

# TORONTO STAFF REPORT

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October 26, 2005

To: Works Committee

From: Fareed Amin, Deputy City Manager

Subject: Impacts of Further Urban Expansion in York Region on the City of Toronto in Terms of Stormwater Quality and Quantity, Air Quality, Traffic Congestion and Impacts on Toronto's Infrastructure (City-wide)

Purpose:

To report on impacts of further urban expansion in York Region on the City of Toronto in terms of stormwater quality and quantity, air quality, traffic congestion and impacts on Toronto's infrastructure.

Financial Implications and Impact Statement:

There are no financial implications to the City as a result of this report.

Recommendations:

It is recommended that this report be received for information.

Background:

Works Committee at its meeting of September 14, 2005, requested the Deputy City Manager, Fareed Amin, to prepare a report on the impacts of further urban expansion in York Region on the City of Toronto in terms of stormwater quality and quantity, air quality, traffic congestion, and impacts on Toronto's infrastructure for the Works Committee meeting on November 16, 2005.

Comments:

The Regional Municipality of York (York Region) located to the north of the City of Toronto is undergoing rapid population growth and urbanization. There are nine local municipalities in York Region, namely the City of Vaughan, Town of Richmond Hill, Town of Markham, Town of Newmarket, Town of Georgina, Town of Aurora, Town of East Gwillimbury, Town of

Whitchurch-Stouffville, and Township of King. Currently there are two major urban areas in York Region. One area extends from Steeles Avenue to Major Mackenzie Drive in the City of Vaughan, Town of Richmond Hill, and Town of Markham. Another area is bounded by Bathurst Street, King Road, Green Lane, and Highway 404 in the Town of Aurora and the Town of Newmarket. The remaining areas are towns, villages, rural areas, and agricultural areas

## Regional Growth

Significant growth is anticipated in the GTA, especially York and Peel Regions (see Table 1). The City acknowledges this, and recognizes that the Regions and their local municipalities will have to accommodate it. Plans for the growing municipalities outside Toronto specify an ‘urban boundary’ which includes not only the existing built-up area, but also the adjacent agricultural and rural area where development is ‘planned’ but has not yet occurred.

Table 1: Population Growth Projections within the GTA

	Population			Households		
	2001	2031	Growth	2001	2031	Growth
	(Figures in Thousands)					
Toronto	2,590	3,080	490	940	1,270	330
Peel	1,030	1,640	610	310	540	230
York	760	1,500	740	220	500	280
Durham	530	960	430	170	350	180
Halton	390	780	390	130	300	170
GTA	5,300	7,960	2,660	1,770	2,960	1,190

(Source: Draft GGH Growth Plan, Schedule 3)

A report prepared for the City in 2002 by GHK International estimated that most of the growth then projected to 2031, could be accommodated within areas designated for development by municipal Official Plans. But the report also predicted that a large increase in traffic congestion and air pollution in the GTA would result if present development patterns continued: in the order of 68% more vehicle kilometres travelled between 1996 and 2031, and similar increases in emissions of gases such as carbon dioxide and nitrous oxides. The GHK report argued that the form of growth was unacceptable and that more transit and transit supportive development was needed.

## Provincial Planning Framework

A Provincial framework for managing growth is emerging which responds, in part, to the issues that the City and the GHK report identified. The centrepiece of this provincial framework is the Growth Plan for the Greater Golden Horseshoe (‘Places to Grow’), a draft of which was released last February.

There are four prime objectives to the draft Growth Plan:

1. Directing / planning to accommodate the bulk of the growth that is anticipated to take place by 2031 in a limited number of urban centres and intensification corridors as well as through redevelopment of the existing urban fabric;
2. Connecting these urban centres and centres of economic activity through infrastructure to move people and goods more efficiently and effectively;
3. The creation of “complete communities” with a full range of services and opportunities; and
4. Protecting the countryside – Greenbelt, farmland, and natural areas.

The draft Growth Plan also introduces stringent requirements for the expansion of the urban boundary, complementing the recent change to the Planning Act which removed the ability to appeal to the OMB a municipal refusal to allow an urban boundary expansion. The new provincial framework does not, however, prohibit development within the yet-to-be-developed areas within the existing urban boundary. The draft Growth Plan anticipates considerably more growth than the GHK report, but it also notes that the existing designated settlement areas provide enough land ‘to accommodate the majority of development for approximately two development cycles.’

The Provincial draft Growth Plan’s approach and objectives have been supported by the City (in its comments on the Draft Growth Plan) and are consistent with the City’s new Official Plan.

The draft Growth Plan is complemented by the Golden Horseshoe Greenbelt and its associated Greenbelt Plan. They effectively limit future urban expansion on the Niagara Escarpment, in the Oak Ridges Moraine and in areas to the north of the Moraine.

The Growth Plan’s legislative authority is provided by the *Places to Grow Act, 2005*. The Act requires that decisions under the Planning Act must conform to the Growth Plan (Sec 14(1)). In other words, an Official Plan, an Official Plan amendment, a zoning by-law or amendment, or a plan of subdivision must conform to the Growth Plan. Municipalities will be required to bring their Official Plans into conformity with the Growth Plan. In turn, the Planning Act requires that no public work may be undertaken that does not conform to an Official Plan (Sec 24(1)). In effect, therefore, all public works will have to conform to the Growth Plan.

Under this approach, the City of Toronto is able to provide comments on new Official Plans or amendments to existing plans in surrounding regions and municipalities. It can appeal these Plans or amendments to the OMB if it does not agree with them. For example, Council recently directed an appeal of an OPA that provided for significant development in Markham in the Steeles – Kennedy area (Milliken Mills) because of concerns over traffic that may be generated.

### **Toronto Official Plan Perspective**

The new Toronto Official Plan (OP) provides a clear basis and direction for the City’s relations with surrounding regions and municipalities, particularly in relation to growth management and the provision of infrastructure. It acknowledges that ‘the way in which growth and change are managed in Toronto must mesh with that of our neighbours because we are integrally linked in many ways,’ including the recognition that traffic does not stop at our borders, and that Toronto is part of a larger biophysical region.

The new OP's policy states that:

'Toronto will work with neighbouring municipalities and the Province of Ontario to address mutual challenges and to develop a framework for dealing with growth across the GTA which:

- a) focuses urban growth into a pattern of compact centres and corridors connected by an integrated regional transportation system, featuring frequent, direct, transfer-free, inter-regional transit service;
- b) makes better use of existing urban infrastructure and services;
- c) results in better water quality through water conservation and wastewater and stormwater management based on watershed principles;
- d) reduces auto-dependency and improves air quality;
- e) increases the efficiency and safety of the road and rail freight networks in the movement of goods and services;
- f) encourages GTA municipalities to provide a full range of housing types in terms of form, tenure, and affordability, and particularly encourage the construction of rental housing in all communities;
- g) increases the supply of housing in mixed use environments to create greater opportunities for people to live and work locally;
- h) recognizes Pearson International Airport as a major hub in the regional economy and improves access for passenger travel and air cargo for all GTA residents and businesses, including convenient access to Downtown Toronto;
- i) recognizes the importance of Union Station as the major hub in the regional transit system;
- j) improves the competitive position of the Toronto regional economy internationally and creates and sustains well-paid, stable, safe and fulfilling employment opportunities for all individuals; and
- k) protects, enhances, and restores the region's system of green spaces and natural heritage features, the natural ecosystem and the natural corridors that connect these features and protects the regions prime agricultural land.'

The draft Growth Plan for the Greater Golden Horseshoe is consistent with this policy.

### **Stormwater Quantity and Quality**

York Region has separate sanitary and storm sewer systems. Storm sewer systems are operated and maintained by local municipalities in York Region. Stormwater runoff is collected and conveyed by local storm sewer systems and eventually discharge into streams and rivers in York Region. The Humber River, Black Creek, West Don River, East Don River, and the Rouge River convey stormwater runoff from York Region to the City of Toronto and then discharge into Lake Ontario.

The impacts of urbanization on streams have been well documented. In general, urbanization increases impervious area and thereby reduces infiltration of stormwater into the ground. This results in the increase of stormwater runoff flow rates and volumes, increased stream erosion, degradation of stormwater quality, and impacts on aquatic habitat. The extent of the impact of further urban expansion in York Region on the City of Toronto with respect to stormwater quantity and quality depends on numerous factors such as the physical characteristics of the affected watersheds, types of land use and development and the performance of stormwater management measures implemented in York Region.

As a result of increased peak flows to streams which flow through the City of Toronto, further erosion in these streams and the corresponding undercutting of stream banks, can expose and may damage buried infrastructure. Similarly, during severe storm conditions, flooding and erosion in these streams can damage other infrastructure such as bridges, roads, and walkways.

In developing the City of Toronto's Wet Weather Flow Management Master Plan (WWFMMP), hydrologic, hydraulic and water quality simulation models were used to consider the effects of urbanization (to the level of intensification projected within the respective municipal Official Plans) across each watershed. Since the environmental end-point of concern in the WWFMMP study was the character of water quality and quantity where the main stems of the rivers discharge into Lake Ontario, the effects of urban expansion in York Region on stormwater quantity and quality entering the City of Toronto is not explicitly available in the WWFMMP reports. This type of analysis could, however, be undertaken as a separate study, drawing on the work completed through the development of the WWFMMP.

### **Air Quality**

Assessing the air quality impact of further urban expansion in York Region on the City of Toronto requires knowledge and understanding of all of the four standard steps to understand air quality impacts. The steps have to be understood in respect to the Region of York as a source of emissions from urban expansion yet to occur, the quality and quantity of the dispersion of such contaminants from York Region that move into Toronto's air, plus the exposure and impacts of such exposures on everyone in Toronto.

There are four standard steps to understanding air quality impacts:

1. Measuring, estimating, and modeling emissions into the air
2. Modeling the dispersion of those emissions and resultant contaminant concentrations
3. Estimating and modeling human exposure to those concentrations
4. Estimating and modeling the health impacts of such exposure

The City obtained, as part of its work in defense of the Oak Ridge Moraine, preliminary estimates of emissions throughout the GTA in respect to transportation emission estimates. The relevant report is "Growing Together: Prospects for renewal in the Toronto Region - Background Report 2: Estimating CO2 Emissions and Other Transportation Impacts of Alternative Urban Forms – Summary of Base Results" (May 2002). While the work did not examine York Region separately from the other regions, estimations suggest future air quality impacts will be a function of future development in York Region. Further modeling of new transportation and new urban development in York Region and elsewhere as sources of trans-boundary emissions coming into Toronto's air shed is technically possible, but this analysis has not been undertaken.

### **Transportation Planning Context / Traffic Congestion Issues**

As noted in the work completed by GHK, a large increase in traffic congestion and air pollution is expected in the GTA if present development patterns continue: about 68% more vehicle kilometres travelled between 1996 and 2031, will result in increased traffic congestion. The draft Growth Plan for the Greater Golden Horseshoe also addresses the forecast increases in traffic congestion by emphasising the need to invest in transit infrastructure and to encourage transit-supportive development. The draft Growth Plan indicates that the Province is expected to lead planning for inter-regional transportation. The draft Plan notes:

"While the Growth Plan provides the policy framework for an integrated transportation network in the GGH, the Ministry of Transportation in Ontario is also developing a Transportation Strategy for the Greater Golden Horseshoe area. This transportation strategy would be consistent with the Growth Plan and set out more specific objectives such as: increasing transit ridership; reducing commute times; building up a balanced transportation system; reducing the environmental impacts of transportation and co-ordinating transportation investment."

The Toronto Official Plan addresses the problems of congestion, environmental sustainability and meeting a broad range of mobility needs by encouraging compact growth, expanding public transit, and better managing our road system. The Official Plan supports inter-regional transit initiatives, recognising that traffic does not stop at the City's borders. The City continues to support transit being the first priority for investment to improve transportation services throughout the region, as recommended in the provincial draft Growth Plan. Identifying investment priorities should include a review of pressing transit needs, to ensure that the larger, land use transportation planning objectives of the region are being supported and pursued in the most cost effective manner that achieves the greatest benefits for the least cost. The City also recognises that without significant additional dedicated and stable funding, recommendations to unlock gridlock and the accompanying problems of air quality and traffic congestion become increasingly more difficult to implement.

#### Conclusions:

The regions outside Toronto will grow, and their growth will impact the City. Together, however, the City's new Official Plan and the recent Provincial initiatives provide an approach to managing this growth so that its impacts on the City will be more acceptable than it would have been otherwise.

The Provincial Growth Plan's approach and objectives are supported by the City (in its comments on the Draft Growth Plan) and are consistent with the City's new Official Plan. The draft Growth Plan is complemented by the Golden Horseshoe Greenbelt and its associated Greenbelt Plan. They effectively limit future urban expansion on the Niagara Escarpment, in the Oak Ridges Moraine and in areas to the north of the Moraine. Under this approach, the City of Toronto is able to provide comments on new Official Plans or amendments to existing plans in surrounding regions and municipalities. It can appeal these Plans or amendments to the OMB if it does not agree with them.

The City continues to support transit being the first priority for investment to improve transportation services throughout the region to ameliorate projected traffic congestion, as recommended in the provincial draft Growth Plan. Along with the other Regions in the GTA, the City anticipates working with the Ontario Ministry of Transportation to develop a transportation strategy for the Greater Golden Horseshoe area. Without significant additional dedicated and stable funding, however, recommendations to unlock gridlock and the accompanying problems of air quality and traffic congestion become increasingly more difficult to implement.

From a stormwater perspective, urbanization increases impervious area and reduces the infiltration of stormwater into the ground. The consequences of urbanization with respect to stormwater includes increases in stormwater flow rates and volumes, corresponding increases in stream erosion, degradation of stormwater quality, and impacts on aquatic habitat. However, the full extent of the impact of further urban expansion in York Region on the City of Toronto with

respect to stormwater quantity, stormwater quality, and infrastructure cannot be determined at the present time without further study.

Information obtained from emissions modeling and from concentration modeling suggests that future air quality impacts in Toronto will, in part, be a function of future development in York Region. Further modeling of new transportation and new urban development in York Region and elsewhere as a source of trans-boundary emissions coming into Toronto's air shed has not been undertaken.

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