



# Myths about Urban Growth and the Toronto “Greenbelt”

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## Executive summary

The geographical growth of urban areas, pejoratively called “urban sprawl” by anti-growth advocates, has become a heated issue across Canada but especially in Ontario, home to the country’s largest agglomeration. The new provincial government has indicated its intention to implement smart growth policies intended to slow or stop the growth of urban land areas. But the anti-growth agenda conflicts with other important public-policy objectives such as maintaining and expanding household and regional prosperity, sustaining personal and civic freedoms, and reducing the incidence of poverty.

The growth of urban land areas is a worldwide phenomenon that naturally accompanies population and economic growth. Urban land area growth can be found in virtually all high-income world urban areas from Canada to the United States, Australia, New Zealand, Japan and Western Europe. Further, urban land area growth is occurring, in the emerging democracies of Eastern Europe, the urban areas of less affluent nations, such as in India and China and virtually everywhere else that urban areas are adding population.

## The main charges against the growth of urban land areas are erroneous

### *Wasting land*

It is suggested that the growth of urban land areas wastes land. Yet, even after 400 years of urbanization, urbanization represents a small portion of the land use in the nation’s agricultural belt (under 5%).

### *Loss of agricultural land*

The growth of urban land areas is charged with consuming an inordinate amount of agricultural land, thereby threatening the food supply. Reduction in agricultural land, however, is due to increased agricultural efficiency, not scarcity of land.

### *Consumption of open space*

It is claimed that urban land area growth consumes large amounts of open space. However, as indicated above, more productive agriculture has returned far more land to open space than has been consumed by urbanization (this is not to suggest that environmentally sensitive or otherwise special land should not be conserved in reasonable amounts).

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***Traffic congestion and air pollution***

Urban land area growth is purported to make traffic congestion and air pollution worse. The opposite is true. Traffic congestion and air pollution are intensified by higher densities and generally moderated by lower densities.

***Excessive use of automobiles***

It is claimed that urban land area growth forces people to be too dependent upon automobiles and that transit should be used more. However, automobiles are without competition for their ability to provide mobility throughout the modern urban area. No transit system has been proposed, much less implemented, that could remotely equal the mobility of automobiles, simply because it would be far too costly. Moreover, it is infeasible to increase urban densities enough to make transit materially competitive.

***Jobs-housing imbalance***

Anti-growth activists often talk about the separation of jobs and housing as being a condition forced upon consumers. In fact, the separation that occurs is the result of conscious choices. People tend to travel farther than planners perceive to be necessary in virtually all urban areas, regardless of the extent of sprawl, passing literally hundreds of thousands of jobs.

***Higher government costs***

Virtually all anti-sprawl academic studies project higher government costs in less dense areas. However, the actual data indicates virtually the opposite. The newer, less dense suburbs have lower expenditures per capita than the more dense central cities.

***Obesity***

Over the past year, an intense public relations effort has accompanied publication of academic studies purporting to demonstrate that urban land area growth is a principal cause of obesity. It is suggested that lower population densities and suburban land use discourage walking, thereby increasing weights. There are at least two strong reasons to doubt the sprawl-obesity connection. Food intake has increased markedly during the same period that obesity has accelerated. Further, the large reductions in population density and walking occurred before the rise in obesity.

In fact, urban land area growth is found to be a benign, and potentially beneficial development, while anti-growth policy is found to threaten prosperity and retard social mobility, at the same time it increases traffic congestion and air pollution.

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## The case against “Smart Growth” in Ontario

The government of Premier Dalton McGuinty has expressed its commitment to fighting the growth of urban land areas by designating 7,000 Km<sup>2</sup> running from southeast of Peterborough to the Niagara Peninsula as a “greenbelt.” The most important effect of the proposed greenbelt will be to increase the price of housing, making it more difficult for families with lower income to enter the economic mainstream and could lead to greater economic disparities. At the same time, it can be expected that the already serious traffic congestion will become much worse due to the failure to provide sufficient new roadway capacity to handle demand and the inability of any feasible system of public transit to reduce traffic congestion materially.

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## Part 1

# Evidence from Canada and the World

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## Introduction

The geographical growth of urban areas, [1] pejoratively called “urban sprawl” by anti-growth advocates, has become a heated issue in Canada. Opponents attribute a laundry list of ills to the growth of urban land areas, saying, for example, that it consumes too much land and requires an unnecessary and undesirable reliance on automobile travel. The effort to combat the growth of urban land areas they call “smart growth.”

The growth of urban land areas occurs as the result of four factors: (1) population growth, (2) increase in the number of households, (3) increasing affluence and (4) commercial expansion. It is obvious that urban land areas will grow as population increases. But, in recent decades, average household sizes have dropped, which has required building more housing units and further expansion of urban land areas. In addition, as people become more affluent, they are more likely to seek larger living quarters and more space, which also adds to the growth of urban land areas. Finally, growing commerce requires additional land, and modern, lower-cost, efficient commercial practices require more space, as multi-story facilities are often replaced by sprawling single-story facilities. Advocates of “smart growth” generally claim that they are in favour of urban population and economic growth. But, increased demand for urban land naturally accompanies population and economic growth. As a result, to oppose growth of urban land areas is, in essence, to oppose population growth and economic growth.

Further, there has been a tendency to consider urban growth in a policy vacuum. As a result, increased demand for urban land is rarely discussed in relation to overall economic objectives or other societal and policy goals. Excessive regulation tends to retard economic growth unnecessarily, whether the object of the regulation is business or land or anything else. [Gwartney and Lawson, 2003] There is nearly universal agreement that economic growth is desirable and that policies should ease the movement of households from low-income to middle-income status. Attempts to “limit” or “control” the growth of urban land areas through “smart growth” policies inevitably lead to higher costs, as will be shown below. As a result, efforts to control growth are the opposite of the wealth creating and low-income reducing policies that are necessary to sustain economic growth.

Reports in the anti-growth literature blame urban land area growth for:

- wasting land
- consuming agricultural land
- consuming open space and sensitive land
- aggravating traffic congestion, air pollution, and climate change
- encouraging excess use of automobiles and reducing transportation choice
- causing a spatial imbalance between employment and residences
- causing obesity.

But there is a great deal of evidence suggesting that these charges against urban growth are false. Meanwhile, most strategies for slowing or stopping urban growth are based on increasing the population densities of cities and favouring public transit over private, automobile-based transportation. Such proposals carry the potential for significant economic harms, which will fall disproportionately on the poor, immigrants, and minorities, and would sharply curtail the rights of Canadians to live a lifestyle that they choose, free of government dictate.

This study will examine the claims against urban growth, and some of the potential impacts of “smart growth” planning on the people of Ontario. The new Dalton McGuinty provincial government has embraced an anti-growth agenda, has appointed a Greenbelt Task Force to propose anti-growth policies for Toronto’s Golden Horseshoe area, and recently designated 7,000 Km<sup>2</sup> running from south-east of Peterborough to the Niagara Peninsula as a “greenbelt.” The previous provincial government, under Premier Ernie Eves, had established a Smart Growth Panel that put considerable effort into research and analysis of alternative futures for the Golden Horseshoe area. In addition, national reports have espoused strong actions to combat urban growth. Perhaps the most notable is the David Suzuki Foundation’s Report *Understanding Sprawl*. [Gurin, 2003]

Generally the policies proposed by the McGuinty government would place significant constraints on the development of land in the Golden Horseshoe and favor public transit over automobile-based mobility, with the objective of of constraining the expansion of urban land areas.

## Does the growth of urban land areas “waste” land?

An oft-repeated criticism of urban growth is that it “wastes” land. This raises an important question. What constitutes wasting land and what does not? This is another way of asking: What is the “appropriate” urban density? One certainly cannot derive such a value from looking at historical or international data. [2] It is possible for urban densities to be much higher than is typical of Canada, Ontario’s “Golden Horseshoe,” or even the most dense urban areas in the world as they exist today. Here are some examples.

**Kowloon** What may have been the highest density in urban history was the Kowloon Walled City, a series of interconnected buildings covering 2.6 hectares (0.026 square kilometers or 6.5 acres) in Hong Kong with as many as 50,000 residents at its peak. The British demolished the Kowloon Walled City in 1993. The Kowloon Walled City was home to more than 1,000 businesses, including more than 500 small manufacturing facilities. [Internet Kowloon Walled City, 2004] The population density may have been nearly 2,000,000 million per square kilometer. [3] At this density, the 2001 population of the world could have been accommodated within the urban areas [4] (developed areas) of the Golden Horseshoe. [5]

**Hong Kong** The core of Hong Kong (Victoria and Kowloon) has a population density of approximately 50,000 per square kilometer. At this density, the urban areas in the Golden Horseshoe could accommodate 120,000,000 people, nearly four times the population of Canada.

**Other urban areas** The urban areas with the highest densities in the high-income world [6] outside Hong Kong (for example, Tokyo or Barcelona) have fewer than 6,000 persons per square kilometer.

**Toronto** The Toronto urban area itself, which includes the city of Toronto and the contiguous urban development in the “905” area, has a population density of 2,600 per square kilometer (4,367,000 people in 1,655 square kilometers). This is similar to the density of 2,700 per square kilometer of Los Angeles, which is the most densely populated urban area in the United States.

**Canada** The average urban area in Canada has a population density of somewhat less than 1,000 per square kilometer.

**Sudbury** The urban area of more than 100,000 residents with the lowest density in Canada is Sudbury, with 380 persons per square kilometer. If the Toronto area had

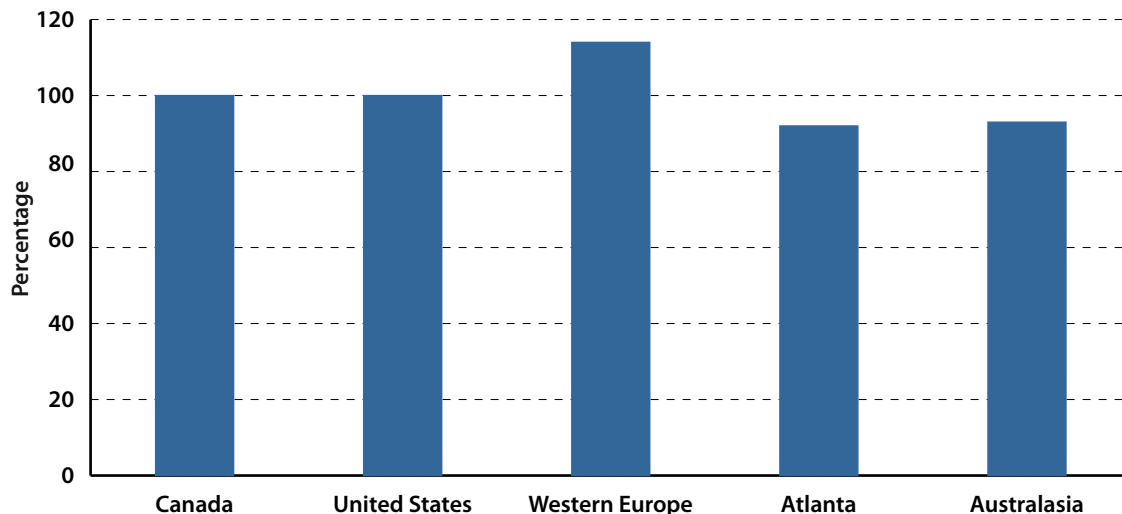


the same density as Sudbury, then the uninterrupted urban development would extend to Georgian Bay, Peterborough, and stop just short of Woodstock, making it the most expansive urban area in the world, at 11,400 square kilometers. [7]

Urban densities vary, and have varied significantly. The Kowloon Walled City may have been more than 5,000 times as dense as Sudbury. Both, however, could be considered examples of urban growth, having expanded to their ultimate or present geographic extent from smaller cores. The dense shantytown that for some years grew beyond the fringes of the Kowloon Walled City was still, in effect, a suburb despite its high density. Virtually any geographical growth of urban areas has been suburban growth, whether Toronto’s peripheral neighbourhoods in East York or York some years ago or the newer development on the edges of Newmarket or Halton Hills.

In recent decades, more than 95% of urban growth [Figure 1.1] in urban areas of the high-income world has been in the suburbs. [8] Since 1965, approximately 115% of urban growth in Western Europe has been in suburbs, while negative growth (a loss of population) has occurred in the core cities. Western Europe’s suburban growth share has been well above the 90% to 95% of Canada, the United States, Australia, and New Zealand. In actuality, these figures understate suburban growth, since nearly all core city growth has been the result of annexation or development of suburban “greenfield” (undeveloped) space within core city limits. Even in the special cases of the geographically and politically constrained city-states of Hong Kong and Singapore, population growth has been concentrated in “greenfield,” albeit more dense, suburban locations.

**Figure 1.1: Percentage of urban growth in suburbs (metropolitan areas over 1,000,000)**



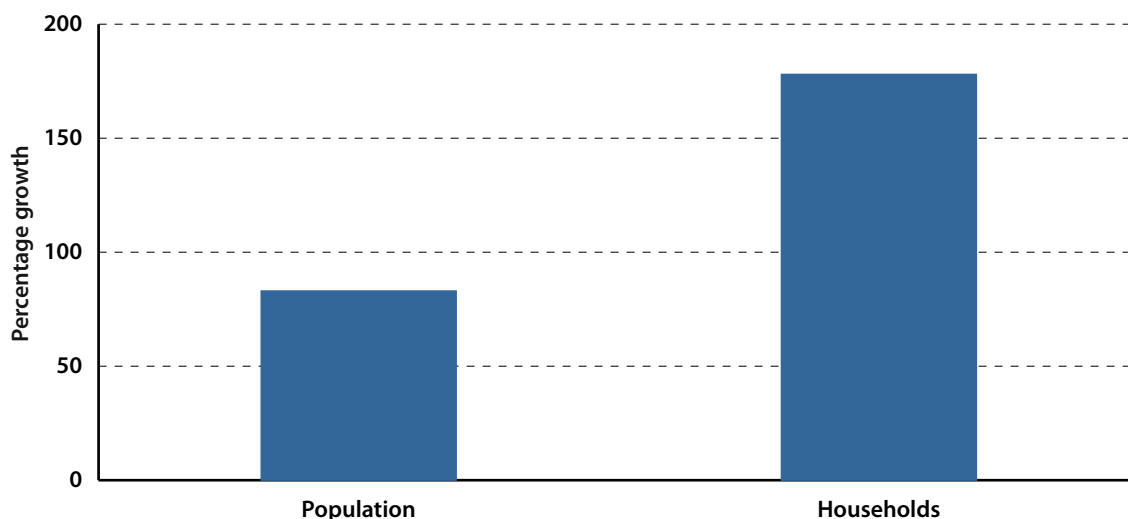
Source: Calculated from national census and estimates data. [Demographia, 2004h]

## Population growth and the increase in the number of households

Growth of urban land areas results principally from a growth in population and an increase in the number of households (housing units). As urban areas gain population, they add developed land area. There is also another factor in play: as people become more affluent, they may move to larger houses on larger lots in the suburbs, which those opposed to growth often claim to be a “waste” of land. But, in recent decades, the most important cause of the growth of urban land areas appears to be an increase in the number of households. As the average size of households has declined, the number of households has increased at a rate well above the rate of population growth. As the number of households increase, so does the demand for land and dwellings. For example, in Ontario, the population increased 82% from 1961 to 2001 while the number of households increased 177%, more than double the population increase rate. [9] [Figure 1.2]

It is true that the greatest suburban growth and the lowest overall urban population density occurs in high-income nations. [Cox, 2004a] These conditions can be found on the edges of virtually all high-income urban areas from Canada to the United States, Australia, New Zealand, Japan and Western Europe. It is appearing, with rare exceptions, wherever rising incomes permit it, in the emerging democracies of Eastern Europe [Cox, 2004b] and even in the urban areas of other middle-income [10] and less affluent nations, such as India and China. [11] Historical data on urban densities are limited, both in Canada and internationally. However, Kenworthy, Laube, and Newman developed comparative density information for some urban areas from 1960 to 1990. [Kenworthy, Laube, and Newman, 1999] It shows urban densities generally declining in Western Europe, Canada

**Figure 1.2: Population & households in Ontario, 1961–2001**



Source: Calculated from Statistics Canada data.

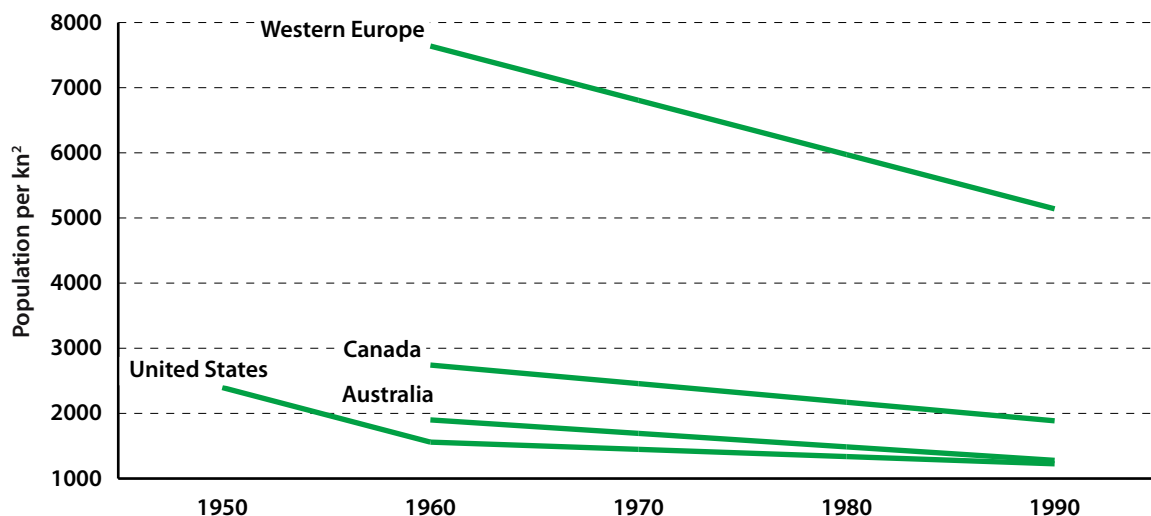
and Australia. Information on urban density in the United States is available from 1950, and shows a similar pattern. In 1960, US urban densities were considerably below those in Canada, Australia, and Western Europe; however, in 1950, US densities were much closer to the Canadian figure for 1960 and above Australia. [Figure 1.3]

The crucial influence of the increase in the number of households is illustrated by an analysis of the Toronto urban area. Historical data on the urban area (developed area) are limited but it has been estimated that the Toronto urban area occupied 400 square kilometers in 1961. [12] Based upon the increase in population and the estimated increase above that in the number of households, an estimate can be made of the causes of urban growth in the Toronto urban area over the past 40 years.

- An additional 745 square kilometers would have been required to house the population increase through 2001, had the size of households remained what it was in 1961.
- A further 386 square kilometers would have been required to house the new households that were created in excess of the population increase.

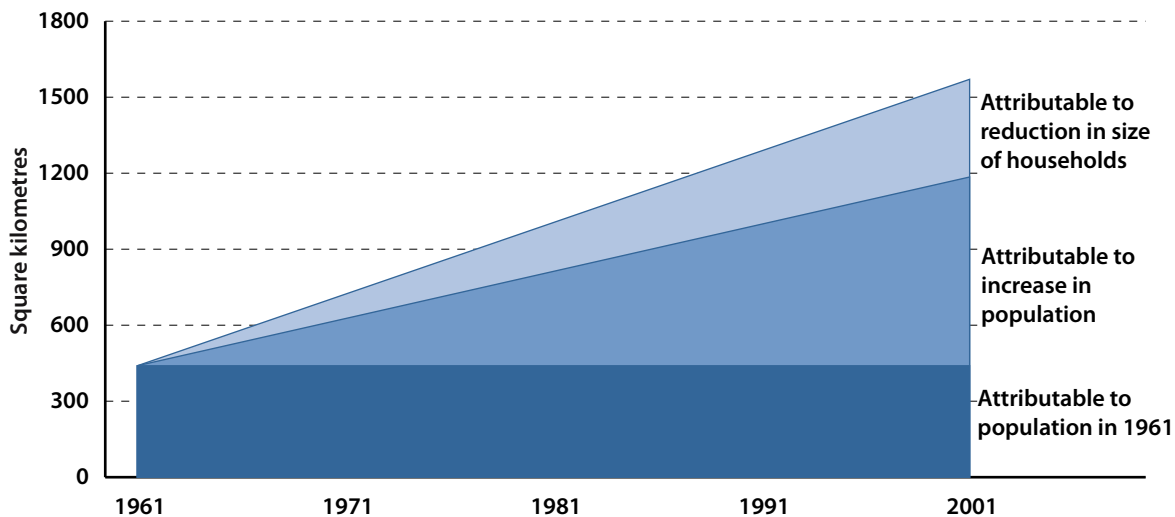
Overall, this would have made the Toronto urban area 1,571 square kilometers in 2001. The actual figure (1,644) was only 5% higher. Further, this estimate is likely to have *overstated* the extent of new urban growth since it is based upon a somewhat understated estimate of the urban land area in 1961. [13] [Figure 1.4] Based upon this analysis, the growth of Toronto’s urban area over the past 40 years does not appear to be the result of using materially more land per household. This is compelling evidence against the notion that urban growth “wastes” land.

**Figure 1.3: Trends in the density of urban areas**



Source: Calculated by author. [Demographia, 2004h]

**Figure 1.4: Toronto urban area—estimated land area, 1961–2001**



Source: Kenworthy, Laube, and Newman [1999] estimated the urban area (developed area) within the Municipality of Metropolitan Toronto at 440 km<sup>2</sup> in 1961, with a population of 1.620 million. The Census Metropolitan Area figure for the same year was 1.919 million. There was some contiguous urbanization outside the Municipality, which is excluded from this estimate. Figures for 2001 from Statistics Canada.

## Commercial expansion

Finally, commercial development has grown as incomes, populations, and the number of households have increased. And, commercial facilities have been developed to cover more land and become more efficient, lowering consumer prices. Thus, stores are larger than they used to be. Perhaps as important, warehouse and distribution facilities have become larger. Former multi-story facilities have been replaced by single-story commercial buildings that take up more land. This is especially obvious to a traveler taking off or landing at Toronto’s Pearson International Airport, with its surrounding sea of single-story commercial buildings.

### **The rule—declining densities in core cities**

As they expand, Western European and Asian urban areas are generally losing density. In fact, in recent decades the only boundary-constrained, fully developed, and non-amalgamating central city in the high-income world that has gained population is Vancouver. [14] At the same time, most job growth has been outside the downtown (central business district) cores and, in most cases, outside the central cities themselves. Among the largest central business districts in the high-income world, only in London, England have more jobs been created, [15] with losses in Tokyo, New York, Osaka, and Paris. [16]

In recent years, inner cities have begun to prosper again, with population increases. For example, after four decades of decline, the core of Chicago has begun growing again but is unlikely to recover the more than 700,000 residents lost since 1950. During the 1990s, inner London became perhaps the principal financial capital of Europe and reversed 80 years of decline. But, the population remains approximately 40% below its peak in 1911. Other core cities, from Toronto and Montreal to Sydney, Copenhagen, and other Western European and US cities, are experiencing a renaissance. But, generally, nearly all urban growth continues to be in suburban areas and overall urban densities remain far below peak levels.

Western European and Japanese urban areas have increasingly expanded in a manner similar to those in Canada, the United States, Australia, and New Zealand. The urban growth has been later in coming and generally somewhat less extensive, but that appears to be related to issues of income and automobile ownership. [Cox, 2003] For example, by 1955, Canada had become affluent enough to achieve 0.75 automobiles per household. Western Europe and Japan took from 20 to 30 years longer to achieve this rate of automobile ownership. Thus, from Toronto to Turin, Tokyo and Tampa-St. Petersburg, the trend is the same: the preponderance of urban development has been on the urban periphery, as has generally been the case when permitted by available technology and income.

Reflecting the growth of urban areas, the latest available data indicate that population densities have declined in Canadian urban areas and elsewhere. From 1960 to 1990, Canadian urbanized areas experienced a 21% decline in population density. This is considerably less than in Western Europe, where the reduction was 60%. [17] The growth of urban areas in Western Europe has been so substantial that overall urban densities average only 15% higher than that of the urban areas of Toronto or Los Angeles. [18] There is virtually no evidence for a material increase in the overall density of modern urban areas, except those that have had comparatively low densities to begin with. [19]

## “Wasted” land?

Whether or not land is being wasted is a value judgment. On one hand, it might be argued that the Kowloon Walled City proves that people can live at far higher density: all of Canada could be contained in a rectangle little larger than from Bathurst Street to the Don Valley Parkway and the Gardier Expressway to Bloor Street in Toronto. But, there are important trade-offs to consider. Despite appearances within the Toronto urban area, there is no shortage of land. It will be shown below that urbanization represents no threat to agricultural production. At the same time, it will be shown that the land-rationing policies that represent the core of the smart-growth agenda (urban growth boundaries, greenbelts, and development limits) raise prices for housing and other goods, reducing the overall standard of living and that those with lower incomes, in effect, pay for

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these regulations by being denied the opportunity to own their own homes and travel to employment locations throughout the urban area. Thus, the standard for determining whether or not land is being wasted is whether there is a serious threat to having enough and whether, in an attempt to limit its use, segments of society are consigned to a low standard of living. From this perspective, “waste” of land is not generally a concern at this point in the Golden Horseshoe (or in most other high-income world urban areas).

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## Does the growth of urban land areas consume an excessive amount of agricultural land?

One of the most enduring anti-growth claims is that urbanization and the growth of urban areas threatens food supplies by consuming agricultural land. [20] New houses built to serve rising demand are often built on former agricultural land on the fringe of urban areas. However, this poses little or no threat to agriculture because there is so little of it in relation to the extent of available farmland and the increasing efficiency with which it is used. Of the total amount of land converted to urban uses between 1971 and 1996, less than half was considered “dependable” agricultural land. [21] This loss of agricultural land to urban uses represents only 0.88% of the total agricultural land in use (Statistics Canada, 2001).

According to a study by the United States Department of Agriculture, the Canadian agricultural sector was 206% more productive at the end of the 1980s than at the beginning of the 1960s (USDA, 1994). These gains have been spurred by advances in biotechnology and the advent of crop varieties that are much more resistant to various environmental factors. Further, Canada continues to be a net exporter of agricultural products, with exports nearly 1.5 times the value of imports. Finally, comparatively low agricultural prices in Canada are clear testimony to the fact that there is no agricultural crisis that requires government intervention. Urbanization clearly does not pose a threat to agricultural production.

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## Does the growth of urban land areas consume excessive amounts of open space and sensitive land?

Anti-growth proponents also profess concern about the preservation of open space. In fact, the abandonment of excess agricultural land in Canada has created approximately 100,000 square kilometers of non-agricultural, non-urban, open space during the last 50 years (total agricultural land withdrawn from service minus total urbanization). [22] This is an area approximately 1.5 times the size of New Brunswick. In Ontario, at least 30,000 square kilometers of new open space have been created by the withdrawal of excess farmland. This is approximately four times all of the urbanization in the province and nearly nine times the total urbanization in the Golden Horseshoe.

Nonetheless, urban growth has been substantial in recent decades. The 10 largest census metropolitan areas [23] have risen from a total population of 8.9 million in 1951 to 19.1 million in 2001, an increase of 115%. [24] Housing more than 10 million additional people has meant, in turn, that more urban land has had to be developed. The perception that urbanization is consuming large amounts of farmland or open space arises from the fact that most observers live in urban areas. They do not venture out across the wide-open spaces of the country on a daily basis. But a flight on a clear day from Toronto to London or Ottawa will reveal that the theoretical bounty of both agricultural land and open space is indeed real and is not often interrupted by urbanization.

There is, however, concern about preservation of such sensitive landforms as the Niagara Escarpment and the Oak Ridges Moraine. It may be desirable to restrict development in at least part of these areas, though whether such conservation is best done privately or publicly is a question for a different study. [25] However, decisions with respect to such preservation should not be made in a policy vacuum that excludes a careful consideration of other public policies and objectives. Further, if more land adjacent to an urban area is preserved, this is likely to expand urban development further, not contain it. Development tends to “leap frog” over preserved open spaces, a pattern of land use that can be observed especially in Western European urban areas, such as London, Paris and a number of German cities.



## Does growth of urban land areas aggravate traffic congestion and air pollution?

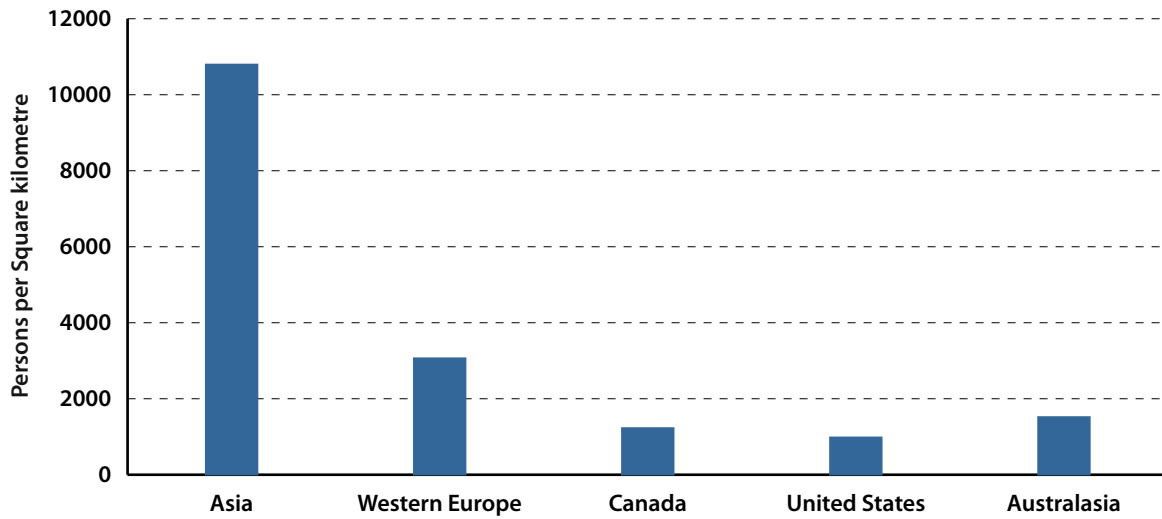
Anti-growth advocates blame highways and automobiles for much they consider to be wrong with modern urbanization and urban growth. It is often claimed, for example, that freeways are responsible for urban growth. [Gurin, 2003] There is no question that the technological advances of the automobile and trucking have reduced costs and eased mobility, which has led to lower density in urban areas around the world. But, it is not clear that high-quality highways (freeways), in and of themselves, have made urban growth significantly greater. Australian urban areas, for example, have expanded more than Canadian urban areas [26] but generally had less freeway coverage. Similarly, some Canadian urban areas, such as Vancouver, Edmonton and Calgary, have considerably less freeway coverage than urban areas with similar population in the United States. They have, nonetheless, expanded significantly. [27] Further, Atlanta, the world's least dense major urban area (one-quarter the density of Toronto) contains the largest expanse of suburban area in the world without non-radial freeways. David Hartgen and Daniel Curley, at the University of North Carolina, found that urban ring roads (beltways) make little difference in the extent of urban growth. [Hartgen and Curley, 1999]

### Increased travel times and traffic congestion

A frequently repeated misconception of anti-growth advocates is that urban growth increases travel times. In fact, suburban areas generally have faster overall travel speeds and often shorter travel times. The principal reason for the longer travel times in urban areas more dependent upon public transit is that public transit is generally slower than the automobile. For example, the International Union of Public Transport (UITP) reports that average highway speeds are approximately 51 kilometers per hour in Toronto compared to an average speed for public transit of 24 kilometers per hour. [28]

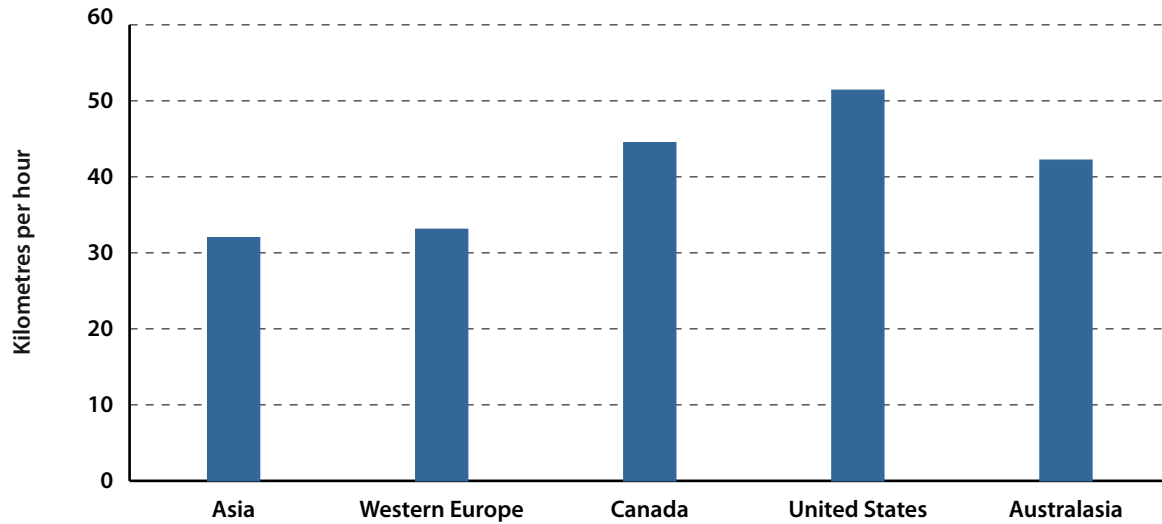
Although public transit's market share is much lower where there is lower population density, travel speeds are generally faster [Figure 1.5; Figure 1.6], unless there is a substandard road network. [Cox, 2004a] For example, among urban areas of more than 5,000,000 population, [29] American urban areas had travel times for trips to work considerably lower than those of Western European or Asian urban areas: on average, Western Europeans spend 36% more time commuting to work in large urban areas [30] and commuters in large Japanese urban areas spend 55% more time traveling to work than do commuters in the United States, [31] where automobile use is the highest. [Figure 1.7] In Tokyo-Yokohama, which has by far the world's most extensive urban public-transit sys-

**Figure 1.5: World urban population densities, latest data (1990 or later)**



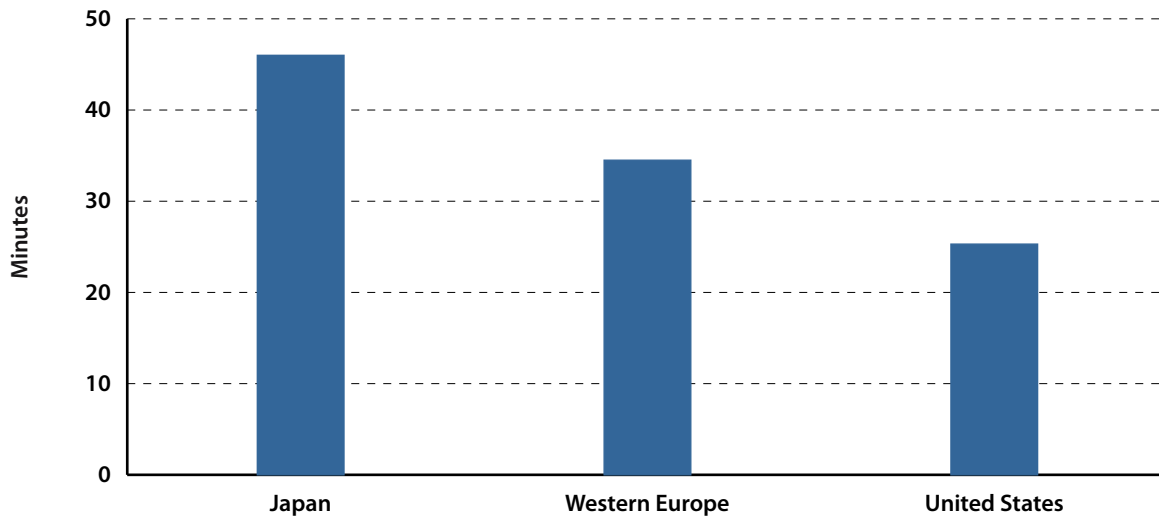
Source: [Cox, 2004a]

**Figure 1.6: Average urban roadway speeds around the world, latest data (1990 or later)**



Source: [Cox, 2004a]

**Figure 1.7: Average travel times (minutes) for one-way trip to work in urban areas over 5,000,000 in Japan, Western Europe and the United States, latest data (1990 or later)**



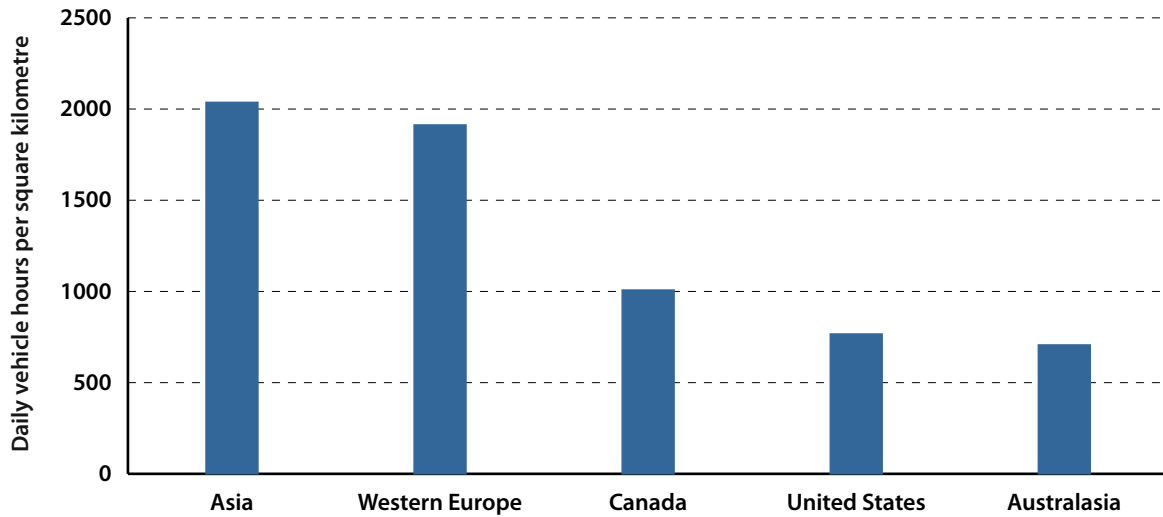
Source: US Census 2000; 2000 Census of Japan.

tem and where the speed of urban public transit is 50% faster than that of the automobile, the average commuter spent 53 minutes traveling each way to work, more than double the average of large American urban areas in 2000. [32]

Opponents of urban growth claim that urban areas with higher density have less traffic congestion. But the opposite is true. Because traffic speeds are slower, traffic intensity is greater as measured by daily vehicle hours per square kilometer. High-income urban areas with more than 7,700 persons per square kilometer have traffic intensities 7.6 times that of urban areas under 1,150 (the average urban density is slightly below 1,000 in Canada). Urban areas between 3,850 and 7,700 persons per square kilometer, which includes a number of Western European cases, have traffic intensities per vehicle hour 4.1 times that of urban areas under 1,150. [Figure 1.8] [33] Even in Hong Kong, where public transit has the highest market share and where there is by far the highest urban densities, traffic intensity is more than one-third higher than in Los Angeles. [34]

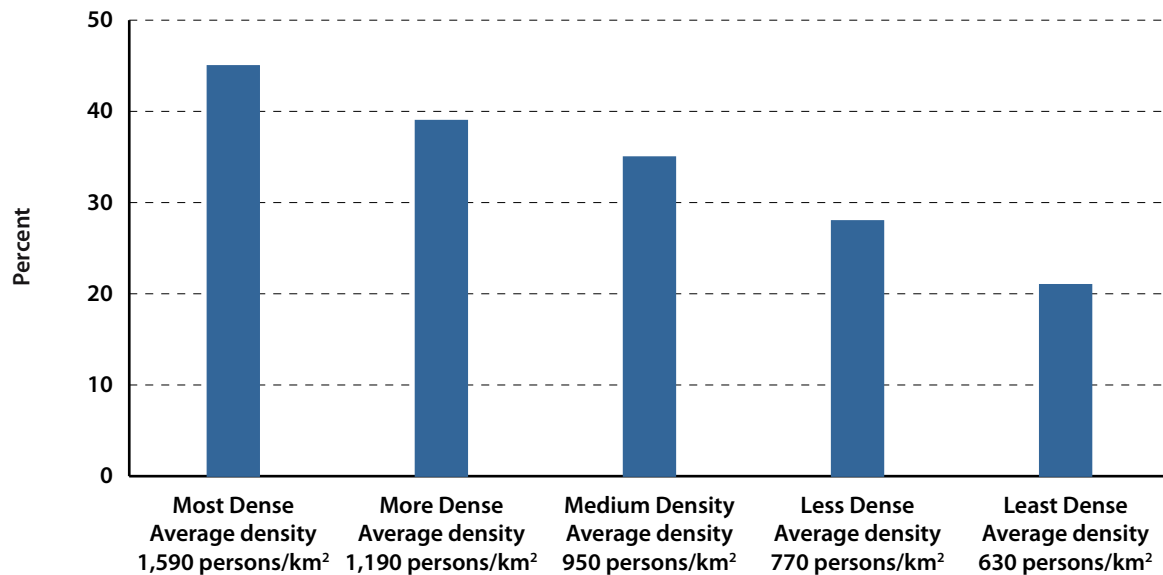
The same relationship between higher density and greater traffic intensity exists in the urban areas of the United States. The urban areas with the highest density have the greatest traffic delay, as measured by the Texas Transportation Institute Travel Time Index, [35] while the least dense urban areas have the least delay. [Figure 1.9] The Travel Time Index estimates the additional time necessary to travel by roadway during peak periods compared to non-congested periods—the congestion penalty. Further, research for the United States Department of Transportation indicates that traffic volumes increase with density. Areas with double the average urban density in the United States have traffic volumes that are approximately 1.8 times [36] as great. [Figure 1.10] [37] While

**Figure 1.8: Average traffic intensity (daily vehicle hours per urban square kilometre, 1990) in urban areas around the world**



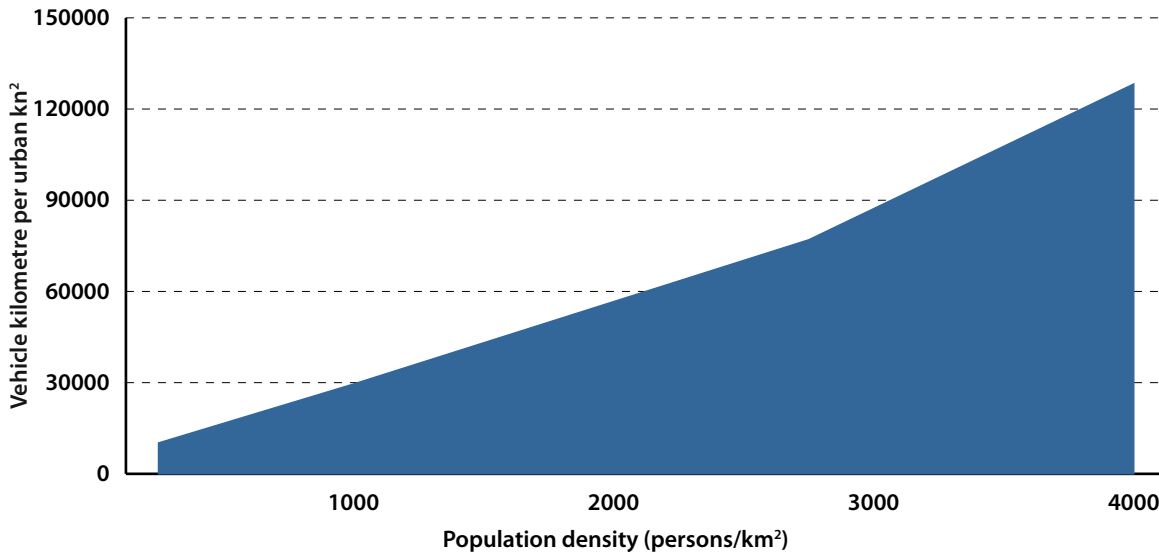
Source: Calculated from data in Kenworthy, Laube, and Newman, 1999.

**Figure 1.9: Traffic congestion in US urban areas—congestion penalty (additional time for travel as a percentage) by density quintile, 2001**



Source: Data from Texas Transportation Institute, *Travel Time Index*, <<http://tti.tamu.edu>>.

**Figure 1.10: United States—density and traffic congestion, 1995**



Source: based upon 1995 National Personal Transportation Survey.

this would indicate a modest reduction in automobile use per capita, the intensity of traffic in a specific area (such as a square mile) is greater and drivers spend more time in traffic congestion, which frustrates them and makes air pollution more intense (more on the latter below).

Portland, Oregon has adopted what may be the strongest growth-control policies among North American metropolitan areas. This has included, among other strategies, limitations on highway development and expansion of public transit. But Portland’s urban-containment policies, had they been implemented as originally intended, would have produced no reduction in traffic congestion. The *2040 Plan* for Portland—which, some 38 years before the establishment of the urban growth boundary, had already expanded beyond the limits set by the *2040 Plan*—projected an increase in traffic volume of 45% from 1990 to 2040. These projected traffic volumes appear to have already been exceeded since the volume of traffic increased nearly 65% from 1990 to 2002. [38] From 1986 to 2002, Portland’s increase in traffic congestion was greater than that of any of the other 74 urbanized areas for which data are maintained by the Texas Transportation Institute. [39]

Finally, the impact of restraining highway capacity on trucks is often overlooked. As roadway speeds decline, trucking costs increase, as necessarily do the related consumer product prices.

## Air pollution and climate change

There is sometimes a tendency to forget that urban areas of 100 years ago were much less healthy than today. For example, the use of coal for heating tended to make air pollution intense. The reliance on horses made both the streets and the air less clean. Great progress has been made since that time, including progress during the automobile era. [Lomborg, 2001] Certainly, air quality in Canada, with the exception of ozone, has improved dramatically in the last 30 years. [Brown et al., 2004]

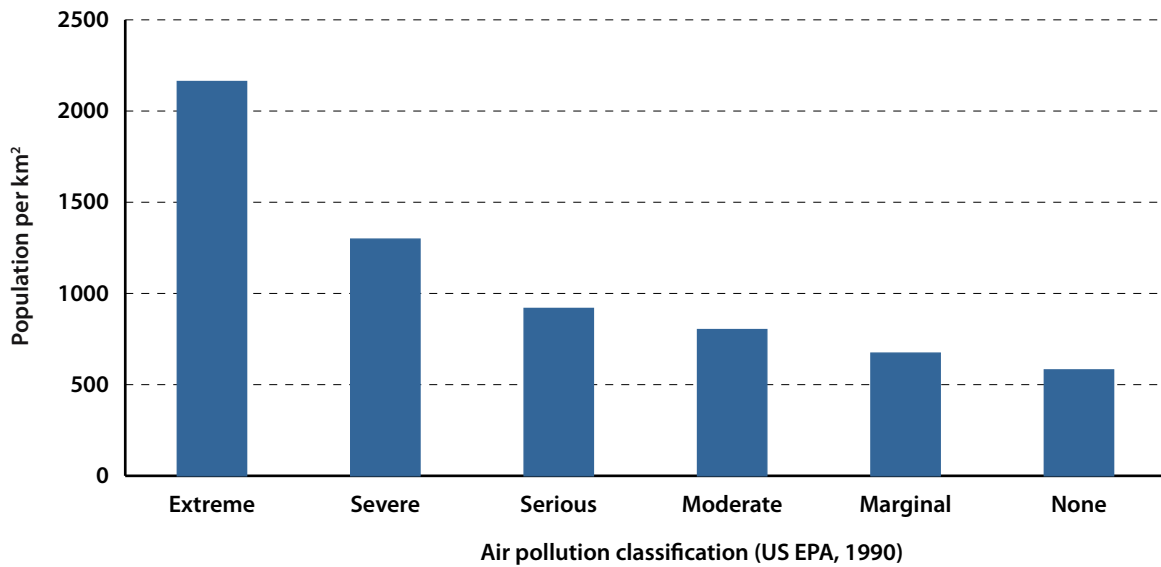
Opponents of growth claim that more dense urban areas have lower *overall* levels of air pollution produced by motor vehicles. But, the effects upon health of air pollution are not spread across all urban areas but are related to the intensity of air pollution in the specific area where the air is breathed. Air pollution is more intense in local areas where traffic volumes are greater and even more intense where traffic operates more slowly and in “stop and go” conditions. More intense air pollution in a local area is a more significant health risk than the gross amount of pollution in an entire urban area.[40]

In United States, more severe classifications of air pollution [Figure 1.11] are associated with higher densities. [O’Toole, 1999] This mirrors international evidence, with production of air pollution per square kilometer being lower where population densities are lower. [41] The impact of higher traffic densities on air pollution is readily apparent to any walking in the dense cores of urban areas such as London, Paris, or Tokyo.

At the same time, primarily due to technological advances, substantial progress has been made in reducing emissions of air pollutants. Emissions of volatile organic compounds and NO<sub>x</sub> from automobiles and light trucks decreased in five large urban areas from 1980 to 2000 (Calgary, Edmonton, Montreal, Toronto, and Vancouver). Concurrently, overall vehicle kilometers travelled increased more than 65%. [42] In addition to the already evident gains, technological improvements in motor vehicles, such as hybrid and fuel cell cars promise to reduce air pollution considerably further.

The report from the David Suzuki Foundation [Gurin, 2003] bases much of its anti-growth campaign on the impact of carbon dioxide emissions from automobiles on global warming (an issue not within the purview of this paper). Regardless of whether one thinks that reduction of carbon dioxide offers any net societal benefit, the fact is that substantial progress can be made in reducing carbon dioxide with current technologies (such as hybrid vehicles) and others are likely to be developed. [Bedsworth, 2004] As automobile emissions have been radically reduced in recent decades by technological advances, it can be expected that carbon-dioxide emissions will also be reduced.

**Figure 1.11: Population density and air pollution for US urban areas (by air pollution classification), 2001**



Source: O'Toole, 2001.

## Does the growth of urban land areas cause “excessive” automobile use?

A common theme in the anti-growth literature is that urban growth fosters a “dependency” upon automobiles. In fact, access to automobiles is liberating. Those with automobiles have access to much greater opportunities for employment and shopping and there is a growing consensus in the United States that expanding access to automobiles is a principal strategy for reducing economic differences between the White, non-Hispanic population and visible minorities. Automobiles liberate lower-income (and other) people by making it possible for them to take employment over much larger areas than is possible with public transit. Researchers from the University of California estimated that making automobiles available to all African-Americans in the United States would reduce the unemployment gap between them and non-Hispanic Whites by approximately one half. [Raphael and Stoll, 2000] The Progressive Policy Institute, affiliated with the Democratic Party (the US political party of the “Left”), has emphasized the importance of access to automobiles for low-income citizens.

In most cases, the shortest distance between a poor person and a job is along a line driven in a car. Prosperity in America has always been strongly related to mobility and poor people work hard for access to opportunities. For both the rural and inner-city poor, access means being able to reach the prosperous suburbs of our booming metropolitan economies, and mobility means having the private automobile necessary for the trip. The most important response to the policy challenge of job access for those leaving welfare is the continued and expanded use of cars by low-income workers. [Waller and Hughest, 1999: 1]

A report by the highly respected Brookings Institution came to a similar conclusion: “auto ownership programs may be one of the more promising options and one worthy of expansion.” [Blumenberg and Waller, 2003: 2] Similarly, the Clinton Administration sought to expand access to automobiles by low-income citizens by easing restrictions that limited automobile ownership among welfare recipients. [The White House, 2000]

### Public transit?

Often it is said that people should use public transit more. Further, there is an implicit assumption that people will abandon their cars and take public transit if traffic gets too bad. But, most urban trips, whether in Toronto or Western Europe, simply cannot be



made on public transit as quickly or as cheaply as they can by private automobiles; some cannot be made at all. Although traffic congestion is much increased and traffic speeds slower, there is no indication that people will abandon their cars for public transit, even where traffic has become intolerable. This, again, is not because people dislike public transit but rather that they cannot get where they need to go on public transit as quickly as they can with the automobile, even where service is available.

Further, the automobile buys its users additional time because it is available for travel when the driver needs it. Transit, on the other hand, operates on schedules. Some services are frequent, especially during peak hours. But, in off-peak periods or late at night, service tends to be less frequent, if there is service at all. Transit provides direct service only for a small percentage of trip origins and destinations. As a result, most trips within an urban area would require a time-consuming transfer from one route to another (bus or rail), and often a trip may not be possible even with a transfer.

### **Transportation choice**

Anti-growth advocates propose more public transit so that “transportation choice” (cars or public transit) will be available. But no such choice is possible without developing a public transit system far too costly to be contemplated. As an alternative, urban areas could be made dense enough for transit to serve them efficiently, but not even the most ardent smart-growth proponents have seriously proposed such an approach. It would require the virtual condemnation of most of the urban area and the resettlement of the former residents into a far more dense urban core, akin to Hong Kong.

In fact, there is choice in method of transportation today. But the choice is based upon where a household has chosen to live. People living in Newmarket do not have public transit service to Ajax that is competitive with the automobile. But when they moved to Newmarket, they made transportation choices that were obvious enough at the time. It is unlikely that many households moved to Newmarket from East York only to be surprised that they could not take the subway to Brampton. Nor could they reach Brampton from their former residence in East York.

Most people who live in a modern urban area make transportation choices when they choose where they live and work. And, most people in urban areas can choose to live where public transit service is good enough to accommodate most travel. But there are factors in the decision other than public transit and cars. Living where one can rely on good public transit service means that travelling to most suburban job locations by public transit will take much longer than travelling by automobile. It may mean higher housing costs, smaller houses, or any other of a number of characteristics that the decision maker might consider more important than riding the bus or train to work every morning. Transportation choice may have an attractive “ring” but simply cannot be provided in the modern urban area, because public transit service that can compete with automobiles can only be provided for a relatively small proportion of urban trips.

However, the anti-growth advocates' preference for public transit could be fairly characterized as superficial, if not as "sloganeering." While they routinely claim that public transit is or can be an alternative, they virtually never produce credible models that would attract a material amount of demand away from the automobile. This is illustrated by the smart-growth planning in Toronto, which would, if implemented in its most aggressive form, move only 2% to 3% of automobile demand to public transit. [IBI Group, 2004] The problem is that there is not, and cannot be, a comprehensive public transit alternative to the automobile in the modern Canadian [43] urban area. It would simply be too costly, as is outlined below.

Where public transit service is competitive with the automobile, people use it. This is demonstrated by the high market share gained by public transit to downtown Toronto, where rapid public transit service (GO-Transit commuter rail service and TTC subway service) offers travel times that are often quicker and usually competitive with the automobile from many places. Even in the United States, where, it is claimed, there is a "love affair with the automobile," market share is high for public transit to downtown areas with comprehensive rapid, public transit service from throughout the urban area. Market shares for work trips [44] by public transit are near or above 50% to the downtown cores of New York, Chicago, Philadelphia, San Francisco, and Boston. [45] The large market share gained by public transit to downtown Toronto, New York, Chicago, Philadelphia, San Francisco, and Boston is similar to that in Western European urban areas, where public transit often provides a high percentage of employment trips to, and within, core areas. [46]

There is no reason to believe that public transit's market shares would not be as high if the same high-quality, intensive, and frequent transit service were provided to other employment areas. But, employment areas outside downtown and the urban core are simply not served by transit service of the quality serving downtown. As a result, outside downtown areas well served by rapid public transit and dense core areas, the market share of public transit is much lower. For example:

**Toronto** Public transit's market share during the morning peak period in the Toronto suburbs is 1.5%, compared to 33% in the city. [IBI Group, 2003]

**Paris** Public transit's market share in the suburbs of Paris is 15%, well below the 65% in the core city (ville de Paris) and the 29% in the entire urban area. [47] Yet, the market share of suburban public transit in Paris is much higher than what would be expected in North American urban areas, principally due to overall lower income and the fact that populations of urban poor tend to be concentrated in inner-ring suburbs just outside the city boundary.

**US urban areas** US Census data from 1990 indicate that, in major urban areas, market share for work trips by public transit outside the downtown core was 3%.

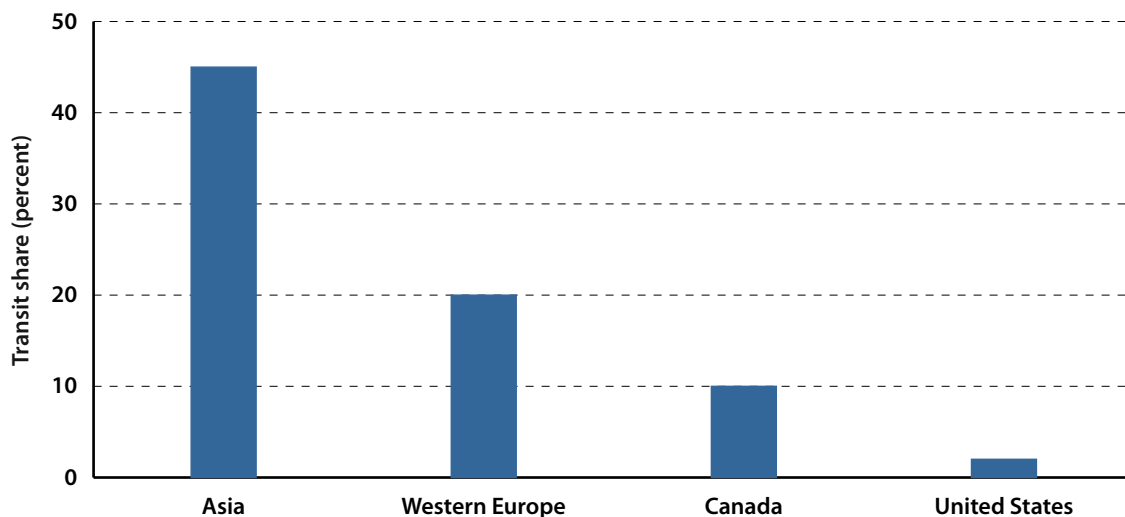
Lower-income workers have considerable difficulty reaching the growing suburban employment areas. Convenient public transit service is generally not available for “reverse commuting” to suburban work destinations, even where comparatively high service levels are provided. [Lacombe, 1998]

Public transit’s market shares are higher in high-income Western Europe and Asia, where densities are also higher than in Canada. [Figure 1.12] Yet, in urban areas around the high-income world, considerable efforts and resources have been expended to attract demand from automobiles to public transit. However, these efforts have been without notable success. Public transit’s market shares have continued to decline in virtually all major urban areas of the high-income world, even where major urban rail expansions have taken place. [Urban Transport Fact Book, 2004]

The high market shares that public transit has in Western Europe and Asia are not the result of densification, because that has not occurred. Neither are they the result of a reduction in automobile use, because that has increased. Indeed, virtually all major high-income urban areas have experienced significant declines in the market share held by public transit. For example:

**Japan** Public transit market shares declined 17% in Tokyo-Yokohama, 22% in Osaka-Kobe-Kyoto and 46% in Nagoya from 1975 to 2000. [48] These two urban areas have the high-income world’s largest public transit systems and highest public transit market shares outside Hong Kong. [49]

**Figure 1.12: Estimated transit shares, 1995**



Source: *Urban Transport Fact Book*, 2004.

**Western Europe** Market share has declined in Western European urban areas since 1980. Overall, the annual loss has been 1.7%, with only one urban area (Zurich) experiencing an increase (0.2% annually). Paris, with one of the most effective public transit systems in the world, has seen the market share of its public transit drop over one-third since 1960. [50]

The problem is not that people who work outside the best-served downtown areas or who live outside well-served core areas dislike public transit. It is rather that public transit service is not competitive with the automobile for trips to employment locations outside downtown or for trips outside the densest urban cores. [51] The overwhelming majority of travel destinations in modern Canadian or Western European urban areas are outside neighbourhoods that are well served from the rest of the urban area by public transit. Travel patterns in the Toronto urban area illustrate this point well. The only transit system that serves most of the urban area is GO Transit [52] and even that requires driving to stations or transferring to buses. Approximately 95% of trips on GO commuter trains either begin or end at Union Station. [GO Transit, 2002] Further, transit service tends to operate less frequently during off-peak and evening periods, or may not operate at all.

Critics of urban growth sometimes claim that there are “density thresholds” above which public transit will be much more productive. *Growth Plan*, the discussion paper of the McGuinty government, makes a similar assertion. [Province of Ontario, 2004] These views can be traced back to research by Pushkarev, Zupan and Cumella (1982) that sought to categorize the densities that would support different types of public transit systems (buses, light rail, and commuter rail). This is useful research but it has been stretched far beyond its applicability. The conclusions of Pushkarev and his colleagues relate to downtown corridors and do not address trip patterns outside the core. Today, most travel is to outside downtown areas and the complex travel patterns make the concept of density thresholds irrelevant to most urban travel.

In the modern urban area, the origins and destinations of trips are too dispersed for public transit to serve efficiently or practically. Trips may begin virtually at any point in an urban area and end at any other point. The modern urban area is designed around the automobile, which is capable of taking drivers and passengers from within walking distance of any point to within walking distance of any other. Transit can generally take people to within walking distance of downtown locations and to destinations in the urban core. Even so, transit is often not available within walking distance of the non-downtown or non-core ends of a trip, which requires patrons to drive to transit stops. But, more importantly, the great majority of trips in the urban area—those that do not end in the core or downtown—are simply not possible by transit or take far too long.

The generally accepted maximum walking distance used in the design of public transit systems is 400 meters. [Transportation Research Board, 2003] Similarly, public transit would need to be available to within walking distance of every point in the urban area. Toronto, which has one of North America’s largest transit systems, illustrates how dif-

difficult it can be to serve the entire area. Less than 1% of the Toronto urban area is within walking distance of a GO Transit station. [53]

Travel would also need to be rapid. This renders the relatively efficient radial public transit systems of today ineffective, because they can generally compete with automobiles, as they are required to do, only in the core or to the core. Perhaps the most efficient design for a public transit system that could compete with automobiles would be a grid of automated rail lines similar in concept to Toronto's Scarborough rapid transit line or Vancouver's Skytrain. But, such a system would need stations within 400 meters of every point in the urban area. [54] Most trips would require transfers between routes, which would take additional time. But, providing frequent service could reclaim some of the lost time (perhaps service intervals of one minute or less).

Such a transit system, however, would be exceedingly costly. In the Paris urban area, for example, such a system would require more than 8,000 kilometers of high-quality urban rail, compared to the less than 600 kilometers that presently operates. As a result, public transit service that can compete with the automobile is limited to the core *ville de Paris* and routes leading to the core. Despite its former dominance, only 15% of jobs in the Paris metropolitan area are now in the core, and that percentage is declining. In an average large US urban area, the annual capital and operating cost would exceed gross (before tax) personal income. [Cox, 2002b]

Proposals to achieve a substantial reduction in automobile use through land use would not begin to achieve the objective. Multicentered (nodal) public transit systems have been proposed. [Bagnasco and Le Gales, 1997] These systems look comprehensive on maps but the reality is that service coverage is far too sparse to compete with the automobile. Most locations are kilometers from stations, well beyond the recommended 400-meter walking distance. Proposals to intensify particular corridors will also be ineffective, because travel demand is not confined to corridors. Micro-level benefits can occur from nodal or corridor-based approaches but not benefits that can be measured at the sector or urban-area level.

There is no practical potential for sufficiently increasing the density of a modern urban area or making it sufficiently compact for public transit, much less bicycling or walking, to displace a material share of automobile use. Yet, without radical and unachievable densification, the claimed benefits of public transit are not attainable. [55] As a result, public transit designs that would increase corridor densities or establish multi-nodal systems could, at most, only marginally reduce the use of automobiles. In fact, for all of the discussion about public transit, there has been no model or serious proposal for a system that would compete with the automobile except for trips within and to the core. The vast reaches of the urban area beyond this, where most jobs and residences will be found, can be served effectively only by a personal mode of transport, which at this time is the automobile. There are no precedents, Canadian or international, to support the view that densification would make a difference in traffic congestion or in an area's reliance on automobiles and highways.

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## Does the growth of urban land areas cause an imbalance between jobs and housing?

Anti-growth activists suggest that the growth of urban areas creates an imbalance between jobs and housing that is responsible for “automobile dependency” and traffic congestion. They propose to reduce traffic congestion by improving the geographical balance between jobs and housing. But, attempts to create communities where the majority of jobs are a short distance from housing have generally been unsuccessful. This is illustrated by the experience in both the United Kingdom and Sweden.

**London** A number of new towns (such as Milton Keynes and Stevenage) were built outside the London greenbelt after World War II. A principal purpose was to develop “self-contained” communities in which residents would work within the new towns. However, the jobs in the new towns attracted residents from communities throughout the London and the Southeast, while residents of the new towns also commuted to a wide geographic area, including central London. [Pennington, 2002]

**Stockholm** The city of Stockholm built a number of satellite communities (such as Tensta and Vällingby) with high concentrations of jobs and employment with the intention that residents would work in the local area, generally within walking distance of their residences or only a short ride away by public transit. In fact, barely 25% of residents today work in the local communities. Peter Hall noted that “the satellites failed in one important respect: they did not deliver the planned relationship of homes to jobs.” [Hall, 1998: 867]

**Hong Kong** Hong Kong, which because of its unparalleled density is arguably the most favorable environment for a balance between jobs and housing that minimizes distances travelled to work, undertook perhaps the most aggressive new town-development program in the 1970s. A principal purpose was to create self-contained urban areas in which residents lived and worked. [Staley, 1994] Yet, more than three decades later, the Hong Kong government reports that approximately 75% of trips by residents were to areas outside their new town and that an even higher percentage of work trips was intercity rather than within the new towns. [Wilbur Smith Associates, 2003]

If a balance between jobs and housing conforming to the theories of urban planners cannot be achieved in Hong Kong, then it probably cannot be achieved anywhere. In Hong Kong, with population densities of 50,000 per square kilometer (more than seven



times the density of the former city of Toronto), the average work trip is eight kilometers. In Hong Kong, a commuter might well find employment on the same floor of a residential apartment building. Nonetheless, the average commuter in Hong Kong travels past literally hundreds of thousands of potential employment opportunities on the way to work. Average work-trip travel distances are long in the majority of high-income urban areas. In the Tokyo urban area, with an urban density more than double that of the Toronto urban area, commuters travel 17 kilometers to and from work. This is one kilometer *more* than in the Toronto area. [56]

The fact is that housing can routinely be found close to jobs. But the housing close to work may not be what the employee wants. There are a number of reasons why people travel significant distances to work.

**Labour markets are regional, not local** A locally based jobs/housing balance negates what is one of the greatest draws of the large modern urban area—that it is a large regional market of jobs and workers. Employers are able to attract workers from throughout the urban area while workers have a choice of jobs throughout the urban area. Metropolitan labour markets simply cannot be partitioned into self-contained smaller units by urban planning as the failures in Stockholm, the United Kingdom, and Hong Kong illustrate. Where such partitioning takes place, the labour market can be expected to be less efficient, which means that people are likely to have fewer employment choices. This can be expected to have the greatest negative impact upon lower-income households because of the resulting higher transportation costs.

**Multiple worker households** Many households have more than one worker, which makes it difficult to locate housing close to the multiple jobs.

Not all jobs are the same: For a jobs/housing balance to be effective, more would be needed than a simple statistical balance. The jobs would also need to be balanced with the skills and interests of the workers throughout the urban area. Thus to be effective, a jobs/housing balance would need to be a jobs/housing/skills/interest balance.

**Job mobility** People may change jobs, further complicating the potential for planning that would match jobs to residences.

**Proximity may not be the principal job-location factor** Minimizing journey to work travel time is just one of many factors that households consider when they locate housing. It is quite common for workers in households to travel farther than necessary to live in housing or an environment that they prefer. For example, young middle-income households will often locate in the far suburbs, where newer housing is

less expensive, rather than reducing time to travel to work by living in closer housing that is less suited to their preferences. In the United States, for example, proximity to the work location is the principal neighbourhood location factor for only 21% of households. Among households owning their own homes, the figure was 12%. [US Census Bureau, 2001] Further, research published by the University of California indicates that the continuing suburbanization of employment in the United States has, all things being equal, led to shorter work trips. The authors further suggest that time to travel to work increases as incomes rise. [Crane and Chatman, 2003]

There would seem to be virtually no potential for reducing traffic congestion through an improved jobs/housing balance. As an analyst put it in commenting on the failure of the UK's new towns to achieve a balance between jobs and housing: "short of imposing restrictions on freedom of movement . . . it is difficult to see how the goal of 'self-containment' could ever have been achieved." [Pennington, 2002: 42]

Core areas in Toronto, Manhattan, Paris, and other international urban areas are often cited as walkable because of the proximity of jobs and housing. However, the walkability of these core areas locations results from a jobs-housing *imbalance*—the *excess* of jobs over resident workers. In Manhattan, for example, there are nearly three times as many jobs as there are workers living in the area. [57] Obviously, such an imbalance of jobs and housing cannot be sustained throughout an urban area.



## Does the growth of urban land areas raise the costs of government?

Advocates of anti-growth policies claim that public costs (principally municipal costs) are higher in the newer, less dense suburbs. [Burchell et al, 2002] At first glance, such a proposition seems logical. For example, less dense development means that sewers will need to be longer, which would require more metres of pipe. But, there are other factors, such as higher labour productivity, that can more than make up for higher material costs.

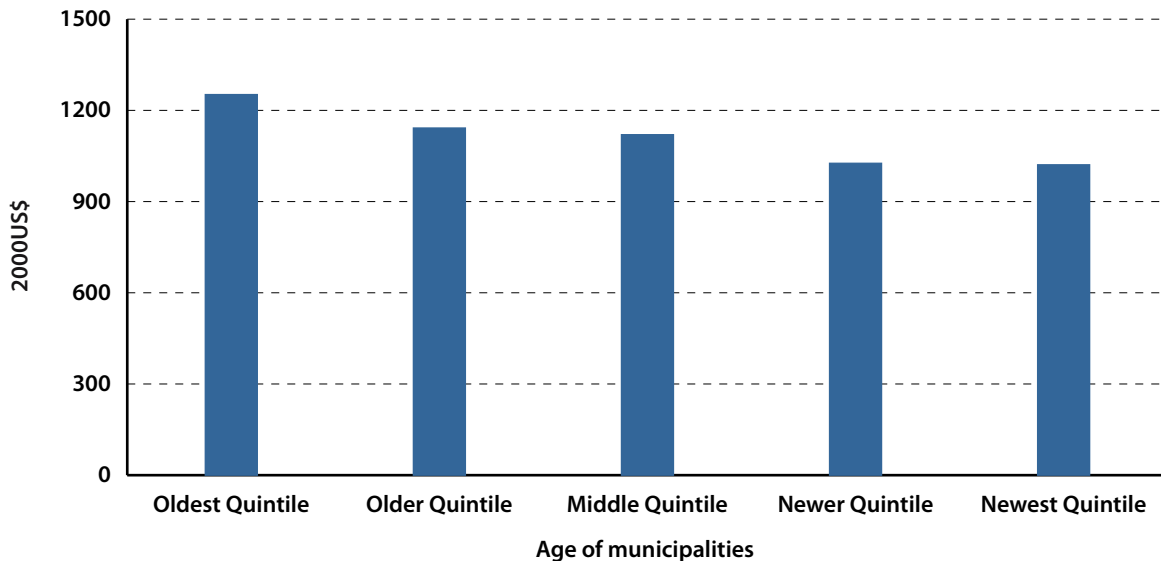
Considerable research has been conducted on urban growth and municipal costs in the United States. Most of the research leading to the conclusion that public costs are higher in less densely developed areas is theoretical, projecting standard costs into the future. It makes no attempt to test the actual expenditures of more dense, slower growing, and older municipalities compared to those in municipalities with the suburban land-use patterns that have developed over the past half-century. Perhaps the most influential study was *The Costs of Sprawl—2000*, financed by the US government, which suggests that public costs in the United States will be more than \$300 billion higher over the period from 2000 to 2025 under a “business as usual” scenario compared to a “smart growth” scenario. [Burchell et al, 2002] A previous study had characterized the future costs of urban growth as unaffordable. [Burchell et al., 1998]

Despite the appearance of significance, the projected additional costs are modest: they would be spread over a quarter century and an average of more than 300 million people. Over 35 years, \$300 billion is less than \$40 per capita per year—less than the cost of a single dinner for two each year.

In 1996, the *Report of the Greater Toronto Task Force* [58] reached conclusions similar to those of *The Costs of Sprawl*, projecting cost savings from more compact urban development. [GTA Task Force, 1996] But neither of these reports account for the reality of costs as they occur in government. A genuine comparison of government costs in higher or lower density areas requires examination of actual experience, not theoretical projections.

An analysis of the more than 700 municipalities reporting to the US Census Bureau [Cox and Utt, 2004] indicates that newer, less dense, municipalities (cities) have the lowest expenditures per capita and that the highest operating expenditures per capita are in older municipalities, which also have the highest densities. [Figure 1.13] Robert Bish of the University of Victoria [Bish, 2000] and Andrew Sancton [Sancton, 2003] of the University of Western Ontario reach similar conclusions with respect to larger municipalities, which tend to be older and denser. Similarly, research by The Fraser Institute [Mullins, 2004] indicates that in Ontario the net tax burden per household—taxes paid minus spending in the community—was higher in the suburbs than in the city of Toronto.

**Figure 1.13: US municipal expenditures per capita (2000US\$)**



Source: [Cox & Utt, 2004].

The difference between the theory and the reality is accounted for by the fact that government costs are determined not by the market but by political factors. The US Census Bureau’s data indicate that some municipalities have higher cost structures than others. It appears that a principal reason for this is that compensation paid to municipal employees, which accounts for more than 50% of municipal expenditures, varies widely. Generally, newer suburban municipalities in the United States have lower labour expenditures per capita than older municipalities. US data suggest that political factors are a more important determinant of local government expenditures per capita than population density or urban growth. [Cox and Utt, 2004]

Further, these conclusions are consistent with reality in the United States. [59] Growth, both urban and suburban, have been greater in the United States than elsewhere, including Canada. More than 50 years of world-record urban growth in the United States has failed to produce the excess costs from low-density urban development that the theory predicts. [60]

Additional evidence comes from a comparison of cost trends in Oregon and Georgia. In the 1970s, Oregon enacted the most stringent state-wide smart-growth policies in the United States, which have designated all areas outside urban growth boundaries as greenbelt on which development is not permitted. At the same time, Georgia has some of the most liberal land development environments in the United States and its capital, Atlanta, is the most expansive large urban area in the world (based upon population density). More than 65% of Atlanta’s growth has occurred since 1970. In 2000, urban density

was 60% higher in Oregon than in Georgia. Yet, government expenditures are rising considerably more rapidly in anti-growth Oregon than in expanding Georgia.

Overall state and local government expenditures per capita rose significantly more than the national average from 1990 to 2000 and more than triple the rate of Georgia. Education and capital costs for sewers, two functions of local government that would seem most likely to be increased by more expanding development, also increased more in Oregon and, in each case, at a rate more than 1.5 times that of Georgia. [Table 1.1] Oregon's expenditures per capita also rose more than in the rest of the United States, where smart-growth legislation is less common.

Similar research found that the fastest growing, largely suburban, school districts in the United States had lower overall expenditures per capita, despite their having to construct more schools than the older, slower growing, school districts in core areas. The older school districts had higher operating costs per capita that neutralized their lower expenditures on construction and servicing debt. [Schlomach with Cox, 2004]

These conclusions do not demonstrate that the less dense suburban municipalities of Canada are less expensive, per capita, than the higher density municipalities in core areas. No comprehensive research of actual municipal expenditures relative to land use was identified in Canada. Moreover, the recent trend toward municipal amalgamation, in which many suburbs are combined into central cities, will make such research more difficult in the future.

**Table 1.1: Expenditures by state and local governments**

	1990	2000	Change
<b>Expenditures per capita by state and local governments</b>			
United States	\$5,170	\$6,193	19.8%
Georgia	\$4,631	\$5,172	11.7%
Oregon	\$5,167	\$7,041	36.3%
<b>Capital spending on education</b>			
United States	\$96	\$160	67.7%
Georgia	\$129	\$181	40.6%
Oregon	\$65	\$114	74.4%
<b>Capital spending on sewers</b>			
United States	\$97	\$100	2.8%
Georgia	\$71	\$103	45.7%
Oregon	\$95	\$171	80.5%

Calculated from US Census Bureau data: All State & Local Governments.

## Does the growth of urban land areas cause obesity?

There has even been an attempt by anti-growth advocates to link the increase in American obesity to land use. Generally, the claim is that obesity is in large part caused by driving more and walking less.

For example, in 2003, *Smart Growth America* and the *Surface Transportation Policy Project* published a report by researchers from the University of Maryland purporting to demonstrate a relationship between the growth of urban land areas and obesity. [McCann and Ewing, 2003] Using data from the US government's Centers for Disease Control and Prevention (CDC), the researchers developed an econometric model predicting a statistically significant relationship. But, the relationship was too small to be of significance in forming policy. [Cox and Utt, 2003b] Moreover, the fact that McCann and Ewing used data from the CDC has resulted in considerable misreporting, with the findings being wrongly attributed to the government agency. Among the many misreporting publications were *The Eye* [The Eye, 2004] and the David Suzuki Foundation's report. [Gurin, 2004]

In any case, the study identified only small differences in obesity between more dense urban cores and less dense suburban areas. For example, the average person in the "fattest" and least dense suburban county in the Chicago area had an average modeled weight of only 0.4 kilograms more than in the dense central county. More importantly, the study's conclusions were called into question [Cox and Utt, 2003b] since available income data was not included (some research has suggested that obesity is higher where income is lower). Additionally, the results were skewed higher by the inclusion of the four most dense counties of New York City, [61] all of which have population densities greater than the former city of Toronto. The report has been subject to a substantial marketing program, including special Congressional briefings, suggesting an agenda more aggressive than usually accompanies academic research.

A study at the University of British Columbia (UBC) reviewed driving patterns in Atlanta and concluded that people who drive more are more likely to be obese. [Frank, 2004] But this study exhibits design faults so severe as to make its conclusions virtually meaningless. To estimate apparently causal relationships objectively, econometric formulas should include all reasonably logical factors (or at least all factors for which data is available). The UBC study did not include information about diet, which might well be considered the principal cause of obesity and, since it relied on "travel diary" information from survey participants, could easily have been designed to include this information. [62]

Obesity is a problem in the United States: the CDC reports that obesity has approximately doubled since 1990. Canada faces a similar problem, though not yet as severe as that in the United States: it has been reported that obesity rates in Canada doubled among women from 1985 to 2000 and increased more than 150% among men. [London Free Press, 2003] As in the United States, the principal cause seems to be excessive con-

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sumption of food: Statistics Canada indicates that, while caloric consumption was relatively unchanged from 1971 to 1991, there was a 17% increase from 1991 to 2001. [Statistics Canada, 2003] Nevertheless, the timeline for increase in obesity does not track with urban growth: there was comparatively little increase before 1980 [Brownson and Boehmer, 2003] and, for changes in land use to be one of its principal causes, would require land use to have changed materially over a similar period of time. The evidence does not support this. Land use is little changed in the United States, for example, since 1970. Densities of the urban population are approximately the same, [63] and have increased since 1980 (growth has decreased, after accounting for population increase). Household densities are little changed from 1960. [64] Land use, which has not changed markedly during the period during which obesity increased, cannot therefore have contributed significantly to the problem. A more likely cause is a substantial increase in the consumption of food over the period, from 1,774 to 2,002 calories in the first half of the 1990s alone, having tended to be constant before that time. [Nestle and Jacobson, 2002]

## What are the problems with anti-growth policies?

This publication has so far discussed the arguments that anti-growth advocates make against urban growth, finding that they are largely spurious. There are also important problems with the policies being promoted by anti-growth advocates, who would combat urban growth principally through explicit and implicit rationing. The most important policies are those that would ration land and mobility.

### Rationing land and housing costs

Advocates of “smart growth” would ration land through explicit policies, such as greenbelts, urban-growth boundaries, [65] “down-zoning” (which requires larger lots), higher densities, and growth areas (outside of which development is not permitted). Land rationing is justified to increase densities consistent with “smart growth” objectives and to achieve an improved “jobs/housing balance.” A variant of land rationing is the imposition of limitations on retail development, such as “big box” stores. Perhaps the most destructive impacts of “smart growth” policies result from rationing land.

A number of approaches to “smart growth” operate from the apparent belief that, if there is a sufficient inventory of vacant, developable land within an urban growth boundary, then all development ought to be directed there. The availability of sufficient land, however, does not neutralize the tendency of land rationing to increase prices. The following factors make housing more expensive in an environment of land rationing.

**Reduced competition among landowners** As rationing raises the price of land, landowners who have developable land are able to ask a higher price as they need not worry about competition from other land owners whose land cannot be developed.

**Reduced competition among builders** As limits are placed upon development, fewer home builders and developers are able to survive because land is scarce and the price of what remains is higher than it would otherwise be. As a result, smaller firms are driven out of the market, reducing competition and raising prices. Driving the smaller companies out takes away a competitive advantage that the McKinsey Global Institute attributes to the Australian and US home-building industries. [Lewis, 2004]

**Premium prices for new construction** Moreover, because fewer houses are likely to be built, builders can be expected to target higher-cost markets and the new housing built will be less affordable. It is the same effect as would be expected if the

automobile industry were to have their production rationed: automobile makers would tend to produce more expensive cars than they would if they were permitted to produce the number of cars that the market demands.

**Economies of scale lost** Forcing new housing to be built on smaller development sites removes the economies of scale and standardization that occurs from larger developments. This also raises prices.

**“Infill” development expensive** The “infill” development that is favored by “smart growth” is inherently more expensive than greenfield development.

As noted above, the McKinsey Global Institute finds a competitively intensive home-building industry to be important to economic growth. [Lewis, 2004] They cite land-use regulations and their impact on the price and supply of housing to be a principal cause of the economic stagnation of Western Europe and Japan relative to the United States (and Canada). Land rationing in Germany, France, Japan and the United Kingdom raises land costs artificially, driving up the price of housing and housing construction.

The land scarcity induced by “smart growth” planning means that there are few large-scale construction projects building single-family dwellings, which denies the industry the economies of scale that occur in nations with less restrictive regulations. For example, the McKinsey Global Institute finds that housing prices tend to average 25% lower where larger housing projects are the rule, as in the United States and the Netherlands. [Lewis, 2004]

All of these factors combine to raise housing prices. This is consistent with research from Harvard University, which found that the principal cause of differences in housing affordability among US metropolitan areas is zoning and land regulation. [Glaeser and Gyourko, 2002] This is a particularly stark finding, since average house prices in US markets range from over \$800,000 in the San Francisco area to under \$250,000 in many Midwestern and Southern metropolitan areas, including the fastest growing urban areas in the nation (for example, Phoenix, Houston, Las Vegas, Atlanta, Dallas-Fort Worth, Raleigh-Durham). A study by the Reason Public Policy Institute also documented the relation between higher housing costs and “smart growth” policies in Oregon, Florida, and Washington. [Staley and Gilroy, 2001]

### ***Subsidies to ensure affordable housing?***

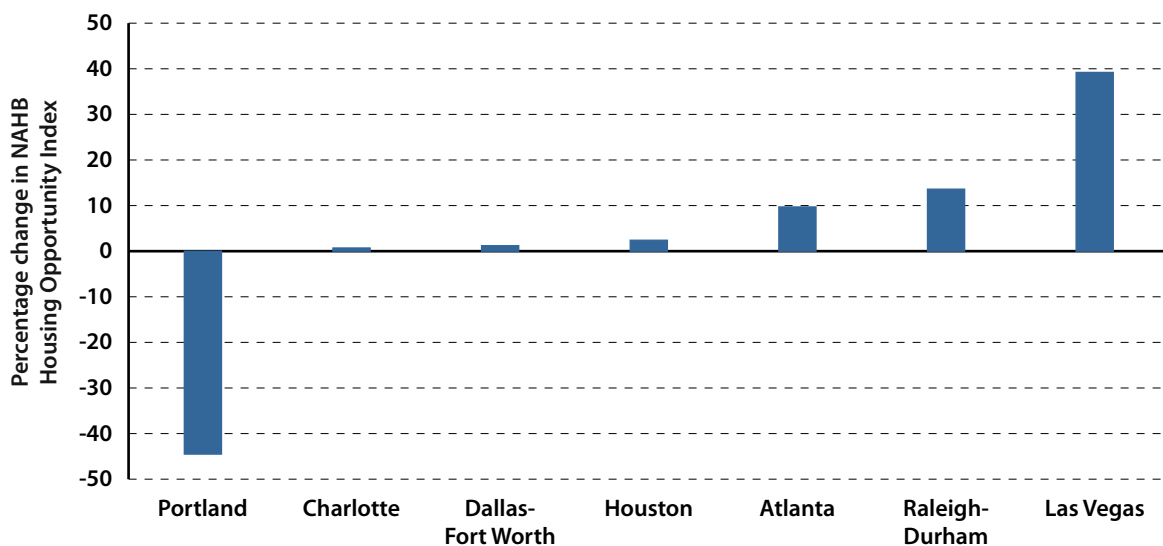
Anti-growth advocates often suggest the necessity of policies to ensure affordable housing but seem not to understand that their own policies make the situation worse by forcing prices higher. When they understand the connection, they often claim that the higher costs that “smart growth” generates will be neutralized by increased housing subsidies. There is virtually no prospect of raising sufficient new revenues to make up for the higher costs.



Portland’s urban-growth boundary, for example, appears to have profoundly reduced affordable housing. Between 1991 and 2001, the affordability of Portland’s housing declined far more than in any US metropolitan area with a population of more than 500,000. [66] Local officials blamed the declining affordability on Portland’s strong population growth, suggesting that the increase was driven by higher demand. In fact, however, Portland was not the fastest growing metropolitan area in the nation over the same period. Each of the metropolitan areas that grew faster registered improvements in housing affordability. Atlanta, the world’s most expanding major urban area (measured by population density) experienced an improvement in housing affordability of 1%. [Figure 1.14] [67]

Similarly, “smart growth” planning policies in the United Kingdom have generated a serious housing shortage, as home building trails demand in new household formation by a substantial margin. Over the past 30 years, scarcity imposed by planning has been associated with an annual increase in housing prices more than double the rate of continental Europe, where land regulation is less severe. A report commissioned by Deputy Prime Minister John Prescott calls for relaxation of planning regulations that are similar to those proposed by the McGuinty government for implementation in the Golden Horseshoe. [Barker, 2004] Similar problems have been identified in Sydney, Australia, where the state government’s scarcity-creating land-rationing policies are blamed for a significant decline in housing affordability. [Johnston, 2003] The Commonwealth Bank reported loss in housing affordability of more than 20% for the year ending in September 2003. [Commonwealth Research, 2003]

**Figure 1.14: Comparison between the change in housing affordability in Portland and in urban areas without “Smart Growth” policies, 1991–2001**



Source: Dallas-Fort Worth Housing Affordability Index; National Association of Home Builders (NAHB).



In addition to imposing urban-growth boundaries, many US jurisdictions have levied excessive “impact fees,” ostensibly to pay for the infrastructure required to serve new housing. In Californian cities, impact fees on new residences add 10% to the cost of new houses and 20% to the cost of new apartments [Cox, 2002a]. Impact fees can exceed \$100,000 for detached houses and \$70,000 for apartments. Californian jurisdictions often use impact fees in addition to land-rationing strategies, especially urban-growth boundaries. As noted above, the San Francisco Bay area has the most expensive housing market in the nation, which has developed as these strategies have been implemented.

Land rationing raises the price of new housing and has a similar impact on existing housing. Land rationing has induced even greater urban growth as people seeking affordable housing locate further away from their jobs. From 1990 to 2000, the greatest increase in average work-trip travel times in the United States occurred in the San Joaquin Valley, 100 to 150 kilometers from the San Francisco Bay area, where housing prices have escalated to the highest in the nation. Not coincidentally, this area has also emerged as having the one of the worst air-quality problems in the United States, to which the long automobile commutes to the Bay area contribute. Similarly, London’s greenbelt has had the effect of forcing virtually all of Southeast England’s growth farther away from the core over the past 50 years. [68]

In the longer run, a lower standard of living would be forced upon more households by anti-growth measures and fewer households would enter middle-income status.

#### ***Land rationing and commercial development***

Land rationing strategies also impair retail and commercial development. This can simply be the result of less available and more expensive land. It can also result from regulations that prohibit or limit the number or size of particular types of commercial developments. Most typical are “smart growth” policies that limit the building of large stores, especially “big box” stores in the suburbs. Generally, the purpose is to preserve downtown commercial areas or smaller businesses but this protection comes at a price, as the experience of nations that have long had such policies indicates. Land use and market regulations have severely limited the development of modern, competitive retail sectors in Germany, France, the United Kingdom, and Japan, and are identified by the McKinsey Global Institute [Lewis, 2004] as a principal reason why those nations continue to lag well behind the per-capita income of Canada and the United States. A principal reason for such regulations is to protect existing, smaller businesses. This results in less innovation and means that the retail sector is comparatively inefficient, not able to take full advantage of the economies of scale generally available in Canada and the United States. This means that consumer prices are higher than they would be if there were the “competitive intensity” precluded by the planning and market regulations. This translates into less disposable income and higher levels of poverty. The price of protection in the retail sector is lower incomes and more poverty.

## Rationing mobility

Anti-growth policies ration mobility, implicitly, by discouraging the construction of sufficient roadway capacity and encouraging the expansion of public transit. While it may not be obvious, the impossibility of replacing a substantial demand for automobiles with the use of public transit results in less mobility. As was noted above, “smart growth” advocates have not been able to enunciate a vision in which public transit would supplant the use of automobiles to any significant degree. Nonetheless, they seek to place significant limits on highway development. In Portland, for example, the regional planning agency intends to foster “smart growth” by allowing traffic congestion to become much worse than in the past before adding more road capacity. The result will be reduced levels of mobility, as cars will be slowed and drivers will be able to travel to less of the urban area in a specific period of time. A school of thought among anti-growth planners perceives this to be good. It is not.

Failing to provide sufficient highway capacity slows traffic and reduces the area to which motorists can travel in a particular period of time. This rations mobility. For example, at average Toronto-area roadway speeds, motorists have access to nearly 2,100 square kilometers [69] by automobile within 30 minutes. This is an area 1.25 times the entire urban area. In contrast, at average public-transit speeds, travellers have access to only 450 square kilometers within 30 minutes, an area equal to approximately 25% of the urban area. Further, the automobile can go virtually anywhere in the 2,100 square kilometers, while access via public transit would be restricted to an area considerably smaller than the 450 square miles because of the time necessary to transfer from one line to another for most trips and the lack of service to some destinations. At average densities, this means that the car can access at least five times as many jobs as public transit. The greater mobility available by automobile increases employment opportunities and contributes to a more efficient labour market in which average incomes are higher.

Further, public transit service is not competitive with automobiles except within and to urban cores but most of the employment growth is outside the urban core, where nearly all travel is by automobile. Strategies that limit road expansion make access to these growing suburban areas more difficult, increasing travel times unnecessarily. This will reduce access to employment for people in the area. Fewer opportunities reduce the efficiency of the labour market and can be expected to result in lower incomes over the long run than would otherwise be the case.

This is confirmed in the research of Remy Prud’homme and Lee at the University of Paris, who sought to estimate the economic impact of changes to the size of the labour market to which an area’s residents have access. In a study that included European and Asian urban areas, they examined the output of urban areas based upon the size of the metropolitan labour market accessible to residents in fixed amounts of time (such as 40 minutes). They found, generally, that as the number of jobs that can be reached in a fixed

amount of time is reduced, the economic efficiency of the urban area is reduced at a rate of approximately 0.18. For example, if an urban area experienced a 10% reduction in the labour market accessible to residents within 30 minutes, it would be estimated that the economic output (measured in gross personal income) would be reduced 1.8%. [Prud'homme and Lee, 1998] [70]

Few advocates of “smart growth” have directed their efforts toward the other strategy by which access via automobile-competitive public transit could be provided throughout an urban area—radically increasing population densities. To do so would require increasing densities to Hong Kong’s competitive levels, nearly 50,000 persons per square kilometer or more than 25 times the urban density of the Golden Horseshoe. At such a density, the entire population of the Toronto urban area could be accommodated within the boundaries of the former city of Toronto. This would, however, require dismantling not only the “905” suburbs but also the earlier suburbs of York, East York, Scarborough, North York and Etobicoke. From a political and public-relations perspective, it is not hard to comprehend why proponents of “smart growth” have not proposed this strategy. The bottom line is that there is no public transit system that can replace the automobile at a price that can be afforded, without a politically impossible dismantling of virtually all development in the Toronto urban area outside the former city of Toronto, into which all residents and commercial activity would have to be forced.

Thus, strategies that slow traffic or reduce mobility are likely in the long run to reduce economic opportunity, make labour markets less effective, and reduce overall regional income.

## The backlash against “smart growth”

Meanwhile, political reality has begun to slow the rush to implement “smart growth” policies and some policies are in the process of being repealed or significantly diluted. As was noted above, Portland’s urban growth boundary was an early casualty, having been expanded already (36 years early) to beyond what was planned for 2040. Plans have been scaled back in the Washington, DC, California, and Colorado. [Orski, 2003] Following a change in governors, the Metropolitan Council in Minneapolis-St. Paul withdrew the “smart growth” plan of the previous council, “Blueprint 2030,” and replaced it with “Framework 2030,” which allows more regulatory freedom in land development and includes plans for highway expansion. [Metropolitan Council, 2004] And, as noted above, the government of the United Kingdom has received recommendations to liberalize its land development policy. [Barker, 2004]

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## General conclusions and recommendations

From the analysis above, the following conclusions are drawn:

- Growth of urban land areas is universal and is the natural result of population, household, economic, and commercial growth.
- The factors used to show that growth of urban land areas should be stopped are not sufficiently compelling to justify either strong or broad regulation.
- By rationing land, anti-growth policy threatens to lower the standard of living by increasing household prices and reducing household incomes.
- By rationing mobility, anti-growth policy threatens to reduce employment opportunity and other economic activities.
- The net effect of anti-growth policies can be expected to reduce the standard of living (rationing the quality of life) while sustaining higher poverty levels than would be achieved if people were allowed to do what they want.
- At the local level, the effects of “smart growth” could be characterized as socially exclusive, which could entrap some lower-income households in poverty.

## Part 2

# The Case against “Smart Growth” in Ontario

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## Introduction

The government of Premier Dalton McGuinty has expressed its commitment to fighting the growth of urban land areas in Ontario. The government's initiative focuses on establishing a "greenbelt" inside which development would not be permitted, a development moratorium, and efforts to force urbanization towards core areas and away from the periphery. [Bartleman, 2003; Ministry of Municipal Affairs and Housing, 2003] A discussion paper [Ontario, Ministry of Municipal Affairs and Housing, 2004] has now been published that includes the following policy proposals:

**A "greenbelt" around the Golden Horseshoe** Development would be permanently banned on land designated as "greenbelt."

**A provincially drafted Golden Horseshoe Plan** This would place restrictions on the ability of municipal governments to accommodate growth. In general, the plan would favour "infill" development and discourage development on the urban fringe ("greenfield development").

**Priority support of transit** This would also de-emphasize highway expansion. A 2¢ per litre gasoline tax would be transferred from the province to municipalities to provide additional transit funding.

**Efficient movement of freight** Measures to bring about more efficient movement of freight would apply to highways and railroads.

**Infill** Easing of regulations upon infill development.

In addition, the discussion paper indicates that the government will investigate the effects of a real-estate transfer tax to encourage more infill development. The discussion paper relies principally upon analysis previously done by the Smart Growth Panel established by the previous provincial government, under Premier Ernie Eves. Generally, Ontario's anti-growth reports agree that there is an imperative for seriously limiting the outward growth of urbanization in the Golden Horseshoe and finding are sometimes exaggerated to support the smart growth thesis.

**A large amount of new land will be developed if urbanization continues in the future as it has in the past.** The Ontario Smart Growth Panel projected that, under the *Business as Usual* scenario, urban development "nearly" equal to twice the area of the city of Toronto would be added to the Golden Horseshoe from 2000 to 2031.

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In fact, the *Business as Usual* scenario would add 1.7 times the area of the city of Toronto, while the most dense scenario considered by the Smart Growth Panel would add 1.3 times the area of the city of Toronto. In 2031, the most dense scenario would cover only 7% less land than the *Business as Usual* scenario. In both cases, more land would be developed, as would be expected as the population and economy continue to grow, and the difference in the resulting “footprint” of urbanization would not be large. [IBI Group, 2002]

**Increasing air pollution** The final report of the Ontario Smart Growth Panel [Ontario Smart Growth Panel, 2003] indicates that, with continuation of the current trend, “air pollution would get worse.” [71] In fact, the data developed for the Panel indicates that, despite a more than 40% increase in population through 2031, gross NO<sub>x</sub> emissions would decline by 65%, carbon monoxide emissions by 35%, and emissions of volatile organic compounds by 50%. The Smart Growth Panel writes that air pollution will get worse because they treat emissions of carbon dioxide, which are expected to increase, as an air pollutant.

## Urban development in the Golden Horseshoe

While Toronto's urban area has expanded significantly, it is still approximately in the middle ranks for population density among urban areas in the high-income world. [72] Among the 28 urban areas in the high-income world with populations of more than 3,000,000, Toronto ranks twelfth in density of urban population. Toronto is, by far, the densest urban area in Canada and is competitive [73] with Los Angeles, the most dense urban area in the high-income New World. [74] [Table 2.1]

Nearly all of the urban areas that rank above Toronto either have strong cores developed before the invention of the automobile (Tokyo, Osaka, Barcelona, Madrid, Paris, Nagoya, and Rome) or are the result of land-use policies that increase density to an extraordinary degree (Hong Kong and London). Hong Kong, with the world's highest density by far, is an historical anomaly largely the result of an unprecedented influx of refugees from China after 1949. London achieved its highly dense urban area by forcing the 3,000,000 new residents that have arrived since World War II outside a greenbelt not unlike that proposed by the McGuinty government. The result is that London does not have adjacent suburbs but rather suburbs that are remote from the core, having exploded throughout virtually all of Southeastern England. [75] It is notable that the most dense urban area, Hong Kong, has a density more than eight times that of the second most dense urban area, London.

The high density of Toronto's urbanized area is illustrated by comparison to other large urban areas in the high-income world. If Toronto's urban area were as sparsely populated as Atlanta, the world's least dense major urban area, urban development would cover 6,300 km<sup>2</sup> instead of the actual 1,655 km<sup>2</sup>. While there may be an impression that Toronto's urbanization might eventually reach this far, at *Business as Usual* anticipated densities, such an area would have a population of more than 18 million, not many less than the 20 million who live in Australia. At the densities of Montreal or Sydney, the Toronto urban area would occupy approximately 50% more land, while at Melbourne's density, 75% more land would be required. On the other hand, if Toronto were as dense as Hong Kong, all of the urban area's 4,367,000 people could be housed inside the former city of Toronto, while leaving the Toronto Islands to their present uses. The Toronto urban area is more dense than New York, San Francisco, or Milan and more dense than other smaller Western European urban areas, such as Copenhagen, Helsinki, and Antwerp. [Demographia, 2004q] Excluding the special case of Hong Kong, Toronto's density is virtually at the average for major urban areas of the high-income world.

The Toronto urban area is the largest in Canada and contains approximately one-fifth of the total urban population. The Toronto area has grown very rapidly. The metropolitan area grew more than 250% from 1951 to 2001, a faster rate than occurred in such fast-growing US areas as Los Angeles and Seattle. Virtually all growth in the Toronto



**Table 2.1: Land area required to accommodate the population of Toronto's urban area at various urban densities**

(Urban areas in the high-income world with populations greater than 3 million)

Rank	Urban Area	Density (population/km <sup>2</sup> )	Area (km <sup>2</sup> ) required to accommodate population of Toronto's urban area	Percentage by which land area is smaller or larger than that of Toronto
1	Hong Kong	49,581	88	-95%
2	London	6,046	722	-56%
3	Tokyo	5,932	736	-56%
4	Osaka-Kobe-Kyoto	5,681	769	-54%
5	Barcelona	5,577	783	-53%
6	Madrid	5,255	831	-50%
7	Paris	3,545	1,232	-26%
8	Berlin	3,154	1,385	-16%
9	Rome	2,970	1,470	-11%
10	Nagoya	2,851	1,531	-7%
11	Los Angeles	2,729	1,600	-3%
12	<b>Toronto</b>	<b>2,639</b>	<b>1,655</b>	<b>0%</b>
13	San Francisco	2,367	1,845	11%
14	Rhine-Ruhr-Wupper	2,243	1,947	18%
15	Milan	2,172	2,011	22%
16	New York	2,050	2,130	29%
17	Montreal	1,839	2,374	43%
18	Miami	1,702	2,566	55%
19	Sydney	1,683	2,595	57%
20	Chicago	1,511	2,890	75%
21	Melbourne	1,493	2,925	77%
22	Washington	1,313	3,325	101%
23	Detroit	1,195	3,654	121%
24	Houston	1,140	3,831	131%
25	Dallas-Fort Worth	1,138	3,838	132%
26	Philadelphia	1,105	3,952	139%
27	Boston	897	4,870	194%
28	Atlanta	688	6,343	283%
	<b>Average</b>	<b>4,303</b>	<b>1,015</b>	<b>-39%</b>
	<b>Average without Hong Kong</b>	<b>2,626</b>	<b>1,663</b>	<b>0%</b>

Based upon data in Demographia, 2004q.

area has been outside the urban core. From 1951 to 2001, the former city of Toronto added approximately 1,000 net residents. At the same time more than 3,400,000 residents were added outside the urban core. The former city itself reached its population peak in the 1970s, when more than 700,000 residents were recorded. Between the census of 1996 and that of 2001, population growth and employment growth continued to be predominantly in the suburban areas outside the city of Toronto.

Central city losses and extraordinary suburban gains have been the rule among high-income urban areas. The only major city in the high-income world that is at its population peak without having either annexed new territory or amalgamated with suburbs is Vancouver. But even there, more than 85% of the growth since 1951 has been in the suburbs. Most core cities have lost more of their population than Toronto. For example:

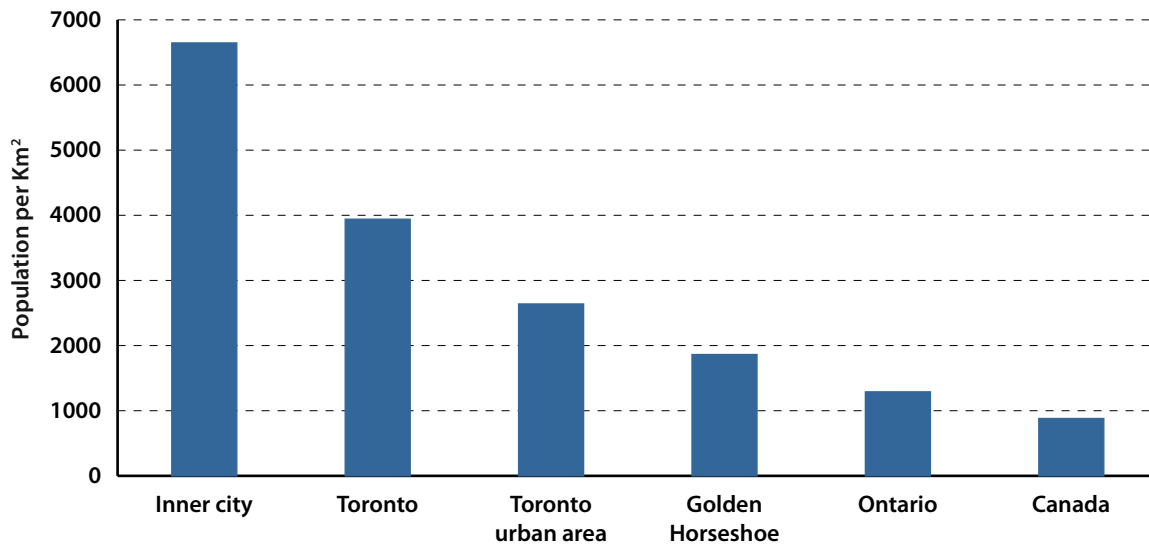
- The former city of Montreal recorded 14% fewer people in 2001 than in 1971. Since 1951, more than 98% of the growth has been in the suburbs.
- Copenhagen has lost more than one-third of its population since the 1950s. Its loss of more than 200,000 has been offset by a 700,000 increase in the suburbs.
- The *ville de Paris* has lost more than 700,000 residents since the 1950s, while the suburbs have added more than 4,000,000 residents.
- The city of Chicago has lost more than 700,000 residents since 1950, while the suburbs have gained more than 4,000,000.

Even so, in most urban areas, the population gains recorded in suburbs were considerably greater than the losses to the central city. This would tend to indicate that the growth of the suburbs was fueled principally by growth taken from rural and smaller urban areas rather than from central cities.

The urban core of Toronto (the former jurisdictions of Toronto, York, and East York) is the most dense development in the Golden Horseshoe, with 6,600 persons per square kilometer. The outer city (the former jurisdictions of Etobicoke, Scarborough, and North York) has a density of 3,200/km<sup>2</sup>, while the density of the suburbs is 1,840/km<sup>2</sup>. [76] But even at this much lower density, the suburbs of Toronto are approximately the same density as Montreal, the nation's second most dense urban area. In fact, the Toronto urban area's developed land expansion is largely accounted for by the growth in households over the past four decades.

Densities are somewhat lower in the Golden Horseshoe urban areas outside Toronto, at under 1,200 persons per square kilometer. This is 40% more dense than Ontario urban areas located outside the Golden Horseshoe and 55% more dense than Canadian urban areas. Overall, the density in the Golden Horseshoe is greater than Montreal, more than double the average national urban population density and more than 50% greater than the average density for other urban areas in Ontario. [Figure 2.1] It would thus appear that, if urban decentralization is a problem that should be addressed, the priority would be *outside* the Golden Horseshoe, where there is much lower urban density.

**Figure 2.1: Population density in Toronto, Ontario, and Canada**



Note: Inner city = the former municipalities of Toronto, East York, and York; Toronto = present city of Toronto; Toronto urban area = area extending from near Burlington to Oshawa and to Newmarket .  
Source: Statistics Canada.

Further, in the Golden Horseshoe as in other major high-income world urban areas, jobs have followed residences outside the core. Most job growth has been outside downtown Toronto and outside the core cities. Despite the prominence of the sky-scraping office towers, downtown Toronto contains less than 7% of the employment in the Toronto urban area. [[International Union of Public Transport, 2001](#)]

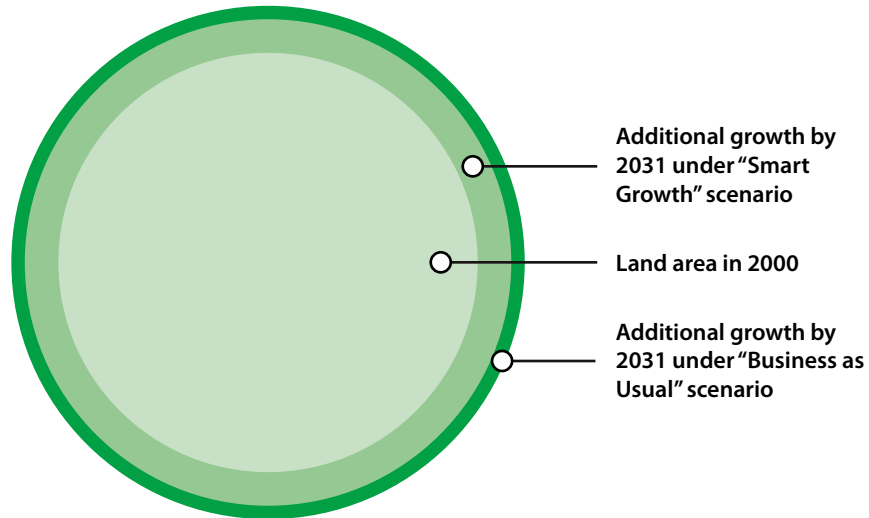
## Scenarios considered by the Ontario Smart Growth Panel

Nonetheless, the Smart Growth Panel reports are based upon the thesis that expansion of the urban land area needs to be stopped in the Golden Horseshoe. The *Business as Usual Report* expresses near panic that urban development might continue to occur. Yet, its projections simply add enough developed land to accommodate the anticipated additional population at approximately the same density as today. Population and developed land are projected to grow at nearly the same rate.

The clear implication of the “smart growth” planning processes has been that growth must be “managed” in the Golden Horseshoe, which means much more compact development. But the alternative scenarios developed for the Ontario Smart Growth Panel, while requiring substantial interference in land markets that would cause a spike in housing prices, envisioned an urban area that would look in 2031 little different than the scenario described in *Business as Usual*. For example, the most compact scenario

considered by the Ontario Smart Growth Panel (*Consolidated* scenario) would require only 7% less developed land than the *Business as Usual* scenario. [IBI Group, 2003] This would make little difference to the “footprint” of urbanization, as is indicated by a representation of the areas on a circle chart. [Figure 2.2] The “centers” scenario would require even more urbanization. The differences between the “sprawling” *Business as Usual* scenario and these two smart-growth scenarios do not seem to justify significant concern. Moreover, the *Business as Usual* projections leave a considerable expanse of rural (non-developed) land *between* the 2031 area of urbanization and both the Oak Ridges Moraine and the Niagara Escarpment between Oakville and Oshawa.

**Figure 2.2: Projected urbanization in the Golden Horseshoe under the “Smart Growth” and “Business as Usual” scenarios relative to urbanized land area in 2000**



## Policies and impacts

The proposals of the McGuinty government would require municipalities to set density intensification targets to develop already-serviced land rather than continuing to allow development to occur on the urban fringe. This is consistent with proposals included in the previous Ontario “smart-growth” reports. As we saw earlier in this study, however, such land-rationing strategies must lead to higher housing prices and lower levels of home ownership.

### Home ownership

Home ownership plays an important role in the economy. It is not just that people like to have space to call their own or room for the kids to play. Home ownership contributes to the economy as a principal means of accumulating wealth. [Cox and Utt, 2001] Houses build equity, both from rising values and retiring the mortgage. This equity can be used by households for other productivity-improving activities, such as college education, funding for new businesses, or property improvements. Arguably, home ownership has inherent value in the economy because of the role it plays in creating funding for a higher quality of life. It would be best for the economy and for all Canadians for virtually all households that choose to own their own homes to achieve that goal as quickly as possible .

It is not surprising that home-owners are financially more secure than those who rent. Statistics Canada reports that households owning their own homes outright have a median net worth of \$524,400. Households owning homes with mortgages have a median net worth of \$248,600. Renters have a median net worth of \$57,600. [Figure 2.3] In the Golden Horseshoe, like many other urban areas around the world, [77] home ownership is much higher in the suburbs than in the core. [Figure 2.4] Within the core of the city of Toronto (the former jurisdictions of Toronto, York, and East York), 2001 home ownership was 42.6%. In the outer city (the former jurisdictions of Etobicoke, North York, and Scarborough), home ownership was 56.9%. By far the highest home ownership rate was in the suburbs, at 80%. In the balance of the Golden Horseshoe, home ownership was above 70%.

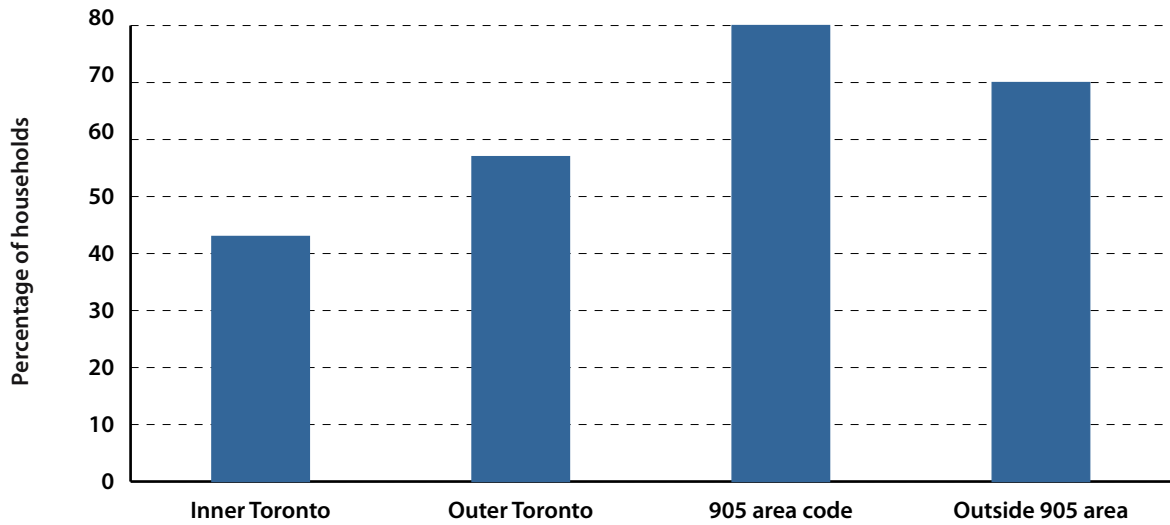
As indicated above, preferences for living in suburban areas seem to have grown significantly, with nearly all population growth having occurred there for decades in virtually all metropolitan areas of the high-income world. People are drawn to the suburbs by the space, the generally superior mobility, and the cost effectiveness of the housing. House prices are not always lower than in the core but generally much more space is obtained. One recent report indicated that, on average, higher transportation costs in the

**Figure 2.3: Net worth of family units in Canada by housing status, 1999**



Source: Statistics Canada, 1999.

**Figure 2.4: Percentage of households owning homes in the Golden Horseshoe by area, 2001**



Source: Statistics Canada, 2001 Census.

suburbs more than made up for any lower housing costs, [Monsebraaten, 2004] though the findings were not adjusted for size of dwelling. Generally, however, the perception is that overall costs in the suburbs are lower. In some cases, they may not be. But Canada is a free country: no household has yet been compelled to move to the suburbs. People make their own rational choices based upon what is of value to them. And, people flock to the suburbs in Toronto, just as in Brussels, Portland, Tokyo, and Sydney. It is not unusual for people to choose longer driving times and perhaps sometimes even higher costs to achieve the lifestyle they prefer, neutralizing the most earnest efforts of planners to “balance” jobs and housing.

The McGuinty government’s discussion paper rightly expresses concern about the affordability of housing. But, its very strategies would make the situation far worse: “smart growth” policies that place significant restrictions on development generally raise house prices, which is likely to reduce home ownership in the longer, if not the shorter, run. The proposed greenbelt and moratorium on development, both of which are classic land-rationing policies, can be expected to have the same effect. The discussion paper, as is typical of studies done on other urban areas, tends to ignore the impact of “smart growth” land-rationing policies on the price of housing and its effects on households.

Simply put, the implementation of anti-growth regulations can drive housing prices upward. In Portland, for example, aggressive plans to limit the growth of the urban area have been largely abandoned. The regional land-use agency (Metro) adopted a plan that would have allowed growth from the 233,000 acres inside the urban-growth boundary in 1995 to a maximum of 252,000 acres in 2040. Political and economic factors, however, forced Metro to expand the urban-growth boundary to include more than 256,000 acres in 2004, 36 years early. But the damage had already been done: the affordability of housing in the Portland area dropped at a greater rate than in any other major US metropolitan area. [Cox, 2002a] In an environment characterized by frequent claims of insufficient funding, there would seem to be no likelihood that compensating subsidy programs would be created to neutralize the impact of the higher prices on low-income households, much less the more significant middle-income housing market.

## Retail and commercial development

The proposals of the McGuinty government would also increase the cost of commercial and retail development. The cost of commercial development is raised by rationing for some of the same reasons that apply in the residential sector: higher land prices, reduced construction of new facilities, reduced standardization, and higher “infill” [78] costs. This could deter business growth and relocation in the Golden Horseshoe and reduce employment growth. Such an impact would be consistent with the McKinsey Global Institute’s

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findings as reported by Lewis [Lewis, 2004], which cited a less restrictive environment for retail development as an important driver of superior economic performance.

The impact of land rationing on commercial and retail development can also be expected to increase consumer prices. Because of the pivotal role the Golden Horseshoe plays in the economy, these impacts could cause a ripple of higher prices across the nation. Moreover, in an environment of free trade, an increase in consumer prices could spur larger gross purchases in the United States by Canadians.



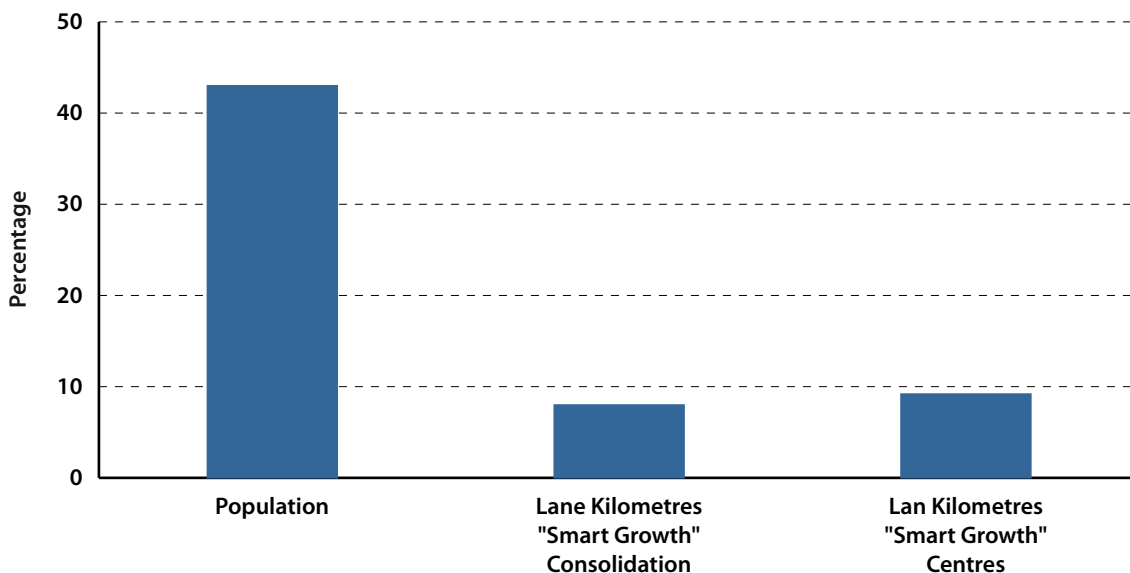
## Rationing mobility

Ontario “smart growth” reports are virtually unanimous in their agreement that urban decentralization increases traffic congestion or “gridlock.” At the same time, the discussion paper expresses the goal of reducing average commute times. But the transportation proposals themselves would have the opposite effect, increasing both traffic congestion and commute times.

According to the Smart Growth Panel, demand for street and highway travel will increase by from 54% to 62%. Yet, roadway capacity [Figure 2.5] would be increased only by from 8% to 10%. [IBI Group, 2003] This means that, on average, roadways will be forced to handle from 43% to 53% more volume. The failure to provide additional roadway capacity consistent with demand represents a policy of rationing mobility and will make traffic congestion worse. [Figure 2.6]

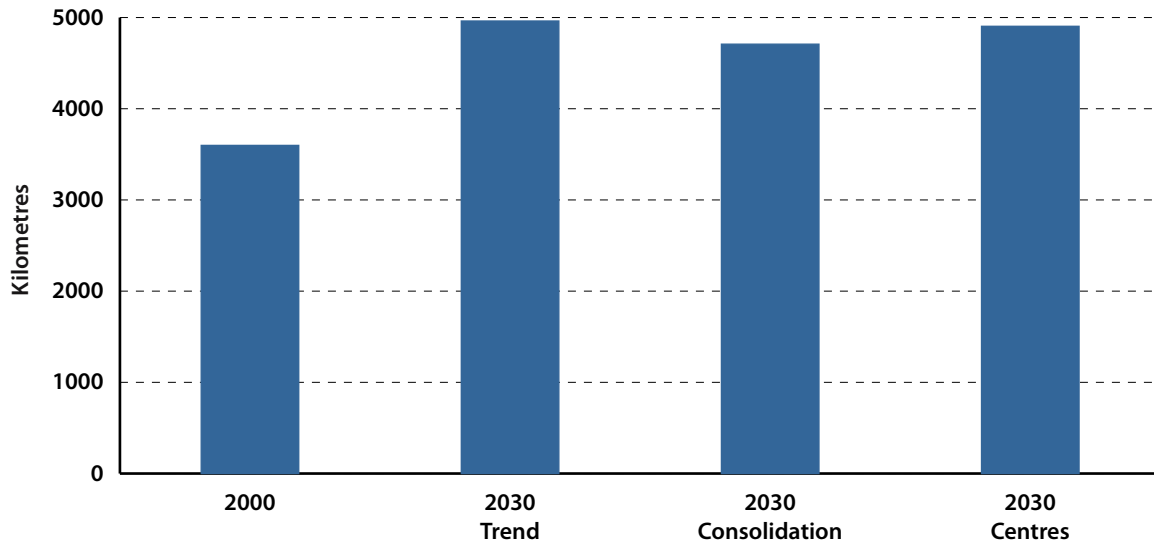
This is consistent with international data, which associate higher levels of traffic congestion with higher densities. All things being equal, where population densities are higher in affluent urban areas, traffic is more dispersed. That makes it less congested. But a more or less dense urban area can have greater traffic congestion if its roadway system is insufficiently robust. For example, Atlanta has traffic congestion much worse than would be expected for such a low density urban area. The reason is that its roadway system is among the least comprehensive in the United States. [Cox, 2000]

**Figure 2.5: Projected increase (%) in population and roads, 2000–2031**



Source: IBI Group in association with Metropole Consultants and Dillon Consulting Ltd., 2003.

**Figure 2.6: Traffic congestion (kilometres of travel per lane kilometre)**



Source: IBI Group in association with Metropole Consultants and Dillon Consulting Ltd., 2003.

The scenarios developed for the Ontario Smart Growth Panel are reflective of this problem. As noted above, automobile volumes are expected to increase more than 50%, yet roadway capacity would be expanded 10% or less. It is therefore not surprising that average automobile travel delays during peak hours would double under the “smart growth” scenarios. [79]

It should be noted, however, that the traffic conditions that have been projected for the Golden Horseshoe under the “smart growth” scenarios are little better than those under the *Business as Usual* scenario, and much worse than at present. The average peak-hour delay per trip would increase more than 100% under the *Business As Usual* scenarios. The small improvement in traffic congestion in the “smart growth” scenarios compared to the *Business as Usual* scenario is principally the result of a planning bias that added more road capacity relative to demand. This is not to suggest that the highly developed parts of the urban area should be dissected by new and wider roadways. That would not be necessary so long as residential and commercial growth is permitted on the urban periphery. Most of the roadway expansion would occur in newly developed areas and the new roadways could be expected to draw commercial activities and employment that would otherwise be located in more congested areas. It is neither necessary nor prudent for the Golden Horseshoe to face a future of roadway expansion at one-quarter the rate of population growth, particularly when there is another approach that can increase mobility.

A more successful approach was developed in 2003, when the Texas Governor’s Business Council commissioned a report [Lomax, Ellis, Pisarski and Cox, 2003] that reviewed the potential for significantly reducing traffic congestion in the metropolitan areas in

Texas. Two of the metropolitan areas are larger than Toronto (Dallas-Fort Worth and Houston) and are growing faster. The conclusion was that traffic congestion could be substantially reduced, from average peak-hour delays of up to 40% in 2000 to 15% in 2025, while charging users only modestly increased highway user fees [80] (or tolls), which would be sufficient to finance and maintain the highway expansions. The program would require prioritizing highway investments based upon the cost per hour of delay reduced. A program such as this would use available funding to reduce traffic congestion at the greatest efficiency. [81]

Indeed, it was determined that the fuel savings alone would finance more than a one-half of the additional road construction and maintenance costs. As a result, Texas Governor Rick Perry and the legislature have established a process to plan the improvements. The objectives for Houston and Dallas-Fort Worth would produce levels of traffic congestion less than one quarter of that projected for the Golden Horseshoe, although in 2000 traffic congestion was similar to that in the Golden Horseshoe in Dallas-Fort Worth and worse in Houston. This strategy will improve the international competitiveness of the Texas metropolitan areas. The same criterion—cost per hour of delay reduced—could be applied to all decisions about transit and highway investment. The problem with the McGuinty government’s proposals is that they simply assume transit investments to be superior, despite their very limited application, which will be described below.

## Impact on low-income households

While Canadian urban areas have not developed what has been referred to as the “doughnut hole” effect that has occurred in the dilapidated cores of US urban areas such as Detroit and St. Louis, another related dynamic may be occurring. A report published by Statistics Canada indicates that low-income neighbourhoods in Toronto surround an “affluent downtown.” [Heisz and MacLeod, 2004] This is an effect identified in a number of Western European urban areas and around some recently gentrifying US cores, where lower-income neighbourhoods are on the periphery, creating what might be called low-income “doughnut bites” around the core. The core itself remains healthy but it is increasingly surrounded by low-income areas.

With these ominous trends, there would seem to be an even greater imperative for ensuring that public policies do nothing to make it more difficult for the young, recent immigrants, minorities, or anyone else to enter the economic mainstream. The low-price economy that results from competitive intensity [Lewis, 2004] should be maintained and extended. Any policy that raises prices, whether in retail stores or in housing will only make things worse and would need to be justified by overwhelmingly compelling reasons, none of which have been identified. The “smart growth” policies that inevitably increase the price of housing and other goods and services have the potential of increasing, by

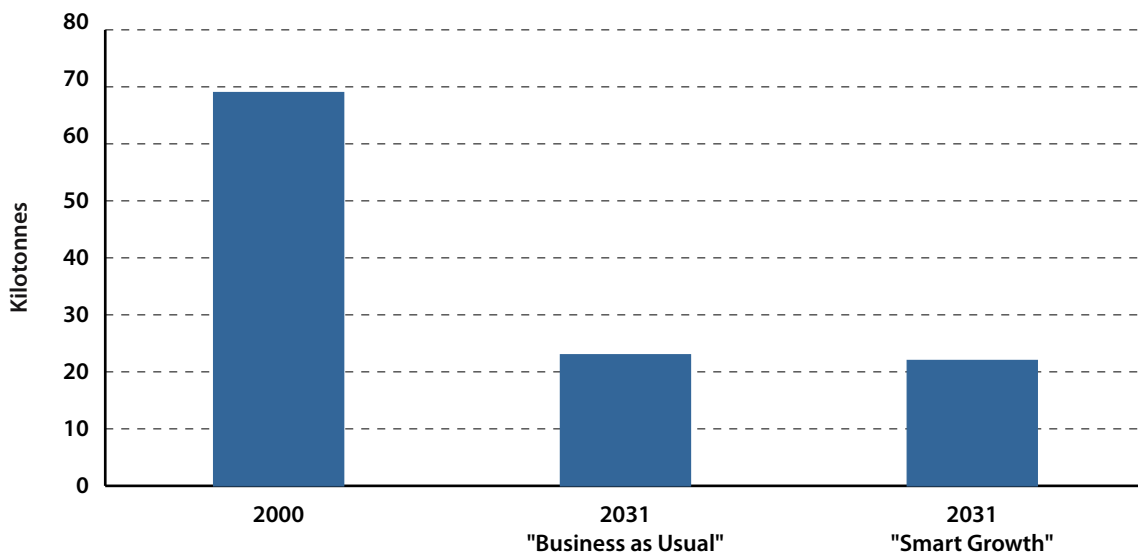
government *fiat*, income inequalities and social exclusion and could lead to the establishment of a more permanent underclass. The consequences of land rationing and mobility rationing inherently “undercut” the economic objective of broadening, maintaining, and increasing household prosperity and sustainably reducing the incidence of poverty.

## Air pollution

As was noted above, the data developed for the Ontario Smart Growth Panel indicates that, despite a more than 40% increase in population through 2031, gross NO<sub>x</sub> emissions would decline by 65%, carbon monoxide emissions by 35%, and emissions of volatile organic compounds by 50%. Because of the expansion of the urban area, the intensity of air-pollution emissions would fall even further: NO<sub>x</sub> emissions would fall by 75% per square kilometre, carbon monoxide emissions by 55%, and emissions of volatile organic compounds by 65%. [Figure 2.7; Figure 2.8; Figure 2.9] Lower pollution emissions per square kilometer translate generally into lower levels of air pollution in neighbourhoods.

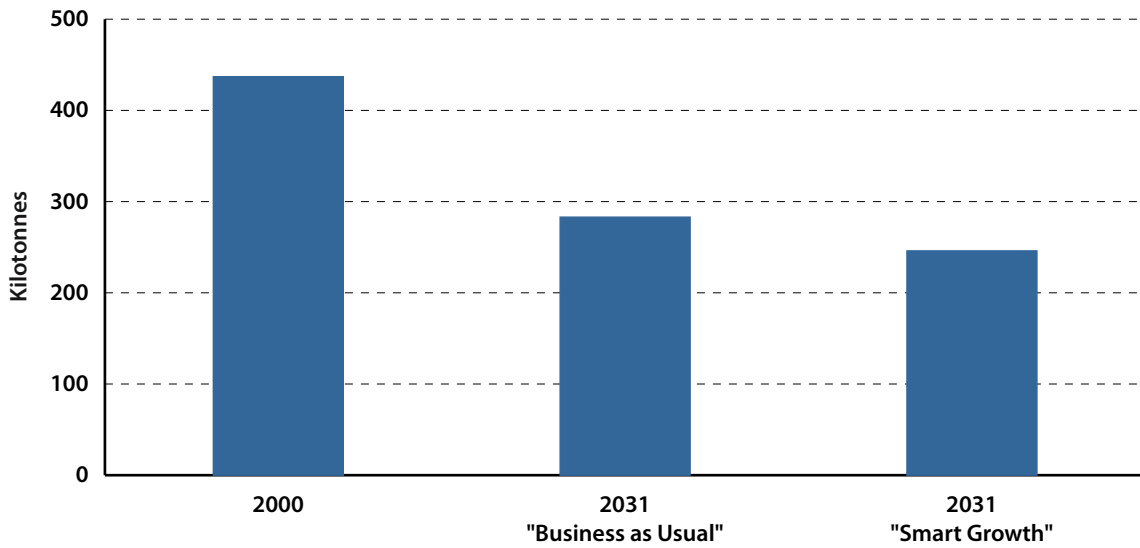
The projections of the Ontario Smart Growth Panel show an increase in carbon dioxide emissions that is largely the result of additional travel. In fact, however, there are technological advances likely to substantially reduce carbon dioxide emissions. These include hybrid cars, which are already being marketed. A recent California report indicated that existing technologies could substantially reduce carbon dioxide emissions. [Bedsworth, 2004] It seems likely that carbon dioxide emissions could be lower than at present, despite the increase in driving and population.

**Figure 2.7: Emissions of NO<sub>x</sub> (kilotonnes) per km<sup>2</sup>, 2000 & 2031**



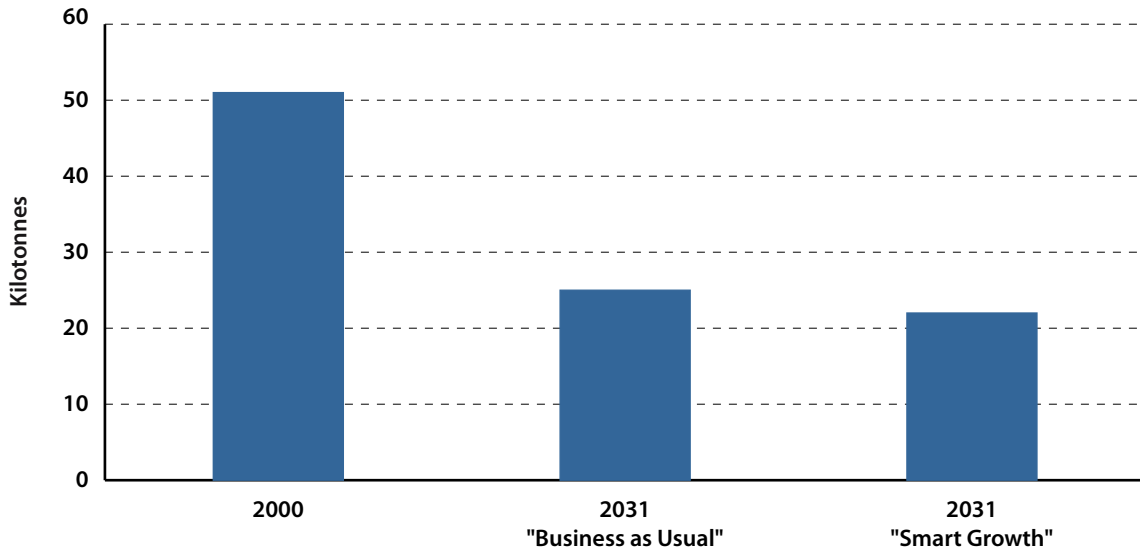
Source: IBI Group in association with Metropole Consultants and Dillon Consulting Ltd., 2003.

**Figure 2.8: Emissions of CO (kilotonnes) per km<sup>2</sup>, 2000 & 2031**



Source: IBI Group in association with Metropole Consultants and Dillon Consulting Ltd., 2003.

**Figure 2.9: Emissions of VOCs (kilotonnes) per km<sup>2</sup>, 2000 & 2031**



Source: IBI Group in association with Metropole Consultants and Dillon Consulting Ltd., 2003.

## Public transit

Virtually all of the Ontario “smart growth” reports indicate that favouring public transit is an important part of a strategy to control growth: one report stated: “An effective region-wide transit system is needed.” [Blais, 2001: 22] At the rhetorical level, this appears to be a laudable goal. But, outside Hong Kong there is no urban area in the high-income world, including Canada, with a public transit system that can compete with the mobility of the automobile-based systems. Thus, strategies that would fail to provide roadway capacity equal to demand where public transit cannot substitute can be said to ration mobility. The McGuinty government’s discussion paper, *Places to Grow*, notes that “our transit systems have not been able to keep up with ... demand, so people have been forced to rely on their cars.” [Province of Ontario, 2004: 30] In fact, the Golden Horseshoe is not unique in this regard. Throughout the world, transit has been unable—and is by its very nature unable—to keep up with rising demand for mobility. As was shown above, throughout the high-income world, virtually all urban travel growth has been by automobile. This situation does not represent a failure to invest sufficiently in transit; rather it indicates that transit is simply incapable of providing efficiently most of the trips that are taken in the modern urban area (as indicated below, operating expenses at the Toronto Transit Commission increased 20 times the rate of service expansion from 1982 to 2002, inflation adjusted).

### **Public transit must compete with automobiles**

For transit to attract material demand from the automobile, it must compete with the automobile. This means that people need to be able to make their desired trips nearly as quickly by transit as they can be automobile; then they will be able to leave their cars at home. While this is possible for some trips within urban cores and to downtown, it is not possible for the vast majority of trips that are not to downtown locations or within the core. Both residences and employment locations are dispersed throughout the urban area.

Perhaps the most efficient design for a public transit system that could compete with the automobile would be a grid of automated rail lines similar in concept to Toronto’s Scarborough rapid transit line or Vancouver’s Skytrain. [82] Stations would need to be within 400 meters of every point in the urban area, so that all locations in the area would be within walking distance. [83] Most trips would require transfers between routes, which would take additional time. But, this lost time could be minimized by providing frequent service—perhaps service intervals of one minute or less.

A transit system that could take a rider from within walking distance of any origin to within walking distance of any destination would be prohibitively costly. In an average large US urban area, the annual capital and operating cost would exceed gross (before tax) personal income. [Cox, 2002b] In a more dense urban area, such as Toronto, it would be less costly but not by any means affordable. For public transit to compete with the automobile in the Toronto urban area alone would require a more than 5,000-kilometer

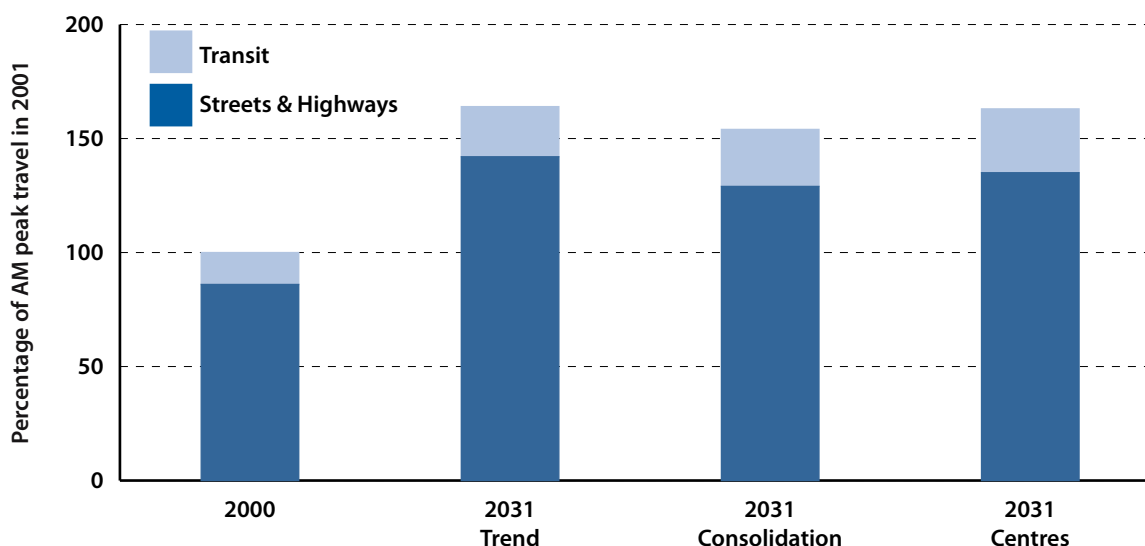
grid of high-quality rapid urban rail, similar to the Scarborough rapid transit line. This is 70 times as much urban rail as currently exists in Toronto. The annual capital and operating costs of such a system are estimated at more than 40% of the urban area’s annual gross income. [84] An automobile-competitive transit system that served all of the urbanization in the Golden Horseshoe would be even more expensive. In short, no feasible expansion of transit would make it competitive for a large percentage of trips within the Golden Horseshoe.

**Transit—no vision**

In 2000, 14.1% of peak-hour travel was by public transit. Under the *Business as Usual* scenario, this would decline slightly to 13.5% in 2031. Under the *Smart Growth* centres scenario, public transit’s share would rise only to 17.1% by 2031, while automobile traffic volumes would increase substantially. [Figure 2.10] This presumes a more than 20% increase in municipal public transit service per capita and a 60% increase in GO Transit rail service. Even these service expansions are likely to be unaffordable because nearly all new funding obtained by transit is used to finance higher operating costs, rather than service expansions.

The meager projected increase in transit’s market share would account for barely one-fifth of new peak-period travel demand, as four times as much new automobile use would occur. Transit’s impact during non-peak travel periods would be even less, because transit accounts for a higher share of travel during morning and evening peak periods. These results fall far short of the rhetorical “effective region wide transit system” discussed above.

**Figure 2.10: Travel in the Golden Horseshoe (estimated AM peak), 2000 & 2031**



Source: IBI Group in association with Metropole Consultants and Dillon Consulting Ltd., 2003.

The principal reason for the failure of the *Smart Growth* scenarios to increase public transit's market share substantially is that automobile-competitive public transit service would still not be available throughout most of the Golden Horseshoe but principally in downtown Toronto and the Toronto urban core. This is illustrated by a review of housing and business locations in the Toronto area, based upon the 2001 Census. The highly focused and non-comprehensive nature of transit services is more starkly illustrated by the fact that more than 95% of trips on the GO Transit commuter rail system begin or end at Union Station in downtown Toronto. [GO Transit, 2002]

The reality is that there is virtually nothing transit can do to substitute for highway or general roadway use. The proof of this is the very projections made by the Ontario Smart Growth Panel. Despite its philosophical attachment to transit, the McGuinty government is without a vision of a transportation future in which transit plays a meaningfully more material role than today. [85]

#### ***“Priority urban centres”—making traffic worse***

The McGuinty government's discussion paper proposes “priority urban centers,” where higher levels of transit service would be provided. There is, however, virtually no potential for public transit to reduce traffic congestion for trips to such centers. For example, to capture a significant portion of work trips to North York, downtown Oshawa, downtown Mississauga, Brampton City Centre, or any other priority urban center would require establishment of a radial transit system that provides no-transfer service to *each* center. Today, for example, North York is served by the Yonge Street subway and has substantial bus service, yet less than one-quarter of trips to North York are on transit, compared to the more than 50% of trips to downtown Toronto. Downtown Mississauga is well served by Mississauga Transit's extensive bus system, one of the largest in the nation. Yet, only 8% of travel to downtown Mississauga is on transit. [Crowley and Dalton, 1998]

It will not be sufficient to build a few new rail lines or establish a few new bus routes. Each of the centres to which transit is expected to make a difference would need to be served by a transit system with service levels similar to that of downtown Toronto from all parts of the entire urban area. Of course, there will not be enough money to establish such systems. The result of encouraging new employment in these centres will be to *increase* traffic congestion. The effect would instead be to create white-elephant public transit systems with significant under-utilization, unless a case can be made that the existence of the new transit lines draws sufficient new employers. It can be expected that the overwhelming majority of the new jobs will be filled by people *driving* to work. For example, if a priority urban center were to increase its employment by 50% and 20% of the new workers were to use transit, there would be a nearly 40% increase in trips to work by automobile.

Despite a public transit system that is effective, especially in the Toronto area, the Golden Horseshoe is simply too spread out and not dense enough for public transit to do



much more than it is doing today, as the *Smart Growth* scenarios projections attest. As a University of Toronto study put it in 1998, “suburban transit services ... were only competitive with the automobile for travel to Toronto’s Central Area.” [Crowley and Dalton, 1998: 18] No public transit system that could serve such disparate trip origins and destinations has been seriously proposed anywhere, much less implemented.

Further, urban densification intense enough to make the Toronto urban area possible to serve by automobile-competitive public transit at an affordable price would require the virtual dismantling of all but an area smaller than the approximately 100 square kilometers occupied by the former city of Toronto. Reaching the necessary densities, equivalent to those of Hong Kong, would require the geographical expanse of the urban area to be reduced more than 90%.

Thus, the current policy proposed by the Ontario government that would require municipalities to develop areas already served by public transit would make no significant difference. Throughout most of the Golden Horseshoe, there is simply no public transit that is competitive with the automobile. The presence of a public transit stop or station in an area does not mean that the service is competitive with the automobile or that it goes where people need to go. The miniscule market share of public transit outside the city of Toronto illustrates this. Transit’s morning peak-period market share in the Toronto suburbs is 1.5%, compared to 33% in the city. [IBI Group, 2003]

The proposed transportation policies are based upon vain hope or, perhaps, ideology, not on a reasoned analysis of what can be accomplished. The projections for transfer of demand from cars to public transit are immaterial, as is the case virtually everywhere such plans have been developed in the high-income world. Moreover, by increasing local area densities, traffic congestion will be made worse, traffic speeds will be slower and less consistent, and air pollution more intense than it would otherwise be. Mobility rationing can be expected to combine with land rationing to constrain household prosperity by reducing the effective size of the labour market. Higher incomes and better urban economic performance are associated with greater mobility. In an environment where highways are insufficiently expanded and public transit cannot be expanded sufficiently to provide automobile competitiveness, the result is to ration mobility.

“Smart growth” policies that discourage the provision of sufficient capacity for rising automobile demand are, in fact, policies that ration mobility. Further, the higher levels of traffic congestion brought about by the failure to provide sufficient road capacity will slow travel speeds, placing effective limits on commute distances. For example, the projected reduction in peak-period travel speed in the Golden Horseshoe from 2000 to 2031 would reduce the area that can be reached by a 30-minute commute by more than 40%. [86]

Again, lower-income households, which are disproportionately those of the young, recent immigrants, and minorities can be expected to pay the greatest price. The higher prices that result from land rationing will deny many such households entry into the economic mainstream through home ownership. And, given that those with lower incomes

are less likely to own a car and that public transit cannot be sufficiently expanded to provide access to job opportunities throughout the area, the fast-growing suburban job markets will be largely beyond reach for many.

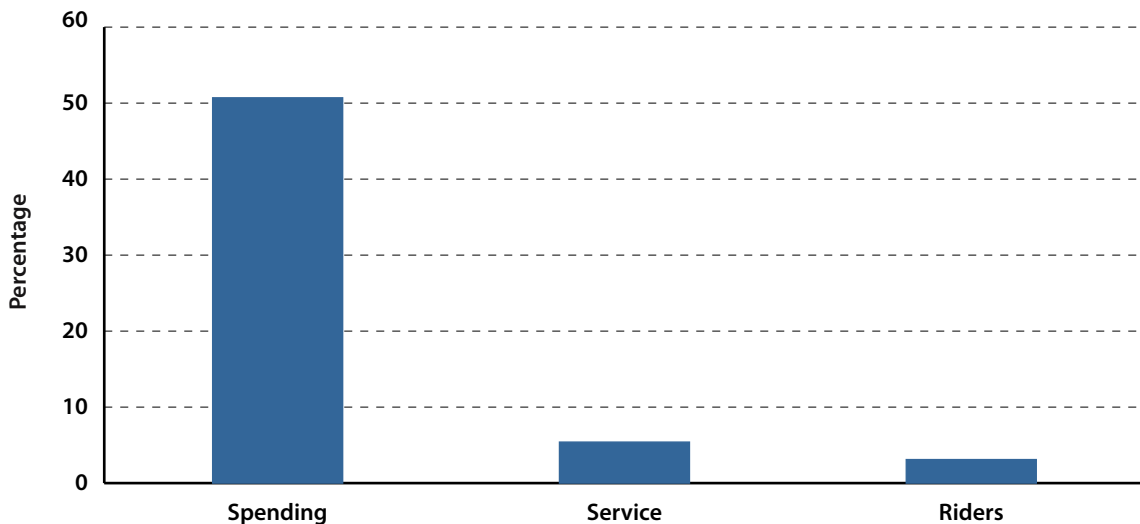
**Transit in Toronto—not sustainable**

Further, there is reason to believe that even present transit service levels are not sustainable. Public transit in Toronto has faced nearly continuous fiscal crises. Currently, much hope is being placed on the potential for new funding from the federal government. But it is not money that has been in short supply; it is rather cost containment. In 2002, the Toronto Transit Commission (TTC) spent \$300 million more than would have been necessary if it had contained costs per kilometer within the inflation rate over the past 20 years. [87]

Between 1982 and 2002, Toronto Transit Commission (TTC) operating expenditures rose 51% (after inflation adjustment). This extraordinary increase in expenditures has attracted an increase in ridership of only 3% and in 2003 ridership fell more than 10 million annual trips, to just 0.5% above the 1982 rate. A principal reason why ridership fell so far behind spending is that service levels were not materially increased. TTC returned only 5% in new service in exchange for its more than 50% increase in spending (after inflation adjustment). [Figure 2.11]

The McGuinty government’s gasoline tax of 2¢ per litre could be producing more than \$200 million annually in the Golden Horseshoe. [88] But this substantial amount pales by comparison to the cost of significant transit improvements. For example, it

**Figure 2.11: Increases in spending, service and riders, Toronto Transit Commission, 1982–2002**



Source: Calculated from data in Toronto Transit Commission, 2003 and Ontario, Ministry of Transport and Communications and Ontario Urban Transit Association, undated.

would build little more than one kilometer of subway annually at the cost of the TTC Sheppard subway line opened in 2002. [89] This expensive line was expected to increase TTC patronage more than 1,000,000 annually, or by less than 0.5%. By comparison, travel demand is increasing at more than three times that rate *each year* in the Golden Horseshoe. [90] In fact, as noted above, TTC transit travel declined more than 10,000,000 trips in 2003, despite the addition of the Sheppard subway.

The TTC's cost escalation illustrates the potential difficulties with the proposed federal public transit aid. Much of the new funding could be consumed by escalating unit costs without materially increasing public transit service or ridership. In the United States, little of the new federal funding for public transit was used to expand service between 1970 and 1985, and instead fueled unprecedented unit cost escalation. This cost-escalation effect is also part of the reason that so many Western governments are decentralizing public transit funding and eliminating or significantly reducing national (or even regional) funding programs. [91]

This is not just a problem for Toronto: public transit service is provided by government monopolies in many urban areas in the western high-income world. It is a generally accepted economic principle that monopolies are associated with higher-than-market costs, because there is insufficient competitive influence to keep unit costs under control.

At the same time, unit costs have declined in transport industries in which competition has been increased, principally through deregulation or privatization. In recognition of this, a number of nations and urban areas have taken steps to apply competition to public transit, which has made it possible to sustain present levels of public transit service within available revenues. Various forms of competition have been applied to public transit service, both bus and rail, in such disparate locations as London, [92] Stockholm, Copenhagen, Auckland, Adelaide, San Diego, and Boston, while making it possible for present levels of service to be operated without the requirement for additional revenues. London Transport experienced decreases in cost per kilometer of approximately 50%, after adjustment for inflation, from 1985 to 2001. [Cox and Duthion, 2001] This is in considerable contrast to the cost escalation experienced at the Toronto Transit Commission.

Nonetheless, it is important to note that, while improved cost effectiveness would increase transit service levels, no improvement of transit cost effectiveness would be sufficient for transit to make a material difference in traffic congestion (see [Public transit must compete with automobiles](#), above).

### **Movement of freight**

The McGuinty government's discussion paper appropriately notes the importance of moving freight in and through the Golden Horseshoe efficiently. Measures to improve both rail and truck movement are proposed. But, at the most fundamental level, the strategies with respect to trucks must fail. Trucks use the same roadways as cars. If, as is proposed, insufficient capacity is provided to accommodate the increasing demand, not

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only will cars be stuck in traffic but trucks will as well. This would harm the economic competitiveness of the Golden Horseshoe, would increase freight transportation costs, and would inevitably contribute to higher consumer costs. The government will either keep the traffic moving or not. Allowing automobile travel times to become worse will make truck travel times worse as well.

***Transportation—conclusion***

The transportation dilemma is not easy to solve. On one hand, there is the desire to transfer demand to transit from cars. But, to achieve the critical mass that would accomplish that objective would require an intensification of development that is simply not possible. For transit to be competitive with the automobile would require densification and centralization far beyond anything that has been proposed by the government or by any other government in a democratic society. As has been noted above, only Hong Kong has automobile-competitive transit throughout, and to replicate Hong Kong densities in Toronto would require dismantling nearly 95% of urban development. Short of that, the urban area must principally rely on automobiles. The choice is not transit or highways, it is rather the extent of traffic congestion, and lost competitiveness, that will be tolerated.

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## Useful initiatives

The McGuinty government's discussion paper also includes useful initiatives. For example:

**Removing regulatory barriers** There are currently unnecessary regulatory barriers to development in developed areas. This constrains infill development. The government appropriately seeks to remove these barriers. Strategies such as these have been a factor in the renaissance of central cities that is occurring around the high-income world. But there is an important distinction. The market tends to respond favorably to expanded regulatory freedom, as the generally increasing competition keeps housing prices down. On the other hand, as has been shown above, greater regulation tends to lead to higher housing prices and less affordability.

**Community liveability index** There is a proposal to establish a "community liveability index" that would measure the quality of life and various environmental and economic factors. But the present proposal is incomplete. Additional factors that should be included in the index are average commute times, average traffic travel speeds and cost effectiveness of public expenditures (such as cost per new-passenger-kilometer of travel).

## Conclusion and recommendations for the Golden Horseshoe

The proposed policies of the McGuinty government for the Golden Horseshoe can be expected to have at least the following impacts:

- Housing prices would be higher, reducing home ownership.
- Retail prices would be higher, putting additional strain on household budgets.
- The time that people spend traveling would be increased unnecessarily and geographical employment opportunities would be reduced by rationing mobility.
- The demand for new housing would be even further dispersed than today, with development driven to much less expensive areas, such as less central portions of the Golden Horseshoe (outside the Toronto area) and other areas outside the greenbelt. This will accelerate, not contain urban growth.
- The higher costs and more constrained housing choices and more intense traffic congestion could discourage population growth in the Golden Horseshoe, driving “new movers” to other parts of Ontario or Canada.
- The slower traffic speeds would make it more difficult for trucks to travel in and through the area and retard competitiveness relative to other urban areas.
- The increases in the cost of housing and reduced employment and economic opportunities would consign many recent immigrants and minorities to longer periods in rental housing and lower standards of living, delaying for some, and preventing for others, entry into the economic mainstream through home ownership.

But, at the local level, the effects of smart growth could be characterized as socially exclusive, which could entrap some lower-income households in what could become a more permanent underclass. Worst of all, this would be the result of policies based on trivial justifications, which would, in the end, produce land use and transport results little different than if people were allowed to do what they want.

The “smart growth” diagnosis of urban degradation in the Golden Horseshoe is inconsistent with the reality of one of the world’s most affluent urban areas. There are difficulties but they are difficulties that can be overcome. As the data developed for the Ontario Smart Growth Panel [2003] indicates, air pollution continues to improve. Incomes can be expected to increase, and prosperity broaden if government policies such as land rationing and mobility rationing are not implemented.

There may well be a need to preserve more land within the Golden Horseshoe. But any such efforts should be undertaken carefully, and in consideration of their impacts on the population. Not everyone has sufficient income to live at a middle-income level and, until they do, the price of excessive protection will be an inferior quality of life for people with insufficient means.

One of the most difficult problems is traffic congestion. The McGuinty proposals, inherited from analyses by the Eaves’ Smart Growth Panel would place a priority on pro-

viding more transit service for the barely 15% who would use it during peak travel periods. At the same time, the McGuinty government's proposals essentially frustrate the needs of the 85% of travelers who use their cars, more often than not out of necessity. And, the critical requirements of the trucking industry are also given little serious attention. Moreover, neither the McGuinty government's document nor the Ontario Smart Growth Panel's documents analyze the costs and benefits of the proposed transit plans—cost per new rider, cost per new passenger kilometer or cost per reduced travel delay hour—or of the alternatives to highway expansion.

There are alternatives with respect to highways. The Texas Governor's Business Council report provides a useful model, which would involve establishing maximum traffic congestion objectives, with the intent of minimizing congestion delay during peak periods (such as the 15% maximum travel-time penalty adopted in the planning process in the Texas metropolitan areas). The higher levels of mobility that would result would improve the economic efficiency of the Golden Horseshoe's labour markets and, at the household level, improve employment opportunities and household income. They would also help move trucks in and through the area efficiently. At the same time, tolls could finance additional high-capacity (freeway) roadways as the urban area continues to expand.

But, Ontario and the Golden Horseshoe should implement programs that encourage economic growth and household prosperity. This would require land regulations that encourage maximum housing affordability and the lowest retail and commercial prices. This would be consistent with the "competitive intensity" cited by William Lewis as the missing factor responsible for the lagging economic performance of Western Europe and Japan. [Lewis, 2004] This will produce a more prosperous and inclusive metropolitan community, and an area strongly positioned to compete in international markets. This would contribute to a more prosperous Ontario and a more prosperous Canada.



## Notes

- 1 As used in this paper, urban area means developed area. Statistics Canada denotes an urban area as having “a minimum population concentration of 1,000 persons and a population density of at least 400 persons per square kilometre, based on the current census population count. All territory outside urban areas is classified as rural. Taken together, urban and rural areas cover all of Canada.” An urban area is different than a Census Metropolitan Area, which includes non-urban areas considered to be in a labour market.
- 2 International data is used throughout this paper because anti-growth advocates often point to Western European and Asian urban areas as models for policies that contain urban land expansion. In fact, urban land has been expanding along with population, household, income, and commercial growth in these areas as well.
- 3 Other estimates place the density as much as 30% lower. To house the world’s population at this lower density would require all of the developed land in the Golden Horseshoe plus the developed land in Vancouver.
- 4 Generally, an urban area includes the continuous urban development extending outward from the core. The Toronto urban area, according to Statistics Canada, extends from near Burlington to Oshawa and to Newmarket.
- 5 All of the urban areas of the Prairie Provinces would also be sufficient to house the world’s population.
- 6 Urban areas of the high-income world include all in Canada, the United States, Western Europe (excluding Greece), Japan, Australia, New Zealand, Hong Kong, Singapore and Israel. These urban areas had an estimated gross product per capita (purchasing power parity) of US\$15,000 or more in 1995. Based upon research in Cox, 2004a; Statistics Canada, 2002.
- 7 In fact, the world’s most expansive urban area (in terms of geographical expanse) is New York, whose 18,000,000 people are spread across more than 8,600 square kilometers.
- 8 Calculated from national census and estimates data. [\[Demographia, 2004h\]](#)
- 9 Calculated from Statistics Canada data.
- 10 For example, since 1957, the Buenos Aires area added 7,500,000 people. All were added in the suburbs, with the core city losing 80,000 from its population. [\[Demographia, 2004g\]](#)
- 11 For example, data from Census of India indicate that the core former city of Mumbai (pre-1958) gained approximately 40,000 people from 1981 to 2001. In contrast, the expanding outer city gained 3.6 million and the suburbs outside the city gained 4.1 million. [\[Xutong, Hongcai and Pangyan, 2003\]](#) Beijing added 88% to its urbanized land area from 1990 to 2001, while adding 38% to its population. [\[Demographia,](#)



- 2004k]** Overall, suburban growth has exceeded core city growth in both middle-income and low-income world metropolitan areas with populations of more than 5,000,000. [\[Demographia, 2004f\]](#)
- 12** Kenworthy, Laube, and Newman [\[1999\]](#) estimated the urban area (developed area) within the Municipality of Metropolitan Toronto at 440 square kilometers, with 1.620 million people. The Census Metropolitan Area figure for the same year was 1.919 million. There was some contiguous urbanization outside the Municipality, and that is excluded from this estimate.
  - 13** If data were available for the additional contiguous urbanization that existed outside the Municipality of Metropolitan Toronto in 1961, the overall density would be lower. Thus, the use of the estimates from Kenworthy et al. [\[1999\]](#) as a base tends to understate the extent of urban expansion as it existed in 1961 and to overstate its increase since that time.
  - 14** Central cities that have achieved a peak population of 400,000 or more at some point in their history. Calculated from national census and estimates data. [\[Demographia, 2004i\]](#)
  - 15** Central business districts with more than 750,000 jobs.
  - 16** Calculated from national census and estimates data. [\[Demographia, 2004l, 2004m, 2004n, 2004o, 2004p\]](#)
  - 17** Calculated from Kenworthy, Laube and Newman [\[1999\]](#)
  - 18** Calculated from national census and estimates data. [\[Demographia, 2004e\]](#)
  - 19** Such as Los Angeles and Phoenix.
  - 20** For example, see Gurin [\[2003: 11\]](#).
  - 21** “Dependable” agricultural land is that designated as Class 1, Class 2, and Class 3 by the *Canada Land Inventory* (see McCuaig and Manning, 1982).
  - 22** The term “open space” as used herein excludes urban and agricultural land.
  - 23** Statistics Canada uses the term “census metropolitan area” to denote a major labour market that includes both urbanization and rural fringes. Statistics Canada uses the term “urban area” to denote a continuously developed area including a core city and its suburbs, without rural territory. Thus, a census metropolitan area will include one or more urban area and rural areas considered to be in the labour market area.
  - 24** Calculated from Statistics Canada data. [\[Demographia, 2004a\]](#)
  - 25** This paper does not attempt to evaluate the case for preservation of these land forms.
  - 26** In fact, Australian urban areas have expanded virtually to the same extent of those in the United States, which are characterized by the most comprehensive urban freeway systems in the world.
  - 27** According to Statistics Canada, in 2001 the Vancouver urban area had 1,634 persons per square kilometer, about 25% higher than the US average for urbanized areas over 750,000 in 2000. Calgary’s urban density was 1,252 per square kilometer,

- nearly the same as the US average. Edmonton's urban density was 920 per square kilometer, approximately 33% below the US average.
- 28 Calculated from [International Union of Public Transportation, 1995](#).
  - 29 There are no Canadian urban areas or metropolitan areas with a population greater than 5,000,000.
  - 30 Calculated from US Census Bureau. [[Kenworthy, Laube & Newman 1999](#); [Gerondeau 1997](#)]
  - 31 Calculated from 2000 US Census and Statistics Bureau [[2003](#)].
  - 32 2000 Census of Japan and 2000 US Census.
  - 33 Calculated from data in [[Kenworthy, Laube, and Newman, 1999](#)].
  - 34 1990 data, calculated from [[Kenworthy, Laube, and Newman, 1999](#)].
  - 35 The *Travel Time Index* measures the additional time necessary to take a roadway trip during peak travel periods. Similar data are not generally available in Canada.
  - 36 In this example, total automobile use would increase 90% when population density increases 100%. The result would be a 5% reduction in per-capita automobile use but a 90% increase in actual traffic in an area.
  - 37 Calculated from United States Census Bureau data and Ross and Dunning [[1997](#)].
  - 38 Analysis of data from the Texas Transportation Institute [[2003](#)]. Some of this increase was in Clark County, Washington, outside the jurisdiction of Portland's "smart growth" policies.
  - 39 Calculated from data from the Texas Transportation Institute [[2003](#)] for the Travel Time Index, which estimates the percentage delay occurring during peak travel periods.
  - 40 This can be illustrated by the following example. The state of Alaska is more than 500 times the size of the state of Rhode Island. If, for the sake of discussion, air pollution volumes were the same in Alaska as in Rhode Island, this would indicate little about the comparative health risks. In Alaska, the air pollution would be far more dispersed, so that people would generally be exposed to far less intense pollution. In Rhode Island, the air pollution would be concentrated in an area  $1/500^{\text{th}}$  the size of Alaska, and would be much more intense than in Alaska. People in Rhode Island would generally be exposed to much more air pollution as a result. The critical issue with respect to the impact of air pollution upon health is not the gross pollution levels of a large area but rather the micro-area pollution that is breathed by individual human beings.
  - 41 Calculated from data in [[Kenworthy, Laube & Newman, 1999](#); [Demographia, 2004b](#)]
  - 42 Calculated from data in [[Demographia, 2004s](#)]; 2000 data projected in source.
  - 43 Or Western European urban area
  - 44 Work trips are particularly important, because their concentration in a few hours per day is the principal cause of most urban traffic congestion. In addition, work trips are generally the simplest for transit to attract.

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- 45 Calculated from data from the US Census Bureau.
- 46 For example, two-thirds of of motorized travel within the core of Paris is on public transit as is 69% of travel in the urban core of London. Outside these cores, more than 80% of travel is by car. [INSEE and IAURIF, 2000; IAURIF, 1998]
- 47 Calculated from [INSEE and IAURIF, 2000].
- 48 Tokyo-Yokohama is the world's largest metropolitan area with 33 million residents, while Osaka-Kobe-Kyoto ranks 7<sup>th</sup> with 17 million and Nagoya has more than 5 million residents. The larger two have the highest high-income transit market shares outside Hong Kong while Nagoya's transit market share is higher than all but a few metropolitan areas in Western Europe and nearly double the transit market share of Toronto. [Demographia, 2004]
- 49 Hong Kong is an historical accident that makes replication virtually impossible elsewhere. The colony's early growth occurred following the Opium Wars of the 19<sup>th</sup> century as British traders moved from Guangzhou to Hong Kong. The communist takeover of mainland China in 1949 also spurred further growth, as refugees settled in Hong Kong. The result is by far the highest population densities in the high-income world.
- 50 Calculated from [Kenworthy, Laube, and Newman, 1999].
- 51 This can be demonstrated by an examination of transit maps in virtually any Canadian or Western European urban area. The systems generally are radially oriented to downtown. Particular trips by transit in non-radial corridors are either not available or tend to require transfers to other lines, which makes travel uncompetitive with the automobile. Even where service is available, transit tends to be slower than cars. According to data in the *Millennium Cities Database*, cars are 30% faster than transit in Western European urban areas and 70% faster in Canada. [UITP, 2002] This is also illustrated by a review of commuting in the Chicago area, which has one of the best transit systems in North America (metro, commuter rail and bus). For work trips to destinations other than downtown, the average transit travel time was more than three times the downtown transit commute time. It was also more than five times the average automobile travel time. [Cox, 2003] A similar review found that only 5% of employment within the area of Portland, Oregon is available by means of public transit competitive with automobiles. [Cox, 2002b]
- 52 The urban area's largest transit operator, the Toronto Transit Commission, principally serves the city of Toronto, which represents less than one half of the urban area.
- 53 GO Transit has 49 stations. Less than 25 square miles are within walking distance (400 meter radius) of a station.
- 54 Based upon the service model developed for [Cox 2002b].
- 55 As is indicated below, transit service is a practical alternative for all travel only in the urban area of Hong Kong. Even there, however, traffic congestion is considerably worse than in the United States (below).

- 56 Calculated from [\[International Union of Public Transport, 1995\]](#).
- 57 Calculated from 1990 US Census Data. [\[Demographia, 2004j\]](#)
- 58 Also called the “Golden Report,” after Anne Golden, the chair of the Task Force.
- 59 There is also a view that larger government units are more cost effective. This has been a principal justification for municipal consolidations that have occurred in Nova Scotia, Quebec, and Ontario in recent years, and in Winnipeg three decades ago. Data from this study indicates, to the contrary, that larger units of government tend to have higher expenditures per capita. The sample of US municipalities indicates that the highest expenditures per capita are in the largest municipalities and that the lowest expenditures are in medium-sized municipalities.
- 60 No analysis of actual data on municipal expenditures was identified in Canada.
- 61 New York city is composed of five counties, or boroughs.
- 62 Further, the study included what appears to be a disproportionate share of people who drive excessively long periods: 6% of respondents drove more than five hours daily and the maximum was more than 10 hours. Values this far out of the normal range are typically excluded from econometric analyses.
- 63 Calculated from US Census data. [\[Demographia, 2004d\]](#)
- 64 Estimated from US Census data. [\[Demographia, 2004c\]](#)
- 65 A greenbelt is a form of boundary on urban growth.
- 66 Calculated from data from the National Association of Home Builders [\[Demographica, 2004t\]](#).
- 67 Dallas-Fort Worth Housing Affordability Index change estimated using weighted rates for the Dallas and Fort Worth sub-metropolitan areas (primary metropolitan statistical areas that make up the consolidated metropolitan statistical area).
- 68 According to Statistics Canada, all urban areas in Canada combined covered 27,169 square kilometers in 2001. London’s urbanization has been forced out into a gross area estimated at more than 16,000 square kilometers. [\[Demographia, 2004r\]](#)
- 69 The actual travel radius would vary based upon location relative to Lake Ontario.
- 70 10% times 0.18 ( $0.10 * 0.18$ ).
- 71 The McGuinty government’s discussion paper simply quotes this finding, failing to note the substantial advances that have been made in the air pollution measures most associated with human health.
- 72 International data is used throughout this paper because anti-growth advocates often point to Western European and Asian urban areas as models for policies that contain urban land expansion. In fact, urban land has been expanding along with population, household, income and commercial growth in these areas as well.
- 73 The density of the Toronto urban area, as defined by Statistics Canada, is 3% less than the Los Angeles urbanized area, as defined by the United States Census Bureau. There are minor differences in definitions but the two characterizations of urbanization are generally comparable.

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- 74 Canada, the United States, Australia and New Zealand (New Zealand has no urban areas over 3,000,000 population).
  - 75 Census data. [Demographia, 2004a]
  - 76 The portion of the Toronto urban area outside the city.
  - 77 Generally, home ownership increases with distance from the core in US urban areas, Paris, and Tokyo.
  - 78 Infill development occurs within the developed area, either on vacant lots or on “brownfield” sites with older structures being demolished or refurbished.
  - 79 Travel delays are projected to be slightly more under the *Business As Usual* scenario. This is the result to be expected of adding fewer kilometers of new roadway relative to demand than under the “smart growth” scenarios.
  - 80 Generally gasoline taxes.
  - 81 A program of highway expansions has been proposed by the Canadian Automobile Association. [Canadian Automobile Association, 2004]
  - 82 The only other alternative would be to establish no-transfer radial bus and rail systems from throughout the urban area to within walking distance of every employment location in the urban area. This would be considerably more expensive.
  - 83 Based upon the service model developed for [Cox, 2002b].
  - 84 Estimated using model developed for [Cox, 2002b].
  - 85 The McGuinty government has plenty of company here. Though we have followed the literature closely, we have seen no long-term metropolitan transportation plans in the high-income world that anticipates a material loss of roadway market share, for the same reasons that it is not financially feasible in Toronto. Transit service competitive with automobiles can be provided at an affordable price only to downtown and the core.
  - 86 Calculated from speeds given in the *Smart Growth* and *Business as Usual* scenarios.
  - 87 Calculated from data in reports from the Toronto Transit Commission [2003] and the Ontario Ministry of Transport [undated].
  - 88 Estimated based upon Ontario’s Smart Growth Panel estimates of demand and average fuel efficiency.
  - 89 The cost per kilometer of the Sheppard subway is estimated at approximately \$165 million per kilometer by inflation-adjusting the cost at the mid-point of construction (1994) to 2004 dollars.
  - 90 Calculated from projections of the Smart Growth Panel.
  - 91 For example in France, Germany, and the United Kingdom.
  - 92 The entire London bus system has been competitively tendered, with marketing and coordination maintained by London Transport. In the United Kingdom outside London, services were deregulated, with no coordinating authority.

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Wendell Cox is a demographic and transport consultant and principal of Wendell Cox Consultancy in metropolitan St. Louis. He is also a visiting professor at the Conservatoire National des Arts et Métiers, a French national university in Paris. He has completed projects in North America, Australasia, Asia, Europe and Africa and was retained by the former city of Toronto for technical assistance in opposing the subsequent amalgamation. He was appointed to three terms on the Los Angeles County Transportation Commission by Mayor Tom Bradley and, while in that position, wrote the tax amendment to finance the light rail and subway systems. During that period, he was also elected to chair two national committees of the American Public Transit Association (Policy & Planning and Governing Boards). In 1999, US Speaker of the House of Representatives, Newt Gingrich, appointed him to the Amtrak Reform Council to complete the unexpired term of New Jersey Governor Christine Todd Whitman.

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