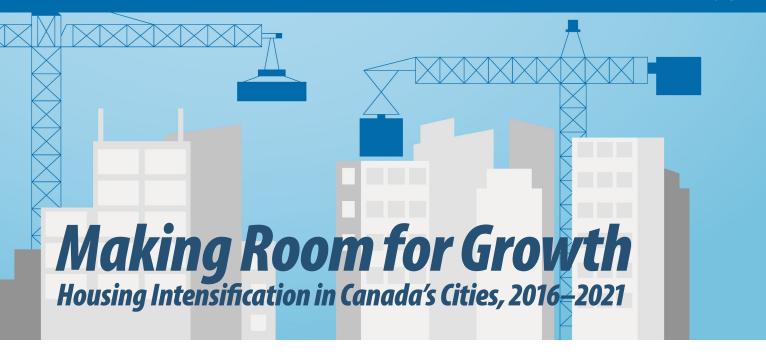
FRASER BULLETIN



2023



by Josef Filipowicz and Steve Lafleur

MAIN CONCLUSIONS

- As Canada struggles to close the gap between the number of homes needed and the number built, its communities are faced with two options to increase housing supply: spreading outward, by adding new neighbourhoods at the urban fringe, or becoming more dense, by allowing more homes to be built within existing neighbourhoods—a process called "intensification".
- A majority (54.2%) of the growth in Canada's housing stock between 2016 and 2021 occurred in existing neighbourhoods, rather than on undeveloped land; intensification is a major driver of growth in Canada's housing stock.
- A little more than half of this intensification (50.9%) occurred in the fastest-growing 5% of urban census tracts, suggesting a highly uneven pattern of growth in the housing stock.

- On the other hand, more than a quarter (26.4%) of urban tracts lost more dwellings over this period than they added, representing a cumulative net loss of 33,723 dwellings.
- This highly uneven growth pattern holds across most major metropolitan areas.
- Canada faces an acute shortage of housing, and needs to increase housing supply across all housing types, regions, and neighbourhoods.
- Given the important role played by intensification in accommodating a fast-growing population, the trends identified in this report should inform urban policy makers and Canadians in search of adequate housing options.

Introduction

Canada faces a significant shortage of homes, to rent or to own. Recent analyses estimate Canada's housing deficit to be in the millions of housing units (CMHC, 2022; Perrault, 2021), while low (and falling) rental vacancy rates in most cities (CMHC, 2023) indicate ongoing problems in the supply of rental units.

As Canada's communities seek ways of closing the considerable gap between the number of homes needed and the number being built, they are faced with two options, not mutually exclusive, to grow the housing supply. First, they can spread outward, by adding new neighbourhoods at the urban fringe. Second, they can become more dense, by allowing more homes to be built within existing neighbourhoods. Some growing communities combine both options.

This research bulletin focuses on the second option available to growing communities: growing inward and upward, through increased density. This process, often referred to as *intensification*, involves the addition of homes and businesses in existing neighbourhoods by adding structures or converting previously underused properties. For example, a ground-level parking lot can be converted to an apartment building, or a single-family home can be converted into a duplex or triplex.

Section 1 considers what intensification is and its role in major Canadian cities. Section 2 explores how much of Canada's housing stock growth is occurring in existing urban areas. This is achieved by comparing census tract (neighbourhood-level) housing stock data from the two most recent censuses (2016 and

2021). Section 3 explores the distribution of intensification, both across all urban census tracts and across major census metropolitan areas. The report concludes that, given the important role played by intensification in accommodating strong demand for more homes and the diverse factors encouraging intensification in various areas, the trends identified in this report should inform urban policy makers and Canadians in search of adequate housing options.

1. What is intensification? What role does it play in major Canadian cities?

When faced with pressure to increase the number of homes or businesses, cities have two options by which they can add more commercial and residential space: they can grow outward by adding new neighbourhoods at the periphery or they can grow inward and upward by adding new homes and businesses within existing neighbourhoods. The latter option—growing inward and upward—is often called *intensification*. For example, the government of Ontario defines intensification as follows in its Growth Plan for the Greater Golden Horseshoe:²

The development of a property, site or area at a higher density than currently exists through: a) redevelopment, including the reuse of brownfield sites [contaminated or underused industrial and commercial properties]; b) the development of vacant and/or underutilized lots within previously developed areas; c) infill development; and d) the expansion or conversion of existing buildings. (Ontario, 2022).³

¹ For more detailed analysis of the gap between Canada's population growth and home-building over time, see Filipowicz and Lafleur, 2023a.

² At the time of writing, the Ontario provincial government has proposed legislation to replace the Growth Plan for the Golden Horseshoe (Bill 97). Thus, the language on intensification may change, though intensification may remain a priority in future plans.

³ For further discussion on intensification, including definitions, see Burchfield, 2010.

For some municipalities, notably those that have already built over their entire geographical jurisdiction (for example, Vancouver, Victoria, Montréal-Est) or that face geographical barriers to outward expansion (for example, West Vancouver), intensification is the only means by which they can add commercial and residential space. It is worth noting, however, that some provincial governments, which are responsible for municipalities and legislation governing land-use planning, have implemented policies specifically restricting outward expansion in certain communities. Ontario's Growth Plan for the Greater Golden Horseshoe is one example; its Greenbelt is another. Both policies restrict the geographical enlargement of Canada's largest urban region, anchored by Toronto.

Even where outward urban growth is not limited by geography or prohibited through legislation, intensification is one important channel by which Canadian communities can increase the housing stock and address well-documented housing shortages.

There are other motivations for denser urban development. Patterns of denser urban development can, for instance, improve productivity and innovation. Dense clusters of businesses and workers have been shown to reduce costs and increase productivity, a well-documented phenomenon called *agglomeration economies*. This type of development therefore warrants measurement and analysis comparing how Canada's urban areas have intensified—or not—in recent years, particularly when it comes to housing.

This report is thus motivated by the following questions: (1) how much of Canada's housing stock growth is occurring in existing urban areas, and (2) how is this growth distributed?

2. How much intensification is there in Canada? How is it measured?

To answer the first question, data from the two most recent censuses, conducted by Statistics Canada in 2016 and 2021, were compared. The unit of analysis selected was the census tract (CT), which roughly represents neighbourhood-sized urban geographies within census metropolitan areas (CMAs) and census agglomerations (CAs).⁵ Put more simply, a census tract is a sub-district within a larger census metropolitan area. In 2021, Canada had 6,247 census tracts spread across 49 CMAs and CAs. Their combined population was 27,981,835 inhabitants, or 75.6% of Canada's total population (Statistics Canada, 2022d, 2023b).

The comparison of 2016 and 2021 census statistics was made possible by ensuring census tract boundaries remained the same in both periods. To do this, Statistics Canada's GeoSuite tool enables users to download "concordance files" presenting 2016 statistics for 2021 geographies, rather than 2016 statistics for 2016 geographies (Statistics Canada, 2023). For this report, concordance files including both 2016 and 2021 census data for 2021 census tracts were obtained, offering total dwelling counts in both years.

⁴ For more on agglomeration economies, see Puga, 2010.

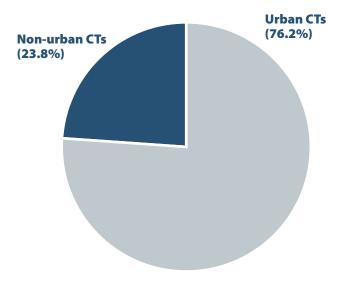
⁵ According to Statistics Canada: "Census tracts (CTs) are small, relatively stable geographic areas that usually have a population of fewer than 7,500 persons, based on data from the previous Census of Population Program. They are located in census metropolitan areas (CMAs) and in census agglomerations (CAs) that had a core population of 50,000 or more in the previous census" (Statistics Canada, 2022c). Census metropolitan areas and census agglomerations represent urban regions with core populations of at least 10,000 inhabitants. In 2021, 81% of Canada's population lived in a CMA or CA. (Statistics Canada, 2022b).

Second, census tracts considered fully urban in both census periods (2016 and 2021) were distinguished from tracts containing non-urban land using digital maps of Statistics Canada's census geographies. These included census tracts as well as population centres, which are a census geography representing the extent of cities' and towns' urban footprint in a given census year.⁶ Statistics Canada boundary files (digital maps) of both 2016 population centres and 2021 census tracts (Statistics Canada, 2019a, 2022a) were superimposed using Geographical Information System (GIS) mapping software, allowing the measurement of their overlapping land areas. Census tracts with 95% or more of their land area located within a 2016 population centre were selected for this analysis, as virtually all of their housing-stock growth occurred in neighbourhoods existing in both census periods rather than "greenfield" areas (that is, not previously developed, or rural lands). Further explanation of this approach and an example are included in the **Appendix** (p. 8).

To better illustrate how this operation affects the number of census tracts used for analysis, **figure 1** shows the share of all tracts considered urban in both census years. A significant majority—76.2%—fall under this category. This high share is unsurprising, as census tracts are only located within Canada's 49 largest CMAs and CAs, which are primarily urban. Further, fewer rural census tracts are required to cover more land area, as rural populations are smaller and less concentrated. In total, urban tracts represent 59.1% of Canada's 2021 housing stock, and 57.4% of its 2021 population.

After identifying census tracts considered urban in both 2016 and 2021, we calculated estimates of

Figure 1: Distribution (%) of census tracts (CTs) in Canada, 2021



Sources: Statistics Canada, 2019a, 2022a, 2023a; calculations by the authors.

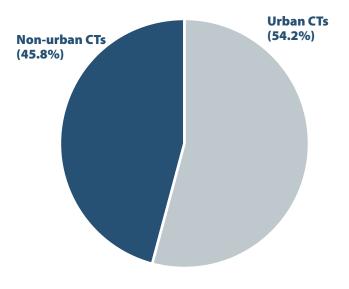
housing-stock growth by subtracting each tract's total private dwellings⁷ in 2016 from their totals in 2021. The resulting measurement represents the net increase in the stock of housing units, and accounts for both the removal of existing housing units and the addition of new units.

Combined, urban census tracts grew by 472,340 units between census periods. This represents 54.2% of Canada's overall growth in housing stock (figure 2). This analysis assumes that increases in housing in non-urban tracts represents outward growth while increases in housing in urban tracts represents growth through increases in density. Thus, slightly more than half of Canada's recent growth in housing stock occurred through intensification.

⁶ For a full definition of population centres in 2016 (the year used for this report), see Statistics Canada, 2017.

^{7 &}quot;Private dwelling refers to a separate set of living quarters with a private entrance either from outside the building or from a common hall, lobby, vestibule or stairway inside the building. The entrance to the dwelling must be one that can be used without passing through the living quarters of some other person or group of persons." (Statistics Canada, 2019b)

Figure 2: Share (%) of growth in housing stock in urban census tracts in Canada, 2016–2021



Sources: Statistics Canada, 2019a, 2022a, 2023a; calculations by the authors.

3. How is intensification distributed?

Intensification contributes just over half of the growth in housing stock in Canada. It is important, therefore, to analyse how this growth is distributed, both across the entire sample of urban census tracts and among urban regions. Doing so offers insight into how urban areas Canada-wide are responding to significant growth pressures.

Uneven distribution of intensification

Figure 3 divides the entire sample of urban census tracts (4,762) into 20 quantiles, ranked by change in housing stock between censuses (total private dwellings in 2021 minus total private dwellings in 2016). In other words, figure 3 divides the urban census tracts into groupings of five percentage points categorized by the degree of increased (or decreased) housing recorded between the census of 2016 and the census of 2021.

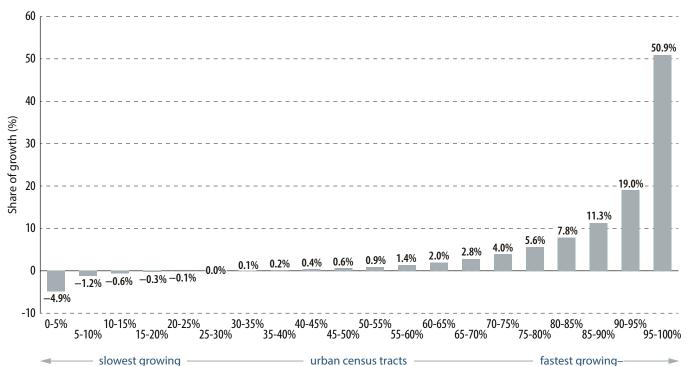


Figure 3: Share (%) of growth in housing stock in urban census tracts in Canada, 2016–2021

Sources: Statistics Canada, 2019a, 2022a, 2023a; calculations by the authors.

Slightly more than half (50.9%) of all urban tracts' net growth in housing stock occurred in the fastest growing 5% of tracts. Indeed, these census tracts grew by a combined total of 240,581 dwellings between 2016 and 2021, compared to a total of 472,340 across all urban tracts. Stated plainly, a small number of urban tracts experienced significant increases in housing unit supply, inferring large-scale redevelopment in these areas.

As figure 3 shows, growth in housing stock in Canada's urban areas occurred in a small subset of census tracts. This trend is accentuated by the fact that many urban census tracts featured little to no growth, or even lost dwellings between 2016 and 2021. The slowest growing 50% of urban census tracts each added 15 or fewer dwellings between censuses. Further, more than a quarter of urban census tracts (26.4%, or 1,258 census tracts) actually lost more dwellings over this period than they added, a cumulative net loss of 33,723 dwellings.

Similar results hold across Canada's largest metropolitan regions. Table 1 lists the share (%) of growth in urban housing stock that took place between the 2016 and 2021 censuses in the fastest growing and slowest growing 5% of urban census tracts in each of Canada's ten largest census metropolitan areas (CMAs). In 9 of the 10 regions, between 40% and 60% of intensification occurred in the fastest growing 5% of census tracts. Only the Quebec City census metropolitan area, where 33% of intensification occurred in the fastest growing 5% of urban census tracts, bucks this trend.

Another indication that growth in housing stock in urban areas occurred within a small number of census tracts is the outsized role played by the very fastest growing tracts. The fastest-growing percentile among urban census tracts (48 tracts) added 92,891 dwellings between 2016 and 2021—19.7% of all units added in urban census tracts.

Table 1: Share (%) of housing-stock growth in fastest and slowest growing census tracts within Canada's ten largest CMAs, 2016–2021

Census Metropolitan Area	Share of growth in the fastest growing 5% of census tracts	Share of growth in the slowest growing 5% of census tracts
Toronto	60.0%	-5.1%
Montreal	50.6%	-5.4%
Vancouver	41.6%	-4.7%
Ottawa	43.2%	-2.7%
Calgary	50.7%	-2.4%
Edmonton	51.0%	-4.0%
Quebec City	33.1%	-4.0%
Winnipeg	56.5%	-4.8%
Hamilton	53.0%	-8.8%
Kitchener	41.4%	-1.9%

Sources: Statistics Canada, 2019a, 2022a, 2023a; calculations by the authors...

Factors encouraging intensification

Table 2 extends this analysis by identifying the 20 urban census tracts that added the most dwellings between censuses. Combined, these tracts grew by 49,992 dwellings, or 10.6% of all dwellings added in existing urban areas between 2016 and 2021.

Closer examination of the 20 fastest growing urban census tracts' locations indicate the diverse factors encouraging intensification in each area. Six of the 20 are located in their respective regional cores. The fastest growing tract, in central Montreal, includes the Centre Bell NHL arena, near which many large condominium developments were completed. These tracts were typically already very dense relative to other urban tracts, yet added significantly more housing between the censuses.

Five tracts are located near major transit stations. Those in the Toronto metropolitan region are all located along the Line 1 (Yonge-University) subway

Table 2: The 20 fastest-growing urban census tracts in Canada, by type of location, 2016–2021

Type of location	Census Tract Number	City	CMA	Growth in dwelling stock, 2016–2021
City core	4620063.00	Montreal, QC	Montreal	4,108
	5350062.04	Toronto, ON	Toronto	2,599
	5350034.02	Toronto, ON	Toronto	2,584
	5350017.02	Toronto, ON	Toronto	2,295
	5350011.01	Toronto, ON	Toronto	2,170
	8350033.01	Edmonton, AB	Edmonton	2,082
	5350136.02	Toronto, ON	Toronto	3,288
	5350411.08	Vaughan, ON	Toronto	3,111
Major transit station	5350128.02	Toronto, ON	Toronto	3,057
	9330239.02	Burnaby, BC	Vancouver	2,586
	9330151.07	Richmond, BC	Vancouver	2,086
"Anchor" institution	5410106.01	Waterloo, ON	Kitchener	2,736
	4620643.02	Laval, QC	Montreal	2,092
	5350527.11	Mississauga, ON	Toronto	1,973
	6020140.04	Winnipeg, MB	Winnipeg	2,551
	9350151.02	Langford, BC	Victoria	2,472
Lower doneity suburb	5050171.12	Ottawa, ON	Ottawa	2,214
Lower density suburb	8250001.48	Calgary, AB	Calgary	2,015
	8350104.75	Edmonton, AB	Edmonton	2,011
	9330504.18	Langley Township, BC	Vancouver	1,962

Sources: Statistics Canada, 2023a; calculations by the authors...

corridor, notably near Eglinton station and Vaughan Metropolitan Centre station. Those in the Vancouver metropolitan area include the neighbourhood surrounding Brentwood Town Centre station (Burnaby) and two of the stations at the southern end of the Canada Line (Richmond).

Three of the tracts in shown table 2 are not located near major rapid transit lines, but are nevertheless located near major bus or light rail nodes, as well as "anchor" institutions. Two of these tracts (in Laval and Mississauga) are home to, or in proximity to, major shopping centres (Square One and Carrefour Laval). The other tract is located in Waterloo, between Wilfrid Laurier University and the University of Waterloo. The areas surrounding the major shopping centres and universities in all three of these tracts are undergoing important redevelopment efforts, including the replacement of older, smaller buildings and parking lots with significantly denser building types.

The remaining six tracts in the sample are located in lower density suburbs and outer suburbs of the Vancouver, Calgary, Ottawa, Edmonton, Winnipeg, and Victoria metropolitan areas. These tracts typically featured lower-density housing types and underused or empty lots in 2016, followed by the addition or more dense suburban housing types such as small-lot single-family homes, attached homes, town homes, and walk-up apartments.

The varied forms of new development occurring in the 20 fastest-growing urban census tracts attest to the many ways in which intensification has manifested itself across Canadian metropolitan areas. Not only is there no single template for adding housing to existing neighbourhoods, but there are varying models for Canadian communities needing to accommodate a fast-growing population.

Conclusion

Roughly one half of the growth in housing stock in Canada is occurring in existing urban areas (intensification), rather than non-urban or partially urban areas. However, this share of housing-stock growth is occurring primarily in the fastest growing 5% of urban census tracts. Further, more than a quarter of urban tracts experienced a net loss of housing units between the two most recent censuses, accentuating the uneven distribution of the growth in housing stock.

Canada faces an acute shortage of housing, underscoring the importance of housing supply—across all housing types, regions, and neighbourhoods. Given this significant need facing many Canadian communities, the important role played by intensification in accommodating a fast-growing population, and the diverse factors encouraging intensification in various areas, the trends identified in this report should inform urban policy makers and Canadians in search of adequate housing options.

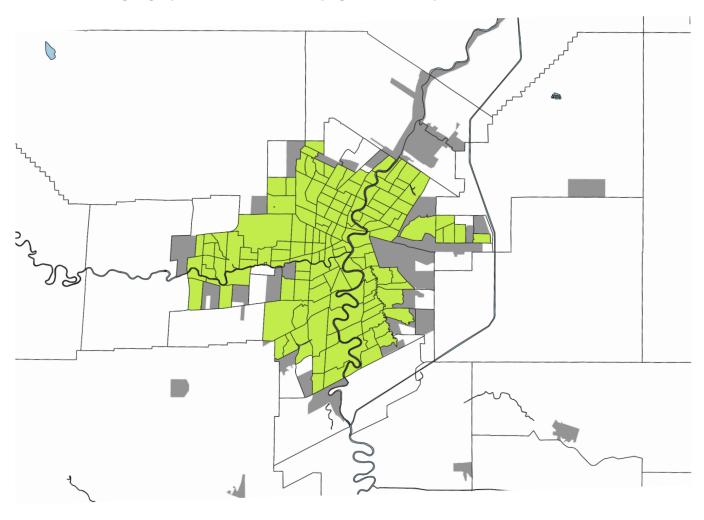
Appendix: How to identify urban census tracts

Figure A1 offers a visual example of the methodology outlined in section 2. The map featured depicts the Winnipeg metropolitan area, showing census-tract boundaries (thin black lines) and Statistics Canada's estimate of the geographical extent of Winnipeg's urban footprint in 2016 (grey area). Census tracts with a green fill are considered fully urban, as 95% or more of their land area overlaps with the 2016 urban footprint (called a "population centre" by Statistics Canada). Tracts that only partially overlap the 2016

urban footprint, or that are entirely outside of it, are not considered urban for the purposes of this analysis.

This approach to capturing urban census geographies is relatively conservative, because it excludes other tracts located primarily within population centres, but not sufficiently so to meet the high cut-off. However, this approach ensures greater confidence in the inference that virtually all of the net growth in housing stock cited in this report reflected some form of intensification.

Figure A1: Winnipeg metropolitan area, showing census-tract boundaries and Statistics Canada's estimate of the geographical extent of Winnipeg's urban footprint in 2016



Sources: Statistics Canada, 2019a, 2022a; authors' own calculations.

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