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WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, August 23, 2007, from the General Manager, Water and Wastewater:

1. RECOMMENDATIONS

It is recommended that:

1. 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 December, 2007.

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

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

2. PURPOSE

The purpose of this report is to update Committee and Regional Council on the status and future activities for priority water and wastewater infrastructure projects required to meet system demands identified as triggers associated with the release of additional capacity and approvals under the Planning Act.

3. BACKGROUND

In the fall of 2003, staff recognized that continued approval delays with the 16th Avenue Sewer Phase 2 project were affecting the Region's ability to continue the release of additional sewage capacity to the local municipalities serviced by the York Durham Sewage System (YDSS). Following these events, a full review of all priority projects, as defined by the water and wastewater master plans, was undertaken. In addition, improvements to the modelling tools available to the Region were being completed, resulting in improved ability to predict system capacities and the effects of the various infrastructure components.

Based on the conclusions of these infrastructure modelling activities, on October 21, 2004, Council approved the release of additional sewage and water capacity to accommodate up to 913,000 people within the YDSS service area. With the release of the

additional available capacity, staff also identified the impact of critical infrastructure projects within the YDSS system. In some instances, release of future capacity was contingent on the completion of certain infrastructure projects. Regional Council further directed staff to prepare a protocol for release of future water and wastewater capacity, in consultation with local municipal staff, to meet planned regional and local municipal growth objectives.

Regional Council, at its meeting on June 23, 2005, adopted Clause 1 of Report No.1 of the Regional Joint Transportation and Works Committee and the Planning and Economic Development Committee which granted the release of additional servicing capacity to accommodate up to 970,000 people within the YDSS service area, along with associated triggers based on the status of critical infrastructure.

Regional Council, at its meeting on June 21, 2007, adopted Clause 6 of Report No.6 of the Planning and Economic Development Committee outlining the principles for releasing conditions of draft plan approval in advance of servicing allocation. Infrastructure required to service an additional 11,000 units beyond the June 2005 allocation were identified. Principles adopted by Council required that phases of plan approvals be subject to capacity triggers related to the progress of the said infrastructure.

This status summary was first reported to 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) followed by five subsequent reports to Council with the last update on April 19, 2007. The next update report is scheduled for December 2007.

4. ANALYSIS AND OPTIONS

This report provides a summary of 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 June 2005 *Water and Wastewater Capacity and Servicing Assignment Protocol)* and a summary of the status of newly added projects identified as triggers for the release of capacity required to service an additional 11,000 units (as set out in the June 2007 *Interim Approach for Releasing Conditions of Draft Plan of Subdivision in Advance of Servicing Allocation Protocol).*

The capacity triggers for servicing up to 970,000 people are summarized in Attachment 1 and for servicing the additional 11,000 units beyond the 970,000 people limit 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, with the overall objective of avoiding 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.

4.1 Allocation Triggers

4.1.1 Capacity Trigger for Servicing up to 970,000 People

As discussed in the last status report update to Council on April 19, 2007, the trigger condition to permit pre-sales for approved developments up to the apportioned share of the 970,000 people limit in the Towns of Aurora and Newmarket, and the Green Lane West area of East Gwillimbury has been met. Final registration of draft plan is expected to occur in the fourth quarter of 2007, with the anticipation that all required infrastructure for the above areas will be in place by the second quarter of 2008.

For Vaughan, the trigger condition to permit pre-sales for the Woodbridge area has been met. For areas requiring the Bathurst Langstaff Trunk Sewer, the condition for presales will be met in the fourth quarter of 2007, one year prior to the completion of the Bathurst Langstaff Sewer, and final registration of draft plans is expected to occur in the second quarter of 2008.

For the Pressure District 9 (PD9) service area in Richmond Hill, the trigger condition to permit presales is expected to be met shortly after the third quarter of 2007, with the expected completion of the first water storage facility in August 2008.

4.1.2 Capacity Trigger for Servicing Additional 11,000 Units

Projects required to service an additional 11,000 units beyond the June 2005 allocation of 970,000 people include:

- The Duffin Creek WPCP expansion.
- YDSS Flow Control Structures (as an 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 WPCP expansion. The installation of YDSS Flow Control Structures is expected to be completed before the Duffin Creek WPCP expansion and, therefore, Duffin Creek WPCP expansion will be the governing trigger. Similarly, for the Richmond Hill PD9 service area, the required water storage tank is expected to be in service by June 2010. Since the completion date of the water storage tank is earlier than the Duffin Creek WPCP expansion, the governing trigger condition for the Richmond Hill PD9 service area will be the Duffin Creek WPCP expansion.

For the Aurora East service area, trigger condition to permit presales is expected to be met in the second quarter of 2010, one year prior to the completion of the Leslie Street watermain in the spring of 2011.

In future updates to this report, new priority projects required to service growth beyond the additional 11,000 units will be identified and added to the priority projects list, as new information becomes available from the current Water and Wastewater Master Plan Update, and completed projects will be removed from the list.

5. STATUS OF WASTEWATER PROJECTS

This section provides the status of the priority projects with a brief description of the project, the current project status, current issues affecting project progress and future activities.

These projects are identified as being required within the five-year horizon to meet future demand requirements. The following priority projects are presented by location in Attachment 3 – Priority Wastewater Projects Map. The projects identified as "critical" are those for which any further delays will result in unacceptable risks of overflow.

5.1 Newmarket Equalization Tank

The Newmarket Equalization tank is required to allow detention of wet weather flows at the existing Newmarket Sewage Pumping Station site. Providing flow equalization at this location expands the service capacity of the pumping station by buffering wet weather-derived peak flows to the pumping station. This tank is required to service Newmarket based on peak flows that could be experienced in this system and will also aid in minimizing downstream capacity risks until the diversion to the 16th Avenue sewer is completed through completion of the 19th Avenue Interceptor Sewer. The tank will prolong the service capacity of the pumping station, and in turn will influence the timing for the Upper York Sewage Servicing project.

5.1.1 Current Project Status/ Milestones

The construction contract for the Newmarket equalization tank was awarded in November 2005, and construction will be completed in October 2007.

Key milestones associated with this project are as follows:

- Complete construction October 2007

5.2 Aurora Equalization Tank

The Aurora equalization tank is required to allow 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. Similar to the Newmarket situation, this tank will also provide

additional capacity to Aurora and will aid in minimizing downstream capacity risks. The tank will also prolong the service capacity of the pumping station which will influence the timing for downstream works that are the subject of additional EA process.

5.2.1 Current Project Status/ Milestones

The construction contract for the Aurora equalization tank was awarded in October 2006, and construction will be completed in June 2008.

Key milestones for the project are as follows:

- Complete construction — June 2008
  (last reported: May 2008)

5.3 16th Avenue Sewer Phase 2 *CRITICAL PROJECT*

Phase 2 of the 16th Avenue trunk sewer is needed to service development areas in Markham and to provide the phased completion of the system along 16th Avenue. 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. The benefiting areas include East Gwillimbury, Newmarket, Aurora, Richmond Hill, King and Markham. Vaughan will indirectly benefit from the diversion of flows in the existing YDSS thereby allowing increased flows from Vaughan.

5.3.1 Current Project Status/ Milestones

Installation of the 16th Avenue Sewer was completed in June 2007. Commissioning of the sewer is expected to occur in the fall of 2007 to allow for rectification of deficiencies.

5.4 YDSS Interceptor Sewer *CRITICAL PROJECT*

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.

5.4.1 Current Project Status/ Milestones

The construction of this sewer has been 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 on schedule for completion in spring of 2008.

5.5 Duffin Creek Water Pollution Control Plant *CRITICAL PROJECT*

Expansion of Duffin Creek WPCP is required to provide additional capacity to serve growth in all municipalities serviced by the YDSS. This phase of the expansion will increase the capacity of the plant 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.

5.5.1 Current Project Status/ Milestones

As discussed in the last infrastructure status report, Class EA Part II Order requests were denied by the Minister of the Environment on March 21, 2007.

York and Durham Regions have now moved forward and awarded the site preparation contract, the first of an anticipated six construction contracts. Work is well underway and on schedule. The second contract for the construction of a major portion of the liquid treatment facility is presently out for tender and scheduled to close in August.

Current schedule for the project is as follows:

- Detailed design for Liquid Module completed and Tendered (second contract) — July 2007
- Construction completed — December 2010

5.6 Bathurst Langstaff Sewer

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 on the completion of these sewers and other required infrastructure.

5.6.1 Current Project Status/ Milestones

This is a design-build project managed by the Region and financed by a group of developers through the pre-payment of development charges. The contract was awarded in March 2006 and is on schedule for completion in October 2008.

5.7 Queensville/Holland Landing Servicing

The Queensville/Holland Landing servicing proposal will provide servicing to the communities of Sharon, Queensville and Holland Landing as well as divert flow from the existing Holland Landing Sewage Lagoons. This servicing is being considered through an agreement with a developer group.

5.7.1 Current Project Status/ Milestones

The review of the Class EA is expected to be completed by the summer of 2007. Timing of this project will be dependent on the outcome of the Class EA review and the execution of the prepaid development charge credit agreement. Current schedule for the project as proposed by the developer group is as follows:

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

5.8 Southeast Collector Sewer *CRITICAL PROJECT

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

5.8.1 Current Project Status/ Milestones

York and Durham Regions are co-proponents for this undertaking. Since the approval of the Terms of Reference by the MOE in February 2006, the project team has completed the baseline study, inventoried the natural, geotechnical and hydrogeological, social and cultural environment within the study area and the process of identifying and short-listing alternatives to providing the necessary sewer capacity. The public consultation program for the Individual Environmental Assessment (IEA) is well underway and currently the team has completed evaluating the five short-listed alternatives and identified the preferred sewer route among the five alternatives. An enhanced consultation process for First Nations has been initiated.

As discussed in the last status report update to Council, the filing of the IEA is now scheduled for September 2008.

On the assumption that the MOE will require seven months for review, the expected date for MOE approval is May 2009. Preliminary indications are that the sewer will employ deep tunnelled construction. Assuming the use of construction methods that would minimize dewatering and an aggressive construction timelines employing four to five tunnelling crews, a minimum construction period of two years could be required. Based on the above, key milestones for the project are as follows:

- Submission of the IEA to MOE — September 2008
- Expected MOE approval of the IEA — May 2009
- Completion of detailed design and tender — January 2010
- Obtain all regulatory approvals — January 2010
- Completion of Construction — December 2012

5.9 YDSS Flow Control Structures*CRITICAL PROJECT*

As a result of the revised completion date of 2012 for the Southeast Collector Sewer, 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 the completion of the Southeast Collector Sewer. In addition to its temporary use, the flow control structures will provide operational flexibility such as flow optimization after the Southeast Collector Sewer is constructed. Key milestones for the project are as follows:

- Completion of preliminary study — January 2008
- Completion of design — September 2008

- Tender the works November 2008
- Construction completion December 2009

6. STATUS OF WATER PROJECTS

Priority water projects are those which have been identified as being required within the five-year horizon to meet imminent demands. The priority projects are listed below and are also presented in Attachment 4 - Priority Water Projects Map.

6.1 Aurora/ Newmarket Feedermain

This project will provide additional water supply to the Towns of Newmarket and Aurora 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. 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 to King/Vaughan Road).
- King/Vaughan Road watermain (Keele to Bathurst).
- Bathurst Street watermain (King/Vaughan to Wellington).
- Maple PD8 Pumping Station.
- Aurora South Reservoir.

6.1.1 Current Project Status/ Milestones

Construction works for the first two contracts (Keele Street and King/Vaughan Road watermains) are complete. The Bathurst Street watermain is constructed with minor deficiencies to be rectified.

The work for the Maple Pumping Station contract is expected to be complete in August 2007.

The Aurora South reservoir work was tendered in February 2007. The target date for commissioning the Newmarket/Aurora feedermain system is December 2007, with completion of all works in March 2008.

Key project milestones are as follows:

- Complete property acquisition for the inground reservoir April 2006
- Tender reservoir contract Feb 2007
- Commissioning of the Newmarket/Aurora feedermain December 2007
- Complete all reservoir work March 2008

6.2 Bathurst Watermain (Aurora/Newmarket West Connection)

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.

6.2.1 Current Project Status/ Milestones

The Class EA and detailed design of the watermain are complete. The work was tendered with the Bathurst Street road widening works from Wellington Street to Mulock Drive in June 2007. The tender closed in July. Barring any delay in awarding the contract, construction is expected to be completed in March 2008.

Key project milestones are as follows:

- Detailed design completed — September 2006
- Tender — June 2007 (last reported: March 2007)
- Construction completion — March 2008 (last reported: November 2007)

6.3 Bathurst Watermain (Newmarket Clearmeadow to Woodsprings)

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.

6.3.1 Current Project Status/ Milestones

The Class EA and detailed design of the watermain are complete. The work was tendered with the Bathurst Street road widening works from Wellington Street to Mulock Drive in June 2007. The tender closed in July. Construction is expected to complete in December 2007.

Key project milestones are as follows:

- Detailed design completed — July 2006
- Tender — June 2007 (last reported: March 2007)
- Construction completion — December 2007 (last reported: November 2007)

6.4 Queensville Elevated Tank

Construction of a 7.0 ML elevated tank in Queensville will provide equalization, emergency and fire storage to the community.

6.4.1 Current Project Status/ Milestones

The timing for this project will be dictated by the initiation of new development in Queensville and Sharon, which in turn will be subject to the timing of the work for the

YDSS Extension to Holland Landing/Queensville/Sharon. The current target completion date for this project is June 2009.

6.5 King City Water Supply

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.

6.5.1 Current Project Status/ Milestones

The Class EA for augmenting the water supply and storage capacity to King City is expected to be completed by September 2007. 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 completion date has been revised to September 2009 in consideration of the longer than expected time spent in the Class EA process and the additional time required for constructing new watermains to connect to the York Water System. Key milestones for this project are as follows:

- Completion of Class EA — September 2007 (last reported: April 2007)
- Tender and contract award — Spring 2008 (last reported: December 2007)
- Completion of construction — September 2009 (last reported: December 2008)

6.6 Richmond Hill (Oak Ridges) Elevated Tank No. 1

The 7.55 ML elevated tank will provide equalization, emergency and fire storage to the Pressure District 9 area in Richmond Hill. This is one of the two new elevated tanks needed for the area, with the second one being planned for completion in 2010.

6.6.1 Current Project Status/ Milestones

The Class EA was completed in January 2007. The preferred site for the elevated tank is located within the Ontario Realty Corporation lands on the north side of Bloomington Road, west of Yonge Street. The work was awarded in March 2007. In consideration of the size of the tank and the submitted schedule from the contractor, the completion date has been revised from May 2008 to August 2008. Key milestones for this project are as follows:

- Completion of Class EA — January 2007
- Tender and contract award — March 2007
- Completion of construction — August 2008 (last reported: May 2008)

6.7 Stouffville Water Supply

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

6.7.1 Current Project Status/ Milestones

The Class EA was approved in May 2007. Design of the proposed water supply works has commenced and is expected to be completed by the summer of this year. Key milestones for this project are as follows:

- Completion of Class EA — March 2006
- EA Approval — May 2007
- Completion of detailed design — Summer 2007
- Completion of construction — Fall 2008

6.8 Toronto East Water Supply

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

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

6.8.1 Current Project Status/ Milestones

The Class EA for the Kennedy Road watermain is now scheduled for completion in September 2007, (last reported in April 2007) as more time is needed for additional hydrogeological investigation works requested by TRCA. Key milestones for this project are as follows:

- Completion of Class EA — September 2007 (last reported: April 2007)
- Expected EA Approval — October 2007 (last reported: July 2007)
- Detailed design completed — April 2008
- Tender and contract award — July 2008
- Construction completion — December 2010

6.9 Richmond Hill PD9 Elevated Tank No. 2

The project is required to augment the storage capacity for the PD9 water system in order to service additional growth beyond the current allocation limit in the Richmond Hill PD9 service area. Key milestones for the project are as follows:

- Completion of Class EA Process — April 2008
- Detailed design completed — December 2008
- Property Acquisition — June 2009
- Tender and contract award — June 2009

- Construction completion June 2010

6.10 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 just north of the Aurora/Newmarket boundary. It is required for servicing growth in the Aurora East service area.

The work is scheduled for completion in the spring of 2011. The Class EA is originally scheduled to commence in 2008. A developer group has recently expressed interest to advance the project through entering into a prepaid development charge credit agreement with the Region. After reviewing the developer group's proposal, it is determined that the Region's schedule for commencing the EA be advanced to 2007. Subject to further changes due to the developer group's proposal, key milestones for the project are as follows:

- Completion of EA Summer 2009
- Construction completion Spring 2011

7. FINANCIAL IMPLICATIONS

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 approximately $1.45 billion. The estimated expenditures of these projects between 2007 and 2012 total $ 1.17 billion, representing 55% of the overall water and wastewater capital expenditures of the same period.

Table 1
Wastewater Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Newmarket Equalization Tank	$10,200,000	October 2007
Aurora Equalization Tank	16,300,000	June 2008
16th Avenue Sewer Phase 2 *	106,500,000	Fall 2007
YDSS Interceptor (19th Avenue and Leslie Street) *	104,300,000	January 2008
Duffin Creek Water Pollution Control Plant *	391,000,000	December 2010

Bathurst Langstaff Sewer	87,000,000	October 2008
Queensville/Holland Landing Servicing	44,100,000	December 2009
Southeast Collector *	514,200,000	December 2012
YDSS Flow Control*	$4,400,000	December 2009
Total Wastewater Projects	**$1,278,000,000**	

*critical projects

Table 2
Water Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Aurora/Newmarket Water Supply	$71,900,000	December 2007
Bathurst Watermain (Orchard Heights Reservoir to Newmarket Reservoir)	2,800,000	March 2008
Bathurst Watermain (Clearmeadow to Woodsprings)	3,800,000	December 2007
Queensville Elevated Tank	8,600,000	June 2009
King City Water Supply	15,600,000	September 2009
Richmond Hill 1st PD9 Elevated Tank	10,300,000	August 2008
Stouffville Water Supply	6,300,000	Fall 2008
Toronto East Water Supply	17,600,000	December 2010
Richmond Hill 2nd PD9 Elevated Tank	22,100,000	June 2010
Leslie Street Watermain (Wellington St. to Newmarket)	13,500,000	Spring 2011
Total Water Projects	**$172,500,000**	

8. LOCAL MUNICIPAL IMPACT

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 plan approval process is contingent on all of these projects being completed as planned. Development projects will be continually monitored to ensure that the risk of delay is minimized and that 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.

9. CONCLUSION

The “priority” and “critical” projects identified in this report are essential in providing the additional capacities needed for the projected growth in York Region. The monitoring of the progress of these projects will assist in ensuring a timely delivery of capacities. This report provides Council with a status of these priority and critical projects and, in turn, their relationship to the timing of plan approvals.

For more information on this report contact Ilmar Simanovskis, extension 5027, Manager Technical Support of the Water and Wastewater Branch in the Transportation and Works Department.

The Senior Management Group has reviewed this report.

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