



Progress on Sustainable Urban Densities: A Brief Comparison Across the Toronto Region

In 2006, the provincial government of Ontario finalized its policies for managing population and employment growth in the Greater Golden Horseshoe region of the province – a region that stretches around the western half of Lake Ontario, with the City of Toronto at its core. The policies are in response to recognized negative side effects of the rapid low-density urban expansion occurring in the region. These effects include the loss of prime agricultural areas, environmentally significant natural lands, widespread traffic congestion, inefficient public infrastructure, and negative environmental impacts such as air pollution and excessive greenhouse gas emissions.

Sustainable urban development means building cities and towns that

- are highly efficient in the use of land, energy and material resources,
- are characterized by a highly-integrated mix of residential and non-residential uses,
- are transportation-efficient, i.e. most daily destinations can be conveniently accessed by means other than private automobile, and
- are also socially and economically effective and vibrant.

This means implementing significantly higher overall residential and non-residential densities as rural lands are urbanized and existing built-up areas are redeveloped. IN order to reduce the consumption of some of the country's best agricultural lands, the province has mandated that by the year 2015, 40% of all new residential units must be accommodated within existing built-up areas, and that all other growth must be accommodated at an overall density of no less than 50 residents and jobs per gross hectare, excluding significant natural areas.

From 2006 to 2021, about 2.0 million residents and 1.1 million jobs are expected to be added to the Greater Toronto and Hamilton Area (GTHA). If the greenfield portion of growth occurs at exactly 50 residents and jobs per hectare, the region can expect to convert approximately 260 km² of rural lands to urban uses by 2021, and another 115 km² by 2031.

The question arises, is 50 residents and jobs per hectare adequate to achieve sustainability goals such as transit-supportive land use? A review of densities in various parts of the GTHA reveals a wide range. The table below shows a sampling of municipal areas. At the low end of the density range is the city of Brampton, which, when fully built-out, will achieve a density of about 39 residents and jobs per hectare. The amalgamated City of Toronto achieved a density of about 66 in 2001. At the upper end are the Cornell community in Markham (at 82 per hectare at maturity), and the yet-unbuilt Central Pickering development (also known as Seaton), at 74.

Interestingly, the provincial policy minimum for new communities in the future is only slightly higher than the 47 residents and jobs per gross hectare that the City of Mississauga will achieve at maturity. Yet Mississauga has been considered a 'sprawl' community, as evidenced by its low 7% local transit modal share of all daily trips. Given the province's desire for new communities to be transit-friendly, infrastructure-efficient and land-sparing, the minimum of 50 residents and jobs will make these goals difficult to achieve, especially if there is a tendency among municipal planners to consider the Province's minimum standards as being maximums.

The Central Pickering development plan illustrates a different aspect of the land-efficiency issue. Although the overall density of 74 residents and jobs per developable hectare (see table) exceeds the provincial minimums, the area as a whole is a patchwork quilt of urban and natural spaces; 53% of the Central Pickering development area

(excluding the Duffins-Rouge Preserve) has been allocated as Natural Heritage areas. The plan will preserve virtually every stream, plus buffers, flowing through the area. At maturity, the overall population and employment density of Central Pickering -- natural and urban lands with a combined area of 30 km² -- will be only 35 per hectare.

If this development model is duplicated for all GTHA growth projected for greenfield lands, urban areas would extend outward by over 370 km² by 2021, and over 530 km² by 2031. The implications for efficient infrastructure and sustainable transportation will be that they will be extremely difficult to achieve. The question also arises, what is the trade-off between this kind of development and the example of Toronto, where some small streams have been buried and woodlots have been converted to high density urban uses but, as a result, larger areas of contiguous natural lands outside the city have been preserved? Which model is better from environmental and urban efficiency perspectives?

The critical issues of rapid climate change, the prospect of future energy price and supply problems, growing traffic gridlock and pollution, and rising public infrastructure costs should override inclinations to continue with traditional suburban development practices. Although the example of Cornell points the way to more efficient densities, even higher densities are possible without compromising livability for the residents and profitability for developers. For example, the Newburg sustainable greenfield development model referred to in the chart below indicates that densities of over 100 residents and jobs per hectare are possible.

Estimated Population and Employment Densities of Selected Urban Areas in the Toronto Region

	Urban Area (sq.km.)	Population	Population Density	+	Employment	Total Occupancy	Total Density per km ²	Total Density per Hectare
Greater Toronto Area and Hamilton ¹	1,920	5,810,000	3,026		2,940,000	8,750,000	4,557	45.6
Former City of Toronto	99.7	679,400	6,814					
GTHA excluding former City of Toronto	1,820	5,130,600	2,819					
Toronto (amalgamated) - 2001 Pop.	611	2,503,300	4,097		1,440,000	3,943,300	6,454	64.5
GTA excluding Toronto (amalgamated) ⁹	1,309	3,306,700	2,526					
City of Mississauga ²	262	750,000	2,858		476,000	1,226,000	4,672	46.7
City of Brampton (built-out) ³	261	687,800	2,636		323,000	1,010,800	3,874	38.7
Planned Cornell Community ⁸	6.94	40,000	5,764		13,000	53,000	7,637	76.4
Planned North Oakville community ⁴	22	59,200	2,669		34,300	93,500	4,216	42.2
Central Pickering Development Plan ⁵	17.5	70,000	4,000		35,000	105,000	6,000	60.0
Places To Grow Greenfield Standards⁶	1.0	3,333	3,333		1,667	5,000	5,000	50.0
Newburg sustainable development model ⁷	1.0	7,300	7,300		3,300	10,600	10,600	106.0

Note 1 - Urban area per Neptis Foundation; 2001 figures

Note 2 - Land area excluding Pearson Airport and Credit Valley greenlands within Mississauga; projected 2031 population and employment

Note 3 - Gross municipal area less 33% of NW Brampton (assumed to remain rural)

Note 4 - Excluding protected natural areas (889 ha)

Note 5 - Excludes lands west of Duffins-Rouge Preserve; excludes natural heritage lands. Consultants' plan projects 55,000 residents.

Note 6 - The density standard is based on gross greenfield land area excluding significant natural lands (e.g. wetlands, streams, woodlands)

Note 7 - Mixed use greenfield development model including full range of urban land uses, including residential, commercial, industrial, institutional, recreational & educational. Density increases significantly if industrial lands are excluded. See www.suda.ca.

Note 8 - Per draft updated secondary plan (summer 2007); jobs range 11,000 to 13,000; Business park area 67 net hectares.

Note 9 - GTA is the Greater Toronto Area, consisting of Toronto and the regional municipalities of Durham, York, Peel and Halton.

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SUDA is a registered Canadian charitable organization whose mission it is to foster a healthy natural environment by providing information about sustainable city-building, by providing information to key stakeholders in the Toronto region through outreach, research and analyses, networking and electronic communications.