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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 September 1, 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 priority 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

Regional Council, at its meeting on June 23, 2005, granted release of additional servicing capacity to accommodate up to 970,000 people to local municipalities serviced by the York Durham Sewage System (YDSS) to meet Regional growth target to 2010. Subsequently, on November 15, 2007 and December 18, 2008, a combined additional capacity of 72,000 people was assigned to service growth target for 2011 and 2012.

On February 18, 2010, a new capacity assignment of an additional 36,328 people was presented to Regional Council for local municipalities serviced by the YDSS, conditional on local council resolutions, to reduce inflow and infiltration in local and Regional sanitary sewage systems. This allocation is intended to facilitate growth to the end of 2013.

This report is a regular update to Regional Council. The last update to Council was on June 24, 2010 and the next update is scheduled for January 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

Capacity assignments made to local municipalities were subject to completion of certain infrastructure projects referred to as triggers. Projects identified as triggers for the capacity assignment are summarized in *Attachments 1, 2 and 3*. These triggers assist the Region in better controlling two key steps in the planning approvals process:

- Pre-sales of homes
- Final plan approvals

Capacity trigger control is required to avoid premature occupancy of new dwellings in advance of availability of the required 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.

KEY PROJECT STATUS HIGHLIGHTS

Highlights of key priority projects and implications to planning approvals are provided in this section. Status of these projects are summarized in *Attachments 1, 2, 3 and 4*. Project locations are illustrated in *Attachment 5*.

Projects required to service 2005 allocation of 970,000 people near completion

Most projects required to service the 2005 allocation are completed. Allocation trigger conditions for final plan approval related to the assigned capacity of 970,000 people have been met for all service areas except Queensville/Holland Landing/Sharon, as shown in *Attachment 1*. Final plan approval for Queensville/Holland Landing/Sharon is projected to occur 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 a watermain connection to the York Water System. Both the elevated tank and the watermain are now

under construction and are expected to be completed in the first quarter of 2011 (last update: first quarter of 2011).

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

Subject to Council approval of the increased costs, award of the contract is anticipated in the fourth quarter of 2010. The expected completion date of this project is December 2012 (last update: December 2012). The works for the Queensville water storage tank No. 1 will be tendered in the fall and is planned to be completed by December 2011 (last update: December 2011).

Works to service additional allocation of 72,000 people expected to be completed by 2010

As reported in the last update, the YDSS Flow Control System was commissioned in May 2010. Other outstanding projects required to service an additional 72,000 people beyond the June 2005 allocation of 970,000 people are summarized in *Attachment 2*. Additional details on the status of these projects are presented below.

Duffin Creek Water Pollution Control Plant liquid process expansion on track for completion in December 2010

With the Ministry of the Environment (MOE) Certificate of Approval (Air) received on June 18, 2010, the Duffin Creek Water Pollution Control Plant Stage 3 Liquid Process Expansion remains on schedule for substantial completion by December 2010. The start-up commissioning and testing process has started. Two of the components, the liquids treatment facility contract is approximately 95% complete (last reported 80%) and the preliminary treatment facility contract is approximately 95% complete (last reported 80%). The Enhanced Phosphorous Removal contract is approximately 20% complete and the main construction contract for Stage 3 Solid Process Expansion awarded in November 2009 is approximately 25% complete. The Solid Process Expansion is scheduled for completion in the second quarter of 2012 (last update: second quarter of 2012).

Leslie Street Watermain on schedule for completion in May 2011

Leslie Street watermain is required to service Aurora East pressure district which includes primarily lands east of Leslie Street in Aurora with a small portion in Newmarket immediately north of the Aurora and Newmarket municipal boundary. The work was awarded in July 2010 and the expected completion date is May 2011 (last update: May 2011).

Final plan approval for development requiring the Leslie Street watermain is projected to occur in the fourth quarter of 2010 (last update: fourth quarter of 2010).

Richmond Hill Elevated Tank No. 2 on track for completion in May 2011

Completion of the new pressure district nine elevated tank in Oak Ridges is expected to be completed in May 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).

Final plan approval for developments in Richmond Hill pressure district nine service area is projected to occur in the fourth quarter of 2010 (last update: fourth quarter of 2010).

Trigger conditions for final plan approval associated with the 72,000 people capacity assignment have been met

With the Duffin Creek WPCP Liquid Process Expansion and other trigger projects on schedule for completion by December 2010 (last update: December 2010) the Region advised local municipalities in late June that allocation trigger conditions for final plan approval related to the 72,000 people capacity assignment have been met for Aurora, Markham, Newmarket, Richmond Hill, Vaughan and Whitchurch-Stouffville, with the exception of pressure district nine service area in Richmond Hill and areas in Aurora and Newmarket requiring the service of Leslie Street watermain. As discussed above, final plan approval for Richmond Hill pressure district nine and Leslie Street watermain service areas are both projected to occur in the fourth quarter of 2010.

With the King City water supply works expected to be completed within six months, the Region also advised Township of King in early September that allocation trigger conditions for final plan approval related to the 970,000 people capacity assignment and the subsequent 72,000 people capacity assignment have been met for King City.

In February 2010 additional capacity of 36,328 people identified to service growth in 2013

In February 2010, Regional Council approved an additional capacity of 36,328 people to local municipalities conditional on local council resolutions to reduce inflow and infiltration in local and Regional sanitary sewage systems. Projects required to service the additional 36,328 people are summarized in *Attachment 3*.

Southeast Collector Trunk Sewer scheduled to be commissioned in 2014

The Southeast Collector Individual Environmental Assessment was approved by MOE on March 31, 2010, subject to a number of stringent conditions to be met within stipulated timelines. Some conditions are required to be met prior to construction, including development of a complaint protocol six months prior to construction. As a result, the construction start date may be deferred until spring 2011 (last update: spring 2011) and the commissioning date for Southeast Collector is now 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, comprising staff from both the Region and local municipalities, met regularly in the last months to develop the inflow and infiltration reduction strategy as required by the conditions of Southeast Collector approval.

Design work continues towards completion and tenders for the tunnel contract will be issued upon completion of detailed design in the fourth quarter of 2010. The activities noted below are now well advanced:

- Manufacturing of the four tunnel boring machines is now underway
- 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 will be completed this year
- Property acquisition of lands required for the project is ongoing and expropriation notices were issued for properties.

Regional and local municipalities work together to address 2013 capacity assignment conditions

2013 capacity assignment to local municipalities in February 2010 was conditional upon MOE 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.

With the approval of the Southeast Collector Individual Environmental Assessment now in place, the first condition has been met. Local councils in Aurora, Georgina, East Gwillimbury, King, Vaughan and Whitchurch-Stouffville have passed resolutions to partner with the Region on the inflow and infiltration reduction program. Markham, Newmarket and Richmond Hill are also moving forward to have resolutions passed in early fall.

Key infrastructure projects identified for servicing beyond current capacity assignment

The status of major projects required to service growth beyond 2013 is presented below and summarized in *Attachment 4*.

Detailed scope for preliminary design of Duffin Creek Stage 1 and 2 upgrades completed

Regional Council, at its meeting dated April 22, 2010, approved funding to proceed with the Duffin Creek Water Pollution Control Plant Stage 1 and 2 Upgrades, which is required as a condition of MOE Certificate of Approval (Air) for Duffin Creek Water Pollution Control Plant Stage 3 Expansion. The works will require partial shutdown of the existing Stage 1 and 2 operations. Partial Stage 1 and 2 operation shutdown, coupled

with more stringent MOE effluent criteria for Stage 1 and 2 operation upon commissioning of Stage 3 Expansion, may temporarily reduce the combined plant treatment capacity to as low as 470 ML/day, which is only sufficient to meet the projected flow for 2013.

To minimize impacts to servicing beyond 2013, staff had extensive discussions with MOE over the past several months. As a result of these discussions, in June, MOE advised that a conditional accommodation would be appropriate to address these concerns and circumstances. Best efforts are to be used to achieve new more stringent effluent treatment requirements that take effect after the completion of Stage 3 expansion even though refurbishment and upgrade activities for Stage 1 and 2 are underway. If meeting these new requirements, despite best efforts, becomes too challenging, the effluent from Stage 1 and Stage 2 will temporarily be allowed to meet the treatment requirements currently in place while the Stage 3 expansion would be required to operate at maximum capacity and achieve the new more stringent requirements. A major reduction in capacity during the Stage 1 and 2 Upgrades is not anticipated.

Detailed scoping for preliminary design has been completed. Preliminary assessment indicated the upgrade works will be completed by December 2016 (last update: December 2016).

As part of the MOE Certificate of Approval (Air) conditions, an odour mitigation plan has to be submitted to MOE. The plan includes undertaking a best in class technology review to identify feasible odour mitigation measures for the refurbishment of Stage 1 and 2. The best in class review will commence in the fourth quarter of 2010.

Environmental Assessment underway for Duffin Creek Plant Outfall

The Regions of York and Durham have initiated preliminary work in support of a Schedule C Class Environmental Assessment study to identify a preferred method of addressing the limitations of the existing outfall and diffuser system at the Duffin Creek Water Pollution Control Plant, which is sufficient for flows up to 520 ML/day. A formal notice of commencement of this study will be issued shortly. The preferred solution will permit the Duffin Creek Water Pollution Control Plant to operate at a capacity of 630 ML/day. 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. 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).

Preferred Alternative for Upper York Sewage Solutions to be identified in late 2010

With the Terms of Reference for the Upper York Sewage Solutions approved by MOE on March 11, 2010, the Alternatives to the Undertaking stage is currently underway, which

involves identifying, developing, documenting and assessing alternatives for the project. A preferred alternative is anticipated to be identified by late 2010 (last update: late 2010). The Environmental Assessment Report is scheduled for submission for approval 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. With the Terms of Reference established, the schedule has been reviewed and realigned to accommodate potential implementation timeframes for all solutions now being evaluated. While the EA completion schedule remains unchanged, completion of the overall project is now scheduled for late 2018 (last update: late 2016) and the completion date will be reviewed and updated as the preferred alternative is identified.

Toronto East Water Supply expected to be completed by March 2012

The Toronto East Water Supply project is required to bring additional water to the Markham pressure district six areas, from Toronto, to meet long-term growth demands. A 1500mm diameter watermain is proposed to be constructed 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 for tunnel construction from Milliken Pumping Station to north of Highway 7. Construction is expected to commence in the fourth quarter of 2010. Given the longer than expected time required for the tunneling portion, the entire watermain from Milliken Pumping Station to Major Mackenzie Drive is now expected to be commissioned by March 2012 (last update: December 2011).

West Richmond Hill Pumping Station – Consultant retained for Environmental Assessment study

West Richmond Hill Pumping Station is a new pumping facility identified by the 2009 Water and Wastewater Master Plan Update to service pressure district eight. Currently, the pressure district eight area in Richmond Hill is serviced by the North Richmond Hill pumping station which pumps water from pressure district seven system, which in turn is serviced by the existing Pugsley pumping station. The new pumping station will pump water directly from the pressure district six system and alleviate existing capacity constraints in Pugsley pumping station. The consultant has been retained and the Environmental Assessment study is underway. The project is expected to be completed in 2014 (last update: 2014).

Environmental Assessment for West Vaughan Sewage Servicing to commence in fourth quarter of 2010

West Vaughan Sewage Servicing is a new project identified by 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. An Environmental Assessment Study to determine the preferred option for providing sewage capacity is expected to commence in the fourth quarter of 2010 (last update: fourth quarter of 2010). The project is scheduled for completion by 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 project schedules. It is reported that the Beckett Sproule feedermain in Peel Region will be delayed by six months. However, Peel Region staff confirmed that this delay will not compromise their ability to meet supply commitments stipulated in the York-Peel water supply agreement. Based on progress of Toronto's projects, it is expected that Toronto will meet their agreement supply needs 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 \$2.05 billion.

Table 1
Cost Estimates for Key Infrastructure Projects

Project	Project Cost Estimates (\$)
Queensville Elevated Tank No. 1	9,604,600
Queensville/Holland Landing/Sharon YDSS Connection	112,500,000
King City Water Supply	24,600,000
Duffin Creek WPCP *	** 390,000,000
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	70,725,000
Southeast Collector *	546,000,000
Upper York Sewage Solutions	500,000,000
West Richmond Hill Pumping Station	33,800,000
Duffin Creek WPCP Outfall	***69,000,000
Duffin Creek WPCP Stage 1 and 2 Upgrades	****160,000,000
West Vaughan Sewage Servicing	107,800,000
Total	\$2,049,529,600

* 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.

**** 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 YDSS 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 that the risk of delay is minimized and capacity will be available as planned. Staff will continue to work closely with the local municipalities affected by the infrastructure program to ensure impacts to planned community growth is minimized to the extent possible considering constraints created by these projects. Coordinated efforts with local municipalities continue on implementation of the inflow and infiltration reduction program to reduce extraneous flows to the YDSS 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 the additional capacity needed to service projected growth in the Region. Continuing to monitor these projects will ensure that 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 extension 5070.

The Senior Management Group has reviewed this report.

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

Servicing Requirements by Municipality / Status of Infrastructure Trigger Projects
to Service up to 970,000 People in the YDSS System
as of August 2010

Municipality	Project Name	Description	Current Status	Expected Completion Date	Anticipated Presales Timing	Anticipated Registration Timing
East Gwillimbury (for areas requiring YDSS connection)	• Queensville/Holland Landing/Sharon YDSS Connection	Provision of sanitary servicing through extension of the YDSS	Tender	Q4 – 2012 (last reported: Q4 2012)	Q4 - 2011	Q2 - 2012
	• Queensville Elevated Tank No. 1	Construction of a 7.5 ML elevated tank	Tender	Q4 - 2011 (last reported: end of 2011)		
Township of King	• King City Water Supply	King City connection to York Water System	Construction	Q1 – 2011 (last reported: Q1-2011)	Permission for pre sales 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)		

- 1) This data will be updated and submitted to Regional Council quarterly
2) Projects completed and removed from the table since last report: none

#2193965

Servicing Requirements by Municipality / Status of Infrastructure Trigger Projects

To Service Additional Population of 72,000 beyond the June 2005 Allocation served by the YDSS
(in addition to all existing servicing requirements as outlined in the June 23, 2005
Council Report for servicing 970,000 persons)

as of August 2010

Municipality	Project Name	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	Expansion to increase plant capacity to 630 ML/day subject to completion of future outfall works	Construction	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 Attachment 1)	Permission for final plan registration granted in June and September 2010 (Except EG where other infrastructure triggers are required, see Attachment 1)
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	May 2011 (last reported: May 2011)	Permission for presales granted in December 2009	Q4-2010 (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	May 2011 (last reported: May 2011)	Permission for presales granted in June 2010	Q4-2010 (last reported Q4-2010)
East Gwillimbury	- Queensville/Holland Landing/Sharon YDSS connection - Queensville Elevated Tank No. 1	Provision of sanitary servicing through extension of the YDSS Construction of a 7.5 ML elevated tank	Tender Detailed Design	Q4 - 2012 (last reported: Q4 2012) Q4 - 2011 (last reported: End of 2011)	Q4 - 2011	Q2 - 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

#2194087

Servicing Requirements by Municipality / Status of Infrastructure Trigger Projects

To Service Additional Population of 36,328 beyond the December 2008

Allocation served by the YDSS

(in addition to all existing servicing requirements as outlined in the June 23, 2005, October 31, 2007 and
December 18, 2008 Council Reports for servicing 1,042,000 persons)

as of August 2010

Municipality	Project Name	Description	Current Status	Expected Completion Date	Anticipated Presales Timing	Anticipated Registration Timing
Aurora East Gwillimbury Markham Newmarket Richmond Hill King Vaughan Whitchurch-Stouffville	- Southeast Collector Sewer - Duffin Creek WPCP (Liquid Process Expansion)	Twinning of existing trunk sewer to provide additional conveyance capacity Expansion to increase plant capacity to 630 ML/day subject to completion of future outfall works	Detailed Design Construction	Mid 2014 (last reported: mid 2014) December 2010 (last reported December 2010)	December 2011 (last reported: December 2011)*	June 2012 (last reported : June 2012)
Vaughan (Woodbridge Service Area served by Humber P.S) (up to 3,500 persons)	Duffin Creek WPCP (Liquid Process Expansion)	see above	Construction	December 2010 (last reported December 2010)	Q4- 2009	Q2 – 2010

*2013 capacity assignment also subject to: local municipalities' allocations to individual developments conditional upon implementation of Inflow and Infiltration Reduction Program project removed: YDSS Flow Control Structure

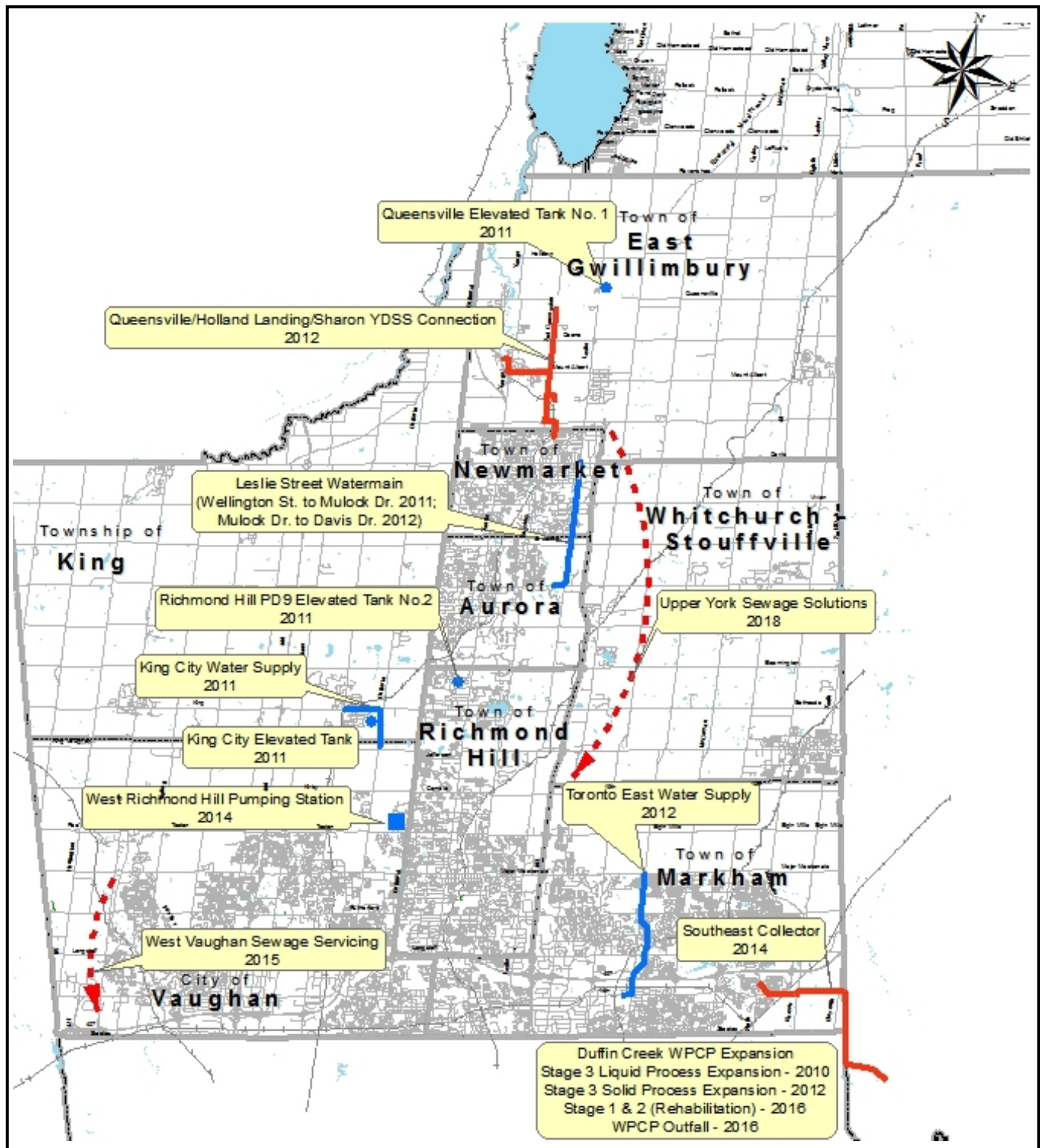
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Status of Other Key Infrastructure Projects

as of August 2010

Project Name	Description	Current Status	Expected Project Completion Date
Duffin Creek Stages 1 and 2 Upgrades	Upgrade and refurbish existing Stages 1 and 2	Detailed Design	Q4 - 2016
Duffin Creek Water Pollution Control Plant Outfall	New outfall to address diffusion requirements and increase plant capacity to 630MLD	EA	Q4-2016
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: Q4 – 2016)
Toronto East Water Supply	Watermain along Kennedy Road from Milliken Pumping Station to Major Mackenzie Drive	Tender	Q1 2012 (last reported: Q4 2011)
West Richmond Hill Pumping Station	New pumping station near Bathurst Street and Elgin Mills Road to service Pressure District 8.	EA	2014
West Vaughan Sewage Servicing	Sanitary servicing solution to accommodate growth in West Vaughan area	Request for Proposal	2015

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



LOCATION PLAN

Key Infrastructure Projects
Water and Wastewater Infrastructure
Status Report

0 3 6 12 Kilometers

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



Environmental Services

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