INTEGRITY OF LAND-USE AND TRANSPORTATION PLANNING IN THE GREATER TORONTO AREA

Richard Gilbert[†]

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[†]15 Borden Street, Toronto, Canada M5S 2M8.
Tel. (416) 923 8839; fax (416 923 6531; e-mail richardgilbert1@csi.com

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Summary

This chapter sketches the recent history of urban government in the Toronto region, its sprawling development, and the associated transport activity that produces the main adverse impacts of the sprawl. Attempts to reduce sprawl and contain the impacts of transportation are characterized as evidencing planning without integrity. Remedies are available, but their implementation may depend on early escalation of energy prices.

1. Formation of Metropolitan Toronto

Toronto was once a model of good regional governance. It was good enough that in the 1960s John Keith, a giant of regional planning in North America, used to bring decision-makers from the New York region and elsewhere to Toronto "to show how it should be done". Dr. Keith—who died in March 2000—served from 1969-1989 as president of the Regional Plan Association, a civic organization formed in 1922 to help secure orderly development of the 31-county New York-New Jersey-Connecticut metropolitan area. His wife was from Port Credit, now part of Mississauga, the Toronto region's second largest city, and he knew the region well. He stopped bringing groups to Toronto in the 1970s because the Toronto region was evidently becoming yet another example of poor regional planning.

Toronto was a model in the 1960s because of the formation of Metropolitan Toronto in 1953. It was North America's first regional metropolitan government, created to provide urban services to the burgeoning suburbs around what was then the City of Toronto (see Box 1). The surrounding rural townships and small towns were linked with the City in an upper-tier municipality—Metropolitan Toronto, also known as Metro Toronto or Metro—charged mostly with sharing the wealth of the City through provision of physical infrastructure in the suburbs. Later, Metro Toronto became for the most part a deliverer of human services, notably policing, welfare, and other social services, while retaining responsibility for major roads, water purification, sewage treatment, and disposal of solid waste.

At first, Metro Toronto had thirteen constituent local municipalities. In 1967, this was reduced by amalgamation to six, including the historic City of Toronto (incorporated in 1834). In 1998, these six local municipalities and Metro were amalgamated to form a single municipality—known as the (new) City of Toronto—combining upper- and lower-tier functions. The present City and the surrounding regional and local municipalities together form what has been known since the late 1980s as the Greater Toronto Area (GTA), depicted in Box 2 as it was just before the formation of the present City of Toronto.

2. Formation of the four surrounding regions

In its early years, Metro Toronto had planning oversight over an adjacent area beyond its boundaries comprising 1242 square kilometres, as well as its own area of 632 km^2 (Baine & McMurray, 1970). The Metropolitan Toronto Planning Area, as it was known, comprised about a quarter of the area of what is now known as the GTA, but included over 80 per cent of its population, including about a third of the population in what became the part of the GTA beyond Metro. In 1967, this part of the future GTA had a population of almost 700,000, representing over a third of the population of Metro, mostly located in relatively densely settled towns and townships. Indeed, as is shown in Box 3,[1] the overall residential density of the urbanized parts of the area outside Metro in 1967 was hardly less than that of Metro itself.

By the early 1970s, the contiguous urbanized area was beginning to spill beyond Metro's boundaries, and adjustments to the governing arrangements were required. The obvious rational adjustment would have involved extending the boundaries of Metro Toronto to include the newly urbanizing area and beyond, perhaps at least to the limits of the Planning Area. The government of the province of Ontario—which under the Canadian constitution has complete charge of municipal structure—was fearful of creating an overly powerful municipality. Thus, the Ontario government instead created four upper-tier regional municipalities around Metro Toronto—Durham,

Halton, Peel, and York—modelled on Metro. Box 2 shows the four regions and their constituent local municipalities.

The four regional municipalities surrounding what was then Metro and is now the City of Toronto became from their formation the main locus of growth in population and jobs. This is illustrated in Box 4, which shows a clear slowing of population growth in what was then Metro on the formation of the regions. Growth in the Toronto region thereafter occurred predominantly outside the boundaries of what is now the City of Toronto, i.e., in what are sometimes known as the *outer suburbs*. The population outside the City passed that of the City in 1998 or 1999. By 2008, given present trends, a larger number of the region's jobs will be located outside the City.

The growth in the Toronto region has been and continues to be fueled mainly by the high rate of immigration to Canada, and by the attractiveness of Toronto as a location for the settlement of immigrants. From 1991-1996, for example, over a million immigrants arrived, more than half from Asia, comprising 4.2 per cent of Canada's 1991 population. Over 40 per cent of these immigrants settled in the Toronto region, directly increasing the region's population by 12 per cent over those five years. In 1996, 37 per cent of Metro's population and 27 per cent of that of the rest of the region consisted of what are known as 'visible minorities' (Siemiatycki, 1998). Present trends suggest that visible minorities will together comprise a majority of the region's population early in the 21st century.

Was it the formation of the four regions around Metro that shifted the focus of growth in population and employment away from Metro? Or would the focus have shifted even if the alternative model of regional governance—expanding the boundaries of Metro—had been imposed? The Canadian Urban Institute convened a meeting in April 1993 to mark the 40th anniversary of the founding of Metropolitan Toronto.[2] The 20 or so participants combined some 500 person-years of planning and related experience in what is now the GTA. They were unanimous in assigning major responsibility for the woes of the GTA—particularly urban sprawl—to the provincial government's early 1970s' decisions to create four regional governments around Metro rather than expand Metro's boundaries (and also to the provincial government's investments in water and sewer infrastructure in the area outside Metro).

Box 3 suggests that participants the April 1993 meeting, who included the author, may have been wrong, at least in respect to the formation of the regions. From 1967 to the early 1990s, what were then Etobicoke, North York, and Scarborough—known as the *inner suburbs* (see Box 2)—filled out with development that, according to the estimates in Box 3, may have been at a similar overall density to that in the outer suburbs.[3] Thus, Metro may have done just about as poorly as the new regional governments in containing sprawl during this critical period. This finding challenges the view that there would have been less sprawl if in the 1960s the boundaries of Metro had been expanded to include all or most of the region's newly urbanizing areas.

A word of caution should be offered about this conclusion. It relies on what may be fragile estimates of trends in the urbanized area of the GTA. Moreover, as indicated in the note in Box 3, the densities shown for the added areas are maxima; thus, the densities of the newly urbanized areas within Metro could have been—although are unlikely to have been—considerably higher than for those in the surrounding area.

If the data in Box 3 can be substantiated and even expanded, the conclusion that the formation of the peripheral regional governments caused sprawl will deserve re-examination. For the moment, it may be enough to point to the following possibilities:

- Sprawl would have happened anyway, no matter what the governmental arrangements. It was 'in the air'. By the 1970s, increased car ownership had made low-density suburban living possible because it obviated dependence on public transit, and desirable because it allowed relief from car-clogged central cities. Affluence was creating demand for new homes, fueled by advertising and media reports. Low-density development occurred inside and outside Metro because that was what people were clamouring for. More of this development was located outside Metro because there was more lower-cost land that was easy for developers to assemble.

- Sprawl might have been constrained had Metro continued to make the planning rules; for many years, most growth could have continued to occur inside Metro. However, the new regional governments had no such ethic of land conservation, only what appeared to be unlimited low-cost land for development and strong needs to secure tax revenues from new development. The resulting fierce competition for development among municipalities inside and outside Metro changed Metro from being a land conserver to a land user.

These possibilities refer to the upper-tier municipalities, i.e., Metro and the four surrounding regional governments. However, the local municipalities had at least as much and often more influence in planning decisions, and at least as much need for tax revenues from new development. The main contribution of the upper-tier municipalities lay in the provision and coordination of infrastructure.

Also important was the role of the provincial government. In the 1960s, the Ontario government began to move to restrain use of agricultural and other land for development in the Toronto region, a process that resulted in publication of the *Toronto-Centred Region Plan* in 1970. For reasons that are not clear but may have to do with the political weight of owners of potentially developable land, the Ontario government did not implement its *Plan* but instead created the four regional governments. As well, it invested heavily in infrastructure that supported development, notably roads and sewerage facilities, sometimes directly and sometimes through grant programs.

The complete story of how the Toronto region has evolved over the last 40 years remains to be told.

3. The main issue: urban sprawl

The growth of an urban region may not be in itself so much an issue for sustainable development as the nature of the growth. Urban regions in North America, and to a lesser extent in other rich countries of the world, have tended to grow by sprawling away from their centres. Urban sprawl can be defined as a condition where the rate of increase in the urbanized area of a region is substantially greater than the rate of increase in its population (Gilbert et al, 2000).

The difference between the urban sprawl and other growth of an urban region is evident in a comparison of the urban regions of Mexico City and Los Angeles. The population of both regions increased by close to 50 per cent over the period 1970 to 1990. The urbanized area of Mexico City also increased by about 50 per cent (Losada et al, 2000) while that of Los Angeles increased by 300 per cent, a six-fold greater rate. In many U.S. urban regions, the ratio between the rate of increase in the urban area and the rate of increase in the population over the same period was higher: New York 8 times; St. Louis, 10 times; Chicago, 11 times. Some urban regions, e.g., Cleveland, recorded an increase in the extent of the urbanized area even though their population fell during that period (STPP, 2001).

The Toronto region's sprawl has been less extreme than that of many U.S. urban regions, but has nevertheless been considerable. Box 5 shows that the relative growth in the Toronto region's urbanized area was well over twice the relative population growth during the period 1967-1999.

The data and estimates in Box 3 (and Box 5) concern *gross* population densities, not the actual densities of the areas in which homes are located. Sprawl comprises land-intensive commercial and industrial development as well as residential development. It also comprises public land, including roads, associated with development. Commercial/industrial development, in particular, may be making the strongest contribution to sprawl in the GTA. One study found that it takes seven times as much land to accommodate a worker in the GTA's outer suburbs than in the central city, but 'only' four times as much land to accommodate a resident (IBI Group, 1993).

Several features of sprawl are contrary to progress towards sustainable development:

Sprawl results in more transport activity and thus more transport-related pollution and resource use. The table in Box 6 and the chart in Box 7 indicate that residents of the Toronto region's outer suburbs (i.e., those of the four regions around what was then Metro) made longer motorized journeys on average in 1996 than urban residents (and mostly by private automobile). Moreover, disproportionately more of the new trips made between 1986 and 1996 were to a suburban destination. Transport-related pollution and resource use are mostly a function of transport activity. (Transport issues are discussed further in Section 4 below.)

Sprawl seems to be associated with larger homes and more resource use. Good data on dwelling unit size in the Greater Toronto Area do not seem to be available, although there are strong suggestions that unit size increases with distance from downtown Toronto. Development at the edge of the urbanized area tends to occur at 10-15 units per hectare (uph) whereas development in long-settled parts of the GTA has mostly been within the range 28-26 uph. New development at the edge is mostly single-family houses, whereas new development in long-settled parts—almost all of it in and near downtown Toronto—is mostly apartments (Blais, 2000), There are more people per household at the edge, but the unit sizes appear to be more than proportionately larger. Other things being equal—notably age of building and household income—larger units are likely associated with more resource use, particularly for heating but also for cooling, appliances and even furnishing and provisioning.

Sprawl results in higher infrastructure costs. An estimate for the GTA showed that current sprawl trends as opposed to more compact urban development will require 21 to 40 per cent more expenditure on infrastructure over 25 years (Blais, 1995). The amounts include capital, operating, and maintenance costs for roads, transit, water and sewer services. Part of the higher cost is associated with more resource use.

Sprawl usually results in loss of agricultural land. This has been particularly true in the GTA, where just about all the land that became urbanized between 1967 and 1999 had been Class 1-3 agricultural land, a total of 1,250 square kilometres or 28 per cent of the amount of this class of land in the GTA in 1967. Moreover, by 1999, a further 992 square kilometres of Class 1-3 agricultural land had been approved or designated for urbanization (Wright, 2000). If nearby agricultural land is lost to development, foodstuffs for an urban area must be imported from greater distances, with resulting increases in emissions. As well, countryside becomes farther from residents of earlier development, causing them to travel greater distances when they leave the urbanized area for recreation and other purposes.

Sprawl may affect species' habitats and migration paths thereby reducing biodiversity. Biological diversity—of species and ecosystems—is essential for evolution and the continuation of life on earth. Even agricultural land in use, where one species is cultivated at the expense of others, can be a rich source of biodiversity. Urban development of any kind can reduce biodiversity by disturbing or eliminating species' habitats, including essential migration paths. Comprehensive data on the impact of urban development in the GTA on biodiversity are not readily available, but there are several indications of the potential effects of development such as the impact on watercourses noted in the next paragraph. A point at issue for all urban regions is the relation between biodiversity reduction and the density of development. Other things being equal, does a given human population reduce biodiversity more if the population's settlement pattern is scattered rather than compact? A scattered population affects a greater land surface—not the least because of transport requirements, but may allow continued biological processes in the interstices of development.

Sprawl has other environmental effects through changing land drainage patterns and albedo. The critical factor here is the amount of land that is paved or otherwise covered by impervious material. With larger areas of impervious surface, more water drains directly into watercourses, causing widening of streambeds, habitat disruption, and even flooding. For example, flow volumes in the lower reaches of Toronto's Don River rose by about 25 per cent in relation to regional rainfall levels between the 1960s and 1990s. As well as causing more precipitation to be flushed into watercourses, land development involving large areas of impervious surface also allows the precipitation to reach watercourses more quickly. This removes opportunities for filtering and other treatment of water by natural features such as wetlands and vegetation. Flushed away with the rainwater and melted snow are the accumulated contaminants associated with human activity, particularly oils and chemical residues from transportation and pesticide use. As a result, some GTA watercourses are seriously stressed; others, even in suburban areas, have notably reduced levels of biological activity (Blais et al, 2001). Depending on the reflectivity (albedo) of surface material, development can change the extent to which sunlight is absorbed by surfaces in urban areas, causing local warming effects, resulting discomfort and more severe effects on humans and other species, and higher levels of energy use for air conditioning.

Sprawl may have adverse social effects on its inhabitants. Data are few, including for the GTA, but arguments have been made that low-density development is inimical to community activity, in part because opportunities for face-to-face interactions are reduced, notably through high levels of automobile use. This is a debatable matter, in the GTA and elsewhere. There are also suggestions that high-mobility, automobile-based ways of living, characteristic of low-density development, are causing other social problems, particularly in respect of children (Adams, 1999; Burchell et al, 1998).

The above kinds of concern were put in context by authors of a comprehensive review of the literature on sprawl (Frank et al, 2000). The following conclusions were drawn, among others:

- Surprisingly little research has been done on the share of environmental harm that can be attributed to sprawling land development patterns. Almost all of the research that has been conducted considers only the environmental impacts of transportation.
- Ninety percent of the environmental costs of transportation are related to the impacts to air quality; impacts to water and habitat combined have been estimated at less than 10 percent of the environmental costs of transportation.

- Of the total environmental costs of transportation, less than 10 percent can be attributed to sprawl; most of the aggregate environmental costs of transportation would remain even if cities were more compact and transit-oriented.

These points may well apply to the GTA, although the data in Box 6 and Box 7 suggest that within the GTA somewhat more than 10 per cent of the environmental costs of transportation can be attributed to sprawl. Compared even with the inner suburbs, residents of the outer suburbs engage in an average of about 50 per cent more motorized travel per day (Box 7), with correspondingly greater environmental impacts.

Moreover, if the GTA's inner and outer suburbs had been developed at the density of the core ring (roughly the part of the inner three local municipalities of Metro Toronto that surrounded the broader downtown area), the urbanized part of the GTA would have about half its present area and would extend to an average of about 20 kilometres from the downtown rather than 30 kilometres. Based on the data in Box 7, the GTA's residents would likely be travelling on average up to 40 per cent fewer kilometres each day.

4. A closer look at transportation trends and impacts in the GTA

Contributing factors to the growth in the overall amount of travelling by car between 1986 and 1996 are shown in Box 8 together with the corresponding changes for public transit. For travelling by car, the increase due to population was enhanced by additional trips per person and slightly longer trips. For travelling by transit, the potential increase due to population growth was strongly offset by a reduction in the number of trips per person, which in turn was offset by growth in the average length of transit trips (due in part to growth in commuting trips by rail from the outer suburbs to downtown Toronto).

Box 9 shows the growth in automobile and heavy truck traffic in the different parts of the GTA. Overall, heavy truck traffic appears to have grown at a similar rate to automobile traffic (28 vs. 31 per cent), i.e., at more than the rate of population growth. As with automobile traffic, truck traffic has grown mainly in the outer suburbs—where the growth in economic activity has occurred (see Box 4)—although the growth rates for each have been different in different parts of the GTA. Truck traffic is of special importance because the emissions from its diesel engines are more hazardous per unit of energy consumed than emissions from the gasoline engines used in cars and other personal vehicles (CST, 2001).

Box 10 shows changes between 1986 and 1996 in the purposes of trips made by GTA residents, in relation to what might have been expected from population growth alone. Work-related trips comprised a smaller portion of all trips in 1996; the growth in automobile activity was more for what are described as 'discretionary' trips (shopping, social events, recreation) than for other purposes.

This trend from work-based to discretionary trips was evident in every part of the GTA but was more pronounced among residents of what was then Metro Toronto. Work-related trips tend to be longer than other trips. Thus the greater shift away from work-related trips in Metro Toronto accounts in part for the smaller growth in automobile traffic there (see Box 9). However, it should also be noted that the large growth in traffic in the outer suburbs occurred in spite of a shift away from work-related trips.

The greatest concern about air quality in the GTA and other urban areas in North America concerns levels of ground-level ozone. Ozone is a highly reactive form of oxygen, damaging to living tissue (particularly those in airways) and to inert materials. It is the main component of summer smog. Ozone is formed by the action of sunlight on nitrogen oxides and volatile organic compounds, both of which result from transport activity and are pollutants in their own right. Unlike most other forms of air pollution, levels of nitrogen oxides and ozone have not been declining in the GTA; indeed, the incidence of 'smog-alert' days showed something of an increase during the 1990s.

Because ozone takes time to form, and its formation is inhibited locally by other transport emissions, the highest ozone levels tend to occur downwind of traffic. In the GTA, they occur at Stouffville, 40 kilometres north east of downtown Toronto, and 10 kilometres beyond the edge of the main urbanized area (Blais et al, 2001). Box 11 shows that transport activity is the main source of nitrogen oxides in the GTA and a major source of volatile organic compounds.

There is little information and less concern about resource use by transportation (and by other activities) in the GTA. In North America generally, there is growing concern about recent large price increases in vehicle fuel, natural gas, and electricity. These large price increases may be reflecting the beginning of the end of readily available, inexpensive fossil fuels (Bentley, 2002; Campbell, 2001). If costs rise further, and especially if supply shortages develop, fuel use and availability of fuel will likely replace air pollution as the major issue associated with transportation. Suburban residents and businesses could be especially vulnerable to energy price increases and energy shortages.

An associated issue is climate change, which seems to be occurring in part because of greenhouse gas (GHG) production from high levels of fossil fuel use (IPCC, 2001). Canada, and by extension the GTA, has among the highest per capita levels of GHG emissions (OECD, 2000). Whether or not fuel shortages and resulting high prices occur, Canada and the GTA could come under pressure to reduce GHG emissions, which would mean reducing fossil fuel possibly through tax-based high prices or market-based rationing. Again, the special vulnerability of suburban residents and businesses could be evident. Global warming itself could benefit the GTA in relation to several other parts of North America. It would not be subject to higher sea levels, the fate of coastal urban regions, or—because of Lake Ontario—to drought, the possible fate of many inland urban regions. There would be heat stress in summer and a higher incidence of disease vectors, but there would also be a longer crop-growing season and reduced need for energy to heat buildings.

Transport activity results in sprawl as well as being caused by sprawl. Suburban development began with and was stimulated at the beginning of the 20th century by public transport—certainly in Boston (Warner, 1978), London, England (Edwards & Pigram, 1977), Los Angeles (Jackson, 1985), and even Toronto (Stamp, 1989). The development initially remained dense enough to allow convenient access to bus and streetcar stops and other rail stations. The ascendancy of the automobile in the 1940s and 1950s in North America—later elsewhere—stimulated development at much lower densities made possible by widespread personal motorized transport; but the lower densities created corresponding dependence on such transport. The pattern continues. Land at the periphery of the urban region is developed only in relation to its accessibility by road, and high levels of use of suburban roads are the result of the development. In the GTA, the main locus of road congestion is moving from the inner to the outer suburbs, with many indications of impending paralysis if current trends continue (City of Toronto, 2000).

5. Reducing sprawl in the GTA: Planning without integrity

A reasonable conclusion from the above is that there are strong imperatives to reduce sprawl in the GTA, chiefly to reduce emissions, resource use, and infrastructure costs, mostly through reducing the need for and amount of motorized transportation.

There are also strong imperatives to continue sprawl. The above-noted review of development in the U.S. concludes that "a surprising level of consensus appears to exist concerning the causes of sprawl" (Frank et al, 2000), most of which would appear to apply to the GTA. The indicated causes include the availability of low-cost land at the periphery, population growth and reduced household size, affluence, competition among peripheral municipalities, deindustrialization of central cities, zoning that favours low densities, and many more including, of course, the pervasive influence of the automobile. Strategies to reduce sprawl need to address these causes.

The GTA's high rate of population growth provides opportunities to reduce sprawl by intensifying development in the outer suburbs and by accommodating more of the growth in what is now the City of Toronto. Section 5.1 concerns what has been happening in the outer suburbs. Section 5.2 concerns plans and prospects for the City of Toronto, which now includes the inner suburbs. Section 5.3 speaks to the matter of directly reducing transportation activity, i.e., reducing a facilitator of sprawl and the source of sprawl's main impacts. The overall impression is that of much talk and little action to reduce sprawl, i.e., of planning without integrity.

5.1 Reducing sprawl in the GTA through more intense development in the outer suburbs

The late 1980s and early 1990s was a period of intense scrutiny of development trends in the GTA. To facilitate this scrutiny, the provincial government introduced the concept of 'Greater Toronto', formed a provincial-municipal coordinating body, the Greater Toronto Coordinating Committee (GTCC), and created the Office of the Greater Toronto Area, initially with its own minister and deputy minister and then as a division of the Ministry of Municipal Affairs and Housing.

The GTCC commissioned what became a landmark study: the Greater Toronto Area Urban Structure Concepts Study (IBI Group, 1990). This major work compared three urban structure concepts for the GTA, known as *spread*, i.e., continuation of sprawl, *central*, i.e, concentration of about half of the projected population growth until 2021 in what was then Metro, and *nodal*, i.e., location in the outer suburbs of as much of the growth as the spread concept but with homes and jobs focused at compact nodes. Each concept was evaluated according to 42 criteria (e.g., concerning infrastructure costs and compatibility with sustainable development). The central concept was the easy winner. It rated first on 22 of the 34 criteria for which one concept was rated above the other two; spread and nodal each rated first on six of these 34 criteria. The nodal concept was nevertheless chosen by the GTCC as the guiding concept for development in the GTA, known as the *GTA Vision*.

In 1997, the Canadian Urban Institute reported on an evaluation of the performance of GTA's municipalities in relation to the *GTA Vision* (CUI, 1997). The CUI noted that by 1992 the regional governments had adopted new land-use and transportation plans "reflecting commitment to the *GTA Vision*". However, 47 rather than 29 nodes had been designated and the resulting land-use pattern would be "closer to the spread model". The CUI found many inconsistencies with respect to designation of transportation corridors and "no evidence that infrastructure investment is being

used strategically". Above all, the CUI found that the policies were "not yet having an impact on the private development sector", i.e., they were not being implemented.

All in all, the selection of the nodal concept rather than the much-higher-rated central concept, the actual adoption of what amounted to the spread concept, and the failure to implement even that concept amounted to a clear pattern of planning without integrity.

A more recent thorough assessment of development patterns in the GTA's outer suburbs noted that achieving 'sustainable' urban development patterns has been a major thrust of provincial, regional, and local planning policy in the 1990s. The policies have sought to protect environmentally significant lands, support alternatives to the automobile, and make efficient use of infrastructure investment through reurbanization, compact development at the fringe, and nodal development (Blais, 2000).

The assessment concluded that, "…despite a body of planning policy with stated sustainability-related objectives, substantial amounts of development have proceeded and will continue to occur on significant greenfields lands, such as prime agricultural lands, the Oak Ridges Moraine [see below], and rural areas. … the regions' and local municipalities' own planning processes account for by far the greatest amount of development in the region. In other words, in terms of planning processes through which development is allowed to occur, 'growth management' itself is probably the major contributor to loss of greenfields lands to development, including sensitive areas such as prime agricultural lands."

The assessment pointed to several contributing factors, notably policies of the provincial government that allow a municipality to justify urbanization on prime agricultural land if no viable alternatives are available within the municipality. It reinforces the conclusion drawn from the earlier assessment by the Canadian Urban Institute that the substantial mismatch throughout the outer suburbs between policy statements and plans, on the one hand, and practice, on the other hand, is an indication of planning without integrity.

Much of the action in the outer suburbs of the GTA has concerned the Oak Ridges Moraine, "a 160-kilometre long ridge of sand and gravel hills running along the northern part of the GTA … the source of drinking water for over 250,000 people, and … the headwaters for over 65 rivers and streams. … Since the 1980s, the urban population of the GTA has begun to advance northward, attracted to the wide vistas, rolling hills and verdant forests of the Moraine. The impact of urban sprawl is already evident in the number of fields and forests converted to urban malls and subdivisions, the headwater streams entombed beneath pavement, our historic villages and hamlets made redundant by strip malls, and the bumper to bumper traffic jams."[4] Blais (2000) indicated that the Moraine's population was 77,837 in 1991, set to rise to 226,007 in 2021.

In May 2001, the Government of Ontario imposed a six-month freeze on development across the Moraine, replacing it in November 2001 by an arrangement limiting development on the Moraine; supplemented in April 2002 by the Oak Ridges Moraine Conservation Plan. The Plan, said the Minister of Municipal Affairs and Housing, "will continue to steer development away from over 90 per cent of the Moraine". Between November and April, the Government had approved up to 9,000 new homes on the Moraine, plus some commercial development, in addition to the 3,000 homes that had already been approved. These approvals aroused considerable local opposition; "betrayal" was a frequently used word. Moreover, concerns have also been expressed by the Ontario Federation of Agriculture that restrictions on development on the Moraine will mean that more prime agricultural land north and south of the Moraine will be used for development.

It may now be more difficult to build on the Oak Ridges Moraine, but the more fundamental issue of development on greenfield lands remains unaddressed, a further indication of planning without integrity.

5.2 Reducing sprawl in the GTA through increasing the City of Toronto's population

The first three-year term of the Council of the amalgamated City of Toronto saw the launch of an ambitious long-term planning exercise comprising development of an economic plan, a social plan, an environmental plan, and land-use plan (known as the Official Plan), all linked together by an over-arching strategic plan.

Only the emerging Official Plan directly addresses the need to help reduce sprawl in the GTA. It proposed to plan for a City of Toronto population of 3.5 million in 2031 rather than the projected 3.0 million (City of Toronto, 2000). This could have the effect of reducing the population of the rest of the GTA from the projected 4.5 million to 4.0 million. Both City and outer suburbs now have populations of just over 2.5 million each (Box 4).

Success on the part of the City would thus reduce the growth in the outer suburbs by about 25 per cent and reduce the projected size of GTA's urbanized area—at current development densities—by a little over 10 per cent. It would raise the City's gross population density to just above the density of the part of the City that was urbanized in 1967.

Little was said in preliminary documentation (City of Toronto, 2000) as to *where* this substantial increase in population should be located. There was mention of adding residential development in the downtown, along the waterfront, around the former city halls of three of the pre-amalgamation municipalities, on abandoned industrial lands, and, with the greatest emphasis, along main streets. However, it is hard to see how what was implied could add up to one million additional residents.

Possibly reasonable estimates of the population that could be added to the City of Toronto in these places by 2031 are as follows: downtown, 50,000; waterfront, 100,000, former city halls, 50,000; abandoned industrial lands, 150,000; main streets, 100,000. These estimates total 450,000, i.e., about the same as the total expected without special intervention and less than half of the proposed total of one million additional residents. Even these estimates could be optimistic, not the least because of what appear to be prevailing attitudes among members of the present City Council. One columnist wrote about them, "…the suburbanites who now run the city and set its planning policies, very often in blatant disregard of the professional advice our tax dollars afford them, hate development" (Barber, 2001).

Perhaps because of the various difficulties in adding a million residents to the City of Toronto by 2031, this target is not in the draft Official Plan (City of Toronto, 2002). The draft speaks only to taking the forecasted increase in population by 2031 as a "minimum expectation … depending on the success of this Plan in creating dynamic transit oriented mixed use centres and corridors" (Page 7). Moreover, the forecasted increase of 537,000 residents has been inflated by using a 1996 baseline even though 2001 Census data had been published. A more appropriate 30-year forecasted increase would be 341,000 residents, from 2.66 million in 2001 to 3.00 million in 2031.[5]

The watering down of the City's commitment to combat sprawl, evident in the absence of a target and in the way the projections are stated, is another example of planning without integrity. The

watering down could perhaps be justified on the grounds that the Plan as a whole is now more likely to be accepted, including several favourable aspects such as those concerning expanded transit facilities. However, even with the watering down, the draft Official Plan appears to have aroused considerable opposition from residents groups and local politicians on the grounds that too much development is proposed. Moreover, expanded transit facilities may be justifiable only if there is a large population increase. The abandonment of the one million target could doom the Toronto region to car-oriented sprawl that will continue as long as there is oil to fuel it.

There are good words in draft Official Plan: about improving the region's livability by reducing the pace at which agricultural lands and the countryside are urbanized, about reducing reliance on the automobile, and about meeting today's needs without compromising the ability of future generations to meet their needs. However, without a firm target for a substantial increase in the City of Toronto's population, and a well worked out plan to meet the target, the Plan lacks integrity.

Several imaginative opportunities for development are not addressed in the City of Toronto's draft Official Plan. One would have a string of additional islands off Toronto's waterfront—mostly sculpted from the lakebed but also formed from demolition waste—that could house 200,000 to 400,000 people near the downtown in car-free, largely sustainable developments. Another would transform the suburban campus of Toronto's second-largest university, and adjoining land, into an urban campus that serves as the key element in a corridor of intense development along an extension of the Spadina subway line to Vaughan City Centre. The corridor would house 200,000 people—150,000 in the City of Toronto and 50,000 in York Region—and be the location of 100,000 jobs.

5.3 Reducing levels of transport activity

The main adverse impacts of sprawl result from associated high levels of transport activity, which in turn help to sustain and enhance sprawl (see Section 4). Reducing these impacts by technological means—i.e., emissions controls and energy efficiency—could make sprawl more tolerable. However, the effect of making sprawl more tolerable in this way could be to enhance sprawl and bring to the forefront other adverse impacts of sprawl such as its costs and its impacts on biodiversity. Reducing levels of transport activity, on the other hand, will reduce the impacts of transportation and will likely also reduce sprawl and its other impacts.

Land-use and other planning documents throughout the GTA speak to supporting alternatives to the use of the automobile, i.e., transit, walking, and bicycling (e.g., City of Toronto, 2000). The intention appears to mostly that of replacing one transport activity with another, by making the other modes more possible and convenient. This is beneficial in itself when the alternative activity is less harmful. This is certainly true of walking and bicycling as alternatives to automobile use, and it is usually true of well-occupied transit. Whether enhancing the attractiveness of transit, bicycling, and walking in the outer suburbs will in itself reduce sprawl is doubtful. Indeed, improving such amenities and services could enhance the appeal of low-density development.

The reality in any case has been an increase in automobile (and truck) activity and a decline in the use of transit throughout the GTA, described here in Section 3. The reality too has been overall declines in both transit service levels and transit investment in the GTA. Meanwhile, several new major roads have been constructed, and many more are planned. All in all, there is a substantial mismatch between planning intentions and reality and thus another indication of planning without integrity.

Strategies that merely promote and enhance opportunities for transit, bicycling, and walking may mostly be doomed to failure. Except where there is pre-existing demand, improved transit may do little to raise ridership levels. A more effective strategy is to improve transit service *and*, simultaneously, restrain automobile use (World Bank, 2000). Moreover, if fiscal restraints are used, the resulting revenue can be used to fund the transit improvements. Apart from minor physical restraints in residential areas (traffic mazes, speed bumps, road narrowings) there has been little interest in the GTA in complementing the expressed desire to increase use of alternatives to the automobile with restraints on automobile use.

6. The rise and fall of the GTSB

Among the reasons given for the seemingly unyielding outward march of sprawl in the GTA has been lack of coordination at the regional level. The Greater Toronto Services Board (GTSB) was established in 1998 to provide such coordination. It comprised GTA mayors, regional chairs, and several Toronto councillors.

The GTSB lacked power to lay down rules about how land should be used and how transportation should be managed and funded. The lack of authority was welcomed by several GTSB members and served to exacerbate urban-suburban differences within the Board. By mid-2001, there were signs of rapprochement and the development of a majority position within the GTSB to seek 'teeth' for the body, particular on transport matters.

The main concern was traffic congestion. The GTSB developed proposals to relieve congestion by improving transit (e.g., GTSB, 2000a), but very little was said about the need to restrain automobile use and thus make the transit improvements effective in increasing ridership. More was said about the need to increase road capacity (e.g., GTSB, 2000b).

Perhaps concerned about the demands for power to effect change, the Government of Ontario abolished the GTSB at the end of 2001 and created the Central Zone Smart Growth Panel in February 2002. This is one of five Smart Growth Panels covering the settled part of Ontario. The Panels are appointed bodies, including local politicians and other 'stakeholders', charged with advising the Minister of Municipal Affairs and Housing on the content and implementation of a Smart Growth Strategy to be developed by the Government. The Central Zone includes the GTA and an additional area about four times the size of the GTA containing about half the GTA's population. The Government's priorities for the Central Zone Smart Growth Panel are "unlocking gridlock", "promoting livable communities", and "re-thinking garbage". Proceedings of and materials developed for the Panels are confidential.

It is difficult to determine whether replacing a forum for local politicians to discuss regional issues with a closed-door process for advising the only government that has power in the region is a step towards more or less integrity in planning for the GTA. The GTSB could have evolved into an effective regional government.[6] But such a government may have been effective only in worsening sprawl or in allowing sprawl to worsen.

7. How the Ontario Government could show integrity

The present arrangement of Smart Growth Panels has the merit of clearly identifying the Government of Ontario as responsible for regional planning. Here is how the Government could show integrity in its land use and transportation planning for the GTA:

- Establish an unbreachable urban boundary at the envelope of the GTA's existing development, with cancellation of all approvals of development beyond the boundary and compensation for those affected in the form of tax credits for intensive development within the GTA.

- Foster intensive development within the urban boundary, particularly in the City of Toronto, including land created in Lake Ontario, to accommodate anticipated population growth.

- Reform municipal finances and property taxes to (a) reduce dependence of local governments on the revenue from new development, so as to relieve the pressure to encourage new development at any cost, (b) shift the focus of taxation gradually from the uses of land to land itself, so as to encourage more intensive use of land.

- Impose strong fiscal restraints on automobile (and perhaps truck) use in the GTA, with the proceeds being used to finance improved transit in ways that balance increasing ridership and meeting the needs of those most affected by the fiscal restraints, all the while respecting the region's economic imperatives.

Given present perspectives, proposals for such actions are unlikely to be made by the Central Zone Smart Growth Panel. If they were made, the Government of Ontario would be unlikely to adopt them.

As long as the means of creating and sustaining sprawl are available, the GTA's entrenched system of sprawl production is likely to continue. One of the means—low vehicle fuel prices—seems about to become less available, as noted in Section 4. Ideally, sprawl would be curtailed in a well-planned manner so as to reduce the impact of ever-increasing fuel prices. A more likely reality is that sprawl will be reversed haphazardly only because living in low-density areas will become unaffordable. This could be the painful outcome of decades of planning without integrity.

Acknowledgements: The author is grateful to Neal Irwin, Anthony Perl, and Don Stevenson for comments on earlier drafts of this chapter.

End Notes

[1] In Box 3 (and also Box 5) the 1967 data on urbanized areas are from Table 5 of Wright, 2000, with the specific estimate for what was then Metropolitan Toronto being achieve by the author of this chapter's close measurement of the appropriate parts of Map 5 of Wright (2000). The same sources were not used for 1999 data as they are believed to be erroneous for that year. They have been superceded by the almost identical estimates in GHK (2002) and IBI Group (2002). The urbanized area data for 1999 in Box 3 and Box 5 are a blend of the estimates in these two sources.

[2] The April 16, 1993, meeting was in the nature of an informal two-hour discussion structured around four questions, the second of which was "How might the Toronto region have developed if Metro's boundaries had been expanded in the early 1970s , instead of the creation of the regional governments around Metro?" According to comprehensive notes on the meeting taken by Don Stevenson, at the end of this part of the discussion a poll was taken on the following question: "If expansion of the boundaries had taken place in the 1970s, would the development of the urban region have been more rational?" According to the notes, "The answer from the group was a loud and unanimous YES!" The whole of this part of the discussion was summarized as follows: "The creation of the surrounding regional governments was a mistake—it had led to further urban sprawl. The extension of Metro boundaries to cover the urbanizing area would have led to more compact, orderly development in the GTA. The Ontario Water Resources Commission's sewer and water pipes in Durham, Peel, and York were also major contributors to sprawl."

[3] As indicated in the note within Box 3 the density estimates for the areas developed between 1967 and 1999 are *maxima*. If there was an increase in the density in the land already urbanized in 1967, the actual density of the newly urbanized land could have been less, perhaps much less. Such intensification would have been more likely to have such an impact in the area that was Metro Toronto in 1967, both because there was more urbanized land and perhaps because it had been settled for longer and thus may have been more susceptible to redevelopment. Accordingly, the density of the land urbanized between 1967 and 1999 in what is now the City of Toronto could have been *lower* than the density of the land urbanized during this period in the rest of the GTA.

[4] The quote beginning with a description of the Oak Ridges Moraine is from *The Oak Ridges Moraine*, a brochure issued by the STORM Coalition and Earthroots, available at <www.stormco.org>.

[5] The preliminary 2001 Census information issued by Statistics Canada on March 12, 2002 (see www.statcan.ca) does not include correction for undercount, which will not be available until 2003. The preliminary population estimate has been increased by 3.0% to correct for undercount.

[6] Evolution of the GTSB into an effective regional government seemed to be the intention of the Minister of Municipal Affairs and Housing (Al Leach) at the time the GTSB was created, but not perhaps the provincial government as a whole. Mr. Leach did not seek reelection in 1999.

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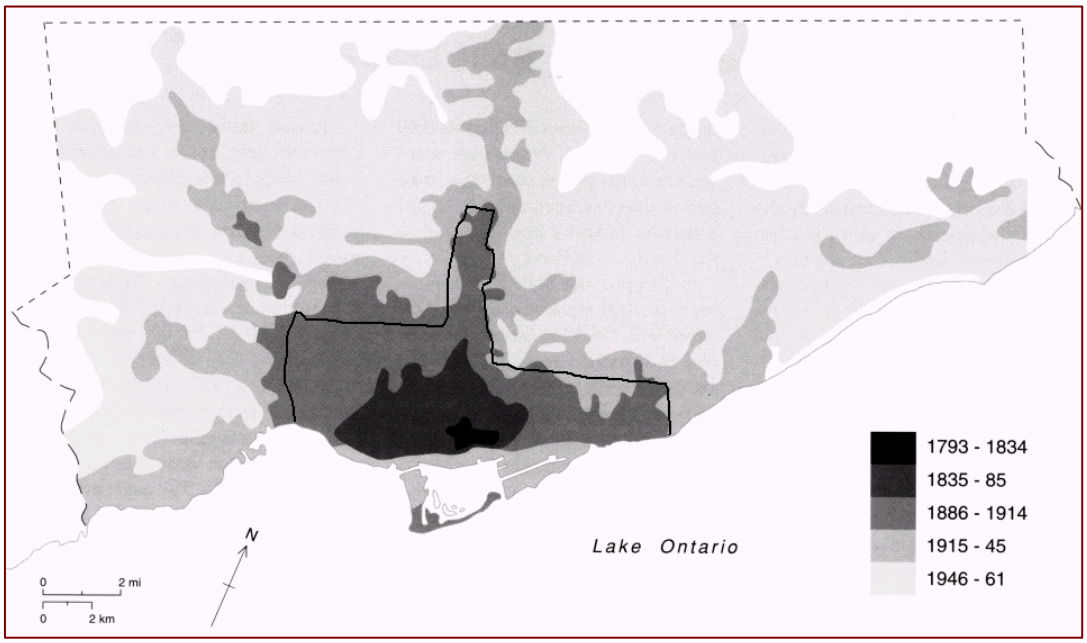
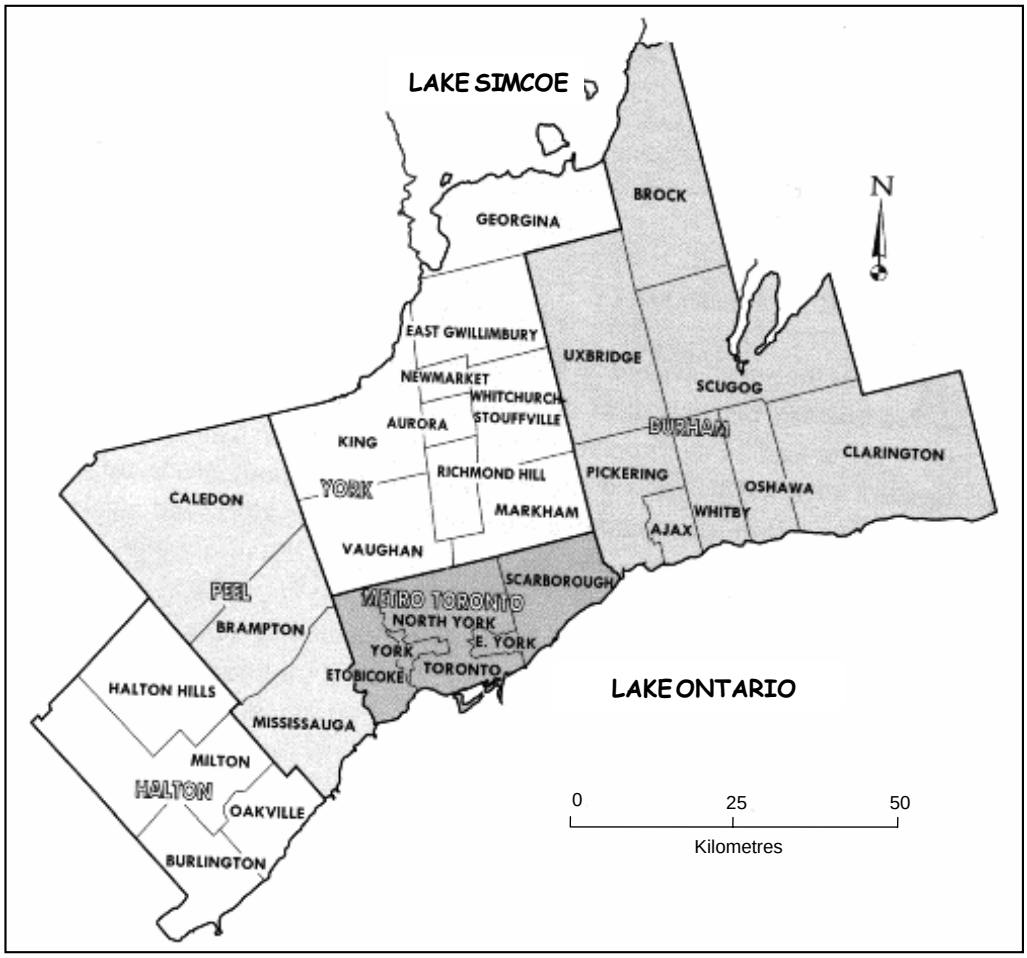
Box 1. Growth of Toronto, 1793-1961



Note: The inner solid line shows the approximate boundary of the City of Toronto during the period 1912-1967. The outer dashed line shows the present boundary, which was the boundary of Metropolitan Toronto from 1953-1997 (see Box 2).

Source: Roots et al (1999)

Box 2. The 30 local and five regional municipalities in the Greater Toronto Area in 1997.



Note: On January 1, 1998, Metropolitan Toronto and its constituent local municipalities—East York, Etobicoke, North York, Scarborough, Toronto, and York—were amalgamated to form the present City of Toronto.

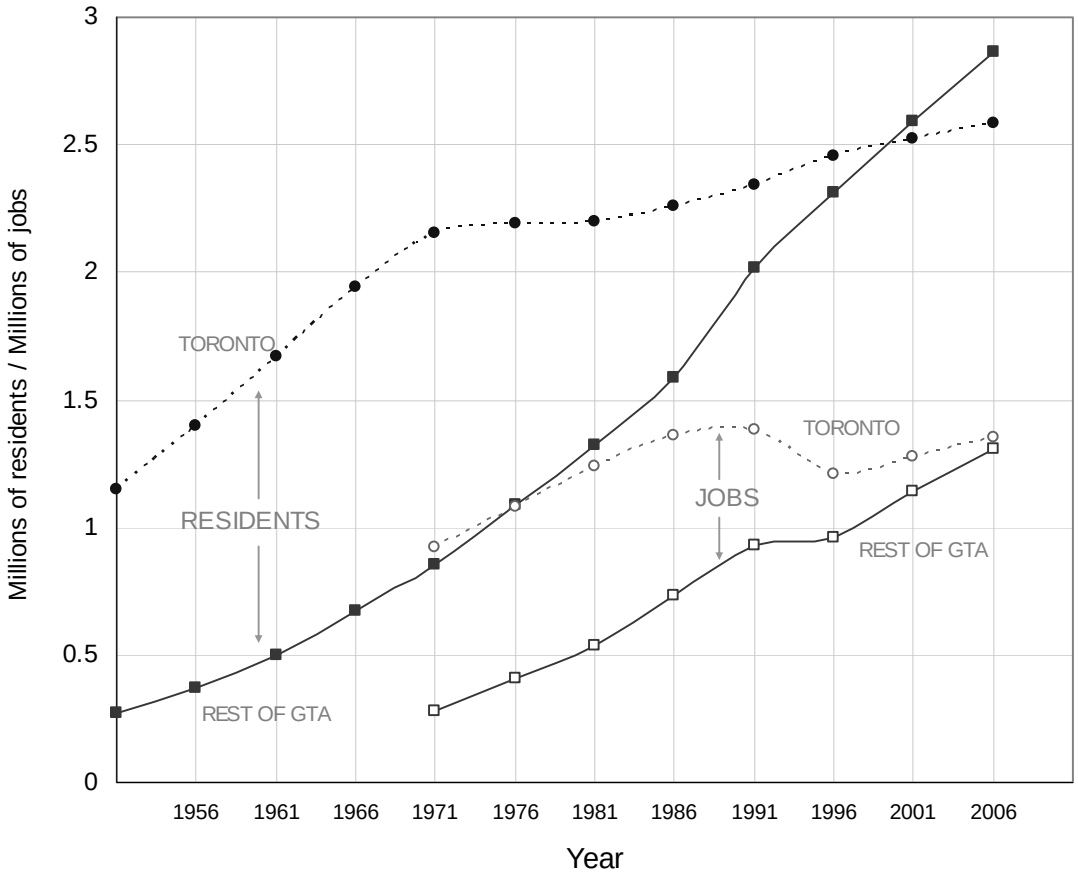
Box 3. Residential densities of urbanized portions of the Greater Toronto Area, 1967 and 1999

	Metropolitan Toronto/ (new) City of Toronto (Area = 632 km^2)				Rest of [what became] the Greater Toronto Area (Area = 6,530 km^2)			
	Urbanized area (km^2)	**Population (millions)**	**Density (residents/ km^2)**	**Maximum density of added area†**	**Urbanized area (km^2)**	**Population (millions)**	**Density (residents/ km^2)**	**Maximum density of added area†**
1967	345	1.92	5,577		137	0.69	5,020	
1999	595	2.50	4,208	2,319	1,046	2.56	2,447	2,059

† Estimated from differences in population and in urbanized areas. These are *maximum* values because they do not take into account redevelopment of existing urbanized areas and consequent possible increases in their population density.

Based on Census of Canada data, Wright (2000), GHK (2002), IBI Group (2002)

Box 4. Actual and projected numbers of residents and jobs in the present areas of the City of Toronto (circles) and the rest of the Greater Toronto Area (squares), 1956-2006



Source: Stevenson, Gilbert (2000)

Box 5. Sprawl in the Greater Toronto Area

Year	Urbanized area (km^2)	Population (millions)	Increase		Ratio of increases
			in area	in population	
1967	482	2.61	240%	94%	2.6
1999	1,641	5.06			

Based on Census of Canada data, Wright (2000), GHK (2002), IBI Group (2002)

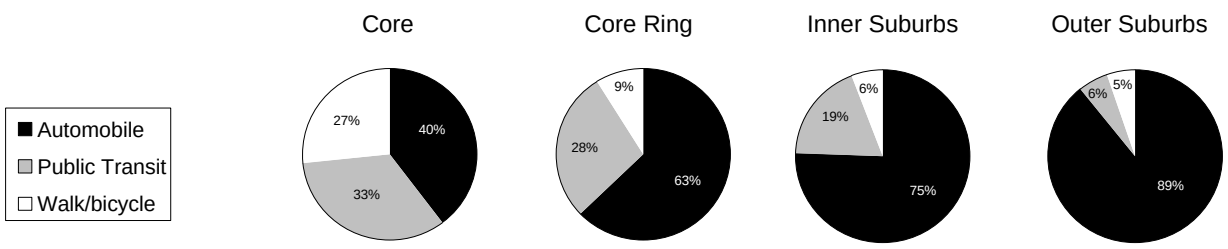
Box 6. Distributions of population and trips in the Greater Toronto Area (GTA), 1986-1996

	Metro (now the City of Toronto)	Rest of the GTA
GTA's population, 1996 (total = 4.63 million)	52%	48%
Population added between 1986 and 1996 (0.83 million)	*21%*	*79%*
Origins of all trips, 1996 (9.0 million)	53%	47%
Origins of new trips, 1986-1996 (1.9 million)†	*25%*	*75%*
Destinations of all trips, 1996 (9.0 million)	53%	47%
Destinations of new trips, 1986-1996 (1.9 million)†	*15%*	*85%*
Average lengths of residents' 1996 motorized trips (i.e., not including 8% and 5% walk/bicycle trips by City and Suburban residents)	7.6 km	11.6 km

† 'New trips' refer to the difference between trip totals in 1996 and 1986 and the features of the difference, whether the additional trips were made by existing or new residents of the GTA.

Based on Joint Program in Transportation (2001)

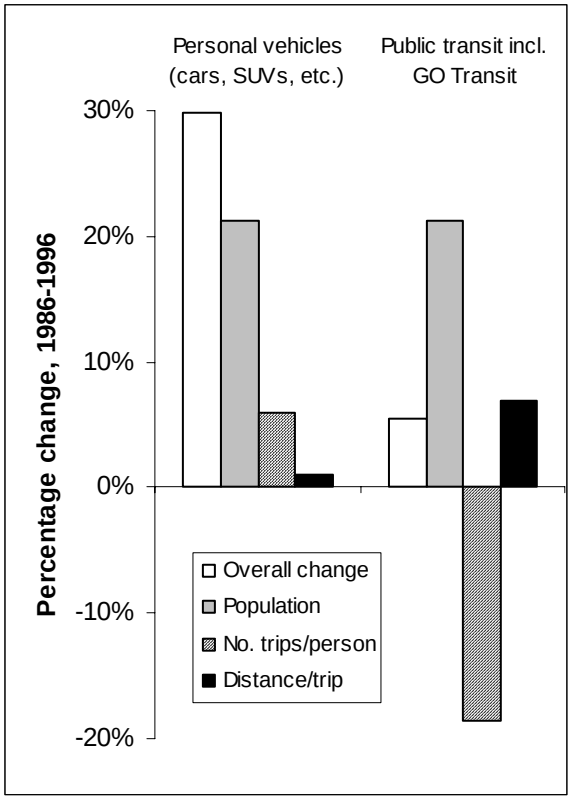
Box 7. Travel and car ownership in 1996 in concentric parts of the Toronto Region ('Outer Suburbs' = GTA outside Metro Toronto)



	Core	Core Ring	Inner Suburbs	Outer Suburbs
Number of trips per day per person	2.06	2.23	2.26	2.51
Motorized distance travelled (km)	12.5	15.0	17.3	25.7
Households with no car	52%	31%	17%	6%
Residential density (persons per square kilometre of urbanized area)	8,500	5,900	2,900	2,300

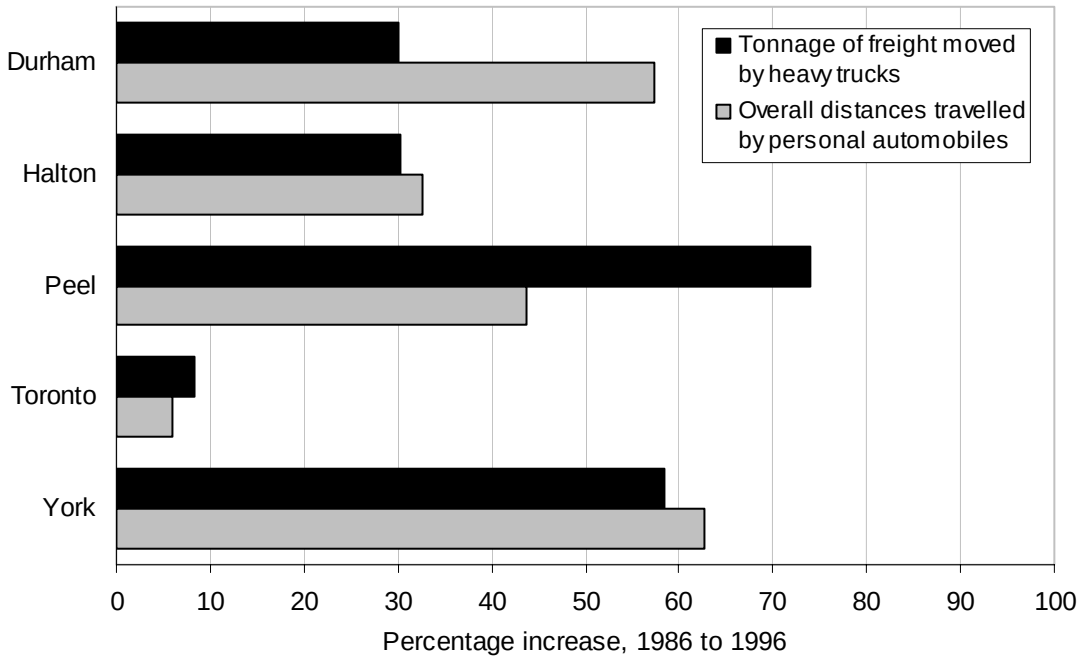
Source: CST (1998)

Box 8. Changes in travelling by personal vehicles and public transit in the GTA, 1986-1996, and contributing factors



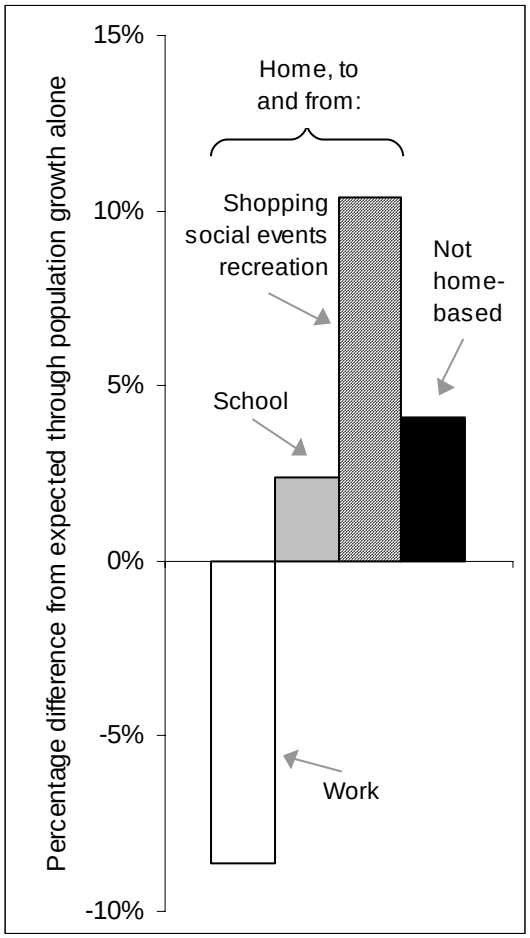
Based on Joint Program in Transportation (2001)

Box 9. Increases in automobile traffic and heavy-duty freight traffic in the GTA



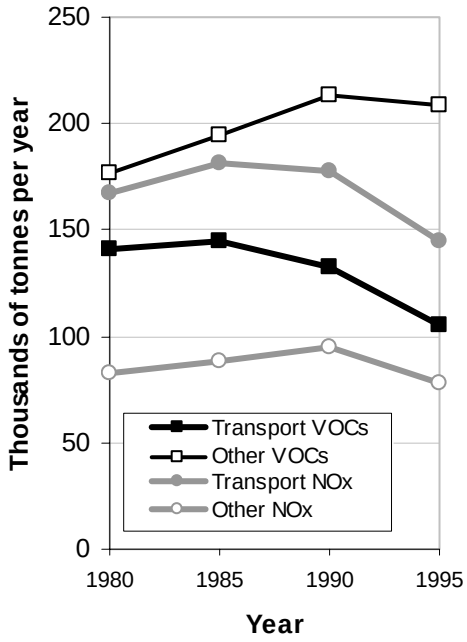
Based on Joint Program in Transportation (2001) and OGTA (1997)

Box 10. Changes in trip purpose in the GTA, 1986-1996



Based on Joint Program in Transportation (2001)

Box 11. Emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x) from transport and other GTA sources



Based on EEA (1999)