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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, 2006, from the Commissioner of Transportation and Works:

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 January, 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 the priority water and wastewater infrastructure projects required to meet system demands in the short term which have been 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 Two project were affecting the Region's ability to continue the release of additional sewage capacity to the local municipalities serviced by the YDSS system. 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.

The *Water and Wastewater Capacity and Servicing Assignment Protocol* (as adopted by Regional Council on June 23, 2005 Clause 1 of Report No. 1 of the Joint Transportation and Works and Planning and Economic Development Committees), identified 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.

This report provides a status summary of the priority infrastructure projects that are being identified as triggers for release of additional capacity that has been identified through the *Water and Wastewater Capacity and Servicing Assignment Protocol*. 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) with two subsequent reports to Council on December 15, 2005 and April 27, 2006, updating the status of the critical infrastructure projects and impacts to the earliest trigger date for release of allocation. The next update report is scheduled for the January, 2007 Council meeting.

4. ANALYSIS AND OPTIONS

The *Water and Wastewater Capacity and Servicing Assignment Protocol*, as contained in Clause 1 of Report No. 1 of the Joint Transportation and Works Committee and the Planning and Economic Development Committee, outlined a process for identifying capacity triggers directly tied to specific critical infrastructure projects. These triggers were identified to assist the Region in better controlling two key points:

- Pre-sales of housing where no certainty of infrastructure delivery exists.
- Building permit issuance without infrastructure capacity being available.

The rationale for the selection of the triggers in this report is based on the need for increased certainty that needed infrastructure is completed by the time occupancy is scheduled and is closely linked to the above two control points. The triggers represent a point in time prior to the infrastructure being operational that allows various planning approvals to be issued while considering these control points.

The revised expectations, for servicing being in place, were therefore established as either of following two criteria:

- Tender award for projects that will take one year or less to complete.
- Or within one year of completion for multi year construction projects.

These trigger dates would represent the point for either Draft Plan Approval or pre-sales. Further safeguards have been proposed for the planning processes to ensure this is the case and a building permit does not get issued prematurely.

Further work needs to be done in consultation with the local municipalities and the development industry in better defining how the trigger point is linked to the development and approvals process. Planning staff have been conducting ongoing discussions with the local municipalities and reviewing specific applications and circumstances to better link these triggers to planning approvals with the overall objective of avoiding pre-mature occupancies in advance of availability of physical services.

Attachment 1 (Table 1) summarizes the infrastructure required to service a population of 970,000, which represents the currently available treatment capacity. The infrastructure includes both water and wastewater facilities with a detailed status provided in the body of this report.

5. WASTEWATER PROJECTS STATUS

This section provides a 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 defined in the YDSS Master Plan and identified as being required within the five-year horizon to meet future demand requirements. The following priority projects are presented by location in *Attachment 2 – Priority Wastewater Projects Map*. Some projects are now deemed “critical” in-that 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 the existing community of 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. In the medium time horizon, this tank will prolong the service capacity of the pumping station which may influence the timing for a required extension of the Leslie Street sewer north.

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 May 2007 (last reported December 2006).

Key milestones associated with this project are as follows:

- Complete construction May 2007 (last reported: December 2006)

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. In the medium time horizon, this tank will prolong the service capacity of the pumping station which will influence the timing for a required extension of the Leslie Street sewer north.

5.2.1 Current Project Status/ Milestones

The project is in the tender phase. The Schedule “B” Class Environmental Assessment document was filed in September 2005.

The Region has applied for the Certificate of Approval from the MOE. Requirement for a Permit to Take Water is not anticipated as the design and construction approach will be based on minimizing, and as much as possible, eliminating any construction dewatering.

Delays in completing the detailed design will effect the construction start date and construction is now expected to take six months more than the preliminary estimated, due to the complexity associated with the construction of the structure.

Key milestones for the project are as follows:

- Tender of construction contract July 2006 (last reported: May 2006)
- Initiation of construction October 2006 (last reported: July 2006)
- Completion of construction March 2008 (last reported: July 2007)

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

All tunnelling is completed along 16th Avenue. The tunnelled sections are currently being lined with concrete. Once the lining is complete, most of the dewatering can stop. The project is on schedule.

Key milestones for this project are as follows:

- Completion of construction April 2007

5.4 YDSS Interceptor Sewer *CRITICAL PROJECT*

The Lower Leslie trunk and the YDSS Interceptor are intended to work together to service new development in Richmond Hill, Aurora, Newmarket, East Gwillimbury and King to provide relief to the existing YDSS through critical sections in Richmond Hill 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 section, and Leslie Street section. Both contracts have been awarded. The team has secured the necessary regulatory approvals, including the Permit to Take Water (July 14, 2006) and the Certificate of Approval from the MOE.

Leslie Street Section

Key Milestones for this section of the project are as follows:

- Complete construction of sewer December 2007

19th Avenue Section

The tunnel portions of the 19th Avenue section will be done by Earth Pressure Balance Machine (EPBM) tunnelling. The contract was awarded in July 2006, and construction is underway.

Key milestones for this project are as follows:

- Complete construction of sewer January 2008

5.5 Southeast Collector *CRITICAL PROJECT*

The Southeast Collector is required to provide additional capacity to the existing YDSS trunk sewer through parts of Markham, Scarborough and Pickering. The need for this sewer is driven by growth in all municipalities serviced by the YDSS and a desirable operational opportunity afforded by redundancy (i.e. the opportunity to thoroughly investigate/rehabilitate the existing sewer).

5.5.1 Current Project Status/ Milestones

The Individual Environmental Assessment (IEA) for this project has been initiated. The Terms of Reference were submitted in July 2005 and approved by the MOE on March 1,

2006, a five-month delay from the Minister's October 5, 2005 deadline as stipulated in O. Reg 616/02.

York and Durham Regions are co-proponents for the undertaking. The two Regions have continued data collection within the study area to inventory the natural environment and accumulate base line data. The project now includes the section from the boundary meter to Valley Farm Road. The public consultation program for the IEA has been initiated.

Key milestones for the Individual EA are as follows:

- Submission of the IEA to MOE June 2007
- Expected MOE approval of the IEA November 2007
- Construction completed December 2010

5.6 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. The expansion will also provide upgrades required to meet evolving environmental standards. The existing facility was planned, from the outset, to be expanded to at least twice its current capacity.

5.6.1 Current Project Status/ Milestones

The filing of the Environmental Study Report (ESR) for the obligatory 30-day public review is planned for September 2006. Technical studies prepared in support of the Class EA were peer reviewed. The Town of Ajax has formally indicated an intention to file a Part II Order request (generally referred to as a "bump-up") at the completion of the ESR to address their concerns with the potential impacts of the expansion on local water and air quality. In the event that this occurs, the Class EA may not be approved until January 2007 or later, depending on the timing of the Minister's ruling on the Part II Order.

The project is a joint undertaking with The Regional Municipality of Durham. The two Regions have secured the Engineering consultant team for all subsequent phases of the project. This will enable the two Regions to expedite the project phases and ensure an uninterrupted transition to the preliminary and detailed design phases upon approval of the Class EA. The preliminary design phase was initiated in June 2005.

This phase of the expansion will increase the capacity of the plant to 630 ML/day and will also include three new incineration units. Project design and construction activities will be phased into appropriate packages to facilitate creation of additional treatment capacity as early as possible.

Key milestones for the project are as follows:

- ESR filed for review September 2006 (last reported: July 2006)

- Expected EA approval (assuming the Minister rules on the Part II order within the legislated timelines) January 2007
- Detailed design completed June 2007
- Construction completed December 2010

5.7 Peel Wastewater Diversion

The Peel Diversion will service the Woodbridge area of Vaughan. This diversion will alleviate constraints downstream of the Humber pumping station in the existing YDSS and will benefit the remaining service areas of the YDSS through the diversion of flows that would otherwise flow east towards Markham.

5.7.1 Current Project Status/ Milestones

Construction of the forcemain and all associated facilities (including the meter chamber and the odour control facility) are complete and ready for commissioning. In the last report, it was expected that diversion would commence in March 2006. However, due to expected operational difficulties associated with the quantity of wastewater to be diverted, the commencement of diversion was delayed until a suitable quantity could be agreed upon between the Regions of York and Peel. The Regions are currently in negotiations to finalize the quantity and timeline for the initiation of sewage diversion.

Key project milestones are as follows:

- Commission system and initiate flow diversion September 2006
(last report: March 2006)

5.8 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.

5.8.1 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. Regional Council approved the award of the design-build contract in December 2005, subject to receipt of funding from the developer group.

The MOE issued the PTTW for contingency dewatering associated with the project.

Key project milestones are as follows:

- Completion October 2008

imminent demands. The priority projects are listed below and are also presented in *Attachment 3 Priority Water Projects Map*.

6.1 Aurora/ Newmarket Feedermain

The Aurora Newmarket Feedermain Project consists of the Maple PD8 Pumping Station, interconnecting watermains and a reservoir located at Bathurst Street and Bloomington Road. 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 North Richmond Hill and increase capacity generally 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. There are five construction contracts associated with this project.

6.1.1 Current Project Status/ Milestones

Construction of the watermains along Keele St. (Teston to King/Vaughan Rd.) and King/Vaughan Rd. (Keele to Bathurst) are complete. The contracts for the Maple PD8 Pumping Station and the watermain along Bathurst (King/Vaughan Rd to Wellington) have been awarded and construction is underway.

The project is a year behind schedule, for the reasons listed below:

- Delays related to the acquisition of property for the in-ground reservoir located in the vicinity of Bathurst Street and Bloomington Road.
- Delays attributable to the consultant in completing the detailed design and securing the necessary regulatory approvals.
- Increase of scope to the Maple Pump Station project located at Keele Street and Teston Road to include significant additional upgrades to the existing pump station.
- Construction delays to the Maple Pump Station.

The final contract for the reservoir will be tendered in the Fall of 2006. Key project milestones are as follows:

- | | |
|---|----------------|
| • Complete property acquisition for the inground reservoir | April 2006 |
| • Tender reservoir contract
(last reported: July 2006) | September 2006 |
| • Complete construction of all works
(last reported: May 2007) | August 2007 |

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 has been completed. Detailed design of the watermain is 90% complete.

- Detailed design August 2006 (last reported: April 2006)
- Tender November 2006
- Completion 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 has been completed and detailed design of the watermain is complete.

- Detailed design completed July 2006 (last reported: April 2006)
- Tender and contract award November 2006
- Project completion November 2007

6.4 Queensville Elevated Tank

Construction of a 6.6 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 above any currently available water capacity, which in turn will be subject to the timing of the work for the review of the Class EA for the YDSS Extension to Holland Landing/Queensville as required by the MOE. The current target completion date for this project is 2008.

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 currently underway and is expected to be complete in November 2006. It is expected that the new water supplies could be in place by the end of 2007. If the preferred solution is based on additional well supplies, then the second well will be in place by 2010.

Locating new well sites has taken a longer time than expected. Several sites have been explored since the start of the groundwater exploration program. To date, only one site has been identified as viable for development into a municipal well, based on preliminary results from a test well. If a connection to the York Water System is considered, the

connection could occur in the vicinity of Keele Street and King Road. Key milestones for this project are as follows:

Completion of Class EA	November 2006
Tender and contract award	December 2007 (last reported: June 2007)
Completion of construction	December 2008 (last reported: June 2008)

6.6 Richmond Hill (Oak Ridges) Elevated Tank and Watermain

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 tank structures with the second one being required by 2011.

6.6.1 Current Project Status/ Milestones

KMK Consultants has been retained for the engineering services required for this project. Work on the Class EA is well underway and will be completed in October 2006. The Class EA is about three months behind schedule as a result of complexities associated with site selections. Key milestones for this project are as follows:

- Completion of Class EA October 2006 (last reported: July 2006)
- Tender and contract award January 2007
- Completion of construction April 2008

6.7 Stouffville Water Supply

Additional water supply is required for the community of Stouffville to service new development areas. A Class EA has recently been completed identifying connection to the York Water System as the preferred solution.

6.7.1 Current Project Status/ Milestones

The Class EA was filed for the 30-day public review on March 9, 2006. There was one Part 2 Order request which is being reviewed by the MOE. It is expected that the Order will not be granted based on the arguments posed by the requestor, namely that Lake Ontario water supply is not suitable for consumption. Design of the proposed water supply works has been initiated.

Key milestones for this project are as follows:

- Completion of Class EA April 2006
- Completion of detailed design Spring 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 demands from growth in areas serviced by the York Water System. The Class EA for this project will be

delivered by the City of Toronto in accordance with the York-Toronto Water Supply Agreement.

6.8.1 Current Project Status/ Milestones

The City of Toronto is conducting a Class EA to include a watermain from Kennedy Pumping Station to Major Mackenzie. MacViro Consultants has been retained for the Class EA services for this project. Construction of York Region works will be by delivered by York Region staff.

- Class Environmental Assessment completed (last report: December 2006) January 2007
- Detailed design completed (last report: December 2008) March 2008
- Tender and contract award (last report: March 2009) July 2008
- Project completion (last report: December 2011) December 2010

The project schedule has been advanced by 12 months due to the reduced amount of required infrastructure along the new proposed route.

7. FINANCIAL IMPLICATIONS

Table 1
Water Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Aurora/Newmarket Water Supply	\$56,000,000	July 2007
Bathurst Watermain (Orchard Heights Reservoir to Newmarket Reservoir)	2,600,000	November 2007
Bathurst Watermain (Clearmeadow to Woodsprings)	3,800,000	November 2007
Queensville Elevated Tank	5,000,000	2008 (tentative)
King City Water Supply	7,000,000	December 2008

Richmond Hill Elevated Tank and Watermain	6,800,000	April 2008
Stouffville Water Supply	10,000,000	Fall 2008
Toronto East Water Supply	30,000,000	December 2010
Total Water Projects	\$122,000,000	

Table 2
Wastewater Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Newmarket Equalization Tank	\$10,300,000	May 2007
Aurora Equalization Tank	15,400,000	March 2008
16 th Avenue Sewer Phase 2	96,000,000	April 2007
YDSS Interceptor (19 th Avenue and Leslie Street)	94,000,000	January 2008
Southeast Collector	248,000,000	December 2010
Duffin Creek Water Pollution Control Plant	400,000,000	December 2010
Peel Wastewater Diversion	46,000,000	September 2006
Bathurst Langstaff Sewer	94,000,000	October 2008
Pine Valley Pumping Station	8,800,000	September 2006
Queensville/Holland Landing Servicing	TBD	Fall 2009
Total Wastewater Projects	\$1,012,500,000	

Tables 1 and 2 summarize updated project costs and project completion dates. These project costs have been included in the 2007 10 year Capital Plan as well as the 2007 Development Charge Bylaw Update.

8. LOCAL MUNICIPAL IMPACT

The priority projects reviewed in this report are critical in 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 outlined in the Water and Wastewater Capacity and Servicing Assignment Protocol in June 2005, is contingent on all of these projects being

completed as planned. These 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 priority projects.

9. CONCLUSION

The “priority” and “critical” projects identified in this report are necessary to ensuring that water and wastewater capacity for projected demands is made available as needed.

Completion of these projects is tied to the release of additional capacity. This report, in conjunction with the Capacity and Servicing Assignment Protocol report of June 2005, provide Council with a status of these priority projects and their relationship to increases in servicing capacity to the municipalities.

The Senior Management Group has reviewed this report.

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