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WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Transportation and Works Committee recommends:

- 1. The recommendations contained in the following report, March 23, 2006, from the Commissioner of Transportation and Works be adopted; and**
- 2. The record reflect that the Certificate of Approval has been received for the Leslie Street section of the YDSS Interceptor Sewer and construction should begin in the near future.**

1. RECOMMENDATIONS

It is recommended that:

1. Staff continue to provide quarterly updates on the priority projects linked to the release of additional capacity, with the next report to be submitted in September 2006.
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 local 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. The first version of this report was completed in December 2005. An update to the capacity monitoring report will be completed for the 2006 period and provided to council in January 2007.

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 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).

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 revised 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 pre-sales. Draft Plan registration could then occur six months prior to completion of the required infrastructure (as outlined in the Water and Wastewater Servicing protocol Provision of Regional Conditions for Draft Approval as adopted by Regional Council on February 1, 2006). 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.

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*. Some projects are now deemed “critical” in that further delays will result in unacceptable risks of overflow.

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/ Milestones

The construction contract for the Newmarket equalization tank was awarded in November 2005.

Key milestones associated with this project are as follows:

- | | |
|-----------------------------------|--|
| • Tender of construction contract | June 2005 |
| • Initiate construction | November 2005 |
| • Complete construction | December 2006 (originally 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. Similar 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/ Milestones

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

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.

Delays in completing the detailed design will effect the construction start date but are not expected to impact the overall completion date. Key milestones for the project are as follows:

- Tender of construction contract May 2006 (originally April 2006)
- Initiation of construction July 2006 (originally May 2006)
- Completion of construction July 2007

4.3 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.

4.3.1 Current Project Status/ Milestones

Tunnelling is underway in the two sections of the tunnel along 16th Avenue. A new shaft is under construction in the vicinity of McCowan Avenue. This has allowed for the completion of the shaft and significant reductions to dewatering at Stone Mason Drive. The project is on schedule. Key milestones for this project are as follows:

- Completion of construction April 2007 (originally August 2007)

4.4 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.

4.4.1 Current Project Status/ Milestones

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.

The construction will be divided into two contracts; the 19th Avenue section, and Leslie Street section respectively. The PTTW is a common permit for both sections of the project. The PTTW application was submitted to the MOE in March 2006. There was a two-month delay in this submission due to requirements for external peer review of the submission material.

Leslie Street Section

The CofA application for this section was submitted to the MOE in November 2005. The certificate is expected, prior to the award of a construction tender, in late March.

The section was tendered on March 6, 2006. Award of the project will be contingent on receipt of both the PTTW and the CofA. Key Milestones for this section of the 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 (originally January 2006) | March 2006 |
| • Secure Certificate(s) of Approval (originally January 2006) | March 2006 |
| • Award "open-cut" contract along Leslie Street (originally March 2006) | April 2006 |
| • Complete construction of sewer (originally October 2006) | December 2007 |

19th Avenue Section

The tunnel portions of the 19th Avenue section will be done by Earth Pressure Balance Machine (EPBM) tunnelling, 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. Key milestones for this project are as follows:

- | | |
|---|------------|
| • Tender "tunnelling" contract along 19 th Avenue (originally February 2006) | April 2006 |
| • Award "tunnelling" contract along 19 th Avenue (originally April 2006) | May 2006 |

4.5 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 new development in all municipalities serviced by the YDSS and a desirable operational opportunity afforded by redundancy (ie. the opportunity to thoroughly investigate/rehabilitate the existing sewer).

4.5.1 Current Project Status/ Milestones

The Individual Environment 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 October 5, 2005 deadline 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:

- | | |
|--|---------------|
| • MOE approval of the Terms of Reference
(originally November 2005) | March 2006 |
| • 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/ Milestones

The Class Environmental process is scheduled for completion by July 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.

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:

- | | |
|-----------------------------|-------------------------------------|
| • EA complete | July 2006 (originally 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/ Milestones

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 March 2006.

Once these facilities are completed, the Wastewater diversion will be commissioned. Key project milestones are as follows:

- | | |
|--|------------|
| • Completion of the odour control facility and meter chamber
(originally November 2005) | March 2006 |
| • Commission system and initiate flow diversion
(originally December 2005) | March 2006 |

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/ 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. Design-build proposals from two proponents have been received and evaluated. Regional Council approved the award of the design-build contract in December 2005, subject to receipt of funding from the developer group.

The MOE is currently reviewing the PTTW, submitted in July 2005, for the contingency dewatering associated with the project. Key project milestones are as follows:

- | | |
|--|------------|
| • Secure funding from developers
(originally December 2005) | March 2006 |
| • Secure PTTW
(originally December 2005) | March 2006 |
| • Award design build contract
(originally December 2005) | March 2006 |

- Completion October 2008
(originally August 2008)

4.9 Pine Valley Pumping Station

4.9.1 Current Project Status/ Milestones

The project in Vaughan is in the construction phase.

- Complete construction September 2006

4.10 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 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/ Milestones

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.

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).

Timing of certain aspects of this project will be dependent on the outcome of the review of the Class EA. Preliminary dates indicate:

- Completion of Class EA June 2006
- Completion of detailed design Summer 2007
- Construction completion Fall 2009

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 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.

5.1.1 Current Project Status/ Milestones

Three out of the five contracts including the Maple PD8 Pumping Station 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.
- 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.
- Delays attributable to the consultant in completing the detailed design and securing the necessary regulatory approvals.

The third watermain along Bathurst Street was tendered in November 2005 and awarded in February 2006. This contract includes the road widening on Bathurst Street between King Road and Wellington Street. The fifth contract for the reservoir will be tendered in the spring of 2006. Key project milestones are as follows:

- | | |
|--|------------|
| • Complete property acquisition for the inground reservoir (originally March 2006) | April 2006 |
| • Tender reservoir contract (originally March 2006) | July 2006 |
| • Complete construction of all works (originally January 2007) | May 2007 |

5.2 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.

5.2.1 Current Project Status/ Milestones

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

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.

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

5.3 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.

5.3.1 Current Project Status/ Milestones

The Class EA has been completed and detailed design of the watermain is complete.

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.

- | | |
|---|---------------|
| • Detailed design completed
(originally December 2005) | April 2006 |
| • Tender and contract award
(originally February 2007) | November 2006 |
| • Project completion
(originally December 2007) | November 2007 |

5.4 Queensville Elevated Tank

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

5.4.1 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 2007.

5.5 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.

5.5.1 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 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.

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 (originally June 2006)
Tender and contract award	June 2007 (originally November 2006)
Completion of construction	June 2008 (originally December 2007)

5.6 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.

5.6.1 Current Project Status/ Milestones

KMK Consultants has been retained for the engineering services required for this project. Work on the Class EA has been initiated. 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 |

5.7 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.

5.7.1 Current Project Status/ Milestones

The Class EA was filed for the 30-day public review on March 9, 2006. Design and construction of the proposed water supply works is expected to commence immediately following the completion of the Class EA. Key milestones for this project are as follows:

- | | |
|---------------------------------|------------------------------------|
| • Completion of Class EA | April 2006 (originally Fall 2005) |
| • Completion of detailed design | Spring 2007 (originally Fall 2006) |
| • Completion of construction | Spring 2008 (originally Fall 2007) |

5.8 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. This project will be delivered by the City of Toronto in accordance with the York-Toronto Water Supply Agreement.

5.8.1 Current Project Status/ Milestones

MacViro consultants has been retained for the engineering services required for this project.

A review of the servicing scheme for the Toronto East Supply identified an additional option that will be included in the Class EA. This activity has been included within the current Terms of Reference for the project.

- | | |
|--|---------------|
| • Class Environmental Assessment completed
(originally December 2006) | December 2007 |
| • Detailed design completed
(originally December 2007) | December 2008 |
| • Tender and contract award
(originally March 2008) | March 2009 |
| • 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
Aurora/Newmarket Water Supply	\$56,000,000	May 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	4,400,000	TBD
King City Water Supply	5,600,000	June 2008
Richmond Hill Elevated Tank and Watermain	6,200,000	April 2008
Stouffville Water Supply	3,600,000	Spring 2008
Toronto East Water Supply	220,000,000	December 2011
Total Water Projects	\$302,200,000	

Table 2
Wastewater Projects

Project	Project Costs	Anticipated Completion Dates
Newmarket Equalization Tank	\$13,000,000	December 2006
Aurora Equalization Tank	15,400,000	July 2007
16 th Avenue Sewer Phase 2	76,000,000	April 2007
YDSS Interceptor (19 th Avenue and Leslie Street)	55,000,000	December 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	March 2006
Bathurst Langstaff Sewer	89,000,000	October 2008
Pine Valley Pumping Station	8,800,000	September 2006
Queensville/Holland Landing Servicing	TBD	TBD
Total Wastewater Projects	\$644,200,000	

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 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.

8. 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 new 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.)