

1

WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, March 22, 2007, 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 September, 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 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 through 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 four subsequent reports to Council on December 15, 2005, April 27, 2006, September 21, 2006 and January 25, 2007, 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 September 2007.

4. ANALYSIS AND OPTIONS

The *Water and Wastewater Capacity and Servicing Assignment Protocol* (as adopted by Regional Council on June 23, 2005 through Clause 1 of Report No.1 of the Joint Transportation and Works Committee and the Planning and Economic Development Committee), identified the capacity triggers and the associated infrastructure required to allow certain phase of the planning approvals to proceed. These triggers summarized in *Attachment 1* (Table 1) were used to assist the Region in better controlling two key steps in the planning approvals process:

- Pre-sales of homes
- Final plan approvals

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. Planning staff have been working closely with local municipalities to apply these triggers to the planning

approvals process, with the overall objective of avoiding pre-mature occupancies in advance of availability of physical services.

4.1 Allocation Trigger

As discussed in the last status report update to Council on January 25, 2007, the trigger condition to permit pre-sales for approved developments in the Towns of Aurora and Newmarket, and the Green Lane West area of East Gwillimbury has been met. Final registration of draft plans and issuance of the building permits will be subject to the next trigger that ties to the completion date of the works. With the anticipation that all required infrastructure for the above areas will be in place by the second quarter of 2008, it is expected that registration can proceed in the fourth quarter of 2007.

The trigger condition to permit presales for the Woodbridge area in Vaughan has also been met. Permission for presales in other areas of Vaughan dependent on the Bathurst Langstaff Trunk Sewer is expected to occur in the fourth quarter of 2007, one year prior to the completion of the Bathurst Langstaff Sewer.

As projects are completed they will be removed from future updates of the Water and Wastewater Infrastructure Status Report. For the next infrastructure status report, the completed projects, namely, Peel Wastewater diversion and the Pine Valley Pumping Station will be dropped.

The priority infrastructure projects discussed in the infrastructure status reports are those required to service the projected growth to 2010. A general overview of priority infrastructure projects required to service growth between 2010 and 2015 will be discussed in the next infrastructure status report. Projects required to service growth beyond 2015 will be fully described, with the completion of the Water and Wastewater Master Plan Update in 2008.

5. WASTEWATER PROJECTS STATUS

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

These projects are 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*. The projects identified as “critical” are those for which any further delays will result in unacceptable risks of overflow.

5.1 Newmarket Equalization Tank

The Newmarket Equalization tank is required to allow detention of wet weather flows at the existing Newmarket Sewage Pumping Station site. Providing flow equalization at this

location expands the service capacity of the pumping station by buffering wet weather-derived peak flows to the pumping station. This tank is required to service 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 through completion of the 19th Avenue Interceptor Sewer. The tank will prolong the service capacity of the pumping station. This will influence the timing for the project identified in earlier Master Plans as the Upper Leslie Street Trunk Sewer.

5.1.1 Current Project Status/ Milestones

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

Key milestones associated with this project are as follows:

- Complete construction October 2007
(last reported: August 2007)

5.2 Aurora Equalization Tank

The Aurora equalization tank is required to allow detention of wet weather flows at the existing Aurora Sewage Pumping Station site. Providing flow equalization at this location expands the service capacity of the pumping station by buffering wet weather peak flows to the pumping station. Similar to the Newmarket situation, this tank will also provide additional capacity to Aurora and will aid in minimizing downstream capacity risks. The tank will also prolong the service capacity of the pumping station which will influence the timing for downstream works that are the subject of additional EA process.

5.2.1 Current Project Status/ Milestones

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

Key milestones for the project are as follows:

- Complete construction May 2008

5.3 16th Avenue Sewer Phase 2 *CRITICAL PROJECT*

Phase 2 of the 16th Avenue trunk sewer is needed to service development areas in Markham and to provide the phased completion of the system along 16th Avenue. The 16th Avenue trunk will convey sewage from existing and future developments in the north areas of the Region from the Leslie Street trunk sewer to the existing 9th Line trunk sewer. The benefiting areas include East Gwillimbury, Newmarket, Aurora, Richmond Hill, King and Markham. Vaughan will indirectly benefit from the diversion of flows in the existing YDSS thereby allowing increased flows from Vaughan.

5.3.1 Current Project Status/ Milestones

All tunnelling is completed along 16th Avenue. The tunnelled sections have all been lined with concrete. Construction is scheduled for completion in May 2007. Key milestones for this project are as follows:

- Completion of construction

May 2007
(last reported: 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 tunnelling section and the Leslie Street open-cut section. The Leslie Street section was substantially completed in January 2007. The 19th Avenue tunnelling contract is on schedule for completion in 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.

5.5.1 Current Project Status/ Milestones

The Individual Environmental Assessment (IEA) for this project was initiated in 2005. 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. Since the approval of the Terms of Reference, the Project team has completed the baseline study, inventoried the natural, social and cultural environment within the study area and the process of identifying and shortlisting alternatives to providing the necessary sewer capacity. The public consultation program for the IEA is well underway and currently the team is in the process of evaluating the shortlisted alternatives in order to select the preferred alternative. An enhanced consultation process for First Nations has been initiated. Following the selection of the preferred alternative and the completion of the environmental work to address all of the Minister's conditions, the Regions will file the IEA with the Ministry of the Environment.

Given that the likely preferred routes have now been identified, the project team has developed the scope of the work plan to address all of the requirements of the Ministry of the Environment and it appears that the filing of the IEA will be achieved about 16

months later than the previously provided completion date of June 2007. The reasons for this are as follows:

- Extensive hydrogeological assessments including multiple 72 hour pump tests are required. Given the nature of the geotechnical and hydrogeological conditions along the preferred route, these assessments can be performed only during the summer months to ensure the validity of these tests.
- More extensive public, First Nations and agency consultation is now required.

The implication is a delay in filing the IEA until September 2008, at the earliest.

On the assumption that the MOE will require seven months to review, the expected date for MOE approval is now April 2009. Now that the team has a better definition of the extent of the sewer facilities that are required, the project team has developed realistic timelines for the design and construction of the sewer. Preliminary indications are that the sewer will employ deep tunnelled construction. Given this and assuming the use of construction methods that would minimize dewatering, a minimum construction period of two years would be required. Based on the above, key milestones for the project are now as follows based on aggressive construction timelines employing four to five tunnelling crews:

- | | |
|--|---|
| • Submission of the IEA to MOE | September 2008
(last reported: June 2007) |
| • Expected MOE approval of the IEA | May 2009
(last reported: January 2008) |
| • Completion of detailed design and tender | January 2010 |
| • Obtain all regulatory approvals | January 2010 |
| • Completion of Construction | December 2012
(last reported: December 2010) |

Given, the significant change to the above project schedule, Regional staff are assessing various contingency measures to minimize impacts to the development approvals that are dependent on the project.

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. This phase of the expansion will increase the ultimate capacity of the plant to 630 ML/day subject to completion of future works to address limitations of the existing outfall and will also include three new incineration units. The expansion will also provide upgrades required to meet evolving environmental standards.

5.6.1 Current Project Status/ Milestones

Subsequent to the filing of the Environmental Study Report (ESR) for the obligatory 30-day public review on September 22, 2006, the Town of Ajax and two environmental

groups filed Part II Order requests (generally referred to as a “bump-up”). A detailed response was filed by the Region on November 21, 2006.

In the last few months, staff worked with the Ministry to resolve technical issues related to effluent criteria and the proposed plant outfall improvements, and have responded to additional requests from MOE Environmental Assessment and Approvals Branch with respect to First Nations consultation. York and Durham Regions are moving forward to tender some contracts related to earthworks and equipment purchase, in order not to lose time caused by delays in the Minister’s ruling on the Part II Order that might unnecessarily compromise plant performance.

The Minister of the Environment’s decision, denying Part II Order requests, was received on March 21, 2007 and the project is now approved to proceed.

Key milestones for the project are as follows:

- ESR filed for review September 2006
- EA approval March 2007
(last reported: Dec 2006)
- Certificate of Approval
and construction tender award (first of several) March 2007
- Detailed design completed June 2007
- Construction completed December 2010

5.7 Peel Wastewater Diversion

The Peel Diversion was commissioned in December 2006. The Peel Diversion services the Woodbridge area of Vaughan as well as alleviates system constraints for service areas tributary to the Duffin Creek WPCP. As this project is completed, it will be removed from the priority project list on future infrastructure status report update.

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. The contract was awarded in March 2006 and is on schedule for completion in October 2008.

5.9 Pine Valley Pumping Station

The Pine Valley Pumping Station is a new pumping station located within the Boyd Conservation Area on Pine Valley Drive, north of Langstaff Road. This station is required to service Blocks 38, 39, and 40 in the City of Vaughan and is subject to a

prepaid development charge agreement. The works consist of the pumping station, an associated forcemain, and a sanitary sewer.

5.9.1 Current Project Status/ Milestones

The work was completed in October 2006. As this project is completed, it will be removed from the priority project list on future infrastructure status report update.

5.10 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.

5.10.1 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 well underway and the third Public Consultation Centre was held in February 2007.

Timing of this project will be dependent on the outcome of the Class EA review and the execution of the prepaid development charge credit agreement. Preliminary dates indicate:

- Completion of Class EA review March 2007
(last reported: Feb 2007)
- Completion of detailed design December 2007
- Construction completion Fall 2009

6. 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 3 - Priority Water Projects Map*.

6.1 Aurora/ Newmarket Feedermain

This project will provide additional water supply to the Towns of Newmarket and Aurora to supplement the well supply from the Yonge Street Aquifer. It will also provide additional supply to 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.

The project consists of five construction contracts:

- Keele Street watermain (Teston to King/Vaughan Road).
- King/Vaughan Road watermain (Keele to Bathurst).
- Bathurst Street watermain (King/Vaughan to Wellington.)
- Maple PD8 Pumping Station.
- Aurora South Reservoir.

6.1.1 Current Project Status/ Milestones

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

No further delay is reported for the Maple Pumping Station contract since the last report and the work is expected to complete in July 2007.

The most critical contract of the project is the Aurora South reservoir. As part of the site plan approval for the proposed reservoir at Bathurst Street and Bloomington Road, a minor variance application was submitted to the Aurora Committee of Adjustment which was subsequently approved in September 2006. An appeal to the Committee decision was filed and subsequently withdrawn. With the appeal withdrawn, the work was tendered in February 2007, two months earlier than previous schedule (last reported: April 2007). The target date for commissioning the Newmarket/Aurora feedermain system is December 2007.

Key project milestones are as follows:

- Complete property acquisition
For the inground reservoir April 2006
- Tender reservoir contract Feb 2007
(last reported: Apr 2007)
- Commissioning of the Newmarket/Aurora
feedermain December 2007
- Complete all reservoir work March 2008

6.2 Bathurst Watermain (Aurora/Newmarket West Connection)

This watermain on Bathurst Street from Orchard Heights Reservoir to the West Newmarket Reservoir will provide additional water supply and system security to both Aurora and Newmarket West Pressure Districts.

6.2.1 Current Project Status/ Milestones

The Class EA and detailed design of the watermain are complete. The work is to be tendered with the Bathurst Street road widening works from Wellington Street to Mulock Drive in March 2007.

- Detailed design completed September 2006
- Tender March 2007
(last reported: Dec 2006)
- Construction 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 and detailed design of the watermain are complete. The work is to be tendered with the Bathurst Street road widening works from Wellington Street to Mulock Drive in March 2007.

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

6.4 Queensville Elevated Tank

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

6.4.1 Current Project Status/ Milestones

The timing for this project will be dictated by the initiation of new development in Queensville and Sharon, which in turn will be subject to the timing of the work for the YDSS Extension to Holland Landing/Queensville/Sharon. The current target completion date for this project is June 2009.

6.5 King City Water Supply

The King City Water Supply Project consists of a 2.74 ML elevated tank and additional water supply from new wells, or other sources, such as the York Water System.

6.5.1 Current Project Status/ Milestones

The Class EA for augmenting the water supply and storage capacity to King City is well underway and is expected to be complete by April 2007 (last reported March 2007).

Subject to the final results of the EA, the preferred solution at this time is to connect King City to the York Water System. The preferred route for the York Water System connection is currently under study. Key milestones for this project are as follows:

- Completion of Class EA April 2007
(last reported March 2007)
- Tender and contract award December 2007
- Completion of construction December 2008

6.6 Richmond Hill (Oak Ridges) Elevated Tank No. 1 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 needed for the area, with the second one being planned for completion in 2010.

6.6.1 Current Project Status/ Milestones

KMK Consultants has been retained for the engineering services required for this project. The Class EA was completed in January 2007. The preferred site for the elevated tank is located within the Ontario Realty Corporation lands on the north side of Bloomington Road, west of Yonge Street. Key milestones for this project are as follows:

- Completion of Class EA January 2007
(last reported: Dec 2006)
- Tender and contract award March 2007
- Completion of construction May 2008
(last reported: 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 II 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. Additional First Nations consultation as recently requested by MOE was carried out. Design of the proposed water supply works has commenced. Key milestones for this project are as follows:

- Completion of Class EA March 2006
- Expected EA Approval June 2007
- Completion of detailed design Summer 2007
- Completion of construction Fall 2008

6.8 Toronto East Water Supply

The Toronto East Water Supply Project is required to bring additional water to the Markham Pressure District 6 area from Toronto to meet the long term 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.

As part of the project, a new watermain along Kennedy Road from Kennedy Pumping Station to Major Mackenzie Road is required. While construction of the works will be carried out by York Region, the Class EA is conducted by the City of Toronto. MacViro Consultants has been retained for the Class EA services for this project.

6.8.1 Current Project Status/ Milestones

The Class EA for the Kennedy Road watermain is currently underway. Key milestones for this project are as follows:

- | | |
|-----------------------------|---|
| • Completion of Class EA | April 2007
(last reported: January 2007) |
| • Expected EA Approval | July 2007 |
| • Detailed design completed | March 2008 |
| • Tender and contract award | July 2008 |
| • Construction completion | December 2010 |

7. FINANCIAL IMPLICATIONS

A summary of the costs of the priority infrastructure projects is provided in Table 1 (water projects) and Table 2 (wastewater projects). The total cost of these projects is approximately \$1.4 billion. The estimated expenditures of these projects between 2007 and 2010 total \$ 1.08 billion, representing 65% of the overall water and wastewater capital expenditures of the same period.

The costs of the above projects have been reviewed and revised since the ten-year capital program is finalized. The most significant cost difference from the ten-year program occurs in the Southeast Collector project, where cost has increased from \$245 million to approximately \$500 million. However, there is sufficient funding in the 2007 budget to cover the costs in 2007, as the bulk of the expenditure occurs after 2007 during the construction years. The up-to-date costs will be reflected in the Development Charge Bylaw update.

This is primarily due to the fact that most of the sewer will be tunnelled whereas previously the estimates were based on open-cut construction for some sections of sewer.

Table 1
Water Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Aurora/Newmarket Water Supply	\$69,000,000	December 2007
Bathurst Watermain (Orchard Heights Reservoir to Newmarket Reservoir)	2,800,000	November 2007
Bathurst Watermain (Clearmeadow to Woodsprings)	1,900,000	November 2007
Queensville Elevated Tank	5,000,000	June 2009
King City Water Supply	11,200,000	December 2008
Richmond Hill 1 st PD9 Elevated Tank and Watermain	7,100,000	May 2008
Stouffville Water Supply	6,400,000	Fall 2008
Toronto East Water Supply	16,900,000	December 2010
Total Water Projects	\$120,300,000	

Table 2
Wastewater Projects

Project	Current Project Cost Estimates	Anticipated Completion Dates
Newmarket Equalization Tank	\$10,300,000	October 2007
Aurora Equalization Tank	16,500,000	May 2008
16 th Avenue Sewer Phase 2 *	104,000,000	May 2007
YDSS Interceptor (19 th Avenue and Leslie Street) *	102,200,000	January 2008
Southeast Collector *	500,100,000	December 2012
Duffin Creek Water Pollution Control Plant *	373,000,000	December 2010
Peel Wastewater Diversion	44,000,000	Completed
Bathurst Langstaff Sewer	96,000,000	October 2008
Pine Valley Pumping Station	10,600,000	Completed
Queensville/Holland Landing Servicing	41,000,000	Fall 2009
Total Wastewater Projects	\$1,297,700,000	

*critical projects

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.

For more information on this report contact Stephen Fung, extension 3025, Acting Program Manager of the Water and Wastewater Branch in the Transportation and Works Department.

The Senior Management Group has reviewed this report.

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