3
WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, May 29, 2008, from the Commissioner of Environmental Services:

1. RECOMMENDATIONS

It is recommended that:

1. Environmental Services staff continue to provide regular updates on the priority projects linked to the release of additional capacity, with the next report to be submitted in September, 2008.

2. Environmental Services staff continue discussions with the local municipalities with respect to infrastructure completion dates and various planning approvals.

3. The Regional Clerk circulate this report to the Clerks of the municipalities of Vaughan, Markham, Richmond Hill, Aurora, Newmarket, East Gwillimbury, King and Whitchurch-Stouffville.

2. PURPOSE

This report updates Regional Council on the status and future activities for critical and priority water and wastewater infrastructure projects required to meet system demands identified as triggers for the release of additional capacity and approvals under the *Planning Act.*

3. BACKGROUND

In 2005, Regional Council approved an overall servicing capacity of 970,000 people in the York Durham Sewage System service area

In 2003, delays with key infrastructure projects were impacting the Region's ability to allocate sewage capacity to the local municipalities. Between 2003 and 2005, staff completed extensive investigations to determine the maximum allocation capacity available and the critical projects required to realize this capacity. Regional Council, at its meeting on June 23, 2005, granted the release of additional servicing capacity to accommodate up to 970,000 people within the York Durham Sewage System (YDSS) service area along with associated triggers based on the status of critical infrastructure. This allocation was expected to meet Regional growth projections to 2010.

Implementation of YDSS flow control measures made available an additional sewage capacity of 58,000 people

In keeping with the Region's policy to provide a multi-year supply of servicing allocation, staff investigated alternatives to offset the impact of expected delays in the completion of the Southeast Collector Sewer. Installation of flow control systems within sections of the YDSS were determined to yield an additional 58,000 persons capacity while also reducing risks in the system. This additional capacity offsets the expected delay in completing the Southeast Collector Sewer.

Subsequently, Regional Council at its meeting on November 15, 2007, adopted the recommendations of the *Servicing Allocation and Future Regional Conditions for Draft Plan of Subdivision Approval Report* of the Planning and Economic Development Committee. Of the 58,000 persons capacity made available by the proposed YDSS flow control systems, the Regional Council assigned 36,000 persons capacity to meet the Regional growth target to 2011. The infrastructure required to realize the 58,000 persons capacity in addition to the proposed flow control systems was also identified.

Status of key infrastructure projects triggering the release of available capacity is reported to Regional Council on a regular basis

This report summarizes the status of priority infrastructure projects identified as triggers for the release of capacity required to service up to 970,000 people as set out in the *Water and Wastewater Capacity and Servicing Assignment Protocol Report*, Clause 1 of Report No. 1 of the Joint Transportation and Works and Planning and Economic Development Committees as adopted by Regional Council on June 23, 2005. It also provides the status of projects identified as triggers to service an additional 58,000 people as set out in the *Servicing Allocation and Future Regional Conditions for Draft Plan of Subdivision Approval Report*, Clause 3 of Report No. 9 of the Planning and Economic Development Committee as adopted by Regional Council on November 15, 2007.

This status summary was first reported to Regional Council on June 23, 2005 (*Water and Wastewater Infrastructure Status Report*, Clause 2 of Report No. 1 of the Joint Transportation and Works and Planning and Economic Development Committees). Eight subsequent reports followed, with the last update to Regional Council on March 27, 2008. The next status report is scheduled for September 2008.

In future updates to this report, completed projects such as Aurora-Newmarket feedermain and the Bathurst watermain (Newmarket Clearmeadow to Woodsprings) will be removed from the priority projects list. Upon completion of the Water and Wastewater Master Plan Update in early 2009, additional priority projects identified in the Master Plan will be added to the list.

4. ANALYSIS AND OPTIONS

4.1 ALLOCATION TRIGGERS

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

Projects identified as triggers for servicing up to 970,000 people are summarized in *Attachment 1* and for servicing an additional 58,000 people are summarized in *Attachment 2.* The trigger tables are used to assist the Region in better controlling two key steps in the planning approvals process: 1) Pre-sales of homes and 2) Final plan approvals. Capacity trigger control is required to avoid premature occupancies 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.

Release of capacity for servicing up to 970,000 people

As discussed in the previous status report update to Regional Council, the trigger condition to permit final registration of the draft plans for approved developments up to the apportioned share of the 970,000 people capacity in the Towns of Aurora, Newmarket and the Green Lane West Area of East Gwillimbury was met in December 2007. As a result the Region has notified the three local municipalities that they could proceed with final plan registration, subject to meeting other draft plan conditions and other localized servicing requirements.

In March 2008, the Region advised the Town of Richmond that trigger conditions to permit final plan registration in the Yonge Street Corridor PD8 and PD9 had been met. Outstanding infrastructure including the 16th Avenue phase 2 sewer, YDSS Interceptor/Lower Leslie Street trunk sewer and Oak Ridges elevated tank No. 1 is expected to be in place within the next six months.

Timing for final registration of the draft plan for the Bathurst Langstaff Trunk Sewer service area in Vaughan will be provided in the next update report. Completion of the Bathurst Langstaff Trunk Sewer has been delayed due to construction problems.

Release of capacity for servicing an additional 58,000 people

Projects required to service an additional 58,000 people beyond the June 2005 allocation of 970,000 people include:

- The Duffin Creek Water Pollution Control Plant expansion.
- YDSS Flow Control Structures (interim alternative to Southeast Collector Sewer).
- Leslie Street watermain (applicable to Aurora East service area only).
- Richmond Hill second water storage facility (applicable to PD9 service area only).

With the exception of the Aurora East service area, the trigger condition to permit pre-sales is expected to be met by the end of 2009, one year prior to the scheduled completion date of the Duffin Creek plant expansion. Installation of YDSS Flow Control Structures is expected to be completed before the Duffin Creek plant expansion and, therefore, Duffin Creek plant expansion will be the governing trigger.

Similarly, for the Richmond Hill Pressure District 9 (PD9) service area, the required second water storage facility is expected to be in service by June 2010. Since the completion date of the water storage facility is earlier than the Duffin Creek plant expansion, the governing trigger condition for the Richmond Hill Pressure District 9 (PD9) service area is the Duffin Creek plant expansion.

For the Aurora East service area, the trigger condition to permit pre-sales is generally expected to be met in the second quarter of 2010, one year prior to completion of the Leslie Street watermain from the Aurora East pumping station to the Aurora/Newmarket boundary in the spring of 2011. Work is currently in progress to advance a portion of the watermain, in support of proposed developments southeast of Mulock Drive and Leslie Street in Newmarket. Since the last report update, the Region has determined that the section of watermain required to service the above noted developments will fall under the new Schedule A+ category of the recently amended Municipal Class EA Process. As a Schedule A+ undertaking, the work is pre-approved and can proceed upon public notification. Timing for completion of this project will be provided in future updates.

4.2 STATUS OF WASTEWATER PROJECTS

This section provides a brief description of priority wastewater projects, their current status, issues affecting project progress and future activities. Projects listed are required within the five-year horizon to meet future demands. Projects identified as “critical” are those for which any further delays will result in unacceptable risks of overflow.

The projects listed below are also presented in *Attachment 3* – Priority Wastewater Projects Map.

The Aurora Equalization Tank is expected to be completed in October 2008

The Aurora equalization tank allows detention of wet weather flows at the existing Aurora Sewage Pumping Station site. Providing flow equalization at this location expands the service capacity of the pumping station by buffering wet weather peak flows to the pumping station. This tank will also provide additional capacity to Aurora and will

aid in minimizing downstream capacity risks. The tank will prolong the service capacity of the pumping station which will influence the timing for downstream works that are the subject of additional Environmental Assessment (EA) processes.

The construction contract for the Aurora equalization tank was awarded in October 2006. Due to the severity of this past winter, completion of construction has been delayed to October 2008 (last reported: July 2008).

The 16th Avenue Sewer Phase 2 *CRITICAL PROJECT* scheduled for commissioning in July 2008

Phase 2 of the 16th Avenue trunk sewer is needed to service development areas in Markham. The 16th Avenue trunk will convey sewage from existing and future developments in the north areas of the Region from the Leslie Street trunk sewer to the existing 9th Line trunk sewer. Benefiting areas include East Gwillimbury, Newmarket, Aurora, Richmond Hill, King and Markham. Vaughan will indirectly benefit from diversion of flows in the existing YDSS thereby allowing increased flows from Vaughan.

Construction of the 16th Avenue Sewer was completed in June 2007. A flow control structure is proposed at the junction of the existing Highway 404 sewer and the 16th Avenue Sewer. Flows from the existing Highway 404 sewer will be diverted into the 16th Avenue Trunk Sewer once the YDSS Interceptor sewer and the flow control structure are installed. Commissioning is expected to be completed by July 2008 (last reported: July 2008).

Tunnelling work associated with the 19th Avenue YDSS Interceptor Sewer *CRITICAL PROJECT* is expected to be completed by July 2008

The Lower Leslie Trunk and the YDSS Interceptor are intended to work together to service new developments in Richmond Hill, Aurora, Newmarket, East Gwillimbury and King by providing relief to the existing YDSS, south of 19th Avenue.

Construction of this sewer is divided into two contracts: the 19th Avenue tunnelling section and the Leslie Street open-cut section. The Leslie Street section was completed in January 2007. The 19th Avenue tunnelling contract is scheduled for completion in July 2008 (last reported: July 2008).

Commissioning of the Duffin Creek Water Pollution Control Plant Expansion *CRITICAL PROJECT* is expected to occur in December 2010

Expansion of the Duffin Creek plant is required to provide additional capacity to serve growth in all municipalities serviced by the YDSS. This phase of the expansion will increase the plant capacity to 630 ML/day subject to completion of future works to address limitations of the existing outfall and will also include two new incineration

units. The expansion will also provide upgrades required to meet evolving environmental standards.

Following the denial of Class Environmental Assessment (EA) Part II Order requests by the Minister of the Environment (MOE) on March 21, 2007, York and Durham Regions have substantially completed the site preparation contract and have commenced the contract for construction of the liquid treatment facility. The two most critical contracts to provide additional liquid treatment capacity are the Liquid Module Contract and the Preliminary Treatment Contract. The liquid module contract comprises the construction of the clarifiers, secondary clarifies, aeration tanks and disinfection facilities; this work is currently under construction. The preliminary treatment contract was awarded in May 2008. Both contracts are expected to be completed in December 2010 (last reported: December 2010).

Bathurst Langstaff Sewer delayed due to construction problems

The Bathurst Collector and the Langstaff sewers are required to provide additional capacity to Vaughan. These sewers are proceeding under a pre-payment of development charges credit agreement, and release of additional capacity for these developments is contingent upon the completion of these sewers and other required infrastructure.

The project contract was awarded in March 2006. Due to problems encountered during construction works on Langstaff Road, the Langstaff sewer has been delayed. Current assessment indicates that there will be no delay on the Bathurst Collector section. A revised project completion date will be provided in the next update (last reported: end of 2008).

Timing for completion of the Queensville/Holland Landing/Sharon Servicing is subject to Environmental Assessment Approval

The Queensville/Holland Landing/Sharon project will provide sewage servicing to the communities of Queensville, Holland Landing and Sharon. It will also decommission the existing Holland Landing Sewage Lagoons and direct the flow to the YDSS. This servicing is being considered through an agreement with a developer group.

The review of the Class EA was completed in August 2007. The Class EA document was filed on the public record for a 30-day period, during which time three requests for a Part II Order were submitted to the MOE. Timing of this project is dependent on the outcome of the Minister’s decision on these Part II Order requests as well as execution of the prepaid development charge credit agreement. The project schedule proposed by the developer group has been delayed since the last report as the MOE has not made their decision on the Part II Order requests yet.

Summary of key milestones:

- Completion of Class EA — August 2007
- Completion of detailed design — December 2008 (last reported: June 2008)
- Construction completion — June 2010 (last reported: December 2009)

The Southeast Collector Sewer *CRITICAL PROJECT* is scheduled for completion in December 2012

The Southeast Collector Sewer through parts of Markham and Pickering is required to provide additional capacity to the existing YDSS trunk sewer. The critical need for this sewer is driven by growth in all municipalities serviced by the YDSS.

York and Durham Regions are co-proponents for this undertaking. Since approval of the Terms of Reference for the Individual Environmental Assessment (IEA) by the MOE in February 2006, the project team has completed the baseline condition report, feasibility study report, evaluation of alternatives report, conceptual design report, and impact assessment reports. The extensive public engagement program is well underway. An enhanced consultation process for First Nations is also proceeding.

The IEA is scheduled to be filed in October 2008. The expected approval date is in the fall of 2009, assuming that the MOE will require approximately one year for review and approval. The completion date for this project has not changed. The following is a summary of key milestones:

- Target date for submission of the IEA to MOE — October 2008
- Expected MOE approval of the IEA — Fall 2009 (last reported: May 2009)
- Detail design and tender — December 2009
- Obtaining regulatory approvals — December 2009
- Construction completion — December 2012 (last reported: December 2012)

Installation of York Durham Sewage System Flow Control Structures *CRITICAL PROJECT* is scheduled for completion by December 2009

As a result of the revised completion date of 2012 for the Southeast Collector Sewer, Environmental Services staff are now undertaking a project to implement flow control on the YDSS. The flow control structures to be installed in selected locations in the YDSS will attenuate peak wastewater flows, thereby allowing additional capacity for growth prior to completion of the Southeast Collector Sewer. These flow control structures will also provide operational flexibility after the Southeast Collector Sewer is constructed.

The schedule for this project has not changed since last report. A summary of key milestones is as follows:

- Completion of detailed design — November 2008
- Tendering — December 2008
- Construction completion — December 2009

(last reported: December 2009)

4.3 STATUS OF WATER PROJECTS

Priority water projects are those required within the five-year horizon to meet imminent demands. The projects listed below are also presented in *Attachment 4* - Priority Water Projects Map.

The Aurora/Newmarket Feedermain is now in service

This Aurora/Newmarket Feedermain will provide additional water supply to the Towns of Aurora and Newmarket to supplement the well supply from the Yonge Street Aquifer. It will also provide additional supply to northern areas of Richmond Hill and generally increase capacity in the York Water System and in East Gwillimbury. Consequently, completion of this project will assist in meeting the long term demands due to growth in Richmond Hill, Newmarket, Aurora and East Gwillimbury.

The project consists of five construction contracts:

- Keele Street watermain (Teston Road to King/Vaughan Road).
- King/Vaughan Road watermain (Keele Street to Bathurst Street).
- Bathurst Street watermain (King/Vaughan Road to Wellington Street).
- Maple Pressure District 8 Pumping Station.
- Aurora South Reservoir.

Construction works of all five contracts are complete and the system is now in service.

Installation of the Bathurst Street Watermain (Aurora/Newmarket West Connection) is now complete

This watermain on Bathurst Street from Orchard Heights Reservoir to the West Newmarket Reservoir will provide additional water supply and system security to both Aurora and Newmarket West Pressure Districts.

The work was tendered with the Bathurst Street road widening works from Wellington Street to Mulock Drive in June 2007. Installation of the watermain was completed in May 2008.

The Bathurst Street Watermain (Newmarket Clearmeadow to Woodsprings) is now in service

The Bathurst Street watermain in Newmarket's West Pressure District will provide additional water supply to Newmarket's northwest quadrant to meet the growth needs for this area.

The work was tendered with the Bathurst Street road widening works from Wellington Street to Mulock Drive in June 2007. Construction was completed in March 2008 and the watermain is currently in service.

Completion of the Queensville Elevated Tank is expected for December 2009

This project involves the construction of a 7.0 ML elevated tank in Queensville. The tank will provide equalization, emergency and fire storage to the community.

The target completion date for this project of December 2009 has not changed since the last report.

The King City Water Supply project is expected to be completed in 2010

The King City Water Supply Project consists of a 2.74 ML elevated tank and additional water supply from new wells or other sources, such as the York Water System.

The Environmental Study Report for augmenting the water supply and storage capacity to King City was completed in September 2007. Three Part II Order (bump up) requests were received during the 30-day review period. Subject to the final results of the EA, the preferred solution at this time is to connect King City to the York Water System. The schedule for this project has not changed since last report.

Summary of key milestones:

• Completion of Class EA	September 2007
• Completion of detailed design	Winter 2008
• Tender and contract award	Winter 2008
• Completion of construction	Summer 2010
	(last reported: Summer 2010)

Construction of the Richmond Hill (Oak Ridges) Elevated Tank No. 1 is scheduled for completion by August 2008

The project consists of a 7.55 ML elevated tank to provide equalization, emergency and fire storage to the Pressure District 9 area in Richmond Hill. The preferred site for the tank is located within the Ontario Realty Corporation lands on the north side of Bloomington Road, west of Yonge Street. This is one of the two new elevated tanks needed for the area, with the second one planned for completion in 2010.

The Class EA was completed in January 2007. The work was awarded in March 2007. The expected completion date of August 2008 for this project has not changed since last report.

The Stouffville Water Supply project is expected to be completed by March 2009

Additional water supply is required for the community of Stouffville to service new development areas. The approved Class EA identified connection to the York Water System as the preferred solution.

Design of the proposed water supply works was completed in January 2008. This project is being delivered in two contracts: 1) The Stouffville pumping station contract which was tendered in January 2008 and 2) The Stouffville watermain combined with road widening which is expected to be tendered in June 2008. Construction of water supply works is expected to be completed in March 2009 (last reported: March 2009).

The Toronto East Water Supply project is expected to be completed by December 2010

The Toronto East Water Supply Project is required to bring additional water to the Markham Pressure District 6 area from Toronto to meet long term growth demands in areas serviced by the York Water System.

As part of the project, a new watermain along Kennedy Road from the Kennedy Pumping Station to Major Mackenzie Drive is required. The Class EA was completed by the City of Toronto in accordance with the York-Toronto Water Supply Agreement. Construction of the works within York Region will be carried out by the Region.

The Class EA for the Kennedy Road watermain was completed in October 2007. The project schedule has not changed since the last report. A summary of key milestones is as follows:

- Completion of Class EA — October 2007
- Completion of detailed design — December 2008

- Tender and contract award — February 2009
- Construction completion — December 2010
  (last reported: December 2010)

The Class EA for the Richmond Hill Pressure District 9 (PD9) Elevated Tank No. 2 is in progress

The project will augment storage capacity for the PD9 water system required to service additional growth beyond the current allocation limit in the Richmond Hill PD9 service area.

While completion of the Class EA and detailed design phases have been delayed since the last report, it is not anticipated that this change will affect the final project delivery date. Key milestones for the project are as follows:

- Completion of Class EA Process — August 2008
  (last reported: April 2008)
- Detailed design completed — March 2009
  (last reported: December 2008)
- Property Acquisition — June 2009
  (last reported: June 2009)
- Tender and contract award — June 2009
  (last reported: June 2009)
- Construction completion — June 2010
  (last reported: June 2010)

Consultant retained for engineering work associated with the Leslie Street Watermain (Wellington St. to just north of Newmarket)

The Leslie Street watermain connects to the existing Aurora East pumping station on Wellington Street, and runs easterly along Wellington Street then northerly along Leslie Street ending at Davis Drive.

The work from the Aurora East pumping station to just north of the Aurora/Newmarket boundary was originally scheduled for completion in the spring of 2011. In support of developments southeast of Mulock Drive and Leslie Street in Newmarket, the Region advanced the start of the project and retained a consultant to carry out the environmental assessment for the watermain works as well as the road widening works between Wellington Street and Mulock Drive.

Since the last report update, the Region has reviewed the property requirements and completed a preliminary geotechnical investigation and determined that the section of watermain required to service the above noted developments in Newmarket will fall under the Schedule A+ category of the recently amended Municipal Class EA Process.

As a Schedule A+ undertaking, the work is pre-approved and can proceed upon public notification. Timing for completion of this project will be provided in future updates.

5. FINANCIAL IMPLICATIONS

Total cost of priority infrastructure projects is approximately $1.46 billion

A summary of the costs of the priority infrastructure projects is provided in Table 1 (wastewater projects) and Table 2 (water projects). The total cost of these projects is $1.46 billion. Estimated expenditures for these projects between 2008 and 2012 total $1 billion, representing 53% of the total water and wastewater capital expenditures for the same period.

Table 1
Cost Estimates and Anticipated Completion Dates for Wastewater Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
16th Avenue Sewer Phase 2 *	$104,100,000	June 2007**
YDSS Interceptor (19th Avenue & Leslie Street)*	$102,200,000	July 2008
Aurora Equalization Tank	$16,300,000	October 2008
Bathurst Langstaff Sewer	$86,000,000	TBD
YDSS Flow Control*	$4,000,000	December 2009
Queensville/Holland Landing/Sharon Servicing	$69,000,000	June 2010
Duffin Creek Water Pollution Control Plant *	$391,000,000	December 2010
Southeast Collector *	$514,000,000	December 2012
Total Wastewater Projects	**$1,286,000,000**	-

*critical projects
**connection works ongoing

Table 2
Cost Estimates and Anticipated Completion Dates for Water Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Aurora/Newmarket Feedermain	$69,500,000	January 2008
Bathurst Watermain (Orchard Heights Reservoir to Newmarket Reservoir)	$2,800,000	May 2008
Bathurst Watermain (Clearmeadow to Woodsprings)	$3,800,000	March 2008
Richmond Hill 1st PD9 Elevated Tank	$10,300,000	August 2008
Stouffville Water Supply	$7,700,000	March 2009
Queensville Elevated Tank	$8,600,000	December 2009
Richmond Hill 2nd PD9 Elevated Tank	$29,000,000	June 2010
King City Water Supply	$15,600,000	Summer 2010
Toronto East Water Supply	$17,600,000	December 2010
Leslie Street Watermain (Wellington St. to Newmarket)	$13,500,000	Spring 2011
Total Water Projects	**$178,000,000**	-

6. LOCAL MUNICIPAL IMPACT

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

The "priority" and "critical" projects reviewed in this report are crucial to providing timely servicing capacity to the 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 will be continually monitored to ensure 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 this infrastructure program to ensure that impacts to planned community growth are minimized to the extent possible considering the constraints created by these projects.

7. CONCLUSION

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

For more information on this report, please contact Tracey Carrigan, Acting Manager, Technical Support of the Water and Wastewater Branch, Environmental Services at Ext. 5095.

The Senior Management Group has reviewed this report.

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