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WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Environmental Services Committee recommends the adoption of the recommendation contained in the following report dated December 16, 2010, 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 Regional Council on the status of key water and wastewater infrastructure projects required to meet system demands identified as triggers for release of additional capacity and approvals under the *Planning Act*.

3. BACKGROUND

Capacity assigned to local municipalities serviced by York Durham Sewage System totaling 1,078,328 people to facilitate growth to the end of 2013

In 2010, Regional Council assigned capacity to local municipalities to permit a total serviced population up to 1,078,328 within the York Durham Sewage System (YDSS) and Peel diversion service areas. This allocation is intended to facilitate growth to the end of 2013.

The major constraint to permit growth beyond 2013 is conveyance capacity limitations in the existing Southeast Collector Trunk Sewer. With growth in the Region being slower than forecasted in 2009, local municipalities will have an ability to maintain their forecast growth rates beyond 2013 to early 2014 which is in line with the current targeted commissioning date for the new Southeast Collector Trunk Sewer.

Capacity assignments made to local municipalities were subject to completion of certain infrastructure projects referred to as triggers. The last update to Council on trigger projects was provided on September 23, 2010 and the next update is scheduled for April 2011.

4. ANALYSIS AND OPTIONS

ALLOCATION TRIGGERS

Capacity triggers allow the Region to ensure occupancy of new homes timed to coincide with available water and wastewater services

Monitoring the progress of trigger projects assists the Region in better controlling two key steps in the planning approvals process:

- Pre-sale of homes
- Final plan approvals

Capacity trigger control is required to avoid premature occupancy of new dwellings in advance of required availability of municipal water and wastewater services.

In general, pre-sales of homes are only permitted if the required infrastructure is expected to be in place within one year and final plan approvals are granted if the required infrastructure is expected to be in place within six months. At the discretion of the local municipality, high-density development may move to final approval within eighteen months of completion of required infrastructure and complex high-rise developments within thirty six months of completion of required infrastructure.

Projects identified to service assigned capacity of 1,078,328 people

When reported in September 2010, the following trigger projects required completion to service up to 1, 078, 328 people:

- Duffin Creek Water Pollution Control Plant Stage 3 Liquid Process Expansion
- King City Water Supply
- Queensville/Holland Landing/Sharon YDSS connection
- Queensville Elevated Tank No. 1
- Richmond Hill Oak Ridges Elevated Tank No. 2
- Leslie Street Watermain

Beyond 1,078,328 people, major projects required within the next ten years include:

- Southeast Collector Trunk Sewer
- Duffin Creek Water Pollution Control Plant Stages 1 and 2 Upgrades
- Duffin Creek Water Pollution Control Plant outfall
- Upper York Sewage Solutions
- Toronto East Water Supply
- West Richmond Hill Pumping Station
- West Vaughan Sewage Servicing

While trigger projects are intended to facilitate growth up to 2013, actual growth in 2013 depends on market conditions and may not necessarily match the allocation target

of 1,078,328 people. York Region's Planning and Development Services Department monitors population growth on a continuous basis. Monitoring results inform the pace of future allocation and timing of projects. In September 2010 staff reported to Planning and Economic Development Committee that the 2009 year-end population serviced by the YDSS and Peel diversion is around 926,000. Given growth experienced in 2010 of approximately 26,000 people, actual growth is slightly below the planning projection of 970,000 people for 2010.

Trigger projects listed above are either under construction or on the critical path to meet committed allocation and/or forecasted demand. Delivery of these multi-year projects requires reasonable time to ensure on time completion without adversely impacting growth. As such, future deviation of actual and forecasted growth rates are not anticipated to warrant revisions of the current delivery schedules for these projects.

KEY PROJECT STATUS HIGHLIGHTS

Most trigger projects required to service 1,078,328 people are within six months of completion

Status of projects required to service 1, 078,328 people are summarized below and in *Attachment 1*. Project locations are illustrated in *Attachment 3*.

Duffin Creek Water Pollution Control Plant Liquid Process Expansion fully operational

Commissioning of the Duffin Creek Water Pollution Control Plant Stage 3 Liquid Process Expansion commenced in third quarter of 2010 and is now fully operational and capable of processing all required flows. The Enhanced Phosphorous Removal contract is approximately 40% complete (last reported 20%) and the main construction contract for Stage 3 Solids Process Expansion awarded in November 2009 is approximately 45% complete (last reported 25%). The Solids Process Expansion is scheduled for completion in the second quarter of 2012 (last update: second quarter of 2012).

King City Water Supply scheduled for completion in Q1 2011

The King City Water Supply project is comprised of a new elevated tank and watermain connection to the York Water System. Both the elevated tank and watermain are under construction and are expected to be completed in the first quarter of 2011 (last update: first quarter of 2011).

Richmond Hill Elevated Tank No. 2 scheduled for completion in April 2011

Completion of the new elevated tank in Oak Ridges is expected by April 2011 (last update: May 2011). Decommissioning of the existing water standpipe, included as part of the construction contract, will be completed by October 2011 (last update: October 2011).

Leslie Street Watermain scheduled for completion in August 2011

Leslie Street watermain is required to service the Aurora East pressure district which primarily includes lands east of Leslie Street in Aurora with a small portion in Newmarket immediately north of the Aurora/Newmarket municipal boundary. The work was awarded in July 2010 and the Notice of Construction was issued in September 2010. As a result of delay in start of construction, due to unanticipated material delivery delay, the expected completion date is now August 2011 (last update: May 2011).

Queensville/Holland Landing/Sharon Servicing scheduled for completion in December 2012

The Queensville/Holland Landing/Sharon YDSS connection contract was tendered in October 2010. The tender closed in December 2010. The expected completion date of this project is December 2012 (last update: December 2012). The works for construction of the Queensville water storage tank No. 1 was tendered in late 2010 and closed in December 2010. Due to longer than expected time required for detail design, the project is now scheduled for completion in May 2012 (last update: December 2011).

Trigger conditions for final plan approval associated with most of the 1,078,328 people capacity assignment have been met

Except for Queensville/Holland Landing/Sharon servicing projects and the Leslie Street watermain project, all projects required to service up to 1,078,328 people are either complete or within six months of completion. As such, the Region advised local municipalities that final plan approval can proceed for all service areas except Queensville/Holland Landing/Sharon and areas in Aurora and Newmarket requiring the Leslie Street watermain.

Final plan approval for Queensville/Holland Landing/Sharon is projected to occur in the second quarter of 2012 and for Leslie Street watermain service areas is projected to occur in the first quarter of 2011.

Conditions for February 2010 allocation of 36,328 people have been met

Of the 1,078,328 people capacity assigned by Regional Council, capacity for 36,328 people was assigned in February 2010 and was conditional upon Ministry of the Environment approval of the Southeast Collector Individual Environmental Assessment and commitments of local municipalities to partner with the Region to implement local and regional inflow and infiltration reduction programs. Both conditions have now been met.

December 2011 is the projected date for permitting pre-sales associated with capacity for 36,328 people subject to future progress of Southeast Collector.

Key infrastructure projects identified for servicing beyond 1,078,328 people

Status of key projects required to service beyond 1,078,328 people is summarized below and in *Attachment 2*. Project locations are illustrated in *Attachment 3*.

Southeast Collector Trunk Sewer scheduled to be commissioned in 2014

The Southeast Collector Individual Environmental Assessment was approved by Ministry of the Environment on March 31, 2010, subject to a number of stringent conditions to be met within stipulated timelines. Progress has been made on a number of the Conditions of Approval including submission of the Complaint Protocol to Ministry of the Environment. Further, a new Southeast Collector Advisory Committee has been formed and meetings have been held to review odour management plans required under the Conditions of Approval.

The construction start date is scheduled for spring 2011 (last update: spring 2011) and the commissioning date for Southeast Collector is forecasted to occur in mid 2014 (last update: mid 2014). The Region has given top priority in achieving the Individual Environmental Assessment approval conditions. The Inflow and Infiltration Reduction Task Force, comprised of staff from both the Region and local municipalities, continues to meet regularly to develop the inflow and infiltration reduction strategy as required by the conditions of Southeast Collector approval.

Tenders for the tunnel contract were issued in January 2011. Activities noted below are now complete:

- Manufacturing of the four tunnel boring machines
- Manufacturing of the segmental linear materials for the tunnel construction
- Contract for rehabilitation, improvement and resurfacing of haul roads to move materials from the tunnel operation to a suitable site
- Property acquisition of lands required for the project is ongoing and expropriation notices were issued

Engineering assignment awarded for Duffin Creek Stages 1 and 2 Upgrade

Regional Council, at its meeting dated April 22, 2010, approved funding to proceed with the Duffin Creek Water Pollution Control Plant Stages 1 and 2 Upgrades. This work is required as a condition of Ministry of the Environment Certificate of Approval (Air) for Duffin Creek Water Pollution Control Plant Stage 3 Expansion.

The engineering assignment for the Stages 1 and 2 Upgrade has been finalized and awarded as per the authority granted by Regional Council in April 2010. Design work has commenced and construction is scheduled to start in 2011 with substantial performance expected in 2016. (last update: December 2016).

To comply with the Ministry of the Environment Certificate of Approval (Air) Conditions, reports have now been submitted to the Ministry of the Environment on the ambient odour monitoring program conducted through the summer of 2010 as well as the best in class technology review to guide the odour mitigation measures required for the Stages 1 and 2 Upgrade. Emissions testing, ambient odour monitoring, odour dispersion modeling and preparation of an odour management plan are scheduled for completion in 2017.

Environmental assessment underway for Duffin Creek Plant effluent outfall

The Regions of York and Durham have jointly initiated a Schedule C Class Environmental Assessment study to identify the preferred solution of addressing limitations of the existing outfall and diffuser system at the Duffin Creek Water Pollution Control Plant. The present flow capacity limit is 520 ML/day, capable of accommodating growth to 2017. The preferred solution will permit the Duffin Creek Water Pollution Control Plant to operate at a capacity of 630 ML/day to meet growth to around 2031. The Environmental Assessment will be undertaken to satisfy requirements of the Municipal Class Environmental Assessment and the Canadian Environmental Assessment process as one harmonized study.

Notice of commencement of this study was issued in late 2010. Work is currently underway to collect offshore geotechnical information by using a barge and associated drilling equipment. This work will continue to spring 2011. A Stakeholder Advisory Committee (SAC) was formed and the first public meeting under the Class Environmental Assessment process is planned for spring 2011. The Environmental Assessment study is expected to be completed in 2012 and construction of the outfall is expected to be completed in 2016 (last update: 2016).

Working with Ministry of the Environment to identify Preferred Alternative for Upper York Sewage Solutions

With the Terms of Reference for the Upper York Sewage Solutions approved by Ministry of the Environment on March 11, 2010, the project team has been addressing issues with Ministry of the Environment that are necessary to determine the recommended Alternative to the Undertaking for the Environmental Assessment. The Public Information Forum will be set once a recommended Alternative to the Undertaking has been determined. Submission of the Environmental Assessment Report is scheduled by the third quarter of 2012 (last update: December 2012) and approval by the Minister of the Environment is projected to occur in mid 2013. Completion of the overall project is currently scheduled for late 2018 (last update: late 2018). The completion date will be reviewed and updated once the environmental assessment is approved.

Toronto East Water Supply expected to be completed by June 2012

The Toronto East Water Supply project is required to provide additional water from Toronto to Markham pressure district six to meet long-term growth demands. A 1500 mm diameter watermain is proposed to be constructed along Kennedy Road from the Milliken Pumping Station on 14th Avenue to Major Mackenzie Drive. The work will be completed under two contracts. The first contract is for open cut construction from north of Highway 7 to Major Mackenzie Drive and the second contract is for tunnel construction from Milliken Pumping Station to north of Highway 7. Construction is expected to commence in early 2011. Given the longer than expected time required for the tunneling portion, as well as difficulties in securing all the required property, the entire watermain from Milliken Pumping Station to Major Mackenzie Drive is now expected to be commissioned by June 2012 (last update: March 2012).

West Richmond Hill Pumping Station – Environmental Assessment study underway

West Richmond Hill Pumping Station is a new pumping facility identified in the 2009 Water and Wastewater Master Plan Update to service pressure districts seven and eight. The new pumping station will pump water directly from the pressure district six and alleviate existing capacity constraints at the Pugsley pumping station. The Environmental Assessment study is currently underway and Notice of Study Commencement was issued in November 2010. The project is expected to be completed in the fourth quarter of 2014 (last update: 2014).

West Vaughan Sewage Servicing – Environmental Assessment study underway

West Vaughan Sewage Servicing is a new project identified in the 2009 Water and Wastewater Master Plan Update to provide sanitary sewage capacity to service growth in the West Vaughan area (the area west of Highway 27 including Kleinburg-Nashville) up to the year 2051. The consultant has been retained and the Environmental Assessment study is now underway. Completion of the project including construction is scheduled for 2015 (last update: 2015).

Staff continue to monitor status of Peel and Toronto cost shared projects

Provision of water and wastewater services through partnerships with Toronto and Peel Region is a key component of the Region's long-term servicing strategy. A number of projects in Toronto and Peel Region are currently underway to provide capacity to service growth in the Region. Regional staff conduct regular meetings with Toronto and Peel staff to discuss issues regarding supply commitments including cost-shared project delivery schedules. Based on progress of Peel and Toronto's projects, it is expected that both will meet their long term water agreement supply commitments to the Region.

5. FINANCIAL IMPLICATIONS

A summary of the costs of priority infrastructure projects is provided in Table 1. The total cost of infrastructure projects included in this update is \$2.1 billion. Costs provided reflect the current approved 10 year capital program budgets for these priority projects.

Table 1
Cost Estimates for Key Infrastructure Projects

Project	Project Cost Estimates (\$)
Queensville Elevated Tank No. 1	9,600,000
Queensville/Holland Landing/Sharon York Durham Sewage System Connection	112,500,000
King City Water Supply	25,300,000
Duffin Creek Water Pollution Control Plant *	** 402,300,000
Leslie St. Watermain (Wellington St. to Davis Dr.)	15,000,000
Richmond Hill 2nd pressure district nine Elevated Tank	10,500,000
Toronto East Water Supply	74,700,000
Southeast Collector *	546,100,000
Upper York Sewage Solutions	502,000,000
West Richmond Hill Pumping Station	33,800,000
Duffin Creek Water Pollution Control Plant Outfall	***68,000,000
Duffin Creek Water Pollution Control Plant Stages 1 and 2 Upgrade	****161,100,000
West Vaughan Sewage Servicing	159,200,000
Total	\$2,120,100,000

* Critical project: Delay on these projects will be monitored to ensure acceptable level of service and environmental protection.

** Durham share of \$91M and Federal/Provincial funding of \$93.4M not included.

*** Durham share estimated at \$17M not included (amount subject to ongoing cost share negotiation with Durham Region)

**** Durham share estimated at \$40M not included

In addition to the above capital costs, additional operational and asset management funds and staffing resources are required to support the new facilities. Operational impact of these projects will be assessed in the annual budget process.

6. LOCAL MUNICIPAL IMPACT

Staff continue to work closely with municipalities affected by the infrastructure program to minimize impacts on planned community growth

Priority projects reviewed in this report are crucial to providing timely servicing capacity to municipalities serviced by the York Durham Sewage System and the York Water System. The capacity is necessary to meet growth expectations while maintaining a desirable level of environmental and public health protection.

Release of additional capacity as well as granting of approvals in each phase of the plan approval process is contingent on all of these projects being completed as planned.

Projects are continually monitored to ensure risk of delay is minimized and capacity will be available as planned. Staff continue to work closely with the local municipalities affected by the infrastructure program to ensure impacts to planned community growth are minimized to the extent possible considering constraints created by these projects. Coordinated efforts with local municipalities continue on implementing the inflow and infiltration reduction program to reduce extraneous flows to the York Durham Sewage System and thereby increase system capacity.

7. CONCLUSION

This report provides Regional Council with a status of priority projects and their relationship to the timing of plan approvals. Projects identified in this report are essential to provide capacity needed to service projected growth in the Region. Continuing to monitor these projects will ensure capacity allocation and granting of planning approvals are synchronized with project schedules.

For more information on this report, please contact Daniel Kostopoulos, Director, Capital Planning and Delivery, Environmental Services at (905) 830-4444 Ext. 5070.

The Senior Management Group has reviewed this report.

(The three attachments referred to in this clause are attached to this report.)

Status of Infrastructure Trigger Projects & Conditions

Required To Service 1,078,328 people in the YDSS and Peel diversion service areas as of December 2010

Municipality	Project Name / Trigger Conditions	Description	Current Status	Expected Completion Date	Anticipated Presales Timing	Anticipated Registration Timing
Aurora East Gwillimbury Markham Newmarket Richmond Hill King Vaughan Whitchurch/Stouffville	Duffin Creek WPCP (Liquid Process Expansion)	Expansion to increase plant capacity to 630 ML/day subject to completion of future outfall works	Complete	December 2010 (Liquid Process Expansion) (last reported: December 2010)	Permission for presales granted in December 2009 and June 2010 (Except EG where other infrastructure triggers are required, see below)	Permission for final plan registration granted in June and September 2010 (Except EG where other infrastructure triggers are required, see below)
Township of King	King City Water Supply	King City connection to York Water System	Construction	Q1 – 2011 (last reported: Q1 2011)	Permission for presales granted in June 2010	Permission for plan registration granted in September 2010
	King City Elevated Tank	Construction of a 2.74 ML elevated tank	Construction	Q1 – 2011 (last reported: Q1 2011)		
Aurora, Newmarket (Aurora East pressure district only)	Leslie/Wellington Street Watermain	Watermain from Aurora East pumping station on Wellington St. to Leslie St., just north of Mulock Drive	Construction	August 2011 (last reported: May 2011)	Permission for presales granted in December 2009	Q1 - 2011 (last reported Q4 2010)
Richmond Hill (PD9 only)	PD9 Elevated Tank No. 2	Elevated Tank in the Richmond Hill Pressure District 9 service area	Construction	April 2011 (last reported: May 2011)	Permission for presales granted in June 2010	Permission for final plan registration granted in October 2010
East Gwillimbury	Queensville/Holland Landing/Sharon YDSS connection	Provision of sanitary servicing through extension of the YDSS	Tender	December 2012 (last reported: Q4 2012)	Q4 - 2011	Q2 - 2012
	Queensville Elevated Tank No. 1	Construction of a 7.5 ML elevated tank	Tender	May 2012 (last reported: Q4 2011)		
Aurora East Gwillimbury Markham Newmarket Richmond Hill King Vaughan Whitchurch/Stouffville	Regional conditions on 2013 allocation	MOE approval of the Southeast Collector Trunk Sewer IEA Commitments of local municipalities to partner with the Region on the I-I reduction program	Conditions met		December 2011 (last reported: December 2011)	June 2012 (last reported: June 2012)

1) This data will be updated and submitted to Regional Council quarterly

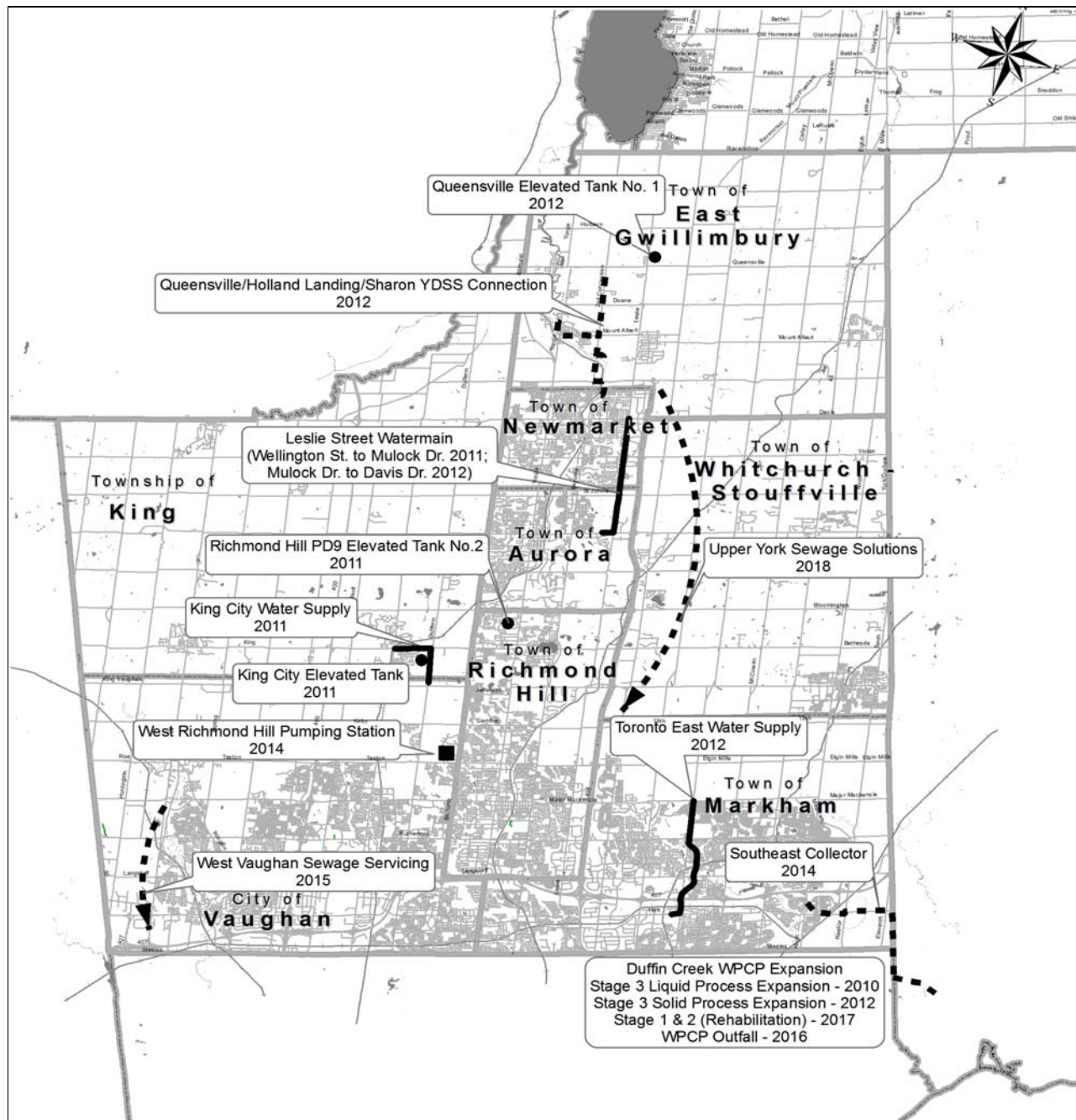
2) Projects completed and removed from the table since last report: none

Status of Key Infrastructure Projects

**Required within the next 10 years to service beyond 1,078,328 people
as of December 2010**

Project Name	Description	Current Status	Expected Project Completion Date
Southeast Collector Sewer	Twinning of existing trunk sewer to provide additional conveyance capacity	Tender	Mid 2014 (last reported: Mid 2014)
Duffin Creek Stages 1 and 2 Upgrades	Upgrade and refurbish existing Stages 1 and 2	Detailed Design	2017 (last reported: Q4 2016)
Duffin Creek Water Pollution Control Plant Outfall	New outfall to address diffusion requirements and increase plant capacity to 630MLD	EA	2016 (last reported: 2016)
Upper York Sewage Solutions	Sanitary servicing solution to accommodate growth in Holland Landing, Queensville, Sharon and parts of Aurora and Newmarket	Individual Environmental Assessment.	2018 (last reported: 2018)
Toronto East Water Supply	Watermain along Kennedy Road from Milliken Pumping Station to Major Mackenzie Drive	Tender	Q2 - 2012 (last reported: Q1 2012)
West Richmond Hill Pumping Station	New pumping station near Bathurst Street and Elgin Mills Road to service Pressure District 8.	EA	Q4 - 2014 (last reported: 2014)
West Vaughan Sewage Servicing	Sanitary servicing solution to accommodate growth in West Vaughan area	EA	2015 (last reported: 2015)

1) Projects added to the table since last report: none



LOCATION MAP

Key Infrastructure Projects
Water and Wastewater Infrastructure
Status Report and Presentation

0 3 6 12 Kilometers

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