TODs, Intensification, and Equity: What We're Seeing Across Five Corridors

Full Methodology and Findings

Authors: Prentiss Dantzler, Khalil Martin, and Abigail Meza
Housing Justice Lab, School of Cities
University of Toronto

Methodology

Our team at the Housing Justice Lab has been tracking how new and planned rapid transit investments are reshaping neighbourhoods in five Canadian corridors: Cooksville (Mississauga), Northfield (Waterloo), Arbutus (Vancouver), McKernan–Belgravia (Edmonton), and Panama–Brossard (South Shore Montreal). We are asking a simple but politically loaded question: *when we build transit, what actually happens on the ground – and for whom?*

How We Approached the Analysis

Across all five sites, we use a common framework so we can meaningfully compare what is happening in very different local contexts:

- We define **Transit-Oriented Development (TOD)** as compact, walkable, mixed-use development within **800 metres** of a rapid-transit station.
- We focus on three big pieces:
    1. **Building intensification** – where and how fast new housing is being built.
    2. **Investment and landlord behaviour** – measured through permit values and, in Cooksville, formal eviction filings.
    3. **Demographic change** – especially shifts among non-white, visible minority groups.

To do this, we:

- Delineate **800 m station catchments** and treat those dissemination areas (DAs) as our station-area "treatment" group.
- Identify **matched control DAs** outside any rapid-transit influence with similar pre-treatment characteristics (income, renter share, dwelling condition, shelter burden, visible minority share).
- Build **annualized indicators** of development:
    - Units created per land area and per 1,000 dwellings (where permit data allow).
    - Dollar value of new dwelling projects per square kilometre.
    - Eviction filings per renter household in Cooksville (where eviction data allow).
- Track **ethnoracial change** by census population group to see who is moving into or out of these station areas over time.

Methodologically, each case is built around a **quasi-experimental, difference-in-differences design**, comparing how station areas change relative to matched controls before and after the opening (or anticipated opening) of transit.

What We're Seeing Across Corridors

1. TOD impacts are real but uneven

The five cases break any illusion that TOD effects are automatic or uniform:

- McKernan–Belgravia (Edmonton) shows a delayed but powerful wave of infill, with a sharp spike in units per 1,000 dwellings a decade after the station opened.
- Arbutus (Vancouver) and Cooksville (Mississauga) are already seeing strong pre-opening investment surges, as developers respond to clear planning signals (Broadway Plan, Hazel McCallion Line) and visible construction progress.
- Northfield (Waterloo) and Panama (Brossard) sit at the other end of the spectrum: development is emerging, but at a much slower pace, and in Panama's case barely at all.

2. Planning certainty matters

Where municipalities have paired transit investment with **clear land-use policy** and upzoning:

- We see **sharper, earlier spikes** in residential investment (Arbutus under the Broadway Plan; Cooksville under Mississauga's downtown intensification strategy).
- Where frameworks are weaker or more suburban in form (Panama; northern Waterloo), intensification is limited or highly uneven.

3. Demographic change is not one story

Across the cases, visible minority populations generally increase in station areas – but the mix is not the same everywhere:

- **Northfield** records one of the **largest proportional jumps in visible minority residents**, especially Black, Arab, Latin American, and West Asian populations, reflecting both student housing and broader migration patterns.
- **McKernan–Belgravia** and **Cooksville** show growth among several racialized groups (Black, Filipino, Arab in Edmonton; Japanese and other minoritized groups in Cooksville), while some long-standing groups decline.
- **Arbutus** is diversifying in a context of entrenched land values: Latin American, Southeast Asian, and West Asian populations grow even as overall population change remains modest.
- **Panama** largely bucks the trend: the station catchment shows neither strong intensification nor major demographic shifts, even as surrounding South Shore areas diversify.

4. Equity signals are mixed

Cooksville is our clearest window into formal displacement risk:

- **Eviction filings per renter household** decline over the decade in Cooksville and other Hurontario LRT areas, while control areas retain higher and more volatile rates.
- That pattern sits uneasily next to visible reinvestment and suggests more complex sorting dynamics: who is being housed and under what conditions.
- In Edmonton and Waterloo, visible minority populations grow in station areas, but in the context of tightening rental markets and rising costs.
- In Panama, low development can look like "protection" from speculation, but it also means a missed opportunity to add non-market and deeply affordable housing near high-order transit.

Taken together, the cross-case lesson is clear: **transit alone doesn't guarantee either intensification or access**. Local land-use rules, market conditions, and tenant protections shape who benefits from these massive public investments.

Case Snapshots

Cooksville, Mississauga – Early Intensification, Quiet Eviction Trends
Cooksville shows a dramatic spike in the value of new dwelling projects around 2023 as the Hazel McCallion Line approaches opening, with much lower investment in non-station controls. At the same time, formal eviction filings per renter household trend downward, and the area becomes more racially diverse. Cooksville is becoming a regional growth node, but whether that growth locks in affordability is still very much an open question.

Northfield, Waterloo – Emerging Node at the Edge of the Corridor
Northfield is slowly shifting from employment- and institutional-heavy lands to a more mixed urban node. Intensification is modest in absolute terms but high relative to the existing dwelling base, and the station area records a sizeable jump in visible minority residents. It is an early-stage TOD zone where policy can still meaningfully shape outcomes.

Arbutus, Vancouver – Speculation Meets Policy Certainty
Near Arbutus, building permit values per square kilometre climb sharply after the adoption of the Broadway Plan, signaling strong market anticipation. Investment is concentrated along West Broadway and Arbutus Street, and the station area is quietly diversifying while overall population remains stable. This is TOD in a high-cost market: intense capital flows, constrained affordability, and a small but important demographic reshuffling.

McKernan–Belgravia, Edmonton – Slow-Burn TOD
McKernan–Belgravia has been on the LRT network since 2009. For several years, development is steady but moderate; then, unit creation per 1,000 dwellings surges in the late 2010s, outpacing both control areas and newer Valley Line stations. The demographic picture shows growth among several visible minority groups but uneven trajectories by subgroup. This is what a long-term TOD build-out looks like in a more affordable city.

Panama–Brossard, South Shore – Transit Without Transformation (Yet)
In Panama, the story is what does *not* happen. Non-station areas across the South Shore see strong growth in occupied dwellings and rising diversity; Panama's 800 m catchment barely moves on either dimension. Despite a major transit investment and its strategic position, the station area has not yet absorbed significant redevelopment pressure or demographic change. It is a reminder that TOD potential can be stalled by local zoning, ownership patterns, and market timing.

Detailed Findings: Arbutus Station (Vancouver, BC)

This analysis examines land use, housing, and equity conditions surrounding the Arbutus transit station in Vancouver.

Data Sources

The study drew on a combination of spatial, administrative, and secondary data sources. First, we retrieved data based on the Broadway Subway Project (BSP) alignment from the City of Vancouver's Open Data Portal. This dataset maps the planned extension of the Millennium Line from VCC–Clark to Arbutus Station across the Vancouver region (City of Vancouver, n.d.-a). Specifically, we extracted the geographic coordinates of proposed and existing station locations along the Broadway corridor to delineate local catchment areas. (See Appendix ARB-I for the full list of transit stations.)

Like other cases, we use census data for the analysis were obtained directly from **Statistics Canada** through publicly available datasets at the **dissemination area (DA)** level for the 2011, 2016, and 2021 Census cycles. These demographic data were also harmonized across years to ensure comparability. For DAs within and around the 800-meter catchment areas, the cleaned and harmonized variables were merged with spatial boundaries to support the selection of our Arbutus site, treatment and control DAs.

Finally, we drew building permit data from the **City of Vancouver.** The City of Vancouver's *Issued Building Permits* dataset includes a "Project Value" field that reports the estimated dollar value of each construction project. For this analysis, only permits categorized as "New Building" and associated with "Dwelling Uses" were selected, and their project values were aggregated to assess residential construction investment across the city (City of Vancouver, n.d.-b).

Analytical Procedure

To understand patterns of residential investment around Arbutus Station, we focus on one primary outcome: the dollar value of new dwelling projects per square kilometre. We derived this measure by aggregating the total reported project value of eligible "New Building" permits at the dissemination area (DA) level and standardizing by each area's total land size. This approach captures the relative intensity of residential construction activity, reflecting both the frequency and financial scale of new development. To produce a continuous trend over time, annualized project values were estimated for the years 2017 through 2024, smoothing month-to-month variation while preserving local differences across treatment and control DAs. This enables a comparative assessment of housing investment trajectories within and beyond the 800-metre station catchments, illustrating how anticipated transit infrastructure influences the spatial distribution of development capital (See Appendix ARB-II for map on catchment areas and siting of Arbutus station).

Results

Figure 1: Value of New Dwelling Projects per square kilometre

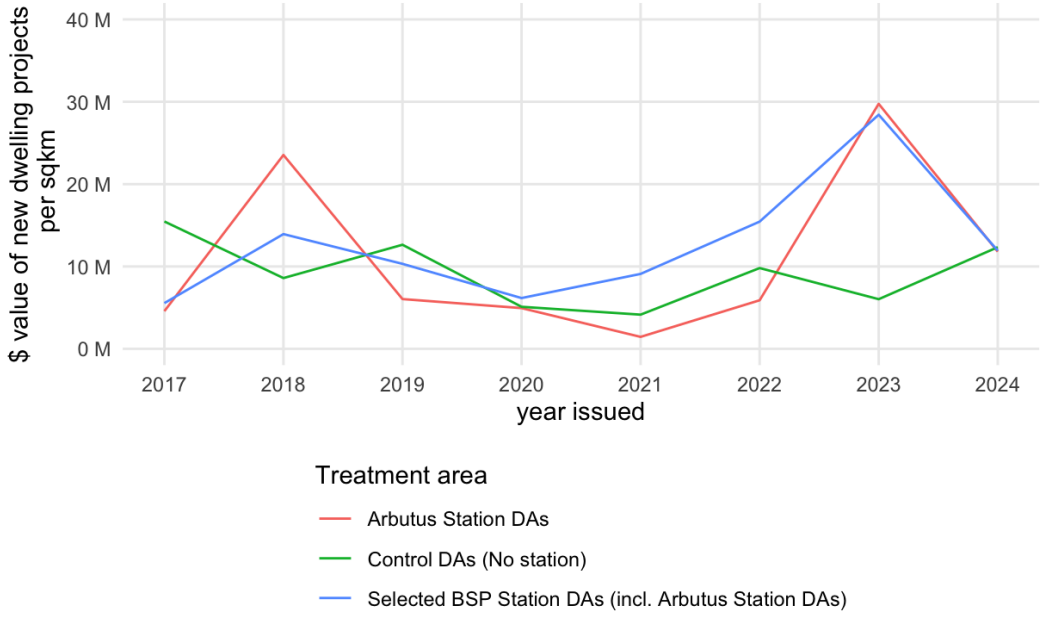


Figure 1 illustrates year-to-year changes in the dollar value of new dwelling projects near Arbutus Station compared with nearby control and broader BSP dissemination areas. Since 2017, Arbutus has experienced pronounced fluctuations in residential investment, culminating in a marked rise in 2023 before easing slightly in 2024. This surge suggests growing developer confidence in anticipation of the station's completion and the broader intensification planned along the Broadway corridor. While values within the Arbutus site and the broader BSP corridor, which includes Arbutus, also shows a similar trajectory, neighbourhoods beyond our catchment area had lower levels in recent years reinforcing the catalytic effect of new transit infrastructure on residential construction investment within Vancouver's west side.

The sharp rise in 2023 aligns closely with the City of Vancouver's adoption of the Broadway Plan in 2022, which laid the groundwork for higher-density, mixed-use redevelopment along the corridor and signaled policy certainty to investors and developers (City of Vancouver, n.d.-c; Municipal World, 2024). This policy clarity, combined with visible progress on the Broadway Subway extension, appears to have accelerated speculative investment and large-scale permit activity in anticipation of future transit access. The slight decline in 2024 likely reflects short-term permitting delays or market adjustment following that surge. Spatially, much of this investment activity is concentrated along major corridors such as West Broadway and Arbutus Street, where zoning flexibility and parcel assembly opportunities are greatest. These are patterns consistent with how transit-oriented development tends to drive early land value increases near new rapid transit nodes (Harlos et al., 2018). Taken together, these trends suggest that the impacts of TOD are unfolding well before the station opens, reinforcing how transit infrastructure and land-use planning can reshape market behavior long in advance of operational service.

Figure 2: Percent Change in Ethnoracial Population by Subgroup, 2016 to 2021

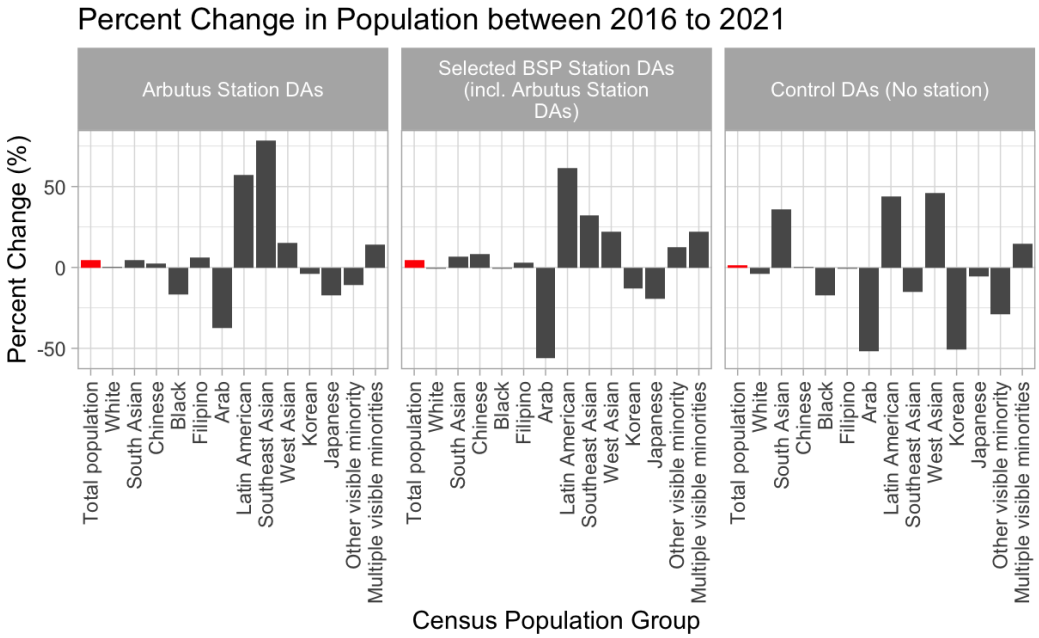


Figure 2 shows the percent change in population by census group between 2016 and 2021 for dissemination areas (DAs) surrounding Arbutus Station, compared with those in the broader Broadway Subway Project (BSP) corridor and nearby control areas without transit investment. While overall population growth near Arbutus remained modest, the station area exhibited distinct demographic shifts among visible minority groups. Notably, Latin American and Southeast Asian populations experienced the largest proportional increases, with gains exceeding 50% in some DAs, while West Asian (Afghan, Iranian (Persian), Armenian, Azerbaijani, Turkish, Kurdish) and other mixed-race households also grew moderately.

By contrast, Black, Arab, and Japanese populations showed moderate declines, reflecting broader patterns of urban demographic turnover and localized redevelopment pressures in Vancouver's west side. These shifts suggest that the Arbutus corridor is becoming more demographically diverse, albeit in a context of relatively stable total population. In comparison, control areas saw more divergent changes across groups. Particularly, there has been noticeable growth in South Asian, Latin American, and West Asian households while Black, Arab, Korean and other visible minority groups show relative declines. Taken together, these findings suggest early transit-oriented development dynamics near Arbutus may already be influencing local population composition across ethnoracial lines.

Conclusion

The Arbutus Station case underscores how transit-oriented development is beginning to reshape Vancouver's west side in subtle yet meaningful ways. Rising building permit values point to growing market anticipation ahead of the Broadway Subway's completion, while population data reveal gradual diversification rather than rapid transformation. Increases among Latin American, Southeast Asian, and West Asian households alongside relatively stable overall growth suggest

that early TOD effects are unfolding within a context of entrenched land values and limited affordability. These patterns signal the need for intentional planning: one that centers housing justice by ensuring new investment delivers community benefit, safeguards existing renters, and creates opportunities for inclusive, mixed-income development as the corridor continues to evolve.

References

City of Vancouver. (n.d.-a). *Broadway Subway Project Alignment* [Dataset]. City of Vancouver Open Data Portal. Retrieved October 31, 2025, from https://opendata.vancouver.ca

City of Vancouver. (n.d.-b). *Issued Building Permits* [Dataset]. City of Vancouver Open Data Portal. Retrieved October 28, 2025, from https://opendata.vancouver.ca/explore/dataset/issued-building-permits/

City of Vancouver. (n.d.-c). *Broadway Plan* [Webpage]. City of Vancouver. Retrieved October 31, 2025, from https://vancouver.ca/home-property-development/broadway-plan.aspx

Delmelle, E. C., Nilsson, I, and Bryant, A. (2021). "Investigating transit-induced displacement using eviction data." *Housing Policy Debate 31*(2): 326-341.

Harlos, K., Gwilliam, G., & MacDonald, M. (2018). *Land values and transit investment – Broadway Corridor (Report #2018-55).* University of British Columbia. Retrieved from https://sustain.ubc.ca/sites/default/files/2018-55%20Land%20Values%20and%20Transit%20Investment%20-%20Broadway%20Corridor_Harlos_0.pdf

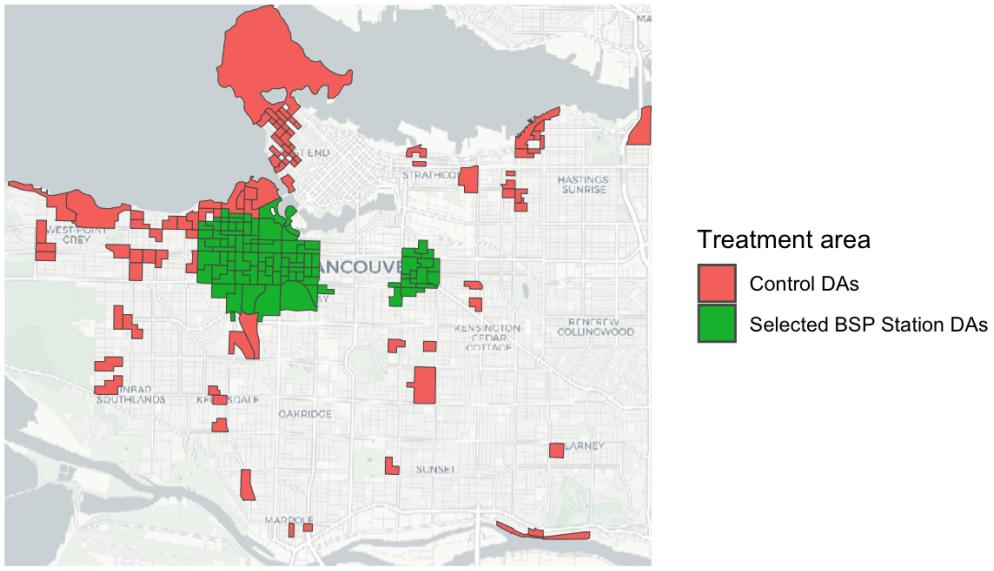
Municipal World. (2024, February–March). Vancouver's Broadway Plan reflects transit-oriented development. *Municipal World.* Retrieved from https://www.municipalworld.com/feature-story/vancouver-broadway-plan-transit-oriented-development/

Appendix ARB-I: List of Selected Rail Transit Stations in Vancouver Case

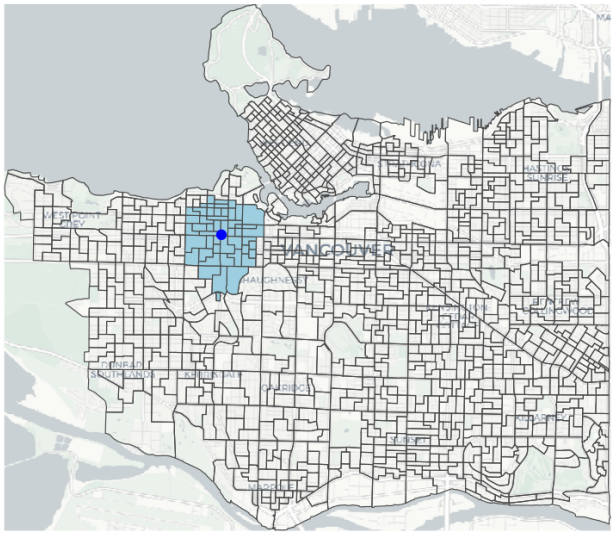
#	Station Name	Line	Year Opened
1	Great Northern Way – Emily Carr	Broadway Subway Project	Not opened
2	Mount Pleasant	Broadway Subway Project	Not opened
3	Oak-VGH	Broadway Subway Project	Not opened
4	South Granville	Broadway Subway Project	Not opened
5	Arbutus	Broadway Subway Project	Not opened
7	Waterfront	Expo Line, West Coast Express, Canada Line	1985, 1995, 2009
8	Burrard	Expo Line	1985
9	Granville	Expo Line	1985
10	Stadium – Chinatown	Expo Line	1985
11	Main Street – Science World	Expo Line	1985
12	Commercial – Broadway	Expo Line	1985
13	Nanaimo	Expo Line	1985
14	29th Avenue	Expo Line	1985
15	Joyce – Collingwood	Expo Line	1985
16	Rupert	Millennium Line	2002
17	Renfrew	Millennium Line	2002
18	Commercial – Broadway	Millennium Line	2002
19	VCC – Clark	Millennium Line	2006
20	Vancouver City Center	Canada Line	2009
21	Yaletown – Roundhouse	Canada Line	2009
22	Olympic Village	Canada Line	2009
23	Broadway – City Hall	Canada Line	2009
24	King Edward	Canada Line	2009
25	Oakridge – 41st Avenue	Canada Line	2009
26	Langara – 49th Avenue	Canada Line	2009
27	Marine Drive	Canada Line	2009

Appendix ARB-II: Arbutus Station and Selected Surrounding Dissemination Areas

Dissemination Areas included in study



The Future Arbutus Station and Surrounding Dissemination Areas



Detailed Findings: Cooksville Station (Mississauga, ON)

This analysis examines land use, housing, and equity conditions surrounding the future Cooksville transit station in Mississauga.

Data Sources

The study drew on a combination of spatial, administrative, and secondary data sources. First, we retrieved building permit data from the City of Mississauga's Open Data Portal to track patterns of new development and investment. Spatial data mapping the alignment of the Hurontario Light Rail Transit (LRT) line (now known as the Hazel McCallion Line) were obtained from Metrolinx's Open Data Portal (Metrolinx, 2024). These data include the planned LRT route and station locations along the Hurontario corridor, which were used to identify and analyze areas of transit-oriented development (See Appendix COO-I for the full list of transit stations).

Census data for the analysis were obtained directly from **Statistics Canada** through publicly available datasets at the **dissemination area (DA)** level for the 2011, 2016, and 2021 Census cycles. These data include demographic, socioeconomic, and housing variables such as population counts, dwelling characteristics, household income, and ethnoracial composition (Statistics Canada, 2022). Datasets were downloaded via the Statistics Canada data portal and harmonized across years to ensure comparability, accounting for boundary changes or redefinitions between census periods using correspondence files and geographic crosswalks. For DAs within and around the 800-meter catchment areas, the cleaned and harmonized variables were merged with spatial boundaries to support the selection of our Cooksville site, treatment and control DAs (See Appendix COO-II for dissemination areas included in the study and designated transit site).

Finally, the study focused on two key outcomes: patterns of new residential development and landlord behavior. We use data from the City of Mississauga (2024) and the Ontario Landlord and Tenant Board (LTB) (2024). Building permit data from the City's Open Data Portal provide a comprehensive record of construction activity since 2018, including permit type, issue date, construction value, and location, which we used to calculate annual investment in new dwelling projects near the planned Hurontario LRT stations. To assess landlord behavior, eviction application data from the LTB were cleaned and geocoded by postal code, then aggregated to dissemination areas to generate an indicator of eviction filings per renter household from 2011 to 2021. Together, these datasets provide a spatialized view of neighbourhood change in Mississauga, linking new transit investment to patterns of development pressure and tenant displacement risk.

Analytical Procedure

To examine the relationship between transit-oriented development (TOD) and neighbourhood change in **Cooksville**, we analyze three outcomes: the value of new dwelling projects, eviction filings, and shifts in non-white ethnoracial populations. Development intensity was standardized by (1) calculating the annual dollar value of new dwelling projects per square kilometre and (2)

normalizing new units by total occupied private dwellings in 2011, 2016, and 2021. Intervening-year dwelling counts were estimated through linear interpolation to produce a continuous annual measure. This approach enables annualized tracking of growth, density, and demographic change around the Cooksville LRT station.

We created 800 m buffers around selected stations in Mississauga. Overlapping buffers were merged to prevent duplication and to capture shared development zones. To estimate the potential impact of the opening of the Cooksville transit station on patterns of residential development, we apply a quasi-experimental approach similar to those used in prior transit-oriented development studies (See Delmelle et al., 2021). Specifically, we use a difference-in-differences design to compare annual changes in building permit activity between areas within an 800-meter buffer around Cooksville Station (the treatment area) and matched control areas beyond the buffer catchments. Dissemination areas (DAs) serve as the unit of analysis, as they represent the smallest geography at which harmonized census and permit data are available, providing a reasonable approximation of neighborhood-scale development patterns while allowing for consistent comparisons over time.

For matching, we use baseline dissemination area characteristics from the 2011 Census, focusing on key housing and socioeconomic indicators relevant to vulnerability dynamics. Specifically, we include the proportion of households spending 30% or more of income on shelter costs, the proportion of dwellings in need of major repair, and median household income. These variables capture housing affordability, quality, and overall economic conditions that tend to change slowly over time and are thus reliable for establishing pre-treatment comparability. Dissemination areas within or adjacent to any current or planned transit catchments were excluded from the pool of potential matches to reduce the risk of spatial spillover effects (See COO-Appendix II for map on catchment areas and for siting of Cooksville station).

To assess landlord behavior in **Cooksville**, we analyzed formal eviction applications filed with the Ontario Landlord and Tenant Board (LTB) between 2011 and 2021. These data, which include the date, type, and postal code of each filing, were geocoded and aggregated to the dissemination area level to compare patterns across neighbourhoods within and beyond the 800-metre Cooksville LRT catchment. Eviction intensity was standardized by the number of renter households to generate an annual rate of filings per renter household, allowing for longitudinal comparison of housing stability (See Appendix COO-III for high propensity dissemination areas included in analysis). This measure captures how formal eviction pressures evolved over the decade, offering insight into the intersection of transit investment, redevelopment, and displacement risk in the Cooksville area

Results

Figure 3: Value of New Dwelling Projects per square kilometre

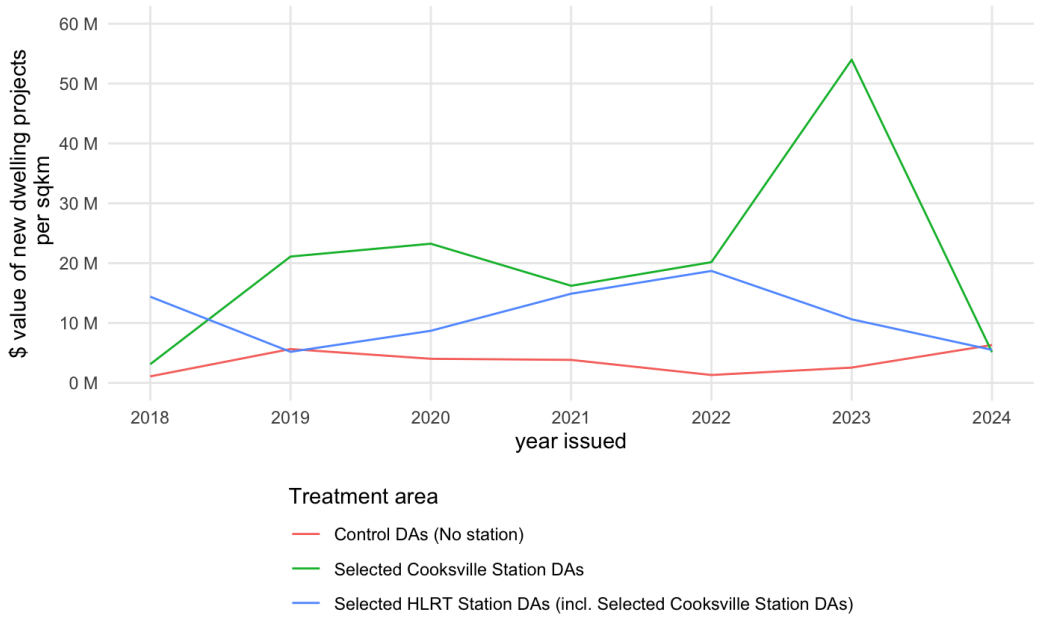


Figure 3 shows year-to-year changes in the dollar value of new dwelling projects near Cooksville Station compared with other Hurontario LRT station areas and control dissemination areas without station access. Between 2018 and 2024, Cooksville experienced pronounced fluctuations in residential investment, peaking sharply in 2023 before returning to lower levels in 2024. This surge corresponds with heightened construction activity and anticipation surrounding the completion of the Hurontario LRT line, which has positioned Cooksville as a key redevelopment node in Mississauga's downtown intensification strategy. The spike in 2023 suggests increased developer confidence and speculative investment ahead of the line's opening, consistent with broader evidence that new rapid-transit infrastructure generates localized land-value uplift and stimulates residential investment near stations (Higgins & Kanaroglou, 2017; Huang et al., 2021). In contrast, control areas without planned station access maintained consistently lower investment levels, underscoring the catalytic effect of transit infrastructure on development patterns along the Hurontario corridor.

Figure 4: Eviction Filings Per Renter Household from 2011 to 2021

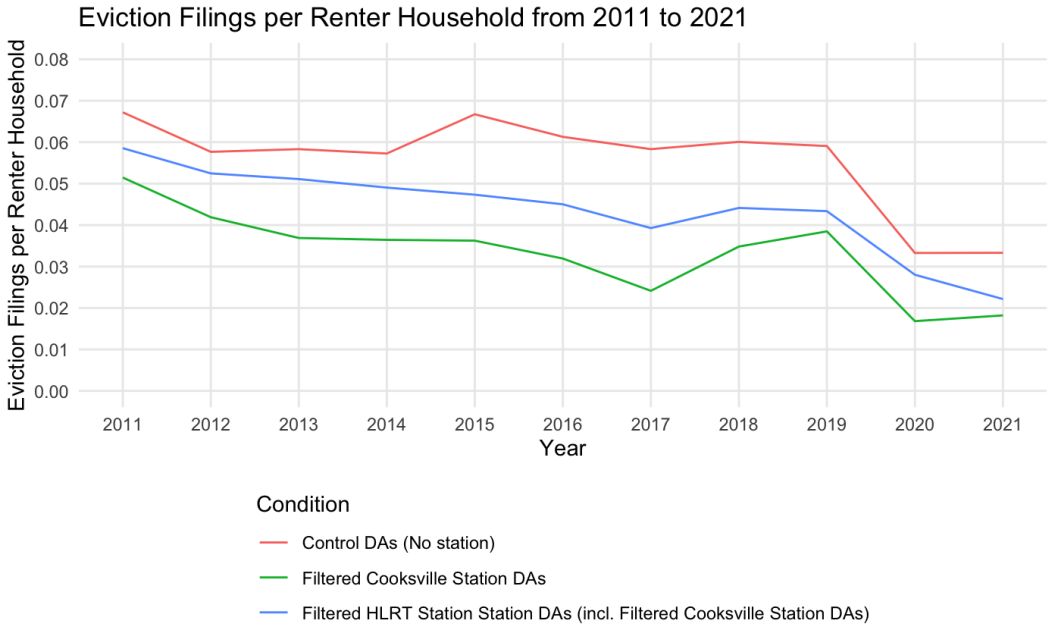


Figure 4 presents trends in formal eviction filings per renter household from 2011 to 2021 across Cooksville, other Hurontario LRT station areas, and our control DAs. Overall, Cooksville and other HLRT areas experienced a gradual decline in eviction filings over the decade, with Cooksville consistently recording lower rates than both the control and broader station-area averages. This trend suggests a modest improvement in housing stability within Cooksville, potentially linked to ongoing investment and gradual neighbourhood renewal tied to the forthcoming LRT corridor. However, the persistent gap between Cooksville and control areas raises additional questions about the types of households transit-adjacent zones may attract over time (see Walks, 2022). The overall downward trend after 2018 likely reflects broader market adjustments, including policy interventions and changing rental demand patterns during the late 2010s and early stages of the COVID-19 pandemic, when formal eviction activity declined province-wide (Mah, 2021).

Figure 5: Percent Change in Ethnoracial Population by Subgroup, 2016 to 2021

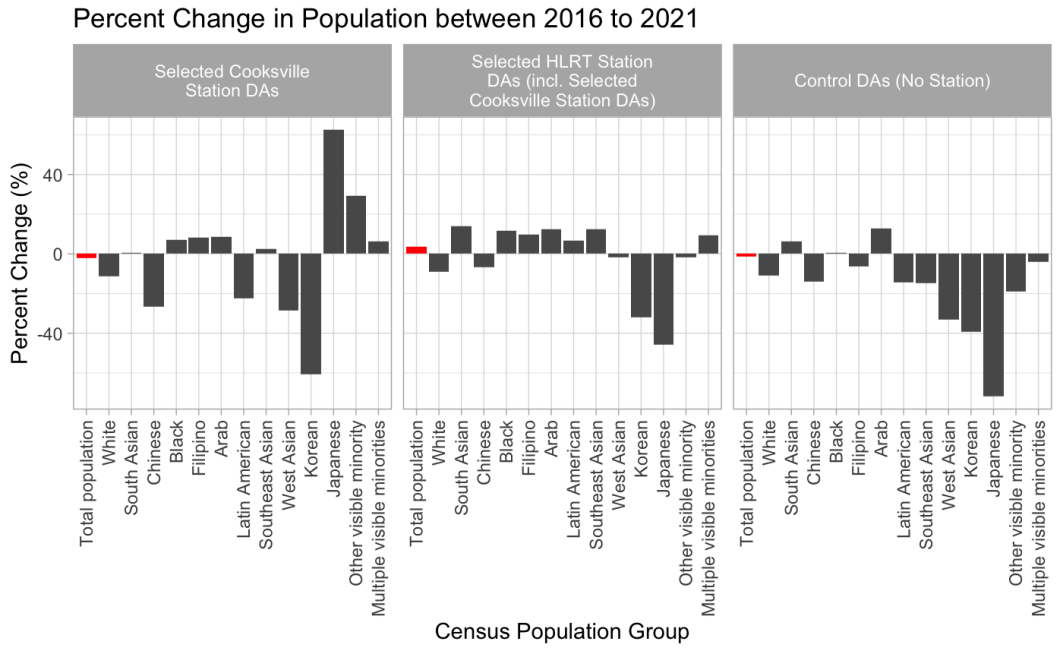


Figure 5 illustrates the percent change in population by census population group between 2016 and 2021 across our study areas. The results show that Cooksville experienced a notable increase in total population alongside a pronounced rise in Japanese and other minoritized households, while the proportion of White, Chinese, Latin American, West Asian, and Korean residents declined. This diversification trend aligns with broader demographic shifts observed along emerging transit corridors in the Greater Toronto Area, where new investment and redevelopment coincide with the movement of immigrant and racialized populations into more affordable, transit-accessible areas (Hulchanski, 2022; Walks, 2013). Compared to control areas, which generally saw declines across most racialized groups, Cooksville and other HLRT zones appear to be undergoing demographic renewal rather than outright displacement, suggesting a reconfiguration of population composition tied to housing supply changes and transit-oriented growth. These findings underscore the complex relationship between infrastructure investment, migration patterns, and the racialized restructuring of neighbourhoods in Mississauga's urban core.

Conclusion

The Cooksville case underscores how TOD is transforming Mississauga's urban core long before the LRT begins operation. Cooksville reflects both the promise and tension of intensification whereby rising investment and visible renewal coexist with deeper questions of who benefits and who remains vulnerable. Compared to surrounding areas, Cooksville's surge in new construction suggests growing developer confidence and policy alignment around transit-linked growth, yet shifts in local demographics and relatively stable eviction rates point to more complex social dynamics at play. In many ways, Cooksville represents a microcosm of the broader Hurontario corridor: a place where regional transit investment is reshaping neighbourhood identity and

market behavior, but where equitable outcomes will depend on how effectively the city and province ensure that density gains translate into long-term housing affordability and community stability.

References

City of Mississauga. (2024). *Building Permits [Data set].* Mississauga Open Data Portal. https://data.mississauga.ca

City of Toronto. (2022). *Our Plan Toronto: 115 MTSA delineations – 86 PMTSAs and 29 MTSAs* [Report]. City of Toronto. Retrieved from https://www.toronto.ca/legdocs/mmis/2022/ph/bgrd/backgroundfile-227702.pdf

Delmelle, E. C., Nilsson, I, and Bryant, A. (2021). "Investigating transit-induced displacement using eviction data." *Housing Policy Debate 31*(2): 326-341.

Higgins, C. D., & Kanaroglou, P. (2017). *Rapid transit projects that increase accessibility should result in a localized land value uplift (LVU) benefit for locations near stations.* McMaster University. https://macsphere.mcmaster.ca/bitstream/11375/22486/1/Higgins_LVU_Toronto.pdf

Huang, Y., Parker, D., & Minaker, L. (2021). Identifying latent demand for transit-oriented development neighbourhoods: Evidence from a mid-sized urban area in Canada. *Journal of Transport Geography, 90*, 102940. https://ideas.repec.org/a/eee/jotrge/v90y2021ics0966692320310176.html

Hulchanski, J. D. (2022). *The three cities within Toronto: Income polarization among Toronto's neighbourhoods, 1970–2020.* University of Toronto, Cities Centre. https://www.urbancentre.utoronto.ca

Landlord and Tenant Board. (2024). *Eviction Applications (L1–L10) [Data set].* Tribunals Ontario Open Data Portal. https://tribunalsontario.ca/ltb/resources/open-data/

Mah, J. (2021). Eviction, housing precarity, and the pandemic: Lessons from Ontario. *Canadian Centre for Policy Alternatives*. https://policyalternatives.ca/publications/reports/eviction-housing-precarity-and-pandemic

Metrolinx. (2024). *Hurontario LRT (Hazel McCallion Line) Alignment [Shapefile]* [Data set]. Metrolinx Open Data Portal. https://www.metrolinx.com/en/about-us/open-data

Walks, A. (2013). *Income inequality and polarization in Canada's cities: An examination and new form of measurement*. Cities Centre, University of Toronto.

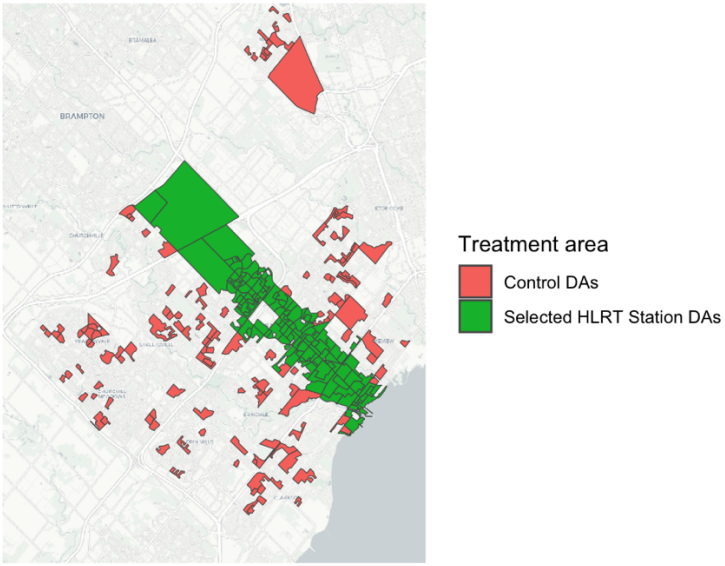
Walks, A. (2022). *Gentrification and displacement in Canadian cities*. *Canadian Journal of Urban Research, 31*(1), 1–15.

Appendix COO-I: List of Selected Rail Transit Stations in Mississauga Case

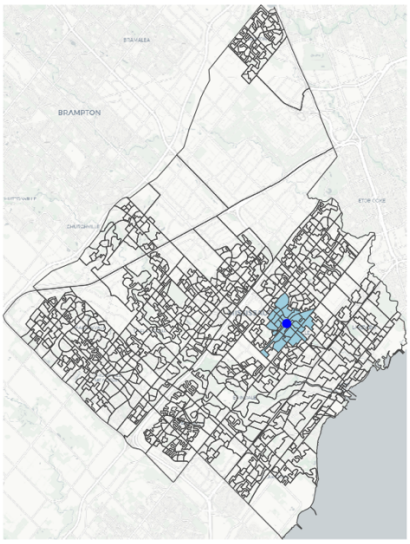
#	Station Name	Service	Year Opened
1	Port Credit	Hazel McCallion Line, Go Transit	Not opened, 1967
2	Mineola	Hazel McCallion Line	Not opened
3	North Service	Hazel McCallion Line	Not opened
4	Queensway	Hazel McCallion Line	Not opened
5	Dundas & Hurontario	Hazel McCallion Line	Not opened
6	Cooksville	Hazel McCallion Line, Go Transit	Not opened, 1981
7	Fairway	Hazel McCallion Line	Not opened
8	Burnhamthorpe	Hazel McCallion Line	Not opened
9	Robert Speck	Hazel McCallion Line	Not opened
10	Mississauga City Centre	Hazel McCallion Line	Not opened
11	Eglinton & Hurontario	Hazel McCallion Line	Not opened
12	Bristol	Hazel McCallion Line	Not opened
13	Matheson	Hazel McCallion Line	Not opened
14	Britannia	Hazel McCallion Line	Not opened
15	Courtneypark	Hazel McCallion Line	Not opened
16	Derry	Hazel McCallion Line	Not opened

Appendix COO-II: Designated Cooksville Site and Selected Surrounding Dissemination Areas

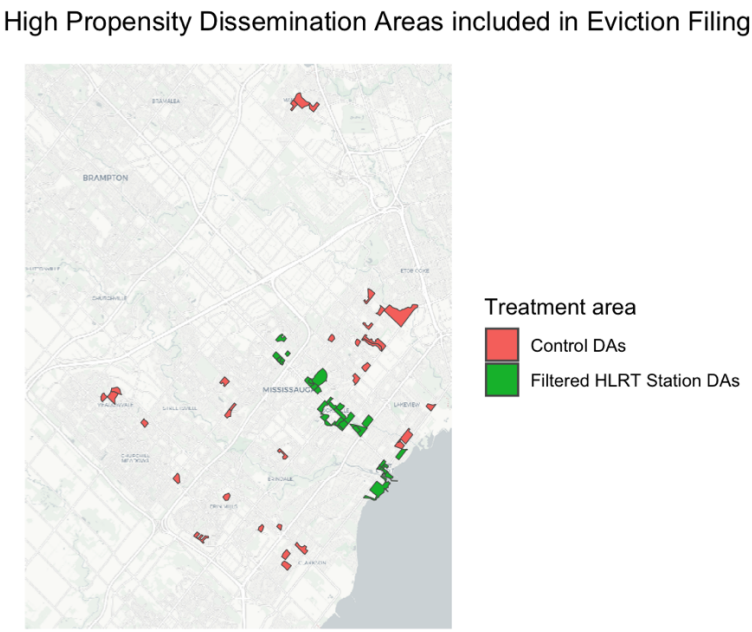
Dissemination Areas included in study



Cooksville Station and
Selected Surrounding Dissemination Areas



Appendix COO-III: High Propensity Dissemination Areas included in Eviction Filing Analysis



Only matched DAs, with 100 renter households or more, lower median after-tax household income than Mississauga in 2011, and no dwellings constructed between 2006 and 2011.

Detailed Findings: McKernan-Belgravia Station (Edmonton, AB)

This analysis examines land use, housing, and equity conditions surrounding the McKernan-Belgravia transit station in the Edmonton region.

Data Sources

The study drew on a combination of spatial, administrative, and secondary data sources. To map the transit context, we used data from the City of Edmonton's Open Data Portal, specifically the "LRT Stations and Stops Map" dataset (City of Edmonton, n.d.). This dataset provides the geospatial locations and attributes of stations and stops across Edmonton's Light Rail Transit network. It includes precise point geometries for each station and stop, enabling us to spatially align the transit system with surrounding neighbourhood characteristics and other built-environment indicators. Integrating this dataset allowed us to examine how proximity to LRT infrastructure intersects with local patterns of demographic change, housing conditions, and broader urban development dynamics. (See Appendix MCK-I for full list of transit stations).

Census data for the analysis were obtained directly from **Statistics Canada** through publicly available datasets at the **dissemination area (DA)** level for the earliest date they were in range of an open station. Datasets were downloaded via the Statistics Canada data portal and harmonized across years to ensure comparability, accounting for boundary changes or redefinitions between census periods using correspondence files and geographic crosswalks. For DAs within and around the 800-meter catchment areas, the cleaned and harmonized variables were merged with spatial boundaries to support the selection of our McKernan-Belgravia site, treatment and control DAs.

Finally, we drew building permit data from the **City of Edmonton.** The dataset provides a comprehensive record of all building permits issued within the city. The dataset includes spatially referenced point data showing where construction, renovation, demolition, and other building activities have occurred since 1986. Each record typically contains information such as permit type, issue date, construction value, and location, offering valuable insights into patterns of urban development and land-use change (City of Edmonton, n.d.). Updated regularly, the dataset enables us to track building activity across neighbourhoods, assess growth trends, and explore the relationship between development intensity and broader housing, equity, and planning outcomes.

Analytical Procedure

To understand the relationship between TOD and neighbourhood changes, we focus on three outcomes: units created (issued units created by land area and dwelling count) and temporal changes among non-white ethnoracial households. We standardized units created two different ways. First, we derive units created by measuring the density of new housing units approved through building permits within a given year, standardized by the amount of land in the area. We also standardize units created by the total number of total private dwellings occupied by usual residents for the observed years. To create a continuous count of building permit activity, values for the intervening years were estimated using linear interpolation, assuming a steady rate of

change in dwelling counts between census periods. This approach enables annualized analysis of housing growth and density patterns across DAs within and beyond the 800-meter catchment areas.

We created 800 m buffers around the McKernan-Belgravia station. Overlapping buffers were merged to prevent duplication and to capture shared development zones. To estimate the potential impact of the opening of the McKernan-Belgravia light rail station on patterns of residential development, we apply a quasi-experimental approach similar to those used in prior transit-oriented development studies (See Delmelle et al., 2021). Specifically, we use a difference-in-differences design to compare annual changes in building permit activity between areas within an 800-meter buffer around McKernan-Belgravia Station (the treatment area) and matched control areas beyond the buffer catchments. Dissemination areas (DAs) serve as the unit of analysis, as they represent the smallest geography at which harmonized census and permit data are available, providing a reasonable approximation of neighborhood-scale development patterns while allowing for consistent comparisons over time.

For matching, we use baseline dissemination area characteristics from the 2006 Census, focusing on key housing and socioeconomic indicators relevant to vulnerability dynamics. Specifically, we include population density, share of households that are renters, share of occupied dwellings in major need of repairs, share of tenant (renter) households spending 30% or more of household income on housing, share of population that are visible minority, and median after-tax household income (Statistics Canada, 2011-2021). These variables capture housing affordability, quality, and overall economic conditions that tend to change slowly over time and are thus reliable for establishing pre-treatment comparability. Dissemination areas within or adjacent to any current or planned transit catchments were excluded from the pool of potential matches to reduce the risk of spatial spillover effects (See Appendix MCK-II for siting of dissemination areas included in study).

Results

Figure 6: Units Created Per Land Area – Annual

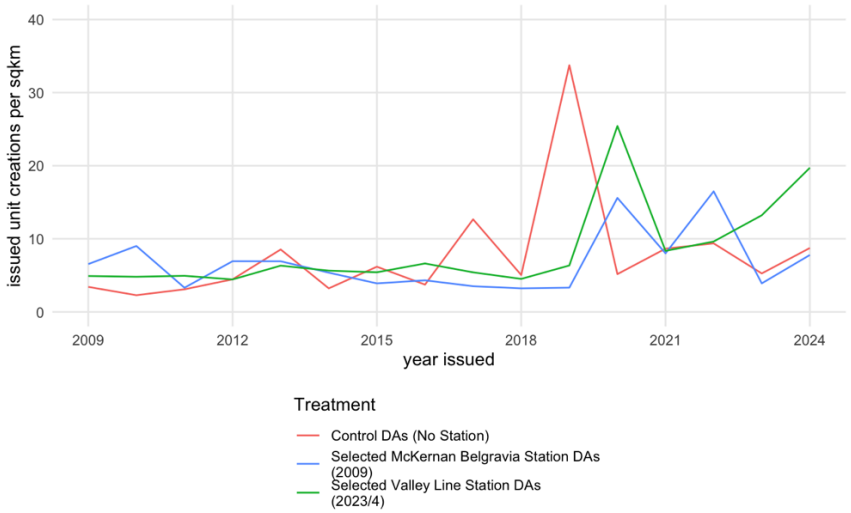


Figure 6 shows distinct but uneven patterns of residential unit creation across the three comparison groups. The McKernan–Belgravia Station DAs (blue), which have been part of Edmonton's LRT system since 2009, exhibit relatively stable and moderate levels of unit creation over time, with only brief periods of heightened activity. By contrast, the Control DAs (red) show more volatility, including a sharp spike in 2019 that reflects a one-year surge in issued units unrelated to station proximity.

The most pronounced upward trend emerges in the Valley Line Station DAs (green), where issued unit creation increases noticeably beginning in 2020 and accelerates through to 2023/24. This trajectory aligns with the buildout and anticipated opening of the Valley Line, suggesting growing development interest ahead of full-service operations. While year-to-year fluctuations remain, the overall upward slope indicates that these areas are beginning to experience more concentrated redevelopment pressure compared to both McKernan–Belgravia and the non-station controls.

Taken together, the figure illustrates that although long-established station areas like McKernan–Belgravia show modest, stable patterns, newly served or soon-to-open Valley Line station areas are recently seeing clearer signs of emerging transit-oriented development activity.

Figure 7: Units Created Per 1,000 Dwellings - Annual

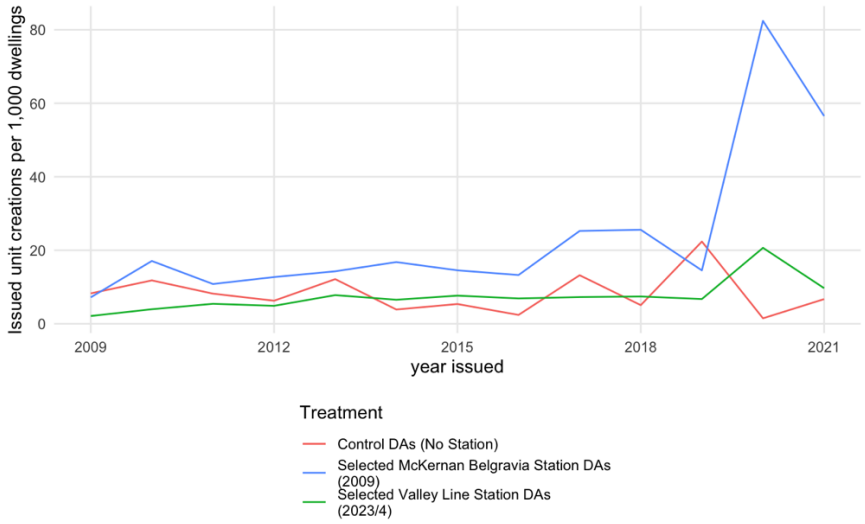


Figure 7 shows that residential development intensity varies considerably across station-area groups when measured relative to existing dwelling stock. The McKernan–Belgravia Station DAs (blue) display the strongest and most sustained activity, with unit-creation rates consistently exceeding both the Control DAs and the Valley Line DAs. After a relatively steady period through the early 2010s, these areas experience a pronounced surge beginning around 2019, culminating in an exceptional spike in 2020–2021. This reflects a wave of higher-density infill and redevelopment occurring well after the station's 2009 opening, suggesting a delayed but substantial uptake in transit-oriented housing production.

In contrast, the Control DAs (red) remain comparatively low and volatile, showing brief increases but no sustained upward momentum. The Valley Line Station DAs (green) show modest and stable activity through most of the period, with a noticeable rise only in the years immediately preceding the Valley Line's anticipated opening. While the increase is smaller than that observed in McKernan–Belgravia, it signals early signs of development response in newly serviced areas. The figure illustrates that long-established station areas like McKernan–Belgravia are seeing the strongest proportional redevelopment, while Valley Line areas are beginning to show emerging but more moderate growth relative to their existing housing stock.

Figure 8: Dollar Value of New Dwelling Projects

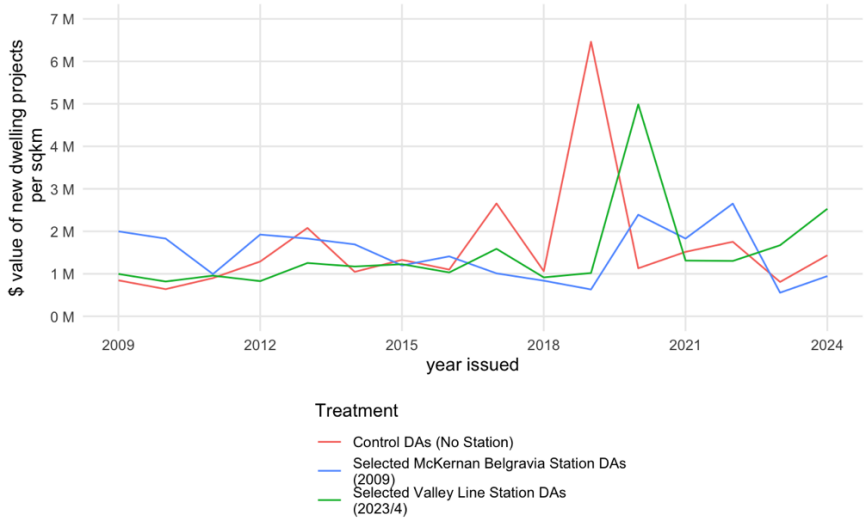
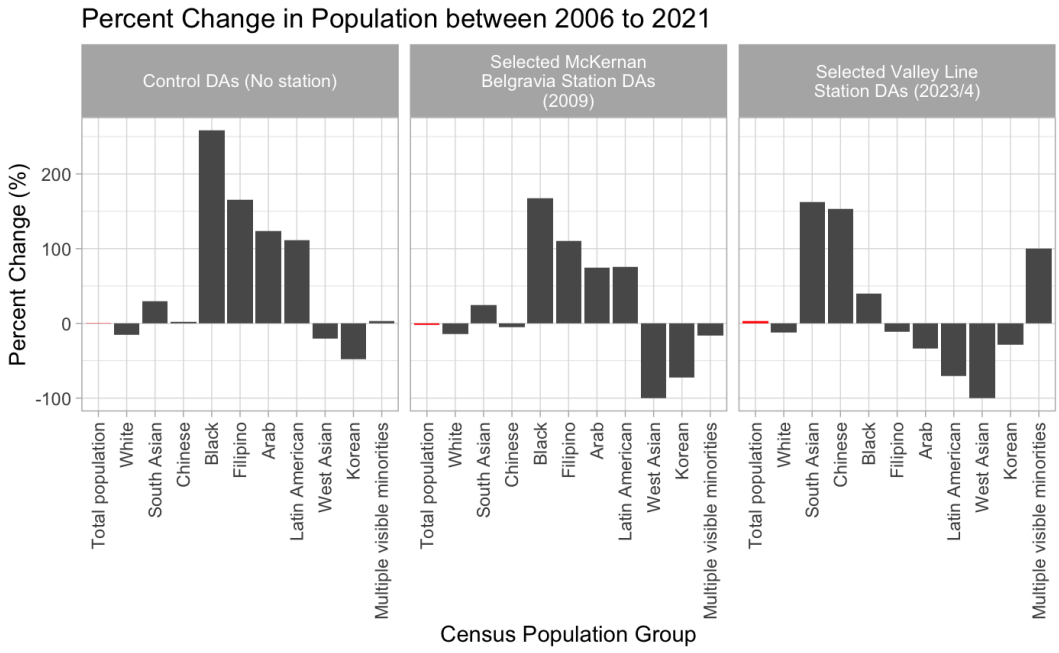


Figure 8 indicates that the dollar value of new dwelling projects per square kilometre fluctuates across all three groups, with occasional sharp spikes. Control DAs show the largest volatility, including a major peak around 2019. McKernan–Belgravia Station DAs display steady but moderate investment levels, with brief increases but no extreme jumps. Valley Line Station DAs show a noticeable rise beginning in 2020, suggesting growing investment activity as the line approached completion. Overall, investment appears more episodic than consistent, with emerging upward movement in all three areas.

Figure 9: Percent Change in Ethnoracial Population by Subgroup, 2006 to 2021



Lastly, **Figure 9** shows that population change between 2006 and 2021 varies across station-area types and census groups. In all three areas, Black, Filipino, and Arab populations experience the largest increases, though the magnitude differs. Control DAs see the sharpest growth among these groups, while McKernan–Belgravia shows more moderate increases and notable declines among West Asian and Korean populations. Valley Line DAs show strong increases among Black and South Asian residents but significant decreases in several other groups, including West Asian and Latin American populations. Overall, the patterns suggest uneven demographic change, with select visible minority groups expanding across all areas while others decline depending on local station context.

Conclusion

In summary, the results show that transit-oriented development around McKernan–Belgravia has supported steady but moderate intensification, with a sharper rise in building activity emerging only in the late 2010s. Newly developing Valley Line station areas exhibit early signs of increasing construction and investment, though still at lower levels than long-established station zones. Control areas experience the most volatility, suggesting that broader market cycles, not just transit access, shape development patterns. Demographically, all areas have seen substantial growth among several visible minority groups, particularly Black, Filipino, and Arab residents, though the direction and magnitude of change vary by station context. Together, these patterns indicate that Edmonton's TOD corridors are experiencing uneven but notable shifts in both the built environment and population composition, raising important questions about how future transit investments can better support equitable, affordable, and inclusive neighborhood change.

References

City of Edmonton. (n.d.). *LRT stations and stops map* [Data set]. Open Data Portal. https://data.edmonton.ca/Transit/LRT-Stations-and-Stops-Map/erhd-k2ia

City of Edmonton. (n.d.). *Building permits* [Data set]. Open Data Portal. https://data.edmonton.ca/Urban-Planning-Economy/General-Building-Permits/24uj-dj8v/about_data

City of Toronto. (2022). *Our Plan Toronto: 115 MTSA delineations – 86 PMTSAs and 29 MTSAs*. https://www.toronto.ca/legdocs/mmis/2022/ph/bgrd/backgroundfile-227702.pdf

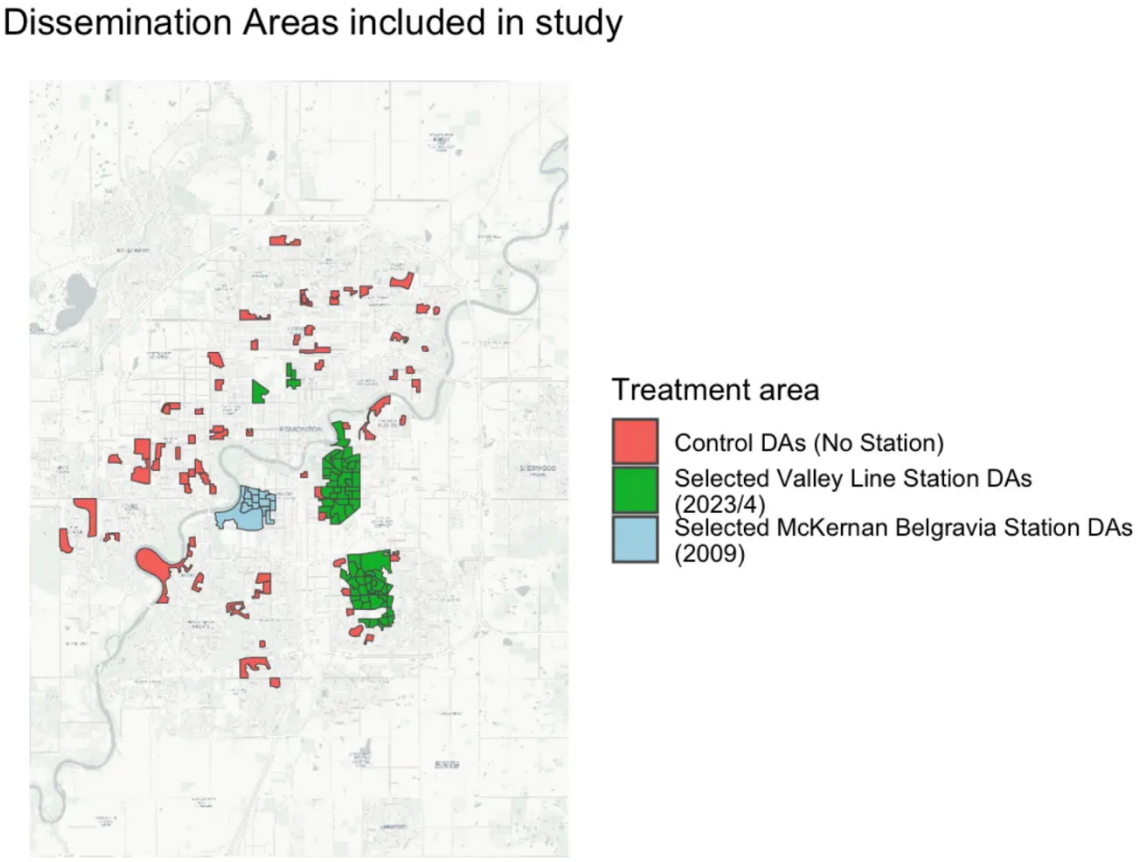
Delmelle, E. C., Nilsson, I., & Bryant, A. (2021). Investigating transit-induced displacement using eviction data. *Housing Policy Debate, 31*(2), 326–341.

Statistics Canada. (2006–2021). *Census of Population: Dissemination area datasets* [Data sets]. https://www12.statcan.gc.ca/census-recensement/index-eng.cfm

Appendix MCK-I: List of Selected Rail Transit Stations in Edmonton Case

#	Station Name	Line	Year Opened
1	NAIT Blatchford Market Station	Metro	2015 (original) 2024 (relocated)
2	Kingsway RAH Station	Metro	2015
3	MacEwan Station	Metro	2015
4	Churchill Station	Capital, Metro, Valley	1978
5	Churchill stop	Valley	2023
6	102 Street stop	Valley	2023
7	Quarters Stop	Valley	2023
8	Muttart Stop	Valley	2023
9	Strathearn Stop	Valley	2023
10	Holyrood Stop	Valley	2023
11	Bonnie Doon Stop	Valley	2023
12	Avonmore Stop	Valley	2023
13	Davies Station	Valley	2023
14	Millbourne Woodvale Stop	Valley	2023
15	Grey Nuns Stop	Valley	2023
16	Mill Woods Stop	Valley	2023
17	Central Station	Capital, Metro	1978
18	Bay Enterprise Square Station	Capital, Metro	1983
19	Corona Station	Capital, Metro	1983
20	Government Station	Capital, Metro	1989
21	University Station	Capital, Metro	1992
22	Health Sciences Jubilee Station	Capital, Metro	2006
23	McKernan Belgravia Station	Capital	2009
24	South Campus Ft Edmonton Station	Capital	2009
25	Southgate Station	Capital	2010
26	Century Park Station	Capital	2010
27	Stadium Station	Capital	1978
28	Coliseum Station	Capital	1978
29	Belvedere Station	Capital	1978
30	Clareview Station	Capital	1981

Appendix MCK-II: McKernan-Belgravia Station and Selected Surrounding Dissemination Areas



Detailed Findings: Northfield Station (Waterloo, ON)

This analysis examines land use, housing, and equity conditions surrounding the Northfield transit station in Waterloo.

Data Sources

The study drew on a combination of spatial, administrative and secondary data sources. First, we retrieve data based on the **ION Rapid Transit Routes** from the Region of Waterloo's Open Data portal (Regional Municipality of Waterloo, n.d). This data maps the alignment of the Stage 1 rapid-transit network through the Waterloo Region. Specifically, we extract station locations for both the light-rail component (between Waterloo and Kitchener; See Appendix NOR-I for full list of transit stations).

Census data for the analysis were obtained directly from **Statistics Canada** through publicly available datasets at the **dissemination area (DA)** level for the 2011, 2016, and 2021 Census cycles. These data include demographic, socioeconomic, and housing variables such as population counts, dwelling characteristics, household income, and ethnoracial composition (Statistics Canada, 2011-2021). Datasets were downloaded via the Statistics Canada data portal and harmonized across years to ensure comparability, accounting for boundary changes or redefinitions between census periods using correspondence files and geographic crosswalks. For DAs within and around the 800-meter catchment areas, the cleaned and harmonized variables were merged with spatial boundaries to support the selection of our Northfield site, treatment and control DAs.

Finally, we drew building permit data from the **City of Kitchener and the City of Waterloo.** The dataset provides a comprehensive record of all building permits issued within the Kitchener-Waterloo metro area. The dataset includes spatially referenced point data showing where construction, renovation, demolition, and other building activities have occurred since 1999. Each record typically contains information such as permit type, issue date, construction value, and location, offering valuable insights into patterns of urban development and land-use change (City of Kitchener, n.d.). Updated regularly, the dataset enables us to track building activity across neighbourhoods, assess growth trends, and explore the relationship between development intensity and broader housing, equity, and planning outcomes.

Analytical Procedure

To understand the relationship between TOD and neighbourhood changes, we focus on three outcomes: units created (issued units created by land area and dwelling count) and temporal changes among non-white ethnoracial households. We standardized units created two different ways. First, we derive units created by measuring the density of new housing units approved through building permits within a given year, standardized by the amount of land in the area. We also standardize units created by the total number of total private dwellings occupied by usual residents for the years 2011, 2016, and 2021. To create a continuous rate of building permit activity, dwelling count values for the intervening years were estimated using linear interpolation, assuming a steady rate of change in dwelling counts between census periods. This

approach enables annualized analysis of housing growth and density patterns across DAs within and beyond the 800-meter catchment areas.

We created 800 m buffers around selected ION LRT and GO Transit stations in Kitchener and Waterloo. Overlapping buffers were merged to prevent duplication and to capture shared development zones. To estimate the potential impact of the opening of the Northfield ION light rail station on patterns of residential development, we apply a quasi-experimental approach similar to those used in prior transit-oriented development studies (See Delmelle et al., 2021). Specifically, we use a difference-in-differences design to compare annual changes in building permit activity between areas within an 800-meter buffer around Northfield Station (the treatment area) and matched control areas beyond the buffer catchments. Dissemination areas (DAs) serve as the unit of analysis, as they represent the smallest geography at which harmonized census and permit data are available, providing a reasonable approximation of neighborhood-scale development patterns while allowing for consistent comparisons over time.

For matching, we use baseline dissemination area characteristics from the 2011 Census, focusing on key housing and socioeconomic indicators relevant to vulnerability dynamics. Specifically, we include the proportion of households spending 30% or more of income on shelter costs, the proportion of dwellings in need of major repair, and median household income. These variables capture housing affordability, quality, and overall economic conditions that tend to change slowly over time and are thus reliable for establishing pre-treatment comparability. Dissemination areas within or adjacent to any current or planned transit catchments were excluded from the pool of potential matches to reduce the risk of spatial spillover effects (See Appendix NOR-II for map on catchment areas and Appendix NOR-III for siting of Northfield station).

Results

Figure 10: Units Created Per Land Area - Annual

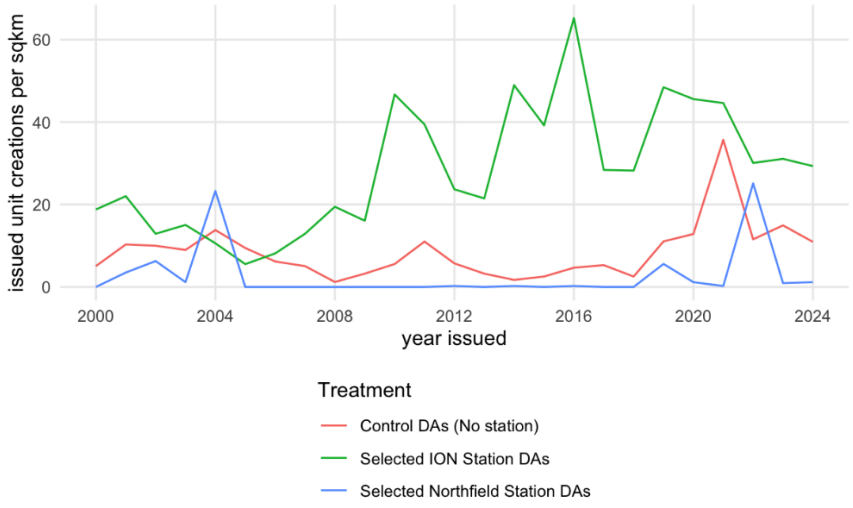


Figure 10 reveals that Northfield Station, located at the northern end of the ION corridor, has only recently experienced notable patterns of residential growth. Compared to central Kitchener stations, Northfield shows a moderate concentration of newly issued housing units relative to its total land area indicating active, but still emerging, transit-oriented development. Much of this activity is clustered near the business park and institutional lands surrounding the University of Waterloo, where parcels are larger and redevelopment potential is more flexible.

However, the data also highlight that Northfield's overall unit creation intensity remains below that of core urban nodes like Victoria Park or Kitchener Market. This reflects both contextual and structural constraints: limited existing residential fabric, the predominance of employment and institutional land uses, and the slower pace of mixed-use conversion in the station's immediate vicinity. Despite these challenges, the presence of new mid-rise proposals and infill approvals within the 800-metre buffer suggests future increased development.

Figure 11: Units Created Per 1,000 Dwellings - Annual

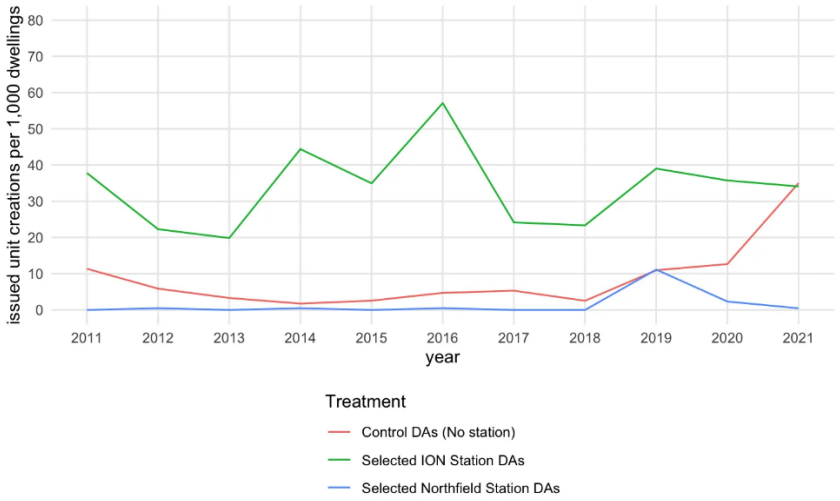


Figure 11 shows that the Northfield station area have relatively little to no units issued for much of our study period. There was a slight uptick in 2019; however, like other stations on the ION line, there was a decrease afterwards. Northfield's growth rate has mostly followed building intensification patterns like our control while our selected ION stations showed much higher rates of unit creations. This reflects a shift toward more residential development near the northern end of the ION corridor, where previously land use was dominated by institutional and employment parcels. Overall, the figure illustrates that Northfield is emerging as a new growth node: its high ratio signals significant redevelopment momentum even if the absolute number of projects remains modest.

Figure 12: Percent Change in Ethnoracial Population by Subgroup, 2016 to 2021

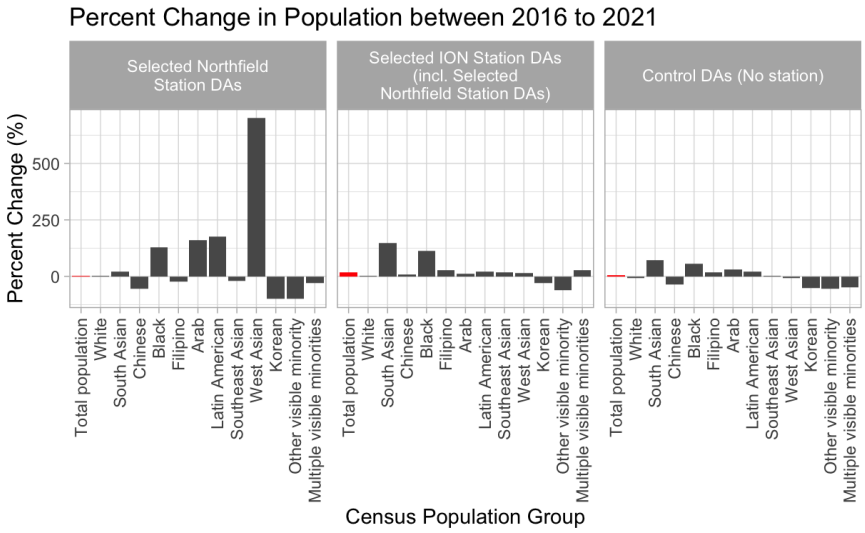


Figure 12 that the area surrounding **Northfield Station** experienced one of the largest proportional increases in visible minority residents across the corridor. Between census years, the visible minority population within the treatment group rose by roughly ten percentage points, compared with only marginal change in the control zone. This growth was driven mainly by increases among Black, Arab, Latin American, and West Asian residents, likely due to regional migration and student-related housing trends near the University of Waterloo. Yet, Northfield also loss notable shares of Chinese and Korean households, among other visible minority groups.

Northfield's moderate growth demonstrates the corridor's outward diffusion of TOD impacts. It also underscores the need for tailored planning strategies to activate underutilized lands and expand housing supply in station areas that were historically employment-focused. Encouraging land-use diversification, streamlining approvals for mixed-use development, and ensuring affordable and purpose-built rental housing near this key northern terminus would help balance intensification across the corridor and prevent an overconcentration of growth solely in Kitchener's core.

Conclusion

Taken together, this analysis shows that **Northfield Station** is evolving into a key growth node at the northern edge of the ION corridor. Figure 1 indicates a steady concentration of new residential construction, while Figure 2 reveals that, relative to its small existing housing base, Northfield is experiencing one of the fastest proportional growth rates in the region. Yet, the pandemic years have slowed construction impacting building patterns. This new development is accompanied by a marked increase in ethnoracial diversity, driven largely by in-migration rather than displacement. From a policy standpoint, these trends suggest that Northfield is transitioning from an employment- and institutional-oriented district into a more mixed and inclusive urban node. To ensure this transformation supports long-term equity goals, policymakers should prioritize affordable and purpose-built rental housing, community amenities, and transit-oriented public spaces that can anchor a diverse, growing population.

References

City of Kitchener. (n.d.). *Building Permits* [Dataset]. Kitchener GeoHub. Retrieved October 29, 2025, from https://open-kitchenergis.opendata.arcgis.com/datasets/KitchenerGIS%3A%3Abuilding-permits

City of Toronto. (2022). *Our Plan Toronto: 115 MTSA delineations – 86 PMTSAs and 29 MTSAs* [Report]. City of Toronto. Retrieved from https://www.toronto.ca/legdocs/mmis/2022/ph/bgrd/backgroundfile-227702.pdf

Delmelle, E. C., Nilsson, I, and Bryant, A. (2021). "Investigating transit-induced displacement using eviction data." *Housing Policy Debate 31*(2): 326-341.

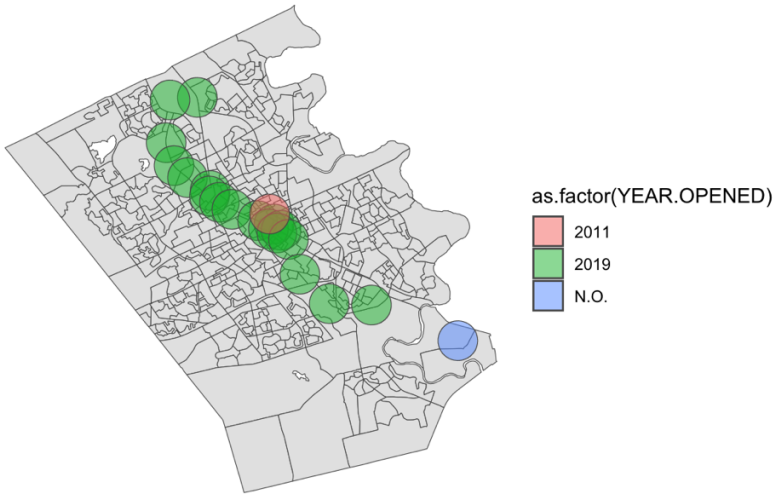
Regional Municipality of Waterloo. (n.d.). *ION Routes* [Dataset]. Retrieved October 29, 2025, from https://rowopendata-rmw.opendata.arcgis.com/datasets/RMW::ion-routes-1/about

Statistics Canada. (2011–2021). *Census of Population: Private dwellings by structural type and occupancy status (Dissemination Area level)* [Data set]. Government of Canada. Retrieved from https://www12.statcan.gc.ca/census-recensement/index-eng.cfm

Appendix NOR-I: List of Selected Rail Transit Stations in Kitchener-Waterloo Case

#	Station Name	Service	Municipality	Year Opened
1	Conestoga	ION	Waterloo	June 21, 2019
2	Northfield	ION	Waterloo	June 21, 2019
3	Research and Technology	ION	Waterloo	June 21, 2019
4	University of Waterloo	ION	Waterloo	June 21, 2019
5	Laurier – Waterloo Park	ION	Waterloo	June 21, 2019
6	Waterloo Public Square	ION	Waterloo	June 21, 2019
7	Willis Way	ION	Waterloo	June 21, 2019
8	Allen	ION	Waterloo	June 21, 2019
9	Grand River Hospital	ION	Kitchener	June 21, 2019
10	Central Station – Innovation District	ION	Kitchener	June 21, 2019
11	Kitchener City Hall	ION	Kitchener	June 21, 2019
12	Victoria Park	ION	Kitchener	June 21, 2019
13	Frederick	ION	Kitchener	June 21, 2019
14	Queen	ION	Kitchener	June 21, 2019
15	Kitchener Market	ION	Kitchener	June 21, 2019
16	Mill	ION	Kitchener	June 21, 2019
17	Borden	ION	Kitchener	June 21, 2019
18	Block Line	ION	Kitchener	June 21, 2019
19	Fairway	ION	Kitchener	June 21, 2019
20	Sportsworld	ION	Kitchener	N.O.
21	Kitchener train station	VIA Rail, GO Transit	Kitchener	1856 (built); 1982/1990 (VIA Rail); 2011 (GO Transit)

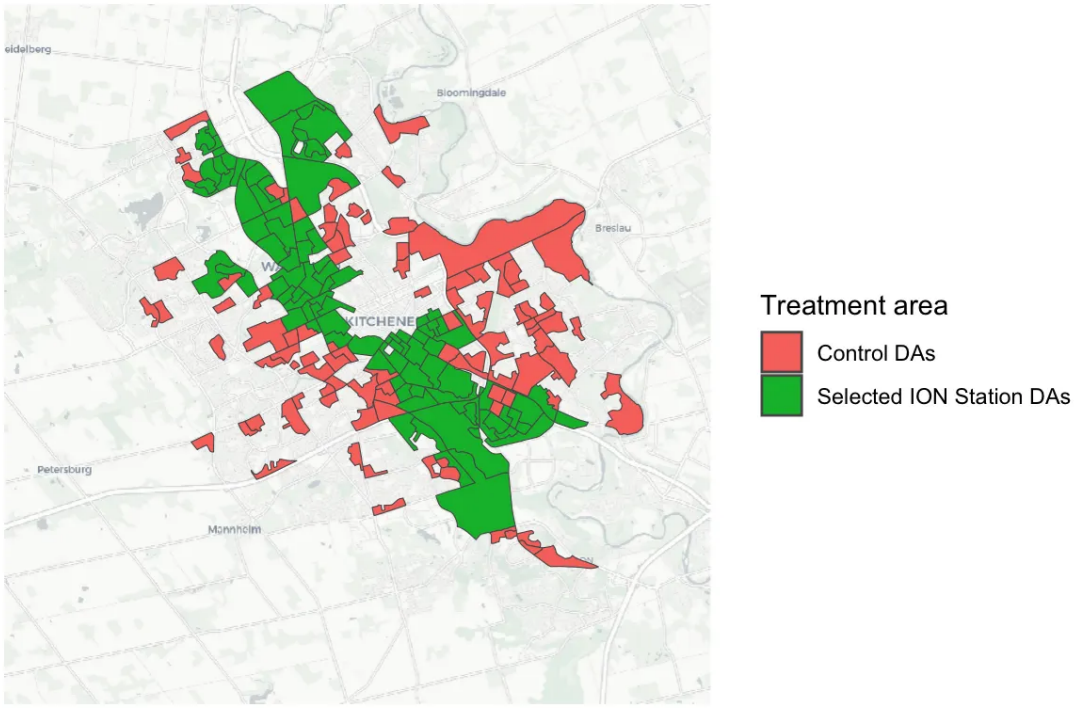
Appendix NOR-II: Figure of 800m Catchment Areas



DAs are selected/filtered based on whether or not they overlap with any of these catchment areas.

Appendix NOR-III: Northfield Station Area and Selected Surrounding Dissemination Areas

Dissemination Areas included in study



Northfield Station and
Selected Surrounding Dissemination Areas

Detailed Findings: Panama Station (Brossard, QC)

This analysis examines land use, housing, and equity conditions surrounding the Panama-Brossard transit station in the Montérégie region of Quebec.

Data Sources

The study drew on a combination of secondary data sources. Unlike the other cases, building permit data was not available at the level of granularity. To address this data gap, we use "dwelling constructions over the past 5 years" from Statistics Canada as our outcome variable. The period of construction refers to the period in time during which the building or dwelling was originally constructed. This refers to the period in which the building was completed, not the time of any later remodeling, additions or conversions. For properties having multiple residential structures, this refers to the period in which the most recent structure was completed. It includes measures at the dissemination area (DA) level enabling us to spatially align the transit station with surrounding neighbourhood characteristics and other built-environment indicators. Integrating this dataset allowed us to examine how proximity to infrastructure intersects with local patterns of demographic change and housing conditions.

Additional census data for the analysis were obtained directly from **Statistics Canada** through publicly available datasets at DA level for the earliest date (2011) they were in range of an open station. Datasets were downloaded via the Statistics Canada data portal and harmonized across years to ensure comparability, accounting for boundary changes or redefinitions between census periods using correspondence files and geographic crosswalks. For DAs within and around the Panama station, the cleaned and harmonized variables were merged with spatial boundaries to support the selection of treatment versus control DAs.

Analytical Procedure

We analyzed how the arrival of the Panama Station in the Brossard–Saint-Lambert corridor impacted local neighbourhood dynamics by focusing on new housing units created through dwelling constructions and shifts in the share of non-white ethnoracial households. Units were standardized by land area and by total occupied private dwellings, and permit activity was interpolated to produce a continuous annual series. This captures the intense concentration of new multi-residential construction around the Panama station compared with the far lower development observed in Saint-Lambert. We defined 800-meter buffers around the station. Using a difference-in-differences approach, we compared annual building activity in catchment DAs with matched control DAs outside any rapid-transit influence (Delmelle et al., 2021). Matching relied on 2011 Census characteristics - population density, renter share, dwellings in need of repair, share of households in unsuitable housing, shelter cost burden, visible minority share, and median after-tax income - to ensure comparable pre-estimates baselines (See Appendix PAN-I for study area and selected DAs).

We included Saint-Lambert DAs to the north because they experienced relatively limited residential development during the study period, offering a useful contrast to the high-growth

zones in Brossard and Panama. Although Saint-Lambert is served by VIA Rail and EXO commuter rail, these services do not generate the kind of frequent, all-day rapid-transit pressures associated with TOD, allowing us to treat the area as a low-growth contrast zone while maintaining consistency with how transit exposure was defined in other studies (Soliz et al., 2024). Commuter rail provides infrequent, peak-oriented regional trips and does not typically generate TOD-intensive land-use change. For consistency across the series, we therefore classify Saint-Lambert as outside the primary rapid-transit catchment while noting that future work could test whether commuter-rail accessibility exerts any measurable development influence.

Results

Figure 13: Percent Change in Occupied Dwellings through Constructions

Figure 13 highlights uneven but instructive differences in residential growth generated through new construction across the comparison groups. The DAs without station access show the strongest and most sustained increases in occupied dwellings, with growth exceeding 20 percent between 2011 and 2021 and remaining comparatively high in the 2016–2021 period (likely impacted by the pandemic). This pattern reflects broad suburban development pressures occurring independently of the transit corridor.

By contrast, the Panama Station DAs exhibit a much more muted trajectory. Growth in occupied dwellings is noticeably lower across both time windows - roughly a quarter to a third of the rate observed in non-station areas - and shows no comparable acceleration leading up to the station's opening. Rather than displaying the kind of pre-opening uplift often associated with emerging TOD zones, the Panama catchment shows only modest incremental change, suggesting that redevelopment pressures have not yet materialized at the scale observed elsewhere in the South Shore. The figure suggests that, unlike newly served station areas that often begin to experience anticipatory development activity, the Panama station zone has not yet undergone a pronounced shift in residential construction patterns. Instead, growth remains relatively subdued, indicating

that TOD-oriented development pressures around this station area are emerging slowly, if at all, compared to broader regional trends.

We explored alternative indicators of residential construction resulting in the same stark pattern: non-station areas experienced far greater growth in occupied dwellings in percentage change than the Panama station catchment. Across both time windows, the Panama DAs show only minimal residential expansion, indicating that the station area has not yet attracted the level of redevelopment typically associated with emerging transit-oriented zones (See Appendix PAN-II for more information).

Figure 14: Change in Occupied Dwellings per Land Area

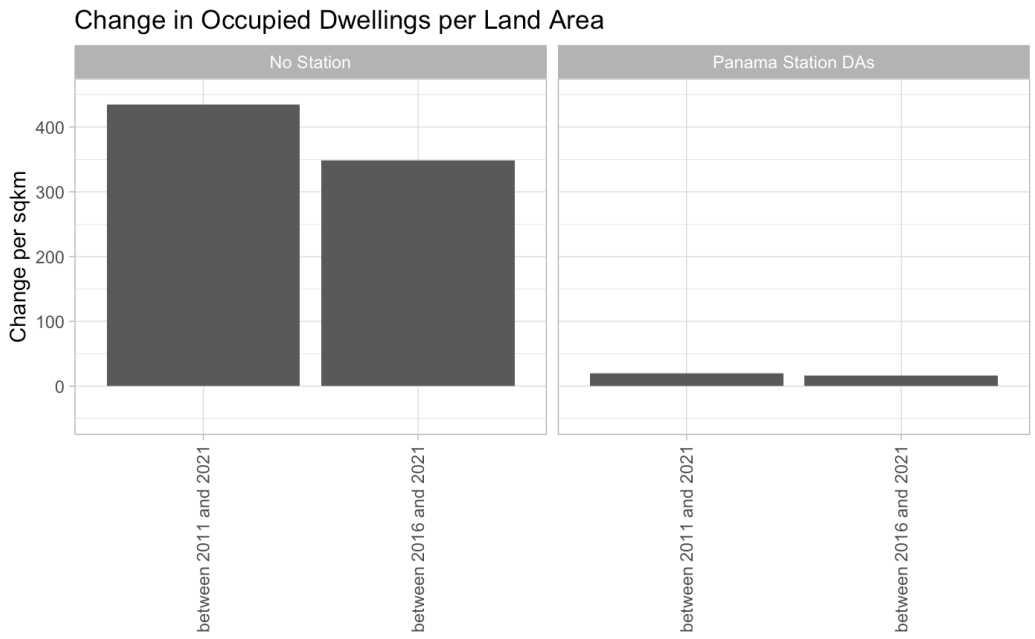


Figure 14 underscores the stark contrast in residential intensification between the Panama station area and the wider South Shore. When measuring change in occupied dwellings relative to land area, non-station DAs show substantial growth: adding more than 400 units per square kilometer between 2011 and 2021 and over 340 units per square kilometer in the 2016–2021 period. By comparison, the Panama station DAs exhibit only minimal increases on both measures, with changes that are an order of magnitude smaller. This pattern suggests that, despite the investment and the area's strategic positioning within a designated TOD corridor, the Panama catchment has not yet experienced the concentrated redevelopment or densification that characterizes other rapidly growing parts of the region.

Figure 15: Percent Change in Ethnoracial Population by Subgroup, 2011 to 2021

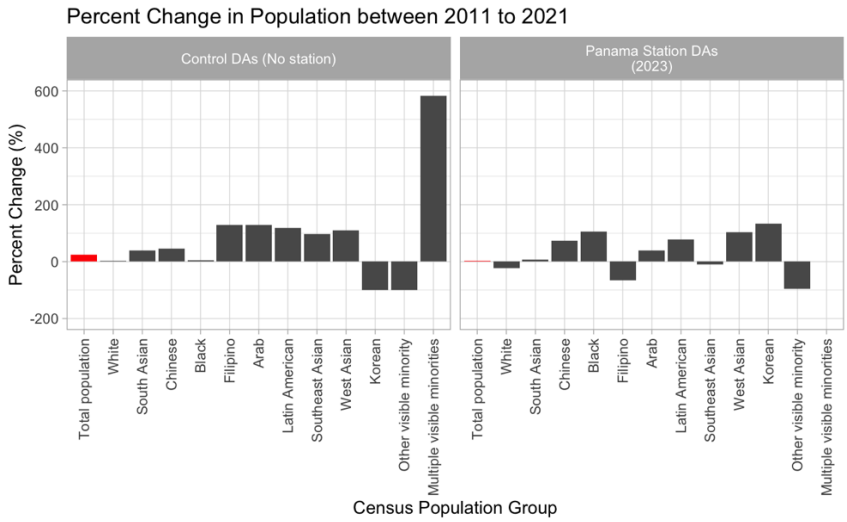


Figure 15 shows that population change across racial and ethnocultural groups differs sharply between the Panama station area and the broader set of control DAs. In the non-station areas, several visible minority groups experienced substantial population growth between 2011 and 2021, particularly "multiple visible minorities," among other groups including Filipino, Arab, Latin American, Southeast Asian, and West Asian residents - indicating broader diversification across the South Shore. In contrast, the Panama station DAs display more modest and uneven shifts: some groups, such as Black and Korean, show moderate increases, while others, including Filipino and "other visible minority" populations, decline over the same period. Overall, the Panama catchment exhibits neither the scale of growth nor the demographic diversification observed elsewhere, suggesting that its population dynamics remain relatively stable despite regional changes and the introduction of transit infrastructure.

Conclusion

Taken together, these findings illustrate that the Panama station area has not yet experienced the type of residential or demographic transformation typically associated with emerging transit-oriented development. Across all measures - percentage change in occupied dwellings, residential growth per land area, and shifts in visible minority populations - the Panama catchment shows only limited and uneven change, especially when compared to the broader South Shore, where non-station DAs display clear signs of intensification and diversification. Despite substantial regional investment in high-order transit and the strategic positioning of Panama as a key transit node, the surrounding neighbourhoods have not yet absorbed redevelopment pressures at a meaningful scale. These patterns suggest that TOD impacts remain in their early stages or are being shaped by local conditions that limit redevelopment potential, underscoring the importance of continued monitoring as the transit system matures and as policy, market, and land-use dynamics evolve in the corridor.

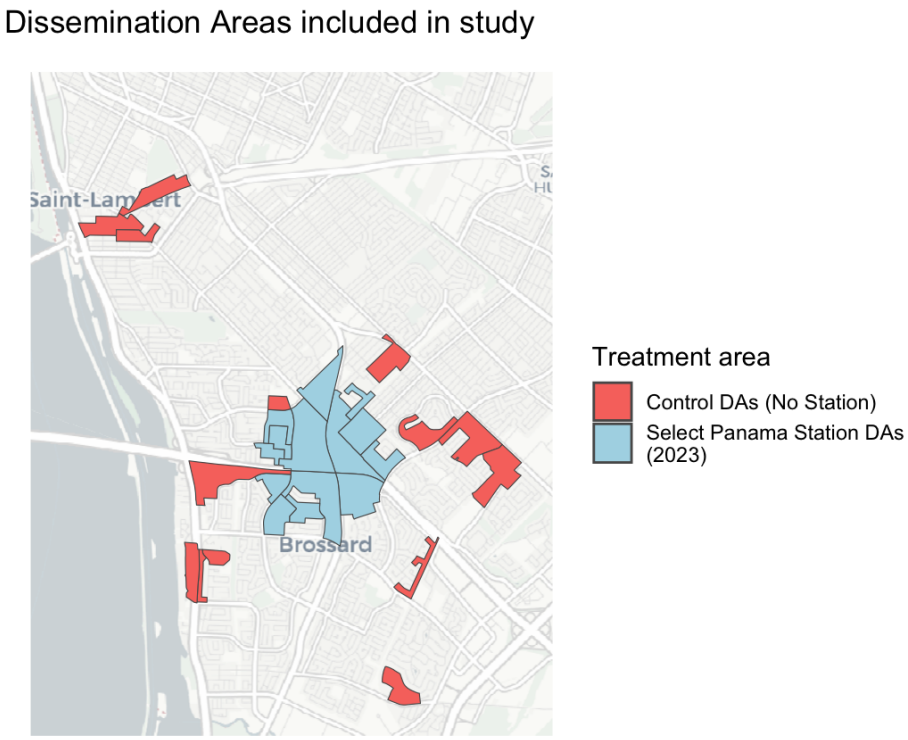
References

Delmelle, E. C., Nilsson, I., & Bryant, A. (2021). Investigating transit-induced displacement using eviction data. *Housing Policy Debate, 31*(2), 326–341.

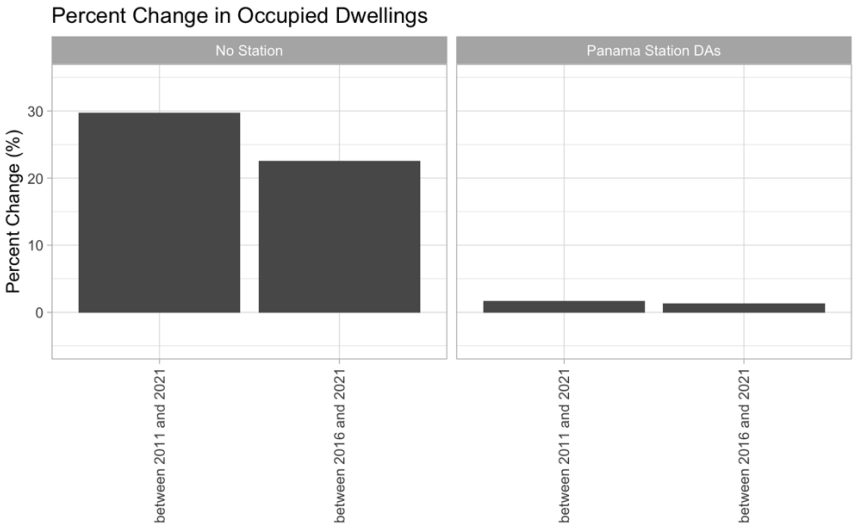
Soliz, A., Rodrigue, L., Peaker, C., Bernard, I., & El-Geneidy, A. (2024). Zoning in on transit-oriented development: Understanding bylaw reform as critical policy groundwork. *Journal of the American Planning Association*, *90*(2), 318-335.

Statistics Canada. (2011–2021). *Census of Population: Dissemination area datasets* [Data sets]. https://www12.statcan.gc.ca/census-recensement/index-eng.cfm

Appendix PAN-I: Panama Station and Selected Surrounding Dissemination Areas



Appendix PAN-II: Alternative Indicators of Residential Change



The percent-change assessment shows a stark contrast between the Panama station area and the broader non-station comparison group. Between both 2011–2021 and 2016–2021, non-station DAs experienced substantial residential growth, with increases of roughly 30 percent and 23 percent, respectively. In sharp contrast, the Panama station DAs saw only minimal gains—around one to two percent in each period—indicating that the station catchment has not yet undergone significant residential expansion. These results reinforce that, despite major transit investment, the Panama area has not seen the scale of housing growth typically associated with emerging transit-oriented development.