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**STRATEGIC APPROACH TO MANAGING IMPACT OF INFRASTRUCTURE
APPROVAL DELAYS**

(Regional Council at its meeting on May 20, 2004 amended Clause 6 as follows:

- 1. Recommendation 1 of the staff report be replaced with the following:**
 - 1(a) Council approve an Independent Third-Party Peer Review of the YDSS model that will determine its current and future capacity and the levels needed to prevent surcharging; and**
 - 1(b) staff report back to the June 10, 2004 meeting of Regional Council with further data regarding short term allocation capacity limits;**
- 2. Recommendations 2 to 6 of the staff report be adopted; and**
- 3. Recommendation 7 of the staff report be adopted as amended by the Committee.)**

The Transportation and Works Committee recommends:

- 1. The following deputations be received;**
 - (a) Mr. John S. Rogers, Chief Administrative Officer, Town of East Gwillimbury;**
 - (b) Mr. Fraser Nelson, Chair, Urban Development Institute, York Chapter;**
- 2. Recommendation 1 contained in the following report, April 30, 2004, from the Commissioner of Transportation and Works and Commissioner of Planning, be deferred to the May 20, 2004 Regional Council meeting;**
- 3. Recommendations 2-6 contained in the following report, April 30, 2004, from the Commissioner of Transportation and Works and Commissioner of Planning, be adopted; and**
- 4. Recommendation 7 be replaced with the following:**

“A communication process be commenced with the Ontario Minister of the Environment and the local MPs and MPPs.”

1. RECOMMENDATIONS

It is recommended that:

1. Regional Council endorse the short term allocation capacity limits outlined in Table 2 of this report.
2. A Chair and Mayors Task Force be created for the purpose of facilitating the communication of key concerns to political and approval agencies to secure the permits required to proceed with all the priority wastewater projects.
3. An Inter-municipal Liaison Team be created to communicate and coordinate issues with the local municipalities serviced by the YDSS.
4. Staff continue with the approach to tracking and assigning municipal water and wastewater allocation capacity based on actual growth and existing system capacity constraints as outlined in this report.
5. Staff report back to Council at least quarterly on the status of the critical projects, alternative wastewater capacity options, and the tracking of development approvals and servicing capacity.
6. A copy of this report be forwarded by the Regional Clerk to the Councils of the local municipalities.
7. A copy of this report be forwarded to the Ontario Minister of the Environment and the local MPs and MPPs.

2. PURPOSE

This report summarizes current issues related to delays in obtaining approvals for critical wastewater infrastructure projects. The report also recommends a strategic approach to capacity management, land use approval, infrastructure approvals and stakeholder communication in co-operation with the affected municipalities.

3. BACKGROUND

3.1 Infrastructure Planning in York Region

York Region infrastructure planning for water and wastewater service is based on the Municipal Engineers Association framework for Municipal Class Environmental Assessments (Class EA) which defines the methodologies for the development of Master Plans. This approach is used to ensure that long term requirements for water and wastewater servicing are identified and scheduled appropriately.

The master planning process is the first step in applying the Class EA Process on a Regional basis. The master plan identifies the infrastructure required to meet servicing

demands based on population and employment forecasts that are approved through the Regional Official Plan. The process also includes public consultation to ensure that appropriate criteria are applied and public input is considered in determining the preferred servicing recommendations.

The master plan partially satisfies the requirements of the Class EA process and represents preparatory work for the completion of the Class EA when individual component projects of the overall servicing strategy are initiated. This is beneficial because detailed project impact and mitigation strategies are framed in the larger context of the Regional servicing strategy.

York Region's Master Plans for water and wastewater are based on a 30 year planning horizon. The first Master Plans, prepared in 1997, one for water and one for wastewater, were based on population forecasts developed through the Regional Official Plan, approved by the Province in 1994. The Master Plans were updated in 2002 (wastewater) and 2004 (water). The updates incorporated all construction works since the previous Master Plan, confirmed the overall approach to servicing in the Region, and used updated population and employment forecasts to identify required future works.

The format of York Region's Master Plans identifies required infrastructure to service the Region's needs in 5 to 10 year blocks for the 30 year study period. Those projects required in the first five years are referred to as "priority projects". Those works required in the second five year block are referred to as "strategic projects". Priority projects are required in the short term to provide overall capacity to the larger urban water and wastewater systems, while strategic projects are required in the medium term to service future development. Priority and strategic projects identified in the Master Plans are programmed into the Region's 10 year capital budget program, and this is the program that supports the Regional population and employment forecasts.

3.2 Recent Changes Affecting Infrastructure Delivery

3.2.1 Wastewater

All of the priority projects identified in the 1997 Master Plan were completed or are very near completion. Few schedule delays were encountered. In the 2003 YDSS Master Plan update, strategic projects from the 1997 Master Plan were confirmed and identified as priority projects.

These are shown on Attachment 1 and are listed as follows:

- 19th Avenue interceptor to be complete by 2005.
- 16th Avenue Trunk Phase 2 Sewer to be complete by 2006.
- Southeast Collector Sewer to be complete by 2007.
- Humber/Peel forcemain to be complete by 2005.

Of these projects, only the Humber/Peel forcemain is on schedule. The 16th Avenue Trunk Phase 2 sewer is now almost two years behind schedule because the Region has not been able to secure a Permit to Take Water for temporary dewatering during construction. In spite of a substantial effort on the Region's part to implement a comprehensive mitigation program for environmental and residential water user impacts at an estimated cost of \$10 to \$12 Million, approximately 22 months have passed since the initial application was filed with the Ministry of the Environment in June 2002. The issues raised by approval authorities on the 16th Avenue Trunk Sewer have also been raised for the 19th Avenue Trunk Sewer and the Southeast Collector. This has added a substantial amount of work and extended the schedule for both of these projects also. At this time, the earliest completion dates for the three critical projects listed above are as follows:

- 19th Avenue interceptor – June 2006.
- 16th Avenue Trunk Sewer – June 2008.
- Southeast Collector Sewer – June 2008.

It should be noted that other projects may be affected by the apparent shift of the Province in granting permits to take water. Regional staff have been warned by MOE staff that the Bathurst/Langstaff Sewer (Vaughan) and 9th Line Sewer (Stouffville) projects may also be delayed.

3.2.2 Water

In December, 2001, York Region entered into an agreement with Peel Region for a major water supply, ultimately 385 ML/d by 2031. Supply is to be staged incrementally over the life of the agreement. To date, the commitments made by Peel Region continue to be met.

In June 2003, a staff report was presented to the Transportation and Works Committee summarizing the status of external supply agreements and outlining a timetable for additional allocation capacity for water supply over and above the December 2001 agreement with Peel (Clause 2 of Report No. 6 of the Commissioner of Transportation and Works and the Commissioner of Planning and Development Services). The proposed allocation timetable was subject to a number of major capital projects being on track. It was generally understood at the time that a substantial increase in allocation capacity, additional to the December 2001 agreement, would be made available some time in 2004, approximately two years in advance of completion of a major expansion of Peel Region's Lakeview Water Treatment Plant.

At the time of preparing that June 2003 report, the critical wastewater projects described in Section 3.2.1 of this report were not at issue. It was believed that the required approvals were forthcoming and that the projects would be completed in time to meet wastewater demands from planned growth. In addition, at the time of writing the June 2003 report, Peel had not yet completed an update of their Water Supply Master Plan. Once completed, the Peel Water Supply Master Plan update showed that a significant

portion of the additional water supply (above the 2001 agreement), would be required to service accelerated growth within Peel Region, leaving less available to meet York needs. Section 4 of this report presents revised allocation capacity numbers on the basis of revised availability of supply from Peel.

3.3 Impacts of Approval Delay of Critical Wastewater Infrastructure

As a result of approval delays for critical wastewater infrastructure projects, available spare capacity in the YDSS has been diminished as the Region continues to grow. Complicating this situation is the fact that growth rates in the Region have been well above average for the past five years, and are not expected to slow down for at least another two years. Because the infrastructure that has been delayed is integral to the carrying capacity of the YDSS as a whole, the ability to service planned growth throughout the Region may be constrained in the short to medium term. Section 4 of this report will present a technical analysis of the available capacity in the YDSS.

It has been necessary to continually monitor both the water and wastewater supply capacities considering that both services are experiencing constraints caused by the accelerated growth conditions and specific infrastructure and supply agreement conditions.

This report summarizes the approach that has been developed to manage the current situation and proceed forward until such time as staff is confident that the required priority infrastructure will be completed as required.

4. ANALYSIS AND OPTIONS

4.1 Wastewater Capacity Analysis

In November of 2003, it became apparent to Regional staff, based on feedback from the approval authorities, that a Permit to Take Water for the 16th Avenue Phase 2 Trunk Sewer project would be further delayed. In light of the threat of potential delays affecting the Region's ability to provide sewage service, a comprehensive analysis of the YDSS was undertaken. The objective of the assessment was to determine the capacity limitations considering further delays in the three critical system infrastructure projects - 19th Avenue Interceptor, 16th Avenue Trunk Sewer, and Southeast Collector Sewer. MacViro Consultants and Earth Tech Canada Inc. were retained jointly to assist in the technical work.

Local municipal staff were alerted to potential capacity issues at a meeting of local works department representatives held at the Region in January, 2004.

Of the three projects at issue, 16th Avenue is considered to be the most critical because delay of this project will be felt most immediately. However, only the north part of the YDSS, consisting primarily of Newmarket, Aurora, King City and North Richmond Hill, requires the 16th Avenue Trunk for service. The southern portion of the YDSS, consisting

of Vaughan, south Richmond Hill, Markham and Stouffville, does not require 16th Avenue. All municipalities of the YDSS will rely on the Southeast Collector for ultimate service because Southeast Collector is at the extreme downstream end of the YDSS.

Because 16th Avenue is considered the most critical project, and because only a portion of the system relies on 16th Avenue, the YDSS was divided into two major drainage areas for the purposes of the technical capacity analysis – the North and the South Service Areas. The North area will rely on the 19th Avenue, 16th Avenue, and Southeast Collector sewers for future service, whereas the south will rely only on the Southeast Collector.

The system capacity analysis involved running a number of “what if” scenarios based on population forecasts in light of recent, above average growth rates, different inflow/infiltration rates, and different infrastructure completion dates. The model output was analysed to determine under which scenarios the YDSS might be expected to surcharge to an unacceptable level, in other words, what population level and inflow/infiltration rate would result in system surcharge (discharge of wastewater to either the environment or to resident’s basements) if the critical infrastructure is further delayed.

Based on the results of the system capacity analysis, two important conclusions were confirmed:

1. *Had approvals been secured to allow the Region to deliver the three critical projects on the original schedule, there would be sufficient system capacity even with the extended period of above average growth that has occurred recently in the YDSS service area.*
2. *Without the Southeast Collector and 16th Avenue Trunk Sewers in place, the risk of system surcharge (either discharge of sewage to a watercourse or backflow of raw sewage into basements) will become unacceptable beyond population levels anticipated for 2007, approximately 873,600 persons.*

4.2 Water Capacity Analysis

Although not as critical as the wastewater capacity, water supply will continue to be constrained until the new supplies from Toronto and Peel are in place. The Toronto supply will remain constant until 2008 and will continue to increase to 2011. Similarly, the Peel supply will be introduced in 2005 and will increase incrementally to 2031. Until the major supplies are available from the Peel system, water use efficiency will continue to play a large role in managing use, and summer water restrictions may be imposed if summer weather is generally hot and dry.

Analysis of demand and future supply agreements conclude that wastewater capacity is currently the limiting factor and that limits based on wastewater constraints outlined in this report will be matched by an equivalent water supply capacity. This situation will be continually monitored and adjusted as new information is presented.

4.3 System Capacity Management

4.3.1 Serviceable Population

Based on the results of the technical capacity analysis, the YDSS system capacity is 873,530 persons. Based on a current serviced population estimate of 761,520 persons, there is a remaining available service capacity of 111,790 persons.

Table 1 summarizes the drainage area capacities derived from the technical capacity analysis.

Table 1
YDSS Proposed System Capacity (Persons)

Drainage Area	2004 Population(1) (units)	System Capacity (2) (units)	Available Capacity (units)
North Area	156,200 (48,490)	183,420 (56,770)	27,210 (8,270)
South Area	605,530 (176,760)	690,110 (201,870)	84,580 (25,120)
YDSS	761,730 (225,250)	873,530 (258,640)	111,790 (33,390)

(1) Based on mid year estimates; includes an estimate for registered unbuilt

(2) Final verification with local municipalities continues.

4.3.2 Allocation Capacity

The capacity allocation shown in Table 2 was developed in close consultation with each of the local municipalities to ensure accuracy and system understanding. Throughout the process, both Regional and municipal staff gained a better understanding of system constraints and allocation issues that may emerge over the short term.

Table 2
YDSS Proposed System Capacity Allocation in Persons (Units)

Drainage Area	2004 Population(1) (units)	Allocation Capacity(2) (units)	Available Capacity (units)
Newmarket	73,410 (23,280)	79,900 (25,340)	6,490 (2,060)
Aurora	46,770 (14,940)	50,750 (16,210)	3,970 (1,270)
Total Richmond Hill	155,640 (48,530)	181,330 (56,390)	25,690 (7,860)
North Richmond Hill	34,830 (9,930)	45,010 (12,840)	10,180 (2,900)
South Richmond Hill	120,810 (38,600)	136,320 (43,550)	15,510 (4,960)
King City	0	4,240 (1,370)	4,240 (1,370)
Stouffville	0	13,240 (4,270)	13,240 (4,270)
Vaughan	231,540 (65,570)	264,350 (74,860)	32,810 (9,290)
Total Markham	254,370 (72,930)	279,720 (80,200)	25,350 (7,270)
North Markham	1,190 (340)	3,520 (1,010)	2,330 (670)
South Markham	253,180 (72,590)	276,200 (79,190)	23,020 (6,600)
YDSS Total	761,730 (225,250)	873,530 (258,640)	111,790 (33,390)

(1) Based on mid year estimates; includes an estimate for registered unbuilt.

(2) Final verification with local municipalities continues.

Each municipality was assigned allocation capacity roughly equal to its 2007 forecast population. Adjustments were then made, considering specific situations where development approvals were in an advanced stage, specific agreements (such as King City) or operational issues (such as the need to reduce the load at the Stouffville WPCP).

Each municipality has identified similar issues relating to allocation limitations, land use approvals and stakeholder communication requirements. One element which has become clear to all the stakeholders is that there is a limited capacity in the YDSS until new infrastructure is completed and that this capacity will have to be managed in an equitable manner considering socio-economic, growth and environmental factors.

4.3.3 Capacity Management Strategy

The capacity management strategy will consist of continued review and confirmation of both available system capacity and population demands to ensure that each municipality is fully aware of ongoing issues. This will also include a concurrent review of water capacity to ensure that both services are matched. This is an important element of the strategy considering that the Region is serviced from many sources and relies on partnerships with the Regions of Peel and Durham and the City of Toronto.

Monitoring of priority projects will also be a key element of the capacity management strategy. This will include both internal and external project schedules to ensure that all projects are understood with regard to risk of delivery and impact on available capacity.

4.4 Management of Land Use Approvals

The management of land use approvals will require close cooperation and constant communication between the Region and the local municipalities. In York Region, the local municipalities are the approval authorities for plans of subdivision and condominiums as well as site plans, which are the principal vehicles for development in Ontario. The Region is a commenting agency and has the responsibility of providing infrastructure capacity to the municipalities for allocation to specific developments.

The process to determine the impact of infrastructure approval delays on development has started. Regional and local staff have been actively completing, as accurately as possible, an estimate of the existing serviced population, inventory of existing development approvals and other commitments to development through agreement.

The management of land use approvals has two components; existing development approvals and future development approvals.

As described in Section 4.3, the process of apportioning sanitary sewer allocation capacity to local municipalities was based on meeting the short term growth forecasts to 2007. In some municipalities existing development approvals extend beyond the 2007 horizon. This means that a process to monitor and manage development will need to be implemented.

To manage existing approvals, it is proposed that Regional and local municipal staff, through the staff teams, work together to establish a process to:

1. Complete the inventory of existing approvals and other development commitments within each municipality.
2. Develop a detailed development phasing plan to reflect a realistic picture of when lands may be in a position to develop.
3. Prioritize development based on the different growth goals of each of the municipalities.
4. Develop a plan to communicate the process and municipal priorities to affected landowners.
5. Review existing development approval conditions to determine adequacy to phase growth.

6. Consider if, and what, other mechanisms are necessary, over and above existing conditions, to implement a tight phasing program.
7. Determine the triggers in the construction of the sanitary sewer infrastructure projects that provide certainty of capacity and would allow development approvals to occur.

There may be slight variations among municipalities; however the intent is to establish a common approach to the issues for all municipalities.

In other municipalities, the current inventory of existing development approvals is not adequate to meet the 2007 population forecast. In these cases, it is proposed that Regional and local staff, through the staff teams, work together to establish development approval conditions that allow development to proceed and still provide safeguards to the Region, local municipality (approval authority), developer and future homebuyer that ensure infrastructure and the phasing of development are closely linked.

There may be other special circumstances in the local municipalities that arise over the short term such that a particular development may deliver a critical piece of infrastructure, such as a road, or important community facility, such as a school or municipal use. It is proposed that these situations be considered on an individual basis through ongoing dialogue between the Region and the municipalities.

4.5 Additional Capacity Improvement Options

There are also a number of alternative capacity options being considered that may further increase service capacity and improve system security. These currently include inline storage of wet weather flows in portions of the trunk sewers, keeping the Stouffville WPCP operating to service a portion of the community to avoid immediate full diversion of flow to the YDSS, and combined initiatives with local municipalities where appropriate.

The inline storage option is currently being reviewed by the Region's consultant in conjunction with assistance from the development community. This option has potential to further reduce system risks through managing high flows caused by weather events. This option looks promising but there is little information on this approach being used in other municipalities for systems that do not have combined storm and sanitary sewers, which is the case in York. This option would require the approval of MOE and potentially other agencies.

Staff will continue to explore these options and provide Council with periodic updates as new developments arise.

4.6 Action Plan for Government Relations and Obtaining Approvals for Critical Infrastructure

Obtaining the necessary approvals to permit construction of critical infrastructure is essential. Significant effort will be required to both assist and inform the various levels of government on the issues the Region is facing and identifying the steps necessary to

overcoming this interim situation. It is proposed that this initiative be led by the Regional Chair and the Mayors of the affected municipalities. The Chair and Mayors Task Force will have the primary objective of securing the agency approvals necessary to complete the priority projects.

The Chair and Mayors Task Force will be assisted by a dedicated Regional Staff Team. This team will be chaired by Tom Webster, Executive Director, CAO's office, and will include staff in the Planning, Infrastructure Design and Construction and Water and Wastewater areas of the Region, with supporting staff. Team members may also be drawn from local municipalities. This team will be responsible for dealing with the approval agencies, communicating with stakeholders and coordinating all required technical resources.

In order to keep municipalities and stakeholders informed, and to monitor and track the progress of development and infrastructure projects throughout the Region, a Municipal Liaison Team will have also been established made up of senior staff of the Region and the eight municipalities serviced by the YDSS. The first meeting of this group was held May 3, 2004.

4.7 Communications Strategy

Communications will be managed through the teams identified in Section 4.6 of this report. The communication strategy will have the primary objective of delivering relevant and timely information to all levels of government and stakeholders for the purpose of ensuring full transparency.

5. FINANCIAL IMPLICATIONS

If further approval delays prevent the timely construction of water and wastewater infrastructure in the Region of York, there could be significant financial impacts to the Region, its local municipalities, and perhaps to the Province of Ontario. The Region of York's economy exceeds the size of the provincial economies of both New Brunswick and Nova Scotia. The Gross Domestic Product (GDP) of York Region is just slightly less than the GDP of the Province of Saskatchewan.

Implementing the strategies outlined in this report to track and monitor development and capital works will have no financial impact on the Region. Most local municipalities already have the mechanisms in place to track occupancy.

6. LOCAL MUNICIPAL IMPACT

Region staff have met with local municipal staff and have discussed the issues surrounding the delay in infrastructure delivery and the impact on growth and approvals on a number of occasions. Municipal staff are aware of the options and are working closely with Regional staff to address these issues.

The existing YDSS has been in place for approximately 30 years and is approaching its design capacity in many areas. Recent expansion and upgrade projects have been keeping pace with accelerated system demands due to increased growth but extended delays in the priority projects could further increase environmental risks as system capacities continue to approach design limits. The priority projects are required as soon as possible to ensure that service levels within the YDSS are at acceptable levels and risks associated with surcharging or flooding are minimized.

Continued delays in the priority projects will eventually result in the need to restrict additional growth in some municipalities. This will have a negative affect on the socio-economic environment including reduced municipal revenues, lost employment opportunities and stagnating economies. Severe capacity restrictions could ultimately impact the standard of living within areas directly affected by these constraints.

7. CONCLUSION

Continued rapid growth in recent years has caused increased demands on existing infrastructure and has increased the awareness that priority projects need to be completed as quickly as possible.

Although continued delays of the priority projects will negatively impact future servicing capacity, there is a commitment to ensure that the 2007 population forecasts for the YDSS can be met. Additional allocation capacity beyond 2007 will be contingent on confirmation that the priority projects will be completed as expected. Further extended delays in these projects could result in no additional allocation capacity being released beyond 2007.

It is proposed that a Chair and Mayors Task Force be created to assist in overseeing the strategic process and communicate the necessary messages to the various levels of the government and approval agencies to secure approvals for critical infrastructure projects

Region staff will continue to work closely with municipal staff to ensure that management of the system capacity is equitable and accurate. This will occur through the development of the dedicated Regional Staff Team and the Inter-Municipal Liaison Team.

The Senior Management Group has reviewed this report.

(A copy of the attachment referred to in the foregoing is included with this report and is also on file in the Office of the Regional Clerk.)