

Close to Home

The benefits of compact, walkable, transit-friendly neighbourhoods

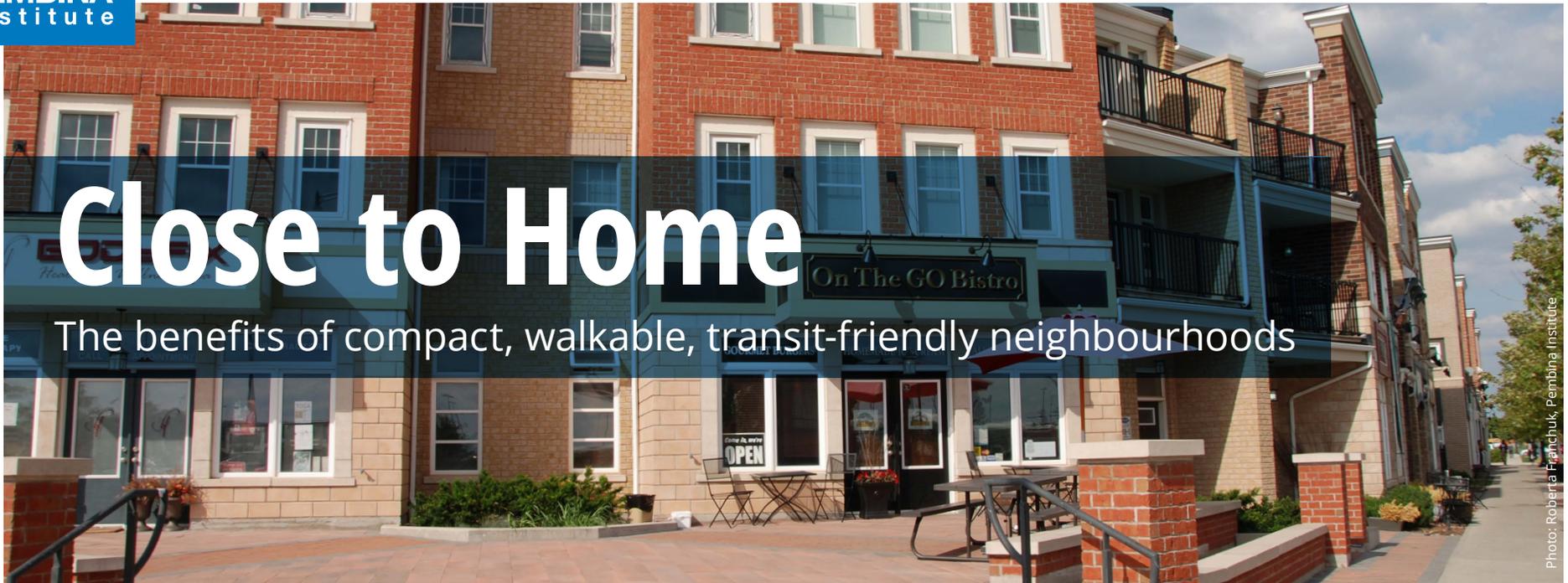


Photo: Roberta Franchuk, Pembina Institute

The character and location of a neighbourhood shapes the lives of the people who live there. A community's access to transit, or housing options for different family sizes, plays a key role in determining who can live there and what kind of community it will become.

More compact and centrally located neighbourhoods provide many benefits for residents. By living closer to where they go, people spend less time commuting and more time doing the things they love. Living in a neighbourhood served by transit means that not everyone has to depend on — or pay for — a personal car. When homes and shops are closer together, they generate the critical mass needed to support businesses and sidewalk culture, as well as providing enough demand for rapid transit lines.

In the Greater Golden Horseshoe (GGH), urban development and land use is guided in part by the Growth Plan. This plan, which was established under Ontario's Places to Grow Act, has helped encourage more compact development and minimize development in the designated greenfield areas near the Greenbelt. Municipal and regional official plans use population and employment growth targets to guide development at the local level.

This report reviews some of the ways focusing on compact development and building complete communities can make life more affordable and enjoyable. It also includes examples of the benefits of density and how it can help create compact, walkable and transit-oriented neighbourhoods.

EVERYONE BENEFITS FROM MORE

COMPACT, WALKABLE AND TRANSIT-FRIENDLY

COMMUNITIES

The Places to Grow Act is Ontario's legislation to make better use of land. It creates growth plans for different regions, including the municipalities in the Greater Golden Horseshoe, to support more compact development.

Policies that create more compact, walkable and transit-friendly neighbourhoods will provide the following benefits:

Create **500,000 more homes and places to work** in walkable, transit-friendly Urban Growth Centresⁱ

More than **80% of GTA residents** would prefer to live in walkable and transit accessible neighbourhoods^{vii}

Households can **save \$9,200** or more per year by being able to give up one car^{iv}

The average commuter — including both drivers and transit riders — will **save more than \$1,300** per year in travel costs, fuel and timeⁱⁱ

Full implementation of the Big Move transit projects could **reduce per-person GHG emissions** from passenger transportation by almost one-third^v

Put **1 million more people within walking distance** of rapid transit by 2030ⁱⁱⁱ

Take 11,500 cars off the road each week during the morning rush hour by providing better alternatives to driving^{vi}

Save 50 hours of time spent commuting or stuck in traffic each year^{viii}

* These figures apply to the Greater Toronto Area and Hamilton combined

Illustration: Steven Cretney, Pembina Institute

Building homes for everyone

In a recent study, more than 80% of Greater Toronto Area (GTA) residents would prefer to live in a walkable and transit-accessible neighbourhood, even if that means trading in a large house and yard for something more modest, like a mid-rise condo or townhouse.¹ However, finding one of those homes at an affordable price can be a challenge.

In central and transit-connected areas, development often takes the form of high-rise condos with smaller units, catering to single people and young couples. Families with children often find themselves moving farther from their workplaces in order to afford a home. Unfortunately these outlying areas often lack transit access, forcing residents to depend on a car.

More liveable neighbourhoods

There is an alternative to the conventional pattern of single-detached housing development we've seen in many suburban areas: compact and walkable neighbourhoods with a mix of housing types, including townhouses and mid-rise buildings. These neighbourhoods support urban intensification without relying heavily on high-rise buildings. The variety of housing types they provide is also essential to attract people in different stages of life — single people, couples, seniors and families of all sizes.

These neighbourhoods make better use of land and have a greater mix of uses, which makes them more liveable. When homes and businesses are spread out, the same area wouldn't have enough density to support a greater range of amenities.



Townhouses on Shaw Street in Toronto.

What are greenfield and brownfield areas?

These are two different options where development can occur.

Designated greenfield sites are undeveloped plots of land outside of an area that has already been built up. Designated greenfield sites are available for development and have lower density targets than existing built-up areas.

Brownfield sites are usually within existing built-up areas. Brownfields are underused sites, usually previously used for industrial or commercial purposes. They typically require remediation from previous contamination.

What is intensification?

Intensification is a key tool for creating more compact neighbourhoods with higher population densities. The Growth Plan for the Greater Golden Horseshoe, 2006, dictates that at least 40% of development must occur in built-up areas.

Intensification can take shape in a few different ways in existing areas. For example, density can be increased by redeveloping or converting existing properties, developing vacant or underused lots, or building infill development.

What are the benefits of intensification?



Intensification provides more choices

Homebuyers tend to prefer walkable neighbourhoods with transit and local amenities in the GTA,² but an area that is already built up obviously has a limited supply of vacant homes, and these homes are more expensive because of the limited supply. Intensification can increase that supply. If all the urban growth centres in the GTA meet their density targets, their populations will grow by at least 50%. That would create **500,000 more opportunities for people to live and work in these desirable neighbourhoods.**⁵



Intensification increases transportation options

Building homes in existing neighbourhoods, and making new neighbourhoods more compact with close access to amenities and employment opportunities, reduces the distance people have to travel, resulting in direct savings for drivers. This provides more residents with the opportunity to reduce their costs from driving. It's projected that in 30 years with the full roll-out of regional rapid transit projects, **80% of the GTHA population will live within two kilometres of rapid transit.**⁴



Intensification reduces greenhouse gas emissions and air pollution

Intensification provides more opportunities for households and employers to move to neighbourhoods with transit access and amenities within walking and cycling distance. Families moving from suburban neighbourhoods to complete communities may be able to reduce distance travelled by car, or even own fewer cars, because they are able to take more trips by walking, cycling or transit. Metrolinx's target for when the Big Move is completely implemented is to **reduce per-person greenhouse gas emissions from passenger transportation by almost one-third.**⁵



Intensification reduces infrastructure costs

Homes that are built in existing neighbourhoods can make use of the infrastructure already in place, be it transit, roads, sewers, schools or community services. That saves taxpayers and developers money, since using or expanding existing infrastructure costs less than building from scratch. In fact, **infrastructure costs for location-efficient communities can be as much as 20-50% lower** than those for new low-density developments.⁶

How intensification works in the Greater Golden Horseshoe

The Growth Plan has identified 25 areas as urban growth centres within the GGH. These are typically downtown cores or emerging centres; for example, Vaughan Metropolitan Centre and Newmarket Centre. These centres have minimum density targets of 150 to 400 people and jobs combined per hectare.⁷ Upper- and lower-tier municipalities use these density targets, and population and employment forecasts, to shape policies and priorities in their official plans.

In the GTA, for example, the Growth Plan has only set targets for municipalities' city centres, and the major centres of Toronto's amalgamated suburbs.⁸ Many municipalities have gone above and beyond these requirements by also focusing intensification along corridors that are connected to existing or planned frequent transit.

A great example of this is Eglinton Avenue: the future Eglinton Crosstown corridor paired with the official plan's demarcation of Eglinton as an "avenue"⁹ acted as a catalyst for redevelopment and intensification along the corridor. Markham and Mississauga have also designated hubs and corridors to focus growth along major transit routes such as Highway 7 in Markham and Hurontario in Mississauga.



St. Clair Avenue in Toronto has a variety of housing options.

Creating more housing options boosts density

High-rise apartments in urban centres significantly increase density. However, in most cases, they do not offer units suitable for families, such as suites with more than two bedrooms. Detached homes that are more suitable for families in terms of size are often unaffordable in urban centres or near transit lines. More affordable multi-bedroom homes tend to be available in car-dependent locations that may require long commutes.¹⁰ To solve this affordability problem, a larger supply of medium-density and family friendly housing options are needed in location-efficient neighbourhoods.

Introducing housing options such as mid-rise and laneway housing in existing communities, and particularly in urban growth centres, helps bring gentle density and addresses the affordability problem by providing more diverse housing options.

Engaging early and often

While everyone has an interest in improving their communities, opinions on how to do so can be varied, and all voices need to be heard. In order to effectively introduce new developments into an established neighbourhood, developers should first do their research on the community, and meet with key members to better understand their needs. This can include local politicians, residents, residents' associations, business improvement areas (BIAs)¹¹, and conservation authorities.

Engaging all stakeholders in the development process benefits everyone involved, and ensures development is headed in the right direction.

Community consultation is a required component of all planning projects in Ontario¹², and doing it right — having a community that supports your developments — plays a critical role in whether or not a developer is granted approval to build. How both developers and the community approach engagement can greatly affect the level of participation and participants' feeling of inclusion.

As economic prosperity is an important part of a successful community, BIAs and local businesses have an important role in shaping development that can help businesses further thrive. Residents' associations also have the ability to mobilize the community and have the potential to constructively guide intensification in their neighbourhoods if positively engaged in the consultation process.

Westbank redevelopment of Honest Ed's

The Westbank redevelopment of Honest Ed's is a great example of a developer shaping a project based on effective stakeholder input. Brook Pooni Associates and Westbank have been coordinating public events and meeting with local groups and organizations since Westbank initially purchased the property in 2013.¹³ The continued feedback collected from these meetings and the public information centre was used to shape the Mirvish Village vision, which includes a public market, mixed use buildings, heritage retention, unique retail opportunities and sustainability initiatives.

The new development will also have 1,100 rental suites. Keeping families in mind, nearly half of the units will be two bedrooms or more, and they are also planning on having a daycare. Westbank continues to run a consultation centre at the site to collect feedback from visitors on the project.

This case shows that fostering relationships between stakeholders and developers gets positive results and creates a win-win situation. When developers actively seek to listen, learn and accept community feedback, they earn trust within the community. Further, when communities positively engage with developers and seek common goals, the resulting development better benefits the community.



The Markham House will be open four days a week to gather community feedback on the Mirvish Village project until construction begins.

Density and a thriving economy go hand-in-hand

Supporting density is important for the economic success of Ontario. By 2041, jobs in the GGH are forecast to increase by 40%, from 4.5 million to 6.3 million.¹⁴ It is critical to support policies, built form and land use that help the swift movement of people and goods in the region.

Successes in Kitchener, a mixed-use tech hub

Kitchener, in the Region of Waterloo, is an interesting case study of how a community put the right policies in place to both support density targets and improve the city's economic stability.

Historically, the Region of Waterloo's leading employers have been the manufacturing and public sectors. However, recent years have seen significant growth in the technology sector. This growth, along with intensification policies in Kitchener, has made the region a destination for younger adults to live and work.

A series of key events supported this shift. Close to a decade ago, the Neptis Foundation completed a study that included a comparison of development in urban centres across the GGH.¹⁵ Downtown Kitchener was the slowest growing urban growth centre with the lowest population increase from 1996 to 2001. Neptis reported that although there were many opportunities to redevelop in downtown Kitchener, there was no market demand for living downtown.



King Street in Kitchener.

To address this, under the leadership of the mayor and city council, the City of Kitchener developed an economic development strategy to attract businesses and developers in hopes of re-invigorating the city.

In 2004, Kitchener's city council introduced the Economic Development Investment Fund¹⁶, with financial incentives including exemptions to development charges and fees, appropriate zoning and a brownfields incentive program.

The Brownfield Financial Incentives Program, a joint venture between the City of Kitchener and

the Region of Waterloo, helped attract developers to purchase the Tannery District building — an approximately 350,000-square-foot former leather factory. The program included financial support for environmental assessments, reduced development charges, building credits and a joint tax increment program.¹⁷ In 2007 Cadan Inc. purchased and transformed the building as commercial space with a focus on attracting the high-tech industry — adding in extra electricity for computer servers along with showers and bike racks.¹⁸

The City of Kitchener contributed \$500,000 from its investment fund for Communitech¹⁹ to create



The Communitech technology innovation hub runs out of the Tannery.

The Tannery building in downtown Kitchener.

a new technology innovation hub operating out of the Tannery. This hub now includes a community of almost 1,000 tech companies.²⁰ The building was also very successful in attracting other tech firms and start-ups; Google opened its largest Canadian office there in 2011. Allied Properties REIT, which purchased the Tannery, is now developing other parts of the building for commercial space.

In 2012 the City of Kitchener developed the Downtown Kitchener Action Plan, a plan to harness the benefits of the new light rail system to push further re-urbanization opportunities and connectivity. It also includes improving the public realm on King Street, adding new mixed-use developments in the downtown and expanding the innovation district, with an eye towards

creating a more unique, urban experience to attract young professionals.²¹

The region's growing tech industry brought increased job opportunities for young professionals, and this, paired with the City of Kitchener's strategy to rejuvenate downtown, has led to a shift in housing demand. Recent development has focused on creating more density, and adding more mixed-use buildings. Not only is the continuing tech boom increasing demand for condos, lofts and mixed-use buildings for young professionals²², but more people aged 65 and over are also moving into condominiums in the Region of Waterloo.²³ More than 40% of residential buildings completed between 2012 and 2014 are five storeys or more. This is a significant increase from pre-2011,

when five-storey or taller apartment buildings represented less than 20% of new builds.²⁴

The combination of the City of Kitchener's economic development policies, supportive land use planning framework and action plan has changed the landscape of the Region of Waterloo. Employment density in Downtown Kitchener is now one of the highest in the GGH.²⁵ It is expected that the 2016 census will show changes to demographics, with a larger proportion of millennials and more knowledge industry employment opportunities.²⁶

Opportunities for transit-oriented development

Increasing density around transit stations is an easy way to bring more people and jobs closer to existing rapid and light rail transit in the GGH region.

The GGH is fortunate to have the GO rail network, which allows residents from across the region to commute into urban centres by train. Taking the GO train instead of driving can make a commute less stressful and more productive, and it also has financial benefits. The average annual cost of riding the GO train is \$3,143,²⁷ while operating a compact car would cost a minimum of \$9,200.²⁸

Building compact neighbourhoods around GO stations puts more people within walking distance of them. Intensification around GO stations makes the best use of existing infrastructure, especially as the province upgrades the service to run more frequently.²⁹ Currently, around 77% of

GO stations have densities below 49 people and jobs combined per hectare.³⁰ If GO and other rapid transit stations continue to be surrounded by low-density developments, fewer people will have the opportunity to commute by train — and more of those who do will have to drive to the station. Unless current mode share and ridership growth patterns change, GO Transit will need to provide 35,000 to 40,000 new parking spaces at stations by 2031 to accommodate growing demand.³¹

These considerations are relevant when evaluating any rapid transit project, not just GO rail lines. For example, many light rail transit projects in the GGH have received funding. These include LRTs in Toronto, Kitchener-Waterloo, Hamilton and Mississauga. Before moving ahead with multi-billion dollar transit investments,

it is critical that plans are made to drive intensification along these corridors, ensuring that the land is used effectively and more people have the opportunity to live within walking distance of a station.

Learning from success

The GTA already has positive examples of compact development around suburban GO stations. Mount Pleasant Village, at the Mount Pleasant GO station in Brampton, illustrates the alternatives available when developing new communities around transit stations. All the new homes are within a 15-minute walk of the GO station, and there are future plans for the Züm BRT to run east-west through the neighbourhood on Boivard Drive, and north-south on Mississauga Road.³²



Focusing intensification around GO stations makes the best use of existing infrastructure.



Photo: Roberta Franchuk, Pembina Institute



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Mount Pleasant Village has a number of live/work units.

At 21%, Mount Pleasant station has one of the highest walking mode shares.

Mount Pleasant

Mount Pleasant Village is a recently built mixed-use greenfield development of 39 hectares with approximately 1,300 residential units.

It has a mix of mid-rise buildings, townhouses and detached homes. There are also a number of live/work units with businesses on the ground level and residential units above. The residential units were designed around a town centre that includes a library, community centre, school, public square, and the GO train station. The community as a whole was laid out to make it easy for residents to walk to the town centre and GO station along calm streets. Approximately 8% of the area's natural features were preserved during development.³³

As with any new development, there have been some challenges and lessons learned. For example, it has not proved easy to attract a diversity of amenities. Many of the available retail spaces are part of the live/work units and are not conducive to larger amenities such as grocery stores. This demonstrates the importance of understanding the needs of different businesses and attracting the right mix of retail and business amenities in developing complete communities.

Despite these challenges, Mount Pleasant Village is a great example of how homes can be located closer to GO stations in order to increase the number of riders who can walk or cycle to train stations. More people walk to the Mount Pleasant GO station than walk to any other nearby station.

How they made it work

The development of Mount Pleasant Village proves the importance of collaboration in creating a complete community. The developer, Mattamy Homes, was keen to work with the City of Brampton to incorporate key pieces, such as a public square, transit station, schools and a library, into the design. External funding was provided from municipal and federal funds, and from a landowners group.³⁴ Design was coordinated with transit — both the Mount Pleasant GO station and a future Züm BRT line. Careful planning and coordination paid off; all homes sold, proving the market demand.

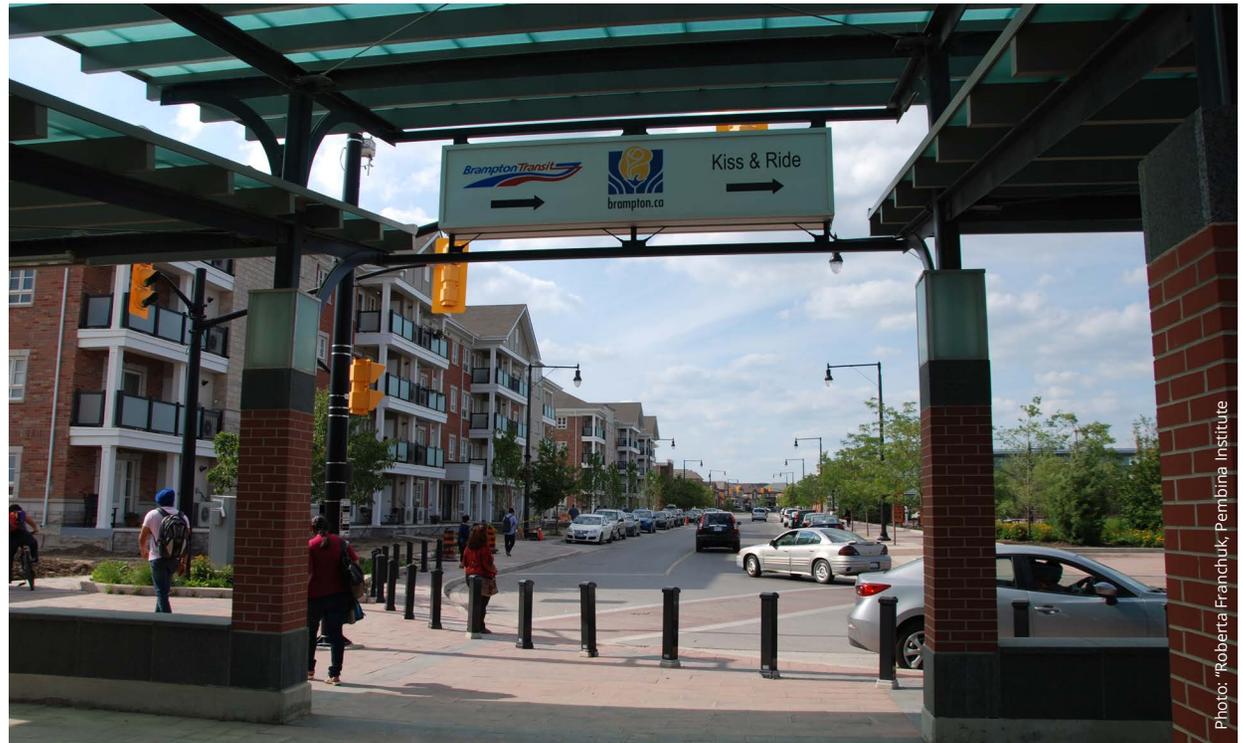
Walkability makes the neighbourhood

Mount Pleasant GO station has a higher walking mode share (21%) than the neighbouring GO stations of Malton, Georgetown and Etobicoke North.³⁵ That difference in walkability — which is the result of compact, transit-oriented development — has a measurable impact on commuting patterns and transit use. At 21%, its mode share for pedestrians is comparable to more established centres with GO stations, like Burlington or Streetsville.

Going forward, ridership at Mount Pleasant station is projected to increase almost three-fold within the next two decades.³⁶

The population within walking distance of Mount Pleasant station is already exceptional — it ranks sixth among the 47 suburban GO stations outside the City of Toronto³⁷ — and likely to increase. So while 62% of GO passengers currently drive to the station, we can expect that to decrease over time.

By modelling itself on older commuter neighbourhoods near GO stations (e.g. Streetsville), Mount Pleasant has shown some early success as a transit-oriented development, and the future outlook is positive. Walkability is a key part of that success — a lesson worth remembering as rapid transit networks expand across the GTA.



Ridership at Mount Pleasant station is projected to increase almost three-fold within the next two decades.

Mount Pleasant

- **Households within 15-minute walk of station:** 1,300
- **Riders who walk to the station:** 21%
- **Parking spots at station being used:** 64%
- **Annual ridership (2011):** 930,000
- **Forecasted annual ridership (2031):** 2,800,000

Case study: Reimagining the 905

With 62% of population growth in the GTA happening outside of Toronto, the region faces a critical question: what do we want our suburbs to look like in 10 years? Or in 20 years?

One possibility is to continue the pattern of building car-dependent residential developments, interspersed with commercial plazas on arterial roads. The other is to grow up instead of out, creating more walkable and liveable neighbourhoods with higher population densities.

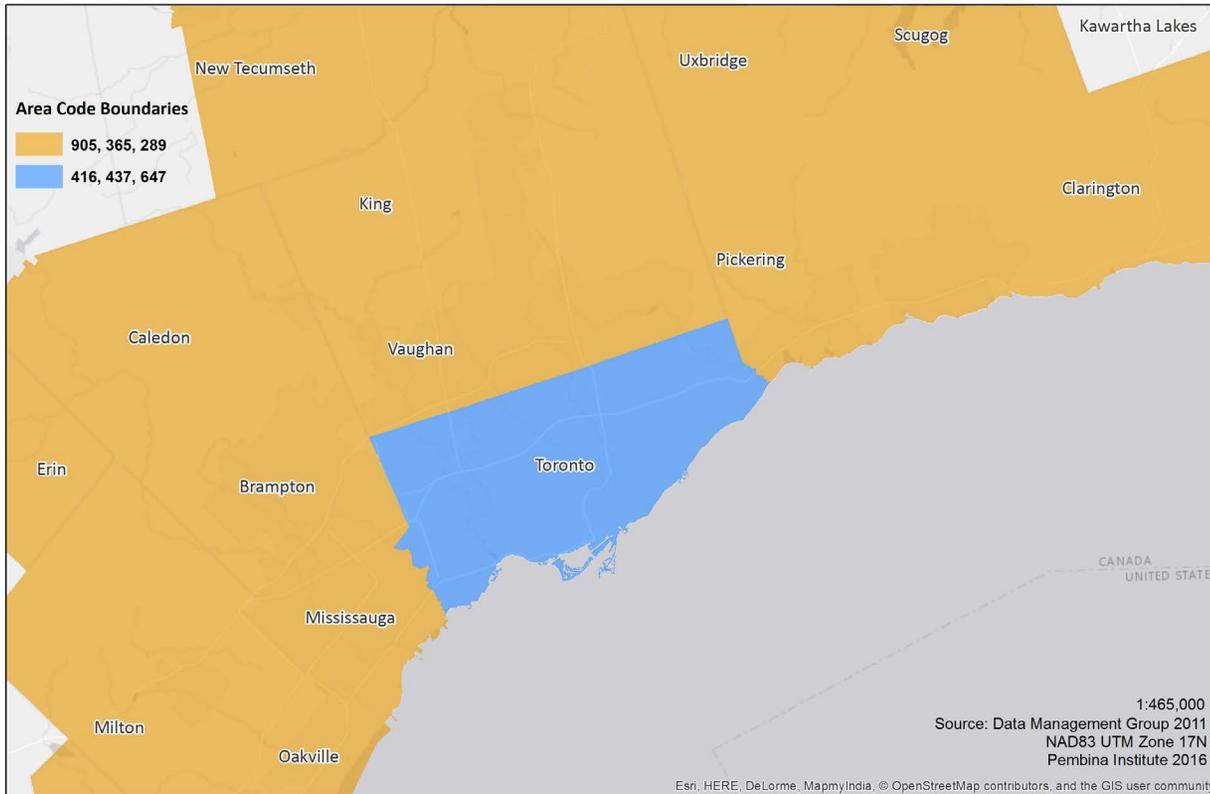
No longer suburbs

Compact development is sometimes described as a downtown phenomenon, placing it in opposition to suburban communities. That characterization does not always reflect the realities on the ground. Even describing cities like Markham and Mississauga as suburbs is increasingly inaccurate, given their rapid growth, limited greenfield development opportunities, and the emergence of their own vibrant downtowns.

Downtown Markham

The Downtown Markham site is being developed by the Remington Group, which purchased the full parcel of land several decades ago. It is a new development, and substantial commercial and residential construction started in 2013, with full development scheduled over the next 15–20 years. It has a mix of homes, retail spaces, entertainment, restaurants, office space, and a diversity of housing options ranging from townhouses to high-rise apartments. There is also a growing number of community amenities, including a YMCA and the Markham Pan Am Centre. The neighbourhood is served by a Viva BRT line and the Stouffville GO line.

Even in these early days of development, Downtown Markham is proving to be a successful complete community. Townhouses and condos are selling well, demonstrating market demand for mixed-use buildings. By bringing homes and businesses closer to transit, introducing diversity in housing options, as well as successfully attracting places of employment, retail and entertainment, Downtown Markham is becoming a place to live, work and play.



Communities in the 905 like Markham and Mississauga have emerging vibrant downtowns.

How they made it work

Markham's clear vision of what good density looks like is key to the success of Downtown Markham's development. The city worked hand-in-hand with the developer to bring the vision to life. Remington Group also understood the changing market demand, and the importance of creating a mixed-use community to attract residents, employers and retail.

The City of Markham had developed a broad plan for the Markham Centre district, and a performance checklist for the development application process to ensure all new development, including Downtown Markham, was true to the larger vision. The city also placed a strong emphasis on increasing density around new transit investments.



The developer, Remington Group, worked closely with the City of Markham to develop the downtown vision.

Downtown Markham

- **Transit services:** Viva bus rapid transit and GO train
- **Retail (planned):** Retail centre, plus retail on ground floor of mid-rise and high-rise buildings
- **Housing types:** Townhouses, mid-rise and high-rise condominiums
- **Average price for a two-bedroom condo (March 2016):** \$460,000
- **Schools:** 2
- **Open space:** Rouge River Valley, Roseberry Park, Civic Mall Park
- **Businesses with 100 to 499 employees:** 3
- **Features (existing):** YMCA, Cineplex theatre and Pan Am Games swimming and sports centre
- **Residential units (planned):** 8,000 (2,000 already built)
- **Retail space (existing):** 500,000 square feet, (2,200,000 square feet planned)
- **Office space (planned):** 3,700,000 square feet (900,000 square feet existing)

Guiding principles to success

This report has shown the benefits of density and the importance of building complete communities. Success takes collaboration and careful planning; here are a few key factors in getting there:



Strong leadership from cities

Good density starts with municipalities determining where population growth should be located and how it can maximize the use of existing infrastructure. Municipalities across the GGH like Markham, Mississauga, Toronto and Kitchener have dictated in their official plans that new residents and jobs should be concentrated around major hubs and transit corridors.



Coordinated transit

Density is best suited to areas where residents and commuters have a variety of transportation options. Planning developments around existing and future transit investments maximizes revenues of transit services and builds the necessary ridership to justify further transit investments.



Early consultation with stakeholders and the community

The community wants what is best for their neighbourhood, and early consultation with local residents and businesses will ensure that the community is engaged and contributing to the development plan. All stakeholders should be willing to work together, and have the common goal of improving the community.



Progressive developers

The most successful examples of greenfield developments or mixed use developments in established neighbourhoods come from developers that are willing to work closely with municipalities and the community. Progressive developers actively listen to community interests and concerns, while also adhering to municipal city-building visions to create new developments that are liveable and denser.

Endnotes

1. Cherise Burda, *2014 Home Location Preference Survey: Understanding where GTA residents prefer to live and commute* (The Pembina Institute, 2014), 7. <http://www.pembina.org/pub/2014-home-location-preference-survey>
2. *2014 Home Location Preference Survey*, 3.
3. Used Growth Plan density targets for Urban Growth Centres and population and employment forecasts to estimate the increase in jobs and residents in Urban Growth Centres. Hemson Consulting, *Greater Golden Horseshoe Growth Forecasts to 2041: Technical Report (November 2012) Addendum*, (2013), 82. <http://www.hemson.com/downloads/HEMSON - Greater Golden Horseshoe - Growth Forecasts to 2041 - Technical Report Addendum and Rev. Appendix B - Jun2013.pdf>
4. Metrolinx, *Background: Modelling Methodology and Results for the Regional Transportation Plan (2008)*. http://www.metrolinx.com/thebigmove/Docs/big_move/RTP_Background_Modelling.pdf
5. Metrolinx, *Big Move: Baseline Monitoring Report* (2013), 22. http://www.metrolinx.com/en/regionalplanning/bigmove/The_Big_Move_Baseline_Monitoring_Full_Report_EN.pdf
6. IBI Group, *Greater Toronto Area Urban Structure Concepts Study: Summary Report*, prepared for the Greater Toronto Coordinating Committee (1990).
7. Ontario Growth Secretariat, *Intensification and Density Targets: Technical Background*. https://www.placestogrow.ca/index.php?option=com_content&task=view&id=385&Itemid=15
8. Toronto Urban Growth Centres: Downtown Toronto, Etobicoke City Centre, North York Centre, Scarborough Centre, and Yonge-Eglinton Centre
9. The Avenues are important corridors along major streets where reurbanization is anticipated and encouraged to create new housing and job opportunities while improving the pedestrian environment, the look of the street, shopping opportunities and transit service for community residents (Toronto Official Plan)
10. Cherise Burda, *Make Way for Midrise* (Pembina Institute, 2015), 3. <https://www.pembina.org/reports/make-way-for-mid-rise.pdf>
11. A business improvement area (BIA) is designated by municipal council as an area where businesses and property owners can mobilize to deliver programs. BIAs are sometimes partially funded by the municipality, but also engage in fundraising to provide services and spur revitalization.
12. The Planning Act requires municipalities to hold public meetings for any applications that may require amendments to the Official Plan, Zoning bylaws and subdivision plans. City staff or councillors may also host community consultation meetings, but this is not required under The Planning Act.
13. Opencity Projects, “Part 2: Engaging the Community,” September 21, 2015. <http://opencityprojects.com/part-2-engaging-the-community/>
14. Ontario Ministry of Municipal Affairs and Housing, *Performance Indicators for the Growth Plan for the Greater Golden Horseshoe, 2006* (2015), 2. <http://www.mah.gov.on.ca/AssetFactory.aspx?did=10849>
15. Pierre Fillion, *The Urban Growth Centres Strategy in the Greater Golden Horseshoe: Lessons from Downtowns, Nodes, and Corridors* (Neptis Foundation, 2007), 42. http://www.neptis.org/sites/default/files/nodes_and_corridors/filion_electronic_report_20070528.pdf
16. City of Kitchener, *Economic Development Investment Fund: Shaping Tomorrow Together*, 3. <https://www.kitchener.ca/en/insidcityhall/resources/EconomicDevelopmentInvestmentFundBrochure.Pdf>
17. City of Kitchener, “Brownfield Remediation.” <https://www.kitchener.ca/en/businessinkitchener/BrownfieldRemediationProgramWebsite.asp>
18. Jennifer Lewington, “Kitchener finds its new groove in industrial past,” *Globe and Mail*, April 2, 2012. <http://www.theglobeandmail.com/report-on-business/industry-news/property-report/kitchener-finds-its-new-groove-in-industrial-past/article4097776/>
19. City of Kitchener, “Economic Development Investment Fund (EDIF).” <http://www.kitchener.ca/en/businessinkitchener/EconomicDevelopmentInvestmentFundEDIF.asp>
20. “About Communitech: The Communitech Hub.” <https://www.communitech.ca/who-we-are/>
21. City of Kitchener, *Downtown Kitchener Action Plan: 2012-2016* (2012), 6. http://www.downtownkitchener.ca/en/resourcesgeneral/downtown_kitchener_action_plan_2012-2016.pdf
22. Katia Dmitrieva, “Condo buying frenzy in Waterloo as Google moves in,” *The Hamilton Spectator*, January 27, 2016. <http://m.thespec.com/news-story/6250586-condo-buying-frenzy-in-waterloo-as-google-moves-in>
23. Doug Norris, *Demographic Trends: Implications for Waterloo Region*, prepared by Environics Analytics for the Region of Waterloo (2015), 36.
24. *Ibid.*, 37.
25. *Performance Indicators for the Growth Plan for the Greater Golden Horseshoe, 2006*, 9.
26. Nielsen, “Millennials Prefer Cities to Suburbs, Subways to Driveways,” March 4, 2014. <http://www.nielsen.com/us/en/insights/news/2014/millennials-prefer-cities-to-suburbs-subways-to-driveways.html>
27. Calculated using: GO Transit, “Fare Calculator.” <http://www.gotransit.com/publicroot/en/fares/farecalculator.aspx> (accessed March 15, 2015)
28. Calculated using: Canadian Automobile Association, “Driving Costs Calculator.” http://caa.ca/car_costs/ (accessed March 3, 2015)
29. Ontario Ministry of Finance, *Investing in Ontario’s Infrastructure: Moving Ontario Forward* (2014). <http://www.fin.gov.on.ca/en/budget/ontariobudgets/2014/budhi2.pdf>
30. Ontario Ministry of Municipal Affairs and Housing, *Performance Indicators for the Growth Plan for the Greater Golden Horseshoe, 2006* (2015), 11. <http://www.mah.gov.on.ca/AssetFactory.aspx?did=10849>

31. Metrolinx, *GO Transit Rail Parking and Station Access Plan* (2013). http://www.metrolinx.com/en/regionalplanning/projectevaluation/studies/GO_Transit_Rail_Parking_and_Station_Access_Plan_EN.pdf
 32. City of Brampton, *City of Brampton Transportation Master Plan Update* (2015), 13. http://www.brampton.ca/EN/Business/planning-development/transportation/Documents/TR4_FutureTransitProvisions.pdf
 33. Advisory Panel to the Ministers for the Coordinated Review, Planning for Health, Prosperity and Growth in the Greater Golden Horseshoe: 2015-2041 (2015), 67. <http://www.mah.gov.on.ca/AssetFactory.aspx?did=11110>
 34. City of Brampton, *Mount Pleasant Village: A New Transit-Oriented Neighbourhood in Brampton* (2012), 3. https://www.brampton.ca/EN/Business/planning-development/projects-studies/Documents/MPV_article_illustrated_Jan_2012.pdf
 35. Queried access mode to boarding GO stations. University of Toronto, Transportation Tomorrow Survey, 2011
 36. *GO Transit Rail Parking and Station Access Plan*, 38.
 37. Calculated the population (Statistics Canada, 2011, Population by dissemination area in Toronto CMA) and jobs (National Household Survey, 2011) within 78.5 Ha of GO stations.
- i. Hemson Consulting, *Greater Golden Horseshoe Growth Forecasts to 2041: Technical Report (November 2012) Addendum*, (2013), 82. <http://www.hemson.com/downloads/HEMSON - Greater Golden Horseshoe - Growth Forecasts to 2041 - Technical Report Addendum and Rev. Appendix B - Jun2013.pdf>
 - ii. HDR Corp., *Costs of Road Congestion on the Greater Toronto and Hamilton Area: Impact and Cost Benefit Analysis of the Metrolinx Draft Regional Transportation Plan*, Prepared for Metrolinx (2006), A7-1. http://www.metrolinx.com/en/regionalplanning/costsofcongestion/ISP_08-015_Cost_of_Congestion_report_1128081.pdf
 - iii. Steven Cretney, Cherise Burda, Bernard Rudny, *Fighting Traffic with Rapid Transit* (The Pembina Institute, 2014). <http://www.pembina.org/pub/2534>
 - iv. Calculated using: Canadian Automobile Association, "Driving Costs Calculator." http://caa.ca/car_costs/ (accessed March 3, 2015)
 - v. Metrolinx, *Big Move: Baseline Monitoring Report* (2013), 22.
 - vi. There will be 600,000 fewer weekday morning peak period auto trips in 2031 (2,603,722) compared to a Business as Usual scenario (3,206,490) (Metrolinx, Backgrounder: Modelling Methodology and Results for the Regional Transportation Plan (2008). http://www.metrolinx.com/thebigmove/Docs/big_move/RTP_Backgrounder_Modelling.pdf). This means 11,500 fewer trips per week during the morning peak period.
 - vii. Cherise Burda, *Home Location Preference Survey: Understanding where GTA residents prefer to live and commute* (The Pembina Institute, 2014), 3. <http://www.pembina.org/pub/2014-home-location-preference-survey>
 - viii. HDR Corp., *Costs of Road Congestion on the Greater Toronto and Hamilton Area: Impact and Cost Benefit Analysis of the Metrolinx Draft Regional Transportation Plan*, Prepared for Metrolinx (2006), 12. http://www.metrolinx.com/en/regionalplanning/costsofcongestion/ISP_08-015_Cost_of_Congestion_report_1128081.pdf

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