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WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Transportation and Works Committee recommends that:

- 1. The presentation by Bala Araniyasundaran, Director, Capital Planning and Delivery, Environmental Services Department, be received; and**
- 2. The recommendations contained in the following report, November 20, 2008, from the Commissioner of Environmental Services, be adopted:**

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 March, 2009.
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

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 York Durham Sewage System flow control measures made additional sewage capacity available for 72,000 people

In keeping with the Region's policy to provide a multi-year supply of servicing allocation, staff investigated alternatives to provide additional capacity prior to the completion of the Southeast Collector Sewer. Recent analysis indicated that installation of flow control structures within sections of the YDSS could accommodate an additional 72,000 persons capacity, an increase of 14,000 people reported in previous update. This additional capacity offsets the extended duration to complete the Southeast Collector Sewer.

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. Initially capacity for 58,000 persons was identified to service the YDSS with the addition of the flow control measure. Regional Council assigned 36,000 persons of this capacity to meet the Regional growth target to 2011. With the newly identified additional capacity of 14,000, the remaining capacity for assignment is 36,000 people.

The "Assignment of Servicing Allocation to Local Municipalities Served by the YDSS 2012", Report No. 2 of the Joint Transportation and Works and Planning and Economic Development Report to the December 3rd Planning and Economic Development Committee recommends assignment of additional capacity of 36,264 people to local municipalities including a regional reserve of 2,164 people. The proposed assignment is anticipated to provide sufficient servicing capacity for growth in local municipalities serviced by the YDSS to the end of 2012 and is subject to infrastructure triggers set out in *Attachment 2* as well as commitment from local municipalities to support and implement in partnership with the Region the following key initiatives:

- Infiltration and Inflow Program
- Water Efficiency Master Plan
- Water System Leakage Reduction Program
- Local Water Use By-Laws

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 72,000 people including the 58,000 capacity 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 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). Ten subsequent reports followed, with the last update to Regional Council on September 18, 2008. The next status report is scheduled for March 2009.

In future updates, completed projects will be removed from this report. Since last report, projects completed and removed include:

- Bathurst Street Watermain (Aurora/Newmarket East Connection)
- 16th Avenue Phase 2 Sewer
- YDSS Interceptor/Lower Leslie Street Trunk Sewer, and
- Oak Ridges Elevated Tank #1

We anticipate that the Aurora Equalization Tank will be completed before the March 2009 Update. 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 72,000 people are summarized in *Attachment 2*. These 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. High density development may move to final approval if the required infrastructure is within eighteen months at the discretion of the local municipality in accordance with the Regional policy adopted in September 2008.

Release of capacity for servicing up to 970,000 people

Trigger conditions to permit final registration of the draft plans for approved developments up to the apportioned share of the 970,000 in the Towns of Aurora, Newmarket, Richmond Hill and the Green Lane West Area of East Gwillimbury have been met. Therefore, the Region has advised the four local municipalities they could proceed to final plan registration subject to meeting other draft plan conditions and localized servicing requirements.

For Vaughan, the trigger condition to permit final plan registration for the Bathurst Collector Sewer service area was met in August 2008 with the Bathurst Collector expected to be complete by the end of 2008. In September, final registration of draft plans was also permitted for the Langstaff Sewer service area through the proposed installation of a flow control gate in the Jane-Rutherford sewer scheduled for completion by February 2009 to provide interim servicing capacity.

In September 2008, the Region granted permission for final registration of draft plans dependent on the Stage 3 water supply project in Stouffville provided that all other draft plan conditions and the Town of Whitchurch-Stouffville infrastructure requirements are satisfied. The Stage 3 water project is expected to be complete in March 2009.

Release of capacity for servicing an additional 72,000 people

Projects required to service an additional 72,000 people beyond the June 2005 allocation of 970,000 people include:

- 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).

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 is the governing trigger.

For the Richmond Hill Pressure District 9 (PD9) service area, the required second water storage facility is expected to be in service by December 2010, the same time as the Duffin Creek plant expansion. As a result, both the water storage facility and the Duffin Creek plant expansion are the governing trigger conditions for the Richmond Hill Pressure District 9 (PD9) service area.

With respect to Aurora East Service Area, the Leslie Street watermain will be constructed in stages, with the first section from Aurora Pumping Station to just north of Mulock Drive to be completed in early 2010 to accommodate proposed developments in Newmarket and the remaining section north to Davis Drive to be completed before the end of 2011. Since the Duffin Creek plant expansion is expected to be completed later than the first section of Leslie Street Watermain, the governing trigger condition for Aurora East service area is the Duffin Creek plant expansion.

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*.

Aurora Equalization Tank expected to be complete in December 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 aid in minimizing downstream capacity risks. The tank has a storage volume of 10,000 m³ and is expected to 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 extreme rainfall experienced last summer and additional remediation work, construction is now expected to be completed by December 2008 (last reported: October 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 on March 21, 2007, York and Durham Regions have progressed into the construction phase of the project. The site preparation contract has been totally performed and the contracts for construction of the:

- liquid treatment facility is approximately 20% complete,
- preliminary treatment facility is approximately 10% complete,
- temporary biosolids dewatering is 75% complete,
- subgrade work for the new incineration and dewatering buildings is 50% complete,
- new electrical substation is approximately 10% complete,
- digester modifications and new boiler building has been awarded, and
- pre-qualification for contractors for the incinerator/dewatering superstructure project has been completed.

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 construction of primary clarifiers, secondary clarifiers, aeration tanks and disinfection facilities.

The preliminary treatment contract comprises construction of distribution channels, screening facilities and grit removal tanks. Both contracts are expected to be completed in December 2010 (last reported: December 2010).

Bathurst Collector Sewer is constructed and Langstaff Trunk Sewer is scheduled for completion in the fall of 2009

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 is contingent upon completion of these sewers and other required infrastructure.

The project contract was awarded in March 2006. Construction of the Bathurst Collector is complete and commissioning of this sewer is underway. Due to problems encountered

during construction on Langstaff Road, the Langstaff sewer has been delayed and is now expected to be complete by fall of 2009.

Due to the revised completion date of the Langstaff Sewer, an interim sanitary servicing solution has been identified to permit developments pertaining to the Regional June 2005 capacity assignment to proceed prior to completion of the Langstaff sewer. The project consists of installing a flow control gate in the Jane-Rutherford sewer that will attenuate peak wastewater flows. The schedule for this work is as follows:

- Completion of detailed design August 2008
- Contract award December 2008
- Construction completion February 2009

Queensville/Holland Landing/Sharon servicing project is expected to be complete by December 2010

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 a pre-payment of development charges credit agreement with a developer group.

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 with three requests for a Part II Order submitted to the MOE. On June 6, 2008, the MOE advised the Region that the Part II Order Requests were denied with conditions. The Region is now in the process of finalizing the prepaid development charge credit agreement. Execution of this agreement has taken longer than anticipated, resulting in a revision of scheduled completion dates for detailed design and construction phases. A summary of key milestones is as follows:

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

Southeast Collector Trunk Sewer *CRITICAL PROJECT* is scheduled for completion by December 2012

The Southeast Collector Trunk 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 in York Region.

York and Durham Regions are co-proponents for this undertaking. Since MOE approval of the Terms of Reference for the Individual Environmental Assessment (IEA) in February 2006, the project team has completed the baseline condition reports, feasibility study report, evaluation of alternatives reports, conceptual design report, impact assessment reports, and IEA pre-submission package.

The intention of the IEA pre-submission package is to record and incorporate the public, agencies and stakeholders' comments prior to the final IEA package submission to the MOE. Currently, the Regions are preparing the final IEA package by incorporating the public, agencies and stakeholders' comments received to date. Extensive public engagement and enhancement programs are nearly complete. An enhanced consultation process for First Nations, is also making good progress.

In November 2008, consultation meetings were held with the Cherrywood community to address the ongoing concerns expressed by this community relating to the planned Odour Control Facility (OCF) located immediately south of Cherrywood West. This community has submitted a 90 name petition to the City of Pickering expressing their opposition to having the OCF sited in this location. Further, a meeting will be held with the Huron-Wendat First Nation from Quebec in December, 2008 to present the final recommendations from the IEA study and planned environmental and recreation enhancement program which are of interest to the First Nations communities. The Huron-Wendat specifically requested this meeting to present this information to their new Chief and Councillors.

The IEA is scheduled to be filed in early December 2008 and expected to be approved in May 2009. Key milestones for this project are as follows:

- Target date for submission of the IEA to MOE early December 2008
(last reported: October 2008)
- Expected MOE approval of the IEA May 2009
(last reported: May 2009)
- Detailed design and tender December 2009
- Obtain regulatory approvals December 2009
- Construction completion 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. Flow control structures to be installed in selected locations in the YDSS

will attenuate peak wastewater flows, 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. Projects listed below are also presented in *Attachment 4 - Priority Water Projects Map*.

Completion of Queensville Elevated Tank is expected for July 2010

This project involves the construction of a 7.5 ML elevated tank in Queensville. The tank will provide equalization, emergency and fire storage to the community.

The target completion date for this project is July 2010 (last reported: July 2010).

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

The King City Water Supply Project will provide water supply and storage capacity to service new development in King City. The project consists of a 2.74 ML elevated tank and connection to the York Water System as recommended by the approved EA.

The Environmental Study Report was completed in September 2007 with three Part II Order (bump up) requests received during the 30-day review period. In June 2008, the Minister denied the bump up requests and therefore the project can proceed as planned. The expected project completion date has not changed since last report. A summary of key milestones are as follows:

- Completion of Class EA September 2007
 - EA approval June 2008
 - Completion of detailed design Winter 2009
 - Tender and contract award Winter/Spring 2009
 - Completion of construction Summer 2010
- (last reported: Summer 2010)

Stouffville Water Supply project scheduled for completion in 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 was tendered in July 2008. Construction of water supply works is underway and expected to be complete by March 2009 (last reported: March 2009).

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. Release of the Request for Proposal for engineering consulting services was delayed due to the preliminary scoping phase taking longer than anticipated. As such, completion of the detailed design and tender phases have been delayed since the last report, but it is not anticipated that these interim delays will affect the final project delivery date.

A summary of key milestones is as follows:

- Completion of Class EA October 2007
- Completion of detailed design June 2009
(last reported: March 2009)
- Tender and contract award September 2009
(last reported: May 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 expected to be complete by November 2008

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

While completion of the Class EA has been delayed since the last report, it is not anticipated that this change will affect the date of tender and contract award. The date of anticipated construction completion, however, has been revised to December 2010 as evaluation of the alternatives studied in the Class EA resulted in identification of the existing standpipe property on Bloomington Road as the preferred site. With this site as the preferred alternative, it is expected that the duration of construction must be extended to December 2010 to account for restrictions on construction due to the close proximity of the new elevated tank to the existing standpipe.

Key milestones for the project are as follows:

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

Leslie Street watermain (Wellington St. to Davis Drive) is expected to be completed by 2011

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 to Davis Drive.

In support of proposed developments in Newmarket, the work will be carried out in stages, with an anticipated completion of the section from the Aurora East pumping station to just north of Mulock Drive by early 2010. The remaining section north to Davis Drive is scheduled for completion by the end of 2011. Key milestones for the project are as follows:

- Notification of Class EA Schedule A+ decision July 2008
- Detailed Design May 2009
- Tender and Contract Award June 2009
- Construction Completion (Contract 1) March 2010
- Construction Completion (Contract 2) November 2011

5. FINANCIAL IMPLICATIONS

Total cost of priority infrastructure projects is approximately \$1.31 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 infrastructure

projects included in this update is equal to \$1.31 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
Aurora Equalization Tank	\$16,300,000	December 2008
Bathurst Collector Sewer	47,159,000	December 2008
Langstaff Trunk Sewer	44,832,000	Fall 2009
YDSS Flow Control*	4,000,000	December 2009
Queensville/Holland Landing/Sharon Servicing	69,000,000	December 2010
Duffin Creek Water Pollution Control Plant *	**519,000,000	December 2010
Southeast Collector *	529,000,000	December 2012
Total Wastewater Projects	\$1,230,000,000	-

*Critical projects

**Includes Durham share of \$ 79,000,000

Table 2
Cost Estimates and Anticipated Completion Dates for Water Projects

Project	Current Project Cost Estimates (\$)	Anticipated Completion Dates
Stouffville Water Supply	\$7,700,000	March 2009
Queensville Elevated Tank	8,600,000	July 2010
Richmond Hill 2 nd PD9 Elevated Tank	10,500,000	December 2010
King City Water Supply	15,600,000	Summer 2010
Toronto East Water Supply	24,000,000	December 2010
Leslie Street Watermain (Wellington St. to Newmarket)	13,500,000	December 2010
Total Water Projects	\$80,000,000	-

6. LOCAL MUNICIPAL IMPACT

Staff continue 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 constraints created by these projects.

7. CONCLUSION

This report provides Regional Council with a status of “priority” and “critical” 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 the project schedules.

For more information on this report, please contact Bala Araniyasundaran, Director, Capital Planning and Delivery, Environmental Services at Ext. 5131.

The Senior Management Group has reviewed this report.

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