastructure Status Update





# DUFFIN CREEK WATER POLLUTION CONTROL PLANT

## STAGE 3 EXPANSION

### Budget:

\$628 Million

\$610 Million delivered

### Status:

98% complete

### Commissioning:

Liquids Process

expansion completed

Solids Process expansion  
in commissioning

Influent Pumping Station  
complete

## STAGE 1&2 UPGRADES

### Budget:

\$267 Million

\$70 Million delivered

### Status:

4 contracts in construction

### Commissioning:

Late 2016 through 2017

## OUTFALL

### Budget:

\$2 Million - Modification to  
existing Outfall

### Status:

Class EA - Filed Nov 2013

Ministry Review of Part II

Order Requests

- Submission Sept 30, 2014

### Commissioning:

Modification - 2016

New Outfall - Beyond 2031







**Contract 2**  
Tunnel Section of  
Watermain (Under  
Construction)

New Corrosion  
Control Facility

Box Grove

Cedar  
Grove  
New Odour  
Control Facility

All Tunnel Drives  
100% Complete

Southeast Collector Trunk Sewer

Connects to  
existing YDSS to  
Duffin Creek  
WPCP



# **SOUTHEAST COLLECTOR TRUNK SEWER**

## **Budget:**

\$564 Million

\$500 Million delivered to date

## **Status:**

All tunnel drives 100% complete  
Odour Control Facility, Air fans, and  
Corrosion Control Facility are in final  
stages of construction

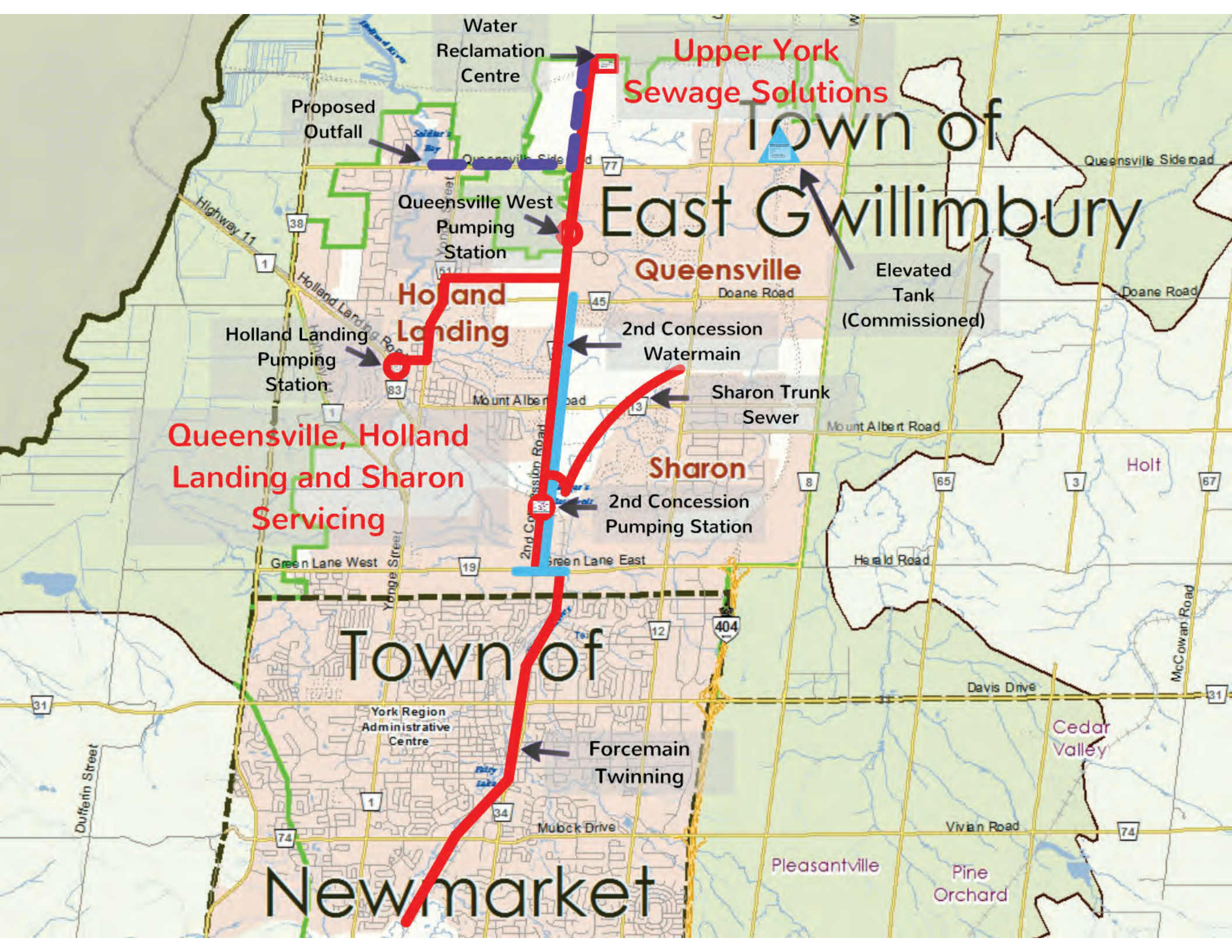
## **Commissioning:**

Late 2014

Total completion Q3 2015









# QUEENSVILLE, HOLLAND LANDING, AND SHARON WASTEWATER SERVICING

## Budget:

\$150 Million

\$43 Million delivered to date

## Status:

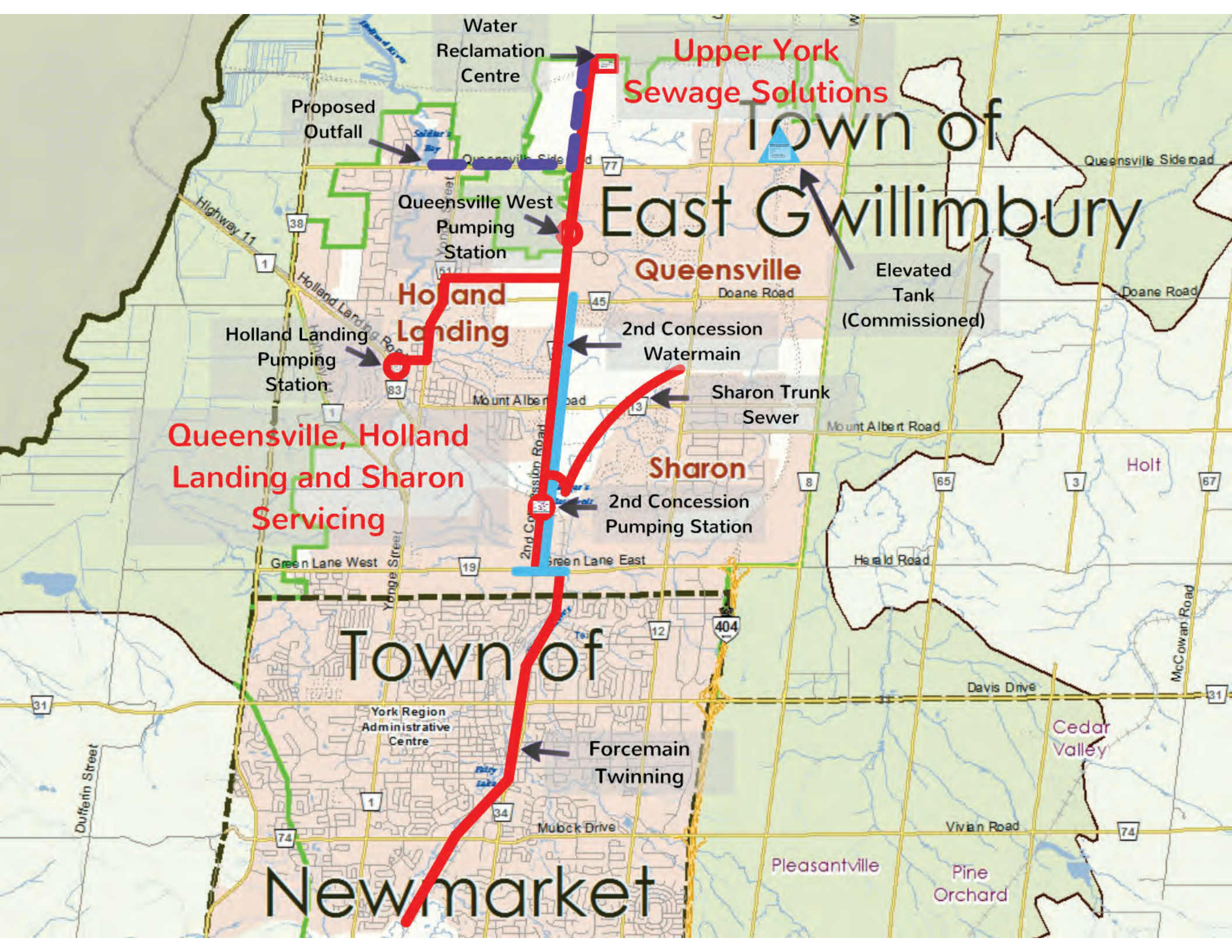
All three pumping stations and linear works under construction

## Commissioning:

Q4 2015







**Upper York Sewage Solutions**

**Town of East Gwillimbury**

**Queensville**

**Holland Landing**

**Sharon**

**Queensville, Holland Landing and Sharon Servicing**

**Town of**

**Newmarket**

Water Reclamation Centre

Proposed Outfall

Queensville West Pumping Station

Holland Landing Pumping Station

2nd Concession Watermain

Sharon Trunk Sewer

2nd Concession Pumping Station

Elevated Tank (Commissioned)

Forcemain Twinning

York Region Administrative Centre

Cedar Valley

Pleasantville

Pine Orchard

Highway 11

Holland Landing Road

Mount Albert Road

Green Lane West

Green Lane East

Herald Road

Davis Drive

Mubck Drive

Vivian Road

Dufferin Street

McCowan Road

Highway 74

Highway 31

Highway 67

Highway 3

Highway 65

Highway 8

Highway 13

Highway 45

Highway 19

Highway 83

Highway 1

Highway 38

Highway 77

Highway 1

Highway 74

Highway 31

Highway 34

Highway 12

Highway 404

Highway 77

Highway 1

Highway 1

Highway 1



# UPPER YORK SEWAGE SOLUTIONS

## Budget:

\$508 Million

\$26 Million delivered to date

## Status:

EA report submitted for MOECC approval - July 2014

Detailed design assignment awarded - June Council

## Anticipated Commissioning:

Phosphorus off-setting program Q4 2017

YDSS Modifications Q2 2018

Water Reclamation Centre Q4 2018









# KENNEDY ROAD WATERMAIN - MARKHAM

## Budget:

\$74 Million

\$51 Million delivered to date

## Status:

Contract 1 complete

Contract 2 60% complete

## Commissioning:

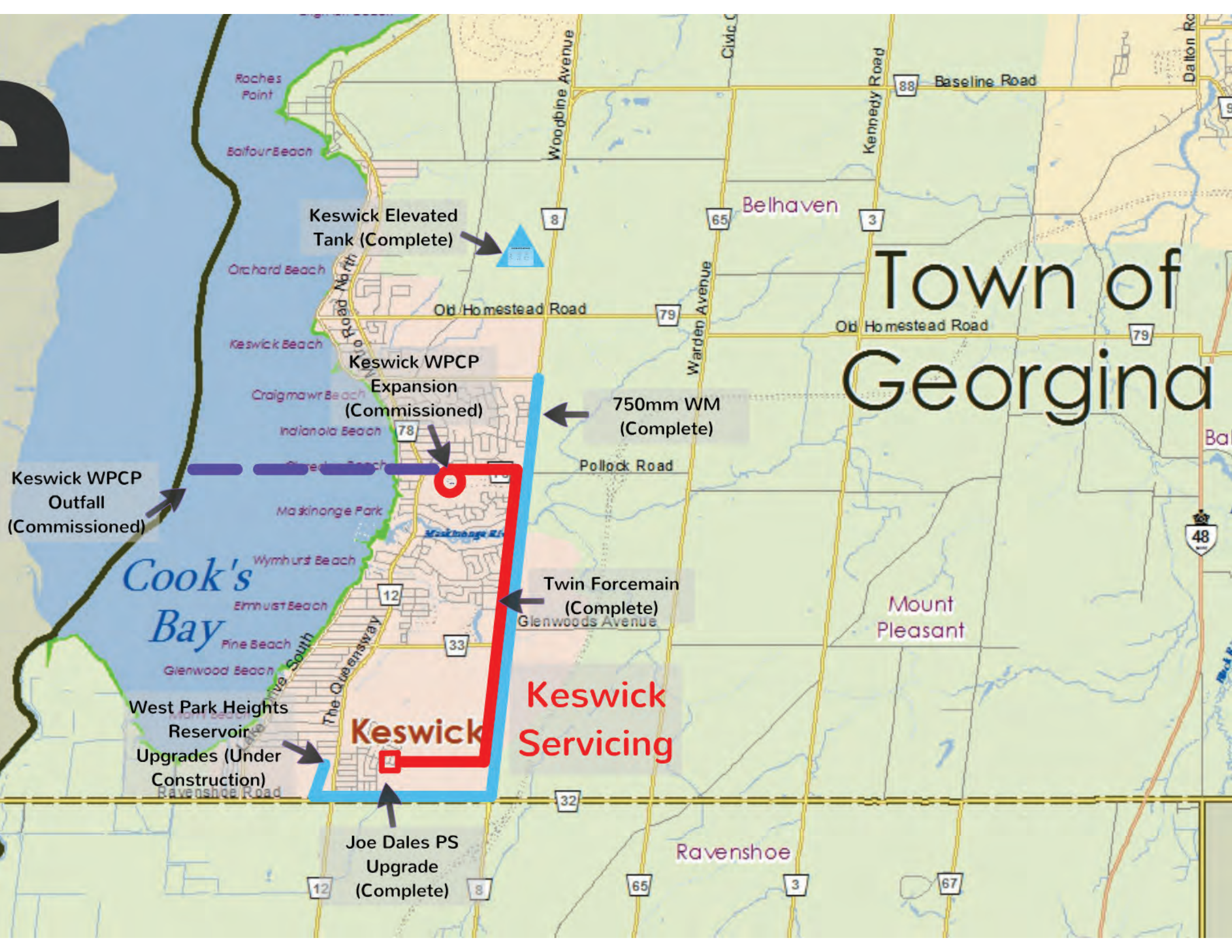
Contract 1 and Contract 2 - Q4 2015







# Town of Georgina





# KESWICK WASTEWATER SERVICING

## WPCP EXPANSION / OUTFALL

### Budget:

\$97 Million

\$92 Million delivered to date

### Status:

WPCP commissioned Q2 2013

Outfall commissioned Q4 2013

## FORCEMAIN / PUMP STATION

### Budget:

\$21 Million

### Status:

Completed Q4 2012





Regional

# Kleinburg Servicing

Nashville Rd WM - Phase 1 (Commissioning)

Kleinburg Booster PS (Complete)

Nashville Rd WM - Phase 2 (Under Construction)

Kleinburg WPCP Expansion (Complete)

Whisper Lane PS (Commissioned)

400mm Islington WM (Complete)

Huntington Rd WM (Commissioned)

# City of Vaughan

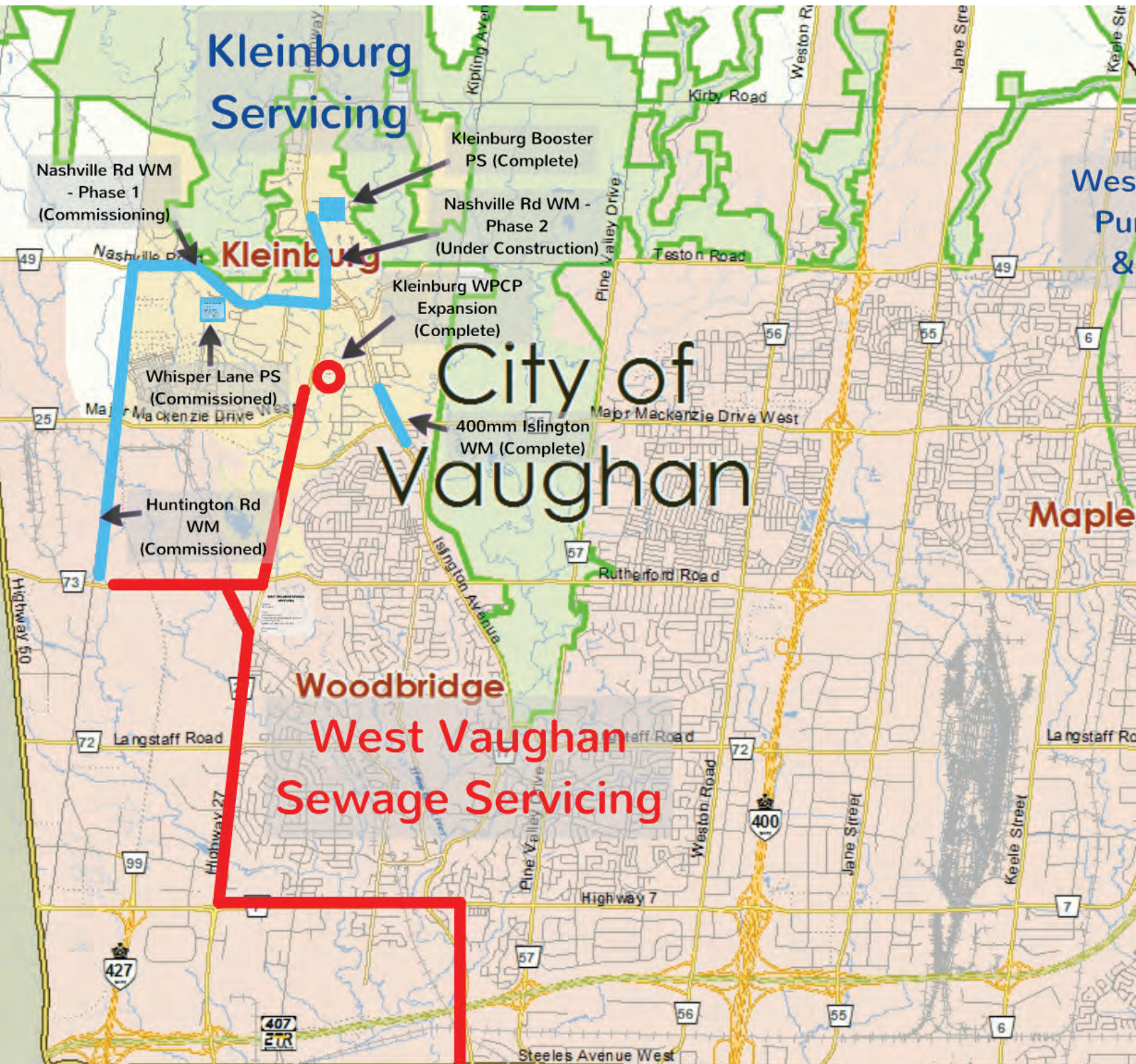
# Woodbridge West Vaughan Sewage Servicing

# West Richmond Pumping Station & Watermain

Existing South Richmond Reservoir and West Richmond Pumping Station (Under Construction)

# North Relief

# Concord





# KLEINBURG WATER SERVICING

## Budget:

\$37 Million

\$26 Million delivered to date

## Status:

Islington Avenue Watermain completed

Huntington Road Watermain completed

Nashville Road (Phase 1) Watermain completed

Whisper Lane Booster Pumping Station completed

Nashville Road Watermain (Phase 2) under construction

## Commissioning:

September 2015





Regional

# Kleinburg Servicing

Nashville Rd WM - Phase 1 (Commissioning)

Kleinburg Booster PS (Complete)

Nashville Rd WM - Phase 2 (Under Construction)

Kleinburg WPCP Expansion (Complete)

Whisper Lane PS (Commissioned)

400mm Islington WM (Complete)

Huntington Rd WM (Commissioned)

# Woodbridge West Vaughan Sewage Servicing

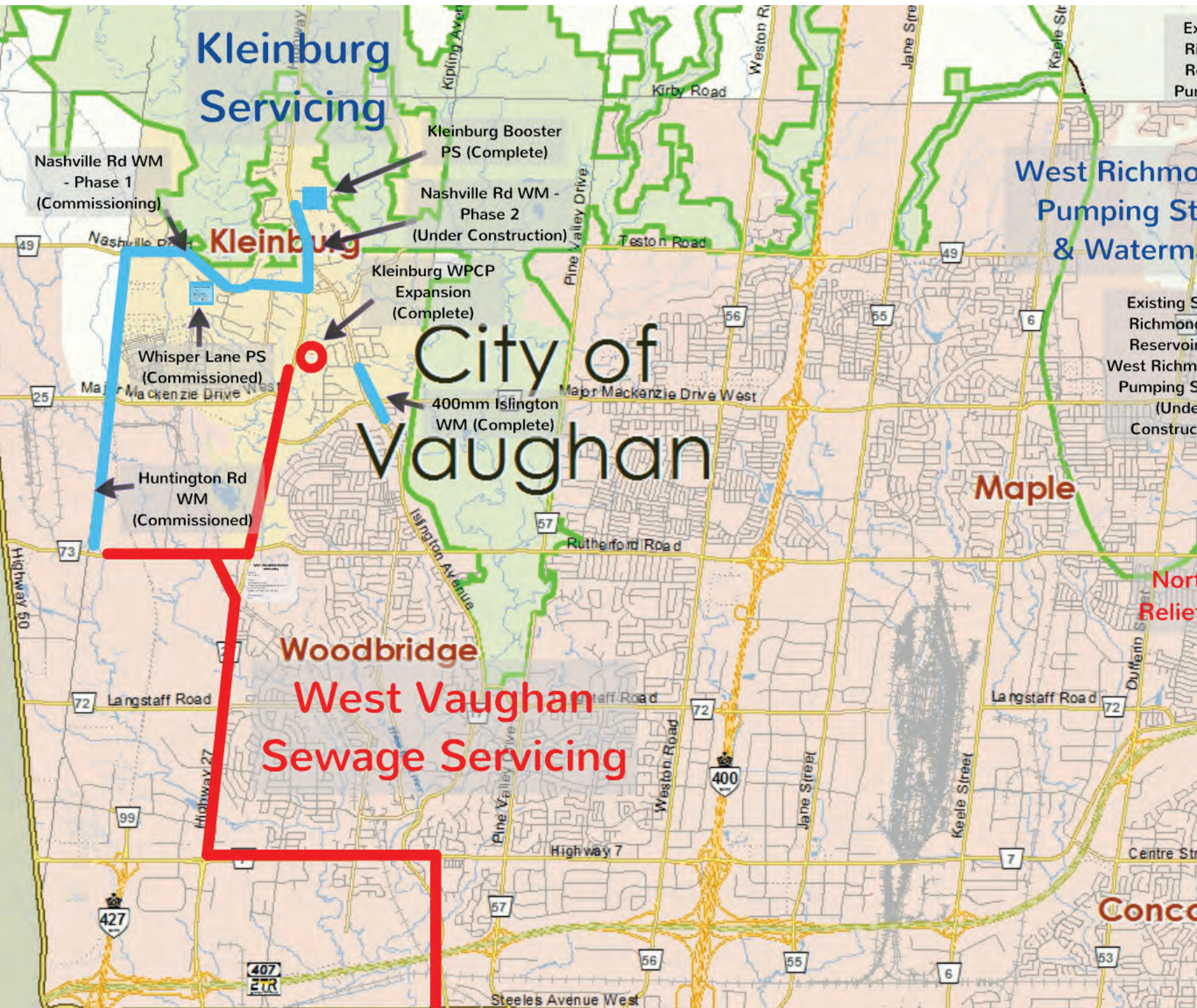
# City of Vaughan

West Richmond Pumping Station & Watermain

Existing South Richmond Reservoir and West Richmond Pumping Station (Under Construction)

North Relief

Concord





# **WEST VAUGHAN SEWAGE SERVICING**

## **Budget:**

\$248 Million

## **Status:**

EA completed in 2013

Procurement for design/engineering services  
completed Q3 2014

Tendering for construction Q4 2016

## **Commissioning:**

2020



# Township of King

Elevated Tank  
(Completed)

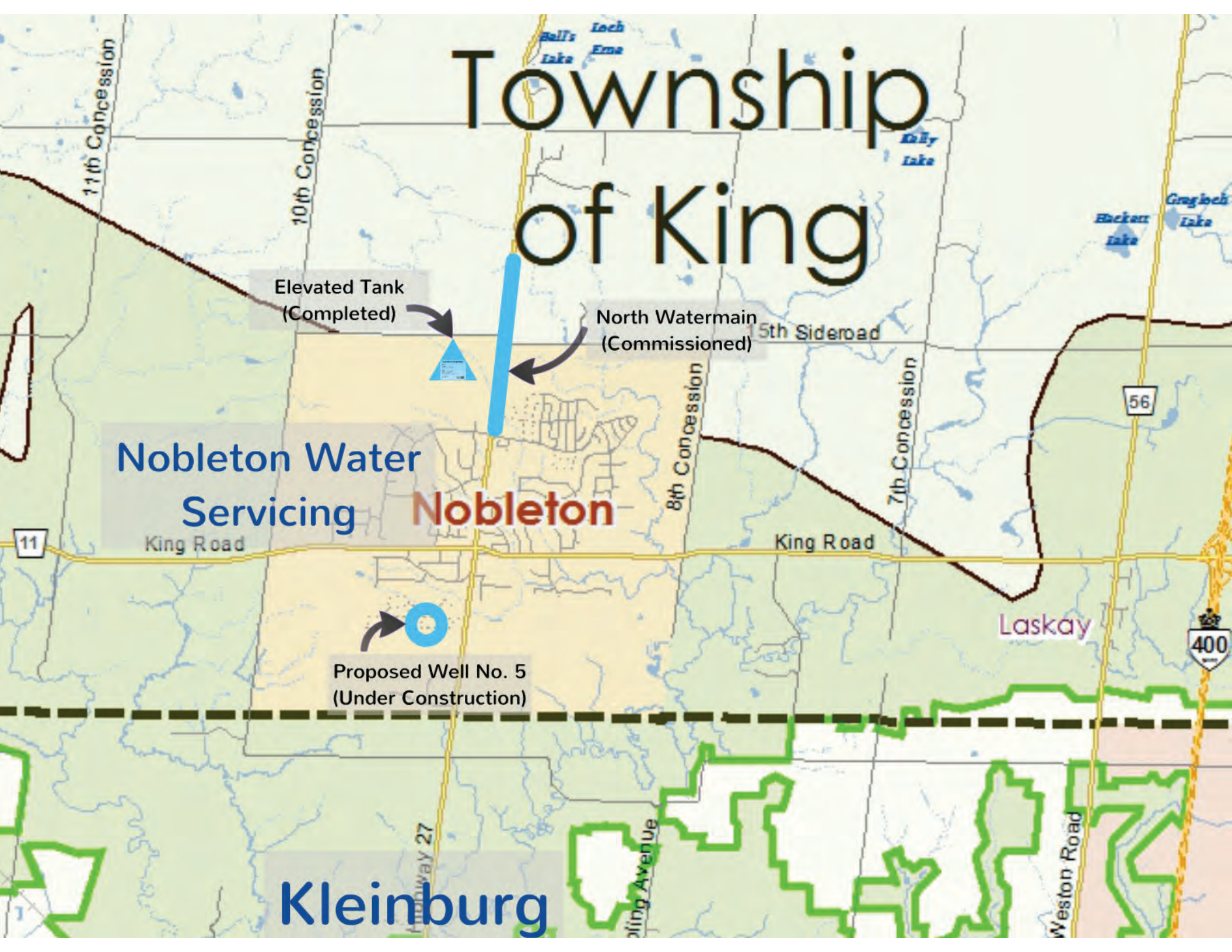
North Watermain  
(Commissioned)

Nobleton Water  
Servicing

**Nobleton**

Proposed Well No. 5  
(Under Construction)

**Kleinburg**





# NOBLETON WATER SERVICING

## Budget:

\$17 Million

\$15 Million delivered to date

## Status:

Elevated Tank completed

Watermain completed

Well Pumphouse under construction

## Commissioning:

Q3 2014





# Town of Richmond Hill

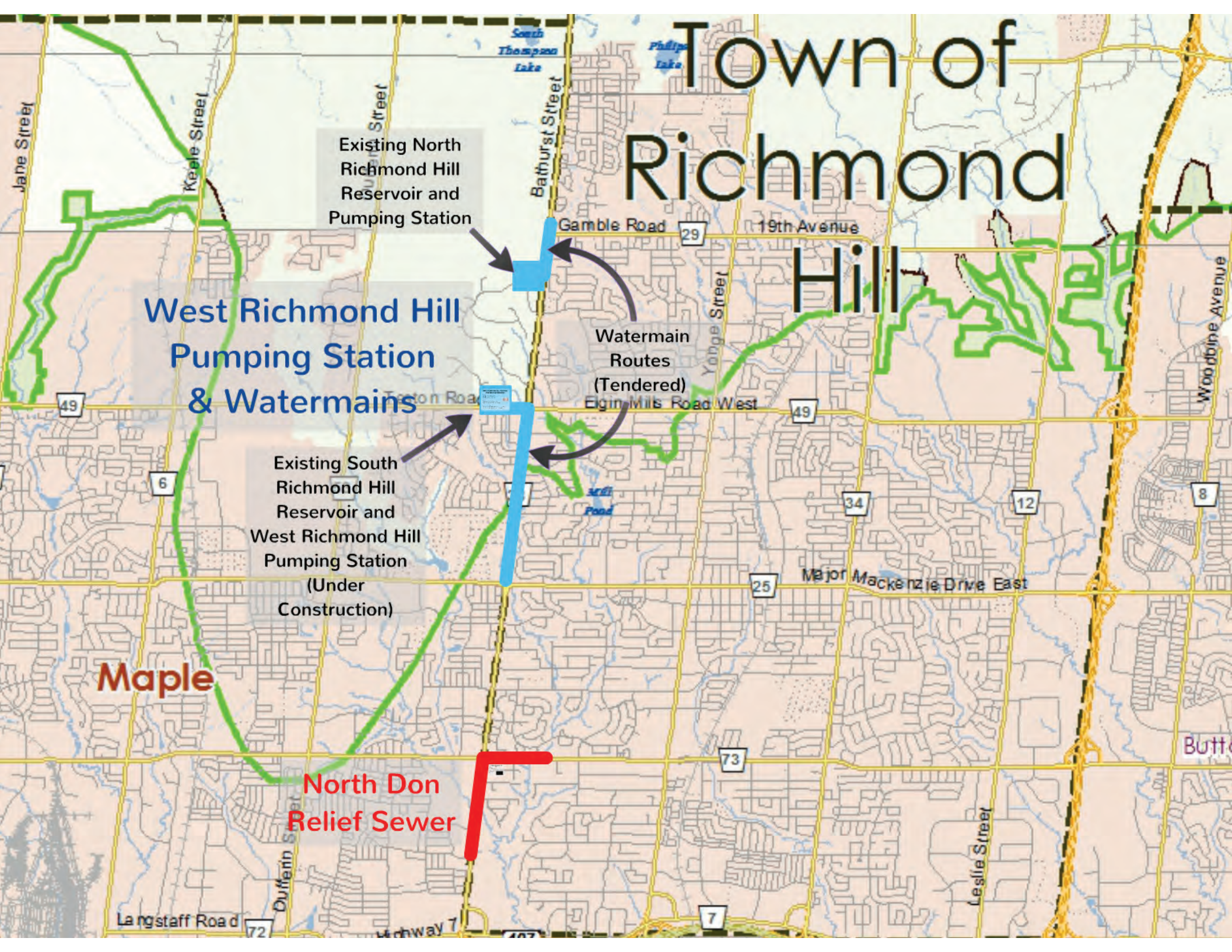
Existing North Richmond Hill Reservoir and Pumping Station

West Richmond Hill Pumping Station & Watermains

Existing South Richmond Hill Reservoir and West Richmond Hill Pumping Station (Under Construction)

Watermain Routes (Tendered)

North Don Relief Sewer





# WEST RICHMOND HILL PUMPING STATION & WATERMAINS

## Budget:

\$30 Million for Pumping Station

\$18 Million for Watermains

## Status:

Pumping Station 20% complete

Watermains tendered - Award Q3 2014

## Commissioning:

West Richmond Hill Pumping Station - Q2 2016

West Richmond Hill Watermains - Q4 2015





# Town of Richmond Hill

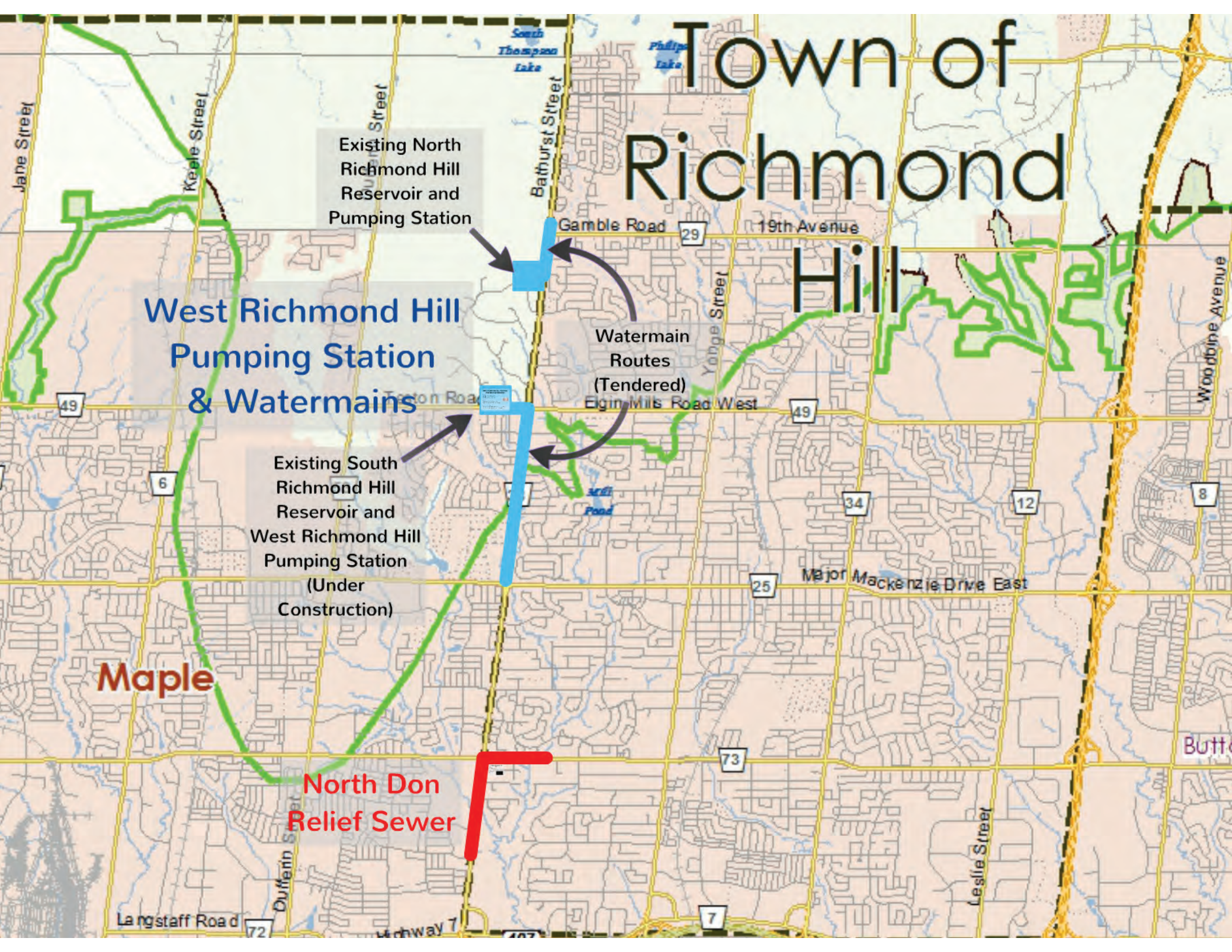
Existing North Richmond Hill Reservoir and Pumping Station

West Richmond Hill Pumping Station & Watermains

Existing South Richmond Hill Reservoir and West Richmond Hill Pumping Station (Under Construction)

Watermain Routes (Tendered)

North Don Relief Sewer





# NORTH DON SANITARY RELIEF SEWER

## Budget:

\$17 Million

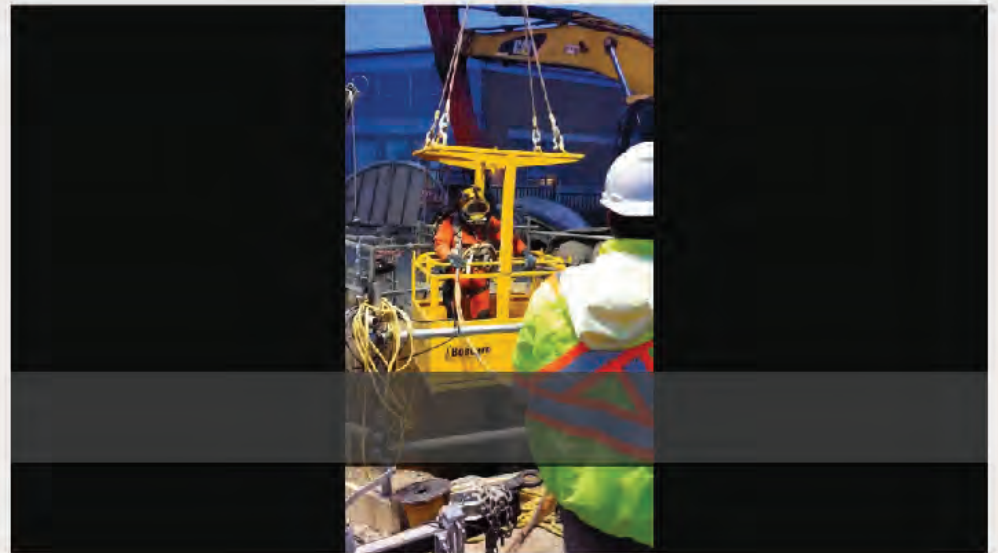
\$16 Million delivered to date

## Status:

Construction complete

## Commissioning:

Q4 2014







# City of Markham

## Unionville Kennedy Road Watermain

## Markham

### Contract 1

Open Cut Section of Watermain (Completed)

### Contract 2

Tunnel Section of Watermain (Under Construction)

Leslie St SPS

Milliken Pumping Station and Reservoir (Completed)

New Corrosion Control Facility

14th Ave Open Cut Section (Under Construction)





# LESLIE STREET SEWAGE PUMPING STATION UPGRADE

## Budget:

\$32 Million

\$18 Million delivered to date

## Status:

Under construction

## Commissioning:

Additional pumping capacity to be commissioned Q1 2015

Total completion 2016



# PEEL COST SHARED WORKS

## Water Projects:

### Budget:

\$626 Million

\$495 Million delivered

### Status:

17 projects completed

3 projects in construction

1 project in design

2 projects to be commenced

## Wastewater Projects:

### Budget:

\$106 Million

\$53 Million delivered

### Status:

11 projects completed

2 projects in construction

2 projects in design





# TORONTO COST SHARED WORKS

## Budget:

\$459 Million

\$206 Million delivered to date

## Status:

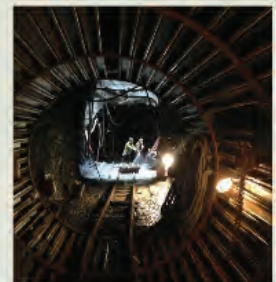
12 projects completed

Gerrard Street Watermain in construction

Ellesmere Standby Power Addition in design/procurement

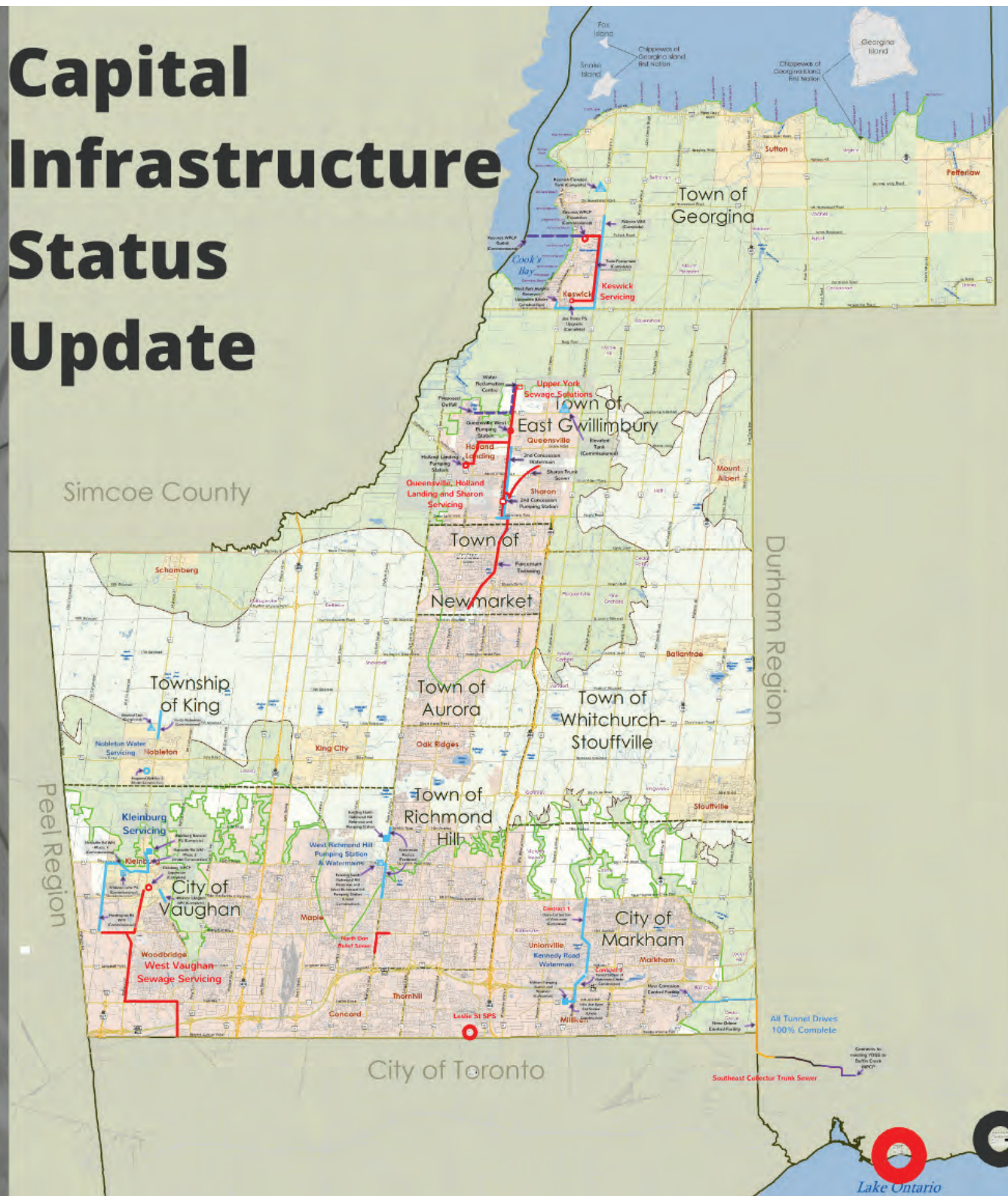
Joint Optimization Study (JOS) Model

Calibration study under way





# Capital Infrastructure Status Update





# DURHAM-YORK ENERGY CENTRE

## Budget:

\$284 Million - Total project budget (70% delivered)

\$74 Million - York Region portion of project budget

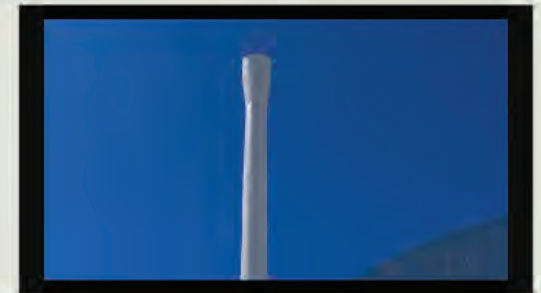
\$49 Million - Paid by Region to date

## Status:

Under construction

## Commissioning:

Ongoing - 2014





# Capital Infrastructure Status Update

