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WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Transportation and Works Committee recommends the following:

- 1. Section 5.4 Bathurst Watermain (Newmarket Clearmeadow to Woodsprings) be amended by adding the following: “This watermain will also supply additional water to the southeast quadrant of the Town of East Gwillimbury.”; and**
- 2. The recommendations contained in the following report, November 22, 2005, from the Commissioner of Transportation and Works be adopted.**

1. RECOMMENDATIONS

It is recommended that:

1. Staff continue to provide quarterly updates on the priority projects linked to the release of additional capacity.
2. 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 and that have been identified as triggers associated with the release of additional capacity.

3. BACKGROUND

In the fall of 2003, staff recognized that continued approval delays with the 16th Avenue Sewer Phase Two project was 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. In the presentation of the additional available capacity, staff also identified the influence of critical infrastructure projects within the YDSS system. In some instances, release of 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 area municipal staff, to meet planned Regional and local municipal growth objectives.

In January 2005, and in support of a capacity allocation protocol, staff proposed to Council the creation of a capacity monitoring report as a means of tracking available capacity and the relationship with infrastructure projects. The intent of this report was to provide each municipality with a detailed local servicing plan which would benefit both the municipalities and the Region with respect to managing capacity availability, timing and distribution. An update to the capacity monitoring report is planned for submission to The Regional Council in 2006.

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 Servicing Assignment Protocol.

Attachment 3 (Table 1) illustrates the various pieces of infrastructure that are required to service a population of 970,000, which represents the available treatment capacity. The infrastructure includes both water and wastewater facilities. The triggers represent the point in time prior to infrastructure being operational that allows various planning approvals to be issued. This timeframe will allow allocation by the municipalities to development and ensure infrastructure is available when occupancy of units occurs. Further safeguards can be provided through the Planning Act to ensure this is the case and a building permit does not get issued prematurely.

The new expectations for servicing being in place are outlined in *Attachment 3 – Table 1* using either tender award for projects that will take one year or less to construct or the infrastructure being within one year of completion (as determined by the Commissioner of Transportation and Works) for multi-year projects, as the proposed trigger for Draft Approval or pre-sales. Further work needs to be done in consultation with the local municipalities and the development industry in defining what the trigger point is linked with. The link between the development/home building process and the planning approvals process and infrastructure delivery will then be further defined.

The use of infrastructure specific triggers brings additional certainty as to the infrastructure being in place prior to occupancy. This will also help to avoid sales of home and occupancy delays resulting in homeowner frustration.

4. 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 1 – Priority Wastewater Projects Map*.

4.1 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 will influence the timing for a required extension of the Leslie Street sewer north.

4.1.1 Current Project Status

The construction contract for the Newmarket Equalization Tank was awarded in November 2005.

4.1.2 Project Issues

The construction of the tank will be completed before the end of 2006.

4.1.3 Significant Milestones

Key milestones associated with this project are as follows:

- | | |
|-----------------------------------|---------------|
| • Tender of Construction contract | June 2005 |
| • Initiate Construction | November 2005 |
| • Complete Construction | November 2006 |

4.2 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 derived peak flows to the pumping station. Similarly to the Newmarket situation, this tank will also provide additional capacity to Aurora and will 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 will influence the timing for a required extension of the Leslie Street sewer north.

4.2.1 Current Project Status

The project is in the Class Environmental Assessment phase. The Schedule “B” Class Environmental Assessment document was filed in September 2005. The project team is addressing comments from the MOE with respect to the Class EA documentation.

4.2.2 Project Issues

Regulatory approvals related to this project will likely be limited to 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.

4.2.3 Significant Milestones

Key milestones for the project are as follows:

- Tender of Construction contract April 2006
- Initiation of Construction May 2006
- Completion of Construction July 2007

4.3 16th Avenue Sewer Phase 2

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.

4.3.1 Current Project Status

Tunnelling is underway in the two sections of the tunnel along 16th Avenue. The project is on schedule.

4.3.2 Project Issues

A new shaft is under construction in the vicinity of McCowan Avenue. This will allow the completion of the shaft and dewatering at Stone Mason Drive at an earlier date.

4.3.3 Significant Milestones

Key milestones for this project are as follows:

- Completion of Construction August 2007

4.4 YDSS Interceptor Sewer

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.

4.4.1 Current Project Status

The review of alternatives as stipulated in the Minister's conditions of October 2004 was completed in October 2005 and the report has been placed on public record. The team is completing the detailed design and focusing on securing the necessary regulatory approvals including the Permit to Take Water and the Certificate of Approval from the MOE.

4.4.2 Project Issues

The construction will be divided into two contracts along 19th Avenue and Leslie Street respectively. Assuming Earth Pressure Balance Machine (EPBM) tunnelling along 19th Avenue, the team will focus on tendering these contracts as soon as possible to expedite the procurement of the EPBM by the contractor as this is a key activity on the critical path. An application for a PTTW will be submitted to the MOE.

4.4.3 Significant Milestones

Key milestones for this Project are as follows:

- | | |
|--|---------------|
| • Submit Application for Certificate of Approval | November 2005 |
| • Submit Application for PTTW | January 2006 |
| • Tender "open-cut" Contract along Leslie Street | January 2006 |
| • Secure Certificate(s) of Approval | January 2006 |
| • Tender "tunnelling" Contract along 19 th Avenue | February 2006 |
| • Award "open-cut" Contract along Leslie Street | March 2006 |
| • Award "tunnelling" Contract along 19 th Avenue | April 2006 |
| • Complete Construction of Sewer | October 2007 |

4.5 Southeast Collector

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 new development in all municipalities serviced by the YDSS.

4.5.1 Current Project Status

The Individual Environment Assessment (IEA) for this project has been initiated. The Draft Terms of Reference are currently under review by the MOE.

4.5.2 Project Issues

York and Durham Regions are co-proponents for the undertaking. In advance of the approval of the Terms of Reference, the two Regions have initiated 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.

4.5.3 Significant Milestones

Key milestones for the Individual EA are as follows:

- | | |
|--|---------------|
| • MOE Approval of the Terms of Reference | November 2005 |
| • Submission of the IEA to MOE | June 2007 |
| • MOE Approval of the IEA | November 2007 |
| • Construction Completed | December 2010 |

4.6 Duffin Creek Water Pollution Control Plant

Expansion of Duffin Creek WPCP is required to provide additional capacity to serve growth in all municipalities serviced by the YDSS. The existing facility was planned, from the outset, to be expanded to at least twice its current capacity.

4.6.1 Current Project Status

The Class Environmental process will be completed in January 2006. Technical studies prepared in support of the Class EA will require peer review. The project is a joint undertaking with The Regional Municipality of Durham. The two Regions have retained the Engineering consultant team for all subsequent phases of the project. This will enable the two Regions to expedite the project and ensure an uninterrupted transition to the preliminary and detailed design phases. The preliminary design phase was initiated in June 2005.

4.6.2 Project Issues

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.

4.6.3 Significant Milestones

Key milestones for the project are as follows:

- | | |
|-----------------------------|---------------|
| • EA complete | January 2006 |
| • Detailed design completed | June 2007 |
| • Construction completed | December 2010 |

4.7 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.

4.7.1 Current Project Status

Construction of the forcemain is complete. The construction of a meter chamber and the odour control facility within Peel Region is scheduled for completion by November 2005.

4.7.2 Project Issues

Once these facilities are completed, the Wastewater diversion will be commissioned.

4.7.3 Significant Milestones

Key project milestones are as follows:

- Completion of the Odour Control Facility and Meter Chamber November 2005
- Commission system and initiate flow diversion December 2005

4.8 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.

4.8.1 Current Project Status

This is a design-build project managed by the Region and financed by a group of developers through the pre-payment of development charges. Design-build proposals from two proponents have been received and evaluated. The design-build contract will be ready for award in December 2005, subject to Council Approval and funding by the developer group.

4.8.2 Project Issues

The MOE is currently reviewing the PTTW for the contingency dewatering associated with the project.

4.8.3 Significant Milestones

Key project milestones are as follows:

- Secure funding from developers December 2005
- Secure PTTW December 2005
- Award Design Build contract December 2005
- Completion August 2008

4.9 Pine Valley Pumping Station

4.9.1 Current Project Status

The project is in the construction phase.

4.9.2 Project Issues

A permit to take water (PTTW) has been secured for this project and construction is underway.

4.9.3 Significant Milestones

- Complete Construction September 2006

4.10 Queensville/Holland Landing Servicing

The Queensville/Holland Landing servicing proposal, will provide servicing to the communities of Sharon and 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 development group. It is proposed that the development group deliver all phases of the project on behalf of the Region, subject to Regional Council approval.

4.10.1 Current Project Status

At its May 2005 meeting, Council adopted recommendations to proceed with the review of the Class Environmental Assessment (EA) for this project as a first step in implementing the Project Delivery Proposal submitted by the developer group. The review of the Class EA is underway, in order to meet the conditions outlined by the Minister of the Environment in October 2004.

4.10.2 Project Issues

As part of the servicing needs for these communities, and as required by the Ministry of Environment conditions, the Region has requested that the Developer Group undertake a review of the Class EA to assess the servicing needs for these communities. The review will include an assessment of the potential to service this area within the Lake Simcoe Basin (completely or partially).

4.10.3 Significant Milestones

Project milestones will be defined once the workplan to review the Class EA has been finalized.

5. WATER PROJECTS STATUS

The priority water projects are defined in the Long Term Water Master Plan Update as projects that 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 2 – Priority Water Projects Map*.

5.1 Peel Water Supply

The Peel Water Supply project will provide additional water supply to the York Water System from Peel in accordance with the 2002 York-Peel Water Supply Agreement. This will help the Region meet the long term demands from growth in areas serviced by the York Water System.

5.1.1 Current Project Status

Construction of the York Peel Feedermain, the Airport Reservoir and Pump Station and the North East Brampton Feedermain is complete. Commissioning of these components was completed in November 2005.

5.1.2 Project Issues

Pressure testing, disinfection and commissioning of the York Peel Feedermain is complete. The system has been commissioned and is now operational.

5.2 Aurora/ Newmarket Feedermain

The Aurora Newmarket Feedermain Project consists of the Maple PD8 Pumping Station, interconnecting watermain 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. Completion of this project will assist in meeting the long term demands due to growth in Newmarket, Aurora and East Gwillimbury. There are five construction contracts associated with this project.

5.2.1 Current Project Status

Three out of the five contracts including the Maple PD8 Pumping Station have been awarded and construction is underway.

5.2.2 Project Issues

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.
- Increase of scope to the Maple Pump Station project located at Keele and Teston Road to include significant additional upgrades to the existing pump station.
- Delays attributable to the consultant in completing the detailed design and securing the necessary regulatory approvals.

The third watermain along Bathurst Street will be tendered in November 2005. This contract includes the road widening on Bathurst between King Road and Wellington Street. The fifth contract for the reservoir will be tendered in the spring of 2006.

5.2.3 Significant Milestones

Key project milestones are as follows:

- | | |
|--|--------------|
| • Complete property acquisition for the inground reservoir | March 2006 |
| • Tender Reservoir Contract | March 2006 |
| • Complete Construction of all works | January 2007 |

5.3 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.

5.3.1 Current Project Status

The Class EA has been completed. Detailed design of the watermain is 30% complete.

5.3.2 Project Issues

This watermain is to be constructed at the same time as the construction of a separate road project and the schedule for these projects are to be coordinated.

5.3.3 Significant Milestones

- | | |
|--|---------------|
| • Detailed design | March 2005 |
| • Tender (contingent on road contract) | November 2006 |
| • Completion | November 2007 |

5.4 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.

5.4.1 Current Project Status

The Class EA has been completed and detailed design of the watermain is for completion by the end of 2005.

5.4.2 Project Issues

Road reconstruction for this section of Bathurst was recently advanced. To avoid unnecessary construction disruption in this section, the water project has been postponed from 2006 to 2007 to allow for coordinated construction activity.

5.4.3 Significant Milestones

- | | |
|-----------------------------|---------------|
| • Detailed design Completed | December 2005 |
| • Tender and Contract Award | February 2007 |
| • Project completion | December 2007 |

5.5 Queensville Elevated Tank

Construction of a 6.6 ML elevated tank in Queensville will provide equalization, emergency and fire storage to the community.

5.5.1 Current Project Status

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 2007.

5.6 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.

5.6.1 Current Project Status

The Class EA for augmenting the water supply and storage capacity to King City is currently underway and is expected to be complete in June 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.

5.6.2 Project Issues

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.

5.6.3 Significant Milestones

Key milestones for this Project are as follows:

Completion of Class EA	June 2006
Tender and Contract Award	November 2006
Completion of Construction	December 2007

5.7 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.

5.7.1 Current Project Status

KMK Consultants has been retained for the engineering services required for this project.

5.7.2 Project Issues

Work on the Class Environmental Assessment has been initiated.

5.7.3 Significant Milestones

Key milestones for this Project are as follows:

• Completion of Class EA	July 2006
• Tender and Contract Award	January 2007
• Completion of Construction	April 2008

5.8 Stouffville Water Supply

Additional water supply is required for the Community of Stouffville to service new development areas. Supply is available either from new municipal wells or by a connection to the York Water System. The Class EA currently underway will identify the preferred solution for water supply in Stouffville.

5.8.1 Current Project Status

Parallel with the Class EA, a groundwater exploration program to identify new groundwater sites is currently being carried out. To date, potential sites have been identified at Cairo Court and at a location within Durham Region that may provide the required capacity; further works will be required to confirm the above. Subject to favourable results from further testing on the Cairo Court site, the Class EA is expected to be complete by the end of 2005.

5.8.2 Project Issues

Design and construction of the proposed water supply works is expected to commence immediately following the completion of the Class EA.

5.8.3 Significant Milestones

Key milestones for this project are as follows:

- | | |
|---------------------------------|-----------|
| • Completion of Class EA | Fall 2005 |
| • Completion of Detailed Design | Fall 2006 |
| • Completion of Construction | Fall 2007 |

5.9 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. This project will be delivered by the City of Toronto.

5.9.1 Current Project Status

The City of Toronto has received proposals for the Class Environmental Assessment for this project and Consultant selection is being finalized.

5.9.2 Project Issues

A review of the servicing scheme for the Toronto East Supply identified an additional option that will be included in the Class EA. The City of Toronto has requested revised pricing from the Proponents to include this activity within the current terms of reference for the project.

5.9.3 Significant Milestones

- | | |
|--|---------------|
| • Class Environmental Assessment Completed | December 2006 |
| • Detailed Design Completed | December 2007 |
| • Tender and Contract Award | March 2008 |
| • Project completion | December 2011 |

6. FINANCIAL IMPLICATIONS

The wastewater priority projects summarized in this report have experienced some significant cost increases primarily attributed to increased environmental concerns. In a

letter received from the Minister of Environment on October 1, 2004, additional conditions were imposed on almost all the Regional wastewater priority projects related to the YDSS. These conditions focused on additional environmental reviews and consideration of cumulative effects on groundwater impacts during construction. These requirements have resulted in increased costs related to additional study requirements, increased environmental mitigation requirements and modified construction methods. Table 1 and 2 provide a summary of the project costs and project completion dates.

Table 1
Water Projects

Project	Project Costs	Anticipated Completion Dates
Peel Water Supply	\$202,000,000	November 2005
Aurora/Newmarket Water Supply	56,000,000	January 2007
Bathurst Watermain (Orchard Heights Reservoir to Newmarket Reservoir)	2,600,000	November 2007
Bathurst Watermain (Clearmeadow to Woodsprings)	3,800,000	December 2007
Queensville Elevated Tank	4,400,000	TBD
King City Water Supply	5,600,000	December 2007
Richmond Hill Elevated Tank and Watermain	6,200,000	April 2008
Stouffville Water Supply	3,600,000	Fall 2007
Toronto East Water Supply	220,000,000	December 2011
Total Water Projects	\$504,000,000	

Table 2
Wastewater Projects

Project	Project Costs	Anticipated Completion Dates
Newmarket Equalization Tank	\$13,000,000	November 2006
Aurora Equalization Tank	15,400,000	July 2007
16 th Avenue Sewer Phase 2	76,000,000	August 2007
YDSS Interceptor (19 th Avenue and Leslie Street)	55,000,000	October 2007
Southeast Collector	114,000,000	December 2010

Duffin Creek Water Pollution Control Plant	227,000,000	December 2010
Peel Wastewater Diversion	46,000,000	December 2005
Bathurst Langstaff Sewer	89,000,000	August 2008
Pine Valley Pumping Station	8,800,000	September 2006
Queensville/Holland Landing Servicing	TBD	TBD
Total Wastewater Projects	\$723,400,000	

7. 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.

Release of additional capacity, as outlined in the Allocation Protocol Report 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 the development industry are minimized to the extent possible considering the constraints created by these priority projects.

8. CONCLUSION

The priority 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 critical for the release of new capacity, and this report in conjunction with the Capacity Allocation Protocol report 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 included with this report.)