



POLICY SERIES

NO. 168 • NOVEMBER 2014
FRONTIER CENTRE FOR PUBLIC POLICY



Housing Affordability and the Standard of Living in Toronto

Wendell Cox



About the author

Wendell Cox is principal of Wendell Cox Consultancy (Demographia), a St. Louis-based (Missouri-Illinois) international public policy firm. He is an expert in land-use and transportation policy and is co-author of the "Demographia International Housing Affordability Survey," which has examined metropolitan areas in Canada, Australia, Ireland, New Zealand, the United Kingdom and the United States since 2004 and covers 10 nations in its 10th edition (2014). The Frontier Centre for Public Policy sponsors the Survey in Canada.

Cox has written and spoken widely on the role of housing affordability in the standard of living and in poverty reduction, including national speaking tours in Australia and in numerous international presentations.

He is author of *War on the Dream: How Anti-sprawl Policy Threatens the Quality of Life* and the co-author with Richard Vedder of *The Wal-Mart Revolution: How Big-Box Stores Benefit Consumers, Workers, and the Economy*. In addition to these books, he has been a frequent book chapter contributor and is the author of a regular column in www.newgeography.com.

He is also author of the widely cited "Demographia World Urban Areas," which is the only compendium of population, land area and population density for all known urban areas of 500,000 or more people.

He served nine years as a visiting professor at the Conservatoire national des arts et métiers, a Paris university, and he holds a BA in Government from California State University, Los Angeles, and an MBA from Pepperdine University, also in Los Angeles.

In 1977, then Mayor Tom Bradley appointed him to three terms on the Los Angeles County Transportation Commission, which was the top policy body in both highways and transit in the largest county in the United States. He was appointed by then Speaker of the United States House of Representatives Newt Gingrich to fulfill the unexpired term of then New Jersey Governor Christine Todd Whitman when she resigned from the Amtrak Reform Council.

He was an invited speaker at the Greater Toronto Area Transportation Summit in 2003, and he has lectured at the University of Toronto. He participated in a policy debate on the Toronto Transit Commission at Ryerson University in 2010.

Cox is a senior fellow at the Frontier Centre for Public Policy.



MB: 203-2727 Portage Avenue,
Winnipeg, Manitoba Canada R3J 0R2
Tel: 204-957-1567
Email: manitoba@fcpp.org

SK: 2353 McIntyre Street,
Regina, Saskatchewan Canada S4P 2S3
Tel: 306-352-2915
Email: saskatchewan@fcpp.org

AB: Ste. 603, 734-7th Avenue SW,
Calgary, Alberta Canada T2P 3P8
Tel: 587-930-2289
Email: alberta@fcpp.org

The Frontier Centre for Public Policy is an independent, non-profit organization that undertakes research and education in support of economic growth and social outcomes that will enhance the quality of life in our communities. Through a variety of publications and public forums, the Centre explores policy innovations required to make the prairies region a winner in the open economy. It also provides new insights into solving important issues facing our cities, towns and provinces. These include improving the performance of public expenditures in important areas like local government, education, health and social policy. The author of this study has worked independently and the opinions expressed are therefore their own, and do not necessarily reflect the opinions of the board of the Frontier Centre for Public Policy.

Copyright © MMXIV by the Frontier Centre for Public Policy.

Date of First Issue: November 2014.

Reproduced here with permission of the author. Any errors or omissions and the accuracy and completeness of this paper remain the responsibility of the author.

ISSN 1491-78

Ideas for a better tomorrow
www.fcpp.org

FCPP Policy Series No. 168 • November 2014

Housing Affordability and the Standard of Living in Toronto

Wendell Cox

Table of Contents

Title	Page
Executive Summary	4
1. Focusing on priorities	9
2. Places to Grow	12
3. The impact of urban containment policy on the standard of living	16
4. Housing affordability and the standard of living in Toronto	23
5. Mobility and economic growth	28
6. Mobility and competitiveness in Toronto	31
7. Sustainability	41
8. Broader economic effects	47
9. Putting people first	50
Recommendations	50
Appendix A	52
Appendix B	55
Endnotes	57

Note to reader: Endnotes and some words in this document may appear in blue and underlined. When e-reading, these links will directly access relevant online websites or documents using your associated browser. Endnotes' numerals will directly link to the appropriate reference at the end of this document.

Executive Summary

1. Focusing on priorities

Over the past two centuries, the world has become more urban, as people have moved to the cities to better their lives. Cities exist because, as large labour markets, they facilitate a higher standard of living for residents and reduce poverty. Governments place a high priority on these social goods. Achieving them requires that governments pursue policies that lead to higher household discretionary income (income after paying taxes and for necessities). Governments must also proactively avoid policies that reduce discretionary income. Regrettably, urban containment policy, the subject of this report, increases house prices relative to income, thereby reducing discretionary income and the standard of living while increasing poverty.

Alain Bertaud, former principal urban planner at the World Bank, expressed the important role played by urban planning as follows: "Increasing mobility and affordability are the two main objectives of urban planning. These two objectives are directly related to the overall goal of maximizing the size of a city's labor market, and therefore, its economic prosperity."

Yet, the dominant strain of urban planning, urban containment policy, leads to a lower standard of living and greater poverty by increasing housing costs relative to income. This occurs because urban containment policy places artificial limits on the supply of land and housing, which drive up prices because of an excess of demand over supply. The cost of housing is the largest element of household budgets and is thus a major determinant of the standard of living and the extent of poverty. There is a need to focus on the fundamental priority of improving the standard of living and reducing poverty ([Section 1](#)).

This report examines urban planning policy and its impact on housing affordability in the Toronto area.

2. Places to Grow

Throughout history, urban areas have tended to expand as they added population. Population densities accompanied strong population growth, especially as transportation improved, from the era of nearly exclusive walking that existed before the early 19th century, to transit and then the automobile. Despite claims to the contrary, Toronto is a compact urban area, the densest urban area in either Canada or the United States.

There is a strong concern among urban planners that urbanization is consuming too much land and that people have become too dependent upon automobile transport. In an attempt to control urban expansion, which is pejoratively called "urban sprawl," urban containment policies have been implemented in some metropolitan areas for nearly 70 years. More recently, curbing urban expansion has been justified by the worry about sustainability (principally the reduction of greenhouse gas emissions).

The province of Ontario has adopted a strong program of urban containment policies, Places to Grow, which requires significant densification, includes strong restrictions

on suburban expansion and gives priority to transit improvements over highway expansion ([Section 2](#)).

3. The impact of urban containment policy and the standard of living

Other things being equal, economic principle indicates that when there is a shortage of a good that is in demand, prices will tend to increase. This relationship is not just theoretical; it has been documented in decades of actual experience (at least since the work of Sir Peter Hall and others, referenced below, more than four decades ago). It is so compelling that economist Paul Cheshire, of the London School of Economics, has concluded that urban containment policy is irreconcilable with housing affordability.

With its Places to Grow urban containment policy, the Toronto area is experiencing unprecedented housing-cost escalation relative to income. Yet, it could become much worse. Some metropolitan areas, such as Vancouver and Sydney, Australia, with a longer history of urban containment have experienced cost increases that are 50 per cent or more above the Toronto house price to income ratio ([Section 3](#)).

4. Housing affordability and the standard of living in the Toronto Area

Since the early 1970s, the Toronto metropolitan area was characterized by broad-based housing affordability. As late as 2000, the median single-family house price was 3.5 times the median household income (this measure is the median multiple). This is consistent with other metropolitan areas throughout the New World (Canada, Australia, New Zealand and the United States) following World War II but prior to their adoption of urban containment policies.

The house price increases relative to income have been broad based, ranging from 66 per cent for condominium apartments to 91 per cent for detached housing. The impact on households has been substantial. Today, all forms of housing in the Toronto area, from condominium apartments to detached housing, are substantially more expensive relative to income than detached houses were in 2000. The latest house prices are so high that the median income household purchasing a house would have \$17,000 less in discretionary income than if the 2000 price to income ratio had been preserved ([Section 4](#)).

5. Mobility and economic growth

Metropolitan areas are labour markets. Any attempt to fragment these markets is likely to lead to lower levels of economic growth. Yet, urban containment policy seeks to localize commuting trips within metropolitan areas, a concept called the "jobs-housing balance." As attractive as the concept may seem, virtually all attempts in democratic societies have failed.

Economic growth improves with greater mobility, which is the ability of residents to commute to the maximum number of jobs in the metropolitan area in a specific amount of time (such as 30 minutes). Transit, cycling and walking are appropriate for many. However, these modes are unable to compete with the automobile in providing quick and comprehensive mobility throughout the metropolitan area.

Further, the mobility and standard of living of low-income households are improved by automobile access ([Section 5](#)).

6. Mobility and competitiveness in Toronto

The competitiveness of the Toronto area is slowed by its traffic congestion and long work-trip commute times, which are among the worst in North America. Higher densities, such as those sought by Places to Grow, are associated with greater traffic congestion, and thus it seems likely that traffic congestion and work-trip travel times will increase in the future. Moreover, more-intense traffic congestion is associated with health problems.

Toronto has one of the best transit systems in North America or Western Europe. The market share of travel to work in the Toronto area is among the highest. Nonetheless, as in virtually all other metropolitan areas, transit's market share is disproportionately to destinations in the downtown area and urban core. For example, approximately 96 per cent of the commuter rail trips on GO Transit begin or end downtown at Union Station. The share of commuters using transit to work to other destinations is a relatively small fraction of the share to downtown.

The Big Move transit plan seeks to substantially increase transit ridership. However, it is unlikely to make a material difference in commuting to locations other than downtown, because most of the Toronto area will be beyond walking distance of rapid transit stations, and travel by transit will continue to be slower than by car for most trips.

The hope that transferring demand from cars to transit can reduce travel times to work is without foundation. The average transit trip to work in the Toronto area takes 60 per cent longer than the average car commute, according to Statistics Canada data. Higher densities are unlikely to change this. Cities with higher densities and even higher transit market shares than Toronto has generally have longer overall commute times because greater traffic congestion is associated with higher population densities.

Strategies that improve traffic movement are the only way to decrease commute times and traffic congestion ([Section 6](#)).

7. Sustainability

Sustainability is a principle underlying the justification of urban containment policy, particularly the reduction of greenhouse gas (GHG) emissions. Yet, urban containment policy produces only minimal GHG emissions reduction and at an exorbitant cost.

In the United States, the Environmental Protection Agency (EPA) estimates that its fuel economy improvements will cost a negative \$200 to \$300 per tonne of GHG emissions reduction. McKinsey & Company estimates that GHG emissions sufficient to achieve the Intergovernmental Panel on Climate Change (IPCC) recommended reduction rates to 2030 could be achieved at an average cost of minus \$9 per tonne.

The cost of urban containment policy is far higher than the metrics indicated by McKinsey & Company and the EPA. The estimated cost of reducing GHG emissions

through transit alternatives is \$1,000 per tonne, and the additional housing costs incurred to reduce GHG are estimated at nearly \$20,000 per tonne in the United States. Expenditures of this magnitude can seriously delay economic growth.

Urbanization is not a threat to agricultural production. There has been a reduction in Canada's farmland, but not because of urbanization. Farming has become more productive and, thus, less land is necessary. In fact, due to improved productivity, the amount of land covered by urban areas is less than the reduction in farmland ([Section 7](#)).

8. Broader economic impact

Not surprisingly, the reduction in household discretionary income associated with urban containment has also led to less-robust metropolitan-area growth according to research in the United Kingdom, continental Europe and the United States.

The Bank of Canada is concerned about rising household debt and rising house prices. Its concerns were also a factor in the downgrading of most major Canadian banks by international rating agencies in 2012. The longer-term possibility of higher interest rates that would put even more pressure on household budgets heightens these concerns.

The experience of Australia and New Zealand suggests that house-price escalation in Canada could be greater in the years to come than what has already occurred.

Housing costs, the largest expenditure item of household budgets and a significant driver of inflation, are beyond the policy purview of the Bank of Canada. The land-use policies of provinces and metropolitan areas are the principal determinant of house-price escalation beyond historic norms ([Section 8](#)).

9. Putting people first

If house prices continue to increase at a rate greater than incomes in the Toronto area, the standard of living could decline further and poverty could increase. There is a need for policies that put people first by restoring and maintaining historical housing affordability. The following recommendations are proposed. The province of Ontario, regional and local governments and transit authorities should do the following:

- Establish housing affordability and economic development as the principal urban objectives. This should include the establishment of housing affordability improvement standards for each type of owned and rented housing, and this should be reported upon on an annual basis. Other objectives, such as the urban form and the way people travel, should be secondary.
- Liberalize the housing market. This should include an expansion of the urban containment boundary sufficient to restore the historical ratio between finished land cost and the construction costs of new houses.
- Estimate both the GHG emissions reduction of any major strategy and the cost per metric tonne of such emissions. Generally, only the most cost-effective GHG

emissions strategies should be undertaken. No strategy that has a cost per tonne of GHG emissions that is greater than prevailing market prices should be embarked upon.

- Adopt transportation policies that maximize mobility throughout the Toronto area and the Greater Golden Horseshoe. These strategies should seek to minimize commute travel times throughout the metropolitan area regardless of the mode of travel.
- Seek to implement infrastructure finance options that could improve housing affordability, such as bonding, user fees and special housing districts.
- The province of Ontario should provide an annual report on housing affordability in each of the census metropolitan areas, census agglomerations and larger municipalities, using a price to income ratio (such as the median multiple). This would be consistent with the province's interest in economic growth and the standard of living of its citizens.

Urban policies that improve the standard of living and reduce poverty by restoring housing affordability should attract support from all political perspectives. There is nothing more fundamental in public policy than facilitating higher standards of living and eradicating poverty. The driving issue is not urban sprawl, nor is it urban design; it is rather a better standard of living and less poverty ([Section 9](#)).

“There is nothing more fundamental in public policy than facilitating higher standards of living and eradicating poverty.

1. Focusing on priorities

Throughout history, people have moved to cities for better lives. Cities offered better opportunities because households could expect to enjoy greater discretionary incomes¹ than in rural areas, and there were greater opportunities for upward economic mobility. Cities are economic entities. Former World Bank principal urban planner Alain Bertaud noted, "Large labor markets are the only *raison d'être* of large cities."² ***The very purpose of cities is to facilitate a higher standard of living for residents and to reduce poverty.*** He continues: "Increasing mobility and affordability are the two main objectives of urban planning. These two objectives are directly related to the overall goal of maximizing the size of a city's labor market, and therefore, its economic prosperity."³

Consistent with this, the virtually universal domestic public policy priority of governments is the betterment of people by facilitating a higher standard of living and reducing poverty. Achieving this objective requires that governments pursue policies that lead to higher household discretionary income. Governments must also proactively avoid policies that reduce discretionary income. Regrettably, urban containment policy, the subject of this report, increases house prices relative to incomes, thereby reducing discretionary income and the standard of living while increasing poverty.

People have advocated for urban containment policy for almost seven decades.⁴ Urban containment is referred to as "smart growth," "compact city policy," "growth management," "liveability" and "densification," among other terms. Urban containment seeks to limit the expansion of urban areas (suburbanization or pejoratively called "urban sprawl") by severely restricting or prohibiting development on or beyond the urban fringe and by other restrictions (Box 1, next page).

A related element of urban containment policy is to limit the use of the automobile⁵ by transferring demand to transit, cycling or walking.

Economic principle holds that, other things being equal, a scarcity in the supply of a product will tend to influence its price upward. The same is true of land for urban development—policies that severely restrict the availability of land are associated with higher and rising house prices. Economists Richard Green and Stephen Malpezzi summarize the issue: "When the supply of any commodity is restricted, the commodity's price rises. To the extent that land-use, building codes, housing finance, or any other type of regulation is binding, it will worsen housing affordability."⁶

The higher prices associated with urban containment policy have broken the historical link between house prices and household incomes ([Appendix B](#)), thus reducing household discretionary income.

Since housing is the largest item in household budgets,⁷ more-expensive housing reduces income, which reduces discretionary income. Less discretionary income means a lower standard of living and higher rates of poverty.

Urban Expansion in Context

Cities grow geographically as they add population. This has been the case since the first cities arose. This spatial expansion becomes greater as cities grow exponentially and transportation technology improves. This expansion is related to the desire on the part of people for better lives ([Section 1](#)). This report does not argue that urban expansion (urban sprawl) is inherently wealth generating; however, it has been associated with an unprecedented increase in affluence and a reduction in poverty.

Virtually all of the largest cities in the world have expanded at least as rapidly as they have added population (see “Dispersion in the World’s Largest Urban Areas”^{[11](#)}). Urban expansion is not a phenomenon unique to Canada or the United States. It can be witnessed from Atlanta, with the world’s lowest major urban area density, to London, Paris, Teheran, Lagos, Jakarta and Shanghai and even to Dhaka,^{[12](#)} which is the highest density large urban area in the world.

Urban containment policies seek to slow, stop or even reverse the organic expansion of cities. Nonetheless, in his recently published book, *Planet of Cities*, New York University professor and urban planner Shlomo Angel advises coming to terms with urban expansion.^{[13](#)} He urges the abandonment of artificial limits on urban expansion and population growth (such as urban containment boundaries), and he promotes programs to improve economic development and the quality of life. He decries the notion that “cities should simply be contained and enclosed by greenbelts or impenetrable urban growth boundaries” as “uninformed or utopian” because this makes sustainability “an absolute end that then justifies all means to attain it.”

Data over recent decades show that there has been an association between house prices and household income, with houses generally costing approximately three times incomes. However, this nexus has been broken, nearly exclusively in metropolitan areas with urban containment policies, from the most vibrant (such as San Francisco, London and Sydney, Australia) to those that have experienced significant industrial decline (such as Liverpool and Glasgow).

Much of the justification for urban containment policy is the expectation that it will materially reduce GHG emissions. However, urban containment policy has been shown to be an overly expensive and ineffective strategy for reducing GHG emissions ([Section 7.1](#)).

The province of Ontario has adopted strong urban containment policies over the last decade (Places to Grow), which are being applied throughout the Toronto^{[8](#)} area and the Greater Golden Horseshoe. At the same time, housing affordability has deteriorated markedly.

Experience elsewhere reveals that there is a strong possibility that without policy reforms that prioritize people over the urban form, urban containment policies could substantially worsen future housing affordability.

As shown in "Urban Policy: A Time for a Paradigm Shift,"⁹ there is a need to focus on the fundamental objectives of maintaining or improving the standard of living and reducing poverty. This report considers land-use, transportation policy and plans and their potential impact on the standard of living in the Greater Golden Horseshoe and especially in the Toronto area, where Places to Grow is having important initial effects.

The principal focus of the report is the cost of housing, which is the largest element of household budgets. Housing is also the budget element subject to the largest variation relative to income between metropolitan areas, with Vancouver's house price to income ratio being more than four times that of some markets in Atlantic Canada.¹⁰ Housing affordability, as used in this report, refers to broad measures of house prices relative to incomes for *all households* and is not limited to social housing, subsidized housing or housing for low-income residents. However, low-income housing is a crucial issue and tends to be more costly where public policies have allowed overall housing affordability to deteriorate substantially.

Housing affordability, as used in this report, refers to broad measures of house prices relative to incomes for all households and is not limited to social housing, subsidized housing or housing for low-income residents.

2. Places to Grow

Virtually all of the largest metropolitan areas in the world have experienced decentralization of population and declining urban population densities.¹⁴ This occurred as the automobile became the principal mode of transport in all major Western metropolitan areas, and households sought detached houses or other ground-oriented accommodation¹⁵ in lower density suburban areas (with a few exceptions¹⁶). This is occurring even in lower-and middle-income nations where household automobile ownership is much lower than in Canada. This is perhaps best illustrated by the metropolitan areas of sub-Saharan Africa and Manila, where much of the motorized mobility is by less formal van-based vehicles, which provide service to within walking distance of most origins and destinations in the built-up urban areas. In Vietnam, low automobile ownership has not deterred the rise in personal mobility, with the overwhelming share of urban passenger transport being by two wheelers (motorcycles and motor bikes). This has also led to declining urban densities as cities have expanded.¹⁷

2.1 Toronto: A compact urban area

Over the last five years, the Toronto metropolitan area has emerged as Canada's largest city, and is routinely ranked among the world's global cities.

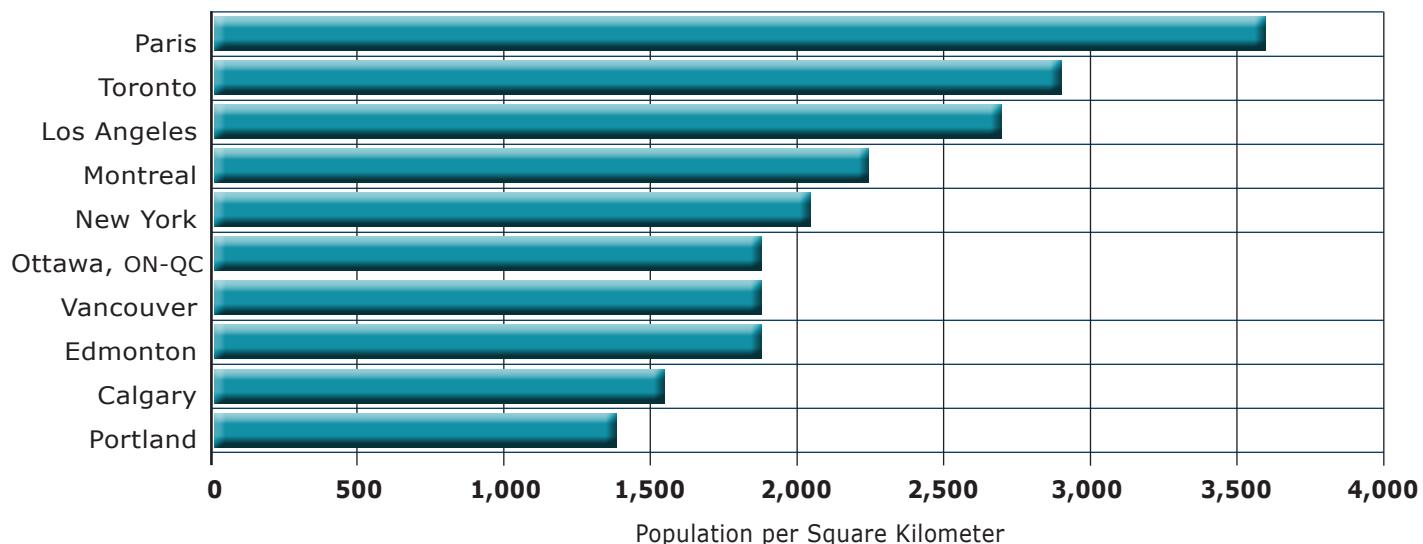
Despite contentions of urban sprawl, the Toronto urban area (continuously built-up urban area)¹⁸ is compact.¹⁹ Among the 45 urban areas in Canada and the United States with more than 1,000,000 people at their last census (2011 in Canada, 2010 in the United States), Toronto was the most dense (most compact in relative terms). Toronto's urban area had a population density of 2,900 per square kilometre in 2011, somewhat above second-place Los Angeles (2,700) and well above Montreal and New York. Toronto is more than twice as dense as Portland, Oregon, which holds an iconic place among advocates of urban containment policy and densification (Chart 1, next page).

Toronto is only 20 per cent less dense than Paris. Nearly all of this difference in population density is attributable to the high density of the pre-automobile and pre-transit ville de Paris (the urban core).²⁰ There is little difference in suburban densities (Chart 2, next page). Moreover, the population density of the Toronto-Hamilton-Oshawa combined urban area is equal to or greater than that of some European cities, despite Toronto's lack of a high-density medieval core (Chart 3, page 14).

CHART 1

Urban Density

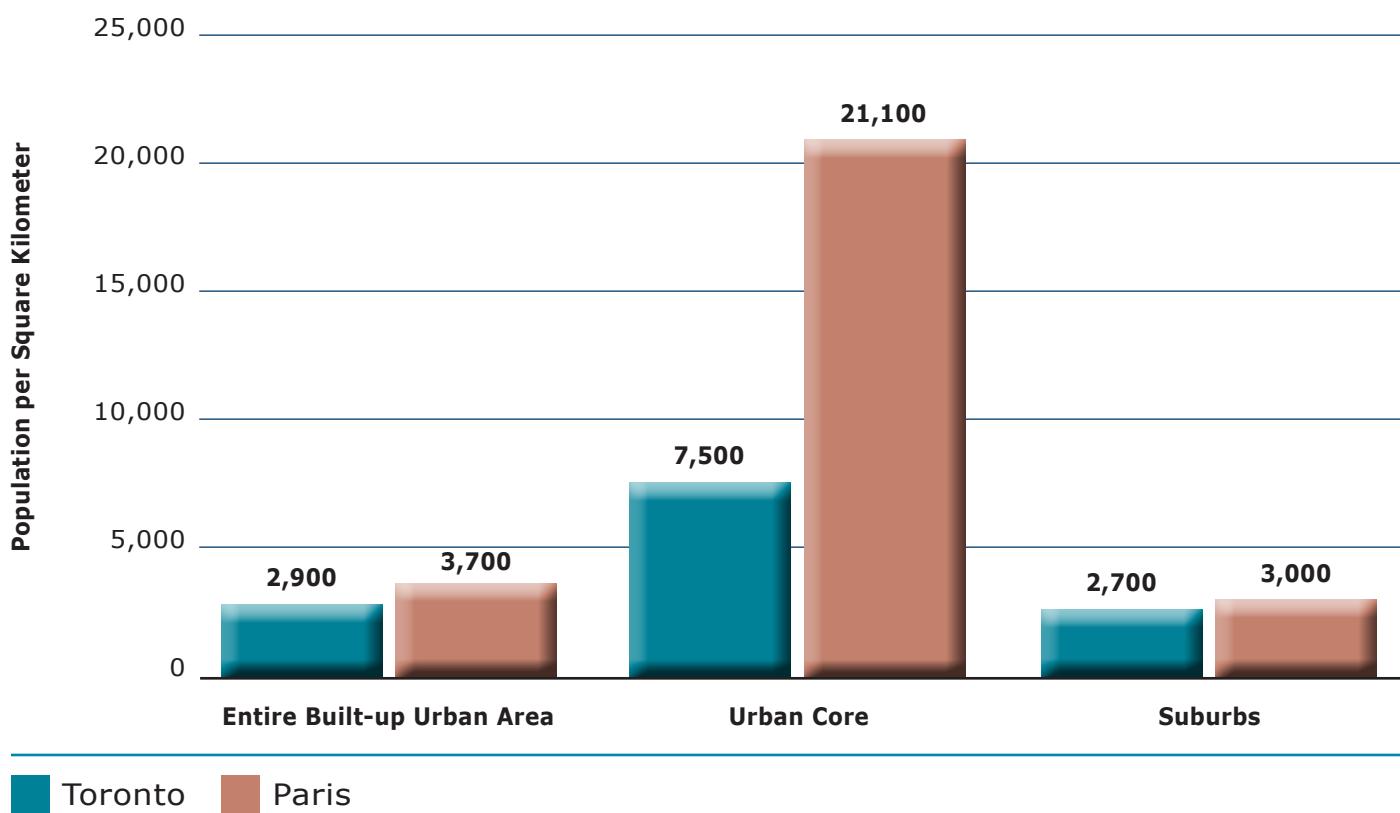
Urban Areas of Canada, U.S. and Paris (2011/2010)



Source: Calculated from Statistics Canada and U.S. Census Bureau data.

CHART 2

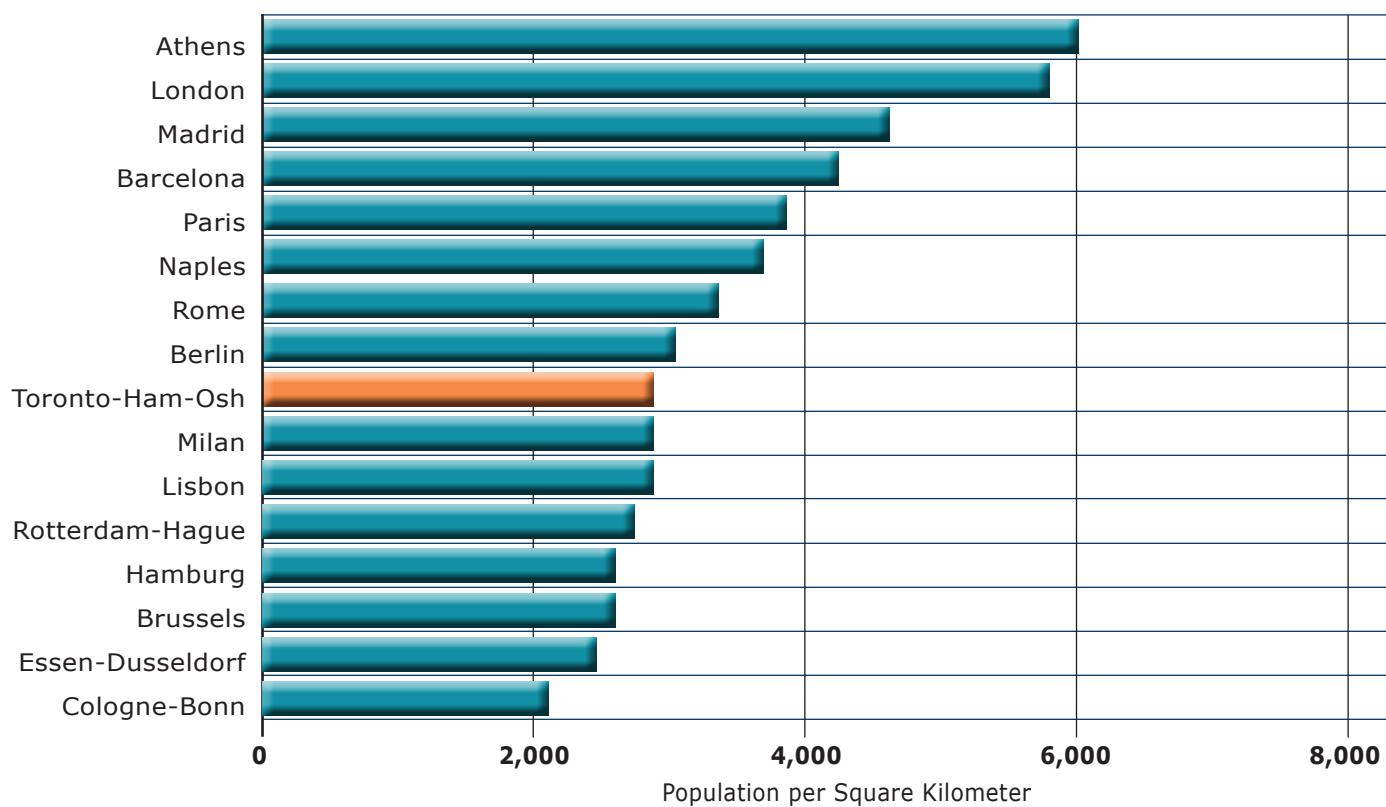
Comparison of Toronto and Paris Urban Density



Source: Derived from Statistics Canada and INSEE data.

CHART 3
Toronto-Hamilton-Oshawa and Europe Densities

Compared with EU Urban Areas over 2M Population



Source: Demographia World Urban Areas 2014.

2.2 Urban planning in the Toronto area: Places to Grow

There is a strong concern among urban planners that urbanization is consuming too much land and that people have become too dependent upon automobile transport. In an attempt to control urban expansion, which is pejoratively called “urban sprawl,” urban containment policies have been implemented in some metropolitan areas for nearly 70 years. More recently, curbing urban expansion has been justified by the concern about sustainability (principally reducing GHG emissions).

The province of Ontario has implemented policies that place significant limits on both new urban fringe developments and greater intensification (higher densities) in fully developed areas. The program, called Places to Grow, generally follows the urban containment model, which dates to the British *Town and Country Planning Act of 1947*. Similar policies have been implemented throughout the United Kingdom and in some New World (Canada, Australia, New Zealand and the United States), metropolitan areas such as Vancouver, Sydney, Auckland and Portland.

Places to Grow places significant restrictions on urban expansion, and it seeks to materially increase population and employment densities throughout developed urban areas and to limit their geographical expansion. Places to Grow also includes an aggressive transit expansion program (The Big Move). Much of the justification for Places to Grow is based on concerns about sustainability.

However, urban containment policies tend to impose significant costs in terms of materially higher house prices and more traffic congestion. These problems are already evident in the Toronto area.

Places to Grow, generally follows the urban containment model, which dates to the British Town and Country Planning Act of 1947.

3. The impact of urban containment policy on the standard of living

Economics teaches that, other things being equal, where there is a shortage of a demanded (wanted) good (whether land, gasoline, jewels, etc.) prices will tend to be driven up. The research on house prices confirms this principle, which is outlined below. It indicates a strong association between urban containment policy and higher house prices.

3.1 Fundamentals of the housing market

There has been a fundamental relationship between house prices and household incomes for decades. This relationship, which is indicated by an approximately 3.0 times (or less) ratio between median house prices and median household incomes, has predominated in Canada, the United Kingdom, Australia, Ireland, New Zealand and the United States ([Appendix B](#)).²¹

Generally, the fundamental connection between house prices and household incomes has been retained in the metropolitan areas that are not governed by strong urban containment policy or government policies that create land scarcity. On the other hand, the connection between house prices and household incomes has been substantially broken only where there are strong urban containment policies. All of the major metropolitan areas (in nine nations) with severely unaffordable housing (median multiples above 5.0) over the 10 years of the "Annual Demographia International Housing Affordability Survey" had strong land-use policies, principally urban containment policy.²² Conversely, none of the major metropolitan areas with liberal land-use policies had severely unaffordable housing. In other words, severely unaffordable housing is strongly associated with urban containment policy. No liberally regulated major metropolitan area in these nations has reached severe unaffordability (not even in the disastrous U.S. housing bubble).

3.2 Urban containment devices

The association between urban containment policy and the loss of housing affordability is principally the result of urban containment strategies (policy devices) that restrict the land available for new development, which drives up the price of land ([Section 3.2](#) and [Appendix A](#)).

Perhaps the most detrimental impact on the price of land for residential development is urban containment strategies that severely restrict the land that can be used for new housing. Three principal strategies are listed below. The strategies are often devised to allow for expansion as the demand for urbanization increases, although generally at higher population densities than before adoption. The purpose of this

expansion is to ensure that there is a land supply for a specified number of years of urban expansion (such as 20 years or 30 years). Scheduled expansions, however, have been difficult, and sometimes they have not been implemented.

One device is the urban containment boundary, which may also be called an “urban growth boundary.” The urban containment boundary permits development only within a line drawn around the specific urban area and permits no urban development outside the line. Urban containment boundaries are in place in such metropolitan areas as Vancouver, Portland, Auckland and Melbourne. Urban containment boundaries can lead to higher land prices and thus higher new-house prices if insufficient land remains within the boundary to preserve competitive land prices.

Another urban containment device is the growth area, which can be referred to by other labels such as “urban growth areas,” and “priority growth areas.” Planning authorities designate growth areas, and they are often identified in plans such as municipal comprehensive plans. Areas not included in growth areas are, in effect, no-growth areas. Growth areas have virtually the same effect as urban containment boundaries and green belts if they do not include sufficient land to preserve competitive land prices. Sydney, for example, relies on growth areas.

A further urban containment device is the greenbelt. A greenbelt is an area around an urban area in which urban development is not permitted. A greenbelt is nearly identical to an urban containment boundary, except that development may be permitted outside the greenbelt. The greenbelt is the principal urban containment strategy in England, and London’s is perhaps the best known. Toronto’s urban containment strategy includes a greenbelt.

Each of these devices restricts the supply of land, while the demand for housing continues unabated. The result, higher house prices, is consistent with economic theory.

3.3 The economic research

Perhaps the earliest evaluation of urban containment policy was *The Containment of Urban England*, which was a five-year project by a team of academics led by urbanologist Sir Peter Hall (1973) of University College, London. The subject of this early 1970s work was the housing market as it evolved since the enactment of the *Town and Country Planning Act of 1947*. Hall, *et al.* found that “perhaps the biggest single factor of the 1947 planning system is that it failed to check the rise in land prices which is probably the largest and most potent element of Britain’s postwar inflation.” The results are characterized as being inconsistent “with the objective of providing cheap owner occupied housing.” Moreover, Hall *et al.* note that the planning system has imposed the greatest burdens on lower-income households.²³

Former governor of the Reserve Bank of New Zealand Donald Brash wrote in the “Introduction” to the “4th Annual Demographia International Housing Affordability Survey,” [T]he affordability of housing is overwhelmingly a function of just one

thing, the extent to which governments place artificial restrictions on the supply of residential land.²⁴

In reports commissioned by the Blair government, Former Bank of England Monetary Policy Committee member Kate Barker wrote about a strong relationship between unaffordable housing prices and urban containment policy.²⁵

A New Zealand government report by Arthur Grimes (2007), then chairman of the Board of the Reserve Bank of New Zealand, attributed the loss of housing affordability in the nation's largest metropolitan area, Auckland, on urban containment policies. In another report, Grimes found that per acre prices just inside Auckland's urban growth boundary were 10 times that of comparable land on the other side of the boundary.

The link is so compelling that London School of Economics professor Paul Cheshire has concluded from his research that urban containment policy is irreconcilable with housing affordability.²⁶ Given the importance of housing affordability in household budgets, this means that urban containment policy is incompatible with maintaining or improving the standard of living.

One of Ireland's most respected economists, Colm McCarthy of University College, Dublin, described how adoption of urban containment policies not only undermined the fundamentals of the housing market, but also led to Ireland's destructive bubble and bust (and one of the most significant economic reversals suffered by any nation in decades).²⁷

"Ireland passed its first major piece of land-use planning legislation in 1963, modelled on the UK's *Town and Country Planning Act of 1947*. The intentions were laudable, to restrict the construction of unwelcome developments and to empower local authorities to take a more active role in shaping the built environment.

...Our old friend, the Law of Unintended Consequences, began to impact from the mid-Seventies onwards as house prices in Dublin began to diverge from the national average.

...Before land-use zoning came along, house-builders extended the city by buying up farms on the city's edge and building at whatever densities the market would support. But as more and more lands were withdrawn from the buildable stock by the planners, prices began to rise and the house-builders moved further away from the city proper."

McCarthy noted that urban containment policies were adopted with good intentions. The impact, however, has been disastrous.

The literature documenting the relationship between urban containment policy and disproportionately high house-price increases (the result of land-price increases) is reviewed in more detail in [Appendix A](#).

Consequences for low-income households

As noted above, Portland is one of the international leaders in urban containment policies. Portland has experienced significant house-cost escalation relative to income.

Portland planners have routinely claimed that one of their principal interests is to improve housing affordability for low-income households. Yet, Portland's low-income households have experienced an even greater loss in housing affordability than the average metropolitan-area household has.

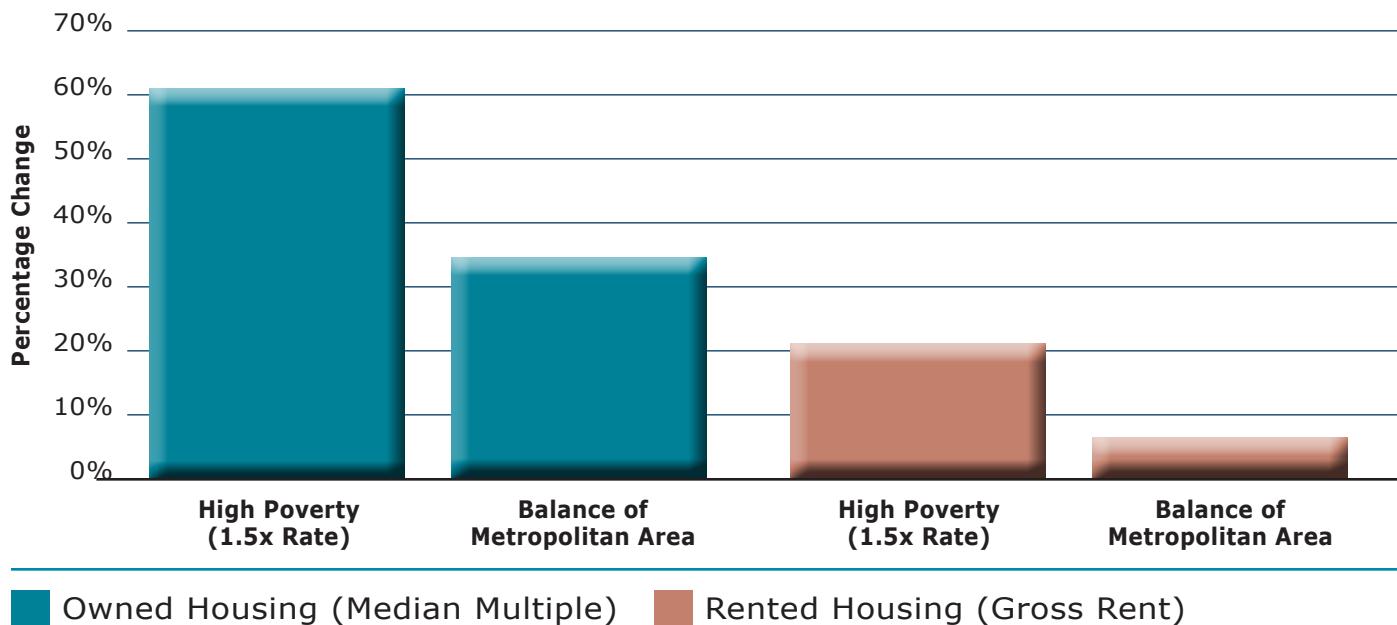
An analysis of postal code areas with poverty rates 50 per cent or more above average shows housing-cost increases for owned and rented housing. Owned housing rose in value (median multiple, using values) approximately 75 per cent more in the high-poverty areas than it did elsewhere in the metropolitan area. The cost of rented housing (adjusted for incomes) rose nearly three times as much in high-poverty areas (Chart 4).

In fact, Portland's programs have made the situation worse. In an effort to improve neighbourhoods, Portland has used urban renewal and tax incentive programs in less-affluent neighbourhoods or disused industrial areas. Neighbourhoods have been improved, while low-income people are being driven out. Many residents of Portland's largest historic black community, Albina, have been forced out and are being replaced by young professionals in the newer, more expensive housing.²⁸

CHART 4

Low-income Household Impact: Housing Costs

Portland: Urban Containment and Poverty Areas (1999-2009)



Source: Postal code data from U.S. Census Bureau.

More recently, advocates for the remaining minority community in Portland opposed the building in the neighbourhood of a new store (Trader Joe's) that caters to affluent consumers out of fear that it would encourage even more displacement of present residents.²⁹

The Oregonian (the metropolitan daily newspaper) compared 2000 and 2010 census data and noted that ethnic diversity was on the decline in some denser Portland neighbourhoods.³⁰ In particular, *The Oregonian* noticed that many black households had been forced to move from their more-central location to more-remote areas, where there is less transit service. This is particularly burdensome to lower-income households that have lower levels of access to automobiles.

Urban deconstruction and displacement of lower-income residents is not new in the United States. According to the Douglas Commission report (headed by long-time Illinois Senator Paul H. Douglas), between 1949 and 1967, 400,000 homes were demolished in urban renewal programs and another 330,000 in urban freeway construction projects.³¹ The deconstruction was disproportionately conducted in lower-income and minority neighbourhoods.³² According to Mindy Thompson Fullilove of New York's Columbia University, little replacement housing was built.³³

Research by Guanyu Zheng for the New Zealand Productivity Commission found that the higher prices generated by Auckland's urban growth boundary were more severe for lower-cost housing: ... [W]hen the supply of land on the urban periphery is restricted, the price of available residential land rises and new builds tend to be larger and more expensive houses.³⁴

The potential for social and economic consequences is best illustrated by California, which has the highest poverty rate, adjusted for housing costs, in the United States.³⁵ This, combined with its highest housing costs relative to incomes in that state, is stark testimony to the economic and social costs of urban containment policy.

In this connection, economist Anthony Downs wrote: "Higher prices then reflect a pure social cost because the efficiency of society's resource allocations has decreased." This means that if households have to pay more for their basic living expenses, such as for housing, they will have a lower standard of living.

3.4 Infrastructure costs

Higher infrastructure and public service costs are often cited as justification for a more compact urban form and the imposition of urban containment strategies.

At the same time, it is important to ensure that levies and charges on new housing do not materially interfere with housing affordability. However, the approach typical of urban containment policy is to front-load attributable costs, which makes new houses more expensive and thus less affordable. Economic research indicates that levies and fees can represent an add-on to house prices where market conditions permit.³⁶ This is likely to be the case more often than not in a strong housing market such as Toronto's. This approach is inequitable to buyers of new houses and has

Government-imposed costs, fees and levies

Before home builders can commence construction, raw land must be converted into finished lots. This is usually a principal task of the land developer, who arranges (and pays for) the local streets and utilities, such as sewage, electricity and natural gas lines. Home builders purchase the finished land, the price of which includes the roads and utilities that the developer put in place. The street and utility improvements are turned over to the municipality and utility system owners.

In addition, government-imposed charges are an important element of new-house costs.³⁹ These charges include the provincial sales tax, the GST and land transfer taxes as well as transaction fees and infrastructure fees (sometimes called development levies).

In addition to the expense of preparing the land for construction, developers are also responsible for public service levies and fees (sometimes called impact fees) paid to municipalities to offset the cost of off-site municipal improvements including infrastructure fees (for streets outside the subdivision and for utilities) and land dedication fees (such as for parks). Generally, these fees are a flat rate per unit of housing, by type of unit (such as single-detached, semi-detached, townhouse, apartment or condominium).

There are equity concerns about funding public facilities through up-front charges on developers, which are routinely included in lot prices charged to home builders and home purchasers.⁴⁰ Economic literature indicates that these charges are associated with *both* higher new-house costs and higher existing-house costs, all things being equal.⁴¹ In effect, new-home buyers pay for the new infrastructure, while existing homeowners and multi-family housing owners receive a windfall from the higher values induced by the development charges. At the same time, buyers of new houses, condominiums and rental units are burdened with paying for public facilities in advance, while existing owners have been permitted to pay their share of such expenditures over time.

Other public facility financing methods are available that would permit owners of homes and multi-unit buildings to pay the attributable costs on a pay-as-you-go basis. These include municipal debt instruments and user fees. Reliance on such instruments could reduce the pressure for higher housing costs, in both the new and the existing stock, leading to improved housing affordability.

Economist Claude Gruen notes further difficulties with government-imposed charges⁴² such as the fact that public service provision tends to be less expensive in newer suburban communities and that repair and upgrading (required for increasing densities) of infrastructure is more costly in more-dense, established areas.

been associated with higher house prices, including existing housing (Box 2).

Fees and levies are a contentious issue. Developers and home builders often think that fees and levies are too high or that they can cover non-essential infrastructure and services. Government officials often consider fees and levies to be too low. Moreover, the setting of fees and levies is not an exact science.

Different jurisdictions take radically different approaches to them. For example, a 2009 Canada Mortgage and Housing Corporation (CMHC) survey found that municipal fees and levies on new single-detached houses varied by a factor of more than 10.³⁷ This may indicate differing perceptions (or tastes) with respect to the impact and desirability of new housing. Some jurisdictions in a metropolitan area might have different perceptions of fees and levies that are appropriate to charge new-home buyers.

New-house prices could be more affordable if attributable charges were financed by debt payable over time. Special debt issues payable through property taxes, for example, by the benefitting homeowners could accomplish this. Another approach would be to allow the establishment of municipal utility districts, which issue public debt that finances the necessary infrastructure and, again, is repaid by the purchasing homeowners. These approaches have been successful in California, Texas and Colorado and are presently under consideration by the New Zealand government.³⁸

“New-house prices could be more affordable if attributable charges were financed by debt payable over time.

4. Housing affordability and the standard of living in Toronto

Historically, the Toronto area has been characterized by housing affordability broadly in line with the post-World War II experience in other metropolitan areas of the New World. Until a Toronto area demand-driven price bubble in the late 1980s, median house prices tended to be approximately three times median household income (this housing affordability metric is called the “median multiple”). After reaching a high of 4.3 in 1990, the median multiple had dropped back to a more typical 3.4 by 1999, as supply adjusted to the greater demand.

However, since 2000, housing affordability has deteriorated markedly. The median multiple in the Toronto area remained at near the historical level in 2000 at 3.5. However, by March 2014, the median multiple had risen to 6.4. This is an 84 per cent increase in house prices relative to income in just 14 years and the highest yet recorded (Chart 6, page 25).

The house price increases have been broad based. The median price of detached housing has risen 91 per cent relative to income since 2000. Semi-detached housing has increased 87 per cent. Condominium housing has also substantially increased in price, at 67 per cent for townhouses and 66 per cent for apartments (Charts 7 and 8, page 26).

4.1 Consequences of the housing affordability losses

The impact on households has been considerable. House prices are so high that the median-income household purchasing the median-priced house would have \$17,000 less in discretionary income⁴³ than they would have if the 2000 price to income ratio had been preserved. A household buying the median-priced detached house would have \$22,400 less than at the 2000 ratio, and a household purchasing a semi-detached house would have \$17,500 less. A household buying a town house would have \$11,900 less and a household buying an apartment (such as a condominium in a high rise building) would have \$10,500 less (Chart 9, page 32).

Further, there is a growing gap between existing house prices and new single-family house prices. In 2000, the average new single-family house price was 25 per cent above that of the average existing house. By 2012, the difference had expanded to 41 per cent, an increase of 65 per cent. The Royal Bank of Canada recently noted that a two-tier housing market has emerged in Vancouver and Toronto, with single-family house prices opening up a much wider gap in prices relative to other housing than ever before.⁴⁴

Urban Myth:

Smaller lots and higher density improve housing affordability

It might be (wrongly) expected that the smaller building lots and higher densities required by Places to Grow will lead to lower house prices. In fact, urban containment policy leads to higher lot prices at the same times as lot sizes are reduced and population densities are increased. This is because the prohibitions on urban expansion lead to increased demand within the already developed area.

This is illustrated in U.S. urban containment markets, such as San Diego, which have seen the price of lots for development rise many fold even as lot sizes have been radically reduced. At the same time, lot prices have remained at historic levels relative to construction costs in liberally regulated markets where lot sizes have not been decreased.⁴⁶

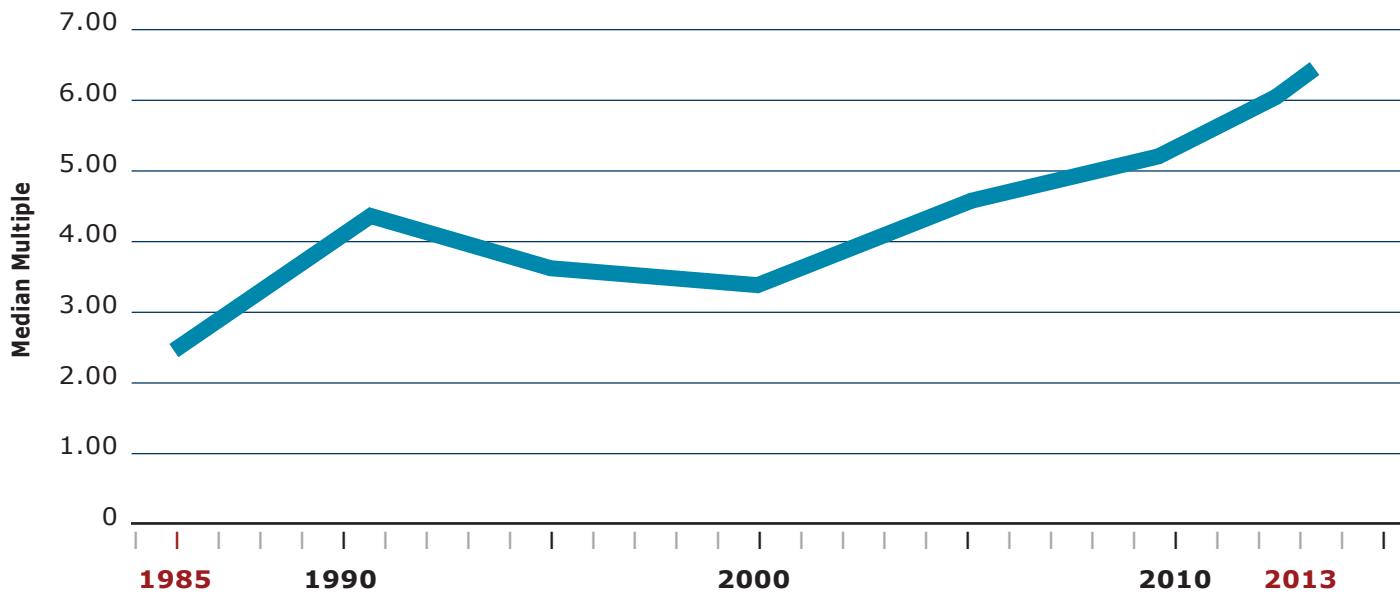
This is also evident in the Toronto area, where new condominium prices relative to incomes have risen to the same level as those of detached houses less than a decade ago. In 2000, the median multiple for detached housing was 4.3, which has now been equalled by condominium apartments, despite their far smaller ground footprint and floor area (Section 4).

In the 10 years of the “Demographia International Housing Affordability Survey,” no major market has reached a severely unaffordable rating (price to income ratio of 5.1 or more) except for those with strong urban containment policies.

Indeed, all forms of housing today, from condominiums to detached, are well above the 2000 price of detached housing relative to income. Relative house-price increases have been observed virtually wherever strong urban containment policy has been implemented. This belies claims to the contrary by some urban containment advocates (Box 3).⁴⁵

CHART 5

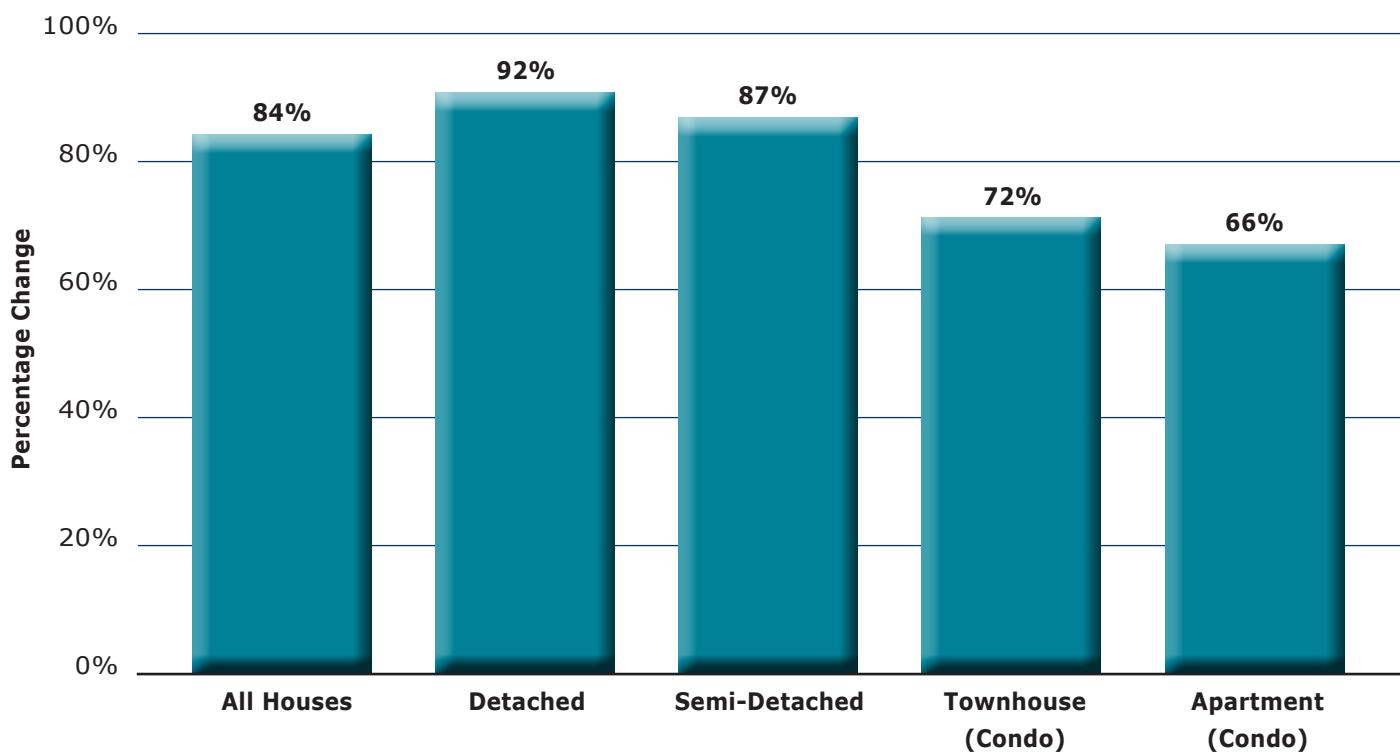
Median House Prices and Median Incomes (1985-2013)



Source: Estimated from Toronto Real Estate Board data.

CHART 6

Change of House Prices Relative to Incomes Toronto Census Metropolitan Area (2000-2014)

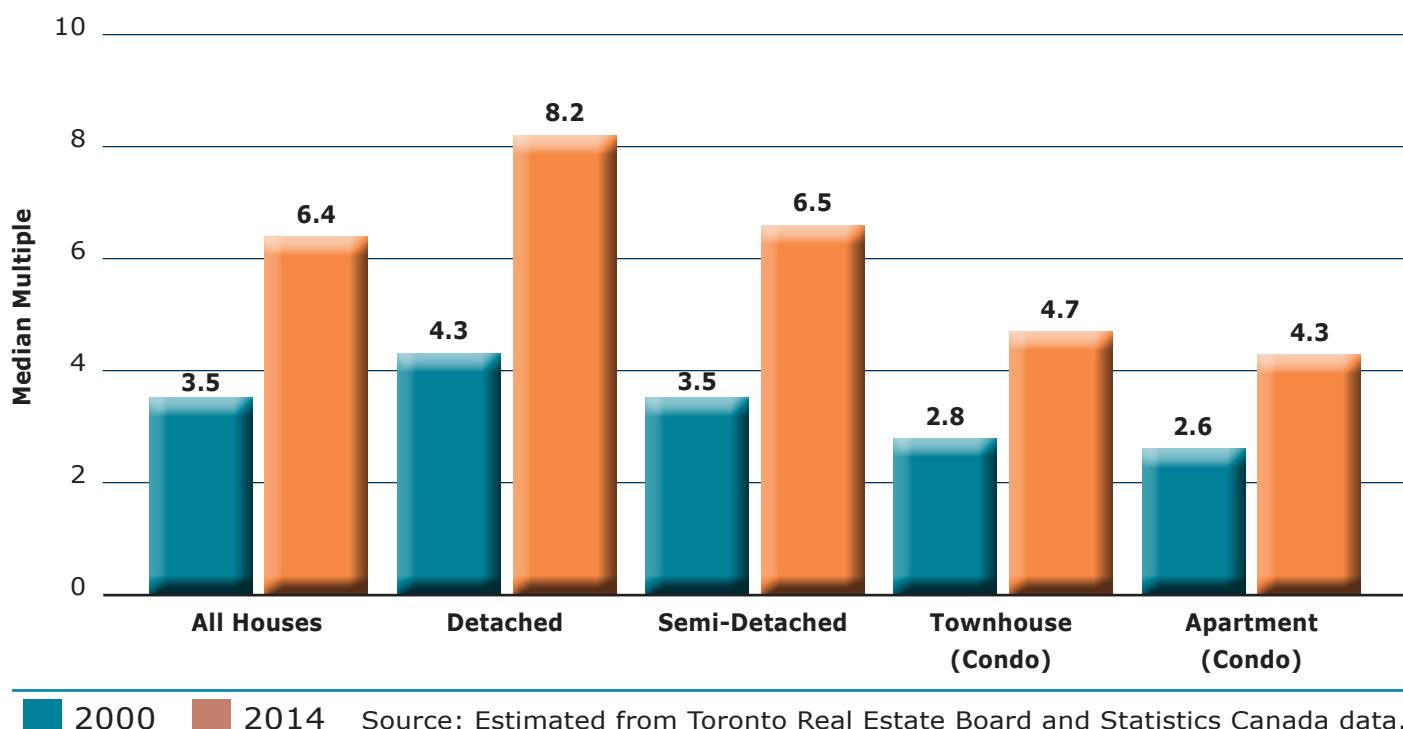


Source: Derived from Toronto Real Estate Board data.

CHART 7

Prices Relative to Incomes by House Type

Toronto Area (2000 and 2014)

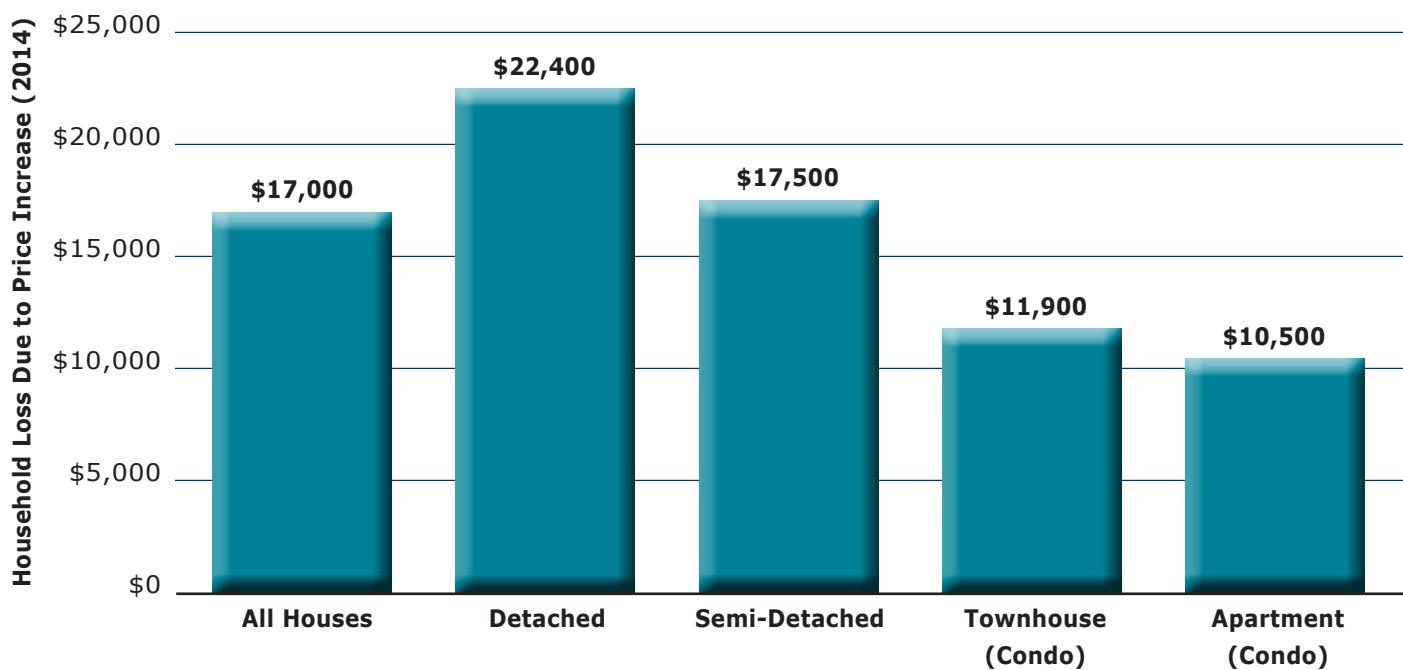


Source: Estimated from Toronto Real Estate Board and Statistics Canada data.

CHART 8

Loss in Annual Discretionary Income

Due to House Price Increase (2000-2014)



Source: Estimated from Toronto Real Estate Board and Statistics Canada data.

4.2 Factors in the housing affordability losses

Toronto's unprecedented decoupling of house prices from household incomes is consistent with both economic theory and expectations based upon the experience of urban containment policy in other major metropolitan areas.

Further, as would be expected, this cost escalation started during the development of the Places to Grow program and has continued through its implementation. Such a response is similar to the stock price increases or decreases that occur as investors react to anticipated earnings performance well before results are published. The natural reaction of the development industry is to accelerate land purchases to ensure sufficient inventory for future development. At the same time, well placed landowners (those whose properties are near or on the urban fringe) would be able to command higher prices. Consistent with this phenomenon, economists Charles Nathanson and Eric Zwick (Harvard University) associated strongly escalating land prices (before the U.S. housing bust) in Las Vegas with a longer-term development constraint (a U.S. government development boundary), leading to speculative activity as developers responded to an expected, though not yet real, future land shortage.⁴⁷

This type of house-price escalation relative to income was predicted for the Toronto area by this author in 2004. (See "Myths about Urban Development and the Toronto Greenbelt".)⁴⁸

"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."

However, this could be just the beginning of the economic disruption for Toronto-area households.

It seems inevitable that today's low mortgage interest rates will return to historic levels in the years to come. This could result in significant increases in mortgage payments for households already owning homes (at loan renewal) and many could lose their homes as a result.

Housing affordability could be retarded even further. Toronto's adoption of urban containment policy came somewhat later than it did in other major metropolitan areas where the greatest housing affordability losses have occurred. By 2013, the house prices relative to incomes remained 50 per cent above Toronto's in Sydney and San Francisco and were 70 per cent higher in Vancouver.

Speculative activity is disproportionately drawn to markets where supply restrictions force prices up at extraordinary rates (as has been occurring in the Toronto area). Housing markets are becoming increasingly globalized and foreign buyers have been cited for increasing the demand for housing in Vancouver and California.⁴⁹ Globalization in a market with artificial political constraints on land supply, such as Toronto's, could lead to accelerated house-price increases.

The result has been an unprecedented break in the previously dominant nexus between incomes and house prices ([Appendix B](#)).

5. Mobility and economic growth

Urban containment policy also seeks to change the behaviour of residents by discouraging automobile use and encouraging more use of transit, cycling and walking. Yet, by virtue of their inherently slower travel times and their more-limited geographical access within the metropolitan area, greater use of these modes can lead to reduced economic growth.

5.1 Myth of the jobs-housing balance (urban villages)

Urban containment policy's mobility strategies are based on invalid conceptions of metropolitan areas and the role that mobility plays in their economic performance. Metropolitan areas are unitary labour markets that provide greater opportunities for employees and employers to match skills and job requirements. By discouraging the quickest mode of travel (in the modern case, the automobile), labour markets can become fragmented and less economically vibrant, which can lead to a lower standard of living and greater poverty.

These urban containment policy initiatives have been referred to as the "jobs-housing balance," or "urban villages," which imagine that planners can site residences and employment such that people will travel much shorter distances to work. The fundamental problem with these concepts is that people and enterprises will tend to seek the best employee-employer matches that are accessible. Attempts to divide metropolitan areas (labour markets) into smaller parts through urban design in democratic societies have been largely hopeless.

According to former World Bank principal planner Alain Bertaud,⁵⁰ the "model does not exist in the real world because it contradicts the economic justification of large cities: the efficiency of large labor markets." He continues: "[T]he urban village model exists only in the mind of urban planners." He supports the point by noting that Seoul's satellite communities were intended to be self-contained towns (urban villages) in which most residents both lived and worked. Yet, most of the workers employed in the towns live in other parts of the metropolitan area. At the same time, most of the residents of the towns worked in other parts of the Seoul metropolitan area. He also says that the Stockholm regulations that require a jobs-housing balance have no impact on shortening commute distances even when such a balance is achieved.

Our research using 2001 census data indicated that the London-area new towns, also intended to be populated principally by people who work in them, had average work-trip travel distances of more than the towns' diameters.⁵¹ This means that large numbers of people were travelling to work outside the towns. In London, as in Seoul, the planners can conceptualize the self-contained satellite towns, but it is beyond them to force the behaviours that make them work.

Further, attempts to divide (Balkanize) the labour market into smaller pieces by restricting mobility can be expected to reduce economic growth.

5.2 Access and Economic Growth

The economic literature generally associates stronger urban area economic growth and job creation with the ability of workers to access the maximum number of jobs in a short travel time. Access is fundamentally a measure of time. Access can include mobility measures (such as the travel time to work), but it also includes electronic access, which is virtually immediate, and more employees work from home by connecting to workplace locations that may be local, international or even virtual (working at home).

For decades, minimizing access time has been a principle of transport planning. Projects are routinely evaluated, at least in a part, based on the amount of time that they will save users as well as the expected economic effects.

Remy Prud'homme and Chang-Woon Lee examine the productivity of cities and relate it to the effective size of labour markets. The labour market is defined both in terms of employers and employees and measured by the number of jobs in the metropolitan area that can either

- (1) Be accessed in a particular period of time (such as 30 minutes) by workers (employee point of view) or;
- (2) Be accessed by the labour force in relation to the work location (enterprise point of view).⁵²

Further, research by Robert Cervero indicated a strong relationship between higher journey-to-work travel speeds and employee productivity.⁵³

"... average commute speed—reflecting the provision of transportation infrastructure—most strongly influenced labor productivity in the San Francisco Bay Area, with an elasticity of around 0.10—every 10 percent increase in commuting speed was associated with a one percent increase in worker output, all else being equal."

David Hartgen and M. Gregory Fields indicated similar results when researching U.S. urban areas,⁵⁴ as did this author for international urban areas.⁵⁵ The economic advantages of personal mobility extend to lower-income households (Box 4, next page).

Mobility for low-income households

The role of the automobile in providing mobility for lower-income households is often underestimated. Research on the mobility opportunities of lower-income households parallels the more general findings above. In research published by the Brookings Institution, Evelyn Waller and Margy Blumenberg noted the importance of automobile access to lower-income workers.⁵⁶

Even in cities with good transit service, transit travel times, on average, far exceed automobile travel times because of walking to and from stops, waits at stops and for transfers, and frequent vehicle stops along the way. These slower travel speeds are especially difficult for parents who must 'trip chain,' make stops for child care or shop along the commute.

They suggested that "[g]iven the strong connection between cars and employment outcomes, auto ownership programs may be one of the more promising options and one worthy of expansion." And further that "[t]hose workers fortunate to have access to automobiles can reach many employment opportunities within a reasonable commute time regardless of where they live."

Steven Raphael and Lorien Rice find substantial advantages in employment outcomes for people with cars compared with those without cars.⁵⁷

6. Mobility and competitiveness in Toronto

As is indicated in [Section 6.3](#), intense traffic congestion and longer work-trip travel times are associated with reduced economic productivity and job creation. Even though work trips represent a minority of urban trips, their concentration in the morning and evening peak periods is the proximate cause of most recurring traffic congestion. As a result, special attention to the work trip is appropriate.

Metropolitan competitiveness

Political, business and other interests recognize this transportation challenge to Toronto's competitiveness. The Toronto Region Board of Trade has raised concerns about Toronto's long work-trip travel times.⁵⁸ Among the 10 North American metropolitan areas with more than 5 million people, Toronto has the third-longest average one-way work-trip travel time at 32.8 minutes. Only New York and Washington have longer average travel times (Chart 9, next page).

According to the Federation of Canadian Municipalities (FCM), Canada's competitiveness is being retarded by long commute times.⁵⁹

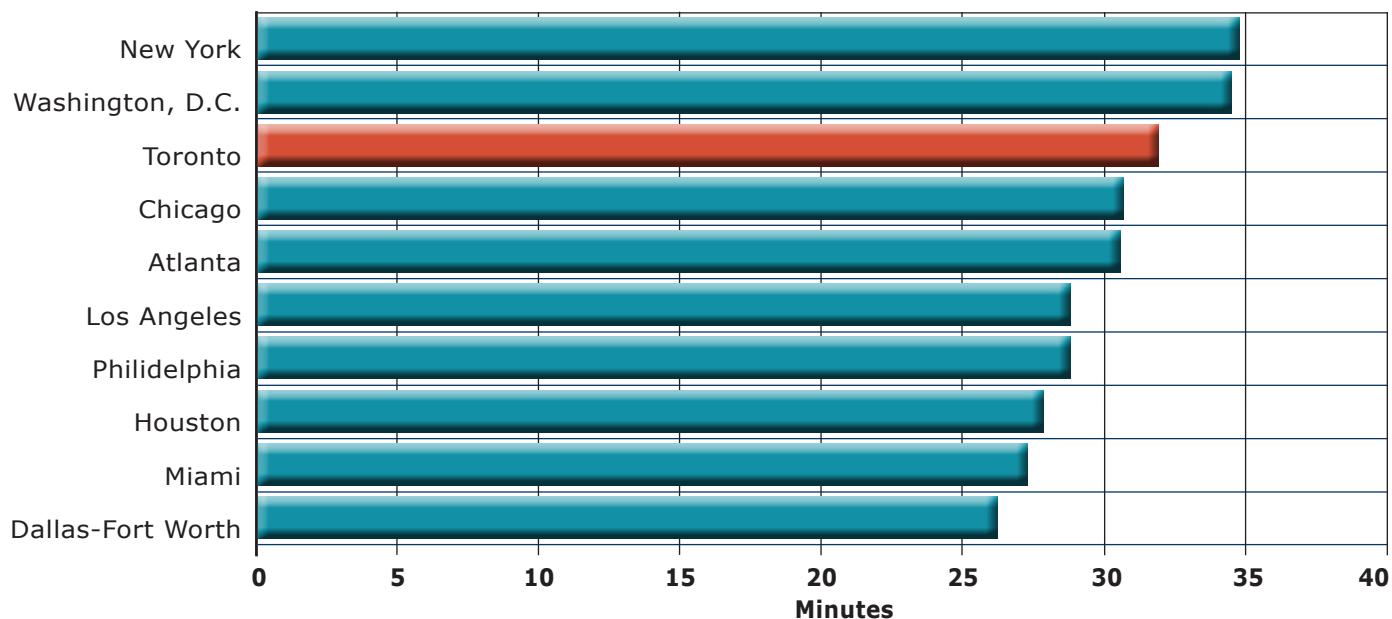
"Long daily commutes are hurting our economy, environment, and quality of life. It's a national problem requiring a national solution. The most recent estimate in 2006 pegged the cost of traffic delays at more than \$5-billion a year, but there is growing evidence that today's cost is much higher. The average Canadian commuter spends the equivalent of 32 working days a year commuting to and from work, facing some of the worst commute times in the developed world."

The Toronto Region Board of Trade has also indicated that worsening gridlock is among the "key structural issues" needing attention.⁶⁰ The two international congestion-reporting systems rank Toronto as having the third-worst traffic congestion among metropolitan areas with more than 5 million people (Charts 10 and 11, next page).

CHART 9

One-way Work-trip Travel Times

Metropolitan Areas Over 5,000,000 People in North America

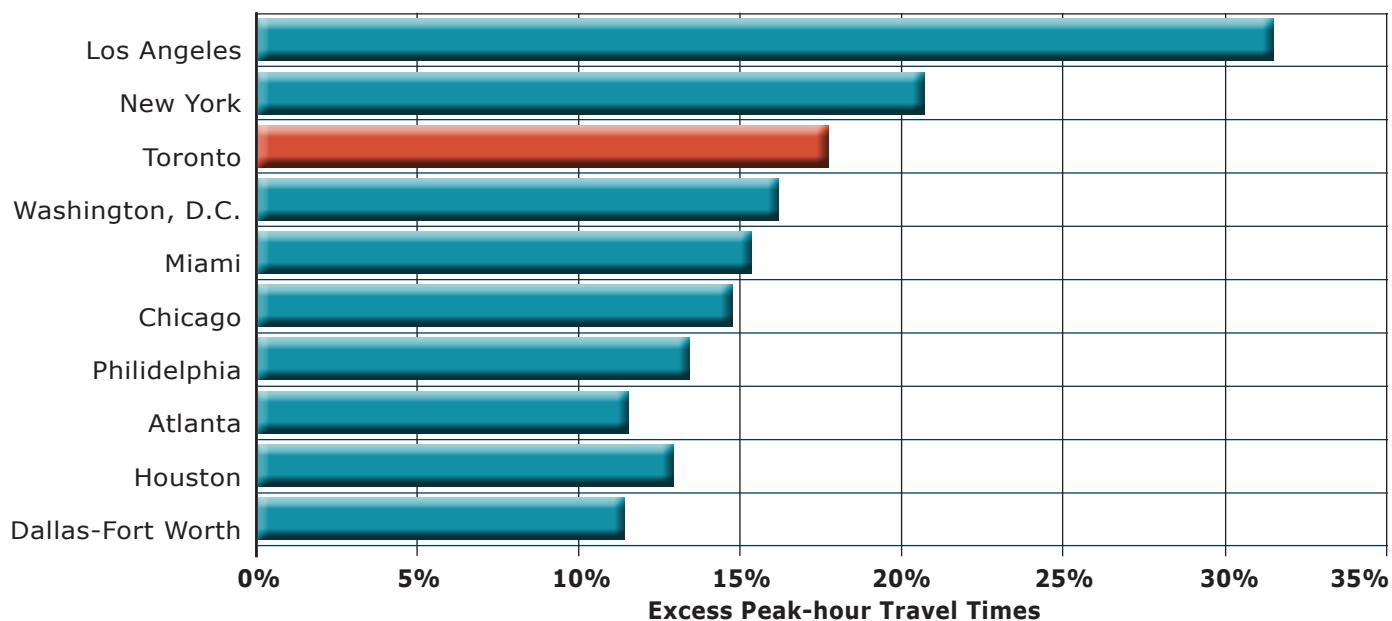


Source: Data from Statistics Canada and U.S. Census Bureau.

CHART 10

Inrix Travel Congestion Ratings

Metropolitan Areas Over 5,000,000 in North America (2013)

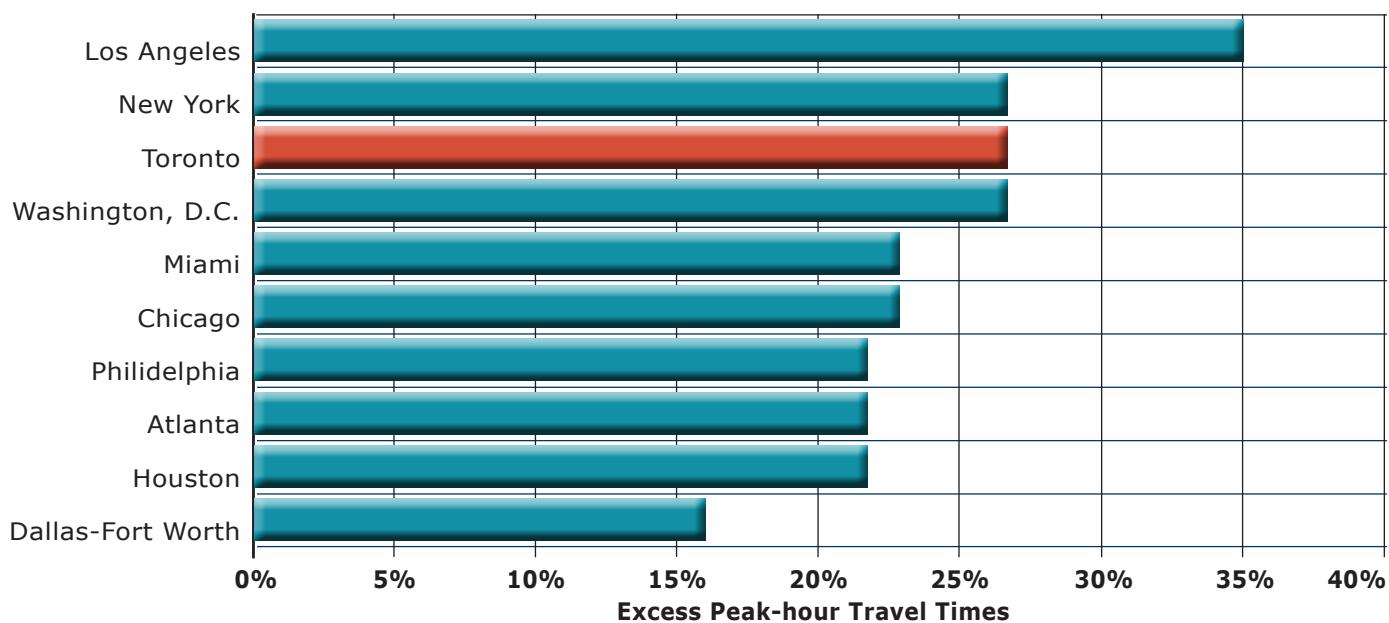


Source: Derived from Inrix.

CHART 11

TomTom Travel Congestion Ratings

Metropolitan Areas Over 5,000,000 in North America (2013)



Source: Derived from TomTom.

6.1 Densification and traffic congestion

Higher densities, such as are sought by Places to Grow, are associated with greater traffic congestion. This occurs because the number of vehicles in an area tends to increase as densities increase. Moreover, urban containment policies virtually never provide the necessary additional road capacity to maintain previous traffic conditions, much less reduce traffic congestion.

In a widely cited study, Reid Ewing of the University of Utah and UC Berkeley's Robert Cervero reported only a minimal relationship between higher density and less driving per capita.⁶¹ In a meta-analysis of nine studies that examined the relationship between higher density and per household or per capita car travel, they found that for each 1 per cent of higher density, there is only 0.04 per cent less vehicle travel per household (or per capita). This would mean that 10 per cent higher density (10 per cent more people) would result in an increase of 9.6 per cent in total driving. In other words, driving increases nearly as much as density. Further, this is before taking into account the greater GHG emissions that are produced per kilometre driven in slower, more congested traffic.

Sierra Club research acknowledged the association⁶² using an Internet-based calculator that shows a 61 per cent increase in traffic density for each doubling of population density.⁶³

The relationship between higher densities and greater traffic congestion is obvious. As a defined area increases its number of households, traffic volumes must increase

unless both the existing residents and the new residents drive far fewer miles on average than did those who already lived in the area. Alternatively, if the existing residents continue to drive the same distances, increased traffic volumes could be avoided only if the new residents do not drive at all. Because there is more traffic in the same geographic area, there is likely to be more traffic congestion, which means roadway travel will slow and greenhouse gas emissions will increase.

Research by the RAND Corporation and others also document the relationship between higher densities and greater traffic congestion.⁶⁴

It seems likely that the densification strategies of Places to Grow will worsen traffic congestion in the Toronto area.

Higher Densities and Travel Behaviour: An important part of the reason that higher population densities are associated with greater traffic congestion is that as distances increase from downtown, residents are much more likely to use automobiles rather than transit. Statistics Canada research indicates that travel behaviour is similar except in close proximity to downtown areas regardless of whether residents live in detached or high-rise multifamily housing.

"Above 10 kilometres from the city centre, however, the impact of neighbourhood density on automobile use dwindles until it almost vanishes. If the effects of other factors are kept constant, the predicted probability that a person living in a medium- or high-density neighbourhood made all trips by car was not statistically different from that of a person living in a low-density neighbourhood."⁶⁵

6.2 Negative health effects of higher population densities

The greater traffic congestion resulting from higher population densities leads to higher air pollution levels at the neighbourhood level and to negative health risks. For example, research published by the American Heart Association found "long-term exposure to air pollution from a nearby freeway or heavily trafficked streets is associated with a hardening of the arteries that could raise the risk of heart disease and stroke."⁶⁶

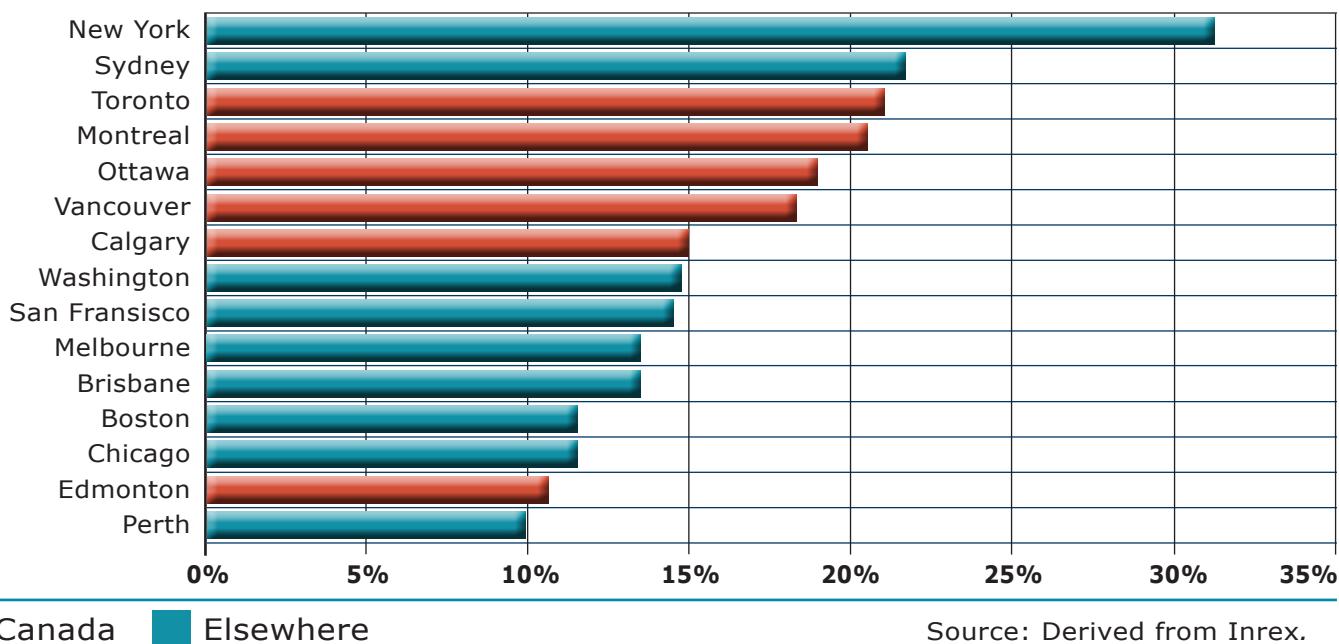
6.3 Transit in the Toronto area

The Toronto area has one of the most successful transit systems in the high-income world outside Asia. The buses and trains of the Toronto Transit Commission (TTC), Metrolinx, York Region Transit and municipal operators have the third-highest transit work-trip market share in the New World, trailing only New York and Sydney.⁶⁷ Toronto also ranks near the top in transit work-trip market share in metropolitan areas with more than 5,000,000 residents in North America and Western Europe (Chart 12).

CHART 12

New World Transit Work-trip Market Shares

Highest Major Metropolitan Areas (2013)

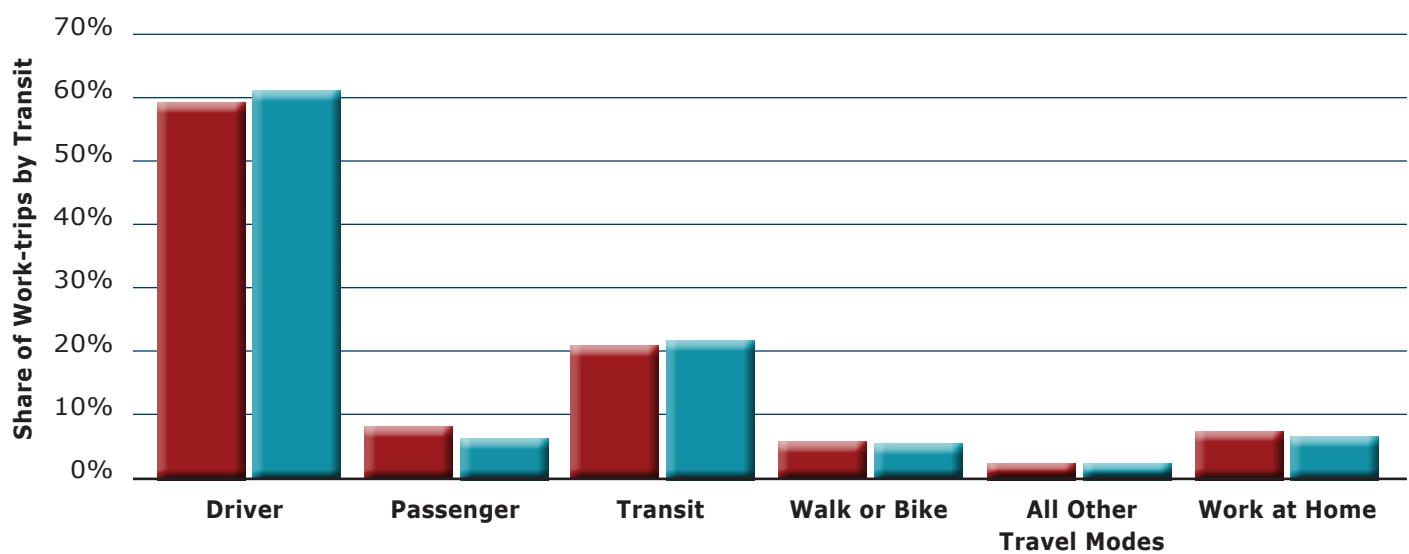


Like virtually all other major metropolitan areas in the New World and even in Western Europe, Toronto's transit is having problems expanding its market share relative to automobiles. Statistics Canada data indicate that the work-trip market shares for automobiles increased in Toronto between 2006 and 2011 (Chart 13) as well as in three of the other five major metropolitan areas (Montreal, Calgary and Edmonton).

CHART 13

Change in Transit Work-trip Market Share

Toronto Metropolitan Area (2006-2011)



Transit's strength: Downtown and the urban core

At the same time, transit plays a crucial role in the urban economy through its strong downtown commute market share.

Transit's strength is downtown (the central business district or CBD). The CBD has by far the highest density of employment in Toronto and is thus best suited for the converging radial lines from around the region. Transit provides competitive and frequent service to the CBD. For many commuters, transit provides a no-transfer trip from home or from a suburban train station to within walking distance of a job in the CBD.

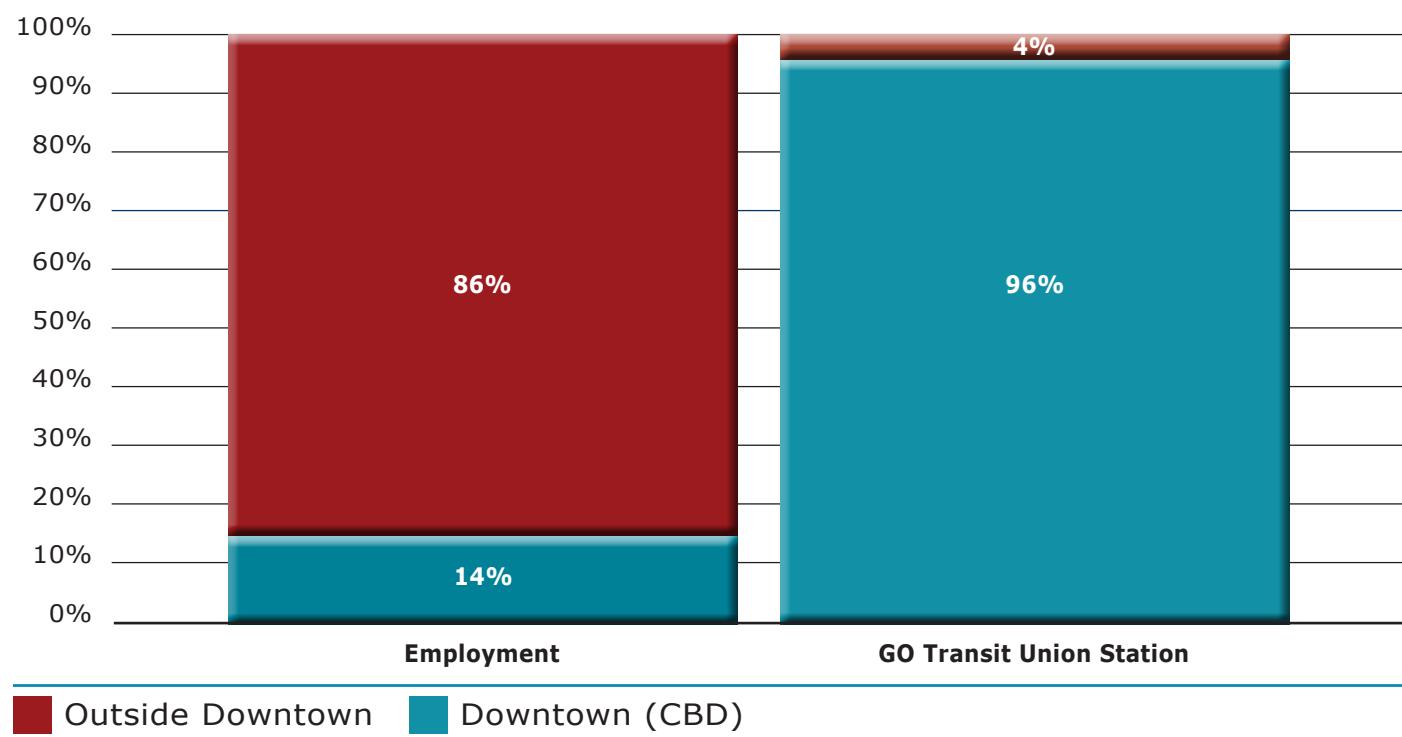
Approximately two-thirds of trips in the morning peak period to the central business districts are by transit.⁶⁸ From the perspective of customers, transit's success in capturing its large downtown market share is due to its competitiveness with the automobile.

However, as competitive as transit is for CBD destinations, transit is generally not competitive with the automobile for commuting to locations outside the CBD. For example, 96 per cent of GO Transit commuters start or end their trip at Union Station in downtown. Yet, only 14 per cent of the employment in the urban area is downtown (Chart 14).⁶⁹

CHART 14

Employment and GO Train Commuting

Toronto Urban Area (2006)



Source: Data from Metrolinx and Transportation Association of Canada.

This is not simply a problem of system design on the part of the TTC or Metrolinx or the other operators. For transit to play a major role in reducing traffic congestion requires automobile-competitive service throughout the area. This means that transit must be within walking distance of virtually all origins and destinations and that transit travel times must be nearly as quick as by car. This is accomplished by today's transit system to downtown Toronto destinations but not for the vast majority of other destinations.

Automobile-competitive transit is virtually impossible throughout the modern metropolitan area, research by this author and Jean-Claude Ziv of the Conservatoire national des arts et métiers in Paris indicated.⁷⁰ Automobile-competitive transit is simply beyond the reasonable financial capability of Toronto, the province or the nation. The same is true of virtually all the world's major metropolitan areas.

Not surprisingly, therefore, walking and cycling continue to account for only a small part of commuting in the Toronto metropolitan area. In 2011, walking and cycling accounted for 5.7 per cent of commuting, which is down from 6.2 per cent in 2006.⁷¹

The Big Move

The province and regional and local officials have approved an aggressive transit improvement program called The Big Move. The plan will cost approximately \$50-billion and will more than triple the length of rapid transit lines in the Greater Toronto-Hamilton Area.

Yet, the substantial transit improvements promised by The Big Move will fall far short of an automobile-competitive transit system. The Big Move, for example, forecasts a much-improved share of transit work-trip travel that can be completed in 45 minutes. However, today, the average drive-alone work-trip travel time is 29.2 minutes. Planning for The Big Move also indicates that rapid transit will be available within two kilometres of 81 per cent of residents. Yet, international research generally indicates that the average person will walk only 400 metres to a transit stop, far less distance than the two kilometres intended by The Big Move. It seems unlikely that many people will walk to transit that is two kilometres away in winter or in the humid summer.

Transit travel times and metropolitan competitiveness

There is an expectation that transit can play a major role in reducing the long commute times that make Toronto less competitive. This expectation is evident in planning documents such as "The Transit We Need," which indicates that "Criterion #1" should be that "[t]ransit investments must help ease traffic congestion."⁷² FCM has expressed the view that political leaders⁷³...

"... must support concrete targets to stop rising commute times. They need to reinvest more tax dollars—that our communities send to Ottawa—in new buses, subways and commuter rail. They need to sit down with cities and provinces to fill the gaps in our transportation networks."

Further, the Toronto Region Board of Trade attributes (at least in part) Toronto's long commute times and intense traffic congestion to insufficient transit ridership.⁷⁴

Commuting by transit takes longer

However, transit does not reduce commute times. The principal reason is that there is little transit service that is time-competitive with the automobile to work destinations outside downtown and the inner urban core.⁷⁵

Work-trip travel times by transit are considerably longer than they are by car. The average automobile one-way work-trip travel time for people driving alone is 29.2 minutes in the Toronto metropolitan area. By comparison, the average one-way transit work-trip travel time is 60 per cent longer at 47.2 minutes (Chart 15). On average, a commuter spends three hours per week more travelling to work by transit than by car.⁷⁶

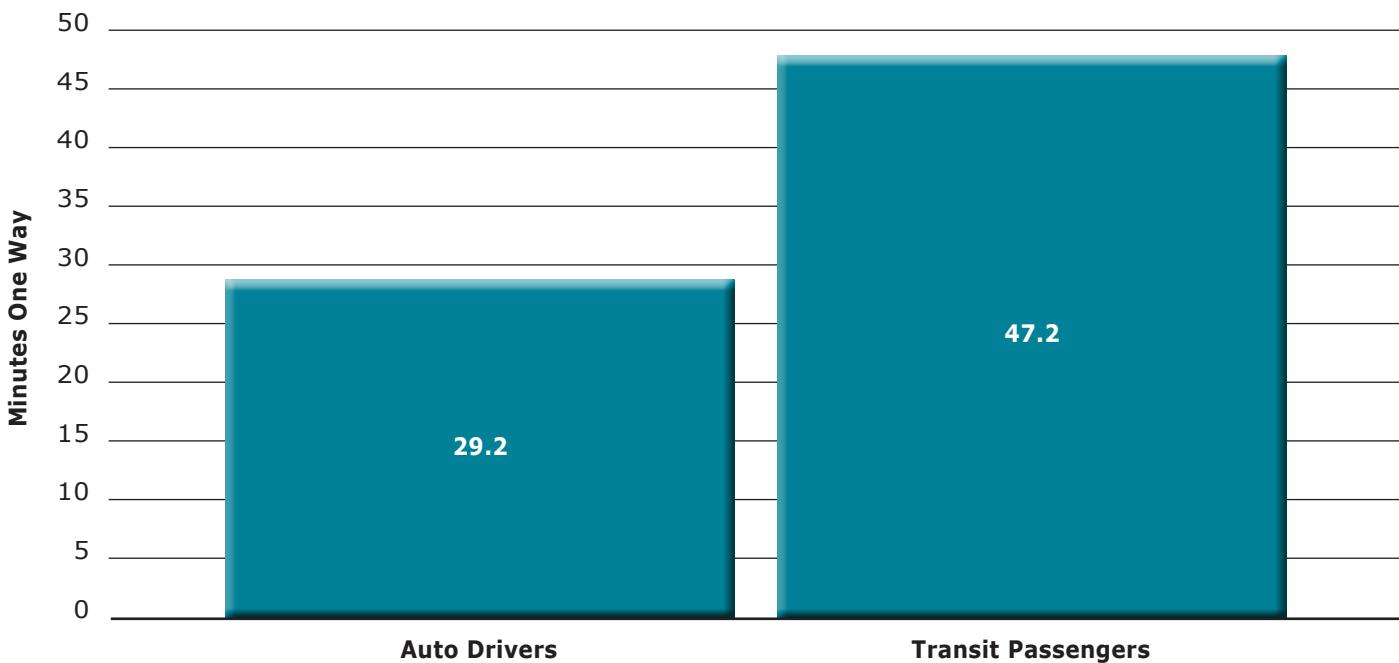
Because of transit's slower trip times, there is little hope of improving competitiveness (which requires shorter travel times) by transferring travel demand to transit.

Typically, major high-income world metropolitan areas with substantially higher transit market shares than Toronto have longer work-trip travel times. This is indicated in Table 1, which provides information on the high-income world metropolitan areas

CHART 15

Commute Times by Auto and Transit

Toronto Metropolitan Area - One Way (2011)



Source: Data from Statistics Canada.

TABLE 1

Toronto Compared to Higher Transit Market Share Asian Metropolitan Areas

Metropolitan Area	Work Trip Travel Time (One Way)	Urban Population Density	Overall Transit Market Share
Hong Kong	47.0	25,700	55% of all trips (2011)
Osaka-Kobe-Kyoto	42.8	5,400	56% of all trips (2009)
Seoul-Incheon	42.0	10,100	63% of all trips in central city
Singapore	38.0	6,400	44% of all trips (2008)
Tokyo-Yokohama	50.4	4,400	67% of all trips (2009)
Toronto	32.8	2,900	14% of all trips (2001)

of more than 5 million people in East Asia. Each of these metropolitan areas has a substantially higher transit market share than Toronto has, and each has higher urban densities.

In Toronto, the average work-trip travel time is less than 33 minutes. In the East Asian metropolitan areas, work-trip travel times range from 38 minutes in Singapore to more than 50 minutes in Tokyo-Yokohama.

Walking and Cycling: Places to Grow also favours walking and cycling as an alternative to automobile use. However, walking and cycling are not practical for most because of geographical constraints that make most jobs inaccessible. As well, many work trips that involve intermediate stops for daycare or shopping are virtually impossible. Weather and personal travel preferences also prevent many trips. Because of these limitations, walking and cycling do not have the capacity to materially improve mobility and work-trip travel times and are thus unable to improve Toronto's competitiveness.

The suburban nature of modern metropolitan areas

At the same time, as is the case throughout Western Europe and the New World, the continued dominance of the automobile results from the suburban urban footprint that typifies virtually all major metropolitan areas in Western Europe and the New World. Recent Queen's University research found all major metropolitan areas in Canada to be principally suburban, including Toronto.

A team led by Dr. David Gordon examined metropolitan areas by using factors such as density and work-trip travel mode. They classified census tracts as "active core" (walkable), "transit suburbs," "auto suburbs" and (auto) "exurbs." Toronto was 75 per cent automobile oriented (suburban and exurban). Only 25 per cent of the metropolitan area was transit oriented or walkable. All metropolitan areas were found to be primarily suburban oriented.

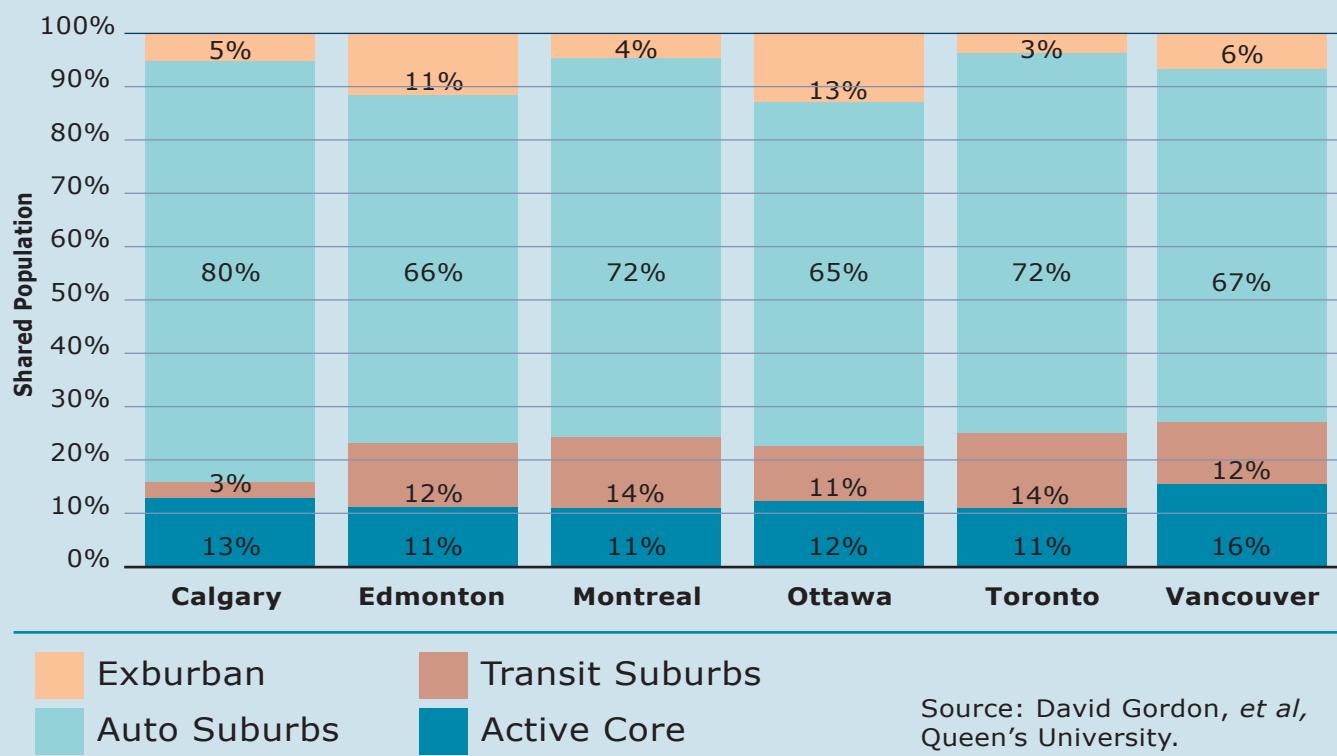
Even Vancouver, with four decades of urban containment policy, remains overwhelmingly suburban and exurban at 73 per cent (Chart 16).

Improved travel times are important if Toronto is to improve its economic productivity and competitiveness. The evidence is overwhelming that transit has an important role to play to downtown destinations, but it cannot be expanded to provide automobile-competitive travel for work trips to other destinations or for most other trips at an affordable price.

CHART 16

Distribution of 2011 Population

Major Census Metropolitan Areas - By Core/Suburban/Exurban



7. Sustainability

Environmental sustainability is a principal justification for urban containment policy. Yet, as the discussion below shows, the sustainability strategies of urban containment policy produce little benefit at an exorbitant cost.

7.1 Greenhouse gas emissions

Urban containment, which is largely favoured in urban planning, generally prefers higher densities, opposes detached housing and seeks to transfer travel demand from cars to transit, is a long-standing policy. This thrust stretches back at least to the British *Town and Country Planning Act of 1947* and later initiatives, especially in the 1970s in Vancouver, Sydney and Portland.

In recent years, these initiatives have been strengthened by the concern for reducing GHG emissions. It was generally thought that GHG emissions could be substantially reduced by substituting higher density housing for detached housing and by discouraging automobile use.

Urban Containment: An Ineffective Strategy for Reducing GHG Emissions:

The expectation that urban containment policy would contribute substantially to the objective of reducing GHG emissions has proven to be disappointing. Comprehensive studies indicate that the potential reduction is not only minimal, but it is also prohibitively expensive. Based on their research on urban containment (smart growth) policies in the United Kingdom, Anthony J. Hargreaves, Gordon Mitchell and Anil Namdeo concluded,⁷⁷

“Smart growth⁷⁸ principles should not unquestioningly promote increasing levels of compaction on the basis of reducing energy consumption without also considering its potential negative consequences. In many cases, the potential socioeconomic consequences of less housing choice, crowding, and congestion may outweigh its very modest CO₂ reduction benefits.”

The most important reviews in the United States have also indicated that the GHG emissions reductions of urban containment policies are generally small and much less than the gains from improved fuel economy.⁷⁹

Limitations of Strategies to Reduce Driving: Urban containment policy generally seeks to reduce automobile travel, which, as noted above, is an ineffective strategy for reducing GHG emissions. Even the apparent gains can be illusory. There is an assumption of a virtual one-to-one relationship between kilometres of automobile travel and GHG emissions. However, as travel speeds slow and congestion increases, fuel economy suffers. The reduction in GHG emissions can be significantly less than the reduction in driving. This substantially reduces the potential for GHG emission reductions from strategies to reduce vehicle kilometres of travel.

Transport Canada research indicates that the greater fuel consumption in congested

traffic can result in GHG emissions that are over 70 per cent higher per kilometre than they are in free-flow traffic.⁸⁰ Thus, strategies that rely on reducing travel can have a much less significant effect on GHG emission reduction than planned because of the greater congestion that occurs in higher density areas (Section 7.1).

Urban containment policy is an ineffective and unnecessary strategy for reducing GHG emissions.

The Economic Metric: Even worse, urban containment strategies produce only modest results at exorbitant costs. The most common metric for GHG emissions reduction is the cost per metric tonne. There are various cost-effectiveness estimates for reducing GHG emissions:

McKinsey & Company estimated that GHG emissions sufficient to achieve IPCC recommended reduction rates to 2030 can be achieved at an average cost of minus €6 per tonne, and that 80 percent of the required emissions reductions can be achieved for less than €40 per tonne.⁸¹ The present market price per tonne of GHG emissions reduction is approximately C\$15.⁸²

There are indications that the above costs may be higher than necessary. The EPA and California Air Resources Board (CARB) programs are expected to reduce GHG emissions at costs of *less than zero*. Two Obama administration regulatory actions have been adopted to improve light-vehicle fuel efficiency through 2017 and 2025. Under each of these regulations, the EPA estimated that the cost for GHG emission per tonne removed would be approximately *minus* US\$200 by 2040 and *minus* US\$300 by 2050.⁸³

In the United States, McKinsey & Company and the Conference Board found that sufficient GHG emission reductions can be achieved without reducing driving or living in denser housing.⁸⁴ In other words, urban containment policy is *unnecessary*. The reductions projected in automobile GHG emissions illustrate this (below).

The costs of urban containment policy are far higher than these metrics. US reports have estimated that reducing GHG emissions through transit alternatives would cost at least US\$1,000 per tonne,⁸⁵ and the additional housing costs at nearly US\$20,000 per tonne.⁸⁶ Obviously, such exorbitant expenditures are not only unnecessary but could also seriously slow economic growth and increase poverty. Regional planning agencies virtually never subject their urban containment strategies to the IPCC maximum cost metric. Inevitably, the result is economic disruption, especially to households where the standard of living is reduced by the higher costs of housing. Not only is urban containment policy ineffective and unnecessary, it is also inappropriate by virtue of its economic damage.

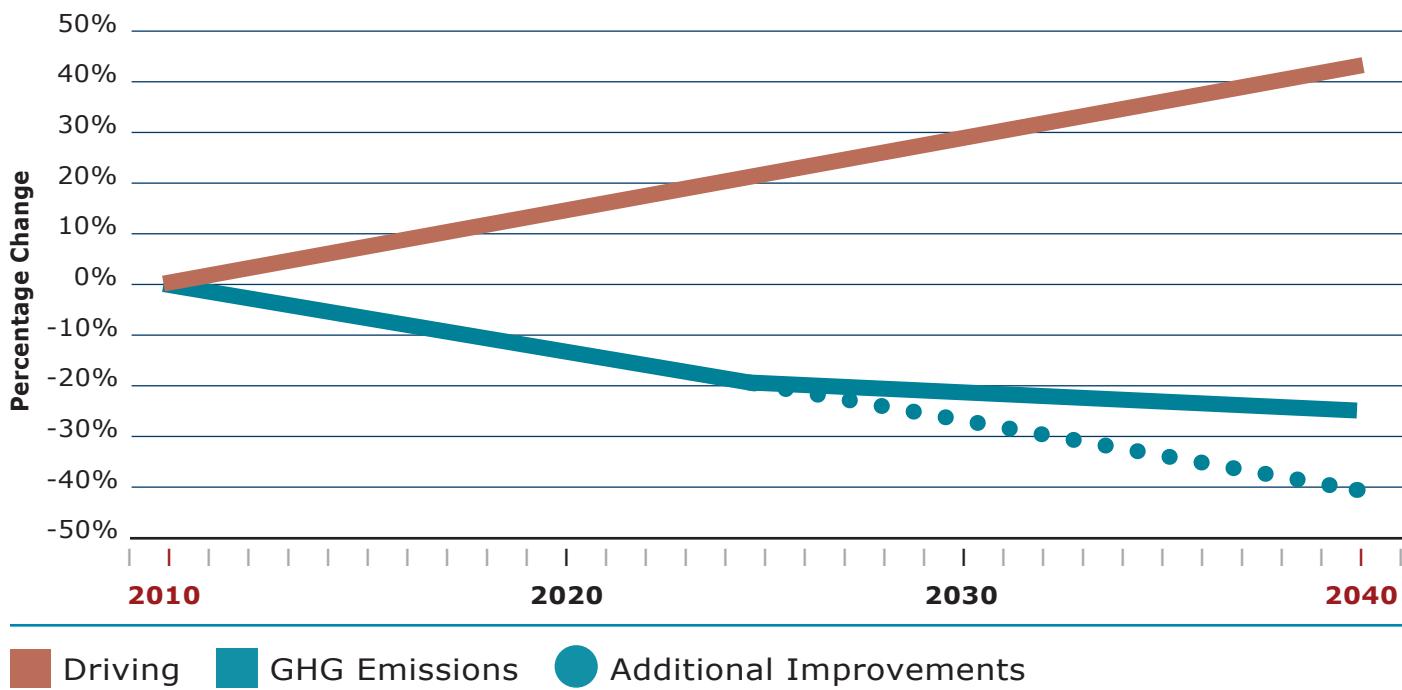
Making Personal Mobility Sustainable: Meanwhile, new government regulations are projected to reduce GHG emissions much more, even as driving continues to increase. Environment Canada projects the reduction in total GHG emissions from the national light-vehicle fleet (cars and light trucks) of 16 per cent between 2010 and 2025.⁸⁷ Longer-term projections for similar U.S. regulations yield huge GHG emissions reductions from automobiles, even as driving continues to increase

substantially (Chart 17). Other sources project even greater savings based upon more-conservative driving volumes.⁸⁸ These gains are projected to be achieved cost-free—Environment Canada projects that the vehicle operating-cost savings will exceed the additional cost of the regulations.⁸⁹

CHART 17

U.S.: Driving and GHG Emissions

From Light-duty Vehicles - 2010-2040



Source: U.S. Department of Energy. Canadian projections for similar fuel efficiency standards not yet available.

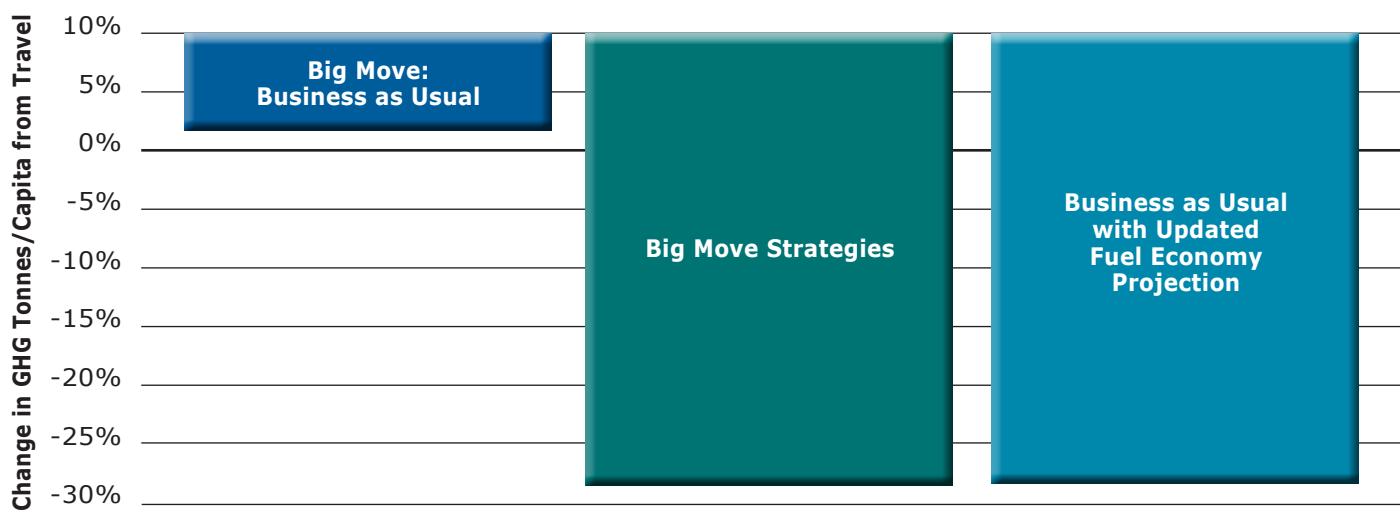
These fuel-economy improvements are far greater than was anticipated when the outlines of The Big Move were adopted. At that time, The Big Move projected that annual GHG emissions per capita from passenger transportation in the Greater Toronto and Hamilton Area would drop from 2.4 to 1.7 annual tonnes, a reduction of 29 per cent. The Big Move also projected a less than 10 per cent GHG emissions reduction per capita under the “business-as-usual scenario.” However, applying the U.S. Department of Energy projections for the new standards,⁹⁰ GHG emissions per capita from automobile travel would decline a near identical 29 per cent by 2035 under the “business-as-usual” scenario (Chart 18, next page).⁹¹

Moreover, these projections assume no regulatory standards changes beyond 2025, and as a result, the gains in GHG emissions begin to increase at a lower rate by 2027. Yet, it seems likely that technological advances could result in a continuation of the fuel economy and GHG emissions reduction trend.

CHART 18

GHG Emissions from Driving

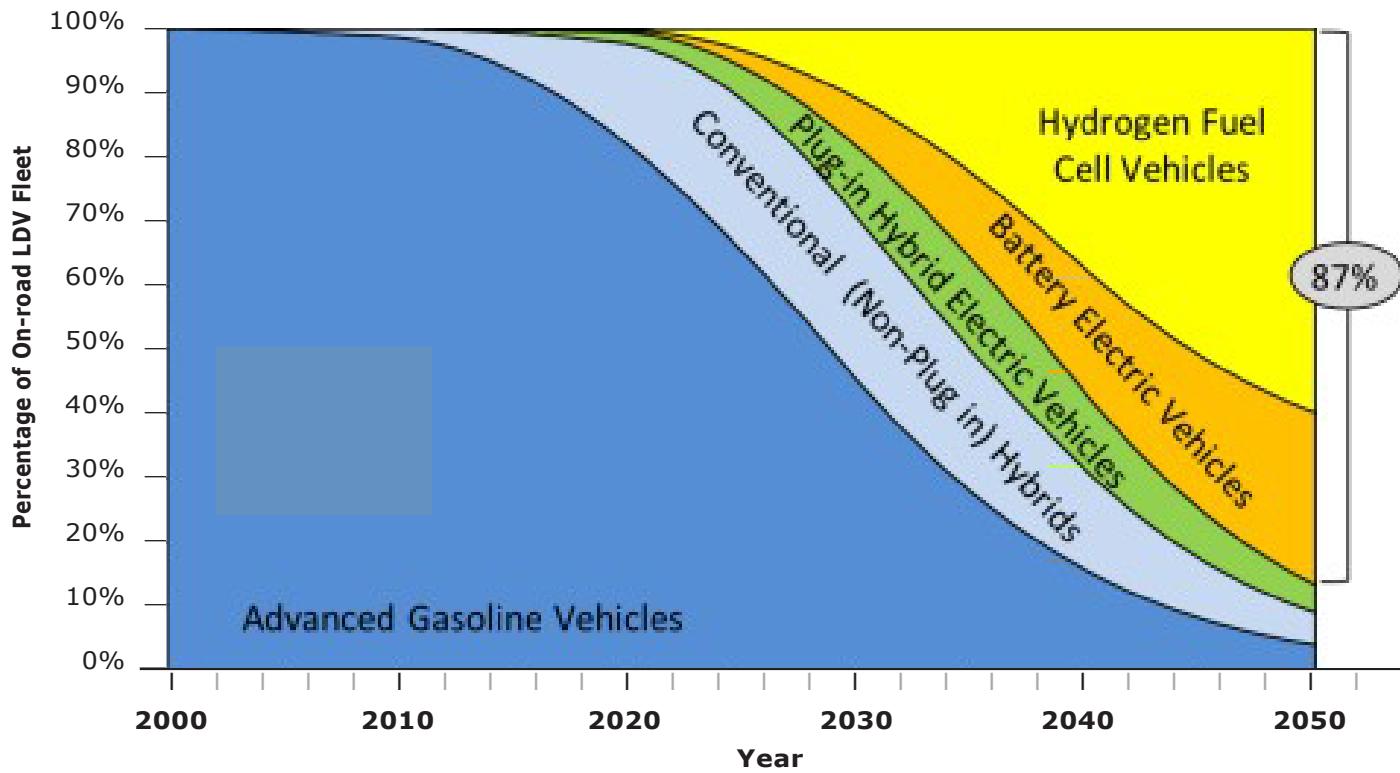
Comparison of Scenarios (2010-2035)



For example, CARB has adopted policies that require that 87 per cent of the light-vehicle fleet in California will be zero emission vehicles (ZEV) by 2050.⁹² If this policy were successful, virtually 100 per cent of vehicles in the state would be ZEVs at

CHART 19

CARB Vehicle Fleet Projection (2000 to 2050)



Source: Chart from CARB.

some point during the following decade (Chart 19).⁹³ The success of such advances can be expected to spread around the world, including to Ontario.

In short, the GHG emissions assumptions that were the basis of planning for Places to Grow have been rendered obsolete by projected improvements in automotive technology.

Housing GHGs: The often-asserted premise is that more-dense housing is associated with reduced GHG emissions. Much of the research, however, excludes common GHG emissions (from elevators, common area lighting, space heating, air conditioning, vertical pumping of water, etc.) in large multi-unit buildings, usually because data are not available. Research in Sydney found that townhouses and detached housing produced fewer GHG emissions per capita than higher density housing when common GHG emissions are included.⁹⁴ Moreover, housing sustainability research is more often than not based on static rather than dynamic analysis, and it ignores future improvements.⁹⁵

Improvements have been made in reducing GHG emissions from lower density housing. According to the Canadian Home Builders' Association, the residential sector has experienced a 5 per cent net reduction in GHG emissions since 1990, while overall GHG emissions have risen 18 per cent. This improvement in housing GHG emissions occurred despite a substantial increase in housing units and an increase in average new-house size.⁹⁶

Rational Sustainability Policy: Sustainability policy needs to be economically rational. All policies intended to address sustainability should be subjected to a rigorous cost metric to avoid exorbitant public expenditures that can result in a lower standard of living and greater poverty (and can reduce public support for GHG emissions reductions programs). Fortunately, there are alternatives for achieving far greater reductions in GHG emissions at costs that are within the IPCC maximum, such as the improved automobile-fuel economy noted above. In the United States, where driving per capita is greater and large urban area densities are lower, McKinsey & Company and the Conference Board found that sufficient GHG emission reductions can be achieved without reducing driving or living in denser housing.⁹⁷

7.2 Agriculture

Concerns have been expressed that expanding urbanization is reducing agricultural land and could threaten food security.

In fact, Canadian agriculture is very healthy. As indicated in "Urban Policy: A Time for a Paradigm Shift,"⁹⁸ the reduction in Canadian farmland has far exceeded the total urbanization in the four centuries of European settlement. The agricultural land that has been taken out of production exceeds the total land area of the Maritime provinces (New Brunswick, Nova Scotia and Prince Edward Island).⁹⁹ Yet, agricultural productivity has improved substantially. Gross output increased 161 per cent between 1961 and 2005 at the same time that total agricultural land was decreasing. This increase in gross output was considerably greater than that of the United States's output over the same period.¹⁰⁰

Moreover, urban land areas are very small compared with agricultural lands. The total urban land area is approximately three per cent of the combined agricultural and urban land area. Recently released Statistics Canada data indicate that between 2000 and 2011, nearly 4.5 times as much agricultural land was returned *to its natural state* in Canada than was converted into urban land.¹⁰¹

In Canada, as in Europe and the United States, agricultural subsidy programs provide incentives to farm more land than is required to meet consumer demand. New York University professor Shlomo Angel has shown that, around the world, *there are adequate reserves of cultivatable land sufficient to feed the planet in perpetuity.*¹⁰²

8. Broader economic effects

Not surprisingly, reducing discretionary incomes can be expected to have negative effects on metropolitan economies and the national economy.

8.1 Impact on metropolitan economies

Housing costs are important to the competitiveness of metropolitan economies. A metropolitan area with inordinately higher house prices relative to incomes will be at a competitive disadvantage, other things being equal. Fewer people are likely to move to the area and businesses may leave or not relocate to the area because household incomes are often not high enough to compensate for the higher housing costs, which discourages in-migration. There is a growing body of literature documenting the competitive disadvantages of urban containment policy.

An econometric analysis concluded that there was an association between the more-restrictive housing supply limitations from more-strict land-use regulation in the Randstad (Amsterdam-Rotterdam-The Hague-Utrecht) and slower economic growth.^{[103](#)}

U.S. Federal Reserve Board economist Raven Saks found that employment growth is 20 per cent less than expected in U.S. metropolitan areas that have stronger land-use policies.^{[104](#)}

After the collapse of the housing market, the U.S. Congress commissioned a report on the causes of the financial crisis. A U.S. Financial Crisis Inquiry Commission minority report identified four hypotheses as possible causes for the housing bubble. One of the hypotheses involved strong land-use restrictions. The report stated:

"Land use restrictions. In some areas, local zoning rules and other land use restrictions, as well as natural barriers to building, made it hard to build new houses to meet increased demand resulting from population growth. When supply is constrained and demand increases, prices go up."^{[105](#)}

Urban containment policy has also been associated with higher commercial development costs^{[106](#)} and higher retail prices.^{[107](#)}

Obviously, any such broad economic consequences would reduce discretionary income, undermine the standard of living and lead to greater poverty (other things being equal).

8.2 Impact on the national economy

Concern that a housing bubble may be developing has even been expressed. This is an ominous prospect in view of the disastrous impact of the U.S. housing bubble on its economy. Between 2004 and 2012, house prices relative to incomes increased in Canada more than they did in the United States, Australia or New Zealand. The increase was more than 50 per cent relative to household incomes; however, the impact on household budgets has been masked to some degree by historically low interest rates.

This seems likely to be only a temporary phenomenon. RBC Global Asset Management chief economist Eric Lascelles said, "Of course, rock-bottom interest rates won't last forever, and the key change on the horizon is higher borrowing costs via the Bank of Canada."¹⁰⁸

Higher interest rates could result in substantial increases in mortgage payments. Younger households are likely to have greater financial constraints, with many facing substantial student loan debt. This will make home purchases more difficult and is an imperative for strategies to improve housing affordability.

8.3 Canada: Following Australia and New Zealand?

As noted above, housing markets in Australia and New Zealand generally had house price to income ratios of 3.0 (median multiples) or less before the implementation of urban containment policies. These policies had been adopted virtually across both nations by the 1990s. Among 39 markets rated in the "10th Annual Demographia Housing Affordability Survey," 25 now have median multiples of 5.1 or higher, and the other 14 have median multiples from 4.1 to 5.0. The situation is similar in New Zealand, where six markets have median multiples of 5.1 or higher, and only two are between 4.1 and 5.0. In Australia and New Zealand, housing affordability has been seriously retarded in virtually all markets, from the smallest to the largest.

The highest median multiples are in the largest metropolitan areas: Sydney (9.0), Melbourne (8.4) and Auckland (8.0). Vancouver already exceeds these median multiples at 10.3. Other major markets in Canada are less affordable than before the adoption of urban containment policy: Toronto (6.2), Montreal (4.7), Calgary (4.3), Edmonton (3.9) and Ottawa (3.8).¹⁰⁹ Outside of Vancouver, urban containment policies were taken up later in Canada than in Australia and New Zealand. The experience of Australia and New Zealand suggests that house-price escalation in Canada could be greater in the years to come than what has already occurred.

8.4 Limits of the Bank of Canada monetary policy

The escalating house prices have also caught the attention of the Bank of Canada^{[110](#)} among others. More recently, international credit rating agencies have downgraded credit ratings for most of the largest banks, at least in part out of concern for their inordinately large exposure to large levels of mortgage debt.

The concern has spread to the Organisation for Economic Co-operation and Development (OECD), which has noted that housing in Canada is overvalued, and yet prices are still rising (as in Norway, New Zealand and to a lesser extent, Sweden): "Economies in this category are most vulnerable to the risk of a price correction—especially if borrowing costs were to rise or income growth were to slow."^{[111](#)}

The late federal Minister of Housing Jim Flaherty noted that the Bank of Canada is unlikely to be able to raise interest rates to slow house-price escalation and that a housing bubble could "destabilize the economy." The Bank of Canada has a monetary policy objective of keeping "inflation near 2 per cent."^{[112](#)}

Even if the Bank were in a position to raise interest rates substantially, the brake on house prices would likely be scant. In urban containment markets, such as Vancouver and Toronto, house prices are not rising due to natural swings of supply and demand. The higher house prices are rather the result of urban-containment induced supply constraints that have been implemented under provincial and metropolitan urban containment policy.

Housing costs, the largest expenditure item of household budgets and potentially a driver of inflation, are beyond the practical policy purview of the Bank of Canada. As regards this important component of national monetary policy, the land-use plans of provincial and metropolitan governments may be more important.^{[113](#)}

9. Putting people first

Higher house prices have reduced the discretionary incomes of Toronto-area households. The result is necessarily a lower standard of living and greater poverty.

There is a larger threat, however. Toronto's house prices could continue to escalate relative to incomes. The experience of metropolitan areas that have longer urban containment policy histories indicates the potential for even greater price increases.

There is a need to shift urban policy to not only restore housing affordability, but also to prevent more serious house-cost escalation. This would require reordering priorities in the Toronto area to put the interests of people first. People are more important than the mode of travel or the urban form.

Recommendations

There is a need for policies that allow the building of houses and neighbourhoods that are affordable for the households that have been driven out of the home ownership market. Restoring housing affordability, especially for middle-income and lower middle-income households, will require the development of single-family houses on less-expensive lots in more-modest neighbourhoods than are possible under Places to Grow.

From a public policy perspective, the important issue is to re-establish and maintain the standard of living regardless of where new housing is built by restoring a competitive market for land. Other urban policies are secondary. Urban containment cannot be justified on GHG emissions concerns because its cost relative to other strategies is exorbitant ([Section 7.1](#)).

The province of Ontario, regional and local governments and transit authorities should use their authority to:

- Establish housing affordability and economic development as the principal urban objectives. This should include the establishment of housing affordability improvement standards for each type of owned and rented housing, which should be reported on an annual basis. Other objectives, such as the urban form and how people travel, should be secondary.
- Liberalize the housing market. This should include an expansion of the urban containment boundary sufficient to restore the historical ratio between finished land cost and the construction costs of new houses.
- Estimate both the GHG emissions reductions of any major strategy and the cost per metric tonne of such emissions. Generally, only the most cost-effective GHG emissions strategies should be undertaken. No strategy that has a cost per tonne that is greater than prevailing market prices should be attempted.

- Adopt transportation policies that maximize mobility throughout the Toronto area and the Greater Golden Horseshoe. These strategies should seek to minimize commute travel times throughout the metropolitan area regardless of the mode of travel.
- Seek to implement infrastructure finance options that could improve housing affordability, such as bonding, user fees and special housing districts. These could include the following strategies:
 - **Bonding for Fees and Levies:** Municipalities could issue bonds to finance fees and levies, with the principal and interest paid by the residents of new housing.^{[114](#)} This would improve housing affordability by reducing initial sale prices, which is also likely to lead to more-modest existing house-price increases.^{[115](#)}
 - **User Fees:** All capital and operating expenses of publicly owned utilities (such as water and wastewater) should be recovered and financed through user fees.
 - **Special Housing Districts:** Jurisdictions could permit the establishment of special housing districts or utility districts that could offer self-contained public services and utilities (Section 4.5) that could follow models in New Zealand, Texas, Colorado and California.^{[116](#)} This would remove the burden from municipal governments of providing services for such developments while facilitating the restoration of the lower-cost new-home market. At the same time, developers and home builders would have an incentive to minimize the cost of such infrastructure in order to attract buyers.
 - **The province of Ontario** should provide an annual report on housing affordability in each of the census metropolitan areas, census agglomerations and larger municipalities using a price to income ratio (such as the median multiple). This would be consistent with the province's interest in economic growth and the standard of living of its citizens.

Urban policies that improve the standard of living and reduce poverty by restoring housing affordability should attract support from all political perspectives. There is nothing more fundamental in public policy than facilitating higher standards of living for people and eradicating poverty.

APPENDIX A

Summary of economic research: Urban containment and house prices

A principal purpose of urban containment policy is to stop the expansion of urban areas (referred to as “urban sprawl,” see Box 1, page 10). Prohibiting development outside urban growth boundaries¹¹⁷ or other restrictions that confine new development to much smaller areas than before accomplishes this.

A.1 The association between urban containment and higher housing costs

Economic principle holds that, other things being equal, a scarcity in the supply of a product will tend to influence its price upwardly. The same thing is true of land for urban development—policies that severely restrict the availability of land are associated with higher and rising house prices.

This results in significant rationing of land, which, like rationing of any good or service, leads to artificially higher land prices, which increase house prices. Economists Richard Green and Stephen Malpezzi summarize the issue: “When the supply of any commodity is restricted, the commodity’s price rises. To the extent that land-use, building codes, housing finance, or any other type of regulation is binding, it will worsen housing affordability.”¹¹⁸

Urban containment policy is also strongly associated with higher costs of living, principally due to the resulting higher housing costs relative to incomes. The economic literature strongly documents the association between urban containment policies and higher relative house prices.

Housing constitutes the largest share of household budgets. The difference in house prices is significant between Canada’s major metropolitan areas and is a principal element of cost of living differences.

A.2 Economic research

A limited sampling of the research that indicates an association between urban containment and higher house prices follows.

According to Brookings Institution economist Anthony Downs, the housing affordability problem occurs from the failure to maintain a “competitive land supply.” Downs notes that an increase in urban growth boundaries can convey monopolistic pricing power on sellers of land if sufficient supply is not available, which, all things being

equal, is likely to raise the price of land and the housing that is built on it.^{[119](#)}

"If a locality limits to certain sites the land that can be developed within a given period, it confers a preferred market position on those sites. ... If the limitation is stringent enough, it may also confer a monopolistic power on the owners of those sites, permitting them to raise land prices substantially."

In any policy that seeks to control or direct growth, it is important for jurisdictions to ensure that there is a sufficient supply of competitively priced lands so that its policies do not retard housing affordability. This point was made by a Brookings Institution policy analysis by a team led by urban containment advocate Arthur C. Nelson of the University of Utah, who associated higher house prices in California with such policies. "... **[T]he housing price effects of growth management policies depend heavily on how they are designed and implemented.** If the policies serve to restrict land supplies, then housing price increases are expected." (Emphasis in original.)

Based on their research on the association between urban containment policy and house prices, John Quigley and Steven Raphael (University of California, Berkeley) noted:

"Indeed, many cities complicate and add costs to the process of building new housing. Perhaps the most extreme barriers to new housing come in the form of explicit growth controls. Municipal growth control measures may take the form of moratoria on new developments, urban growth boundaries beyond which development is severely curtailed, or open space requirements intended to preserve undeveloped land."^{[120](#)}

Economic research also identifies slower than expected economic growth in metropolitan areas with urban containment policy.

World Bank Economist Steven Mayo said, "[H]ouse prices in cities with stricter regulatory policies rose 30 to 60 per cent relative to less restrictively regulated cities over a 15-year period."^{[121](#)}

Richard Green of the University of Wisconsin, along with Steven Malpezzi and Stephen Mayo, performed an econometric analysis of 44 U.S. metropolitan areas and found that heavily regulated metropolitan areas always had constrained housing supplies (which would lead to higher prices).^{[122](#)}

Edward L. Glaeser, Joshua Gottlieb and Joseph Gyourko characterized their research as indicating that markets with stronger land-use regulation experienced larger house price increases during the housing bubble.^{[123](#)} They wrote, "[O]ne of the policy implications ... is that in some regions more restrictive building environments exacerbated the bubble in housing prices."

Other strategies of urban containment policy have similar effects. Infill requirements limit the volume of housing that can be developed on or beyond the urban fringe, creating upward pressure on prices. Building moratoria limit the amount of housing that can be built, similarly leading to higher house prices than would otherwise be expected.

Regrettably, the housing affordability consequences were rarely, if ever, considered by government agencies when they imposed urban containment policy.

As in Auckland, urban containment has been associated with huge differences in the price of equivalent and adjacent land. In Portland,¹²⁴ there are virtually “across the road” differences in raw land costs of at least 11 times, and there are even greater disparities in the London, U.K., area.¹²⁵ In a normal market, the price differences would be minimal.

Dartmouth University professor William Fischel cites studies in the United Kingdom and Korea that associate stronger land-use policy with housing affordability losses.¹²⁶

Greater Attraction of Property Investors (also referred to as “speculators”): As urban containment policy drives up house prices, additional property investors are drawn in by the prospect of quick and substantial profits. These market participants have been pejoratively called “speculators” or “flippers.” These additional buyers further increase demand relative to supply. The house-cost escalation typical of urban containment policy thus feeds on itself by attracting this additional speculative demand and raising house prices even more. As a result, housing markets with urban containment tend to have more-volatile price fluctuations.¹²⁷ The role of additional investors was substantial in driving up house prices in the housing bubble.¹²⁸

A.3 Urban Containment Policy and Housing Affordability: The Experience

California has experienced the most significant house-price escalation in the United States. As late as 1970, California house prices were within the 3.0 median multiple standard, indicating a ratio of prices to incomes similar to that of the rest of the nation. However, at about this time, significant housing regulation were adopted in many parts of the state, and house prices relative to incomes began to rise substantially above those in the rest of the nation.

Some urban planning analysts, including Bernard Frieden of the Massachusetts Institute of Technology (MIT), were expressing concern about California’s planning-related increase in house prices in the late 1970s and early 1980s.¹²⁹ In a study focusing on the experience in the San Francisco Bay Area, David Dowall of the University of California, Berkeley, noted in 1984,¹³⁰ “[N]ow the costs of this policy are also becoming clear: wherever stringent land-use controls have come up against burgeoning demand for housing, land and home prices have skyrocketed.”

Fischel found that by 1990, California house prices had escalated well ahead of the nation’s house prices. He discovered that the higher prices could not be explained by higher construction cost increases, demand, the quality of life, amenities, the property tax reform initiative (Proposition 13), land supply or water issues. He associated the higher prices to the expansion of land-use restrictions.¹³¹

APPENDIX B

Measuring housing affordability

Housing costs represent the largest share of household budgets, which makes housing affordability an important economic and public policy issue.

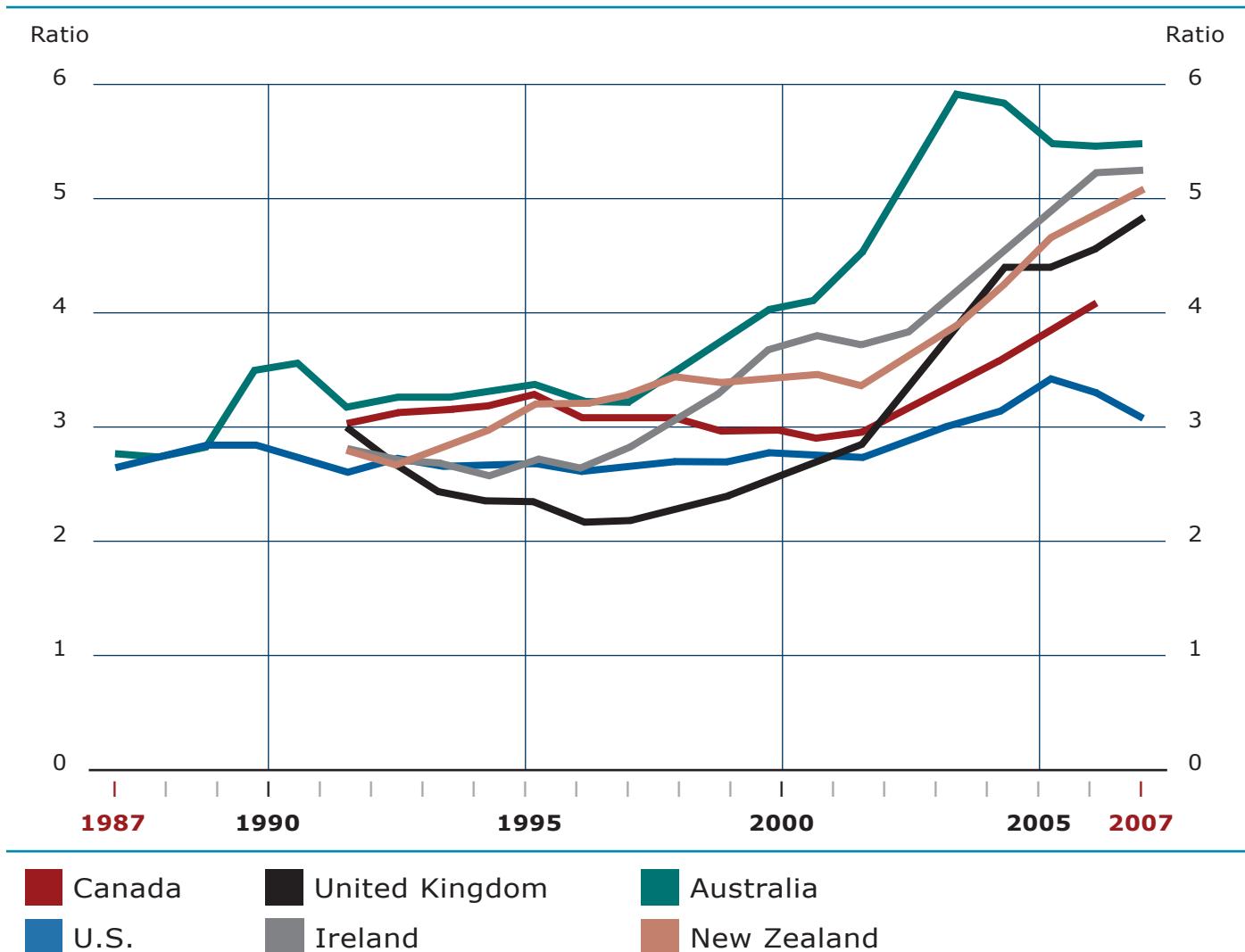
There are various methods for measuring housing affordability. One of the most frequently used is the median multiple, which is the median existing-house price divided by the median household income. This measure has been widely used, including by the World Bank, the United Nations and the Organisation for Economic Co-operation and Development. Median multiple housing affordability categories are now often used (Table 2).¹³²

TABLE 2 **Housing Affordability Rating Categories**

Rating	Median Multiple
Severely Unaffordable	5.1 & Over
Seriously Unaffordable	4.1 to 5.0
Moderately Unaffordable	3.1 to 4.0
Affordable	3.0 & Under

There has been a historical relationship between house prices and household incomes. Generally, a median multiple range of 2.0 to 3.0 has been typical in the metropolitan areas of Canada, Australia, New Zealand, United States, Ireland and the United Kingdom for most of the period since World War II. Chart 20, next page, from the Reserve Bank of Australia (that nation's central bank), indicates that housing affordability was at or below a price to income ratio of 3.0 into the late 1980s and early 1990s in each nation.

CHART 20 House Price to Income Ratios*



* Various combinations of median and mean measures of house prices and incomes uses depending on availability.

Sources: ABS; BIS; Bureau of Economic Analysis; Central Statistics Office Ireland; Communications and Local Government (UK); National Statistics website; OECD; REIA; Reserve Bank of New Zealand; Statistics Canada; Statistics New Zealand; Thomson Financial.

Chart Source: Reserve Bank of Australia.

Endnotes

1. Discretionary income is gross income minus taxes, mandatory payments and necessities (such as housing, clothing, transportation and health).
2. Bertaude, Alain, "The Spatial Organization of Cities: Deliberate Outcome or Unforeseen Consequences?" 2003. Available online at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2004/02/13/000265513_20040213120824/Rendered/INDEX/wdr27864.txt.
3. Bertaude, Alain, "Cities as Labor Markets," *Marron Institute on Cities and the Urban Environment*, New York University. Available online at <http://marroninstitute.nyu.edu/sites/default/files/%20Cities%20As%20Labor%20Markets.pdf>.
4. Much of current urban planning theory can be traced to the British *Town and Country Planning Act of 1947*.
5. Throughout this report, the generic term "automobile" denotes automobiles, sport utility vehicles and personal trucks (all of these may also be called "light vehicles" or "personal vehicles").
6. Green, R.K. and S. Malpezzi (2003), *A Primer on U.S. Housing Markets and Housing Policy*, Urban Institute Press, p. 146.
7. Statistics Canada, "Average Household Expenditure, by Province." Available online at <http://www.statcan.gc.ca/tables-tableaux/sum-som/I01/cst01/famil130a-eng.htm>.
8. The terms "Toronto" and "Toronto area" as used in this report refer to the metropolitan area, the urban area or the general area. The term "City of Toronto" is used to denote the municipality.
9. "Urban Policy: A Time for a Paradigm Shift," 2013. Available online at https://www.fcpp.org/files/1/PS151_UrbanPolicy_JL03F2.pdf.
10. As late as 1971, the maximum variation was less than two (according to Statistics Canada data).
11. Cox, Wendell, "Dispersion in the World's Largest Areas," 2013. Available online at <http://www.newgeography.com/content/003468-dispersion-worlds-largest-urban-areas>.
12. The Dhaka urban area has an estimated population density of 44,500 people per square kilometre, which is more than four times the density of the Paris urban area and more than 15 times that of the Toronto urban area (see "Demographia World Urban Areas: 10th Annual Edition." Available online at <http://demographia.com/db-worldua.pdf>). Yet, commentators have decried Dhaka's "urban sprawl".
13. Angel, Shlomo, *Planet of Cities*, 2012. Available online at http://www.lincolninst.edu/pubs/2094_Planet-of-Cities.
14. Cox, Wendell, "Dispersion in the World's Largest Areas," 2013. Available online at <http://www.newgeography.com/content/003468-dispersion-worlds-largest-urban-areas>.
15. Housing with ground entrances and no housing units above.
16. Suburban detached or other ground-oriented housing proliferates throughout North America, Japan and Western Europe, especially in post-World War II developments. In a few major metropolitan areas (such as Madrid), post-war suburban areas are dominated by multi-family housing.
17. Cox, Wendell, "Developing Africa: Toward Self-sufficient Customer-oriented Urban Transport," Conference CODATU XV; "Average Household Expenditure, by Province," Statistics Canada, 2014. Available online at <http://www.statcan.gc.ca/tables-tableaux/sum-som/I01/cst01/famil130a-eng.htm>.
18. Statistics Canada has recently changed its term from "urban area" to "population centre."
19. The urban area (population centre) is not to be confused with the metropolitan area. An urban area is a continuously built-up area of urbanization and excludes rural areas (unlike metropolitan areas, which include adjacent economically associated rural territory). "Urban area" is the term used by Statistics Canada before 2011. It is called a "built-up urban area" in the United Kingdom, "unité urbaine" in France and "urban area" in many other countries.
20. Toronto urban core density is estimated using federal electoral districts roughly approximating the boundaries of the pre-1997 City of Toronto (Toronto Centre, Trinity-Spadina, Toronto-Danforth, St. Paul's, Davenport, and Parkdale-High Park).
21. Cox, Wendell and Hugh Pavletich, "10th Annual Demographia International Housing Affordability Survey," 2014. Available online at <http://www.demographia.com/dhi.pdf>.
22. Cox, Wendell and Hugh Pavletich, "10th Annual Demographia International Housing Affordability Survey," 2014. Available online at [\(2005 through 2014 editions\)](http://www.demographia.com/dhi.pdf).
23. Hall, Sir Peter, Gracey H. and R. Drewett, *The Containment of Urban England*, George Allen & Unwin, 1973.
24. Brash, Donald, "Introduction" to the "4th Annual Demographia International Housing Affordability

- Survey." Available online at <http://demographia.com/dhi4-preface.pdf>.
25. Barker, Kate, "Barker Review of Housing Supply," 2004. Available online at http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/consultations_and_legislation/barker_consult_barker_index.cfm#report.
 26. Cheshire, Paul, "Urban Containment, Housing Affordability and Price Stability – Irreconcilable Goals," 2009. Available online at <http://www.spatialeconomics.ac.uk/textonly/SERC/publications/download/sercpp004.pdf>.
 27. McCarthy, Colm, "Colm McCarthy: Land Zoning Helped the 'Bubble' Form," November 10, 2013. Available online at <http://www.independent.ie/irish-news/colm-mccarthy-land-zoning-helped-the-bubble-form-29741063.html>.
 28. Hannah-Jones, Nikole, "In Portland's Heart, 2010 Census Shows Diversity Dwindling," *The Oregonian*, April 30, 2011. Available online at http://www.oregonlive.com/pacific-northwest-news/index.ssf/2011/04/in_portlands_heart_diversity_dwindles.html.
 29. Adams, Blair, "Fearing Gentrification, Black Portland Neighborhood Tells Trader Joe's 'No' to New Store," *New Pittsburgh Courier*, February 9, 2014. Available online at <http://newpittsburghcourieronline.com/2014/02/09/fearing-gentrification-black-portland-neighborhood-tells-trader-joes-no-to-new-store/>.
 30. Hannah-Jones, Nikole, "In Portland's Heart, 2010 Census Shows Diversity Dwindling," *The Oregonian*, April 30, 2011. Available online at http://www.oregonlive.com/pacific-northwest-news/index.ssf/2011/04/in_portlands_heart_diversity_dwindles.html.
 31. Douglas, Paul H., *Building the American City: Report of the National Commission on Urban Problems to the Congress and to the President of the United States*, Washington: U.S. Government Printing Office, 1968.
 32. These programs contributed substantially to the large population losses in U.S. urban cores during the period.
 33. Thompson Fullilove, M.D., Mindy, *Root Shock: How Tearing up City Neighborhoods Hurts America, and What We Can Do About It*, New York: Ballantine Books, 2004.
 34. Zheng, G., "The Effects of Auckland's Metropolitan Urban Limit on Land Prices," 2013, New Zealand Productivity Commission. Available online at <http://www.productivity.govt.nz/sites/default/files/research-note-mar-13-auckland-mul.pdf>.
 35. Official U.S. poverty rates do not consider the cost of living. A supplemental program, however, adjusts poverty rates for differences in housing costs, which vary more than five times relative to incomes in the United States. (See Wendell Cox and Hugh Pavletich, "10th Annual Demographia International Housing Affordability Survey," 2014. Available online at <http://www.demographia.com/dhi.pdf>.)
 36. Ihlanfeldt, Keith R. and Timothy M. Shaughnessy, "An Empirical Investigation of the Effects of Impact Fees on Housing and Land Markets," 2002, Lincoln Institute of Land Policy Conference Paper. Available online at https://www.lincolninst.edu/pubs/dl/563_ihlanfeldt_shaughnessy.pdf.
 37. "Government-imposed Charges on New Housing in Canada (2009)," Canada Mortgage and Housing Corporation, 2013. Available online at <http://www.cmhc-schl.gc.ca/odpub/pdf/67163.pdf?lang=en>.
 38. Cox, Wendell, "'Unblocking Constipated Planning'" in New Zealand," 2013. Available online at <http://www.newgeography.com/content/003950-unblocking-constipated-planning-new-zealand> (New Zealand); Bort, Daniel, "An Introduction to California Mello-Roos Community Facilities Districts," Orrick, Herrington & Sutcliffe LLP, 2006. Available online at <http://www.orrick.com/Events-and-Publications/Documents/1180.pdf> (California); Allen, Joe. B. and David M. Oliver, Jr., "Texas Municipal Utility Districts: An Infrastructure Financing System," Allen Boone Humphries Robinson LLP. Available online at <http://westten.com/docs/texas-municipal-utility-districts-an-infrastructure-financing-system.pdf> (Texas); and an example in Colorado: Highlands Ranch Metro District. Available online at <http://highlandsranch.org/>.
 39. "Government-imposed Charges on New Housing in Canada (2009)," Canada Mortgage and Housing Corporation. Available online at <http://www.cmhc-schl.gc.ca/odpub/pdf/67163.pdf?lang=en>.
 40. This is under normal circumstances. A developer is not likely to proceed with a project unless a competitive return on investment can be made, including covering the government-imposed charges. Developers may not be able to recoup all of these costs when land prices fall. However, this is unusual in urban containment markets, unless, as happened in the United States, there is a serious housing bust.
 41. See for example Ihlanfeldt, Keith R. and Timothy M. Shaughnessy, "An Empirical Investigation of the Effects of Impact Fees on Housing and Land Markets." Available online at http://www.impactfees.com/publications_per_cent20pdf/Ihlanfeldt_Shaughnessy.pdf.
 42. Gruen, Claude, *New Urban Development: Looking Back to See Forward*, Rutgers University Press,

2010. Available online at http://www.amazon.com/New-Urban-Development-Looking-Forward/dp/0813547938/ref=sr_1_1?ie=UTF8&qid=1379607332&sr=8-1&keywords=claude+gruen.
43. Assumes a mortgage payment based on a 25-year amortization and a 4 per cent interest rate.
44. "Household Trends and Affordability," *RBC Economics*, 2013. Available online at <http://www.rbc.com/economics/economic-reports/pdf/canadian-housing/house-november2013.pdf>.
45. Such an expectation is expressed by J. Phillips and E. Goodstein, who "... surmise that although the UGB can reduce the supply of developable land, higher density housing can offset this reduction." (emphasis added) J. Phillips and E. Goodstein, 2000, "Growth Management and Housing Prices: The Case of Portland, Oregon," *Contemporary Economic Policy* no. 18 (3):334-344.
46. For example, see the "Demographia Residential Land & Regulation Cost Index," 2010, "Demographia," <http://www.demographia.com/>.
47. Nathanson, Charles G. and Eric Zwick, "Arrested Development: Theory and Evidence of Supply-side Speculation in the Housing Market," 2013. Available online at <http://scholar.harvard.edu/files/nathanson/files/arresteddevelopment.pdf>.
48. Cox, Wendell, "Myths about Urban Development and the Toronto Greenbelt," 2004, The Fraser Institute. Available online at <http://www.fraserinstitute.org/WorkArea/DownloadAsset.aspx?id=3332>.
49. Surowiecki, James, "Real Estate Goes Global," *The New Yorker*. Available online at http://www.newyorker.com/talk/financial/2014/05/26/140526ta_talk_surowiecki and "Chinese Buyers Heavily Focused on California Real Estate: 70 Percent of Purchases Made by Chinese Buyers are All Cash Purchases," Dr. Housing Bubble. Available online at <http://www.doctorhousingbubble.com/chinese-real-estate-buying-china-housing-california-purchases/>.
50. Bertaud, Alain, "Cities as Labor Markets," Marron Institute on Cities and the Urban Environment. Available online at <http://marroninstitute.nyu.edu/sites/default/files/%20Cities%20As%20Labor%20Markets.pdf>.
51. Cox, Wendell, "Jobs-Housing Balance and Urban Villages in Southeast England," "Demographia." Available online at <http://www.demographia.com/db-seuknewtowns.htm>.
52. Prud'homme, Remy and Chang-Woon Lee, "Size, Sprawl, Speed and the Efficiency of Cities," *Urban Studies*, October 1999, vol. 36, pp. 1849-1858. Available online at <http://usj.sagepub.com/content/36/11/1849.abstract>.
53. Cervero, R., "Efficient Urbanization: Economic Performance and the Shape of the Metropolis," 2000, Lincoln Institute of Land Policy Working Paper. Available online at http://www.lincolninst.edu/pubs/88_Efficient-Urbanization.
54. Hartgen, David T. and M. Gregory Fields, "Gridlock and Growth: The Effect of Traffic Congestion on Regional Economic Performance," 2009, Reason Foundation. Available online at <http://reason.org/news/show/gridlock-and-growth-the-effect>.
55. Cox, Wendell, "Public Transport Competitiveness: Implications for Emerging Urban Areas," 2004. Available online <http://trid.trb.org/view.aspx?id=899905>.
56. Blumenberg, Evelyn and Margy Waller (2003), "The Long Journey to Work: A Federal Transportation Policy for Working Families," Brookings Institution. Available online at <http://www.brookings.edu/research/reports/2003/07/transportation-waller>.
57. Raphael, Steven and Lorien Rice, "Car Ownership, Employment, and Earnings." Available online at <http://ist-socrates.berkeley.edu/~raphael/cars1.pdf>.
58. "Toronto as a Global City: Scorecard on Prosperity – 2011," Toronto Board of Trade. Available online at http://www.bot.com/advocacy/Documents/Scorecard/Scorecard_2011.pdf.
59. Federation of Canadian Municipalities, "Cut My Commute: 2011."
60. "Toronto as a Global City: Scorecard on Prosperity – 2014," Toronto Region Board of Trade. Available online at http://www.bot.com/advocacy/Documents/Scorecard/Scorecard_2014.pdf.
61. Ewing, R. and R. Cervero, "Travel and the Built Environment: A Meta-analysis," *Journal of the American Planning Association*, Volume 76, Issue 3, 2010.
62. The Sierra Club advocates compact city policies.
63. ICLEI – Local Governments for Sustainability USA, IELEI Density-VMT Calculator. Available online at [http://www.icleiusa.org/library/documents/8-Density-VMT%20Calculator%20\(2\).xls](http://www.icleiusa.org/library/documents/8-Density-VMT%20Calculator%20(2).xls).
64. Sorenson, Paul, Wachs, Martin, Min, Endy Y., Kofner, Aaron, Ecola, Liisa, Hanson, Mark, Yoh, Allison, Light, Thomas and James Griffin, *Moving Los Angeles: Short-term Policy Options for Improving Transportation*, RAND Corporation. Available online at http://www.rand.org/content/dam/rand/pubs/monographs/2008/RAND_MG748.pdf and Cox, Wendell, "Urban Travel and Urban Population Density," *Journeys*, November 2012. Available online at http://itaacademy.gov.sg/doc/J12%20Nov-p19Cox_Urban%20Travel%20and%20Urban%20Population%20Density.pdf.

65. Turcotte, Martin, "Life in Metropolitan Areas: Dependence on Cars in Urban Neighbourhoods," Statistics Canada Catalogue No. 11-008.
66. American Heart Association, "Air Pollution, Heart Disease and Stroke" (2011), <http://stoptitan.com/resources/documents/handouts/American-Heart-Assoc-Air-Pollution-study%202011.pdf>.
67. Work-trip market share is used as a principal indicator of transit effectiveness, because of the important role of work trips in producing traffic congestion. The concentration of work-trip travel during peak travel hours is the proximate cause of most recurring traffic congestion in metropolitan areas.
68. Calculated from data in "Urban Transportation Indicators Fourth Survey," Transportation Association of Canada 2010. Available online at <http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-util-survey4.pdf>.
69. "What is GO?" Available online at <http://www.gotransit.com/public/en/aboutus/whatisgox.aspx>.
70. Ziv, J.C. and Wendell Cox, "Megacities and Affluence: Transport and Land-use Considerations," paper delivered to the World Conference on Transport Research. Available online at <http://www.publicpurpose.com/ut-wctr2007.pdf>.
71. 2006 Census and 2011 National Household Survey (Statistics Canada).
72. "The Transit We Need," Transit Investment Strategy Panel Discussion Paper 2, October 31, 2013. Available online at <http://www.mto.gov.on.ca/english/news/transit-reports/THE%20TRANSIT%20WE%20NEED%20-%20web.pdf>.
73. Federation of Canadian Municipalities, "Cut My Commute: 2011."
74. For a detailed discussion, see Wendell Cox, Improving the Competitiveness of Metropolitan Areas , pages 33-35 https://www.fcpp.org/files/1/PS135_Transit_MY15F3.pdf
75. Toronto Board of Trade, "Toronto as a Global City: Scorecard on Prosperity – 2011," Available online at http://www.bot.com/advocacy/Documents/Scorecard/Scorecard_2011.pdf.
76. Statistics Canada, National Household Survey, 2011.
77. Echanique, Marcial H., Hargreaves, Anthony J., Mitchell, Gordon and Anil Namdeo, "Growing Cities Sustainably: Does Urban Form Really Matter," *Journal off The American Planning Association*, Vol. 78, Issue 2, 2012. Available online at <http://www.tandfonline.com/doi/abs/10.1080/01944363.2012.666731#preview>.
78. "Smart growth" is a virtual synonym for "urban containment policy."
79. Cox, Wendell, "Reducing Greenhouse Gases from Personal Mobility: Opportunities and Possibilities," *Reason*, 2011. Available online at http://reason.org/files/reducing_greenhouse_gases_mobility_development.pdf and Pisarski, Allen, "ULI Moving Cooler Report: Greenhouse Gases, Exaggerations and Misdirections," *New Geography*, 2009. Available online at <http://www.newgeography.com/content/00932-uli-moving-cooler-report-greenhouse-gases-exaggerations-and-misdirections>.
80. Calculated from data from Transport Canada. (2006). The Cost of Urban Congestion in Canada. Available online at <http://www.adec-inc.ca/pdf/02-rapport/cong-canada-ang.pdf>.
81. The original amounts are stated in 2006 euros and converted here to 2013\$. See McKinsey & Company, "The Impact of the Financial Crisis on Carbon Economics: Version 2.1 of the Global Greenhouse Gas Abatement Cost Curve," 2010. Available online at http://www.mckinsey.com/~/media/McKinsey/dotcom/client_service/Sustainability/cost%20curve%20PDFs/ImpactFinancialCrisisCarbonEconomicsGHGcostcurveV21..ashx.
82. See "Terrapass.com," <http://www.terrapass.com/shop/>, accessed February 22, 2014.
83. U.S. Environmental Protection Agency, "Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards." Available online at <http://www.epa.gov/otaq/climate/documents/420r12016.pdf> and "Final Rulemaking to Establish Light-duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Regulatory Impact Analysis." Available online at <http://www.epa.gov/otaq/climate/regulations/420r10009.pdf>.
84. McKinsey & Company and The Conference Board, "Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?" 2007. Available online at http://www.mckinsey.com/client_service/sustainability/latest_thinking/reducing_us_greenhouse_gas_emissions.
85. "Effects of the Built Environment on Transportation: Energy Use, Greenhouse Gas Emissions, and other Factors," 2013, U.S. Department of Energy. Available online at <http://www.nrel.gov/docs/fy13osti/55634.pdf>.
86. Cox, Wendell, "Reducing Greenhouse Gases from Personal Mobility: Opportunities and Possibilities," 2011. Available online at http://reason.org/files/reducing_greenhouse_gases_mobility_development.pdf.

87. "Canada's Emissions Trends 2012," Environment Canada. Available online at http://www.ec.gc.ca/Publications/253AE6E6-5E73-4AFC-81B7-9CF440D5D2C5/793-Canada's-Emissions-Trends-2012_e_01.pdf.
88. "A New Direction: Our Changing Relationship with Driving and the Implications for America's Future," 2013, U.S. PIRG Educational Fund. Available online at <http://uspirg.org/sites/pirg/files/reports/A%20New%20Direction%20vUS.pdf>.
89. "Regulating Greenhouse Gas Emissions from Light-duty Vehicles, 2017-2025," Environment Canada. Available online at <http://www.ec.gc.ca/default.asp?lang=En&n=56D4043B-1&news=1F13DA8A-EB01-4202-AA6B-9E1E49BBD11E>.
90. Canada adopted virtually identical standards. Longer-term projections are not available.
91. This calculation uses the business as usual daily per capita travel assumption for 2035.
92. "Public Hearing to Consider Advanced Clean Cars Program," 2012, California Air Resources Board. Available online at <http://www.arb.ca.gov/board/books/2012/012612/12-1-2pres.pdf>.
93. "Proposed First Update to the Climate Change Scoping Plan: Building on the Framework," 2014, California Air Resources Board. Available online at http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf.
94. Cox, Wendell, "Greenhouse Gas Emissions and Reality: Residential Emissions," 2009. Available online at <http://www.newgeography.com/content/00728-greenhouse-gas-emissions-and-reality-residential-emissions>.
95. The two sectors at which urban containment policy is principally directed, personal transportation and housing, have (or will have based upon projections) performed better than the economy in their reduction of GHG emissions.
96. "Recognizing Success: Energy Efficiency, Energy Use and Greenhouse Gas Emissions Performance in Canadian Homes: 1920-2010," 2013. Available online at <http://www.chba.ca/uploads/policy%20archive/2013/Recognizing%20Success%20-%202012.pdf>.
97. Cox, Wendell, "California Declares War on Suburbia II: The Cost of Radical Densification," 2012. Available online at <http://www.newgeography.com/content/002781-california-declares-war-suburbia-ii-the-cost-radical-densification>.
98. Cox, Wendell, "Urban Policy: A Time for a Paradigm Shift," 2013. Available online at https://www.fcpp.org/files/1/PS151_UrbanPolicy_JL03F2.pdf.
99. From peak levels, based on provincial data between 1951 and 2011.
100. Calculated from data in "An Overview of the Canadian Agriculture and Agri-Food System," 2011, Agriculture and Agri-Food Canada. Available online at http://publications.gc.ca/collections/collection_2011/agr/A38-1-1-2010-eng.pdf.
101. Between 2000 and 2011, approximately 10,030 square kilometres of agricultural land was converted into barren land or shrub land. Approximately 2,250 square kilometres of land was converted from agricultural use to urban use. Calculated from Table 3.2, "Human Activity and the Environment: Measuring Ecosystem Goods and Services in Canada," 2013, Statistics Canada. Available online at <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2013000-eng.pdf>. The urban area data are for 2000 and 2011, and the agricultural and natural land (forest and shrub land) data are for 2001 and 2011, as reported by Statistics Canada.
102. Angel, Shlomo, *Planet of Cities*, September 2012. Available online at http://www.lincolninst.edu/pubs/2094_Planet-of-Cities.
103. Vermeulen, W. and J. Van Ommeren, "Does Land-use Planning Shape Regional Economies?" 2008, Tinbergen Institute. Available online at <http://papers.tinbergen.nl/08004.pdf>.
104. Saks, R.E. "Job Creation and Housing Construction: Constraints on Metropolitan Area Employment Growth," 2005, Federal Reserve Board.
105. U.S. Financial Crisis Inquiry Commission, "Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States," 2011. Available online at <http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>.
106. Cheshire, P.C. and C. Hilber, "Office Space Supply Restrictions in Britain: The Political Economy of Market Revenge," 2008, London School of Economics. Available online at <http://www.lse.ac.uk/geographyandenvironment/pdf/office%20space%20supply%20restrictions%20in%20britain.pdf>.
107. Lewis, B., Ballek, M., Craig, C., Harris, V., Levi, B., Mullings, H., Osborne, I., Anthony, S., Bugrov, D., Kondo, J., Palmade, V., Rames, J., Fidler, S., Lovegrove, N. and M. Baily, "Driving Productivity and Growth in the UK Economy," 1998. McKinsey Global Institute. Available online at http://www.mckinsey.com/insights/mgi/research/productivity_competitiveness_and_growth/driving_productivity_and_growth_in_the_uk_economy.

- [108.](http://www.rbcgam.com/investment-insights/research-publications/_assets-custom/pdf/rbcgam-economic-compass-canadas-debt-threat-201107.pdf) Lascelles, Eric, "Canada's Debt Threat," *Economic Compass*, 2011. Available online at http://www.rbcgam.com/investment-insights/research-publications/_assets-custom/pdf/rbcgam-economic-compass-canadas-debt-threat-201107.pdf.
- [109.](http://www.demographia.com/dhi.pdf) Cox, Wendell and Hugh Pavletich, "10th Annual Demographia International Housing Affordability Survey," 2014. Available online at <http://www.demographia.com/dhi.pdf>.
- [110.](http://www.bis.org/review/r130111d.pdf) Macklem, Tiff, "Regearing Our Economic Approach," Bank for International Settlements. Available online at <http://www.bis.org/review/r130111d.pdf>; Wendell Cox and Hugh Pavletich, "10th Annual Demographia International Housing Affordability Survey," 2014. Available online at <http://www.demographia.com/dhi.pdf>.
- [111.](http://www.oecd.org/eco/outlook/focusonhouseprices.htm) "Economic Outlook, Analysis and Forecasts: Focus on House Prices," The Organisation for Economic Co-operation and Development. Available online at <http://www.oecd.org/eco/outlook/focusonhouseprices.htm>.
- [112.](http://www.bankofcanada.ca/about/what-we-do/what-is-monetary-policy/) "What is Monetary Policy?" Bank of Canada. Available online at <http://www.bankofcanada.ca/about/what-we-do/what-is-monetary-policy/>.
- [113.](http://money.msn.co.nz/businessnews/national/8626288/rbnzs-tool-kit-wont-stop-housing-bubble) Reserve Bank of New Zealand Deputy Governor Grant Spencer recently told a parliamentary committee that the monetary policy tools available to his central bank were not sufficient to restrain the growth of house prices in Auckland, which has strong urban containment policy. (See "RBNZ's Tool Kit Won't Stop Housing Bubble," MSN NZ." Available online at <http://money.msn.co.nz/businessnews/national/8626288/rbnzs-tool-kit-wont-stop-housing-bubble>.)
- [114.](http://www.chba.ca/uploads/Urban_Council/June2012/Tab%203%20-%20Infrastructure%20Evidence%20and%20Issues%20Synthesis,%20May,%202012.pdf) A report for the Canadian Home Builders' Association describes additional options. "Basic Urban Infrastructure for Canada: Evidence and Issues," 2012. Available online at http://www.chba.ca/uploads/Urban_Council/June2012/Tab%203%20-%20Infrastructure%20Evidence%20and%20Issues%20Synthesis,%20May,%202012.pdf.
- [115.](#) Less price escalation in new housing is likely to moderate cost escalation in the existing housing stock.
- [116.](http://www.newgeography.com/content/003950-unblocking-constipated-planning-new-zealand) Cox, Wendell, "Unblocking Constipated Planning" in New Zealand," 2013. Available online at <http://www.newgeography.com/content/003950-unblocking-constipated-planning-new-zealand> (New Zealand); Bort, Daniel C., "An Introduction to California Mello-Roos Communities Facilities District," Orrick, Herrington & Sutcliffe LLP. Available online at <http://www.orrick.com/Events-and-Publications/Documents/1180.pdf> (California); Allen, Joe. B. and David M. Oliver, Jr., "Texas Municipal Utility Districts: An Infrastructure Financing System," Allen Boone Humphries Robinson LLB. Available online at <http://westten.com/docs/texas-municipal-utility-districts-an-infrastructure-financing-system.pdf> (Texas); and Highlands Ranch Metro District. Available online at <http://highlandsranch.org/> (Colorado).
- [117.](#) An urban growth boundary can be called by various names such as "an urban limit" or "an urban service boundary." The euphemism "growth areas" is also used.
- [118.](#) Green, R.K. and S. Malpezzi, *A Primer on U.S. Housing Markets and Housing Policy*, Urban Institute Press, 2003, p. 146.
- [119.](#) Downs, Anthony, *New Visions for Metropolitan America*, Brookings Institution Press and Lincoln Land Institute, 1994, p. 38.
- [120.](#) Quigley, John M. and Steven Raphael, "Is Housing Unaffordable? Why Isn't It More Affordable?" *Journal of Economic Perspectives*, Volume 18, Number 1, Winter 2004, pp. 191-214. Available online at <http://urbanpolicy.berkeley.edu/pdf/QRJEP04PB.pdf>.
- [121.](#) Mayo, S. K., "Effects of Land and Housing Policies on Market Performance," *Land Lines* May 1997, Volume 9, Number 3, Lincoln Land Institute. Available online at http://www.lincolninst.edu/pubs/483_Effects-of-Land-and-Housing-Policies-on-Market-Performance
- [122.](#) Green, R.K., Malpezzi, S. and S.K. Mayo, "Metropolitan-specific Estimates of the Price Elasticity of Supply of Housing, and Their Sources," *The American Economic Review*, Vol. 95(2), May 2005.
- [123.](#) Glaeser, E.L., Gottlieb, J. and J. Gyourko, "Did Credit Market Policies Cause the Housing Bubble?" 2010, Harvard Kennedy School. Available online at <http://patrick.net/contrib/GlaeserGFCPaper2010.pdf>.
- [124.](#) Cox, Wendell, "Property Values 11 Times Higher across Portland's Urban Growth Boundary," 2010. Available online at <http://www.newgeography.com/content/001808-property-values-11-times-higher-across-portlands-urban-growth-boundary>.
- [125.](#) Barker, K. "Review of Housing Supply: Delivering Stability: Securing Our Future Housing Needs: Final Report Recommendations," 2004, Her Majesty's Stationery Office and K. Barker, "Barker Review of Land-use Planning: Final Report – Recommendations," Her Majesty's Stationery Office.
- [126.](#) Fischel, William A., "Comment" in "The Link between Growth Management and Housing Affordability: The Academic Evidence," in Anthony Downs, editor, *Growth Management and Affordable Housing: Do They Conflict*, 2004, Brookings Institution Press.

127. Glaeser, E.L. and Joseph Gyourko, *Rethinking Federal Housing Policy: How to Make Housing Plentiful and Affordable*, 2008, American Enterprise Institute, p.78.
128. Haughwout, Andrew, Lee, Donghoon, Tracy, Joseph and Wilbert van der Klaauw, "Real Estate Investors, the Leverage Cycle and the Housing Market Crisis," Federal Reserve Bank of New York. Available online at http://www.newyorkfed.org/research/staff_reports/sr514.pdf and Glaeser, E.L. and Joseph Gyourko, *Rethinking Federal Housing Policy: How to Make Housing Plentiful and Affordable*, 2008, American Enterprise Institute.
129. Frieden, Bernard J., *The Environmental Protection Hustle*, MIT Press, 1979.
130. Dowall, David E., *The Suburban Squeeze: Land Conversion and Regulation in the San Francisco Bay Area*, Berkeley: University of California Press, 1984, p. 1. See <http://www.amazon.com/The-Suburban-Squeeze-Conversion-Development/dp/0520049683>.
131. Fischel, William A., *Regulatory Takings: Law, Economics, and Politics*, Harvard University Press, 1998.
132. From the "Demographia International Housing Affordability Survey (2005 to 2013), "Demographia." Latest edition available online at <http://www.demographia.com/dhi.pdf>.

Further Reading

April 2014

Housing Affordability and the Standard of Living in Calgary

By Wendell Cox

<http://www.fcpp.org/posts/housing-affordability-and-the-standard-of-living-in-calgary>

December 2013

Housing Affordability and the Standard of Living in Regina

By Wendell Cox

<http://www.fcpp.org/posts/housing-affordability-and-the-standard-of-living-in-regina>

December 2013

Housing Affordability and the Standard of Living in Saskatoon

By Wendell Cox

<https://www.fcpp.org/posts/housing-affordability-and-the-standard-of-living-in-saskatoon>

For more see

www.fcpp.org



Ideas for a Better Tomorrow