The Production of Space for Entrepreneurship: State-Led Gentrification & Innovation along the ION Light Rail Transit Line in the Region of Waterloo

by
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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public

Abstract

The Region of Waterloo is rapidly transforming along the route of the ION Light Rail Transit Line. As the transit line facilitates greater residential and commercial density, it introduces new socio-economic inequity regarding who can live near and participate in public space connected by mass public transit - state-led gentrification tied to public infrastructure. In 2015, at the same time that construction on the transit line began, the Region of Waterloo announced the Toronto Waterloo Innovation Corridor - injecting global capital and new innovation space into the Region of Waterloo along the transit route.

I argue that the co-produced effect of state-led gentrification and innovation is a means for the municipality to maintain and ossify existing structures of socio-economic inequity. I ask how the conditions of inequity along the LRT are produced and presented by the state, and perceived by residents of the Region. I use a mix of methods: photography, mapping, and a survey to form a discursive relationship between public documents, in-place experience, and the changing socio-economic geography of the Region of Waterloo.

I find that the co-production of gentrification and innovation is fostered by provincial growth planning policy and an institutional response to post-industrial decline. In newly connected public space, I document an aesthetic and spatial narrative of innovation that blurs the boundary between labour and life. Along the ION Light Rail Transit Line, the political potential of newly connected public space is foreclosed. With this work, I extend the theorization of gentrification in relation to innovation labour - entrepreneurship - in the political economy of a post-industrial municipality.

Acknowledgements

I spent a fair bit of this thesis thinking about the process of knowledge production. It is clear to me that new ideas don't come out of a vacuum but are instead made by shared effort. Out in the field, I met many people whose curiosity and willingness to support my work through conversations, participation in surveys, and insight were heartening and inspiring. I would be remiss not to thank the people who wished me luck as I worked on the thesis.

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Last, but not least, thank you Mom, Dad, Dudes & Giulia. I am lucky to have a family that pushes and supports me.

Dedication

This thesis is dedicated to my late grandmother and aunt. To Aai & Thai Moushi.

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1 ## AN INTRODUCTION TO THE PLACE AND THE STUDY

From Behind Erb and Fischer-Hallman

From north to south, the Region of Waterloo is made up of three cities: Waterloo, Kitchener, and Cambridge, and four rural townships: North Dumfries, Wellesley, Wilmot, and Woolwich. The Region's ION Light Rail Transit Line (LRT) project was initially publicized as a catalyst for development across the three cities, in response to predicted growth in Ontario (ION Community Relations 2014). While I had heard critical concern for the drastic changes along the LRT in the years since construction began in 2015, my first ride on the train was swept up in the excitement of having access to a mass transit connection between three hitherto suburban cities.

My life has followed the route of the LRT as it was planned and constructed, largely through institutional spaces. From my lifelong single-family home behind the intersection of Erb Street and Fischer-Hallman Road, I understood the City of Waterloo as a suburban place with a core concentration of intellectual institutions. To locate the town for cousins around the world, I'd rely on the lore of tech and local universities, telling them "where the first smartphone, the Blackberry, was invented". These were the markers used to indicate the importance of an otherwise small place close to Toronto.

I went to high school in Downtown Kitchener, leaving the neighbourhood of winding Drives and Crescents behind to take public transit in a city I'd only visited on school trips or in my parent's car. My commute went from Uptown Waterloo to Downtown Kitchener, moving through much of the planned route of the LRT, four years before construction started. As a teenager, I was suddenly granted independent access to the public libraries, museums, recreation centres, and parks that make up public space in Kitchener-Waterloo. My home, three kilometres away from Uptown and the universities, felt all the more behind.

I use 'behind' to describe a home that was once in the western-most neighbourhood from Waterloo's urban centre and south of the University of Waterloo, away from the cities further south. In effect, behind the heart of the activity of the Region of Waterloo. When I moved to Cambridge to study architecture at a satellite campus of the University of Waterloo I thought of the city as a campus, ignoring the place that exists beyond it. Extending the logic of 'behind',

I read the gap between Kitchener-Waterloo and Cambridge as a gap in the possibility of the place, assuming that there was nothing there outside of the connection to Waterloo.

I begin with my experience of the three cities this thesis will centre on as an introduction to the effect of the LRT and the Region of Waterloo (hereafter the Region). For years, I have read my home in Waterloo as 'behind', as more distant from the centres of intellectual activity and public space. More distant from the LRT, the spaces that might be considered 'behind' are not yet transformed, spatially and aesthetically, to match the forward-moving appearance of the Region's recently connected core. Over the course of this work, I hope to introduce a critical position to this sense of 'being behind' as the LRT reproduces a relationship between the core and periphery; the future of the Region and what's left behind.

As the new transit line creates grounds for more residential and commercial density, creating connections between the central places of the Region, it introduces new socio-economic inequity between those who can choose to live near and participate in the new core and those who cannot. In the thesis, I ask how the conditions of inequity along the LRT are produced and presented by the state, and perceived by residents of the Region. I find that gentrification and innovation are fostered by provincial growth planning policy and the institutional response to post-industrial decline in a simultaneous and co-dependent state-led process. Moving through the Region's newly connected core, people are presented with a narrative about innovation and the labour of entrepreneurship in the public space of gentrifying neighbourhoods. The boundary between labour and life is blurred in the re-arranged geography and aesthetic renovation of the Region, diminishing the political potential of activity in public space.

The ... of Canada: A History of the Region

Before the founding of the Region, individual cities developed into primacy at separate stages. Often taking on the title of The... of Canada, copying a city across the Atlantic initially and later American cities. The Region continues to present itself as the Canadian version of something else, shaping how public space communicates a contemporary identity in the post-industrial knowledge economy. I present this brief history to contextualize the criticism of the Region that I develop in the thesis.

In the 1790s, culturally pacifist Mennonites began settling land in the north and west of the Region as Scottish Celtic settled the banks of the Grand River (Region of Waterloo 2019). After losing the American Revolutionary War (1775-1783), the British Empire sought to colonize and settle land north of the new border, so tracts of land were granted, divided and sold for development in a successive exchange between indigenous and settler populations (Rogalsky 2017).

The Grand River basin was significant to the economic development of the colonial centres that would become the Region. Towns with water-powered grist mills formed around the fertile watershed to service a blossoming agriculture industry (Library and Archives Canada n.d.). By the 19th century, textile mills powered by the force of the river and later steam drew greater populations to the townships that later became Cambridge (Library and Archives Canada n.d.). The "Manchester of Canada" thrived on the force of the river (City of Cambridge 2020).

The predominantly Mennonite population in the northwest attracted additional German speakers who brought with them traditions of specialty craftsmanship enhancing growth away from the river (City of Cambridge 2020). Developing further away from the banks of the Grand River, Kitchener—called Berlin up until 1916—became a centre for industrial food, textile, and beverage production while Waterloo specialized in insurance with Waterloo County Farmer's Mutual and Ontario Mutual Life (McLaughlin and G. Cornell [2012] 2018; McLaughlin [2012] 2018). The twin centres developed in relation to each other, sharing a main road from northwest to southeast.

The place that would later become the Region, however, has a history of centrality that predates colonial settlement. When French explorers arrived in the 1600s, the Attawandaron Confederacy was the largest Indigenous society of multiple agrarian tribes in the Eastern Woodlands (the south of Ontario, extending into Quebec and the United States). The Attawandaron Confederacy was called The Neutrals by the French because they did not engage in the warfare between members of the Wendat Confederacy to the North and the Haudenosaunee Confederacy (more commonly referred to as Six Nations) to the East (Library and Archives Canada n.d.). Instead, they dealt in trade with both nations.

Disease introduced by European explorers ravaged the population (Noble [2015] 2020). A war between The Neutrals and Seneca (Haudenosaunee) broke out, exacerbated by an ongoing war with The Assistaronon to the south, wiping out The Neutrals (Library and Archives Canada n.d.). Survivors of war and disease were absorbed into Haudenosaunee communities, dismantling the confederacy (Library and Archives Canada n.d.). A palisade village in Kitchener's Huron Natural Area and artifacts often unearthed in new construction are all that remain of a once populous nation (Bridgwater 2017).

Joseph Brant, born Thayendanegea, negotiated the Haldimand Treaty of 1784 to move southern populations of the Haudenosaunee Confederacy who had fought with the loyalists in the American War for Independence (Allen and Conn [2008] 2019). The purchase in Upper Canada was made from the Mississauga of the Credit First Nation, members of the Anishnabe Confederacy, through Between the Lakes Treaty No. 3 (Duric 2017). From the land ceded in Treaty No. 3 between the Crown and the Mississauga of the Credit First Nation, 10 kilometres on both sides of the Grand River from its source to Lake Erie were granted to the Six Nations in the Haldimand Treaty. Six major blocks of land were sold in 1798 with the expectation that the Six Nations would receive payment for the sale of their land (Six Nations Council 2008). These tracts of land became the sites of the major cities and prime agricultural land of the Grand River watershed, including the cities that make up the Region (Library and Archives Canada n.d.). Phil Monture has built a detailed account of the unfair transactions and outright theft that took place through European settlement on Six Nations land (Monture 2017). Outside of Monture's work this history is sorely missing from the innovation mythology of the Region as it becomes "the... of Canada".

By WWI, Kitchener—at the end of its life as Berlin—overshadowed neighbouring industrial cities and Kitchener-Waterloo operated as twin cities. In the postwar boom, Kitchener grew into "Canada's Akron" (English 2011). In 1957—during the Cold War—the City of Waterloo, already economically differentiated from its industrial neighbours to the south, established the University of Waterloo with the help of private industrialists (University of Waterloo n.d.). The founding of Conestoga College in 1967, and Wilfrid Laurier University in 1973 further secured Waterloo against the imminent recession. While Waterloo shifted

Legend:

ION LRT
City Boundaries
Grand River

UW   University of Wateroo
UWSA University of Wateroo School of Architecture
WPL   Waterloo Public Library
KWAG Kitchener Waterloo Art Gallery

My bus route to High School
My route to the School of Architecture
Personally Significant Sites

TOWNSHIP OF WELLESLEY

TOWNSHIP OF WOOLWICH

CITY OF WATERLOO

CITY OF CAMBRIDGE

TOWNSHIP OF WILMONT

CITY OF KITCHENER

TOWNSHIP OF NORTH DUMFRIES

ERB ST
my home
FISCHER-HALLMAN RD
UW
WPL
KWAG
high school
REMNANTS OF A WOODLAND IROQUOIS VILLAGE
HURON NATURAL AREA
UWSA

0.0 km   2.5   5.0   10.0

N

FIG. 1. 2. From Behind Erb and Fischer-Hallman: Mapping my experience of core and periphery as I moved through the three cities of the Region.

further away from an industrial economy, the effects of globalization and suburbanization were taking a toll on the industrial centres of Kitchener and Cambridge by the 70s.

The historically separate trajectories of Waterloo, Kitchener, and Cambridge are emblematic of larger trends in the knowledge economy that left some cities suddenly depleted of work as others grew rapidly to service new enterprise (**English 2011**). Personifying the twin cities of Kitchener-Waterloo, prominent local historian Ken McLaughlin characterizes their respective development as follows:

> One of the twins [Waterloo] went to university and developed in his teenage years into a leading professional and the other twin [Kitchener] went to trade school and chose a trade that once had been respected, but that has gone out of style. (McLaughlin quoted in English 2011)

Cambridge was established in 1973 in hopes that an amalgamation of three towns (Galt, Preston, and Hespeler) and a village (Blair) in post-industrial decline would result in a more efficient local government. In 1988, Toyota opened its Cambridge plant becoming one of the largest employers in the Region (**The Record [2017] 2020**). As a result of the plant, some of the industrial capacity of the city was renewed (**English 2011**).

Under the auspice of government efficiency, the Government of Ontario established the Region in 1976; tying together the twin cities with a newly amalgamated City of Cambridge. Since then, the Region has developed a cross-Regional strategy of revitalization, replacing out-moded industry with a knowledge economy of innovation supported by public and private partnerships. As one of the fastest-growing municipalities in Canada, the Region now aims to be 'the Silicon Valley of the North' making a slight departure from "of Canada" (**Slaughter 2021**).

The Central Transit Corridor: A Linear Core

The indisputable spike in development activity in the Central Transit Corridor and secondary intensification corridors has met with a mix of excitement and critique (**Federation of Canadian Municipalities 2022; Doucet 2021**). The Central Transit Corridor (CTC) runs along the LRT, bound within an 800-meter radius at each stop on the route. Secondary intensification corridors run perpendicular to the CTC along iXpress rapid bus routes. Given the scale of the cities in this study, the boundary of the CTC envelops many of the major public spaces and institutions that have played a role in the development of the Region and continue to do so. I focus my research on the rapid transformation of the CTC as a connected concentration of public space.

Planning for the LRT began in 2002. In 2014 GrandLinq Consortium broke ground for 5 years of constructing Phase 1 of the LRT. After the initial 2002 proposal, the 2006 Places to Grow: Growth Plan for the Greater Golden Horseshoe enacted by the province of Ontario provided a renewed political push for the project. By 2008 it was a national priority, and by 2012 a route and supplier were approved by the province (**Banger 2019**). The LRT officially opened on June 21, 2019 (Banger 2019). As plans have solidified for Phase 2, Cambridge has joined in the processes of transformation that are beginning to mature in Waterloo and Kitchener. A 'Notice to Proceed' allowing the planning and construction of Phase 2 to start was signed by the Minister of Environment, Conservation, and Parks in the summer of 2021 (**Minister of the Environment, Conservation and Parks 2021**).

The Region is a two-tier municipality and shares governing responsibilities with the seven municipal governments of the townships and cities. The finer details of urban planning, such as design guidelines for tall buildings or decisions on zoning amendments occur within the city government while principles of intensification are set regionally and supported by regionally governed transit (**McLeod 2011, 8**). This structure becomes relevant to the thesis when considering the competitive and collaborative development strategies of the three cities governed by one regional municipality. The reach of the LRT—as it transforms and connects Waterloo, Kitchener, and Cambridge in one long line—is a potent site to study the state's agency in producing public space.

A Problem not Initially Apparent

Equipped with a sense of the organization and history of the Region, I begin the thesis by introducing two processes of transformation—innovation and gentrification—in public space. A chapter of definitions is intended to establish a problem where a problem might not be initially apparent. The problem of structurally ingrained innovation and gentrification in the development of public space is that this space loses its capacity for political activity—instead, becoming homogenous. A critical theorization becomes more necessary when the effects of recent transformations in the Region are poised to activate the centers of the three cities and bolster a capacity for innovation that will future-proof the local economy (**OECD 2009; Waterloo 2021; CTV 2011**). I propose a problematization of the innovation city to describe the conditioning of public space at the confluence of innovation and gentrification.

The innovation city is theorized as the urban space of the post-industrial knowledge economy. The functional and aesthetic expansions of state infrastructure in this city are made to support the labour of innovation. In doing so, these public spaces are made less effective as sites for political action and interaction.

I use a mix of methods: annotated photography and intertextual mapping supported by policy analysis and a survey in place, to apply the theory of the innovation city to the Region. Using the Region as a case study I map the socio-economic effect of state policy and interventions to ground the theory of the innovation city in the reorganized space of the newly operational ION LRT. In photographs, I narrate the ideological presentation of the innovation city as an aesthetic transformation in the CTC. I interpret knowledge gained from surveys through critical theory as a method to revisit and refine the relationships between public space, gentrification, and innovation that I develop. I conclude with a reflection on the innovation city as a recurrent means of maintaining existing power structures in contemporary state-led urban development practices.

Reflecting on the potential possibility and negative effects of upgrading and updating public space, I lay out an argument against the consumption of public space for private interest in the abstract and on the site of study.

ION LRT

CTC

City Boundaries

Haldimand Tract

Grand River

CITY OF WATERLOO

CITY OF CAMBRIDGE

REMNANTS OF A WOODLAND IROQUOIS VILLAGE

HURON NATURAL AREA

CITY OF KITCHENER

0.0 km   2.5   5.0   10.0

N
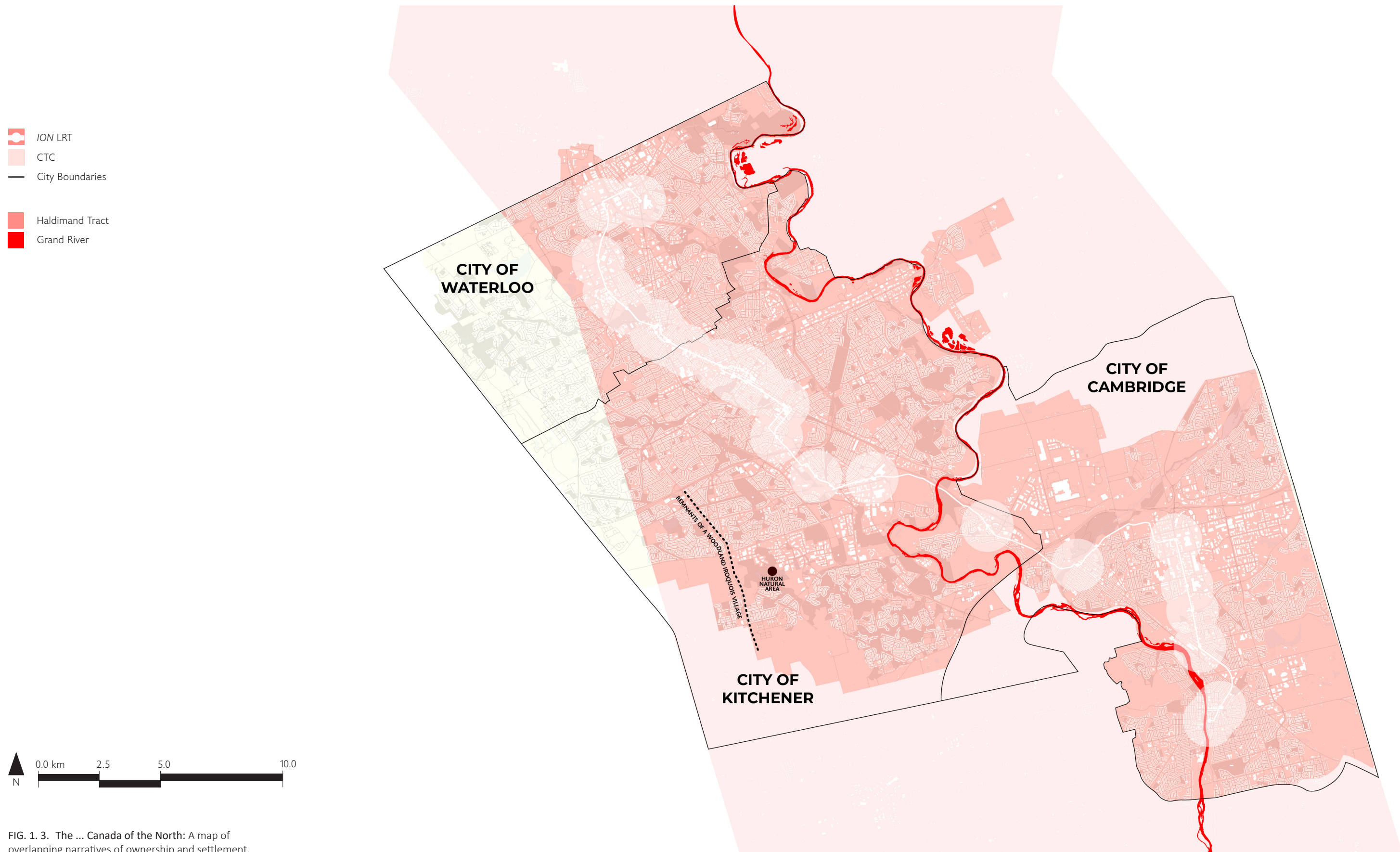
FIG. 1. 3. The ... Canada of the North: A map of overlapping narratives of ownership and settlement.

LRT

CTC

Intensification Corridor

Public Parks & Buildings

—— City Boundaries

Public Parks outside of the CTC

CITY OF WATERLOO

CITY OF CAMBRIDGE

CITY OF KITCHENER

0.0 km   2.5   5.0   10.0

N
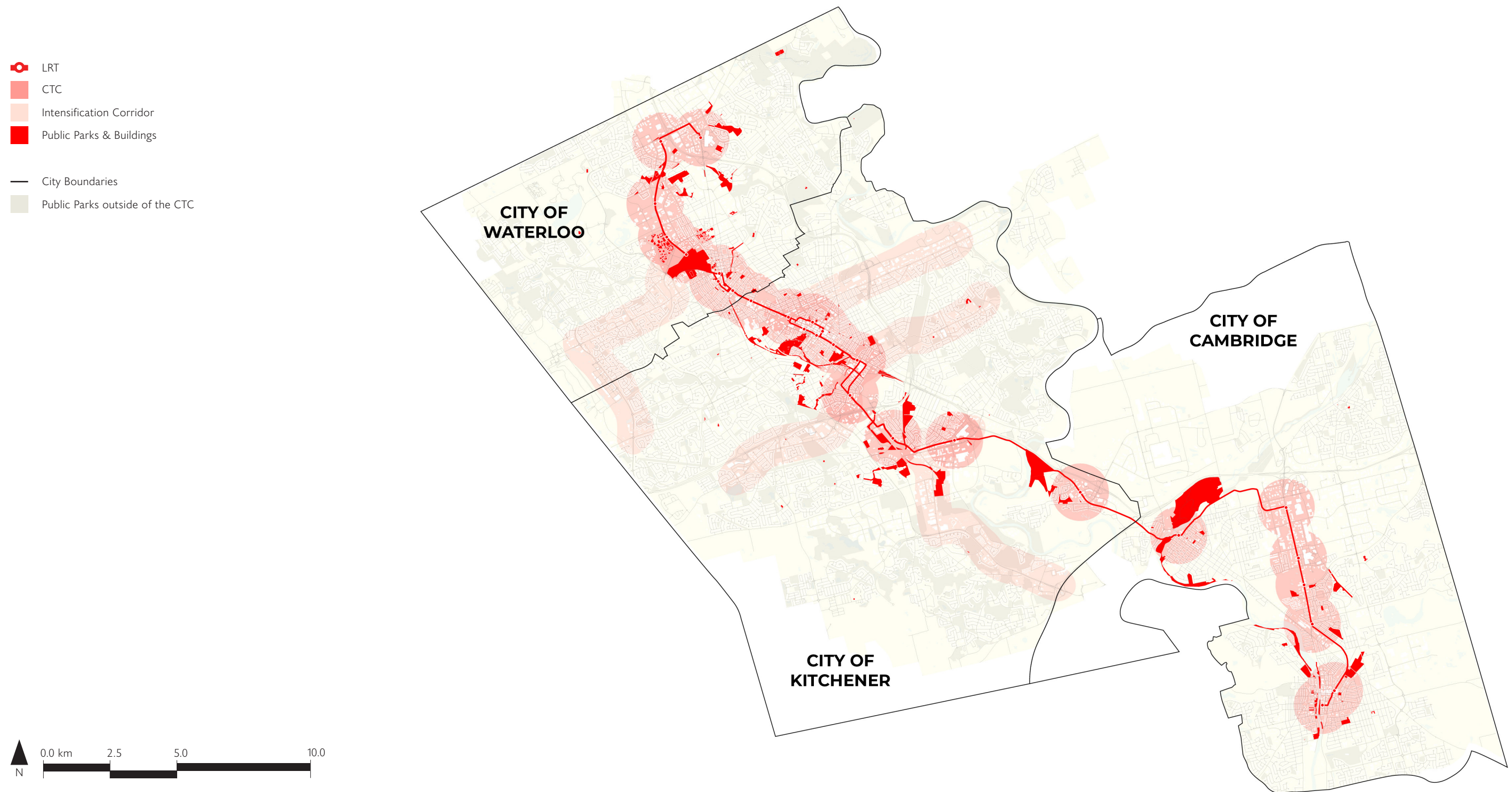
FIG. 1. 4. A Linear Core: The boundary of the CTC, perpendicular intensification corridors, and public spaces connected by the LRT. Mapping the sites of subject of the study.

NEOLIBERAL GOVERNANCE

subjectified municipal
STATE

GENTRIFICATION ▶ **PUBLIC SPACE** / **UN-PUBLIC SPACE** ◀ **INNOVATION**

SUBJECT
entrepreneur

FIG. 2. 1. The production of space for entrepreneurship in the innovation city. A diagrammatic representation of the subjectified local state and the relationship between gentrification, innovation, and public space.

The Innovation City

In this chapter, I form a definition of the innovation city by analyzing the historic development and contemporary theoretical use of its components: the ideology produced by the processes of gentrification and innovation experienced in public space. I argue that the innovation city, co-produced by gentrification and innovation, is a means for the state to ossify and intensify existing structures of socio-economic inequity in service of the post-industrial knowledge economy.

Through gentrification and innovation, creating a new public transit network becomes an interconnected violence in public space. It is violent because it diminishes individuals' sense of belonging in newly connected public space, excluding unwanted people from participating in such space (Agamben 1998). By theorizing the innovation city, I describe a state that is dependent on the economic and urban growth yielded by expansions in public space. Improvements to public transit could represent a means to belong in public but in the innovation city, it embeds public space in entrepreneurship.

Ideology, Subjectification, and Autonomy

In this section, my intention is to provide a primer on the processes of subjectification and ideological hegemony. Neither is unique to the innovation city but together, they pave the link between gentrification and innovation in public space. Two scales of material representation help in describing this relationship. At the larger scale—the scale of the city—the ideology of entrepreneurship is presented in the geographic distribution of socio-economic categories across the city. Within the city—at the scale of individual interaction with built form—the aesthetics of a new structure of labour and life is interacted with by the subject. Over the course of theorizing the innovation city, I will argue that autonomy is reconfigured such that politicized belonging is diminished at the hands of the state in the expanding ideological space of innovation and gentrification. As such, I begin with an introduction to collective and individual autonomy as they relate to ideology and subjectification.

Although similar in some regards, ideology and subjectification offer distinct lenses to understand continuations and transformations in modes of governance

and self-conception in the shift from an industrial to post-industrial society. Ideology is "a representation of the imaginary relationship of individuals to their real conditions of existence" (Goonewardena 2005, 47; Althusser 1971). Following Gramsci, Althusser insists on the importance of material and institutional structures in elaborating and spreading ideology by representing relationships as they are collectively understood and governed by the state (Mouffe 2014, 187). For Althusser (and Gramsci), the state's role is to produce and maintain the ideological condition for "the material relations of production" (Means 2021)—to produce subjects through material and spatial practice instituted by the state (Mouffe 2014, 171). In this interpretation, the state produces the spatial and social environment for entrepreneurship just as the state produced the necessary relationships for forms of labour that occurred in other societies. Althusser's theory of ideology offers a continuation from industrial to post-industrial subject making.

Foucault's theory of the state and subjectification, on the other hand, breaks away from Althusser's subject-making process to argue that power animates and exceeds the state in a political economy (Means 2021). In this context the relationship between the state and the individual shifts. Foucault coins the term subjectification to describe subject-making practices in which the individual engages with material and institutional structures to form themselves into a subject (Foucault 1982, 777–778). In the process of subjectification, the reflexive individual makes themselves into a subject by categorizing their own identity in the immediacy of everyday life (Stewart and Roy 2014). There is an ethics to the choice of forming and transforming oneself within a moral order; in the process of subjectification, one has the autonomy to choose whether to accept or reject the existing ideological condition (Arribas-Ayllon and Walkerdine 2017, 11). The responsibility of subject-making moves from the state to the individual.

Returning to ideology, the state's role in preserving and consuming the subject's autonomy proves fruitful in considering how space might be produced for innovation in the post-industrial economy. Gramsci endows the proliferation of a new ideology with mutual interest amongst social groups (Mouffe 2014, 181). He proposes that "the hegemonic groups will make some sacrifices" of their economic interest in order to exercise leadership over social groups with different interests (Mouffe 2014, 181). The state is seen as the means by which the dominant group can

create favourable conditions for their economic interest while supposedly being the force of universal growth. To maintain the unstable equilibria "in which the interests of the dominant group prevail" their interests can only be supported "up to a certain point, i.e. stopping short of narrowly corporate economic interest" (Mouffe 2014, 181–182).

Like Foucault, Althusser suggests that every subject, an individual with consciousness, must freely accept and act according to their ideas in the actions of their material practice ([1970] 2009, 82). However, the state is responsible for maintaining and asserting an ideological hegemony while the individual has autonomous control of their subjectification. Hegemony is gained by "the transformation of the previous ideological terrain and the creation of a new world-view which will serve as a unifying principle for a new collective will" (Mouffe 2014, 191–192). Rather than the abrupt domination of one uniform class group over the other, hegemony is created through iterations on the foundation of existing ideology. In laying out the mechanisms of ideological transformation, Gramsci affords the collective agency beyond singular class relations. The dominant group cannot lead without the participation and consent of other groups. Thus, these groups retain autonomy in their potential to choose to participate. The autonomy afforded here differs from Foucauldian autonomy in that the collective interacts with the state to voice dissent and the means of producing innovation are organized by the ideological hegemony of the state.

A tension emerges between the dominant group's desire to lead and so convince the other to freely accept an ideological hegemony and the agency of the subject endowed with autonomy. In the process of subjectification, the freedom of enterprise and the entrepreneur opens the individual to more possibilities of dissent (Dey and Steyaert 2016). However, this freedom is necessitated by the political economy of neoliberalism (Lazzarato 2009, 120). The structure of the neoliberal political economy, in which freedom for trade is necessitated and facilitated by the state, replaced the subject's rights with economic interests (Lazzarato 2009, 115, 132). Although perceived as freedom without the state, the process of subjectification is not divorced from the state (Dey and Steyaert 2016, 630).

Subjectification in the ideological space of the innovation city produces an entrepreneurial subject "insofar as (for the entrepreneur) creating an enterprise and creating a self

is the same activity" (Szeman 2015, 482). As neoliberalism proliferated through western governments, social policy moved to service competition instead of security (Lazzarato 2009, 110-111). As capital takes over mechanisms for interaction and exchange in the world, reference to values outside the capitalist mode of production risks subsumption in capital logic to the extent that subjectivity is "entirely immersed in exchange and language," in the modes of production and reproduction of capitalist citizens and society (Hardt and Negri 2000, 386). The ideal subject consistently competes, imagining nothing else more natural than the competitive nature of entrepreneurship. Their potential to choose is lost to the all-consuming project of innovation.
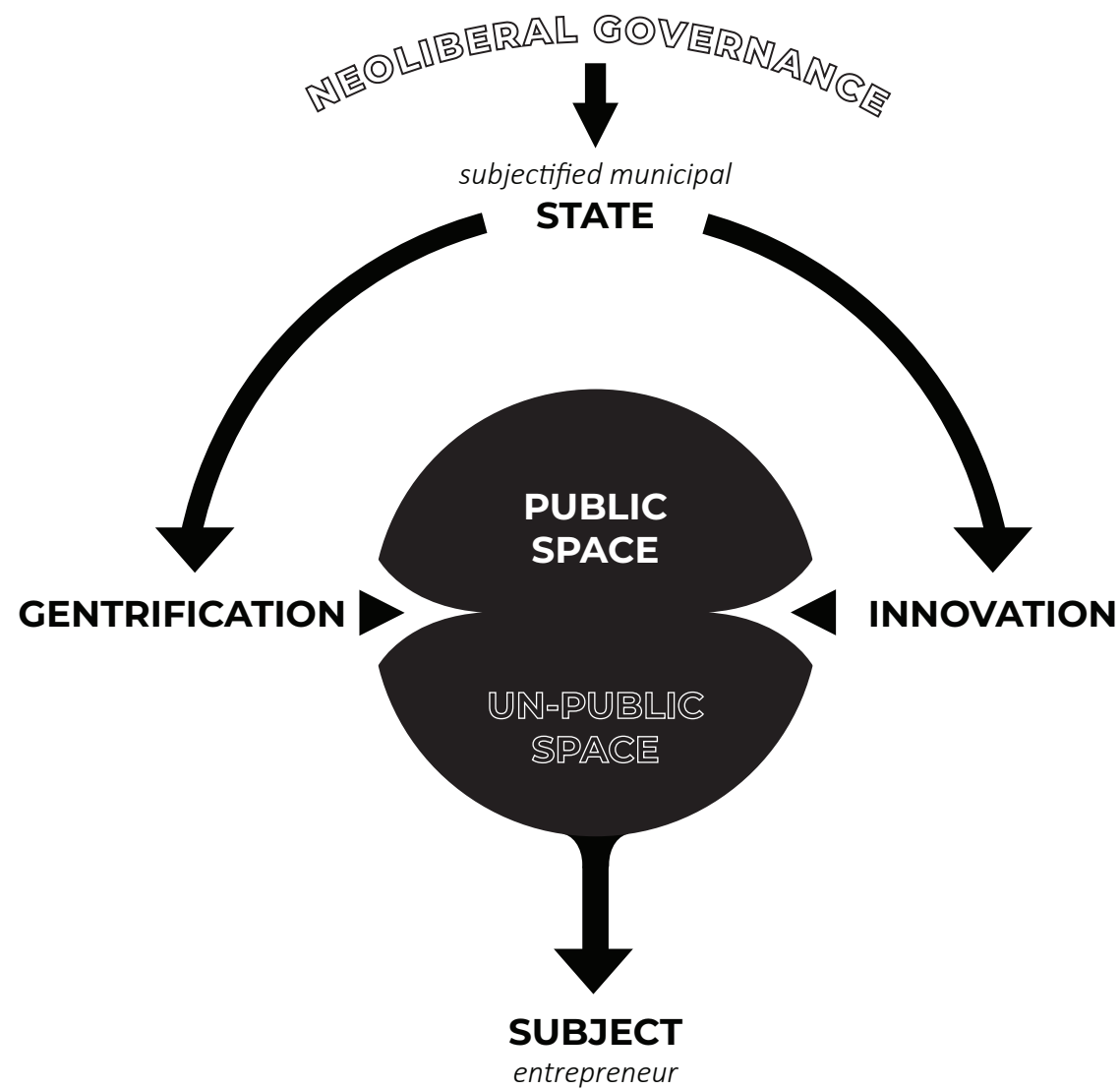
The autonomy associated with subjectification is not necessarily a guarantee of choice but the potential to choose. The ideal subject chooses to accept the geographic and aesthetic conditions of the innovation city to survive. As a result, they accept a culture where one's sense of self is reduced to the activity of innovation. The innovation city is the ideological dimension of the entrepreneurial subjectification experienced by neoliberal subjects. It is the continuation of statecraft that secures the means of production by cultivating relationships for entrepreneurship. Simultaneously, the embrace of autonomy is tied up with responsibility for one's self (Dey and Steyaert 2016, 631). Playing on Althusser's argument that there is no ideology except by the subject and for the subject ([1970] 2009, 103), Antonio Negri writes "there are no subjects except by and for their subjection"(2014). As conscious beings, reflective representations of relationships are inescapably human. The individual is not liberated from being subject to ideology by the potential to choose how to participate in the material practices of ideology in public space. Both ideology and subjectification are relevant to the space of the innovation city.

Gentrification

Operationalized at the individual level of working-class renters displaced by middle-class home buyers, gentrification was first coined by Ruth Glass in 1960s London to describe the spatial result of socio-economic inequities played out across an urban land market (Slater 2011, 571). In the following decades, the role of the gentrifier was abstracted through competing theories of housing supply and demand. Each theory sought to explain the drastic increases in urban land value that pushed lower-income residents out of their homes and neighbourhoods. Contemporary processes of gentrification complicate the clarity of early movements of wealthier households into poorer neighbourhoods.

Jason Hackworth defines contemporary gentrification as, "the production of space for progressively more affluent users" (2002, 815). I follow the development of gentrification, from Glass to Hackworth's definitions, to unpack a new relationship between gentrified—those who experience various forms of displacement— and gentrifiers,—by which I mean the agents of gentrification. I argue that the shift from a phenomenon of direct household displacement to a strategy of development indicates a scaling up of gentrification that is apparent in who might be considered the gentrifier and the gentrified. Drawing on Gramsci's theory of hegemony, I propose that the gentrified and the entrepreneur are tied through a process of identity formation imparted by the ideology of the innovation city.

A Supply Theory & A Demand Theory

The two theories (supply and demand) that dominated the discourse of gentrification through the 80s described two facets of an economic process that the state is now increasingly involved in. As I work towards a definition of the innovation city, the mechanics of supply and demand remain relevant to the question of subjectification as they present two observable components of the economics of contemporary gentrification. As the reach of gentrification becomes more explicitly ideological with the involvement of the state, engaging both theories becomes more important.

In the rapidly transforming downtown cores of post-industrial cities, Marxist geographers theorized a structural cause for gentrification in line with the class conflict Glass first observed. Advancing a theory of uneven development, Neil Smith proposed that a rent gap rendered urban space unaffordable for lower-income residents. In Smith's words, a rent gap exists when "developers can purchase [emptied buildings] cheaply, can pay the builders' costs and profit for rehabilitation, can pay interest on mortgage and construction loans, and can then sell the end product for a sale price that leaves a satisfactory return to the developer" (1979, 546). In other words, there is a gap between the current rent paid by tenants and the potential rent an owner may acquire on a property, often by increasing density on site. The unwanted tenants are removed by insidious methods of abandonment to make room for more desirable occupants. The concept of the rent gap is potent as it remains structurally relevant to gentrification caused by direct state investments in public space. Private investments seek to capitalize on a rent gap induced by public space improvements that are designed to attract more affluent or idealized tenants.

The theory of uneven development attributes the supply of exploitable conditions of low and high land value to global and local capitalist political-economic forces, in contrast to the individual driver in demand-based theory. As accumulated capital is directed to the profitable geographic development of one plot of land, underdevelopment occurs on land with lower rates of profit. The initial investment in development diminishes the high rate of profit from the first property, thus increasing the potential for profit on underdeveloped land elsewhere (Smith 2010, 197). With a focus on the global economic context of gentrification, Smith implicates the state in incentivizing more private investment in line with the rhythms of capital accumulation (Smith 2010, 168–169). In the innovation city, the concept of uneven development helps contextualize the state's desire to produce a greater potential for rent gaps to continue being competitive on the global scale.

What Smith leaves out is the individual's desire to live in a specific city or neighbourhood. Attributing more agency to the individual, humanist geographer David Ley argues that it's demand and not control over the supply that drives up the cost of housing in an area (1986, 532). Observing the social sensibilities of the Canadian gentrifier in post-industrial cities, he suggests that liberated young people with downtown white-collar office jobs are attracted to formerly undesirable and inexpensive neighbourhoods of dense housing because

of "[the] opportunity for contacts with a wide variety of people" that the urban fabric offers (Ley 1986, 524). Ley's demand-side theory is significant because it attributes agency to the individual and values the aesthetic experience of desirable places. However, Ley fails to explain the availability of desirable yet financially accessible housing stock for the middle class, while placing it centrally in his theory.

Both theories are missing the role of the other force that affects land value. In the following section, I argue that Hackworth's contribution to the discourse on gentrification is a conceptual scaling up that blurs the dichotomy of gentrifier and gentrified. Already, Smith lays the groundwork to consider the state as the gentrifier. Ley's work represents a valuable rejoinder to supply-side theory because it begins to introduce the influence of labour on spatial preference. A student of Smith, it is clear that Hackworth is influenced by the theory of uneven development but introduces an ideological element. Smith's developer cannot capitalize on a rent gap without cultivating a desire in the potential tenant. Desire, as Ley suggests, is not a completely economic consideration although experienced by the labouring subject with economic interests (Ley 1986, 524). Together, the two forces express an ideological condition, by structuring who and why one might participate in gentrification.

The Production of Space for More Affluent Users

Since its coinage in the 1960s, gentrification was marked by the direct displacement of low-income households by higher-income households. As this process intensified and a debate on supply and demand ensued, a combination of one-to-one and more complex forms of displacement began to occur as developers capitalized on rent gaps and individuals sought their preferred way of living. By the mid-1990s the hand of the state and the scale of corporations involved in the housing market, from financiers to developers, grew as the first waves of gentrification put pressure on otherwise peripheral neighbourhoods in rapidly changing North American cities (Hackworth 2002). Hackworth makes two poignant observations on a new process of gentrification in the contemporary neoliberal state:

> First, the process is initiated by corporate developers more often than before because of restructuring in the real estate industry. Second, local and federal government intervention in the process has become more open and assertive than before. (2002, 818)

The one-to-one relationship between the gentrifiers and gentrified households became less meaningful when direct displacement was no longer the primary mechanism of gentrification (Hackworth 2002, 839). In a global political-economic shift, gentrification shifted from a process operationalized at the scale of the household to restructuring the urban through built and social transformation —to the production of space for more affluent users.

The production of space refers to the creation of the built environment by the hegemony of economic and political forces (Low 2016, 34). Henri Lefebvre theorized that the way in which space is mentally conceived influences how physical space is perceived and organized towards a political means. As such, space is not just a reflection of modes of production, exchange, and social structures, but the material product. In capitalist social and physical space, the political project is defined by a limited class of entrepreneurs with the financial and political agency to have control over its possibilities (Lefebvre 1992). This group of entrepreneurs can be considered similar to the dominant social group in the work of Gramsci, primarily in the way hegemony is imposed through leadership. The theoretical frame suggests that space is produced by the political-economic order, and is critical of the separation of physical space from democratic activity in capitalist space. Gentrification, as a production of a particular kind of space, robs people of their right to participate in the everyday life of the city as it removes certain people from space, advancing the separation of democratic activity from physical space.

Expanding beyond the private household struggle, Hackworth's definition renders the user of the built environment a subject of political and economic forces—a subject of the ideology of the dominant social group. The production of a built environment for more affluent users is further disguised and naturalized by the development strategy Davidson & Lees (2010) termed 'new-build' gentrification. They describe an urban development process wherein densification and gentrification occur simultaneously, creating completely new built environments without socio-

economic access in mind. Frequently, the development project is made permissible under the guise of creating a social mix or deconcentrating crime that has centralized in derelict brownfield sites (Davidson and Lees 2010, 397). As gentrification intensifies, many of the new properties in such developments end up becoming investment properties more valuable as exchangeable commodities than usable space.

The high risk of building such large-scale new developments exacerbates housing insecurity as housing prices reflect the risk without providing any new housing stock for lower-income households or the unsheltered (Marcuse and Madden 2016). Scaling up from the individual household, gentrification now restructures the composition and nature of neighbourhoods. In the totality of the production of space, public and private life are coloured by the image of the dominant ideology of the neoliberal state (Goonewardena 2005). The housing crisis becomes a crisis of life in the built environment.

Upzoning & Upscaling

The nearly global restructuring of the state from Keynesian welfare governance to entrepreneurial neoliberalism through the 1980s created new grounds for state intervention to foster gentrification (Hackworth 2002, 821). Driven to entrepreneurship by scarcities induced by high-level policy, lower tiers of government began to foster local real estate development as a means to generate revenue from citizens (Harvey 1989, 4; August 2014, 107). As the nature of governance shifted towards a neoliberal model, "the political and theoretical reasons for why [entrepreneurial governance was] once-controversial were suddenly less obvious" (Hackworth 2002, 822). Through taxation and development fees, municipalities moved to compensate for the lack of resources through an extractive relationship with their public.

In the contemporary condition, Smith and Ley's theories gain a heightened simultaneity. Hackworth extends Smith's structural foundation to the spatial consequence of Ley's supply-side theory. New territory, put under the pressure of uneven development, is produced to be desirable for the more affluent user by and for municipal interests. New construction on newly valuable terrain becomes "more closely intertwined with government interventionism" (Davidson and Lees 2010, 397). The state passes off the expansion of more spaces for

the affluent as a "positive public tool" for city improvement (Davidson and Lees 2010). In reality, the state enacts a violence on its citizens by categorizing some as undesirable and excluding if not removing them from place and home.

Through gentrification tied to public investment, the municipality cultivates the grounds for the ideal subject for whom entrepreneurship and living is one and the same. Public space expansions, the LRT for example, are framed as potential revenue generators to secure provincial and federal funds for construction (Johnson and Nicholas 2019, 32). The tax base attracted by such investments is expected to be affluent enough to provide a healthy return on investment for the municipality (Johnson and Nicholas 2019, 32). In the shadow of transit stations, a rent gap is produced as land is allocated for intensification; encouraging applications for a rezoning strategy called "upzoning" where non-residential or lower density zones are rezoned for greater densities (Doucet 2021, 39).

Upzoning becomes the tool of the state to avoid accountability for the provision of affordable housing near new public amenities as the housing supply is arguably increased. Aside from increasing the cost of housing in the short term, unregulated intensification can lead to a lack of supply of larger units for families and other subjects of the state who are not ideal—people for whom life cannot equal entrepreneurship (Doucet 2021, 40). In the ensuing socio-political space of new-build state-led gentrification, the production of the gentrifier is muddied by the apparent desire of the state to produce space for specific users.

The Gentrifier & the Gentrified

Writing in the 1980s, Damaris Rose critiqued the supply and demand discourse of her contemporaries in favour of more investigation into the 'production of the gentrifier' (Rose 1984). In her critique, Smith's rent gap theory renders gentrification "an inexorable law of spatially uneven development" and Ley's theory reduces the individual's subjective choice to consumption practices (Rose 1984, 53, 56). Working in the same context of widespread neoliberalization, Rose argued for greater attention to the "social and spatial restructuring of labour processes [that] are shaping and changing the ways that people and labour-power are reproduced in cities" beyond Ley's observed link between the white-collar worker and urban amenities and the disciplinary effect of uneven development (Rose 1984, 55).

Although Rose's critique of gentrification scholarship focused on the changing role of women in work and domestic life (Rose 1984, 51), greater attention to the transformed nature of labour is significant in the context of the innovation city. Following Lefebvre's theory of the production of space, a focus on labour recognizes that new spatial relationships are tied to the restructuring of political and economic conditions. In the context of the innovation city, gentrification concomitant with innovation is explicitly tied to drawing the entrepreneur out of citizens in newly produced space.

However, the force of gentrification in the innovation city is increasingly less singular. As "a 'formal play' of inequalities [are] instituted and constantly nourished and maintained" socially and economically to fuel neoliberal competition, the state takes on the role of gentrifier (Lazzarato 2009, 117). If the gentrifier in the innovation city is the state, then I imagine it is time to consider the production of the "gentrified" just as Rose called for more attention to the production of the gentrifier, as a result, calling attention to the class conflict experienced in space. Returning to the original class conflict of gentrification scholarship, state-led gentrification in the innovation city unavoidably touches on the agency of the labouring subject.

In the innovation city, state-led gentrification reconstitutes the entire population, making entrepreneurs out of citizens. In the book In Defense of Housing, Marcuse & Madden (2016) make the case that, regardless of tenure type, everyone is subject to the housing insecurity of a financialized and hyper-commodified housing market. Even the homeowner, a scion of the responsible property-owning citizenry, is held in precarity by mortgages and property taxes (Marcuse and Madden 2016). While I would caution against lumping the condition of the coveted young in-coming tech entrepreneur together with those that lead entrepreneurial lives out of greater necessity, there is value in employing Marcuse and Madden's critical position. It is challenging to fit the desired subject of the innovation city, the entrepreneur, in the complicated class structure of the knowledge economy.

The shift in scale from Glass to Hackworth is significantly a shift in terminology that opens up the gentrifier-gentrified relationship. The role of the state in Althusser's theory of ideology aligns with the relationship I've described in this section. The state produces gentrified space - creating an ideological space to maintain the relationships of production

in the city. The individual forms themselves as a subject in the space produced by the state. The entrepreneur, simultaneously subjectified and idealized, suggests that the gentrifier-gentrified dichotomy is less meaningful, as all subjects are treated as "economic subjects who, instead of having rights, have interests" (Lazzarato 2009, 115). Labour becomes a way into the experience of the innovation city, as labour informs the way in which individuals inhabit and form a city. People inhabiting the innovation city experience subjectification in the same space, unified in an ideological presentation of innovation, although the resulting alienation may be perceived differently by different socio-economic groups. In the context of innovation, gentrification shifts from the production of space for the affluent user, to the production of space for the entrepreneur.

Innovation

In order to understand the position of the gentrified individual in the city that seeks to produce innovators, I turn my focus to the nature and context of innovation. Innovation, as a theory for value creation, determines the subject's conditions of labour in the innovation city. In the 1930s, at the end of the Great Depression, Joseph Schumpeter popularized innovation over invention to describe the driver of capitalism (**Godin 2008**). I propose that Schumpeterian innovation, which is widely accepted as the basis of the knowledge economy, is no more than the naturalization of destructive cycles inherent to capitalist circulation. Following the economic logic of neoliberalism, this form of innovation is an unoriginal pursuit of capital growth necessitated by competition that arises from globalization.

The ubiquity of innovation in local to global governance policy leads one to consider the bounds of the practice and to understand innovation in the city and the role of the state in creating conditions for innovation. In the context of Schumpeterian innovation, I outline the role of associative governance organizations and the entrepreneur. Drawing on alternative theories of value creation, I provide a version of innovation that is rooted in shared pleasure as a foil to the entrepreneur, imagining a subject who might reject the innovation city for other forms of urbanization.

Schumpeterian Innovation & the State

Schumpeter identified five areas of innovation: (1) introduction of a new good or a new quality of a good; (2) introduction of a new method of production or a new way of commercially handling a commodity; (3) the opening of new markets for one's own products; (4) securing a new source of supply of raw materials or half-finished goods; and (5) reorganization of an industry, e.g. the creation of a new cartel or monopoly position or the breaking of existing cartels or monopolies. (Schumpeter 1934 referenced in Jessop 2017, 862-3)

Innovation, as popularized by Schumpeter, is broadly considered the use of a new idea, resource, or method for capital gain. He observed that capitalist growth was not derived from competition between inventions alone but from disruptive circumstances—i.e from innovations themselves (**Christiaens 2020, 502**). This understanding of innovation remains influential in analyzing the development of modern business practices as economies move from industry to knowledge (**Hagedoorn 1996, 892**).

These business practices are adopted into policy at the international and local scale. International governance organizations and local municipal governments view Schumpeter's version of innovation as the cornerstone for survival and success amidst the growth of global competition and potential crises of economic stagnation. Internationally, the Organization for Economic Co-operation and Development promotes entrepreneurship and innovation policies in order to "respond efficiently to ever keener international competition" from advancing economies in the global south (**OECD 2009**). In the Region of Waterloo, innovation is deemed a key resource for economic success and a cornerstone of Regional economic development plans (**Munro and Bathelt 2014, 219**).

As innovation shifts towards more ephemeral goods, such as new financial instruments and apps, this economic policy becomes heavily reliant on the state to protect and circulate new ideas appropriately. The state takes on the role of knowledge producer, knowledge protector, and knowledge dispenser in the post-industrial knowledge economy (**Jessop 2002**). Introducing infrastructure, policy, and public space for the networked sharing of information and the privatization of new ideas, the state creates a supply of innovation through the exchange of ideas and demand for innovation by introducing false scarcities of knowledge (**Barbrook and Cameron 1996; Jessop 2002**). The innovation city is produced by the need to build material infrastructure for the networks of exchange and competition to function.

In Towards a Sociology of the Network Society, Manuel Castells argues that "new information technologies allow the formation of new forms of social organization and social interaction along electronically based information networks," (**Castelles 2000, 693**). Networks, broadly understood as connective tissue, are not new to human organization. So, the network isn't inherently problematic—and may offer more flexibility to organize labour or allocate resources efficiently (**Castells 2000**). The digitized structure of the network society re-materializes in the space of shared

workspaces and clusters for collaboration and with it comes a new sociality to interaction and collaboration. Daniel Cockayne describes a "compulsory sociality" in the spaces that result from spatialized networks meant to facilitate innovation that becomes a means of justifying the precarious position of entrepreneurial labourers (**Cockayne 2016**).

The innovation city seeks to produce an expanding network of individuals and firms who may gain capital or the potential for additional capital through the interaction of networking. The state produces local material and social networks that allow it to become part of larger political and economic networks (**Brenner and Schmid 2015**). The most banal of bar nights and public lectures can be used to cultivate the socio-spatial networks relied upon by the innovation city. In these events, entrepreneurs can meet capital (**Bathelt and Spigel 2011, 207**). The networks that shape the structure of the physical and infrastructural space of the innovation city are both social and physical. These networks constitute a revaluing of relationships in terms of capital. In Chapter 4, I elaborate on the relationship between the state and innovation with specific examples from the Region of Waterloo. In that discussion, I will revisit the network as a method of state-led innovation.

Creative Destruction and Associative Governance

Schumpeter adopted the Marxist phrase "creative destruction" to celebrate these disruptive forces that revolutionize economic structure (**Reinert and Reinert 2006**). In the original context of Marxist economic theory, creative destruction is a critique of the cyclic means of addressing the problem of overaccumulation. Overaccumulation occurs when capital cannot be profitably re-invested to support continuous capital circulation and expansion (**Harvey 2015**). In the face of a crisis of overaccumulation, the mass destruction of productive force is orchestrated to protect the interests of the bourgeoisie. David Harvey theorizes that creative destruction is inherent to all capitalist circulation due to the structural need for instabilities and insecurity to maintain profitability (**2010**). Given that Schumpeter borrows from the same Marxist tradition that Harvey works from, they are arguably describing the same phenomenon of disruption and destruction. The two theorists differ in the scale at which they

see the destructive processes. What Schumpeter perceives from a narrow time frame as a disruption in economic norms that shifts power balances, Harvey sees as a consistent and cyclical process to maintain the power of the bourgeoisie.

Associative governance structures are made up of private citizens banded together in associations and alliances. Often, these organizations become publicly funded through tight relationships with the municipality or other levels of government (see Chapter 4 for examples). In the innovation city, they take up the position of the bourgeoisie. In theory, associative governance is a networked approach to governance in which power and decision making is decentralized to the lowest level practicable (**Gunasekara 2006a**). These organizations can be found by the state to encourage "the capacity of social interests to assume extensive public policy responsibilities" (**Bradford 1998**), or by private actors that are proactive in identifying opportunities for collective action and civic participation (**Nelles 2014**). These organizations are seen as a response to a shift from top-down policymaking to a networked approach of bottom-up and regionally-specific policymaking (**Gunasekara 2006a, 138**). In operation, however, the lowest practicable level of power is often held by private citizens embedded in the knowledge economy.

In early cases where the province sought to institute associative governance, the business community was less than willing to participate when immediate capital interests were not met (**Bradford 1998**). Similarly, associative governance organizations started by private actors often made up of business alliances, are eager to capitalize on their interests by engaging in civic activity (**Nelles 2014**). The bourgeoisie is defined as the class that owns most of society's wealth and means of production in the Marxist context (**MIA n.d.**). Inherently, as an actor in a network of governance, associative governance organizations control and mediate opportunities for social learning in an innovation economy (**Gunasekara 2006b**). In the context of innovation, these organizations concentrate on encouraging public investments that will attract the best talent and capital for the benefit of their capital interests-excluding the present population and those who might not have had access to talent development in higher education (**Nelles 2014, 101**). Social and cultural groups, often with a longer history of civic engagement, become less visible as the associative governance organization dominates municipal collaboration if they cannot form a sizable

associative force (Nelles 2014, 102). In Chapter 4, I discuss specific examples of associative governance that are active in the Region. In this section, my goal is to contextualize the role of private actors who take on the responsibility or initiative to propose policy in Marxist class structure and the theory of the network. Instead of factory machinery, the associative governance organization controls the means to produce the spaces of innovation including public research facilities and transit infrastructure. In the context of the innovation city, associative governance organizations control the capital and political means of production.

The fiction of the disruptive force of innovation suggests a more palatable reading of creative destruction than the Marxist critique might provide. Harvey examines the shift towards neoliberalism as creative destruction on the global scale (2006). "The crisis of capital accumulation of the 1970s affected everyone through the combination of rising unemployment and accelerating inflation," (Harvey 2006, 27). As unemployment rose, tax revenues were diminished (Harvey 2006, 30). In deficit, governments took austerity measures that reduced social security (Harvey 2006, 28). These measures would supposedly jumpstart growth in stagnant economies but were extremely effective at reconcentrating wealth in the ruling class (Harvey 2006, 29).

> The assault upon institutions, such as trade unions and welfare rights organizations, that sought to protect and further working-class interests was as broad as it was deep. The savage cutbacks in social expenditure of the welfare state, and the passing of all responsibility for their well-being to individuals and their families proceeded apace. (Harvey 2006, 32)

I consider the actions of associative governance organizations within the theorized and real innovation city as microcosms of the larger project of state-led innovation. In the face of over-accumulation, associative governance organizations push for long-term public investment in institutional growth while leaving the outmoded labourer behind. Public investment goes towards the creation of new industries to be serviced by new labourers in the innovation city, while the existing workforce is rendered jobless and insecure. Desperation breeds more precarious labour conditions as the workforce is made more tolerant of less secure employment (Harvey 2007). In the innovation city, the burden of Schumpeterian innovation is carried by the lower classes who are left with limited autonomy.

Other Theories of Value

It's easy to naturalize Schumpeterian innovation. Both Schumpeter and Harvey believe, in opposing theoretical frames, that the process of creative destruction is inherent to capitalism. The strategy of neoliberal capitalism is to appear so natural that no alternative can be imagined. Mark Fisher goes so far as to suggest that even when a counter-culture is founded through disruptive innovation, it is swiftly absorbed in service of capitalist accumulation (2009).

An alternative valuation of innovation is a significant exercise in detaching from the naturalization of Schumpeterian innovation. From other understandings of value, it is possible to criticize the individualizing labour experience of the innovation city. Schumpeterian innovation is devoid of the social insofar as it erases the collective aspect (whether state-funded or otherwise communal labour) of producing new knowledge and is bereft of the creativity to disrupt existing socio-economic structures. While the entrepreneur is conditioned to experience work as life, the social experiences of the innovator can encourage an understanding of value that maintains and expands collective well-being.

Innovation, recontextualized in the social, is immeasurable. Slipping between or even escaping the comparative lens of capital, innovations produce alternative values that are fruitfully unquantifiable. For example, the innovation of a new genre of music is incomparable to the innovation of a new telecommunication device. While they have comparable market values, the value of the innovation extends beyond this as additions to knowledge in a field. In the seminal work, Toward an Anthropological Theory of Value, David Graeber places value squarely in the social (2001). Graeber begins by arguing that the ultimate freedom is the freedom to decide "what it is that makes life worth living" (Graeber 2001, 88) and that value is derived, in the real or imaginary social context, from assessing the importance of what one does when they could do almost anything to live a life worth living (Graeber 2001, 47).

Graeber concludes that the pleasure of creativity "lies in the nature of the social relations in which it is embedded" (Graeber 2001, 260). Returning to the two incomparable innovations, we could imagine that both innovators' assessments of what makes life worth living led them to

different paths of invention because of the social lives they take pleasure in. The Schumpeterian innovation is one in which the social relations that may lead to the pleasure of creativity are ignored at best and effaced at worst. For the market theorist, Schumpeter's entrepreneur experiences pleasure in "eating food ("consumption")—and not in the context of a public or private feast, either, but apparently, food eaten by oneself" (Graeber 2001, 260).

On the contrary, Graeber makes a convincing argument for pleasure in the social as such:

> I think one might even go so far as to say that in all the most sophisticated formulations, pleasure ends up involving not just the effacement of self, but the degree to which that effacement partakes of a direct experience of that most elusive aspect of reality, of pure creative potential… that very phenomenon, which,…can, if one is entirely unaware of the larger social context in which it takes place, also produce unparalleled misery. (Graeber 2001, 261)

In doing so, Graeber ascribes ultimate value to the pleasurable act of creativity—to innovation as a social practice. In a more recent essay titled What's the Point If We Can't Have Fun? Graeber furthers the relevance of pleasure (renamed fun) as an end in itself to make life worth living (2014). Moving from the fundamental "freedom for its own sake" of subatomic particles to inexplicably fun human activity, Graeber argues that fun is the most natural mode of life (Graeber 2014). The innovator devoid of the pleasure of thinking outside of one's self makes for an entrepreneur who has no fun.

Drawing the Boundary between Innovator & Entrepreneur

Schumpeter narrowly defines innovation in the context of profit but nevertheless imbues the entrepreneur with a spirit outside the calculated logic of capital. The dream-driven entrepreneur has an inexhaustible spirit to continue to innovate at their own risk (Christiaens 2020, 503). If they stop innovating—stop taking on risk for potential profit—the entrepreneur loses the title. In the idealized circumstance, Schumpeter's entrepreneur does not rationally respond and adapt to the market but profoundly disrupts it (Christian 2020). However, the inexhaustible bright-eyed hero from outside is left without protection from the innovations of the state when faced with the destructive cycles they perpetuate.

The sociality of the Schumpeterian entrepreneur is outside the capitalist fold. While this can prove problematic when the ethics of entrepreneurship are all-consuming (Bandinelli 2020), it also presents an exciting opportunity to reimagine the entrepreneur's ambitions and motivations—to repurpose their ambitions to be innovators. Antonio Negri and Michael Hardt recognize the political potential of the intellectual worker, for whom the conditions of labour are "a social force animated by the powers of knowledge, affect, science, and language" (2000, 357). Negri and Hardt challenge the entrepreneur's belief that they have escaped the subjectivation of capitalist labour relationships by attaining rights to their intellectual efforts. While the entrepreneur is technically not alienated from the fruits of their labour as the proprietor of their innovations, they are still leading a machinic existence necessitated by a capitalist economic system. Instead of believing they are in a separate class, Negri and Hardt incite the entrepreneur to see that they are subject to the alienating structures of control and exploitation of post-industrial society (2000, 405). Like Graeber, they suggest that the potential of human creativity is valuable when enacted in the social. To move from entrepreneur to innovator, one could instead seek solidarity with other exploited classes (Blackwell 2006).

Imre Szeman observes a similar potential in a paper reflecting on the proliferation of entrepreneurship as "common sense," i.e as the most natural relationship between labour and capital, writing that:

> there is a kernel of political possibility, a hint of imaginative self-reliance and rejection of the status quo, in the desire to produce one's own life, failure or not, against the dictates of class or origin, that speaks to political inventiveness and possibilities just over the horizon (2015, 485)

Graeber's theory of value suggests that this political inventiveness emerges in the social, in the innovations that occur not to produce a profit, but for the sake of living a life worth living. Negri and Hardt propose a similar opportunity in the immeasurable and ever-present activity of producing and reproducing social structures through innovation (2000, 355). They write that "value will be determined only by humanity's own continuous innovation and creation" (Negri and Hardt 2000, 356), implying that the necessity of innovation is what will lend power to the innovator to break free of oppressive class structures (Negri and Hardt 2000, 366). In alternative

approaches to innovation, it isn't necessarily the "newness" of the idea that is different, it is instead the choice to engage a social context through the process of innovating that changes.

Conspicuous Entrepreneurship & Affective Labour

Extending from the sociality of the Schumpeterian entrepreneur, Hartmann, Krabbe, and Spicer propose the concept of the Veblenian Entrepreneur (2019). Like Thorstein Veblen's conspicuous consumer that consumes to be seen consuming, the Veblenian Entrepreur engages in entrepreneurship as an identity (Hartmann, Krabbe, and Spicer 2019). This performance of entrepreneurship is a practice of entrepreneurial labour fully emersed in the sociality of the entrepreneur - removed from the social context of the innovator. The lucrative industry of innovation is motivated to encourage participation in the labour practices of entrepreneurship for the sake of the industry, taking actual innovation (Schumpeterian or otherwise) out of the equation (Hartmann, Krabbe, and Spicer 2019, 3). The associative governance organizations that hold the means for producing innovation cultivate an industry of innovation in which they lose very little from the individual entrepreneur's likely failure. As long as a few are able to succeed, more people are encouraged to participate in entrepreneurship without innovation (Zunino, van Praag, and Dushnitsky 2017).

The Veblenian Entrepreneur is an ideological entrepreneur and as such is representative of the affective labour of entrepreneurship. Of course, not all entrepreneurs are solely conspicuous participants in entrepreneurship, but the conspicuous mimics and amplifies the behaviour of the Schumpeterian entrepreneur. The division between the Schumpeterian entrepreneur's ambition to innovate and the desired economic effect of innovation is more present than ever in the knowledge economy. Increasingly, the work of the entrepreneur involves affective activities that are not normally considered work (Terranova 2004, 82). Cultivating a collaborative corporate culture or strategically sharing information, for example, are embedded in the duality of the entrepreneur's motivation and effect (Terranova 2004, 82). The entrepreneur's dual relationship to market forces leads to a socio-spatial condition in which the state is increasingly called upon to support the entrepreneur's sociality for private gain.

The organization of the networked society produces avenues for exploitative and free labour to thrive unchallenged. As work moves from dedicated workspace to all space, the worker is encouraged to participate in cultures of exchange within the company and between firms to maintain contact with fast-moving knowledge networks (Terranova 2004, 79). At the same time, the potential of workers who are yet-to-be-employed or unemployed is kept alive through continuous training and education as a post-industrial labour reserve (Terranova 2004, 83). The method of the network produces a precarious labour condition in which the social and intellectual activities that were not traditionally considered work are now consumed by work whether one is employed or not. The labour that is not traditionally considered work is poorly compensated if at all and the overall condition of working in the networked society perpetuates the worker's alienation while imbuing them with a false sense of agency and flexibility (Harvey 2007; Carnoy, Castells, and Benner 1997).

The innovation city is produced by and for entrepreneurship that sees exchange within social space as a means for productive commodity creation. Networked communication removes the individual from a social experience while increasing the necessity of seemingly social interactions (Terranova 2004). In the disconnect between labouring socially and a pleasurable social context, the entrepreneur naturalizes Schumpeterian innovation as the only form of value. The naturalization of this mode of innovation is so pervasive that the state itself partakes in the entrepreneurship of reproducing the ideal subject for whom interaction is extraction. Through investment in spaces for interaction, the state depoliticizes public space.

Belonging

Thus far, I've described the mechanism of state-led gentrification and the destructive process of innovation that produce the ideological space of the innovation city. I've argued that state-led gentrification occurs as the state seeks a population to increase tax revenues, in effect, producing space for more affluent users. As affective work traditionally outside of the realm of capital is absorbed into innovation labour, the state invests in public space to facilitate entrepreneurship. The production of space for more affluent users more specifically becomes the production of space for entrepreneurship. In order to problematize the nature of state investment in the innovation city, I examine the political function of public space through the concept of belonging.

In this section, I define public space as the physical space of democratic activity where one finds and creates autonomy—limiting my definition to space that is publicly owned or financed. In a space that serves such a significant political function, belonging is paramount to asserting one's rights and desires. As Harvey describes, the ability to assert one's self is afforded with a right to the city,

> The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization. (Harvey 2008, 23)

The right that Harvey describes, like the fun that Graeber imagines and the immeasurability Negri and Hardt envision, is a shared experience.

Belonging allows individuals access to shared experiences, by allowing access to the communities that form the public. However, to establish the category of those who belong is also to actuate inclusions and exclusions of who is afforded rights (Knudsen 2018, 442). Giorgio Agamben typifies belonging "by the purification of the group or the group's banishment of all impurities" in reference to the sovereign foundations of western democracy (McVeigh 2013, 8). As such Agamben argues that a universal and non-exclusive community can only occur when any condition of belonging is rejected (Prozorov 2009, 347).

Instead, with reference to Chantal Mouffe's proposal for pluralistic democracy, I propose that belonging is not static. Following Gramsci's conception of hegemony, Mouffe describes a political process played out in public space where rights and values are formed in iteration. While belonging begets exclusions, public space offers the venue for asserting and reasserting one's belonging in a continual process where the category of individuals and ideas that 'belong' expands.

In the innovation city, the conditions for belonging are tied to a culture of entrepreneurship in increasingly inseparable ways. As public space is made to support the exchange of new knowledge to produce innovation the labour of networking is enacted in public space naturalized in the heightened connectivity of public transit. As a venue for work, other forms of socializing in public are stifled.

The Public Sphere

I make a distinction between the public sphere and public space to define public space as publicly owned, financed, or produced physical space. The distinction is valuable in imbuing public space with the politico-philosophical notions of open discourse and democratic possibility tied to the public sphere while seeing the space as the actual site of political practice (Low 2017, 156). The public sphere, more amorphous than space, is "where strangers meet", thus including places that are in fact private, non-spatial, or non-interactive such as online forums or newspapers consumed by the public (Sennett 2010, 261).

Hannah Arendt proposes that one forms a 'self' through the performance of encountering strangers in the comfort and excitement of anonymity in the public sphere (Dossa 2006, 100). In inverse, Jurgen Habermas imagines that the encounters in the public sphere occur between strangers with already formed identities (Mouffe 1999, 748–50). The Habermasian public sphere is a space for encounters on an equal and rational footing (Mouffe 1999). Unlike Arendt, who attributes political potential to the levelling effect of anonymity between strangers, Habermas believes that the public will eventually rise above "economic, ethnic, and cultural circumstances" through openly communicating these circumstances (Sennett 2010, 262). Still, through encounters, both theorizations of the public sphere propose that the exchange of ideas occurs when one steps outside the private

sphere. In theory, the individual expands their horizons in the public sphere—whether through digital platforms, in public space, or outside of the private self (Sennett 2010, 262).

Finding Incoherence in Public Space

The potential ability of the outcast individual to not only move through but participate in the public sphere distinguishes public space from public sphere. Richard Sennet, tying together Arendt's performative self and Habermas's egalitarian deliberator, affords a cosmopolitanism to life in the public sphere (Sennett 2010, 700). In the city, he argues from observations in metropolises, the outcast "can suspend the need to belong" as they encounter strangers anonymously (Sennett 2010, 700). The anonymity afforded to the outcast in Sennet's work does not remove the socio-economic or political dimensions of their lack of belonging—erasing the outcast's need or desire to politicize their condition.

Brutality against unsheltered individuals in public space suggests otherwise. The outcast cannot suspend the need to belong in the public sphere. Rosalyn Deutsche's critical writing on the erasure of homelessness from the view of housed residents during waves of gentrification in New York challenges the cosmopolitanism assumed by Sennet (1996). Sennett's cosmopolitan liberation from the need to belong may apply to acceptable differences within middle and upper-class gentry but the ostracization and policing of homeless people in public life suggests otherwise for those who do not already belong. Deutsche argues that the homeless are imagined as intruders; policed to support "the housed resident's fantasy that the city, and social space, is essentially an organic whole" (Deutsche 1996, 277). The desire for coherence renders the public sphere of intermingled strangers an unpublic space; choking out any possibility for the outcast to assert belonging.

> Categories like "the public" can, of course, be construed as naturally or fundamentally coherent only by disavowing the conflicts, particularity, heterogeneity, and uncertainty that constitute social life. (Deutsche 1996, 259)

Incoherence, then, is a characteristic of public space as it reflects the actual conditions of social life. Incoherence is necessary for the encounters and conflicts that produce a democratic society. Citing Claude Lefort,

Deutsche argues that state power in a democracy "no longer [refers] to an external force" but is "derived from 'the people' and located in the social" (Deutsche 1996, 273). Deutsche, following Arendt, suggests that democratic participation in public space occurs in a society of social relationships formed through encounters that force the individual outside their private and familiar existence (Deutsche 1996). This isn't to say that everyone interacts on equal footing in the public space, or that such a public is the telos of a democracy. Incoherence simply opens up the public sphere to exchanges that provide "access to unfamiliar knowledge" that a democracy, regardless of representative structure, depends upon (Sennet 2010, 261). Public space, when servicing its political function provides the place and infrastructure for incoherence.

From a Deliberative Public Sphere to Pluralistic Public Space

For political theorist Jacque Rancière, the politics of a democratic society, in the sense that the people regulate it, "revolves around what is seen and what can be said about it, around who has the ability to see and the talent to speak, around the properties of spaces and the possibilities of time" (Rancière [2000] 2004, 13). Politics is not the discursive and rational practice Habermas proposes, but the act of making dissent visible (Rancière 2010; Low 2017). Those who have not been afforded the agency or space (what Rancière calls this talent) to speak must make themselves visible and audible, by disturbing the arrangement of who is given a part in society (Rancière 2010, 36). The practice of politics occurs in the public space, where the presence of the dissenter and the acceptable citizen of the public sphere coincide in time and space. Thus the public sphere widens to include and exclude new people.

Habermas imagines everyone can speak in the public sphere; and so true consensus can be achieved through rational discussion on the general interests of all walks of society (Mouffe 1999, 748). This imaginary equality through rationality depends on the assumption that everyone is already included in the public sphere. However, such a consensus could and often does, deprive individuals without social, financial or political agency in society in the conversation of justice (Mouffe 1999, 750). Take for example the disenfranchisement of Canadian women until the last year of World War One,

and in the present, the continued disenfranchisement and dispossession of racialized people globally. Furthermore,

> the impediments to the free and unconstrained public deliberation of all on matters of common concern is a conceptual impossibility because, without those so-called impediments, no communication, no deliberation could ever take place. (Mouffe 1999, 751)

Mouffe asserts that friction is inherent to deliberation on the basis that the procedure of deliberation cannot be neutral when there must first be agreement on the language (Mouffe 1999, 749). The practice of democratic discussion is not to assert the rights of preconstituted identities, but to constitute identities in relation to others on ever-moving terrain (Mouffe 1999, 753). To move beyond the oppressive harmony of a coherent public sphere, towards an acceptance that "every consensus exists as a temporary result of a provisional hegemony", Mouffe proposes a democracy founded on agonistic pluralism. Identity in a pluralistic democracy must be repeatedly reformed by the relationship forged with the adversary in the public space (Mouffe 1999, 756). Public space, to foster a democratic condition in which there is room for dissent and expand the public sphere, must be open to this agonistic conflict. The room I am referring to is both physical public space and ideological representations in public space.

A Conflict inherent to Public Space

Public space is by nature already conflictual. Overlapping constructions by autonomous individuals and productions by hegemonic actors unavoidably exist in public space (Low 2016). In the innovation city, the hegemony produces public space for the labour of innovation and the movement of knowledge. Publicly owned or financed, such space reflects the ideology of the state. To maintain room for conflict and incoherence, the space must strike a balance between what is put in place through public investment and what could be there through the use and activity of the public.

The pervasive reach of innovation and gentrification in the innovation city produce space that is increasingly in service of the private interests of associative governance—if not privatized public space. Don Mitchell suggests that the creep of control in publicly used spaces signals "the end of public space" (Mitchell 1995). Mitchell uses the example of

People's Park near a campus of the University of California in Berkley, to describe "the end". More open to a variety of uses and users, the public space was initially a site for political activity allowing the outcast room to present themselves as part of the public of the city. "It was a political space that encouraged unmediated interaction, a place where the power of the state could be held at bay" (1995, 110). When the municipality, with the support of UC Berkley, took over the park, renovations added new volleyball and basketball courts, updated security lights and a public restroom (Mitchell 1995, 111). While these added new programs to the park they also ossified the possibility of the place by redefining space for solely recreational purposes. Places to gather or rest for otherwise ostracized citizens of the city were cleaned up and made to cohere for the public sphere of UC Berkley (Mitchell 1995). 'Cleaning up' public space in this manner only erodes the potential function of the space.

However, exclusions aren't only perpetuated by the state, but also by subjects adhering to the exclusions introduced by the state. "Even when public space is completely accessible to all, certain groups tend to discourage others" (Duncan 1996; Mehta 2014). Just as the production of space can exclude parts of the public, so can the social construction of space. Public space remains public through a balancing act. In the state-financed, built or otherwise owned space of the innovation city, individuals participating in public space choose to reproduce or reject the ideological representations in public space. Where the binary of the state, organizing citizen and outlaw (Agamben 1998), establishes oppressive coherence, public space loses its public quality. A quality which is only regained when the group that has not asserted its autonomy—has not been given a part in its governance—makes itself visible (Rancière 2010).

Displacement and Belonging in the Innovation City

Before concluding the chapter, I shift the focus back to gentrification and displacement. Conceptually, displacement offers a lens to understand the categorization of people as belonging or not belonging in the eyes of the dominant group. Expressed socially or geographically, displacement with the added conditioning of labour in the innovation city, allows the dominant group increased control over who

belongs in public space. As a political project of the state, the process of gentrification is the material artifact of an ideological hegemony—a mechanism for subjectification. Tied to innovation, gentrification is the means to create the space for innovation and innovation is the means to create a gentrified population by displacement.

Peter Marcuse conceptualized four types of displacement that reflect the continuum of gentrification processes starting from direct geographic displacement to social displacement (1985, 208):

> direct last-resident displacement is the removal of a household by physical (e.g winkling, uprooting, evicting) or economic (e.g eviction by rent-hike) forces;

> direct chain displacement includes the displacement of households forced out earlier on in the winkling process as the landlord intentionally allows the building to deteriorate;

> exclusionary displacement is the result of housing becoming gentrified to the extent that new less affluent residents cannot access it;

> displacement pressure is the dispossession suffered by low-income residents during the gentrification of their neighbourhood.

The state is active in encouraging the rent gaps that induce direct last-resident displacement and direct chain displacement through public investment and institutions in the innovation city—both of which are considered geographic displacement. However, the compounded effect of geographic, exclusionary and displacement pressure offers a rich ground to explore the gentrified subject's sense of belonging in the transformed built environment. Geographic displacements progressively polarize the socio-economic fabric of the city as direct chain and then direct last resident displacements result in the relocation of less affluent households away from gentrifying affluent areas (Hulchanski 2010). In the case of state-led gentrification, low-income residents are specifically distanced from investments in public space from geographic displacements. Socio-economic polarization across the city is furthered by exclusionary displacement as prospective low-income residents are excluded from accessing housing in areas that are newly constructed for more affluent households. Geographically

and exclusionarily displaced, the gentrified subject's access to the improved services of the city is reduced. In the polarized city, displacement pressure is felt by those households that remain in place as the space around them transforms.

The experience of the 'gentrified' in state-led new-build gentrification includes those who experience displacement pressure. Dispossessed in their own neighbourhood, the displaced resident in the fourth category of displacement is not geographically remote from gentrification. The gentrified subject and the incoming resident experience the same ideology present in public space as incoming residents. However, the gentrified subject that has remained in place through transformations of their neighbourhood is apt to experience more acute alienation, social pressure to keep pace with new neighbours that express a position of belonging, and transformations of familiar space (Marcuse and Madden 2016). As public space is transformed, the resident experiencing displacement pressure may not feel welcome, or worse, could be persecuted when visible in public spaces with heightened surveillance (Ellis-Young and Doucet 2021). Less visible, displacement pressure encourages entrepreneurship for and in the innovation city.

A now Apparent Problem in the Innovation City

Embued with political agency, an individual's sense of belonging in public space becomes a significant issue as such spaces are made and remade to serve the purposes of state-led gentrification and innovation. In the innovation city, the state seeks to produce space for entrepreneurship. In the post-industrial economy of innovation, subjects with the potential to innovate (entrepreneurs) are idealized and cultivated.

Kanishka Goonewardena coins the term urban sensorium to describe the aesthetic experience of space mediated by ideology with the story of Siddartha (2005). In the story of the prince who later becomes The Buddha, the urban sensorium is introduced as a fallible experience of aesthetics. King Suddhodana, afraid of a prophecy that the prince will become a "great ascetic", sequesters Prince Siddartha in a palace complex devoid of conflict, with unending pleasures and entertainment. When the prince requests a tour of his kingdom, the King attempts to maintain the imaginary world he has produced to protect Siddartha's kingly future. He extends the luxury of the palace grounds along the city route his son will take producing an urban sensorium free from suffering.

Another Prince, in the late 1700s, made a similar route for Cathrine the Great's visit to the south of Russia. The Potemkin Village, like the experience King Suddhodana orchestrated for his son's path through the city, produced a coherent narrative in public space to be viewed by the idealized character. The urban sensorium is presented in succession along the route, leaving incoherence to persist behind the painted facades, expected characters, and narrative of the urban sensorium. The Potemkin Village of extravagant veneer is fallible because it is limited to the route and limited to the subjectivity it seeks to preserve.

Siddhartha "suddenly cuts through the spectacular spell of ideology into the living hell of human suffering" and "he sees, through the city's premeditated presentation of itself to him, two old men…labouring men and women, sick people and a dead person" (Goonewardena 2005, 49-50). The urban sensorium breaks just as the public sphere is expanded by an assertion of belonging by the

outcast. Siddhartha exercises an autonomy afforded to the subject in public space, an autonomy that strikes the balance between an imposed ideology and one's construction of space through their experience.

In the framework of the urban sensorium, the implication of innovation and gentrification becomes more clear as a problem that now, I hope is becoming apparent in public space. The innovation city imposes an ideology, through the material and aesthetic development of the city, that excludes participants from public space; making it increasingly difficult to belong and so to expand the public sphere in public space. The ideological space of the innovation city obscures an inequity that is produced to foster entrepreneurial labour. Recalling the first section of this chapter, the subjectification of the individual in this space is attributed to the freedom and flexibility of entrepreneurship. However, the entrepreneur experiences alienation much like other labourers who participate in an equally entrepreneurial environment. The urban sensorium works both ways; obscuring and excluding in order to assert coherence in public space.

The subjectification experienced by individuals engenders rejections of the dominant ideology with greater risk than participation in entrepreneurship. Just as the prince loses the sense of perfection his life was once filled with, breaking through the dominant ideology leads to a departure from the subjectification one imposes on themself. As a result, the loss of the existing self creates a potential to expand the public realm. As the innovation city leans on innovation and gentrification to expand and grow in response to the neoliberalization of the state, rejecting the dominant ideology also means rejecting the imagined freedom and separation from capitalist logic attributed to entrepreneurship.

The Conditions and Presentations of the Innovation City

In this chapter, I argued that gentrification is informed by labour as the scale of gentrification shifts from individual household movement to the production of space. Labour in the post-industrial knowledge economy is governed by Schumpeterian innovation. I defined Schumpeterian innovation as a process of creative destruction actualized by a new bourgeoisie of associative governance organizations. Proposing alternative definitions to innovation, I suggest that the current condition of labour is devoid of a social element—depoliticizing the space of labour. I extended this discussion into public space, where I described the necessity for conflictual interactions that allow for expansions in the public sphere.

To conclude, the ideology of the innovation city seeks to reduce social life to entrepreneurial labour, remaking public space to support the state's desire for growth. Gentrification alone produces an unequal spatial condition, dictating who can access the city easily as investments in public infrastructure create grounds for upzoning and new-build gentrification. Simultaneously, public space is depoliticized in the hegemony of the labour-space relationship produced by the innovation city such that presentations of a self are homogenized. This homogeneity is a violence in public space.

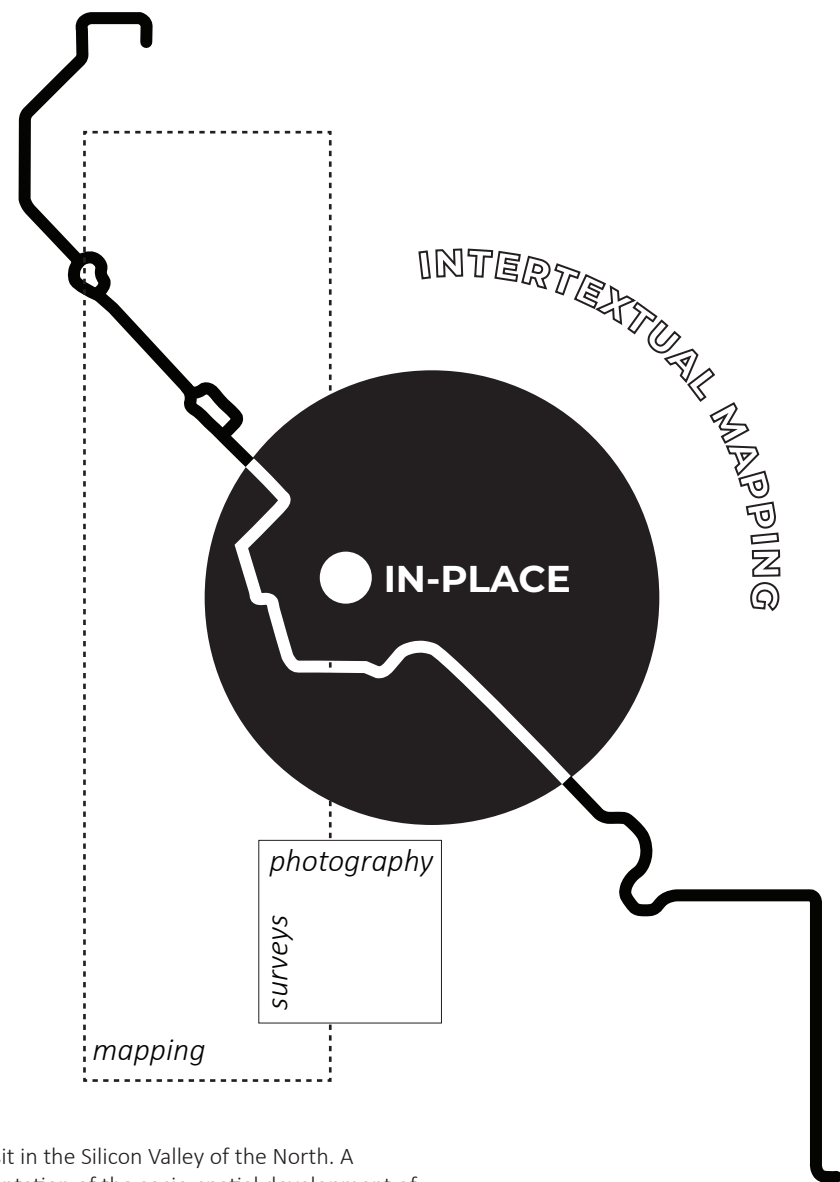INTERTEXTUAL MAPPING

IN-PLACE

photography

surveys

mapping

FIG. 3. 1. Public transit in the Silicon Valley of the North. A diagrammatic representation of the socio-spatial development of the Region of Waterloo from pre-colonial to post-industrial.

3 **A MULTI-SCALAR METHOD**

In Transit

Growing up in the Region, I rode a large portion of the LRT Phase 1 daily. On the bus route readying the city for a new transit line, I went from Waterloo Square to Kitchener Market Station with an extended stop in Charles Street Terminal for four years. Swooping under the intercity Go Train tracks to the new Central Station, confronted by a boxy addition to the Google campus and the new skyline of Downtown Kitchener, I was prompted to consider gentrification and innovation as processes related in public space. The questions and methods I employ in my study of the Region acknowledge and rely upon my experience as a resident in the Region.

As the population of the Region grows at one of the fastest rates in Canada (**Statistics Canada 2022**), the nature of new development poses a problem of who can and will belong in the expanded and refurbished public space of the Region. The theorization of the innovation city offers a framework to criticize and observe the displacements of people and places in the CTC. Using a mix of methods, I approach the following questions:

> How are the conditions of the innovation city produced by state policy and public institutions in the CTC?

> How is the ideology of innovation presented and perceived by individuals in the public spaces of the CTC?

Mixed Methods and Intertextuality

The research questions I pose are multiscalar, as is the breadth and affect of transformations in the Region. Reflecting the networked nature of the innovation city, a combination of methods is used to form a discursive relationship between public documents, in-place experience, and the changing socio-economic geography of the Region.

I move between the space of the Region and the theory I've developed in Chapter 2 to approach the first research question. Using a combination of intertextual maps and definitions of innovation, gentrification and public space, I draw out the influence of state policy and public institutions. Following the structure of the theoretical development of the innovation city, gentrification and

innovation are first considered separately and then brought together to develop the geography of the innovation city in the real context of the CTC.

I answer the second research question with a combination of in-place methods. A series of photographs centred at each station of the current and future LRT route are collaged and annotated. The annotations allow for a close reading of relationships that are visible but experienced abstractly. In a process of co-creation, the annotated images allow the reader to access an enriched experience of the CTC. In a survey, others are asked to reflect on their perception of the public space around them as they occupy the CTC. Shifting from the scale of the individual to the scale of a non-uniform public, I record and analyze what is visible in transformed public space to suggest how innovation is presented in the Region.

Mapping

I chose to map as a way into the innovation city. The map flattens and simplifies the dimensionality of a complex system while introducing space to uncover complex spatial relationships in its flatness (**Mattern 2021**). In the thesis, the map is a means of exploring and communicating the effect of policy and institutions on the CTC. Geographically, indicators of displacement are a valuable means to assess the effect of development policy. I employ two methods to investigate indicators of displacement in the case study. I enhance the case study with maps that serve a communicative function, to describe changes in zoning, the built environment, and network boundaries. The innovation city produces a network of core-periphery relationships that are best read at the scale of the Region.

Geographic displacement, although difficult to track in terms of movement, is legible through dramatic changes in the distribution of income and housing costs (**Hulchanski 2010; Preis et al. 2021**). Large-scale studies of gentrification often use census data because it is readily available and reputable socio-economic information collected at consistent time intervals (**Easton et al. 2020**). However, personal data on income and shelter costs that can be turned into a Geographic Information System (GIS) dataset is only available at the scale of the census tract (neighbourhood) (**Yonto and Schuch 2020**). At the tract scale, geographic displacement is only visible as a trend.

Using data from the Canadian census for the Census Metropolitan Area (CMA) of Toronto over 15 years, Hulchanksi (2010) mapped the change in average individual income per census tract relative to the average individual income of the CMA. He describes a trend toward three cities of polarized socio-economic characteristics "consolidated in distinct groupings of neighbourhoods": (corrected for inflation) income has increased by more than 20% in the first city, income has decreased by more than 20% in the second city, and income has not changed by 20% or more in the third city (**Hulchanski 2010**).

Hulchanski (2010) suggests that a middle-income class (that occupies the second city in FIG 3.2) has the effect of regulating the housing market because they will not always outbid a lower-income household when finding housing and may be able to outbid a high-income household if they really want to live in that place. The lack of a regulating force from within the market under conditions of polarization puts low-income households at a greater risk of displacement as developers or property managers can more easily take over larger swaths of land to remake for more desirable clientele.

Mapping income polarization using Hulchanski's method is complicated by the prevalence of new-build gentrification in the case study. Changes in income or housing costs may be minimized by the dramatic increase in population. As an exaggerated example, imagine a census tract that has five households in 2006 and twenty households in 2015. If one household reports a very high income in the 2006 census, they will elevate the average income of the census tract more than they might in 2015. I used a second indicator of displacement to support the findings of Hulchanski's method in the case study.

I call this second method 'Leftover Income'. Using data from a single census year, this calculus provides a snapshot of income and housing security as it is distributed across the Region. The portion of household income needed to remain sheltered holds more weight for a low-income household in comparison to an affluent household since the absolute sum of income a low-income household does not spend on shelter is less than an affluent household. Shelter Cost to Income Ration (STIR) is the percentage of household income needed to remain sheltered including utility bills, maintenance, and property tax. If STIR exceeds 30%, a home is considered unaffordable. 'Leftover income' is calculated using average STIR and

income per census tract to determine the average household income left over after covering shelter costs in dollar amount. With this calculus, the census tracts where individuals, on average, have a greater expendable income are visible.

Ground truthing observable trends and tracking social displacement poses a challenge to map at a large scale as subjective experiences do not show up at the tract level. The rich narratives of individual experience aren't bound within single census tracts; finer-scale studies can pinpoint sites of gentrification more effectively (**Yonto and Schuch 2020**). Studies of social displacement are often limited to a single building or neighbourhood as they employ more involved methods of ethnographic data collection (**Easton et al. 2020**). Generally depicting a more dire circumstance, ground-truthing with qualitative information can enhance large-scale studies of displacement like the two methods I've outlined.
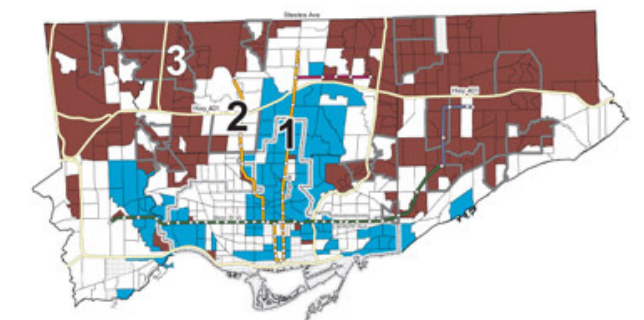
FIG. 3. 2. Hulchanski's method for mapping gentrification in terms of income change over time applied to the City of Toronto.

Survey

One runs into the problem of trying to map nothing as individuals are displaced physically or socially from the site of study (**Mattern 2021**). In this study, I map emerging concentrations of affluence and innovation as they relate to policy, allowing displacement to be implied by an absence. Given that the CTC and tract-level data have incongruent boundaries, I chose to supplement geographic data at the scale of the census tract with a combination of qualitative and quantitative information collected in the survey.

The survey is structured to follow the components that inform the ideology of the innovation city: gentrification, innovation, and public space. A portion of the survey and greater details on the methods for data collection are moved to the appendix. I found that the portions of the survey on gentrification and innovation did not adequately address the effect of either force on public space. In the appendix, I elaborate on why I found the method unsuccessful to discuss gentrification and innovation. I've kept the "belonging" portion of the survey in Chapter 5 because it led to a fruitful discussion on the meaning of belonging in public space for the user of such space.

To encourage participants to reflect on the spaces in question with immediacy, the survey was distributed in-place. At each operational stop of the LRT (Phase 1), 5 people participated in the survey. Participants were invited to participate in a paper survey by random selection within view of the station. As the transformative effect of the LRT is still maturing in Kitchener-Waterloo, and only emerging in Cambridge, the survey aimed to capture the experiences of individuals in the between-stage of socio-economic polarization across Phase 1 of the LRT.

PART 1: EXPERIENCE OF PUBLIC SPACE

Belonging is the sense that you are welcome to be in a public space, to use the space without discomfort.
Public spaces are publicly owned indoor and outdoor spaces. E.g. a park, library, or bus station.

I belong in this public space and the public spaces around this station.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree

Can you identify features of this public space that make you feel like **you belong** here? You may draw or list features of interest. *Eg. park bench, street tree, surveillance camera, building entrance, etc.*

Can you identify features of this public space that make you feel like **you do not belong** here? You may draw or list features of interest. *Eg. park bench, street tree, surveillance camera, building entrance, etc.*

FIG. 3. 3. Part 1 of the survey on Public Space.

Photography

Informed by Walter Benjamin's writing on photography, I positioned myself in the Region I grew up in through a photographic study of the CTC. In the essay, Little History of Photography, Benjamin ([1931] 2005) ascribes a power to the photograph to transcend the skill of the photographer and bring into immediacy for the spectator the subject of the photograph. The immediacy of photography allowed me to inhabit the experience of the researcher removed from the subject and subject in research. This immediacy informs the photographic method in the thesis as a tool, like mapping, for documentation and communication.

While taking photographs, I applied a method outlined in Writing Ethnographic Field Notes by Emerson et al. (2011), following other mixed-method studies that use photography as a rapid documentation tool (Hartel and Thomson 2011). In the method outlined by Emerson et al., field notes are coded and selectively presented after fieldwork is completed (2011, 6). As a fieldnote, the photograph is an instantaneous capture (Sanders 2007). It allows the camera person to document a subject of study without needing to disentangle the socio-spatial processes and relationships that result in what is captured in photograph (Sanders 2007). As such, my prior and immediate experience of the place could overlap.

As I photographed, I engaged in the richness of walking and participating in the object of study through an emplaced relationship (Springgay and Truman 2017). The exercise of photographing in the public space of the CTC, traversing within the 800-meter radius of each station by walking and between stations on the LRT, embedded the photographic practice within a wider network of relationships (Pink et al. 2010). To engage photography as field note and walking as research I produced a series of collages to represent relationships that are represented in the public spaces I studied.

Working in the post-industrial reinvention of Manchester UK, Fraser and Wilmott (2020) use photography to document contradictions within the "smart 'innovation' city" where edge landscapes and wilderness are entangled with the objects of innovation. Their use of the method of 'walking with'— "curating a fine attunement to the geo as a more-than-human space" (Fraser and Wilmott 2020, 362), critically engages

the edges of the innovation city. Their study demonstrates the potency of an in-place photographic study to document relationships through edge conditions experienced by the researcher. Unlike large-scale data or policy documents, photographing while 'walking with' opens spatial analysis to the ideological affect of the built environment (Springgay and Truman 2017). Benjamin writes "it is easier to get the measure of ...architecture, in a photograph than in reality" ([1931] 2005, 523). With the diminutive capacity of photography, one can capture the context beyond the frame within a frame—exposing affect (Benjamin [1931] 2005, 523).

Jia Lou (2010) explores the ideology imparted by the affect of a strategically placed advertisement at the subway entrance of Washington DC's gentrifying Chinatown. The advertisement operates in the public realm just as signage, posters, and imagery shape the public ground of the CTC. Lou uses visual, textual and spatial analytical frameworks to confront the affect of the carefully produced image in a central public space, suggesting that affect may be immediate but untangling the relationships of power that produce such an image requires deeper analysis (Lou 2010, 630). I take up Lou's method of looking at the 'discursive practices' and 'material resources' that have produced the narrative presented in the photographs using policy documents and public information about the new institutions and developments in the CTC.

As Benjamin concludes in Little History of Photography, the caption "must come into play, which includes the photography of the literalization of the conditions of life, and without which all photographic construction must remain arrested in the approximate" ([1931] 2005, 527). The caption renders the photograph legible—not only the photograph but the ideology represented in the frame of the photograph.

Figure 10.Untamed urbanism. In the ghosts of play, a prosecco bottle-plant-drain-road assemblage forms on Pomona Strand, 2 February 2019. © Photograph: Emma Fraser and Clancy Wilmott.

Figure 3.Web/sites. Plants, spiders and electric wiring in an old lampost on the promenade of Pomona Strand, 4 April 2019. © Photograph: Emma Fraser and Clancy Wilmott.
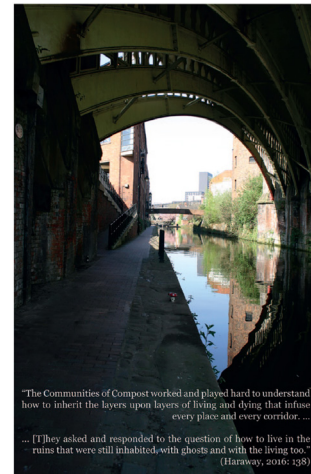
Figure 4.Sympoesis. In the edgelands of the smart city, signs of communities of compost persist. The iron-worked underside of a 19th-century railway bridge crosses over the Bridgewater Canal, the first canal in Europe. In the middle, a disused bollard has been repainted as a mushroom, evoking Anna Tsing's (2015) mushroom at the end of the world, 4 April 2019. © Photograph: Emma Fraser and Clancy Wilmott.
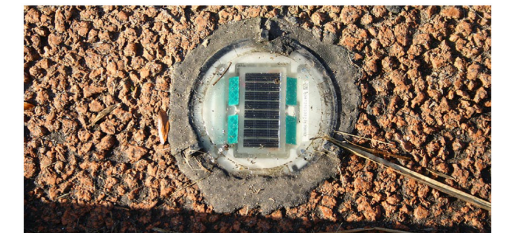
Figure 5.De-compos(i)t-ions. Dirt, muck, tyre marks and dead grass in the gradual erosion of a solar-powered light on the Oxford Road cycleway, a scene of urban innovation, up against compost, 2 February 2019. © Photograph: Emma Fraser and Clancy Wilmott.

FIG. 3. 4. Photographs from Fraser and Wilmot's study. The selected images demonstrate the value of walking on site to capture otherwise missed contradictions in a post-industrial context.

Figure 6.Communities of compost. Community gardens sitting on disused land along the edgelands of the Innovation Corridor, in the shadow of new high-rise developments. Recombinant ecologies of people, plants and animals resisting incessant renewal, 31 May 2019. © Photograph: Emma Fraser and Clancy Wilmott.

Figure 8.Transgression. Looking westward towards Salford Quays, Pomona Wharf is a regenerating area, graffiti hotspot and home to over 125 species of birds (Marsden, 2016), 2 February 2019. © Photograph: Emma Fraser and Clancy Wilmott.
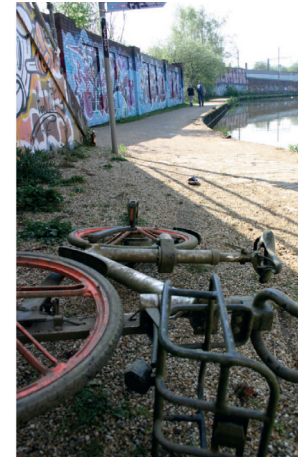
Figure 9.Urban play. In 2017, Chinese company Mobike started a free trial of dockless bike-share services in Manchester, run via a mobile app that collected user data. The bikes quickly became repurposed with high rates of destruction and theft. This bike, pulled from the Bridgewater canal next to Pomona, has been relieved of its digital GPS tracker and locking mechanism. In 2018, Mobike gathered what remained of the 1000 bikes introduced into the Manchester environment and ended the trial, 4 April 2019. © Photograph: Emma Fraser and Clancy Wilmott.

Intertextuality

The reader should imagine the series of visual material presented in the following chapters as one intertextual map. The method of intertextual mapping is not mapping in the traditional sense. The 'map' is the aggregate of various methods of exploration and representation; mapping is the process for sense-making of "intertextual links across data sources" (Schwartz-Shea and Yanow 2013, 85). Intertextuality is a practice of synthesizing various presentations, geographies, and qualities of data—opening the site of study to "the dimensionality, ambiguity, and possible contradictions" presented in multiple accounts (Schwartz-Shea and Yanow 2013, 86). The combination of methods used in the thesis expands critical avenues to consider the creation and presentation of the innovation city.
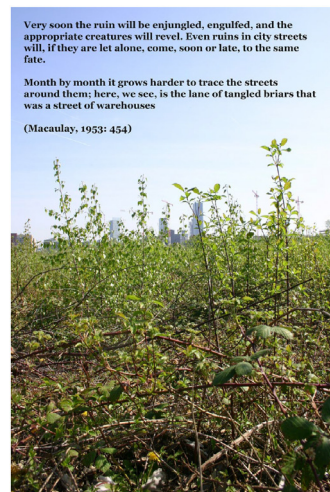
Very soon the ruin will be enjungled, engulfed, and the appropriate creatures will revel. Even ruins in city streets will, if they are let alone, come, soon or late, to the same fate.

Month by month it grows harder to trace the streets around them; here, we see, is the lane of tangled briars that was a street of warehouses

(Macaulay, 1953: 454)

Figure 7.New ruins. Manchester City Centre, taken from Pomona Strand. Where Macaulay (1950) writes of decay that persists despite intensive urban development, shared futures emerge across Manchester via both cranes and shoots, 4 April 2019. © Photograph: Emma Fraser and Clancy Wilmott.
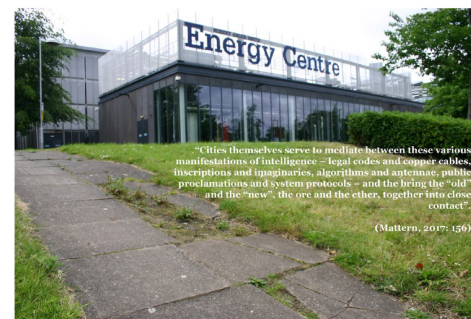
"Cities themselves serve to mediate between these various manifestations of intelligence – legal codes and copper cables, inscriptions and imaginaries, algorithms and antennae, public proclamations and system protocols – and the bring the "old" and the "new", the ore and the ether, together into close contact".

(Mattern, 2017: 156)

Figure 2.Urban innovation. A Siemens energy centre on the newly developed Birley Campus, showing the meeting of technology and the slowly wilding urban fabric. © Photograph: Emma Fraser and Clancy Wilmott.

FIG. 3. 5. Photographs from Fraser and Wilmot's study. The selected images present two methods of annotation that enhance the immediacy of the photograph with theoretical and spatial context.

NEOLIBERAL GOVERNANCE

informed by
associative governance

STATE

RAW MATERIAL

PUBLIC SPACE

NEW METHOD

NEW MARKET

NEW PRODUCT
privatized knowledge
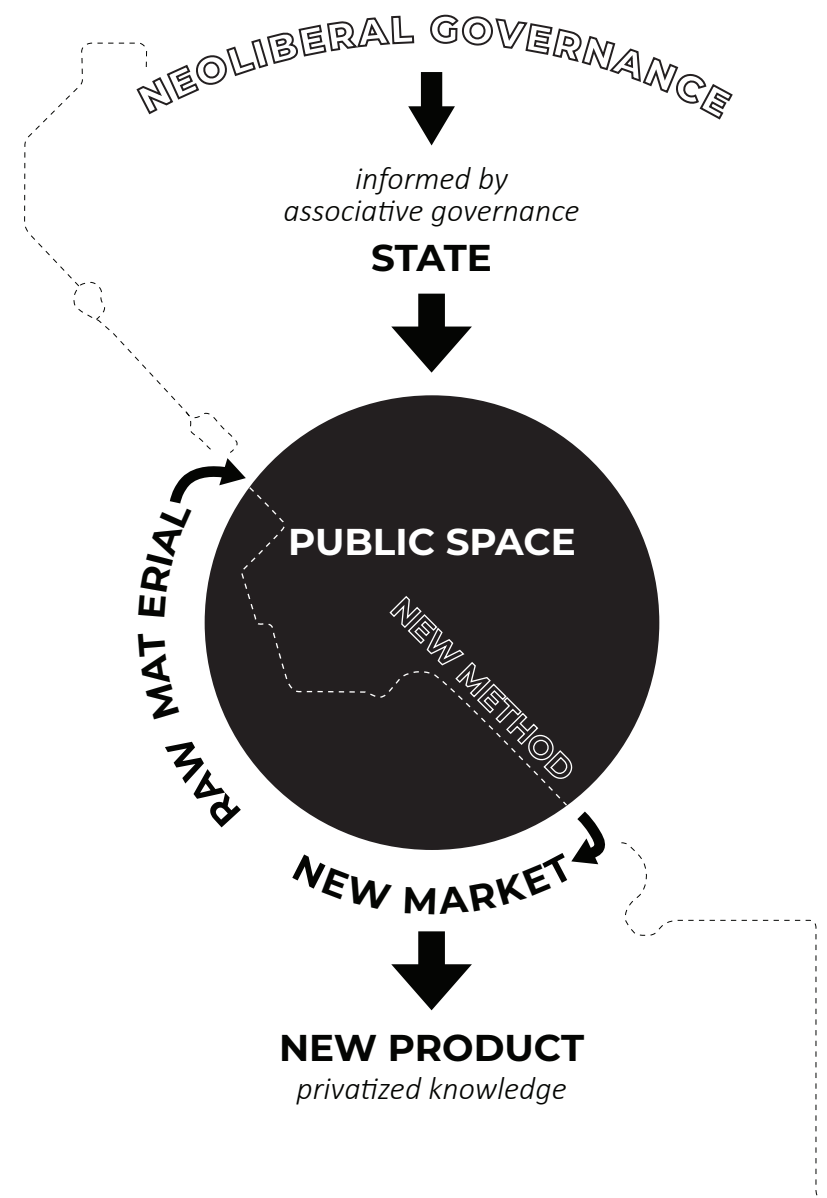
FIG. 4. 1. Polarization and Privatization. A diagramatic representation of the subjectified state's relationship to public space as an entrepreneurial entity.

THE SUBJECTIFIED STATE
A CASE STUDY IN THE
REGION OF WATERLOO

An Overview of the Case Study

In this chapter, I present the Region of Waterloo as a case study for the innovation city—using development along the LRT to describe the relationship between gentrification and innovation as it produces public space for the entrepreneur. Transformed by the LRT, the area bound by the CTC is a material product of the Region's interest in attracting and producing idealized entrepreneurial subjects. However, the agency of the Region—a municipal government—is complicated by the regulation of provincial policy. I characterize the Region as a subject of global and local governance to interrogate the municipality's desire to produce space not simply for more affluent users but for the labour practices of the entrepreneur. By following the influence of the province and local institutions on the socio-economic geography of the Region, I elaborate on the mechanisms that homogenize the public space of the CTC—producing the conditions of the innovation city.

I begin the case study by looking at the effect of provincial growth policy on the geographic distribution of socio-economic difference across the Region. My goal with the first section of the chapter is to describe a connection between the LRT and state-led gentrification. I establish that gentrification—the production of space for more affluent users—is in fact occurring in the CTC because of state policy. To do so, I use a three-part argument. I introduce Places to Grow and examine the effect of debt-financed infrastructure on the subjectification experienced by the Region. Following this, I use the map as a communicative tool to show zone and population changes in the built environment, tying gentrification to the LRT. Finally, using the map for exploration, I establish that the distribution of average individual incomes across the Region has started to polarize with the introduction of the LRT and that the distribution of affordable housing is inversely polarized. The three-part argument suggests that the CTC is moving towards socio-economic homogeneity because of a lack of affordable and diverse housing typologies within its boundaries.

I argue that the subjectification experienced by the Region is offloaded onto residents through the innovations of the state. Using Schumpeter's five categories of innovation, I describe a methodological need to expand public space in the knowledge economy due to the immaterial nature of goods, markets,

and raw materials. Tracing the boundaries of innovation networks I use the map as a communicative tool to describe state innovation spatially. I suggest that the socio-spatial requirements of innovation, as it is practiced in the Region, foster public-private partnerships that expand the hegemony of the dominant group rather than enrich public life.

I conclude in public space with a discussion on the CTC. I reconcile the regional scale analysis and the individual experiences that I documented with other studies of gentrification in the Region. I argue that the ideology propagated by the LRT is taken up ubiquitously in public space. I propose that belonging is under threat as the incoherent and autonomous subject remakes themself to participate in public space, rather than remaking public space to reflect their autonomy.
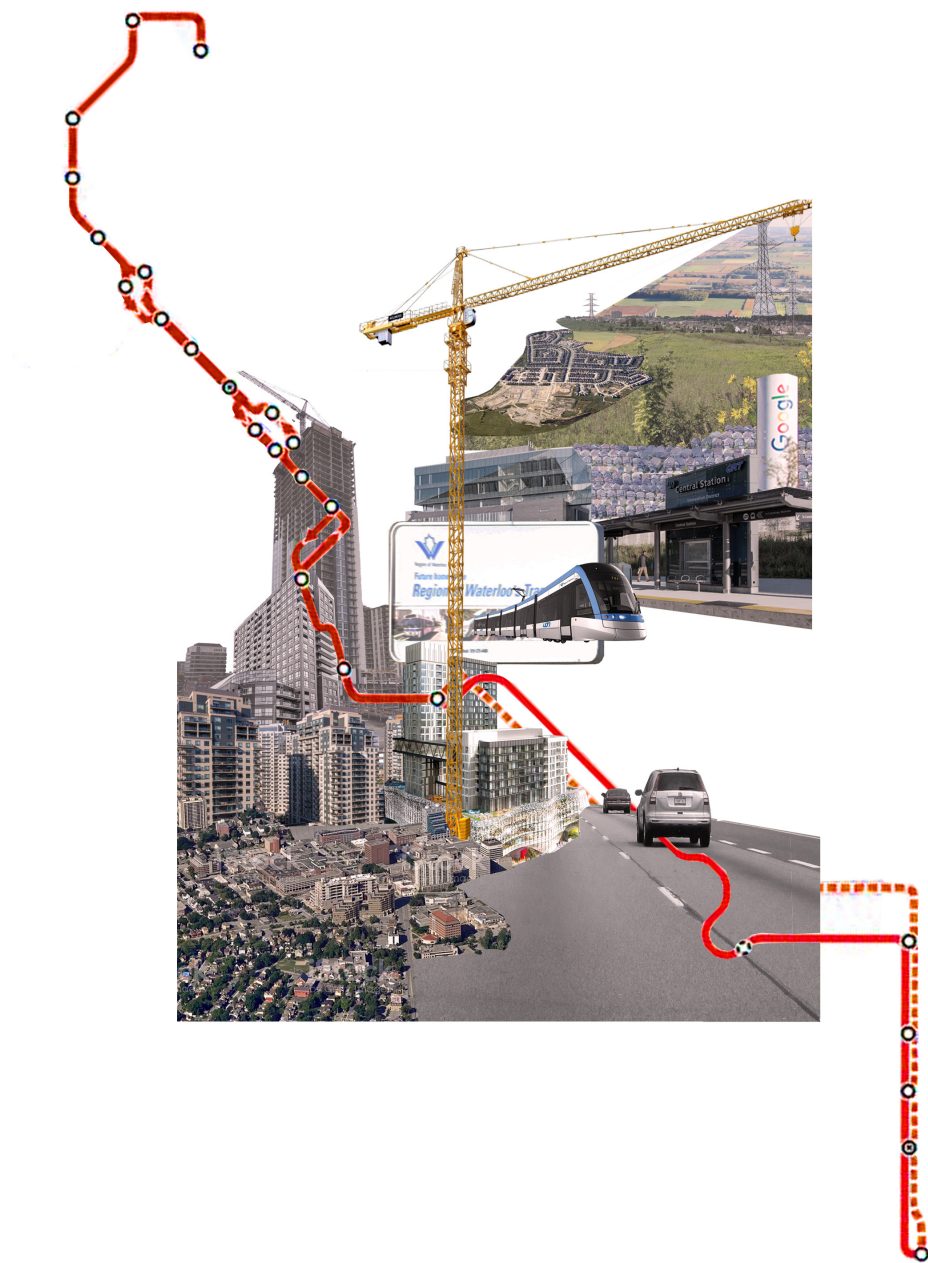
Places to Grow and the Region

A linear core and periphery relationship across the three cities of the Region, produced by the LRT, suggests that state investment in public space and infrastructure—instead of improving access to the city, its services, and public spaces—is primarily interested in producing highly connected and beautified spaces for the affluent user. The Region produces the grounds for gentrification by enforcing provincially mandated intensification and growth policies that are implemented with a problematic lack of regulatory policy. In local development strategies, the Region, as a subject, chooses population growth over all else.

In 2005, the Province of Ontario implemented the Places to Grow Act to plan for growth and economic prosperity while protecting significant farmland and environmentally sensitive areas. The LRT materializes the province's growth plan by facilitating intensification. The new and improved public space of the CTC induces a rent gap in sparsely built-up and undeveloped land—creating opportunities for new-build gentrification enhanced by upzoning. However, the suite of provincial policies suffers from discrepancies in implementation as the actualization of the plan is deferred to local government, putting municipalities in a difficult financial position (**Smetanin and Stiff 2015, 10; Eidelman 2010, 1214**). In order to minimize the risks of implementing Places to Grow, the Region is entirely dependent on the growth of a tax-paying population (**Martinez-Fernandez et al. 2012**). Gentrification results from the strategies of intensification used to attract such a population.

Since 2005, the predictive and prescriptive capacity of Places to Grow has structured subsequent provincially mandated development policies within the Region, effectively creating three land types within municipal boundaries structured by intensification requirements. Intensification corridors perpendicular to the LRT are expected to reach 200 People Per Hectare (PPH) while 50 % of all growth in the Region must occur within existing built-up areas while some development can still occur within the sprawled urban boundaries of the three cities (**Government of Ontario 2020b**). Figure 4.6 maps the three land types induced by the province's growth planning policy. The maps that follow, Figure 4.7 to 4.13, describe a transformation that is best read in sequence. The correlation between land designated

for intensification and gentrification merits a more critical look at the growth planning policy of the province.

The recommendations for such an act are based on predictive models of population growth, employment growth and other factors that may not be reactive to the changing conditions of the province. Citing a lack of granularity in the potential types of jobs people may have and the possibility that some jobs will come from commuters, Smetanin and Stiff apply a holistic model developed by the Canadian Center for Economic Analysis to predict growth. They suggest that the 2011 Places to Grow estimates, which was intended to take into account the 2008 financial crisis, overestimate potential job and population growth across the urban centres of the Greater Golden Horseshoe Area (**Smetanin and Stiff 2015, 16**). This leads to an 'if you build it they will come' approach at the municipal level, putting the municipalities of the Province in competition with one another (**Smetanin and Stiff 2015, 16**).

Service growth for a growing population "typically involves the debt financing of infrastructure development to accommodate future growth" (**Smetanin and Stiff 2015, 10**). Debt incurred by the municipality is expected to be recovered through development charges on upzoned or otherwise gentrified land close to the new amenity (**Smetanin and Stiff 2015, 3; Johnson and Nicholas 2019, 32**). This cost is then offloaded onto residents over time. As the value of public services, calculated by the capital and operational cost, is absorbed into the cost of housing in the form of property taxes on more valuable property the cost of remaining housed near improved services becomes less affordable (**Serkin 2020**). Municipalities in Ontario are prohibited from having an operational deficit (**Goldberg 2021**), entrenching this extractive relationship into the financial structure of the municipality.

Based on Smetanin and Stiff's estimates, the proposed infrastructural development and space planning of Places to Grow "can only mean one outcome: a heavily overcapitalized system that will remain unproductive for potentially a generation" unless economic development takes an uncharacteristic turn in the near future (**2015, 5**). Overcapitalization occurs when the value of an organization's capital, in the form of debt and equity, exceeds the value of its assets, putting the organization in a poor financial position (**Datmouth College 2022; Kenton 2022**). As Ontario's municipalities invest in public infrastructure in

FIG. 4. 2. The built environment of Gentrification in the Region of Waterloo.

accordance with Places to Grow and subsequent growth plans, Smetanin and Stiff argue that the municipality's debt and equity will exceed what could be gained back from an asset such as public transit in a timely manner.

Overcapitalization can lead to a positive feedback loop in a municipalities capital project debt. If the municipality is unable to recover costs on a capital project they may end up paying more interest on a loan as it takes longer to repay ("Understanding Municipal Debt" n.d.). Unless otherwise agreed upon, the municipality can only pay 25% of its revenue minus operating costs and other debts for one long-term debt. As such, there is a limit to what a municipality can do if it does not acquire an adequate tax base after borrowing for a capital project. It can also reduce the effective borrowing power of the state making it more difficult to access necessary debt for capital projects in the future (F. L. B. 2020). Albeit Ontario has tight control over the borrowing capacity of the municipality leading to fairly stable credit ratings, municipalities that are overcapitalized may suffer a higher interest rate on future projects (Bird and Tassonyi 2001). Given the range of services the municipality is responsible for providing, from healthcare to water infrastructure, this can have severe effects on the population of a city if a capital project was required to maintain service post-overcapitalization. In the year that construction for the LRT began, Smetanin and Stiff predicted that this would decrease affordability for residents and hamper private capital investments as municipalities attempt to continue delivering services and pay down capital project debt (2015, 3).

Seven years since their report was published, the cost of housing in Ontario is soaring along with the demand for various types of housing. The market theorist would expect housing supplies to increase in response to widespread demand. However, in an overcapitalized system, the rate of return on investment drops, making the construction of housing a less profitable business (Kenton 2022). As such, it is unlikely that the now crashing boom in residential construction across Canada will address the demand for housing low-income Ontarians (Hogue 2021). Albeit the housing construction market is a complex system, the state of housing in Ontario reflects Smetanin and Stiff's predictions and suggests that gentrification is entangled in the demands of Places to Grow.

The Complete Community and the Subjectified Region

Following Places to Grow, the Growth Plan for the Greater Golden Horseshoe has actively encouraged transit-oriented growth as a means to address urban sprawl and car dependency. The more recent iteration of the growth plan is composed with the support of Metrolinx (an agency of the Government of Ontario created to improve coordination and integration of all modes of transportation) and other mass transportation actors (Government of Ontario 2020a, 5). In the current consolidated growth plan, a focus is put on the complete community, defined as:

> neighbourhoods developed to provide the functions required for people's daily living – jobs, housing, services, schools, recreation and infrastructure – and ensuring convenient and safe options for transit, walking and cycling (McLeod 2011, 24).

Transit-centric mandates are present in every section of the consolidated report as an aid in environmental protection, a means to protect cultural interests and intensification management—as the silver bullet to better development (Government of Ontario 2020a). However, the current emphasis on creating a complete community presents a risk for municipalities as they incur debt on capital projects, and even more so if Smetanin & Stiff's critique of the province's growth projections is correct.

As I've described in the previous section, gentrification is embedded in the structure of state investment in public infrastructure as the municipality eagerly protects against the risk of public construction by attracting a more affluent population. The effect is worsened by the rhetoric of the complete community that puts transit investment at the centre of development considerations, effacing the other needs of the municipality. In doing so, the very idea of the complete community is nullified as it is made less affordable for all members of a community.

Improvements and expansions of public space take on a dual role of attracting the ideal subjects to grow the Region's population and necessitating the growth of public space. Faced with the choice to either adhere to Ontario's growth plan of complete communities in full force or lose out on provincial and federal grants to support the necessary

upkeep and expansion of public services, the Region and other municipalities experience a subjectification much like the individual. In competition with other municipalities for limited funds, the Region relies on a growth in a well-incomed tax-paying population, as is common for neoliberal governance, to create a strong business case to access loans or grants (Martinez-Fernandez et al. 2012).

In the debt-financed structure of growth, the citizen takes up the cost of infrastructure and development in exchange for a more desirable living experience. Debt-financed transit is refunded by development fees and property taxes tied to the new service. Development fees are paid for by the developers of debt-financed new construction with the
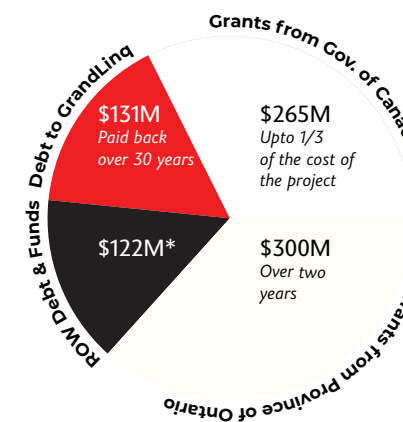
* The Region's portion of the capital costs and operating and maintenance costs, based on a 1.2% tax rate increase in each year from 2012 to 2018, area rated to the urban transit service area, subject to annual budget approval.

FIG. 4. 3. Total Financing of the LRT after contract awarded to GrandLinq.
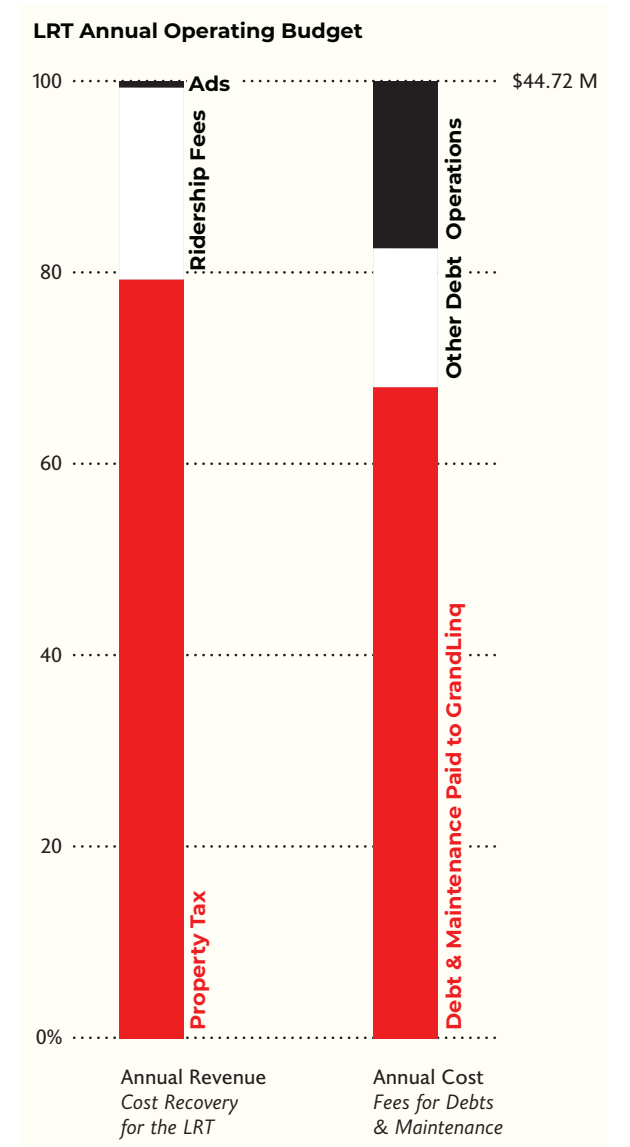
FIG. 4. 4. Annual Budget of the LRT predicted for first year of operation.
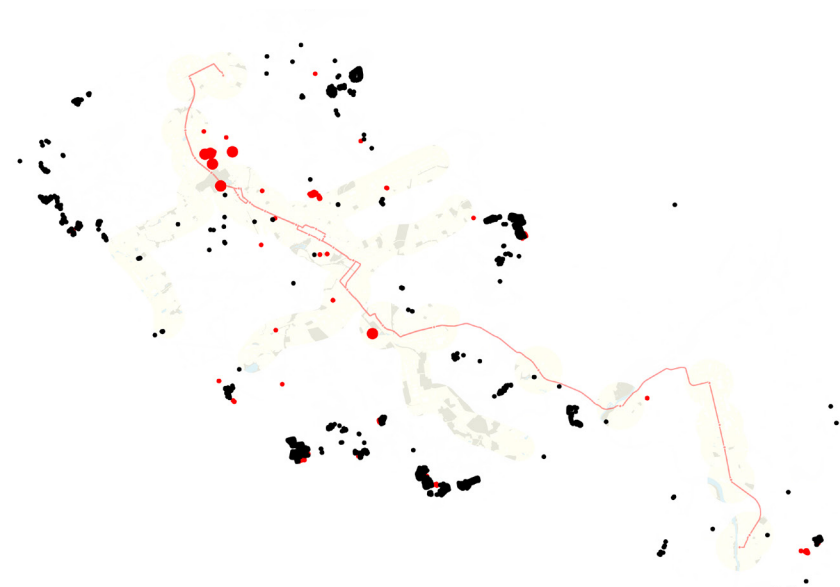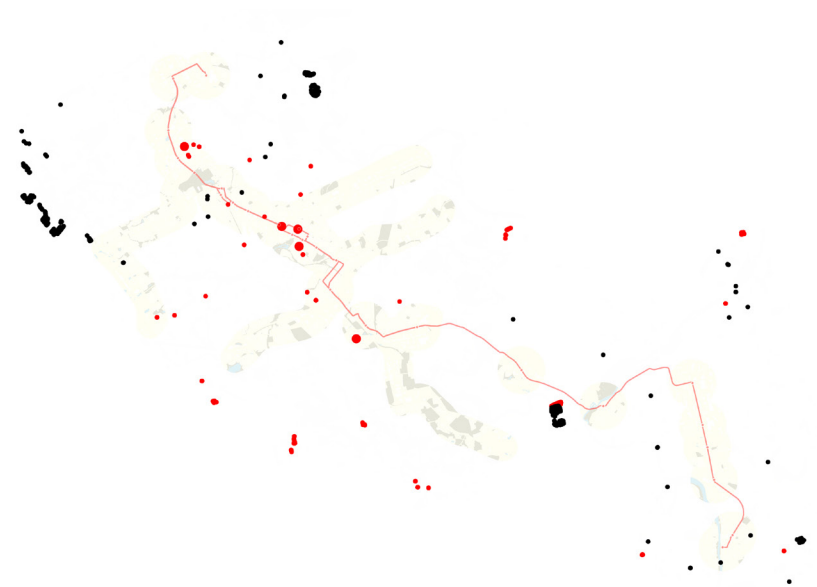
2015   2016   2017
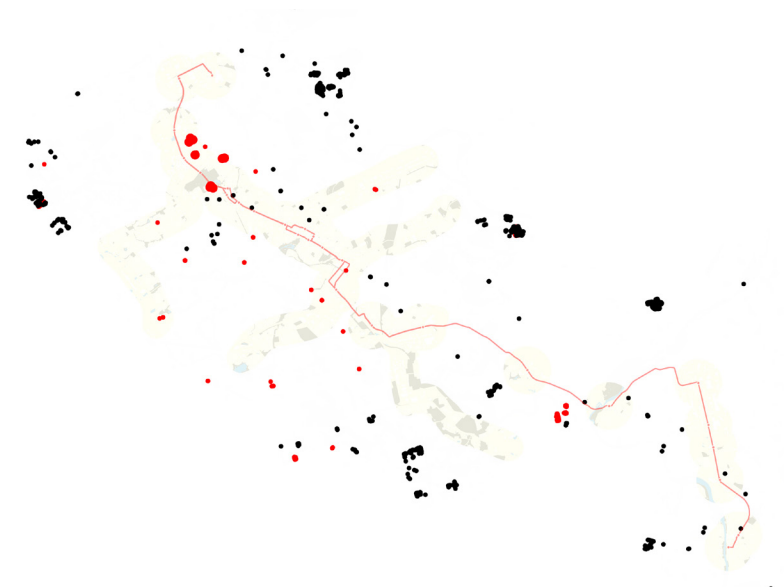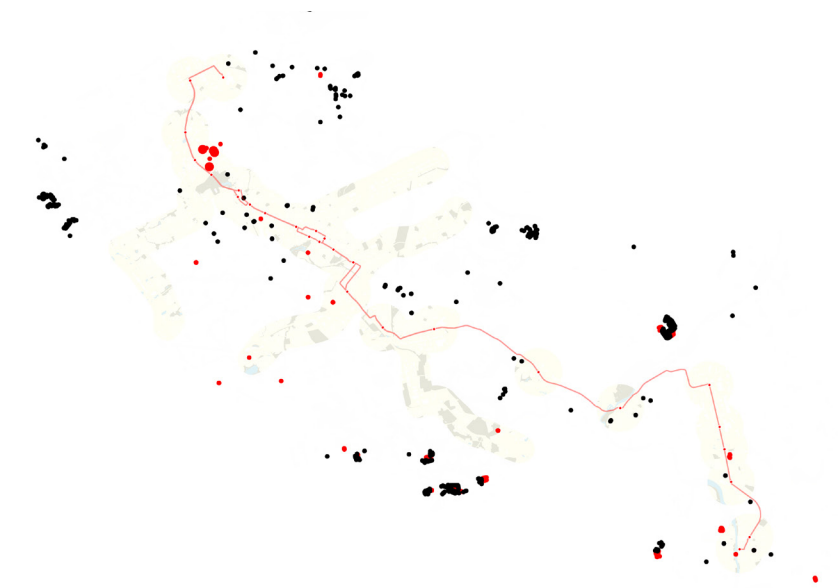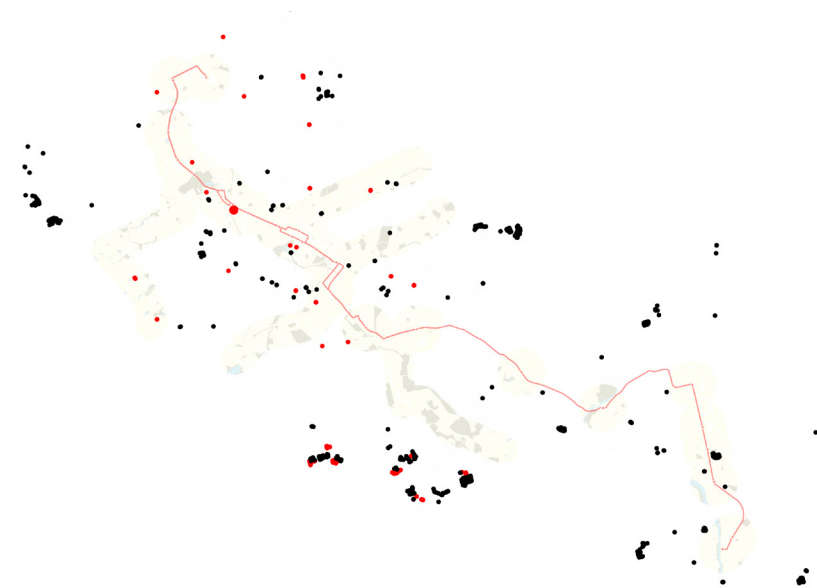
2018   2019   2020
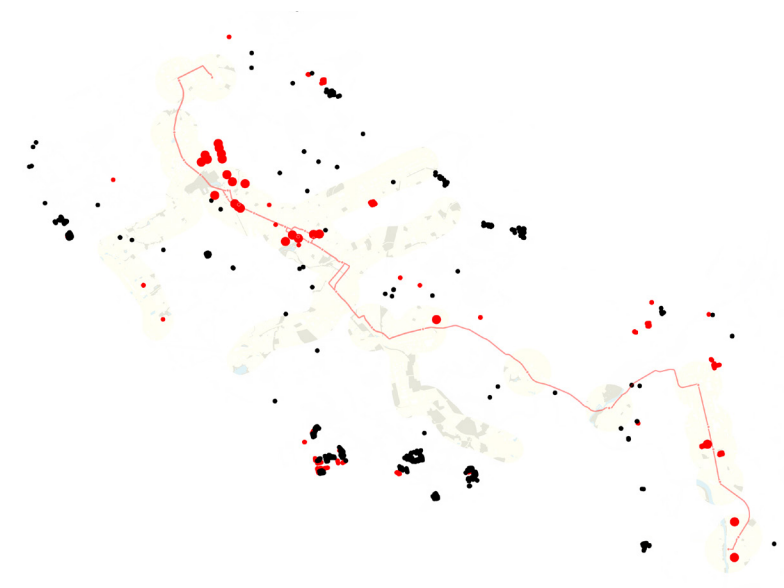
●   Tower Permits

●   Multi-Unit New Permits

•   Single Family Permits

FIG. 4. 5. Building permits for residential construction 2015-2020. This map shows the concentration of high rise development in the CTC in relation to single family homes on the outskirts of the three cities.

revenue generated by the new development by buyers and renters (**Slack 2006, 4**). Ideal subjects then generate ongoing revenue for the Region through heightened property taxes. Although the property tax paying subject is idealized in this method of development, like owners, renters absorb increased costs to development and property ownership in increased rent. This mechanism, by which the subject indirectly pays for public infrastructure in the cost of shelter, is not redistributive if the service provides the most benefits for those who can afford it (**Serkin 2020**). The irony is:

> The percentage of daily average transit activity within the CTC in the region lowered from 67% in 2011 to 59% in 2019, reflecting transit ridership has grown faster in suburban areas compared to the CTC. (**Cheung 2021, 64**)

The growth in suburban transit ridership indicates that the dependency on a gentrification strategy to fund development, drawing out an ideal subject that attributes value to a transformed public space, pushes those who use transit services further away from the most connected part of the Region.

> People are buying near the LRT, not necessarily because they plan on taking the train, but because they believe it's going to be a nice place to live, where they can walk out their door and meet their friends and have a beer or a coffee, where they can take their kids out for an icecream. (**C. Thompson 2019**)

Like the individual subject, the Region's capacity to self-govern has been engulfed by economic interests. Although the Region has some autonomy in developing a strategy to meet provincial growth planning mandates, it has little choice but to produce the grounds for gentrification with the expansion of public transit. As such the Region's subjectification is offloaded onto the local citizen. Although many of the forces I discuss are Ontario-wide, the Region has elected to participate in this method of urbanization with the support of innovation oriented associative governance organizations that I will introduce by name in the upcoming sections on innovation in this chapter.

The LRT is built and operated through a Public Private Partnership (P3). This means that a portion of the financing, risk and responsibility for construction, and operations is taken on by a private company (**Advanced Solutions International, Inc n.d.**). The Region entered into a 30

year P3 with GrandLinq to construct and operate the LRT (**J. Thompson 2019**). As the project neared completion, the Region began regular payment to GrandLinq that will last the 30 years of the P3 contract. The Region also put upfront capital into the project that came from reserve funds and borrowing that will be recuperated in development charges, increased property tax revenues and user fees over undisclosed periods of time. Luckily, for the Region and its residents, two thirds of the LRT were financed by the provincial and national government.

Intensification & Sprawl

The provincial focus on stopping sprawl while maintaining economic vibrance is reflected in the ambitions of local officials for the LRT. Interviews with planners, officials, and local politicians reveal "a political economy of the LRT that is primarily about intensification, in order to achieve the dual goal of economic investment and curbing sprawl" (**Doucet 2021, 43**). Upzoning and intensification are readily apparent in the residential and commercial construction that has occurred in the CTC since construction for the LRT began. However, intensification without affordable and diverse housing options does little to mitigate sprawl or provide the environmental benefits of transit development promised in the 'complete neighbourhood'. The urban form of the subjectified Region manifests in the rapid growth of luxury and high-end high-density housing in the core, suburban peripheral development, and evacuated neighbourhoods between core and periphery.

New residential construction in the CTC serves a very narrow section of the housing market, resulting in peripheral development for the underserved sections of a growing population. Family-friendly housing is almost entirely absent from downtown Kitchener's building boom; of the 2980 units built in 2019 alone, only eight were three or more bedrooms" (**Doucet 2021, 43**). Similarly, in Waterloo and Cambridge, new developments within the CTC offer very few units large enough for families regardless of price. Predominantly found in the CTC, ninety-two percent of rental apartment units in the Region are one and two bedrooms (**Region of Waterloo 2019, 31**). Additionally, the CTC is strikingly devoid of public, non-market, or subsidized housing (**Doucet 2021, 44**). As a result of untenable core development, suburban development continues to consume

the agricultural edge of the Region. 32% of new construction in 2021 occurred on greenfield sites (**C. Thompson 2022**).

While the Region promises to double the number of available public housing units in the next five years by adding 2,500 new homes (**Region of Waterloo 2021b**), the waitlist for households in need of public housing was 6000 in 2019 and is likely to have risen (**Region of Waterloo 2021a**). Doucet, relying on conversations with planners and politicians, suggests that the municipal and corporate vision for the CTC is "a post-industrial, vibrant, creative and tech-oriented community core" (2021, 44). From the policy maker's perspective, it doesn't make sense to push for affordable housing on high-value real estate that will need more subsidies when housing can be put further away from the CTC and be connected by "good [bus] transit" (**Doucet 2021, 44**). However, good transit is associated with intensification in the Region's growth plans.

Not surprisingly, simultaneous to the tall and sprawl relationship produced by a lack of viable housing in the CTC, populations in aging suburbs between core and periphery are declining (**Outhit 2022**). Aging empty-nesters are moving out of the in-between neighbourhoods and leaving homes that are too costly for newcomers (**Outhit 2022**). New suburban developments offer a wider range of housing opportunities at the edge of town than the existing fabric of highly coveted and thus more costly houses can offer. This emptying out has strategic potential. Neighbourhoods with significant decline overlap with parts of the intensification zones that run perpendicular to the CTC (see Figure 4.9). As the in-between neighbourhoods are progressively emptied out, they become more susceptible to the patterns of new-build gentrification that are observed in the CTC. Developers are more able to buy multiple subdivided plots in emptying suburban neighbourhoods and develop at a larger, more cost-effective and profitable scale in such conditions (**Davidson and Lees 2010; Smith 2010**).

Although the Region is proposing a target for 30% of new residential development to be affordable for low and moderate-income households (**Region of Waterloo 2020a, 57**), there is little evidence suggesting that this housing will be in proposed intensification corridors connected to good transit. Furthermore, the Region does not go beyond a strategy of intensification in the most recent housing master plan:

> [Waterloo Region Housing] should not be a mechanism to develop housing on new sites beyond the 65 it currently owns because there are more cost-effective ways to achieve this that have and can be achieved by others. In other words, allow the Service Manager to facilitate the non-profit, co-operative and private sector to continue to develop affordable housing on new sites. (**Region of Waterloo 2019, 41**)

Without the counterbalance of affordable housing policy or regulation on the diversity of unit types available in new construction in the CTC and intensification corridors, sprawl is an inevitable facet of state-led gentrification through intensification.

Polarization

Surprisingly, the Region's 2020 CTC monitoring report indicated that 33% of homeownership transactions including home resales were deemed affordable for those on low-to moderate incomes in 2017 and 38% in 2018 (**Region of Waterloo 2020b, 43**). Using hedonic price modelling, a comprehensive study of rent in the years leading up to the completion of the first phase of the LRT found that rent in the CTC was estimated to be 7.5% higher than rent in more peripheral areas (**Pi 2017**). Reflective of Smetanin and Stiff's prediction, the average Shelter Cost to Income Ratio (STIR) across census tracts renders the Region wholly unaffordable in 2016 (**Canada Mortgage and Housing Corporation 2016**). At a calculated average STIR across the Region of 49.9%, STIR was nearly 20% higher than the limit for affordability (Ibid.). The Region itself found an emerging concentration of affluence in the CTC the year before the LRT was operational in 2018 (**Ellis-Young and Doucet 2021**). Given the evidence of gentrification in the CTC, in terms of a more affluent population and more costly housing, one might wonder about the affluence of home buyers and what that might mean for the landscape of income polarization and social displacement.

I conclude the gentrification portion of the case study with the two methods of mapping displacement that I described in Chapter 3. Both methods demonstrate an overlap, consistent with the other overlaps I've described in this section, between the CTC and a concentration of more affluent households with secure housing. As Hulchanski suggests, extreme polarization creates an easily exploitable condition—ground on which a rent gap can be produced—thereby creating the conditions for sprawl already visible in the Region (**Hulchanski 2010**).

A Series of Exploratory and Communicative Maps on Gentrification in the Region

Applying Huchanski's method to the Region using census data from 2001 and 2016, an increase in the average individual income per census tract that exceeds 20% most often overlaps with the intensification zone of the CTC mandated by Places to Grow. In the time period mapped in Figure 4.7 construction for the LRT had only started. The effect is an early indication of future trends. In Figure 4.8, the calculus of left-over income describes the Region one year into the construction of the LRT in 2016. A polarity is somewhat visible between households with above-average left-over income and those with below-average left-over income. It is interesting that tracts that witness a 20% increase in income over time in Figure 4.7 display an average left-over income after shelter cost in 2016. This relationship suggests that although these neighbourhoods became more affluent over a 15 year period the cost of housing is also greater in these sections of the CTC relative to other portions. Referring back to Figure 4.5, these tracts received more high density development applications in 2015 and 2016 than the rest of the CTC suggesting that these areas experienced the earliest effect of the LRT.

Moving from 2016 to 2021, Figure 4.9, 4.10, and 4.11 describe population and built change in relation to the CTC. Between 2016 and 2021, construction for the first phase of the LRT was completed. While forces outside of growth planning had a major impact on development starting in 2020, an overlap between significant population growth and the CTC is visible in Kitchener and Waterloo. Population decline appears to overlap with intensification corridors in many parts of the Region. In most cases, population decline in a census tract correlates to very few new construction projects between 2015 and 2020 with most (if any) appearing in 2019 and 2020. The inverse is true in census tracts with a significant increase in population. From the three maps a transformation that is indicative of gentrification is most apparent in the CTC.

In 2022, zone change requests continue the pattern of increasing high-rise density within the CTC and introducing new suburban sprawl to the edge of the Region. Figure 4.12 describes the relationship between intensification and sprawl that results from permissive development regulations. If the projects within the CTC follow the

pattern of previous projects, they will be unviable and unaffordable for families and low-income households. In the last map of the series, more development is visible near the second phase of the LRT. Now that the plan is set, the third city of the Region is experiencing the rapid transformation well underway in Kitchener and Waterloo.

This series of maps, contextualized in the finances of state-led projects, suggests that state investment in the LRT encourages gentrification in the CTC.

LRT

Central Transit Corridor & Intensification Corridors
220 People Per Hectare targeted

Built-Up Area
50% of growth planned within the built-up area

Urban Boundary
All growth must occur within the urban boundary

0.0 km   2.5   5.0   10.0

N
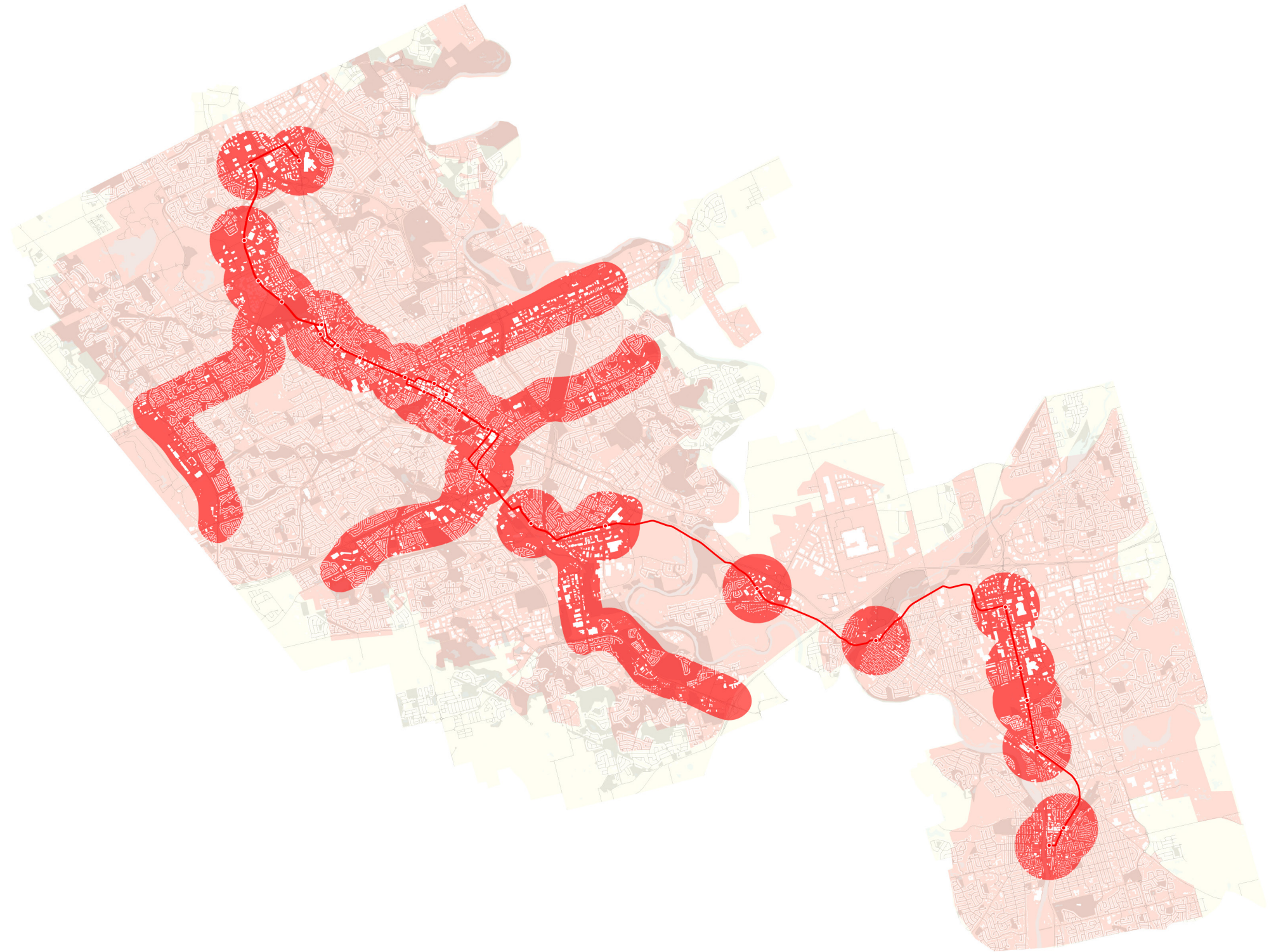
FIG. 4. 6. Places to Grow: In this map, the three types of land that result from places to grow are differentiated. The following maps are overlaid on the boundaries of the intensification corridors and the Central Transit Corridor.

2001-2016

■O■ LRT Phase 1

■ ■ LRT Phase 2

▨ City 1: Income increase of 20% or More

☐ City 2: Income increase or decrease of less than 20%

■ City 3: Income decrease of 20% or More

* Census tract boundaries that have not remained
consistent are not depicted in this map.

The tract within the CTC which
has experienced a 20% decrease
in income contains a large
concentration of the Region's
public housing in the City of
Waterloo and more recent
university-oriented residential
developments. See figure 4.11 for
more details on this census tract.

The tract outside of the CTC which has experienced a 20%
increase in income may have benefited from proximity to
the Research in Motion offices and other tech offices that
spurred earlier suburban development along the grand river.

Population increases in the
rural area of Cambridge
and the Township of
Wilmot may explain why
these tracts also saw a
20% increase in income.
Note that these tracts are
much larger than tracts
elsewhere. In sparsely
populated areas, the
tract is larger to keep the
population represented
in a tract within 2500
and 8000 people.

0.0 km   2.5   5.0   10.0

N

FIG. 4. 7. Polarization: Income Polarization between 2001 and 2016 using
Hulchanski's Method. In this map the general overlap between City 1 where income
has increased by 20% and space within the CTC and intensification corridors.

LRT Phase 1

LRT Phase 2

2016	⟶	with inflation in 2022
<$17,000		<$19,848
$14,000-17,000		$16,346-19,848
$11,000-14,000		$12,843-16,346
$8000-11,000		$9340-12,843
$8000>		$9340

Average Left Over Income

$12,788 ⟶ $14,930

0.0 km   2.5   5.0   10.0

N
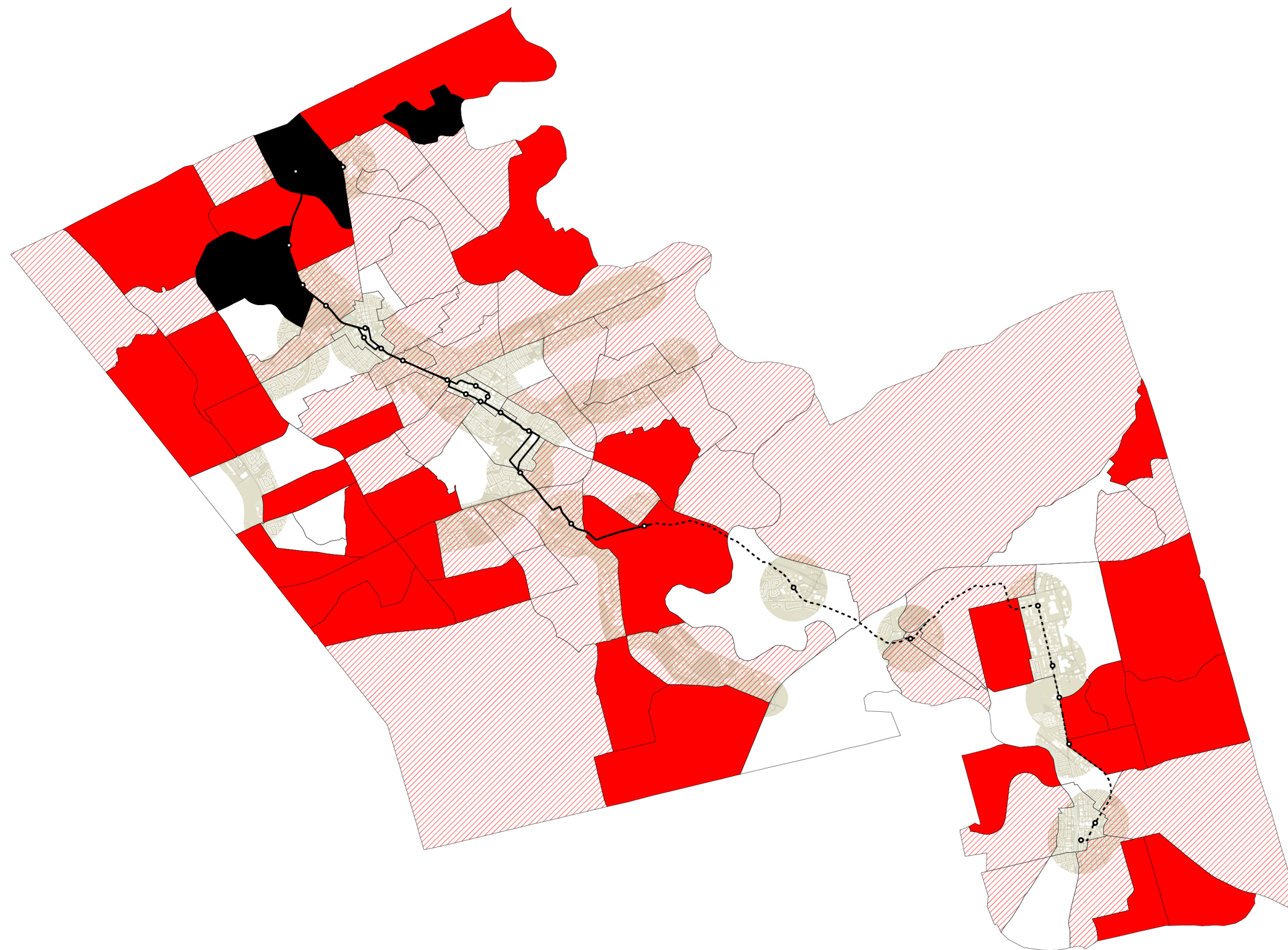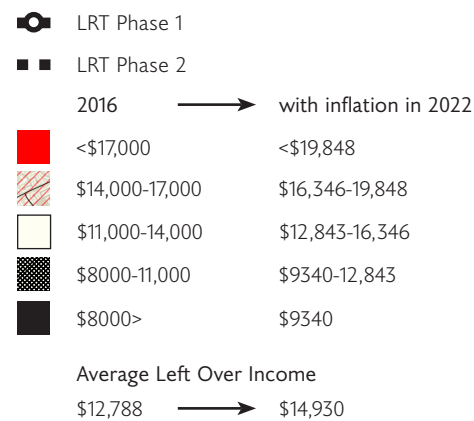
FIG. 4. 8. Polarization: Calculated annual income left over after portion spent on shelter cost per census tract in 2016. Like Fig. 4.7 this map describes a distribution of wealth across the Region. Although more census tracts outside intensification corridors have an average leftover income that is above the municipal average

◈ LRT Phase 1

▪ ▪ LRT Phase 2

▨ 12%> Population Growth

▨ 5-12% Population Growth

▨ 0-5% Population Growth

◼ Population Decline

0.0 km   2.5   5.0   10.0

N
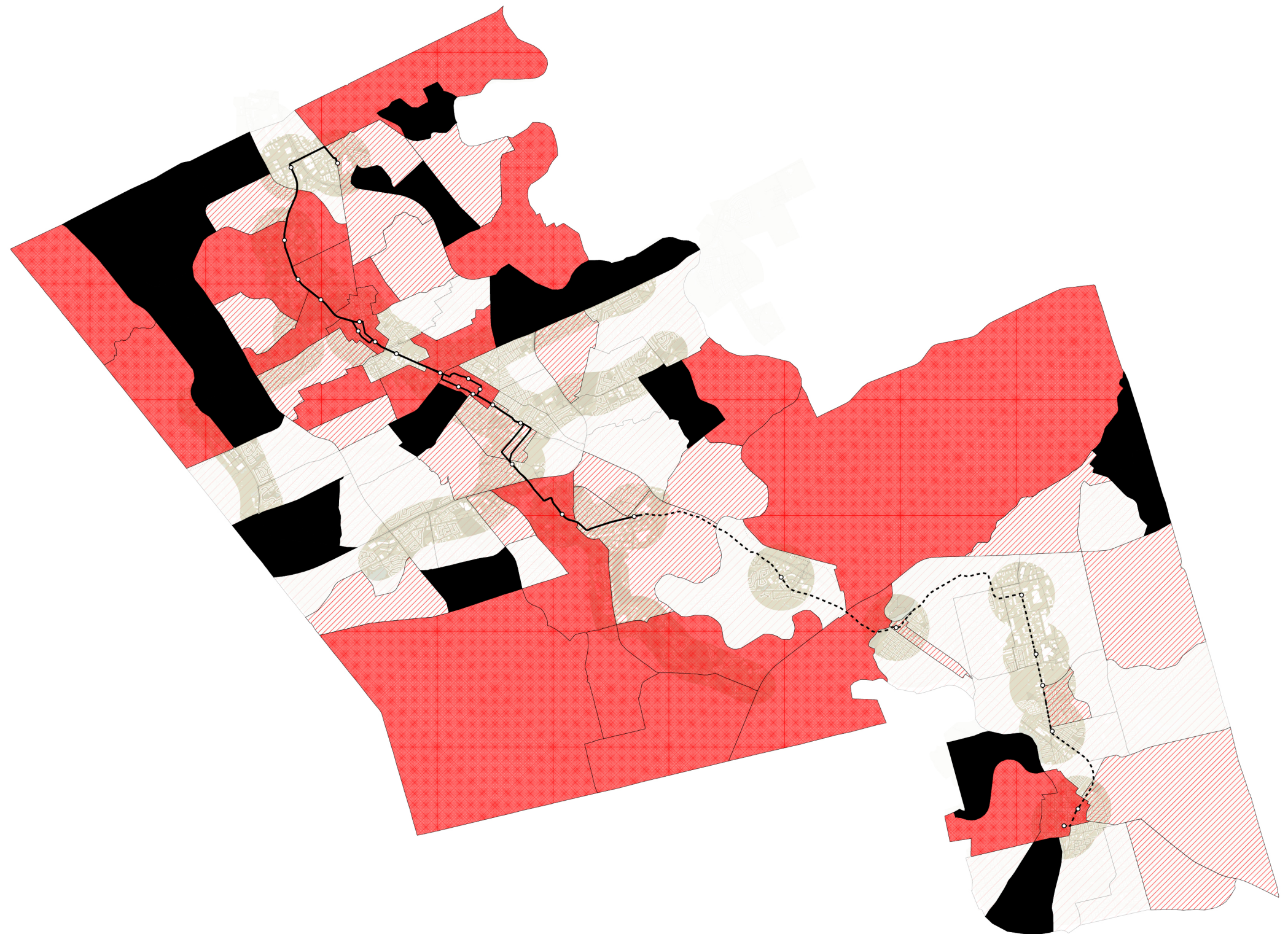
FIG. 4. 9. Intensification & Sprawl: Population change between 2016 and 2021. From this map, the effect of the constructed portion of the LRT on population change is clear. From behind Erb Street and Fischerhallman, in the emptying out neighbourhood of Westvale, an influx of callers, mailers, and flyers ask if we'd like to sell the home.

LRT Phase 1

LRT Phase 2

Population Decline

Tower Permits

Multi-Unit New Permits

Single Unit Permits

2018
Some new residential development.

2019
One new residential tower permit.

2020
No new residential development.

This tract is somewhat anomalous. The development occurring in this tract only began in 2018. It is likely that the population declined as room was made for new construction. In another 4 years, I predict that this tract will experience a population increase comparable to its neighbouring tracts.

0.0 km   2.5   5.0   10.0

N

FIG. 4. 10. **Gentrification:** Building permits between 2015 and 2020 overlaid on census tracts with a population decline between 2016 and 2021. From this map, population decline appears to correlate with a lack of new high-rise construction. This aligns with the Region's ideological interset in creating space for innovation. The decline in population creates opportunities for future intensification.

2016-2021

⬡ LRT Phase 1

▪ ▪ LRT Phase 2

▨ 12%> Population Growth

● Tower Permits

• Multi-Unit New Permits

• Single Unit Permits

0.0 km   2.5   5.0   10.0

N
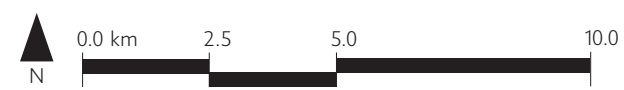
FIG. 4. 11. Gentrification: Building permits between 2015 and 2020 overlaid on census tracts with a population growth of 12% or greater between 2016 and 2021. From this map, intensification and population growth appear to be correlated. Given the unit types in the new buildings, this map suggests that the Region is succeeding in attracting the young urbanite who may embrace the entrepreneurial spirit.

LRT Phase 1

LRT Phase 2

Requests for Increased Density

Requests for Subdivision Development

0.0 km 2.5 5.0 10.0

N

FIG. 4. 12. Intensification & Sprawl: Active change requests for greater residential density in 2022. This map demonstrates the continuation of the pattern of development visible since the construction of the LRT began.

FIG. 4. 13. The innovation network in the Region of Waterloo.

The Entrepreneurial State

Using Schumpeter's five categories of innovation to characterize the innovations of the state, I will outline the production of the entrepreneur as a process inherent to gentrification in the Region in the following sections. To recap:

Schumpeter identified five areas of innovation: (1) introduction of a new good or a new quality of a good; (2) introduction of a new method of production or a new way of commercially handling a commodity; (3) the opening of new markets for one's own products; (4) securing a new source of supply of raw materials or half-finished goods; and (5) reorganization of an industry, e.g. the creation of a new cartel or monopoly position or the breaking of existing cartels or monopolies. (Schumpeter 1934 referenced in Jessop 2017, 862-3)

Rather than a disruption in the cycles of capitalist accumulation, the Region's innovations create false scarcities of knowledge and connectivity operationalized as an ideology. This form of state-led innovation perpetuates existing class structures and engages public space in increasingly insidious ways (Hartmann, Krabbe, and Spicer 2019; Nelles, Bramwell, and Wolfe 2005).

Using the University of Waterloo as a starting point, I consider the subjectification of existing and potential residents of the Region in the following five sections. The University's founding provides an early example of the Schumpeterian innovation and Marxist creative destruction that I seek to problematize. While one might think of advancements in consumer technology when thinking of innovation, the founding of the university was the bourgeois response to an imminent loss of power. A group of industrialists (precursors to current associative governance organizations) founded the university in response to a crisis of overaccumulation present in the post-industrial decline of Kitchener-Waterloo. Increasingly punitive unemployment policies appeared in Canada as existing residents lost long-standing industrial employment in the not-yet-formed Region of Waterloo (Moffatt 2021, 2). The group of industrialists who founded the University of Waterloo sought to grow a more desirable population. Surplus capital was invested into the construction of a new kind of post-secondary institution that promised to address the needs of a changed labour market (McLaughlin 2015). In doing so, state investment went towards a long-

term plan to draw newer younger people to the Region; to restructure the socio-spatial condition of the Region. As a public institution and generator of public space, the University continues to play a significant role in producing the innovative practices of the state and subject in the Region.

SCHUMPETER'S 5 AREAS OF INNOVATIONS	ENACTED BY THE REGION OF WATERLOO
New Good *Privatized Knowledge*	**The University of Waterloo** *Intellectual Property Policy*
New Method *The Network*	**The ION Light Rail Transit Line** *The Toronto Waterloo Innovation Corridor*
New Market *Nodes in the Network*	**The Central Transit Corridor** *Specialized Clustering in Waterloo, Kitchener, & Cambridge*
Raw Materials or Half Finished Good *Students*	**On and Off Campus** *Co-op Program*
Reorganizing the Industry *Associative Governance*	**Communitech & the WREDC** *Collaborating on far reaching policy to Incubate Innovation*

FIG. 4. 14. Categorizing the innovations of the state using Schumpeter's five areas of innovation. Each innovation has a presence that is both spatial and political.

1: Introduction of a new good or quality of a good.

Through state and institutional policy, knowledge is transformed into a fictitious commodity in the post-industrial age. In lieu of the mechanical inventions and products of the industrial city, knowledge becomes a new good or quality of a good. Grappling with the restructuring of industrial policy to suit knowledge-driven economies, Bob Jessop suggests that knowledge does not have inherent value as a commodity when it is available for anyone to use, but needs to be privatized to become a new good (2002). He describes a transformation in the properties of knowledge:

> from a collective resource ('intellectual commons') into intellectual property (e.g., patent, copyright) as a basis for revenue generation (Ibid, 65).

The University of Waterloo's intellectual property (IP) policy facilitates the public to private flow of knowledge that Schumpeterian innovation begets (De Baere and Maine 2017). The nationally distinct IP policy was structured by a spinoff in 1974, fifteen years into the University's growth (Bramwell and Wolfe 2008). Students from the computer science faculty created a compiler later known as WATCOM. The successful relationship negotiated between the founders of WATCOM and the University formed the basis of an IP policy that allows creators sole ownership of knowledge founded within the institution (OECD 2009, 197; Bramwell and Wolfe 2008, 1181). Sole ownership is offered to the producers of any innovation at the University of Waterloo unless prohibited by a granting institution ("Policy 73 – Intellectual Property Rights" 2012).

Although innocuous at first glance, this IP policy institutionalizes the transformation that Jessop describes. The policy structurally encourages knowledge production for entrepreneurship, laying the ground to perpetuate Marxist creative destruction (Nelles 2014). A variety of entrepreneurship initiatives made viable by this policy socialize the student into believing in the disruptive capacity of entrepreneurship (Nelles 2014). In this culture, the emergence of social entrepreneurship popularizes the problem-solving capacity of tech without considering instituted political-economic structures (W. D. H. B. and Krueger 2012). Innovation, narrowly defined as Schumpeterian, becomes the only way to enact change and by
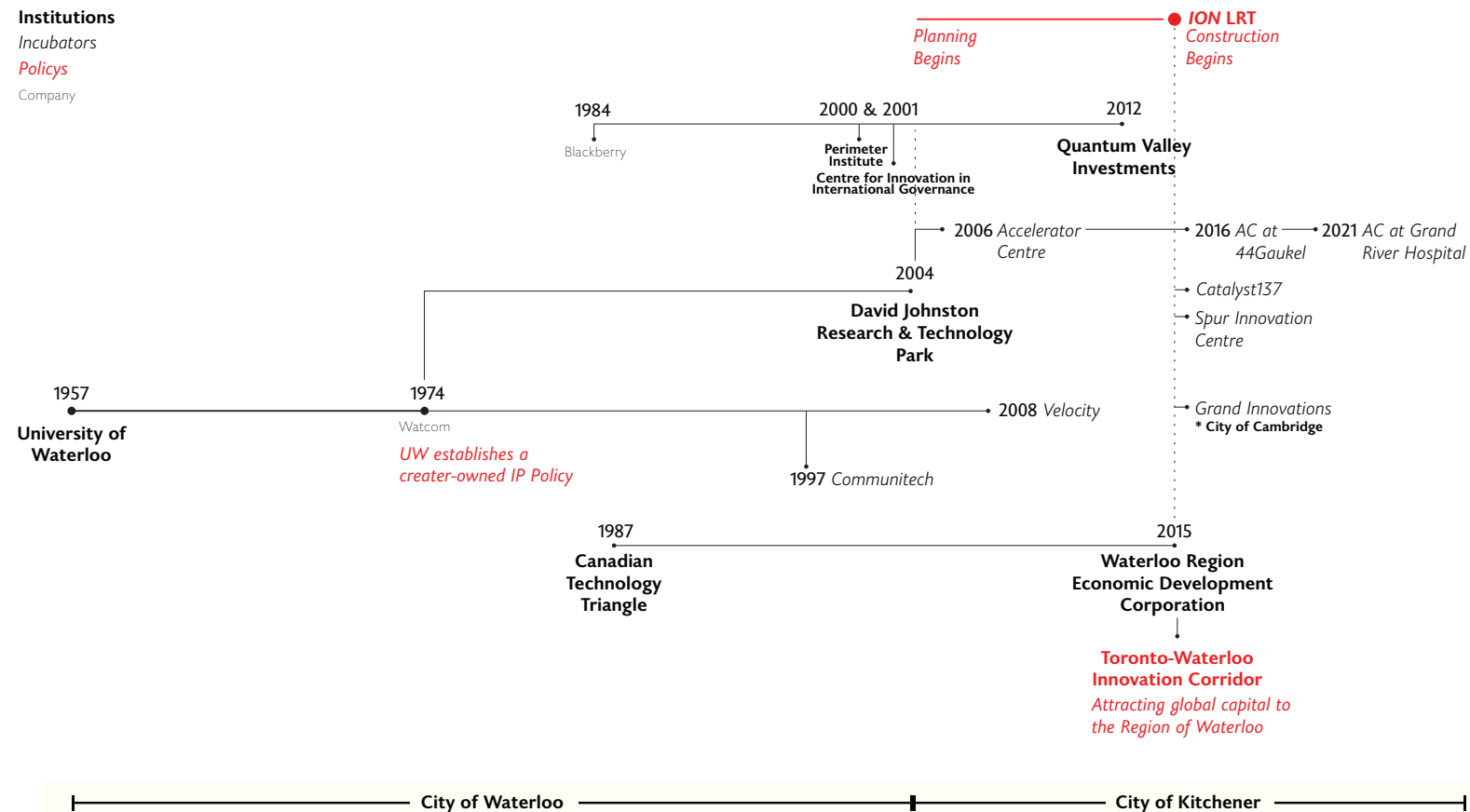
FIG. 4. 15. From the University of Waterloo to a network of innovation. The effect of the IP policy and the growth of innovation in the Region moved from the City of Waterloo to the City of Kitchener and is begining to move south to the City of Cambridge.

extension, commerce becomes the only way to interact with knowledge with the institutionalization of entrepreneurship.

The depoliticized institutionalization of entrepreneurship is made more insidious as it becomes a more widely accepted model for the relationship between public institution and knowledge creation. In the recent discussion of IP policy in post-secondary institutions, there is a call to replicate the University of Waterloo's "creator-owned" model across Canada to encourage scientific entrepreneurship and foster a knowledge economy (De Baere and Maine 2017). In this discussion, the privatization of a public good is considered essential to the success of Canadian institutions and the Canadian post-industrial economy. The collective effort that fosters innovation and the collective consumption that makes the creative act of innovation fun are devalued.

Considering the socio-urban implications of the University's IP policy, I am reminded of the California Ideology. Barbrook and Cameron (1996) proposed the ideology in a criticism of a social phenomenon devoid of social consideration in the world's first Information and Communication Technology (ICT) cluster.

> The Californian Ideology rejects notions of community and of social progress and seeks to chain humanity to the rocks of economic and technological fatalism. (Barbrook and Cameron 1996).

The techno-utopia imagined by the Californian-hippie-turned-tech-entrepreneurs of the 90s masks the cumulative foundation of labour and public wealth with the technology of "unfettered interactions between autonomous individuals" (Barbrook and Cameron 1996). In the digitized space of the internet, the tech entrepreneur believes everyone is "free" to negotiate the world on equal footing. In doing so, the entrepreneur managed to produce a progressive persona while "naturalizing and giving a technological proof to a libertarian political philosophy, and therefore foreclosing on alternative futures" (Ibid.). The public effort that went into developing the internet and subsequent ICT innovations in Silicon Valley are effaced in service of and by the service of new technology. Thus public life is devalued with the foreclosure for other possible relationships to the collective production of knowledge.

I take this detour to California because the Region has claimed to be the Silicon Valley of the North. Following WATCOM, ICT companies including Blackberry (now Research in Motion) dominated the Region forming an ICT cluster with similar ambitions to the larger and older competitor in California. The Region seeks to emulate the public and institutional structures of Silicon Valley with little apparent critique of the spatial injustices produced in service of that innovation city. As I will describe, the California Ideology plays out in the Region in who and what public spaces are built for.

The IP policy of the University of Waterloo operates with the same principles as the California Ideology—privatizing knowledge produced publicly, and in doing so producing a new culture of labour. At its most limited, the IP policy informs an understanding of labour amongst students. However, students become part of the workforce, transferring the assumptions of Schumpeterian innovation into the workplace. UW's IP policy propagates through a network of co-op students, employees, employers, and entrepreneurs. In the following sections, I begin to spatialize the effect of the IP policy and other privatizations of knowledge to describe the making of public space for entrepreneurship.

2: Introduction of a new method of production or a new way of commercially handling a commodity

Opposite to the beliefs of the California Ideology, simultaneous to the privatization of knowledge, new innovation occurs by re-integrating key intellectual properties into the public realm with the regulatory involvement of the state. The state and the institution "need to balance the protection of individual intellectual property (to encourage technological rents) and the general diffusion of its applications 'by creating open systems, by moving intellectual properties into the public domain, by releasing source code democratically" (Jessop 2002, 73). The state navigates its contradictory role in the production of knowledge through new methods.

The state must engage in a balancing act of creating openness while producing commodities through privatization. The balance is found through a new method of producing knowledge as a commodity via the network. However, the network doesn't necessarily lead to new innovation, Schumpeterian or otherwise, nor does it need to. I argue

that the network is a transformational method, making the entrepreneur a commodity to be handled through the social practice of networking. The network itself is destructive as it shifts the process of labour "from the factory to society" (Terranova 2004, 74); restructuring the organization of production/consumption (Castells 2000, 695). By handling the entrepreneur, the network can enact creative destruction even if the entrepreneur individually does not yield new innovation.

Subjected to the innovation economy, the entrepreneur, wrought with innovation potential, participates in practices of networking which resembles what Daniel Cockayne has called "compulsory sociality" (Cockayne 2016), performing the activities of collaboration and competition as a lifestyle, in hopes of succeeding. Filled with blind optimism "entrepreneurs have unrealistic ideas of success and unhealthy fantasies about the productivity and necessity of failure" (Szeman 2015, 482). The waking hours of the almost entrepreneur are consumed by the labour of inventing and the work of networking. Leaving social and familial relationships to the wayside, life is managed through the precarity of entrepreneurship (Cockayne 2016, 464). The perceived necessity of failure to succeed at entrepreneurship becomes a precarity that is celebrated and not challenged. While this may be socially and financially feasible for some, the ubiquity of failure threatens the autonomy of innovators, entrepreneurs, and labourers in the knowledge economy (Carnoy, Castells, and Benner 1997; Hartmann, Krabbe, and Spicer 2019). Citing multiple studies, Hartmann et al. note that the income distribution of people who become successful entrepreneurs are disproportionately from higher income brackets who can rely on access to capital in the very likely event of failure while pursuing an entrepreneurial venture (2019, 12).

The contemporary start-up entrepreneur imagines their work as a life project in which being an entrepreneur carries an ethics with it (Bandinelli 2020, 12). One must create the version of themselves that is still 'true to themselves that is the best for producing the social capital necessitated by entrepreneurship (Ibid, 13). Ethically, the entrepreneur believes that the satisfaction and freedom afforded by an "investment in oneself" exceed the feel-good returns of any other kind of work (Cockayne 2016, 461). The ethics of entrepreneurship is the basis of ideology in the innovation city. As I've described thus far, in the ideological terrain of the innovation city, autonomy to remove oneself from entrepreneurship is limited. The project of entrepreneurship is the ethical choice to equate work with life.

The ideology of entrepreneurship extends in the network, producing a methodologically specific citizen-government relationship with the support of associative governance organizations. The material and virtual networked geographies of innovation are produced in units of the 'corridor', 'district', 'cluster' and other nested inter-state multiscalar boundaries that require the expansion of public space. Whether through transit, public knowledge institutions, or public spaces where the entrepreneur is willing to participate in networking, the method of the network calls upon the state to facilitate connectivity. However, networks operate trans-nationally, thus limiting the governing capacity of single state agencies (Gunasekara 2006; Castells 2000). As such the citizen relates to local and national government as service providers that locally implement networking capacity to engage with international communities. As the state's presence is overshadowed, associative governance activity reinforces the service provider role of the state. Associative governance organizations take on international leadership and lobby for network expansions in physical and virtual space.

The method of producing innovation through networks depoliticizes public space—allowing for the uncritical adaptation of development practices that are demonstrably destructive. Just before construction began on the LRT, the Region began a concerted effort to tap into a globalized network of venture capitalists that could incubate local start-ups. During a visit to California in 2016, the mayors of Waterloo, Kitchener, Cambridge, and Toronto began

promoting the Toronto-Waterloo Innovation Corridor (TWIC) modelled after the regional scale and institutional relationships present in Silicon Valley. With very little real infrastructure, the Region has managed to attract the likes of Google and Block (formerly Square) to its end of the TWIC (Wachsmuth and Kilfoil 2021). Although the Region differs from the municipalities of Silicon Valley in strategies for intensification, the influence of large tech corporations on the built environment matches that of the valley. The Region seeks to emulate the economic success of the valley's tech network of universities, corporations and transit—an ecosystem that is at least partially responsible for extreme housing unaffordability (Harrison 2021).

In the Region and province, investment in public transit connecting the TWIC came after tech offices were established in the corridor. Only in the last year (2022) has a viable link between Waterloo and Toronto been introduced with a GoTrain between the two nodes of the corridor every hour for a portion of the weekday (Metrolinx 2021). These public investments that valorize the presence of tech and entrepreneurship well after the demand for an expansion of public space existed in the Region will be revisited and expanded upon in the next chapter. In the following chapter, I will argue that the method of the network reimagines life as work and public space as space for networking. In the next section, I describe a new market for space produced by and for the material infrastructure of the network.
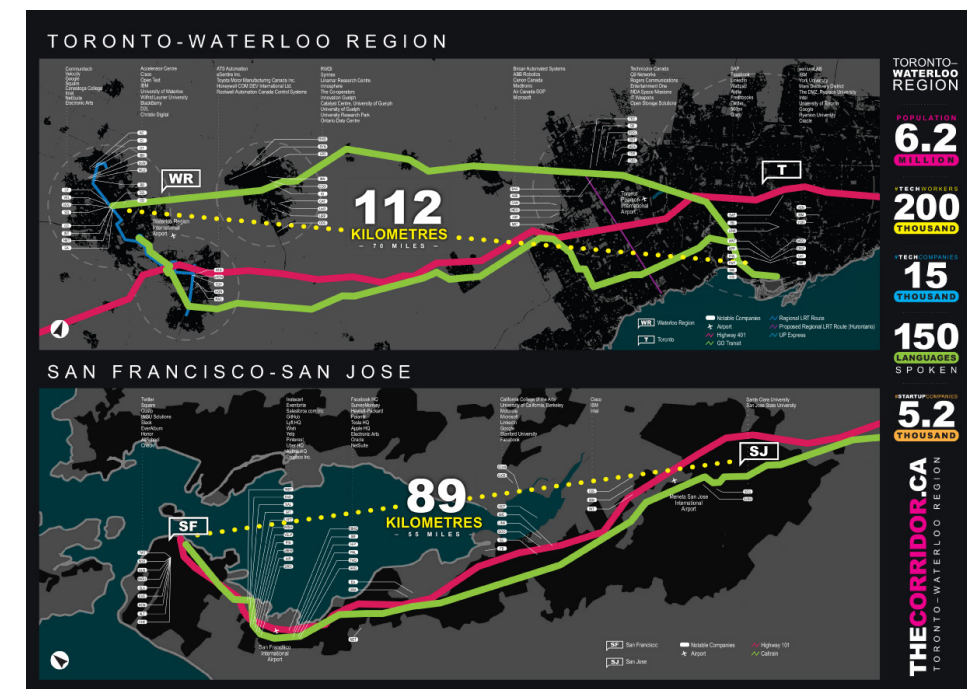
FIG. 4. 16. Toronto-Waterloo Innovation Corridor as marketed by the Region and associative governance organizations.

3: The opening of new markets for one's own products

The municipality makes most of its revenue from property taxes, development fees and user fees. Spatialized, the nested units of the network—innovation districts, corridors, regions, and clusters—connected by the infrastructure of the network produce a new market for the primary products of the state—property and services—through competition and collaboration. At the scales of the Region, the cities and neighbourhoods within the cities, public investment seeks to produce demand for land and property locally while attaching to multi-scalar networks. Connecting into the TWIC, a balance is struck between the amorphous boundaries of networks and local efforts to make distinct nodes. Tied together by the LRT and tied to national and global networks by the TWIC the Region finds new markets by connecting and expanding a network of innovation spaces in locally competing cities and joining force with larger municipalities.

Balancing networked connections and locality, the three cities of the Region competed for innovation spaces following the success of UW. As the cities of the not-yet amalgamated Region suffered in the transition to a globalized knowledge economy, the City of Waterloo found a new market in the university student seeking an employable education. The founding of UW, as an act of creative destruction or the institutionalization of Schumpeterian innovation in public space, was regarded as a successful response to Cold War-era tensions and economic decline (McLaughlin 2015). With UW, the City of Waterloo produced a distinct identity, thus attracting a population of students to consume the products of the state as renters and service users.

More recently, the former township of Galt in the City of Cambridge replicated some of the success experienced in Waterloo by bringing a satellite campus of the University to the historic downtown. After cycles of industrial success up until the end of World War II, the largely vacated downtown of Galt faced a post-industrial decline that was further exasperated by a new highway and an amalgamation of a handful of cities in the 70s (Bowman 2007. 41-42). In 2004, the second-tier municipality orchestrated a deal with the School of Architecture. In want of more space, the School leased a daylight factory on the Grand River just off of Main Street in Galt. The cost-effective decision injected the economic

activity of 300 staff and students into a sleepy downtown. Now one of multiple post-secondary institutions with space in Galt, the satellite campus was the first to create a presence of institutionalized innovation so far from UW in the north of the Region. Plugging into the presence of "creativity" associated with architecture, the local library network introduced a maker's space equipped with laser cutters and 3D printers in 2018. In 2001, in the same time period that the architecture campus was moved to Cambridge, the Cambridge Centre for the Arts opened its doors in downtown Galt. The School of Architecture simultaneously created a network connection to post secondary innovation and enhanced the distinct arts identity of the city.

The Region and the City of Cambridge addressed economic decline by producing a node in the future network of the LRT, partly ensuring Cambridge's access to the transit line. However, in the years leading to construction, the LRT connection to Cambridge was a point of contention because Cambridge would bear the financial burden of the two-phased approach with a delayed benefit (CBC News 2013). Removed from the more active sites of innovation in the Region, Galt has experienced a slower transformation since the introduction of the satellite campus and will be slow to experience the effect of the LRT as well. The connection to Ainslee Street Terminal, albeit difficult, is insured by the institutional anchor that activated Galt.

The Region is producing a new market by connecting the three cities and the innovation spaces each has developed. As plans for the LRT Phase 2 are solidified, gentrification—framed as revitalization—is taking a hold of the second half of the CTC as is visible in the zone-change maps on page XX. In Waterloo and Kitchener, new development within the CTC already brings in 10 to 15 times more property tax than what was there before (C. Thompson 2019). The LRT materializes the method of the network already present in the move to put a satellite campus in Cambridge (or subsequent campuses in Kitchener), producing a new market for space based on the distinct innovation activities present in each city.

The TWIC, borne out of excess capital and expertise from Research in Motion as the smartphone industry left the Blackberry behind (Loop 2022), created a new networked relationship for innovation just as a leader in ICT was in decline. Starting in 2015, the TWIC has created a new market for local and emergent tech companies, more institutional

campuses, incubation spaces, and the housing demand associated with these spaces in the nodes of the corridor ("The Corridor" n.d.). The corridor consists of multi-sectoral hubs in the conventional categories of innovation tech: biotechnology, clean technology, digital technology, and natural resources as defined by the Association of Unversity Research Parks (AURP) in addition to specialized manufacturing towns. See Fig. 4. 20 for a visualization of industry clustering along the corridor. Connecting the institutionalized entrepreneurship of UW and the global recognition of the City of Toronto, the TWIC allows the Region to attract global investment capital as a relatively small municipality (Wachsmuth and Kilfoil 2021).

Like with the LRT, an infrastructural link followed the creation of the network. A more frequent commuter public transit connection between Waterloo and Toronto capitalizes on the now well-established network this year (2022). The increased frequency of the GoTrain introduces an explicit link between the Central Station of the LRT and the larger innovation corridor terminating at Union Station in Toronto. In both cases, an existing innovation space created a market for the expansion of an innovation network that created a market for transit infrastructure. Coming full circle, the transit infrastructure of the network creates a market for new innovation space and new residential demand. These public spaces and the networks they represent produce a demand for the products of the state, as the state capitalizes on development fees associated with the creation of supply.

It becomes fruitful to describe the revenue generators of the state as products in the context of the innovation city as the citizen's relationship to the state is depoliticized (Lazzarato 2009). As described in the context of complete communities earlier in this chapter, the products of the state are bought directly or indirectly by individual citizens in the private development process, by property ownership, or by service usage. State-led gentrification is then linked to the method of the network and the possibility of new markets that arise from competition within and without the network. Considered a product, the activity of the Region to attract certain types of people through a process of state-led gentrification and other innovations is more clearly a search for new markets.

FIG. 4. 17. Region's increase in revenue change since the construction of the LRT. (Corrected for inflation)

4: Securing a new source or supply of raw materials or half-finished goods;

By now, a few elements of the subjectified state's ideology of entrepreneurship in the post-industrial economy are clear. Knowledge is fictitiously commodified into a new good by state intervention. Through the construction of infrastructure, the state supports a society of networks. The new method of the network produces a condition where work is both undervalued and overvalued as life itself. Finally, the state benefits from this arrangement through the geographic results of the network as a new market of capital-rich investors and ambitious entrepreneurs are pulled into the Region's nodes of local, provincial, and transnational networks. Taken together, the innovation of the state transforms labour and space to create a new market for the products of the state.

The Region innovates once more by producing a steady supply of raw material. A raw material, as defined by Marx is the object onto which labour is performed. I've defined the student as a raw material because they are made useful as the subject of other specific labour. Like iron ore, plastic pellets, and cotton thread, the student is half-finished and adapted to the needs of the knowledge economy through educational labour and training (**Terranova 2004; Marx 2008**). The student, cultivated to participate in the production of new knowledge and the maintenance of the network, has entrepreneurial potential (**Hayes 2004, 233**). With labour performed upon them, the student's entrepreneurial potential is actuated in the workforce. The state finds a new source of raw materials in the student whose potential for entrepreneurship is idealized in the innovation city.

The raw material of the student is made into two forms of exploitable labour for the needs of the knowledge economy. The structure of co-op placements leaves students with little agency as very temporary workers. Encouraged to pursue entrepreneurship, the student is exposed to the precarity of an industry where failure is perceived as necessary. The student in the co-op environment is reoriented toward building prosperity in the global marketplace (**Grosjean 2004, 207**); their relationship with the public institution is reduced to transactional training to prepare for the workplace or gain academic rewards (**Grosjean 2004, 216**). In this space, the student is conditioned to shift from a relationship with the institution to an individuated experience of work and entrepreneurship.

UW, more than any other knowledge institution in Canada, sought to push national production from resource-led to applied research-oriented (Niosi 2000). As cities across North America felt the decline of de-industrialization, the university sought to move Canada's economy away from processing natural resources towards producing innovations. In its founding, the institution had a more "pronounced focus on establishing university-industry linkages" than other Canadian universities established in the post-war period (Munro & Bathelt 2014, 225). The co-op education program, where students alternate between a 4-month term in the classroom and a 4-month term in the workplace (with some scheduling variation), established a link between the university and industry, allowing for a shift towards applied research.

The first of its kind in Canada, the co-op program ensures students pursue internships in their field in fulfillment of the degree requirements (**Munro and Bathelt 2014; Grosjean 2004**). The raw good of the student becomes a product of the institution as temporary labour in industry. While there are some protections in place for students, the program produces a potential labourer who must work somewhere in their field because of the program requirements. In the temporary condition, the student turned labourer engages with the employer as an educator (**King 2001**)—masking the alienation inherent to capitalist labour.

A second avenue in the co-op program facilitates entrepreneurship ventures made possible by the university's IP policy. In lieu of a temporary work placement students are allowed to pursue an entrepreneurial project and pursue incubatory funds available through UW and other local actors ("**Enterprise Co-Op**" 2019). In the Enterprise (E) Co-op program, students are offered workspace in a local incubator and access to conferences, speakers, and presentations to build a network for their business. Although some of the economic risk of entrepreneurship is mitigated by the structured co-op environment, the program encourages the affective labour of networking without protection and compensation—naturalizing work as life.

The state produces raw material by attracting students to the public institutions in the Region that all integrate portions of the successful UW co-op program, albeit to a lesser extent. These students are laboured upon to produce a new supply of entrepreneurship and knowledge work. As the universities build campus expansions and develop new degree or certificate programs, the supply is increased.

5: Reorganization of an industry

The state is both more engaged and less present in the restructuring of labour by the method of the network and its socio-spatial implications. The industry of governance is reorganized by a strong presence of associative governance organizations that aid the state in making "the right investments" to grow the Region's innovation economy. Seen as a means for bottom-up governance (**Gunasekara 2006, 138**), local associative governance organizations obscure the state's presence in maintaining and expanding built and economic innovation networks while engaging the state for private interest.

The mechanisms for material and immaterial development have been transformed as associative governance organizations take on a role in researching, advising, and enacting programs.

> The associative state plays an important role in terms of strategic leadership and capacity building in order to empower civic networks. In economic development efforts, the state crucially shapes the institutional environment and underlying conditions conducive to the collective learning processes that link actors… and underpin innovative regions. (Nelles 2014, 92)

Finding 'the right investment' to produce the collaborative environment of the networked society is a challenge for public policymakers. As such, an ecosystem of organizations provides input and expertise as engaged private actors and policy think tanks. In an ethnography of innovation policymakers, William Davies found that they lacked quantitative methods to assess the innovation potential of municipalities but rely on quantifiable data to inform policy decisions (2011, 402). Davies observes:

> The crisis of measure is therefore twofold: for not only must policy-makers pursue investment strategies in intangible assets that resist easy quantification or economic valuation, they must also strive to remain agnostic regarding the likely outcome. (Ibid, 403).

An industry of interdisciplinary 'gurus' "centralized around a small number of institutions, personalities and ideas" are followed by the state, directly or through associative governance organizations, to create the impression that

their constituent place is innovative (Ibid, 411). Self-interested ideas promoted by the likes of Richard Florida and Micheal Porter are used to rationalize local development in direct contrast to the localized grassroots governance that associative governance is supposed to provide.

Originally established by a community of actors to grow the high-tech economy, Communitech and the Candian Technology Triangle (CTT) were founded in the late nineties. Although the two associative governance organizations started independently, with Communitech focused on 'homegrown' entrepreneurship and CTT interested in attracting international enterprise, they developed a coordinated and influential relationship (**Nelles 2014, 95**). Currently, the successor to the CTT, the Region of Waterloo Economic Development Corporation (WEDC) is mandated to "invent the future" by providing a concierge service to relocate, grow, or start businesses in the Region (**Waterloo EDC 2022**). They provide on-the-ground information and connections to entrepreneurs, much like the hotel concierge calling up the local restaurant for a reservation; working the new firm into an existing network. Similar to the WEDC, Communitech now describes itself as a founder service to take a business from start-up to scale-up (**Communitech 2022**). However, both the WEDC and Communitech, "have expanded their mandates significantly beyond their original designs and functions as core associations in regional strategic governance" (**Nelles 2014, 95**).

Amongst other organizations in the Region, these entities promote socio-spatial developments that will serve their interest in the growth of local innovation. For example, in a public meeting for the LRT, the CEO of Communitech used an internal survey to argue that the Region needs to support existing workers and new talent by implementing green transit infrastructure (**Region of Waterloo 2011**). In the same period, the CTT supported the LRT on the basis that "there is intense international competition for talent, and we need to offer great infrastructure and lifestyle to remain competitive ("**Canada's Technology Triangle Endorses Light Rail Transit**" 2011). Hosting conferences (**Ansari 2017**), creating arts ventures (**Jackson 2018**), and advocating for greater engagement between tech and the community, these organizations become engaged with public life. With great influence as economic drivers in the Region, they govern through associated power.

From its impact on local business (in 2015 Waterloo Region's GDP was 15 percent higher than the provincial average) to infrastructure (the LRT being built to service the region's core and the provincial government's commitment to railway improvements in the Toronto-Waterloo Corridor are in part due to policy work by Communitech in concert with government partners), the legacy of collaboration fostered by Communitech is not only written all over the region, it's now national in scope. (Communitech 2017)

Echoing the labour condition of the network society, the social and cultural life of the Region is subsumed into the economic strategy of WREDC and Communitech.

The public-private network of governance is a compelling relationship for the state as a means to avoid a distributive responsibility with investments in new infrastructure. The gentrifying effect of public investment is overshadowed by the imaginary grassroots nature of associative governance founded in the Region. The WEDC, Communitech, and other organizations self describe themselves as part of a local community as their involvement in governance enables the social and spatial displacement of the local community. With a mix of independence and collaboration, these organizations take up the space of residents in the conversation with the state. Producing a narrative that growth in innovation is simply a cultural product of an incredible place, they obscure a reliance on state investment in their organizations and the innovation spaces these organizations support. The California Ideology transferred to its northern cousin, Schumpeterian innovation in the networked society of the post-industrial economy is the privatization of knowledge and space produced through public investment.

LRT Phase 1

LRT Phase 2

GOTrain & GOBus to Toronto

Corridor Connections

University Campuses & Innovation Districts

City 3: 20% or greater change in
income between 2001 and 2016

REGION OF WATERLOO

WATERLOO - IDEAS START HERE

TOROTNO WATERLOO INNOVATION CORRIDOR

KITCHENER INNOVATION DISTRICT

CAMBRIDGE - SATELITE CAMPUSES

0.0 km   2.5   5.0   10.0

N

FIG. 4. 18. The effect of the innovation network on the average income of census tracts since
construction of the LRT began. The overlap between income increases and the introduction
of innovation support a relationship between state-led gentrification and innovation.
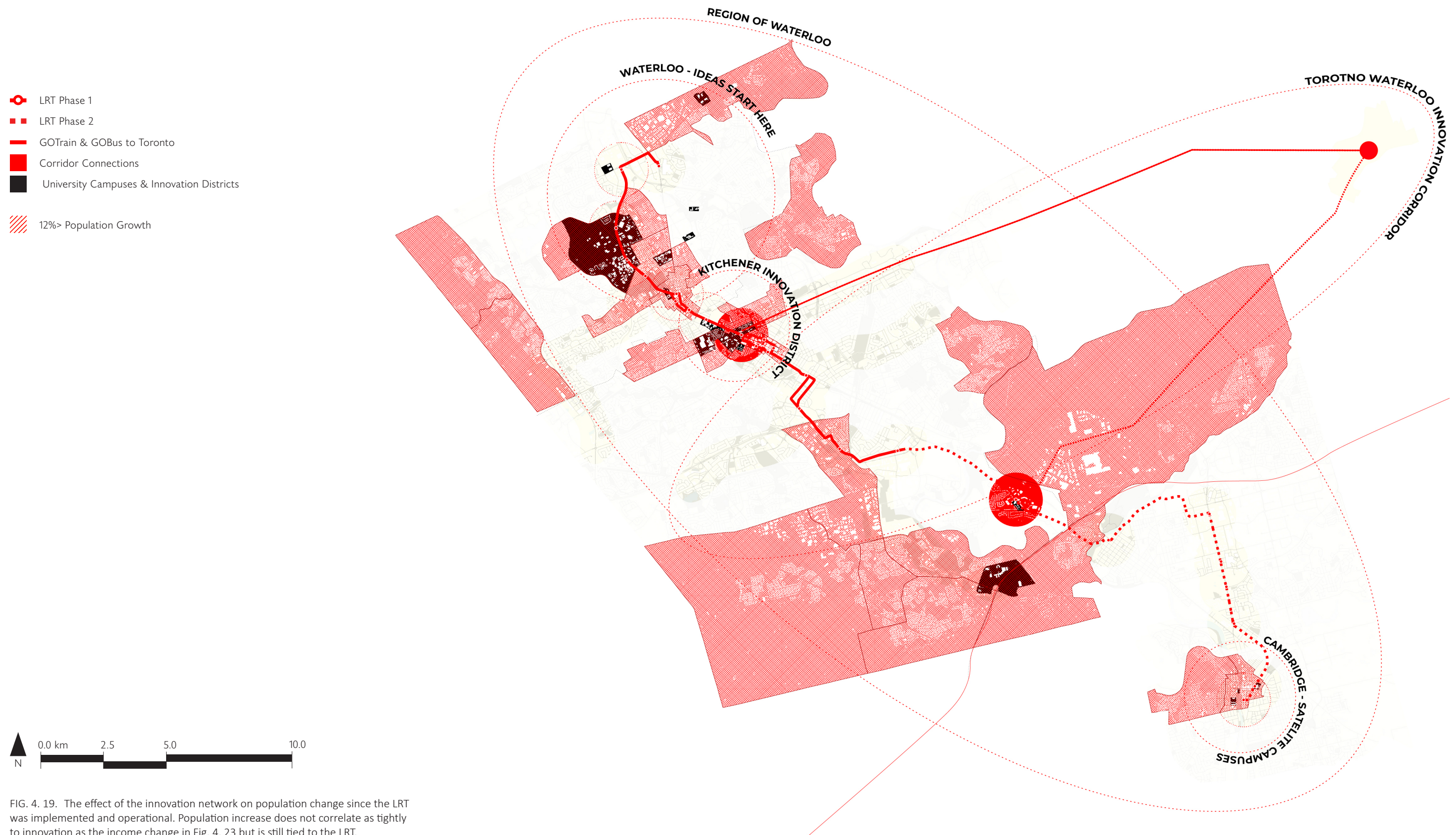
FIG. 4. 19. The effect of the innovation network on population change since the LRT was implemented and operational. Population increase does not correlate as tightly to innovation as the income change in Fig. 4. 23 but is still tied to the LRT.

Legend:
- LRT Phase 1
- LRT Phase 2
- GOTrain & GOBus to Toronto
- Corridor Connections
- University Campuses & Innovation Districts
- 12%> Population Growth

Map labels:
REGION OF WATERLOO
WATERLOO - IDEAS START HERE
TOROTNO WATERLOO INNOVATION CORRIDOR
KITCHENER INNOVATION DISTRICT
CAMBRIDGE - SATELITE CAMPUSES

0.0 km   2.5   5.0   10.0
N

Legend (left):
- ⊙ LRT Phase 1
- - - LRT Phase 2
- CTC
- Public Space

Legend (right):
- ■ Library
- □ *Outside CTC*
- ▶ Rec Centre
- ▷ *Outside CTC*
- ● Commuity Ctr.
- ○ *Outside CTC*

City of Waterloo
City Hall

Waterloo Park

City of Kitchener
City Hall

Victoria Park

Region of Water-
loo Civic Centre

Riverside Park

City of Cambridge
City Hall

Soper Park

CIVIC SPACE

PUBLIC COMMUNITY SPACE

CENTRAL PARKS

FIG. 4. 20. Public Spaces inside and Outside the CTC.

Networked Public Space

I conclude this chapter with an example of the ideology of the innovation city at work in the CTC. The CTC takes on an added intensity of publicness as more people live and work in the high-density built fabric and more people access space connected by mass transit. Although the transitory space of the LRT might not present itself as a space to make dissent visible, the LRT presents a material ideology through the train car, the station, and the places connected by it. Simultaneously, the rider, or lack thereof, has some autonomy in their use of the space and service. The LRT, and the spaces it connects within the CTC are by definition public spaces. Therefore, they should be accessible for everyone to assert their right to participation in order to expand the public sphere.

As space is shaped by the pervasive structure of entrepreneurial labour, gentrification in the CTC imposes a coherence in public space. The Region found that a disproportionate number of calls to the police for services associated with the removal of unwanted people were made from the CTC. Nearly half (47%) of such calls came from the CTC, while only 20% of the Region's population lives within the CTC (Region of Waterloo 2020b, 27). Furthermore, there is an upward trend in the portion of police calls made within the CTC. From 2011 to 2018, there was a 43% increase in calls made within the CTC compared to a 14% increase in calls made from outside the CTC (Ibid.), with an overall population growth of 15% in the same time period (calculated by author).

Interviewing residents in the CTC, Ellis-Young and Doucet found that:

> …perceived growth in shared ideals speaks to a certain accompanying homogeneity in terms of income and cultural capital. This is particularly true given that access to the celebrated urban lifestyle along the LRT corridor that is bringing "like-minded" residents together requires increasing levels of economic privilege, as recognized by both participants and regional monitoring reports. (Ellis-Young and Doucet 2021, 8)

As might be understood from the results of the survey, the element of cultural capital appears to play a significant role at the confluence of innovation and gentrification.

In this chapter, I've described how the state produces the social and spatial displacements of the innovation city through public investment in the method of the network. I built the argument by first establishing a pattern in state-led gentrification, wherein investments in public space are recuperated through fees and taxes offloaded to the resident. I then argued that the state acts as an entrepreneur to foster entrepreneurship by investing in public space. Encouraged by associative governance, the LRT is not a means to curb sprawl or create complete communities, but a public investment in the local innovation economy.

The chapter contributes to the thesis by drawing a link between the public space expansion of the LRT and the Region's strategies for spatial and economic development that reach beyond transit. The relationship between innovation and gentrification in the Region is cyclical and co-dependent; growth in the innovation network creates ground for gentrification and gentrification attracts new participants in the innovation network. Supporting the theoretical exploration in Chapter 2, the Region produces an ideological condition in which public space services entrepreneurship—producing a form of gentrification that is experienced economically and culturally. As I will describe through photographs in the next chapter, the public space of the CTC is consumed by the ideology of innovation.
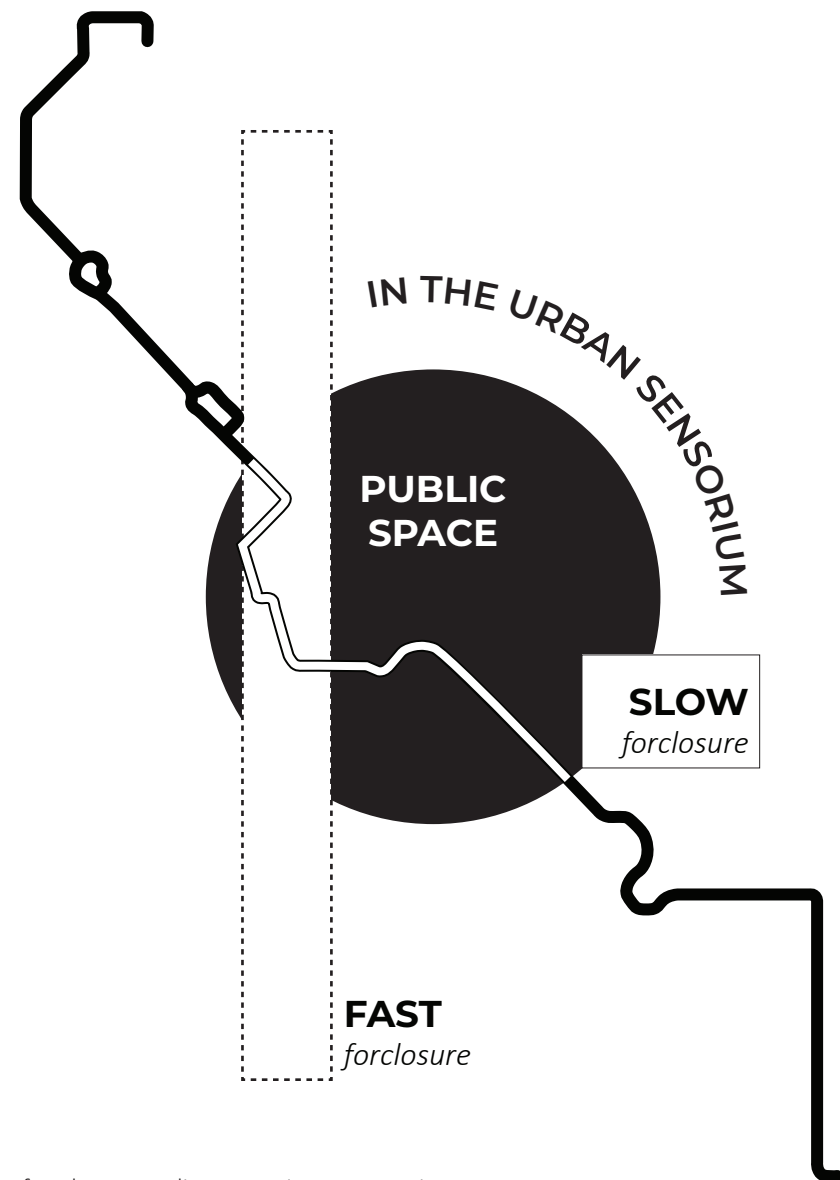
FIG. 5. 1. Slow and fast foreclosures. A diagrammatic representation of the aesthetic transformations in the public space of the CTC.

IN THE URBAN SENSORIUM

PUBLIC SPACE

SLOW
forclosure

FAST
forclosure

5 **THE URBAN SENSORIUM**
SLOW & FAST FORECLOSURES

Slow & Fast Foreclosures

In Chapter 4, the colour red marked transformations that are indicative of gentrification, insertion in space tied to innovation, and the LRT. In this chapter, I will present a series of collaged and annotated photographs moving sequentially from station to station to describe the presentation of an innovation ideology in public space. On the route from the North to the South of the LRT, all the way to the planned terminus of Phase 2 in Cambridge, I photographed what has been added, preserved, and remade since the introduction of the new transit network in service of the innovation city. To explore the transformations of public space that I call foreclosures, I produced a series of collages of the photographs I took while moving through the CTC. I "cut out" the introductions and preservations that symbolize a foreclosure and leave images of the public space whole to describe the context of the foreclosure. In this chapter, the colour red is used to distinguish the existing fabric from the introduction of an innovation ideology and draw attention to foreclosed public space.

The compilation of collaged photographs describes a series of renovated and reimagined public spaces in which the state seeks to produce a new 'self'—the ideal subject of the state (Delaney 1997, 89). Moving through the built fabric of gentrification and innovation, the LRT facilitates foreclosures in public space. Traditionally, foreclosure refers to the legal process in which a lender retakes possession of the collateral—often property—and resells it to gain back the balance on

a loan (Timiraos and Zibel, n.d.). In a sense, the Region enacts foreclosures that are akin to the legal processes. In an attempt to recover the debt of public investment, the Region produces a singular socio-spatial narrative in public space to produce a more lucrative subject—a self that willingly participates in entrepreneurial labour. The reader might notice that not all the existing spaces I present are that great to begin with. Often, the foreclosure expands or enhances the public space it intrudes on. This difficulty, between the visible improvements brought on by the forces of gentrification and innovation and an arguable effect on access, appeared in the survey results I've included in the appendix and will appear in the conclusion of this chapter as well.

Willingness to participate in foreclosed space does not necessarily indicate belonging. Writing about an earlier period of reinvention in the public spaces of the Region, Jill Delaney argues that the aesthetics of the renovated city hall effaced the civic space of its process —suggesting that the space appears unquestionably "there" (1997, 92). In the same vein of Goonewardena's retelling of Prince Siddartha's path through the urban sensorium, Delaney points to a state-led fabrication of spectacle that recontextualizes experiences of space in a narrow ideological narrative. The new 'self' is static, discouraging the conflicts inherent to public space in a project of revitalization and redevelopment (Delaney 1997, 91). In this space, the possibility to transform oneself through the surroundings might exist but is obscured and perhaps made less desirable in the immediate sense by the aesthetic improvements of public space. Belonging is depoliticized.

A foreclosure is the recuperation of public investment in the urban sensorium. The Region introduces new connectivity, language, and art to public spaces along the LRT. Individually, the three cities participate in local renovations and expansions of public and institutional space to produce distinct identities of innovation that are simultaneously part of a greater network and nodes within the local network of the LRT. The aesthetic agenda of place-making activities by both tiers of municipal government historicizes innovation while simultaneously reconstituting public-private relationships to increase control in public space. With reference to the pace, I categorize the foreclosures I observed on my trips in the CTC as slow and fast. These methods of foreclosure impose on the potential for public space to expand and reflect other identities and to function as political space.

A slow foreclosure is the production, through preservation and representation, of a history of place-specific innovation. To actuate the method of the network and a future of new markets, the Region must dig into its history (Spigel and Bathelt 2019). In a series of such spaces, the Region's history of Mennonite collaboration and Germanic industriousness is sanitized and memorialized for the public as a means of forming a local identity. In doing so the Region and the three cities enact a racialized and socioeconomic violence by celebrating settler colonialism on land that was contractually promised to the Six Nations of the Grand River peoples, on the traditional territories of the Attawandaron (Neutral), Anishnaabeg, and Haudenosaunee peoples (Burns and Berbary 2021, 5). It serves to embed the creative destruction of the innovation city in a partial

history of the place. Consequently, slow foreclosures produce a subject that is specifically uncritical of the violence of the dominant culture (Burns and Berbary 2021, 5).

A fast foreclosure mimics public space in the network of spaces serviced by the LRT. In effect, blurring the boundary between public and private with the support of the state. As space for innovation proliferates the connections of the LRT, the affective labour of networking spills out into space that is not public in function or ownership but looks public in materiality (Terranova 2004). Simultaneously, public-private negotiation for taller towers produces surveilled amenity space to look like public space. From community hubs for innovation to privately owned public spaces (POPS), the fast foreclosure camouflages a loss of belonging by depoliticizing space that appears public in aesthetics.

From the gentrifier's perspective, a community is formed through these fast and slow foreclosures. The state, with the support of associative governance organizations, seeks uniformity in how one interacts with politics and mediates this relationship through the aesthetics of public space. In public and private space, the gentrified subject's capacity to belong is individuated. Those who cannot afford to belong by living near the LRT, participating in the commerce of networked spaces, or taking on the continuous risk of entrepreneurship are deemed outsiders. The possible space for the outsider to assert their belonging is made unclear by the aesthetic choices of the state and the institution.

I present the results of the public space portion of the survey, where I asked people to assess their sense of belonging in public spaces in the CTC. I reflect on the results in terms of who refused to participate in the survey and what that might indicate about the politics of belonging. I consider the practice of refusal a meaningful challenge to the desire to belong in a space where the ideology of the dominant group individuates collective experience.

FIG. 5. 2. Phase 1 of the LRT.
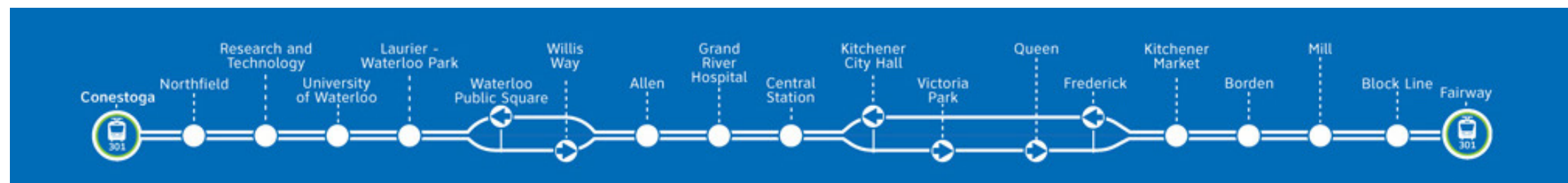
Conestoga

The LRT starts beside the parking lot of Conestoga Mall, looking onto a paved expanse before the renovated entrances of the mall on one side and King Street at its widest, with five lanes of traffic, on the other side. Previously only connected to highways and arterial roads, the interior shopping mall is a relic of suburban expansion at the edge of town. The terminal station is an uncanny injection of urbanity and connectivity in a landscape of big box stores and thoroughfare vehicular traffic.

As a mechanism for municipal development, the LRT appears to produce a form of urbanization that pushes the region beyond "suburbia". This push results in a process of gentrification that arises from a combination of upzoning for greater private investment and aesthetic reinventions and redevelopments of existing places. In its current state, the fabric of the neighbourhood adjacent to a car-oriented mall is antithetical to complete community development. Renewal and revitalization on land with a rent gap are adding density on the LRT side of the mall to orient living towards transit.

There is a sense of re- doing, re- creating, re-novating where the 're' perpetuates rather than invigorates the existing spatial and economic condition. In 2015, as construction for the Conestoga Mall LRT station began, renovations occurred within the mall. Although many of the updates were solely changes for the benefit of the mall: new foodcourt, contemporary store frontage, and new way-finding devices; the mall entered a public-private relationship that enacts a slow foreclosure at the new LRT station.
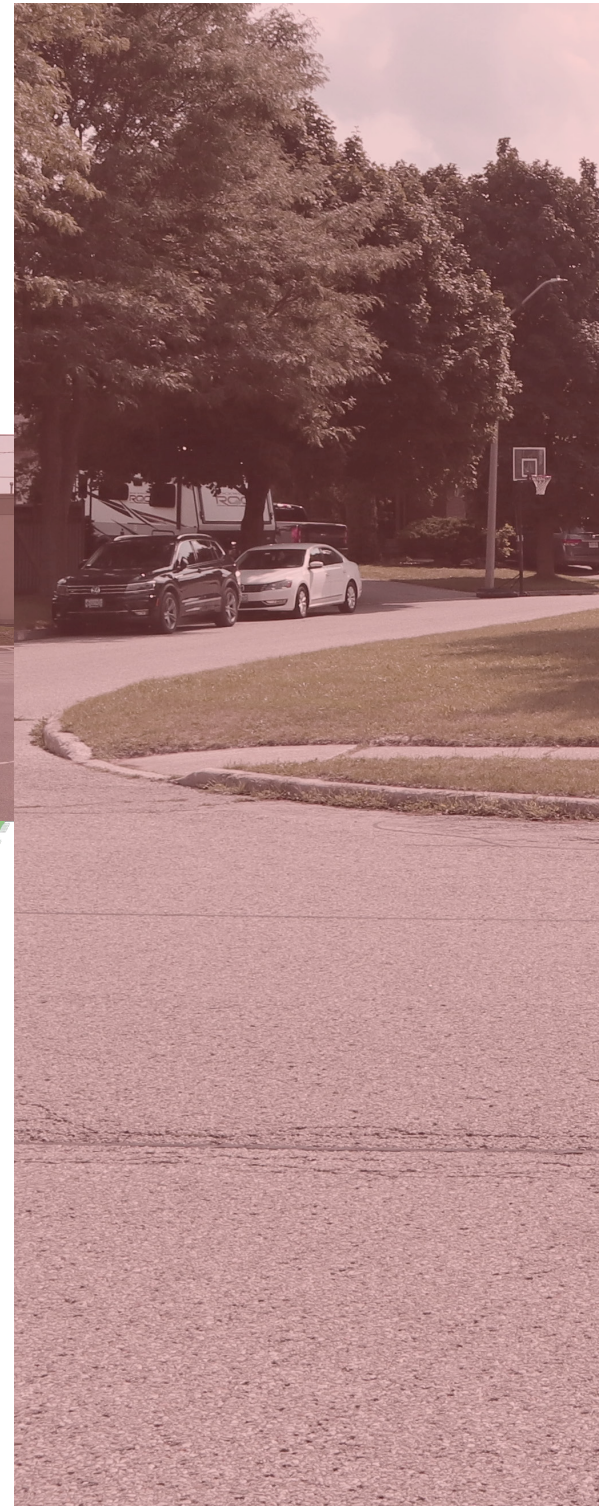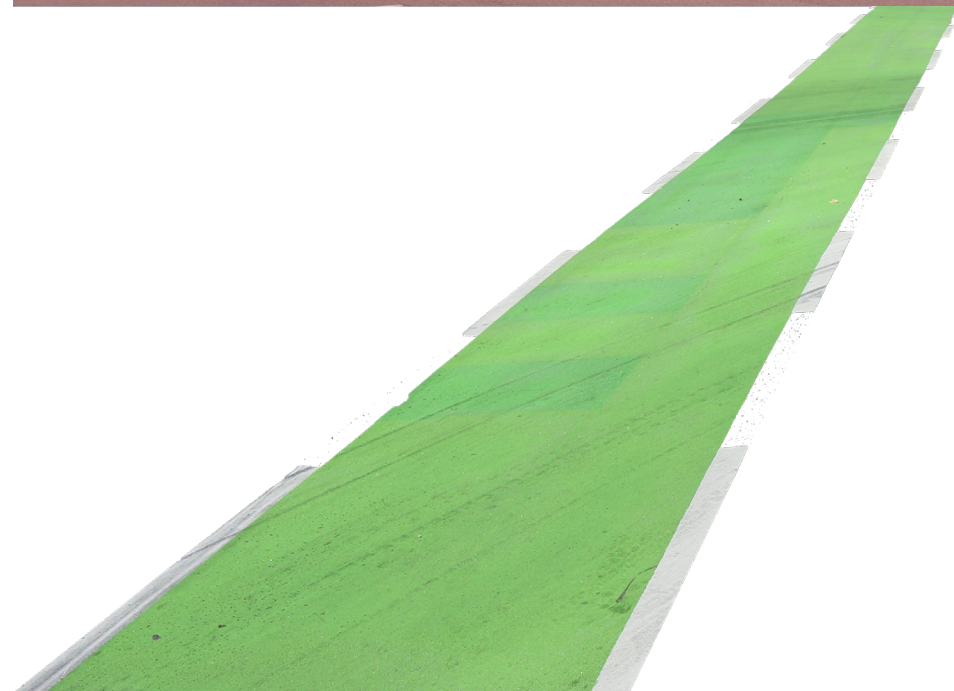
FIG. 5. 3. "Re" urbanization. Comparing a pre-LRT suburban fabric and the interventions of "urbanizing" introduced alongside the LRT: green painted bike paths on 4 lane roads and the terminal in the parking lot.

After the resale of museum space to Shopify near another LRT station, the City of Waterloo made a strategic move to relocate a portion of its collection to the mall. The new branch of the City of Waterloo Civic Museum extends the public space of the transit terminal, making it more accessible than other branches. Displaced and replaced by the forces it celebrates, the new branch is only a room in the renewed mall.

The curatorial strategy highlights the promise of an innovative city that was terra nullius till 1857:

Innovation and entrepreneurship is present in many of the stories of the city - from the establishment of Seagram's, to the founding of the Universities, the development of the BlackBerry, the work of the Perimeter Institute - all of these and many other stories of the city reflect the 'innovation' and 'entrepreneurship' theme. Closely related to this is the idea of collaboration, building on the Mennonite barn-building traditions of the area and many other collaborative ventures. The foundational idea of innovation and entrepreneurship, followed by collaboration, to create new institutions and industries, is "what Waterloo is" … the museum should look ahead to the future of the city as well as interpret its past. (City of Waterloo, Museum & Collections Strategy 2015)

FIG. 5. 4. In conversation. The museum makes history of the community that occasionally parks horse carriages in the garage at the other end of the mall. The anachronism of the slow foreclosure intentionally roots the Region in a curated version of history.

At the other side of the mall is a horse and buggy garage that services the population of practicing Old Order Mennonites in North Waterloo. The garage, while occasionally needed by Mennonite shoppers coming from a township north of the mall, imposes a reminder of historicized innovation, spilling onto a public park in the adjacent neighbourhood. The garage is an example of a belief held across the governing bodies of the Region.

Both academic studies and journalistic accounts suggest that the historical impact of German and Mennonite settlers has been a crucial influence in building an entrepreneurial, innovative, and cooperative culture in the region. (Spigel and Bathelt 2019, 268)

However, there is little evidence to support the belief that the Region's Germanic heritage fostered the conditions for technology start-ups to flourish or created the institutions that are tied to the local technology economy. A more diverse, although predominantly Anglo-Canadian, heritages of founders and entrepreneurs kick-started the Region's knowledge economy and the socio-economic structures that led to the growth in local ICT innovation since the 1990s (Spigel and Bathelt 2019, 273). Writing about the mythos of Mennonite and Germanic culture, Spigel and Bathelt state:

[The] real and imagined legacy of this population has been absorbed into Kitchener-Waterloo's culture and self-image and provides common reference points for joint social and economic initiatives in the region. (Spigel and Bathelt 2019, 268)

Northfield

Running over the Conestoga Parkway on Northfield Drive, the LRT turns off the road to stop in front of MNP LLP, one of the largest full-service chartered professional accountancy and business advisory firms in Canada. The spruced-up mid-rise office block with a feature staircase feels appropriate for the future plans of the CTC surrounding Northfield Station. On transit maps of the LRT a dot marks a 40-acre master-planned tech-centred business campus built in tandem with the construction of the Northfield Station, the Waterloo Corporate Campus. In the image of the innovation city, the space of labour is methodologically enmeshed with public space by state innovation.

A typological replica of the horse and buggy garage in the parking lot of Conestoga Mall, made of contemporary versions of barn board, sits in the centre of the plaza reaffirming and celebrating the collaborative identity of local Mennonites in a space built for entrepreneurship. The program of the corporate campus provides an incongruous white industrial backdrop to the barn.

New development promises to bring sizable ridership to the LRT on otherwise sprawling industrial streets. "15 buildings, including a 35-storey tower beside the Conestoga Parkway at Northfield Drive that would be the tallest in the city" awaits council approval (B. Jackson 2021). The requisite "official plan and zoning amendments to convert the employment and industrial designations" (ibid) would prime the land for new-build gentrification in the absence of existing residents.

Although the proposal will add 3000 new trips to the LRT, it makes no mention of the diversity of unit types or models for affordable housing. Without consideration for who will be able to live in the new complex of towers, the project is likely to increase access to the LRT for more affluent users only. In line with the Places to Grow growth plan:
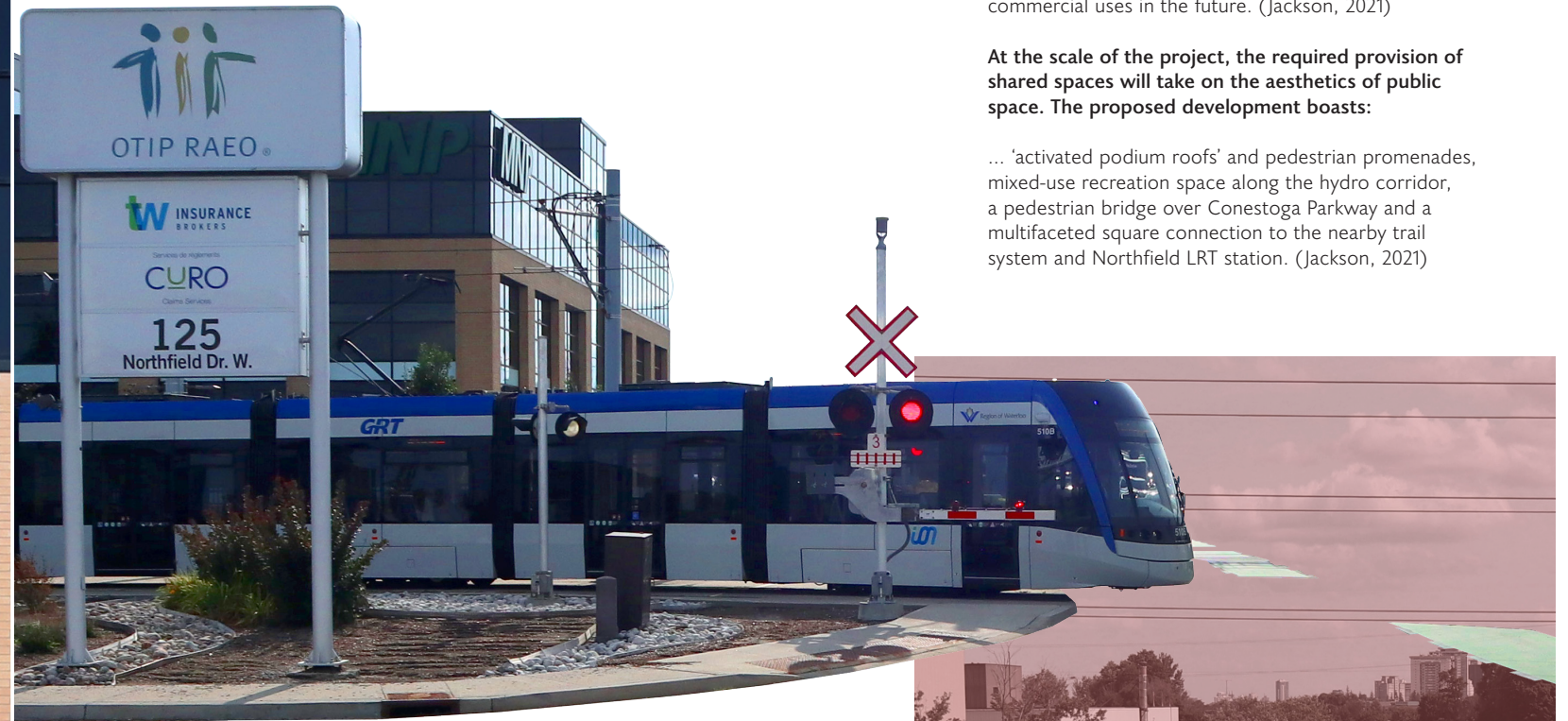
The region has identified this area of Northfield Drive as an intensification corridor for residential and commercial uses in the future. (Jackson, 2021)

At the scale of the project, the required provision of shared spaces will take on the aesthetics of public space. The proposed development boasts:

… 'activated podium roofs' and pedestrian promenades, mixed-use recreation space along the hydro corridor, a pedestrian bridge over Conestoga Parkway and a multifaceted square connection to the nearby trail system and Northfield LRT station. (Jackson, 2021)

FIG. 5. 5. A site for future foreclosure. The area around Northfield Station is in the early stages of transformation. The proposed development will produce an entirely new neighbourhood on now sparsely occupied land.

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Before taking the trip to Research and Technology Station, I'd like to take a moment to discuss a poster that is featured at the stations from Northfield to Central Station. On my first photographing visit to the station, the bright red poster in the in-built advertising space on the surface of the LRT shelter was unremarkable in how it stood out; advertising red and bold block lettering. Having used the LRT for transit purposes frequently in the weeks leading up to the photographic visits, I was familiar with the typography and colour scheme of the new University of Waterloo Innovation Arena promised for 2023. What is striking is the ambiguity of the space that is promised. It retains ambiguity in its location, scale, purpose, and its openness to the public. Planned for the Kitchener's Innovation District, the Innovation Arena is:

For
Lease

Chris Kotseff*   Keith Schappert*
Mitchell Blaine*   Luke Slabczynski*

279 1183   JLL

More than a space. Imagine an epicentre for new and growing companies. A catalyst for breakthroughs in health tech and innovation. And a community for emerging talent, researchers and health experts. ("Home" n.d.)

A fast foreclosure for the innovation city.

564 WEBER NORTH
MARSLAND TECH

FIG. 5. 6. Signaling the innovation city. In what feels like emptied out industrial lands, innovation makes itself present. Not too far from esteemed technology parks, the still growing area around Northfield Station is an extension of the innovation network.

Research & Technology Park

The LRT runs off-road through the wooded area behind Albert McCormick Community Centre. Past a neighbourhood with the greatest density of Regional community housing within the City of Waterloo to an entrance of David Johnston Research and Technology Park (R+T Park). Centred around a verdant field, the park is intended to be a privatizing outpost for innovation and innovators coming out of UW. The path from the station platform to the curved road out of the R+T park is ambiguous in its public nature with all the open space of a standard public park. The only indication of the park's purpose is a scattering of blockish office buildings branded for tech.

The R+T Park predates the construction of the LRT, setting up the tone of public-private relationships for innovation with some of the first rhetoric for clustering in the Region ("Our History - David Johnston Research + Technology Park" 2020), echoing stimulus strategies originating in California (Luger 1991). It is the concrete product of an institutional reorientation towards the knowledge economy, beyond the mythical heritage of collaboration and industriousness. Since 2004, Sybase (SAP), followed by other globally recognized spin-offs from UW - OpenText, BlackBerry (now RIM), NAVBLUE, and AGFA - became tenants of the former farmland across from the university. In 2006 the Accelerator Centre opened, incubating a series of notable ICT start-ups and providing a template for producing entrepreneurship.

The creation of research parks reflects a global reorientation of university teaching towards closer contact with the economic agenda of the state and consumer interests (Jessop 2017, 855). The University of Waterloo is an early adopter of the expectation that knowledge be useful - that the university engages in technology transfer, enable spin-offs, provide consultancy services, and host incubators and technology parks (Ibid.). As I argued in Chapter 4, from founding to organizational structure, UW is fundamentally a place for the institutionalization of public-private knowledge transfer. As historian Ken McLaughlin titled his book: "innovation and entrepreneurship are in the Waterloo Genome" (2015).

Interestingly, the number of spin-offs from the local universities and the networked access to faculty for consultancy and inter-firm relationships facilitated by research parks and centres in the Region have remained stable if not declined since the ICT boom (OECD 2009, 199). Still, the R+T Park has continued producing the spatial and cultural conditions idealized for the innovation city in step with the construction of the LRT.

Reflecting the blurred boundary between labour and life, the Association of University Research Parks (AURP) aligns itself with the lifestyle-oriented development recommendations for innovation districts.

Innovation Districts constitute the ultimate mash-up of entrepreneurs and educational institutions, start-ups and schools, mixed-use development and medical innovations, bike-sharing and bankable investments—all connected by transit, powered by clean energy, wired for digital technology, and fueled by caffeine. [They] are geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators… Innovation districts are the manifestation of mega-trends altering the location preferences of people and firms and, in the process, re-conceiving the very link between economy shaping, place making and social networking…. (Katz & Wagner 2014)

AURP quotes this description from the Brooking's Institute in a proposal for a $459 million pan-Canadian strategy to improve the "innovation ecosystem" with more infrastructure and research facilities in the 2017 budget report (Shaw 2017)).

One of the most recent additions to the R+T Park, evolv1 reflects the space of innovation called for by the Brookings Institute. The building is the first zero-carbon office building in Canada, with an array of visible solar panels and prominent bike storage (Pereira 2020). It seeks to create the fast foreclosures of private space mimicking public space in its interior programs and exterior furnishing. As described by the developer:

The new evolvGREEN innovation space within that building will house a community of local startups, government officials, academic institutions, and industry partners that are committed to supporting a sustainable economy and workplace wellness, as well as accelerate the growth of entrepreneurs looking to make waves in the clean-tech space. ("Evolv1, Canada's First Zero-Carbon Building, Officially Opens Its Doors" 2018)

The field at the entrance of the LRT station is undergoing renovation by the Cora Group to support "an ever-expanding community that connects research professionals, universities, Waterloo's new technology businesses, global companies and sustainable initiatives making it a jewel of Waterloo" (Ibid.).

FIG. 5. 7. Research in the park. A scattering of public transit stops and warning signs line the road that winds through the R+T park to the parking lots behind office buildings. Where one is trespassing is made unclear by the expanse of greenery that has both public facilities and privatizing signage.

The site of the R+T Park, while enacting contemporary fast foreclosures, also hosts a slow foreclosure. The history of the farmland purchase celebrates an exchange between the Brubacher family and the University of Waterloo in 1965 while ignoring the very present history of less equitable exchanges between the Six Nations and settlers. The website boasts a now-familiar cultural indicator of innovation:

Today it is home to the world's leading innovators, all of whom bring the collaborative, barn-raising spirit of those who came before.

The Brubacher Farm House is preserved off of the ambiguously public recreational greens at R+T Park. Although less visible than the museum, or horse and buggy garages, it is present in the institutional space of innovation and in the language of the R+T Park.

Another, more public life occurs outside of view from the station but within the CTC. A fifteen-minute walk from the station, past a neighbourhood garden and a church parking lot, Albert McCormick Community Centre hosts a library, an arena, and a mix of indoor and outdoor community programs. This space is undergoing an exterior renovation that I cannot help but be excited by. Unlike many of the public spaces I visited in my tour of the CTC, the renovation outside Albert McCormick seemed to offer the infrastructure for a flexible and active public space with no signs of the slow or fast foreclosures so prominent elsewhere. For a moment, this location allows me to wonder if I am reading innovation wrong; what if the renovations that I interpret as slow and fast foreclosures are improvements to the Region that will only become clear in the future?

In this moment of worry, I'm reminded of Elizabeth Blackmar's writing on the appropriation of "the English commons" in the naming of suburban North America.

Locally, public spaces continue to offer arenas of assembly and can even prompt meaningful political fights on behalf of access, fairness, accountability, or redistribution. Beyond local settings, however, public space as public property has become as vulnerable as common property was in early modern England. And within a capitalist logic, if it cannot grow, it will die. (2006, 75)

Blackmar suggests that, in redefining "the commons" to describe everything but the shared land for grazing cattle the developer or the planner weakens if not erases the sanctity of the commons just as a fast foreclosure limits what can happen in public by mimicking public space (Blackmar 2006, 64-66). I think the small improvements obscure a larger degradation of public space. As more space is consumed and created for one kind of socialization, other spaces are left to receive ingrained practices.

Albert McCormick Community Centre is a public space that has become vulnerable as one of the few spaces that remains a balance between production and construction in an increasingly alienating spread of innovation-oriented developments.

FIG. 5. 8. A site to for the public. Across the R+T Park from Brubacher House, the construction poster at Albert McCormick was the first and only spot where the state-work was not sanitized. Of course there was the occasional politicized sticker on LRT stations, but nothing so permanent like a paint marker.

University of Waterloo

Amongst several colleges and universities in the Region, the University of Waterloo has "exerted a singular impact on the regional economy" (OECD 2009, 194). The LRT is the concrete space of a tight relationship between public post-secondary institution and public office at this station.

A new bus-only roadway and bus stops is under construction between Phillip Street and Ring Road, opposite the Davis Centre. This will increase bus access to the interior of campus, allow GRT routes to connect directly to the new ION light rail station, and provide access to new developments on Phillip Street. [...] The transit station will include bays for GRT, GO Transit and inter-city buses, large shelters and real-time GRT departure information. It will also connect to the Laurel Trail, and provide a pedestrian/cycling link between Ring Road and Phillip Street. ("University of Waterloo Station" 2021)

The LRT station is sandwiched between the glass facades of the engineering faculty, the new transit terminal, and connections to public spaces off-campus. In view, the long blue-green glass facade of the engineering library, the Davis Centre, is designed to look like a circuit from above. A recently completed expansion to the engineering faculty on the other side of the tracks connects to the campus via an enclosed and elevated walkway. The faculty of engineering is the largest faculty and has higher tuitions and barriers to entry than other faculties in the university ("First-Year Tuition and Fees" 2013; Maclean's 2018). The faculty's influence, as a driver of innovation, is palpable in its connectivity to the Region and the Toronto-Waterloo Innovation Corridor.

In a turn towards the knowledge economy, the agenda of higher education is increasingly set by managers of private enterprise in order to foster a connection between the academic and non-academic world (Jessop 2017, 856)."The Waterloo Plan" that founded the university was drawn up by local Anglo-Canadian industrialists for this purpose - to respond to a demand for new kinds of labour in Canada. This well-connected gentry saw a need for technically trained engineers and technological advancements in the post-industrial Region (McLaughlin 2015; Spigel and Bathelt 2019).
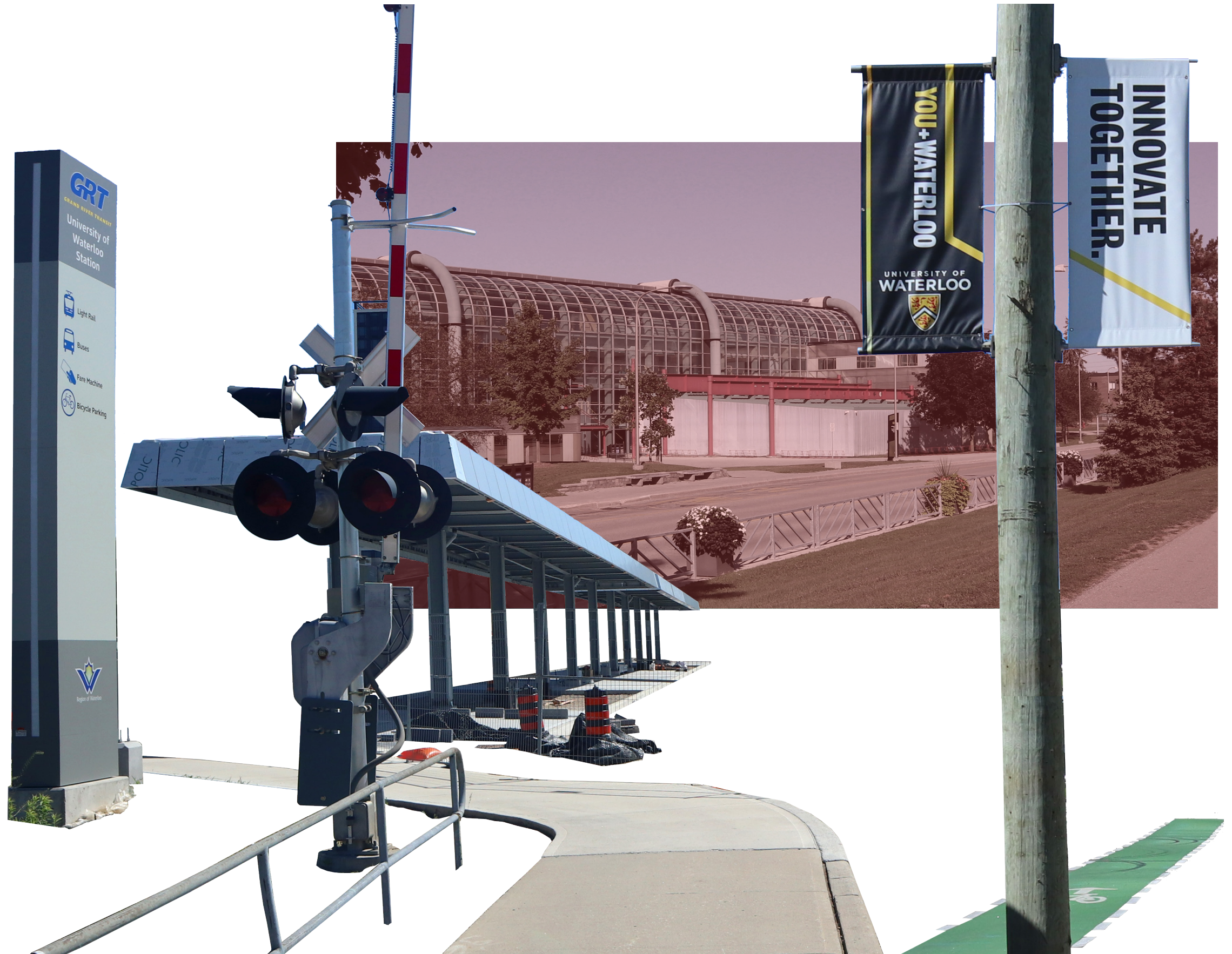
FIG. 5. 9. "Innovation starts here". Phase 1 of the LRT may start at Conestoga Mall (or Fairview Mall if you've spent a lifetime in Kitchener) but this is where the LRT's relationship to innovation is the most clear. A new transit station connected to the LRT will facilitate even more connectivity between the Region and the innovation corridor.
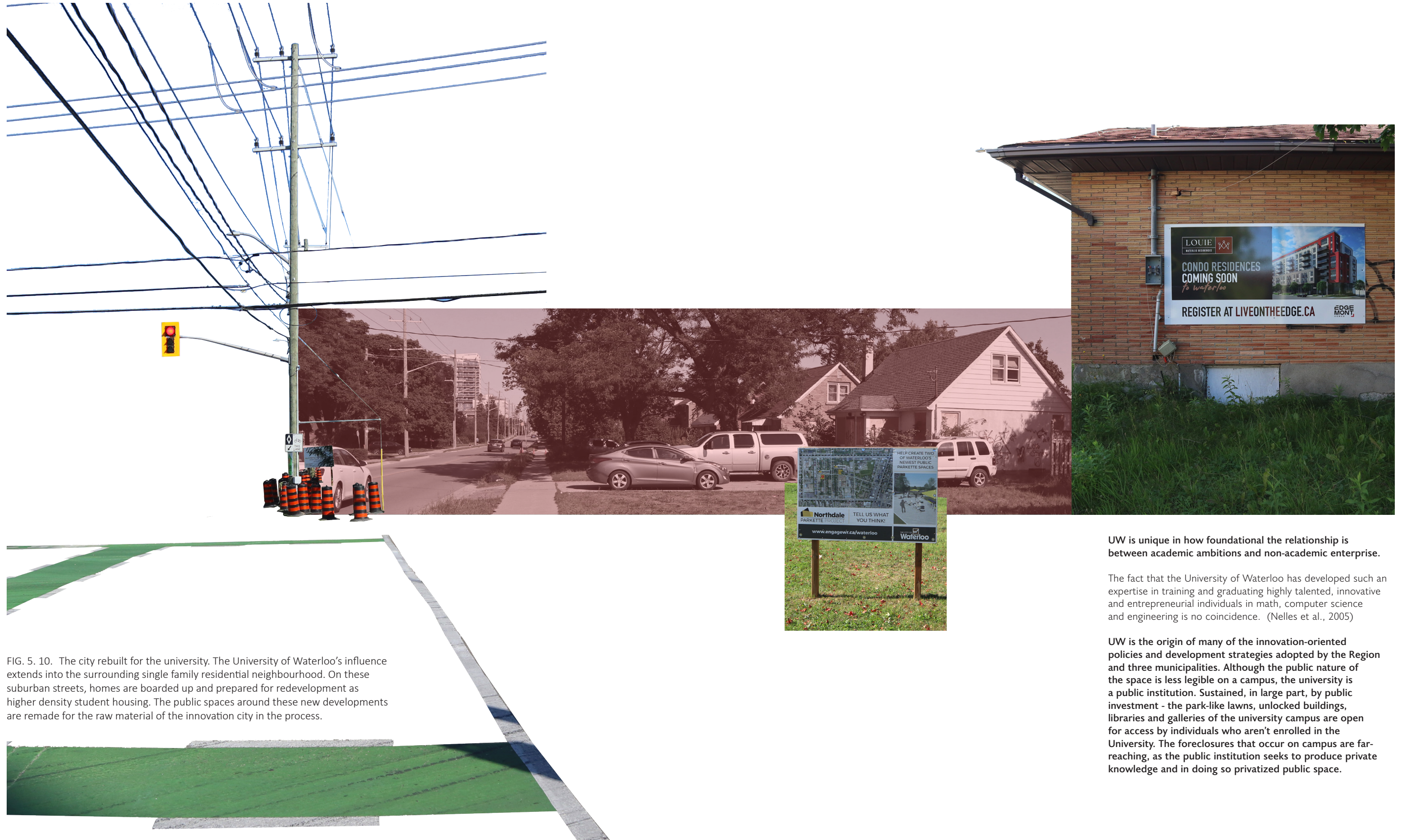
FIG. 5. 10. The city rebuilt for the university. The University of Waterloo's influence extends into the surrounding single family residential neighbourhood. On these suburban streets, homes are boarded up and prepared for redevelopment as higher density student housing. The public spaces around these new developments are remade for the raw material of the innovation city in the process.

UW is unique in how foundational the relationship is between academic ambitions and non-academic enterprise.

The fact that the University of Waterloo has developed such an expertise in training and graduating highly talented, innovative and entrepreneurial individuals in math, computer science and engineering is no coincidence. (Nelles et al., 2005)

UW is the origin of many of the innovation-oriented policies and development strategies adopted by the Region and three municipalities. Although the public nature of the space is less legible on a campus, the university is a public institution. Sustained, in large part, by public investment - the park-like lawns, unlocked buildings, libraries and galleries of the university campus are open for access by individuals who aren't enrolled in the University. The foreclosures that occur on campus are far-reaching, as the public institution seeks to produce private knowledge and in doing so privatized public space.

Laurier - Waterloo Park

Wilfrid Laurier University (Laurier) has not had the fortune of a station in the heart of its campus. Laurier has taken up the banner of innovation as a leader in entrepreneurship and international business education. However, with a limited visibility from the LRT, its influence and geography is not as dominating. At this station, the influence of wealth, more than innovation, structures inequity.

The LRT stops at the mouth of the City of Waterloo's central park, a short walk from the Laurier campus, before cutting through towards Uptown Waterloo and Downtown Kitchener. The station plugs into a network of bike paths that have expanded with the construction of the LRT extending into the intensification corridors and towards TransCanada trails. The distribution of bike paths, like the LRT, becomes an urban amenity most accessible to those who can afford to live on the bike network (McDougall and Doucet 2022, 189).

Shadowed by the most exclusive residential developments in the City of Waterloo (Doucet 2021, 44), the park and adjacent public recreational complex are under renovation. In 2018 an Environmental Assessment was conducted to determine the best course of rehabilitating the water bodies in the park. The renovation will "include new walkways, lighting, amenities, features of interest and improved pedestrian circulation" in addition to "channel improvements along Laurel Creek from the LRT tracks to University Avenue will be done to improve fish habitat, terrestrial ecology, the vegetative community and to reduce erosion" (EngageWR 2019). Signalized crossings connect the split sides of the park, enhancing access to the Laurel Trail bike path for the affluent neighbourhood (Doucet 2021, 41).
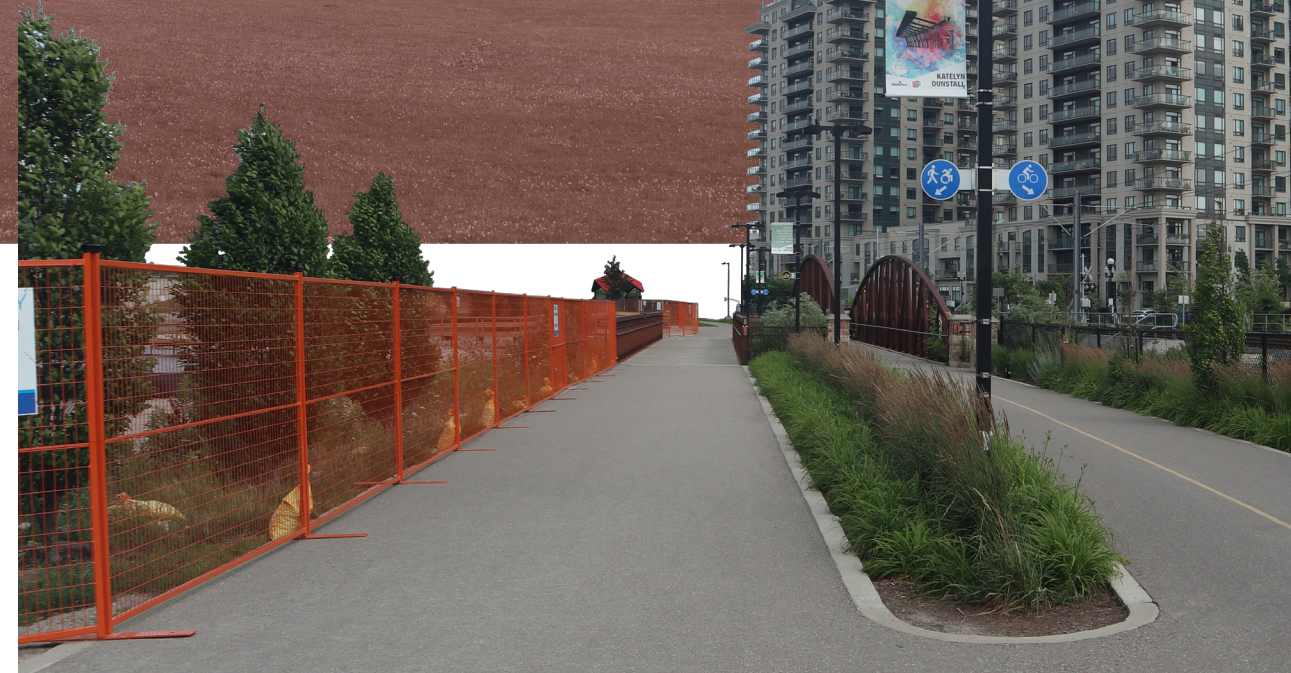
These investments in connectivity for affluent users are less available to lower-income residents near other parts of the transit line. Doucet makes a comparison between care for affluent pedestrians near the park and the choice to favour higher transit speeds over the mobility of less affluent residents in a low-income neighbourhood in the south of Kitchener (Ibid.). While the interests and needs of affluent users were part of the planning process the informal pathways made by lower-income and racialized residents are ignored.

FIG. 5. 11. The ideal subject gets all the nice things. In Waterloo Park, investment in public space began along side the completion of a luxury tower complex.

The park itself participates in the slow foreclosures witnessed thus far. An agrarian history is intertwined with the LRT as it runs through the park parallel to the farm animals at Eby Farmstead. Like Brubacher House and horse and buggy garages, artifacts of history are preserved and contextualized for innovation. In the park, this ideological project is extended to all ages. The artifacts of settlement: barn, grist mill, and schoolhouse - are memorialized as the public history of the city and made recreationally friendly in park space. This isn't to say that there wasn't an agrarian past to the Region or a contemporary presence of old and new order Mennonites. The preservation replaces a history of settler colonialism with a narrative about the origins of innovation in the Region.

In the park, investment preserves and enhances the innovation narrative while investments elsewhere to improve mobility for lower-income populations are deemed not useful. By extension, the innovative capacity of less affluent people is evaluated as less important.

Bookended by institutions of innovation, wrought with the material mark of the entrepreneurial state and the fast and slow foreclosures, the park is a site of struggle for individuals who do not belong to retain autonomy. Three Governor General Award-winning buildings sit at the other end of the park within the boundary of the CTC; two of which are the philanthropic projects to produce knowledge in international governance and theoretical physics of the former twin CEOs of Research in Motion, Jim Balsillie and Mike Lazaridis respectively. Opening in 2011, both the Centre for International Governance Innovation (CIGI) and Perimeter Institute received public funding and public land on the planned route of the LRT, becoming fast foreclosing in their own right (Bunting 2006; "CIGI History" 2022). Public by definition, the park is a site of possible contestation, but is increasingly encroached upon by its surrounding and interior presentations of ideology.

FIG. 5. 12. Preserving the collaboration myth. The buildings preserved in Waterloo Park are some of the "oldest" in the city. An older history is hard to find when the oldest population was wiped out.

Willis Way (S) / Waterloo Square (N)

Moving south, the LRT passes through the intersection with three Governor General Award winning buildings - two of which are public-private partnerships for research and innovation. The north- and south-bound tracks split, presumably, to not crowd out other kinds of traffic on King Street in the downtown core of Waterloo, colloquially called Uptown. At the intersection where the route split, framing the streetscape between the cables and tracks of the LRT, the image of the innovation city is clear. En route to Willis Way Station, the City of Waterloo presents its institutional vigour of public-private relationships in a combination of historic-futuristic architectural interventions.

A slow foreclosure occurs in the preservation of historic industrial architecture. The racialized violence doesn't occur in the adaptive re-use of existing buildings but in the promise that this history of settlement and development begets an industriously innovative future. The LRT stops in front of a parking lot for Seagram Lofts. The luxury lofts inhabit a site of early industry and international trade. A distillery was established in 1857 ("Company History" 2015).

In 1883 Seagram [...] became the sole proprietor, using the names "Joseph Seagram Flour Mill and Distillery Company" and "Joseph E. Seagram, Miller, Distiller". Seagram incorporated the company in 1911, changing the name to "Joseph E. Seagram and Sons, Limited." By 1919 when Seagram died, he had built his Waterloo distillery into a major exporting company and his brand names were widely known. In 1928 the Bronfman family acquired the distillery and amalgamated it with their company, Distillers Corporation Limited. (Ibid.)
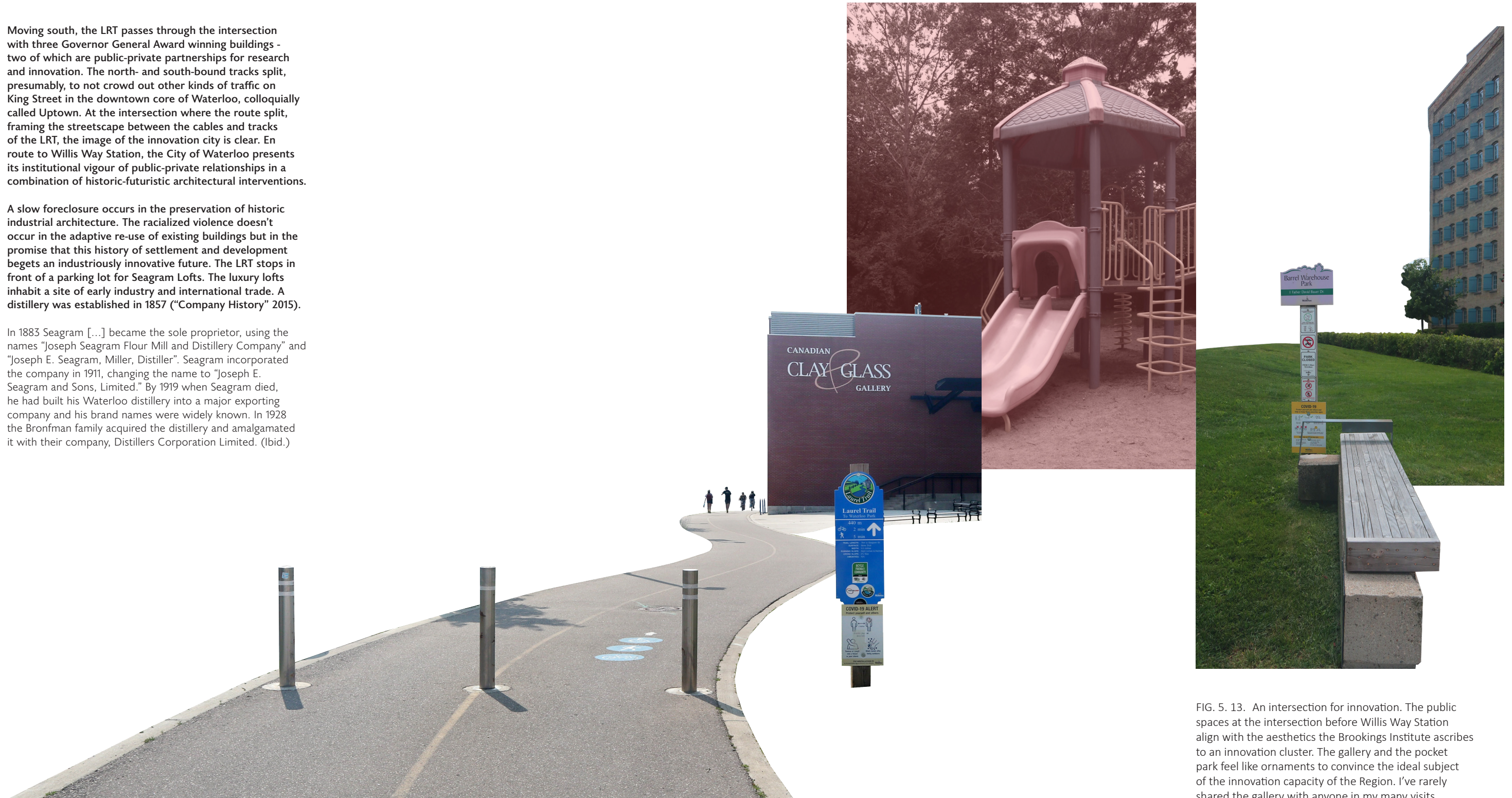
FIG. 5. 13. An intersection for innovation. The public spaces at the intersection before Willis Way Station align with the aesthetics the Brookings Institute ascribes to an innovation cluster. The gallery and the pocket park feel like ornaments to convince the ideal subject of the innovation capacity of the Region. I've rarely shared the gallery with anyone in my many visits.
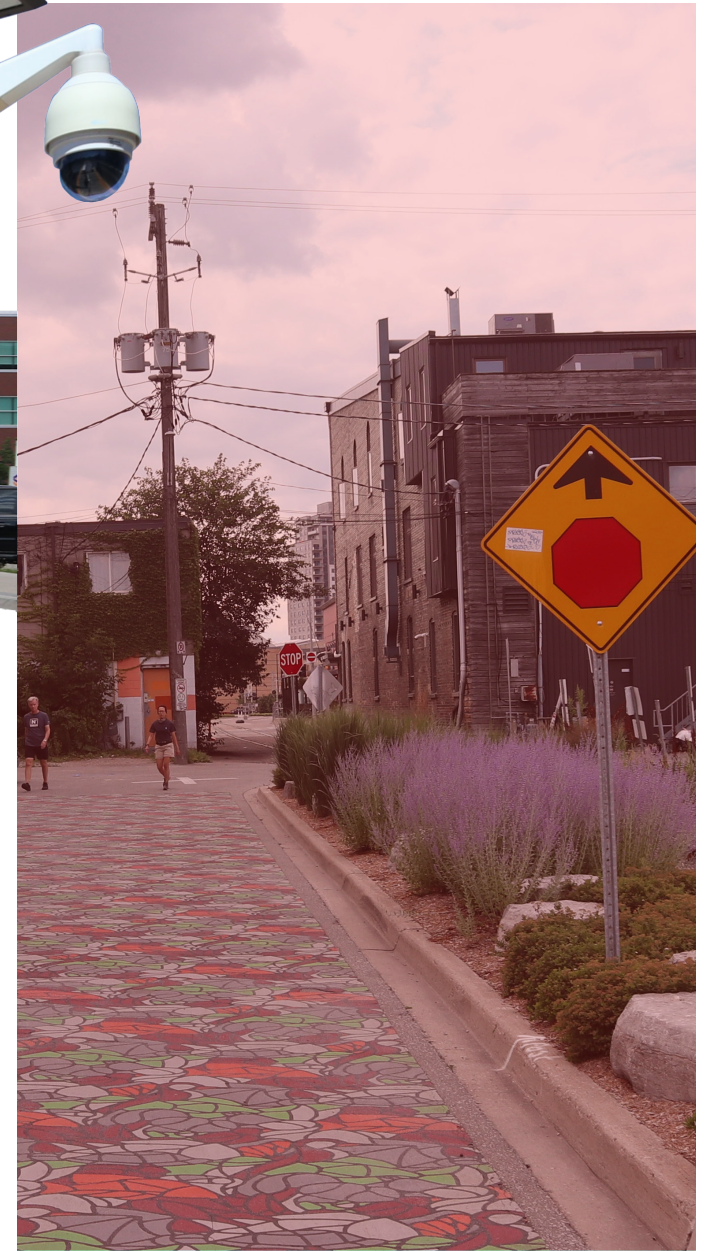
The complex of distillery buildings now hosts a combination of luxury condos, Shopify offices, and the CIGI campus. All three programs interact with and leverage the historic identity of their former industrial site for various kinds of influence. The condo board was particularly active in designating its portion of the properties as a heritage site under the Ontario Heritage Act; the act enabled the board to gain greater control over the nature of development surrounding the property as preservation dictates some urban design guidelines (Desmond 2016).

Contemporary research facilities in the landscape include the Perimeter Institute for Theoretical Physics (PI) and the Centre for International Governance Innovation (CIGI), both of which were designed to support leading edge theoretical physics and global governance research. (City of Waterloo 2019a, 99)

FIG. 5. 14. Progressive Surveillance. Aesthetic and functional improvements to public space and bike infrastructure are tied to public-private investments in institutionalized innovation; however, progressive look is accompanied by a greater presence of surveillance cameras.

The public square where the LRT stops on its northbound route, aptly named Waterloo Public Square, has gone through versions of placemaking well before construction for the LRT began. Beginning as a shadeless concrete flat with anti-skateboard furnishings it has become somewhat activated with the addition of pedestrian traffic and outdoor seating untethered to the surrounding eaters. Crowds gather on auditorium-like concrete seating steps to watch the square on warm evenings. Often, on populous days, performers and preachers take up a corner of the space.

While properly public in the sense that many local protests take up the square, it has been hostile to certain users and remains interconnected in a network of slow foreclosure through the Uptown LOOP. The LOOP ossifies the city's 'innovation throughout history' narrative as it centres around the remaining artifacts of the first settler families of the city (City of Waterloo 2009).

In an inventory of historically significant elements of the city, the City of Waterloo focuses on overlapping historic and contemporary ties to innovation as a reason to attribute significance to certain sites.

The landscape's historical value is exemplified through its collection of educational, research and innovation facilities spanning from 1905 to present day. The Carnegie Library (1905) was the City's first purpose-built library and provided the general public with access to information for the purpose of "self-improvement," learning and research. A new, larger public library was built on Albert Street in 1966 when it outgrew the Carnegie building. […] The historic Mutual Life Assurance Company building has been repurposed to house Communitech, an incubator for businesses, government agencies and academic institutions seeking to use data to develop innovative solutions to contemporary problems. (City of Waterloo 2019a, 99)

As I read and see these efforts of preservation I wonder about the choice not to preserve or mark the site of another mark of Mennonite settlement beneath the northbound tracks of the LRT. During the construction near Waterloo Square Station, a corduroy road likely laid by Mennonite settlers in the early 1800s was unearthed. I postulate that there is no official commemoration of this piece of settler history that is as commonplace as barns and farmhouses because it does not fit the "barn-raising collaborative spirit" narrative the Region seeks to cultivate.

Once it was removed, 100 pieces were offered up to the local community at a morning giveaway at the local dump. (Csanady 2016)

The road, like many more across North America, was built in the process of settlement to make a navigable pathway through swampy terrain (J. Jackson 2018a). It marks the all too familiar theft of land by collective entities. Unlike the barn which can be seen as an individual's, the road is emblematic of the dominance of one group over another.

FIG. 5. 15. The LOOP. The walking tour of the city's history introduces participants to a colonial history renamed innovation.

Allen

Moving south the separated tracks rejoin at Allen Station. The train stops in the midst of the most mature intensification in the City of Waterloo. The street opens into a square lined with boutique shops and a showroom for future condo developments in the Region.

The square, Allen Square, is one of a series of existing and proposed Privately Owned Publics Spaces (POPS) in the CTC. Mediated by commerce, one only finds themselves welcome in Allen Square in relation to the shops. Seating that isn't associated with a commercial enterprise is limited - one bench in the wind tunnel between buildings - and yet, the station feeds into this space offering connectivity to an affluent community.

POPS arise in the mediation between public and private interests for development and intensification. Mimicking the materiality of public space, the City of Waterloo sees POPS as an opportunity to improve public to private flows of people (Stantec-Urban Places Group 2018, 75). In the design guidelines, the city writes that:

Every great city has great public spaces and those places create value. In addition to driving economic development, high-quality public spaces improve social well-being. POPS provide a critical public realm bridge between publicly-owned spaces and privately-owned buildings and spaces. (City of Waterloo 2019b, 1)

POPS are a bargaining tool to negotiate for more density or a workaround for other public services the developer is meant to contribute to; they are a means for the municipality and the developer to avoid more onerous amendment processes. As the state seeks to intensify, the POPS offers an opportunity to offload responsibilities for the social infrastructure of public space while gaining a greater density of subjects.

Under section 37(1) of the Planning Act, a municipality may pass a by-law (pursuant to s. 34 of the Act) that will increase the height and density of a development that is otherwise in excess of existing zoning by-laws and the Official Plan in return for the developer providing certain "facilities, services or matters". (SmithValeriote Law Firm LLP 2015)

Neighbouring Allen Square, a proposed POPS in exchange for density illuminates the fast foreclosure of this method of creating "public" space. In the POPS, Crime Prevention Through Environmental Design produces a space to "direct the flow of people to and through the site" rather than a public space to interact (MHBC Planning Urban Design & Landscape Architecture 2017, 23). Staying is unwelcome; staying introduces the risk of incoherence that the innovation city is so desperate to avoid.

If POPS become the dominant method of producing additional public space in the CTC, a reasonable possibility as it is the more profitable option to regain the cost of a debt-financed infrastructure project, the public plane becomes a place of flows and networks that cannot support the political purpose of public space.

FIG. 5. 16. POPS. Two spaces between buildings are open to the public. The space on the left is a POPS governed by commercial interaction. The space on the right is part of the bike path network in the Region.

On a bike route at the edge of the CTC, a stamping machine from Clemmer Technologies marks the gentrification of historic industrial space. Clemmer Technologies is a more recent participant in the industrial past of the Region's innovation economy, beginning as a mechanic's shop in the 1920s. As the patchwork 108,000 square foot steel rolling plant became more inefficient to run than the sale value of the Uptown property, Clemmer left Waterloo (Davis 2019). The factory is to be replaced by another highrise development - taking up space with crime preventative ground planes.

FIG. 5. 17. Selective preservation. The spaces that are preserved fit with the innovation narrative. In the City of Waterloo, the insurance building is part of the economically distinct history of the city that is valuable to the innovation narrative today.

Grand River Hospital

Between Allen Station and Grand River Hospital Station, the LRT crosses the snaking border between twin cities. The boundary isn't notable, or even discernable for most residents of the Region. However, there are a few differences between the cities. The hospital is in the City of Kitchener, the main campuses of the universities are in the City of Waterloo.

Kitchener is the largest of the Region's cities in population, and the seat of Regional government. Many of the Region's supportive services avoided by the City of Waterloo are offered in the City of Kitchener. An array of organizations working within or outside of the Region's supportive service network create a different condition down the route of the LRT.

The LRT stops at the top of a hill from which the hospital appears to take up a valley. The urbanity that the LRT impresses upon the CTC is missing from the swath of institutionally scaled buildings and medically affiliated storefronts. More recent efforts are bringing innovation and density to the area.

After years of post-industrial decline - of being perceived as behind its twin city (Waterloo), Kitchener is building a booming knowledge economy. Strategically, the city is not replicating the ICT cluster in Waterloo, but focusing on biotechnology. Nevertheless, collaboration across cities are supported in this differentiation. The Grand River Hospital is entering into a collaboration with the Accelerator Centre from R+T Park. In a press release by the hospital they describe the program:

The new initiative, called the Synapse Program, will support companies who are ready to scale, meaning those who have solutions that have been successfully adopted in a medical environment, as well as those who are near-scale and require additional support of the innovation community in their final push to get their solutions into the Canadian market. (Grand River Hospital 2021)

FIG. 5. 18. The start of a biotech cluster. The cluster appears to consistently be accompanied by residential development and transformations to public space.

New high-rise residential developments are underway in every direction from the hospital. However, a proposed zoning amendment to introduce an 'anchor' tower to a village-like streetscape behind the hospital is meeting some resistance. As I considered the proposal for 132 new units, of which only 20 would have two bedrooms, I am conflicted about the resistance towards the development. The preservationist reaction to tug at the heartstrings of the entire region, as one resident said at a public consultation, ignores an opportunity to provide housing near transit (Ma 2022). The argument is as exclusionary as the planned development is likely to be. Like many others in the CTC, this development will offer very few options for families or other shared living situations.

Not surprisingly, city officials frame the new development as an opportunity for more inclusivity without demonstrating how this project will address a growing demand for affordability.

"When you talk about inclusivity, this (development) will allow upwards of 200 additional families into this neighbourhood, where if this were not to be developed, if it were to remain a low-rise or what it is right now, they would never have the opportunity to buy into this neighbourhood," said Counc. Paul Singh. (Turcotte 2022)

The proposed development would be in view of an innovation space called Catalyst 137. The operation is a programmatic retrofit of the factory typology where start-ups can push hardware into production with access to venture capital ("Home" 2019). The new facility shadows the Iron Horse bike trail with added surveillance but is otherwise not present in its surrounding public space. However, members of Catalyst137 are vocally in favour of increased density near Belmont Village.

Kurtis McBride, co-founder and CEO of Miovision Technologies in the Catalyst137 building nearby said attracting long-lasting tech talent means having places to live, shop, and dine, and he called it a modern revitalization project. (Ma 2022)

As development picks up in the dip between cities, the nature of the CTC surrounding the hospital is likely to shift. As more innovation-related organizations assert a presence in the area with tech entrepreneurs living across the street from offices, divisions between labour and life may become less clear.

The Hospital is privileged to be a key partner in health sciences learning and has a rapidly growing role in teaching, innovation and research through the Office of Innovation & Research which has partnered with over 50 organizations on more than 150 innovation and research activities since 2011. (Grand River Hospital 2021)

FIG. 5. 19. Blurring the boundaries between living and working. The future development is unlikely to include viable family housing. The street is equally unlikely to remain unchanged as innovation creeps into the space around it.

Central Station

Running downhill, only minutes south of Grand River Hospital, the rider is suddenly faced with the skyline of a new Kitchener. Central station isn't at the centre of the City of Kitchener or the Region in a civic sense. After the daylight factories bordering the future site of Central Station closed in the 50s, the area was not very central to anything. The centre of regional transit was moved from the now vacant Charles Street terminal, which was closer to the middle of Downtown Kitchener, to the site of a future public space - the King-Victoria Transit Hub.

The transit hub will be a fundamentally important Canadian infrastructure asset, anchoring the west end of the Toronto-Waterloo Region Innovation Corridor and seamlessly connecting it to a new LRT system that offers last mile mobility within a globally renown tech ecosystem. It will more strongly position Waterloo Region as a magnet for future-proof talent, and it will improve social and economic life in our community. (EngageWR 2021)

A new geography of innovation dominates the division between core and periphery. From the platform, the University of Waterloo School of Pharmacy's floral printed tower signals the expansion of a biotechnology cluster of public institutions. Google brands the tank of a former rubber factory and hangs over the tracks of the LRT with a new glass-clad office expansion. The central entrance to the city, as it is poised to be, is a collection of the slow and fast foreclosures of the innovation city.

FIG. 5. 20. Recentering the Region. There is no clearer image of the LRT's ideological purpose than the station in the shadows of intercity transit and the everr-growing Google campus.

In 2010, Communitech moved into a portion of the Lang Tannery complex - introducing a new core to the network of innovation spaces - to the area that was planned to become Central Station. The location suits the industrious narrative celebrated in the spaces and materials preserved in the City of Kitchener. Communitech sites an outsider quality for the Region's success in innovation that resonates with Schumpeter's characterization of the entrepreneur, stating that:

Waterloo Region's founders had a strong tradition of coming together to get big jobs done quickly (and well.) As an inland settlement of mostly German speakers living outside the cultural mainstream, the community had to be self-reliant and innovative. (Communitech 2022a)

At the time of LRT construction in 2015, the unoccupied section of the Lang Tanning Company site was restored to "brick-and-beam office space" (Pender 2015). The post-industrial space would be leased to "a tenant with a global brand" with the support of Communitech's expansion across the site (Ibid.).

Fitting for Communitech, Rheinhold Lang advanced the industrialization of Kitchener's economy just as they support the expansion of a knowledge economy.

The Lang Tanning Company was founded in 1848 by Rheinhold Lang. It was Kitchener's first major industry, and operated for more than 100 years, closing in 1954. Lang was elected to city council and was instrumental in the creation of what was called "The Factory Policy," which provided tax breaks to new industrial enterprises. (Pender 2015)

The site of the new centre reimagines public life in service of tech by a careful combination of preservation and renovation of a former industrial fabric. Aligned with the provincial commuter railway the LRT stops in the middle of satellite campuses from the University of Waterloo and McMaster University (Hamilton Ont.), a growing Google campus, and the strong presence of associative governance from Communitech. Re-centering the Region on local and global networks of innovation.

FIG. 5. 21. Re-purposing the factory. The public private relationship at Central Station is particularly potent as spaces that were once dedicated work spaces facilitate an expansion of work to include things that were not traditionally part of work.

Victoria Park & Queen (South Bound)

The tracks split at Central Station, preserving car mobility along a narrowed, two-lane King Street. The southbound train turns around Charles Street, under the brick bridge of a windowless parking structure that spans two lots, to stop in front of the construction site of a new condo tower. A municipal strategy of placemaking decorates the area in versions of slow and fast foreclosures.

Construction for the southbound LRT disrupted small business activity in downtown Kitchener, ironically- destabilizing the entrepreneurship of local business owners. Rebranded as DTK, a familiar commercial area has been recalibrated for a future in innovation with the construction and operation of the LRT.

Cultural activity is entangled with entrepreneurship and innovation between Victoria Park and Queen Street Stations. At the station, along the extended entrance to Victoria Park, a new creative hub remakes and redistributes an existing community of diverse and creative individuals in a closer relationship to innovation:

44 Gaukel is a shared creative workplace located at the core of Downtown Kitchener. The City of Kitchener operates this creative community through a partnership with anchor tenants ArtsBuild Ontario, a provincial arts service organization dedicated to realizing long-term solutions for arts and creative spaces, and the Accelerator Centre, a technology incubator dedicated to building and scaling globally-competitive technology. ("About" 2017)

Surface works on the buildings between the two stations, at street intersections and the entrance to Victoria park celebrate multiculturalism and indigeneity as local efforts to create artistic venues for otherwise marginalized voices are priced out of Downtown Kitchener (Pender 2021). New residential development introduces increased surveillance and increases in the number of police calls for the removal of people who are incoherent with the idealization of diversity in innovative space (Region of Waterloo 2020b).

FIG. 5. 22. Creative destruction- community collaborations. Charles Street Terminal sits vacant behinds celebrations of diversity that fall short of improving the material conditions of a diversity of people.

Closer to Queen Street Station, a placemaking pilot continues the surface strategy at the doorstep of supportive and civic services (EngageWR 2017). Repainted and fairy-lit Goudies Lane celebrates a version of diversity and public participation that evacuates the space of possibility in a fast foreclosure (Burns and Berbary 2021). The now surveilled and sanitized lane was supposedly underutilized. In actuality, it was an active site of social exchange and informal activity for unsheltered people navigating dramatic changes in the Region (Ibid.).

The outward celebration of racial diversity and community reflects a difference in the nature of growth in Waterloo and Kitchener. Since settlement, Waterloo's economic differentiation has led to differences in the socio-economics of the twin cities (Leibovitz 2003). Socially driven enterprise was more relevant in Kitchener as industries evacuated the city (Working Centre n.d.). As such, the resistance to gentrification and racialization is a visible conversation in official and unofficial capacities.

I first encountered the word 'gentrification' on a telephone pole in Downtown Kitchener as a high school student from 2011 to 2015. In 2015, protestors gathered in Victoria Park to speak up against the dwindling supply of affordable housing in Kitchener. Grassroots organizations like the Working Centre (est. 1982) and A Better Tent City (est. 2020) look at a variety of ways to house and support a growing number of unsheltered and housing insecure people. And yet, resistance has not led to a stop in renovictions, pricing-outs, and other geographic displacements; many of which are suffered by racialized populations (Turman and Doucet 2021).

Although these organizations and other publicly funded supportive services work to support people in need, they may also depoliticize the failure of the two-tiered municipality to maintain socioeconomic diversity with new public investments. By making the structural violence of gentrification and innovation less visible with stop-gap measures, produced with great effort by citizens, the problem is managed rather than solved. The social enterprise must balance advocating for structural change while advocating for funds to remain operational in the meantime.
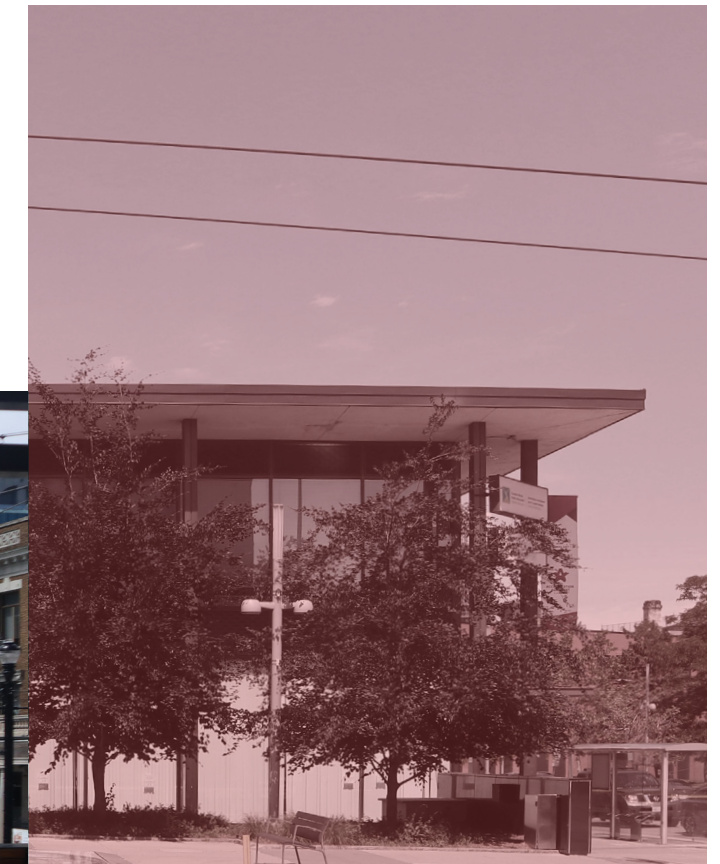
FIG. 5. 23. Replacing place with place-making. Innovation assumes a tabula rasa in its renovation of space, simultaneously re-instating a historicized narrative in service of innovation.

Memorialized in the park are the slow foreclosures of the innovation city. While the aesthetic response of the city celebrates diversity, it does little to interrogate a more widely present celebration of settler heritage. The effect of a Regional innovation strategy, presented in slow and fast foreclosures, is not challenged by a token display of diversity. Rather, the display, like social enterprise in the City, distracts from structural problems.

Down the road from Victoria Park Station, Queen Station is nearly visible. Although undergoing new development and refurbishment, Charles Street is lined with parking lots and parking structures across from the former terminal. Emptied out and awaiting new life, the efforts to make place on the road between stations ring hollow.

Queen Station faces a parking garage on one side and the parking lot of a strip mall on the other side. On half of the intersection driving instructors sit and smoke on the walk up to St. Mary's driving school watching pedestrians visit a retro video store or the middle eastern grocer. On many occasions, people who are otherwise not welcome nap on sunny benches across the road. This side of the intersection feels like one of the last vestiges of a Kitchener that is home to a diversity of socio-economic experiences.

Beyond, a familiar cream and green motif frames the intersection of Queen Street and Charles Street. The Working Centre, established in response to the mass unemployment and poverty in 1980s Downtown Kitchener, operates a relatively affordable cafe and employment service centre under the cream and green signage. Other locations employ, house, train, and support unsheltered and low-income individuals (Working Centre n.d.).
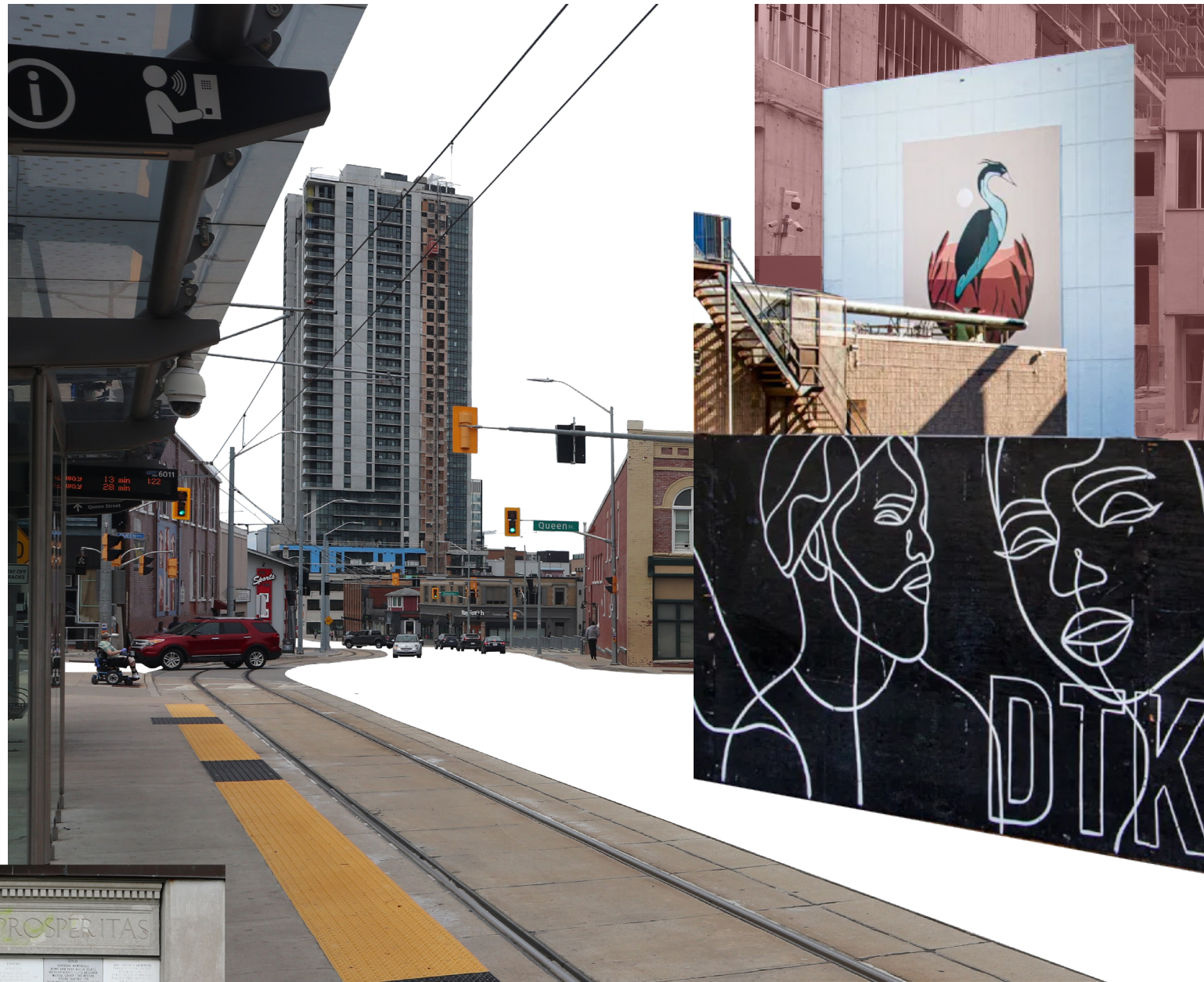
While other offices for supportive services and places for community relocate in cycles of tenure, the Working Centre remains and expands. Property ownership has allowed the centre to remain in the city and protect against the consequences of gentrification with more flexibility than other non-profits (Mancini, Wilmer, and Greene, n.d.). The Working Centre's success in keeping place exposes a conflict in the effect of place-making strategies in Downtown Kitchener.

FIG. 5. 24. Public Works. The City of Kitchener plays a greater role in cultivating an arts scene in the Downtown. This strategy is apparent moving south towards Kitchener Market Station.

City Hall & Fredrick (North Bound)

By following a traffic plan first introduced to Downtown Kitchener in the 60s, the LRT reorients the relationship to the city centre (Haldenby 2020). City Hall faces onto King Street, between the north and southbound stations such that the civic square is on the opposite side of the LRT. Currently blocked off for renovation, the space normally hosts a variety of events, functioning as public space.

A less active public space leading to the entrance on Duke Street is off to the side of the City Hall station. Looking onto the entrances to parking garages and construction sites for future residential development, the LRT's dependence on new development is more palpable. While photographing, I watched as new tower residents popped out of their homes just as the LRT would arrive.

The northbound tracks rejoin the southbound track just after Fredrick Station. Moving north from City Hall, the station is on the turn, bookending downtown. The tilled blue station marker adds a veneer of activity onto a failed revitalization project of downtown urbanization. The Kitchener Market Square Shopping Centre was part of a plan to compete with interiorized malls in post-war suburbs at both ends of Kitchener-Waterloo.

Although the intended anchor to Downtown businesses was never fully occupied it hosted a variety of small businesses for most of my memory. Now, the building is all but emptied out - again rejecting the entrepreneurship of the existing population for a networked version.

FIG. 5. 25. The front and back of Downtown Kitchener. A lime green parking garage breaks up the back of Downtown.

FIG. 5. 26. The library out of the way. The library and the associated cultural facilities have always been out of the way from Downtown despite recent renovation. The LRT creates a new means of integrating this public space into the network of the city.

On the backdrop of Provincial government and justice buildings, an intersection emblematic of the development trajectory of the Region unfolds. A World War I memorial opens the intersection across from a second campus of Conestoga College. Both spaces introduce a moment in the city's identity, from post-war renaming to an expansion of institutional space - reorienting towards innovation. Fredrick Station, between Kitchener's attempts at encouraging growth, re-anchors the south end of Downtown while the mall lays vacant behind.

FIG. 5. 27. Infront of the vacant mall. The vacancy that plagued this intersection appears covered up rather than solved with the connectivity introduced by the LRT.

Market

Moving further south towards an existing low-density residential fabric, the LRT returns to Charles Street. The train stops in front of the retaining wall holding a residential neighbourhood up above Charles Street. Students from the adjacent high school, the largest in the Region, frequent the station and the eateries in the area at lunch breaks, free periods, and after school. The addition of innovation-related employment and residential density adds pedestrian traffic outside student hours.

As a former student of this high school, my sense of change in the neighbourhood is more personal. The built environment has changed radically, from empty rubble lots and signs for future construction to a street of nearly built mid-rise residential towers. My walk from the school to the house converted to a cafe beside Kitchener Market used to consist of a lot more vacancy.

Kitchener Market, one street over from the LRT, opens onto a concrete plaza decorated with surface works of art to be less hostile. Since the Market's 2004 relocation to the purpose-built site, portions have remained vacant for extended periods of time. For 11 years, the north wing remained vacant (Aquino 2019).

FIG. 5. 28. Art for the new resident.

The Market was designed as "an entrance to Downtown Kitchener" ("History of the Kitchener Market" 2020), making recent programmatic additions all the more poignant. The addition of artwork coincided with the market's 150th anniversary, and more significantly, the grand opening of a new coworking enterprise. Workhaus promises "to bridge the innovation corridor between Toronto-Waterloo since their members can work out of their Toronto spaces if needed and vice-versa" (Aquino 2019).

Revitalization is embedded in the approach to the space. In an interview, the local Workhaus Director describes:

"We've completely renovated the second floor and brought it up to code. Everything in the building is brand new and we've made the first floor a very open, bright space," Mawer admired. (Ibid.)

The new space spills into the market's square as more affluent entrepreneurs go from the office to local eateries. After years of disinvestment, a pedestrian first street is now proposed between the market and the cafe in the house (EngageWR 2022). Seemingly, the intervention was only made viable for the convenience of the new city resident.

The narrative of vacancy does little to interrogate what was already present and what has been pushed out in the process of uneven development. The market has been well-trafficked for many years, albeit not fully occupied. Local businesses worked around the "eyesore" of abandonment, providing a venue for public life well before placemaking initiatives took over.

The burden of disinvestment and hyper-investment are most often experienced by low-income residents. For example, as the area of the market gentrifies, the foodscape has also shifted in favour of new occupants (Ong 2020). Along the route thus far, the new density brought about with intensification categorizes existing residents, communities, and places as less valuable.

FIG. 5. 29. The ideal subject gets all the nice things (in Kitchener too). The road between the Market and the cafe on the other side is recieving more activity now that Workhaus brings entrepreneurs to the area.

Borden

The density of Downtown Kitchener starts to fall off between Market Station and Borden Station. Industrial scaled lots are occupied by a mix of commercial and supportive services, gyms, and light manufacturers.

On an undeveloped greenfield site down the road from the station, a small cluster of tents grew with my visits to this station. The encampment is smaller but more visible from the CTC than the other emerging encampments in the city (Ghonaim 2022). The growing population of housing insecure and unsheltered people is correlated if not caused by rapid development in the Region. From 2015 to 2019, the Region experienced a 44% increase in the total number of shelter beds occupied per night (Regional Municipality of Waterloo Community Services 2019), and point in time counts for homeless individuals went from 333 in 2018 to 1085 in 2021 (CBC News 2021).

Between the camp and mostly single-family-home residential neighbourhoods, the Kitchener Horticultural Society maintains a city-owned botanical park adjacent to a privately run Mennonite secondary school. The park is quiet and well cared for with pockets for sitting amidst saplings or around a circular water fountain. In stark contrast to the green field with tents tucked in a corner, this space affords visitors a combination of privacy and solitude.

FIG. 5. 30. South of Downtown. Construction around Borden Station started more recently and is in it's early stages beside the station. Southward on the line, the LRT moves through less affluent single-family residential neighbourhoods.

The innovation of the state is present but not presented in the policing of this neighbourhood of difference. While fast and slow foreclosures are more prominent at other stations, the contrast at Borden station points to the effect of state-led gentrification. Outside the botanical park, police vehicles are parked around the social service centres and thrift stores near the station, categorizing those who belong and those who do not.

A plan to introduce new requirements for developers to provide affordable housing is under consideration in the three cities of the Region. Questions of perpetuity and compensation for developers who provide units at 80% below market rate are still under consideration (EngageWR 2020). The policy, still far from implementation, comes years after the LRT's effect has led to social and physical displacement - when the City of Kitchener is already hitting density goals in the CTC (Record Editorial 2022).

FIG. 5. 31. Borden station.

FIG. 5. 32. Towers and tents. The tent encampment near Borden Station may be located to access the public and charitable support services present around the station.

Mill

Between Borden and Mill Station, the LRT turns towards a residential neighbourhood of single-family homes with a scattering of industrial sites among which was the first Schnieders meat processing plant.

The massive redevelopment of former Schneiders lands will be one of the biggest in the region, adding 2800 residential units and as many as 11 buildings in the $500-million project. [...] The planned development by London, Ont.-based Auburn Developments would create a "mixed-use community" that would add about 5200 residents and 750 employees to the area and create a new street, a park and an urban plaza. [...] The project is the biggest Auburn has ever done, Muir said, noting the developer has built several large developments around Ontario, including Arrow Lofts in Kitchener and the Barrel Yards in Waterloo. (Thompson 2019b)

Both developments mentioned in the news article have altered the demographics of their respective neighbourhoods toward a more affluent crowd.

FIG. 5. 33. Pre-development. The "cool" cafe on the bike path appears to be the first intervention towards the innovation aesthetic valourized by the Brookings Institute.

The geographic pattern of exclusivity is amplified by an aesthetic experience in the public space of the station. Exiting the platform, the recent history of the neighbourhood is very apparent in the churches at the intersection with Ottawa Street. The history of settlement is further communicated by the metal sculpture selected to be public art for the station. Artist Tara Cooper states:

For my first public art commission, I gathered stories from the Mill Street neighbourhood, combining them into a steel-collaged trio. The neighbourhood is rich in tales—from the old Schneider's abattoir, to a 19th century faith healer, to the unbelievable abundance of rabbits popping every evening, to an apple orchard that used to grow here. It's about the tall tales—all of the when I was your age we walked through blizzards to get to school. It's the stories people tell even when the factory is long gone. ("ION Station Artwork by Professor Tara Cooper" 2019)

Although the area does have a large population of German descent, the experience of the station, taken in sequence with the other slow foreclosures along the LRT, suggests a desire to introduce an element of innovation in a station that is otherwise distant from innovation spaces.

By chance, I recently learned that Mill Street is the oldest road in Kitchener. In a display case at the University of Waterloo Mennonite College, Conrad Greble, a brochure describes settler-indigenous contact in the south of Kitchener. Originally a Mississauga road, settlers used the street that was then called "Indian Sam Eby's Road" to travel onto colonized land and take up residence around the existing infrastructure (Mennonite Archives of Ontario 2022). At the station, the only story made relevant is the settler story - the story that supports a mythology of innovation.
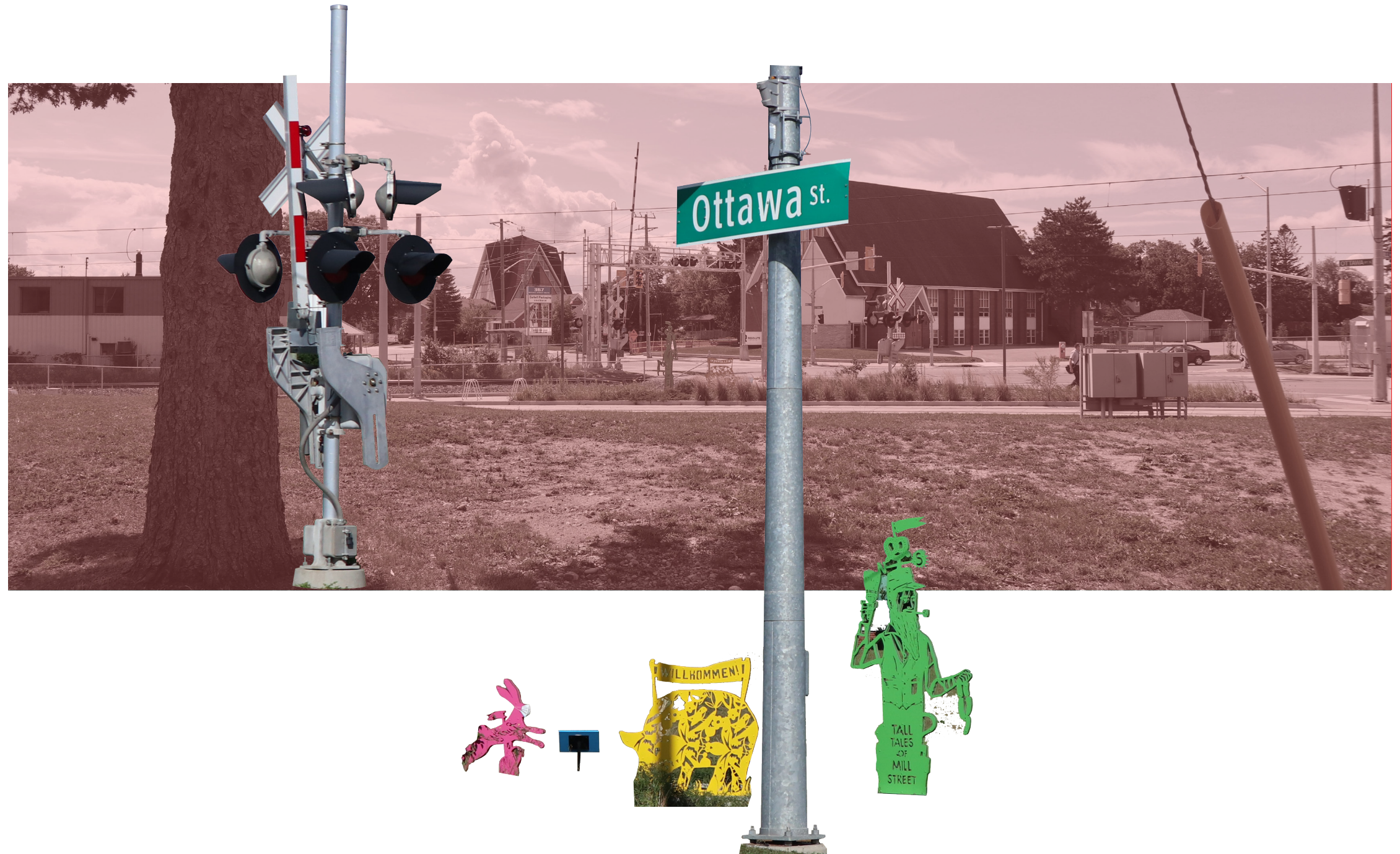
FIG. 5. 34. Public Representation. In a Region with a strong Germanic presence it is hard to be critical of an art work that went through public consultation and sought to represent the neighbourhood. It's only in the larger context that this work appears as a foreclosure at the station.

Block Line

In many ways, Block Line station is an anomaly. Running between anonymous corrugated steel facades, the LRT stops at the edge of a dramatic drop towards the freight rail line. Overlooking the Canadian National Railway (CNR), a trans-Canada freight line, the station is not in an easily developable location.

CN opposed a proposed development of four 26-35 storey mixed-use towers across the road of the station because of concerns about safety, noise, and vibrations.

In the tribunal report, representatives from CNR said: "a derailment could lead to progressive collapse of the planned towers in the proposal akin to the 911 terrorist attack in New York." […In opposition,] A planner who spoke as an expert on the behalf of the developer said the development proposal "contributes toward healthy, livable and safe communities by providing for efficient land use, delivery of market based housing options, transit-supportive and optimizes transit investment through greater access." (Monteiro 2021)

A residential mid-rise tower does already exist across the street from the station. Albeit the structural risks differ between 10 and 30-storey construction, neighbourhoods of people live with the noise and potential danger of the railroad on either side of the train tracks. The expanse of tracks and the noise of freight train traffic has resulted in the high concentration of supportive housing for seniors, families, and single adults operated by the Region and other service providers - pushing an undesired population to undesired land. Most recently, the YW Kitchener-Waterloo started the construction of a mid-rise building for 41 chronically homeless women on the other side of the train tracks from the proposed development (2021).

The station differs again in the artwork selected for the site. This is the only commissioned work connected to the LRT where the artwork does not reference collaboration, innovation, or elements of the Germanic and Mennonite history of the Region.

The artwork depicts the story of the Three Sisters and the Young Iroquoian Boy, notes a Region of Waterloo description. Three Sisters is rooted deeply in the history and culture of the First Peoples. It is "a reminder to all of the need for community, collectiveness, unity and sustainable food," says the Region's description. (Pender 2019)
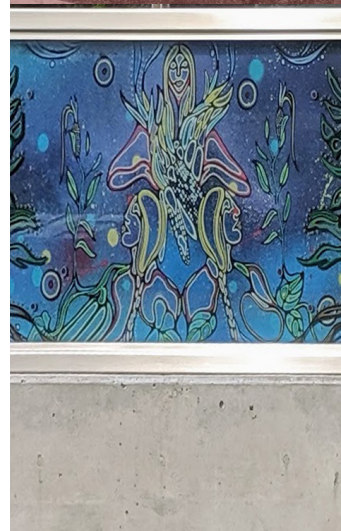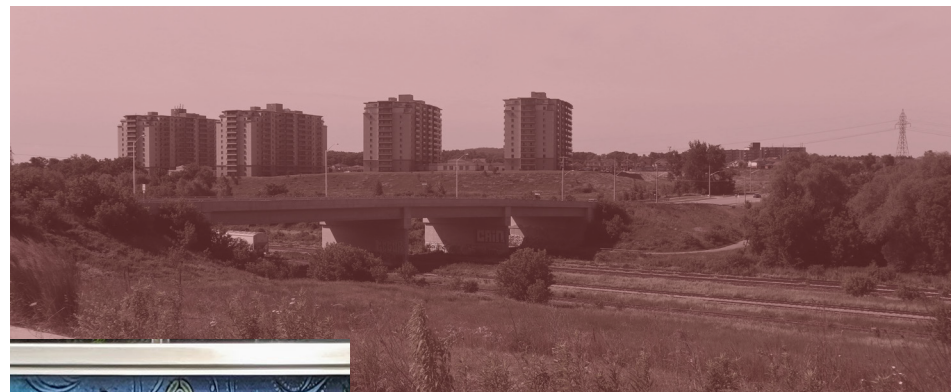
FIG. 5. 35. The odd station. At the left of this image I've cropped a photograph of the art work at Block Line Station. In my initial visit it was ignored precisely because of the significance I discuss in the text.

Mixed in with publicly owned housing, low-income immigrants and refugees live in more affordable homes near the new station (Doucet 2021, 41). While afforded some of the connectivity awarded to more affluent residents at other stations, the low-income resident's experience of the LRT is markedly different. Well frequented pedestrian pathways on open greenspace were fenced off with the introduction of the LRT. Signage on the extended fence threatens punishment for trespassing. The decision to prioritize train speed over the mobility of the adjacent neighbourhood added a 1km detour to many people's walks to groceries and nearby retailers (Doucet 2021, 41). Pushback has resulted in a single crossing; in comparison to multiple signalized track crossings between earlier stations (Doucet 2021, 41).

I'm unsure of the message that the placement of the only public artwork representing an indigenous history sends. The Region and the city have made clear, through statements about the provision of affordable housing and official engagement with the residents of this area while implementing the LRT, that the people here are not as valued as the people in high-end residential space close to institutions and incubators for innovation.

FIG. 5. 36. Around Block Line. The station is close to public spaces and historic preservations that are not so clearly servicing innovation.

Fairview

Just as the LRT begins, it terminates at the mall. Arriving at the last station of Phase 1, the patterns of preservation and intensification that make up slow and fast foreclosures were beyond familiar. The aesthetics of innovation, prominently produced through transformations of public space, are reproduced by private investment.

Fairview Mall is undergoing a renovation that aims to reimagine the suburban typology to a pedestrian centre, reminiscent of a downtown district. Far from innovative, the new development plans to replace the aging invention of local modernism with faux brick industrial replicas of the daylight factories around Central Station (Thompson 2018). The development is framed in an innovative light, as the mall is inverted for pedestrian traffic - signalling "a departure from how a large mall has operated in the past" (mall representative quoted in Thompson 2019a).

FIG. 5. 37. Re-historicizing the un-historic. The new factory-esque smoke stack at Fairview Mall is positioned like a beacon on the bike path running parallel to the LRT .

The public artworks along the LRT are integral to how I've understood the creation of new public space. The works, like many choices in the Region's public space are intended to reflect "diversity, community, and innovation" (Weidner 2016). With a budget of $875, 000, multiple sites, multiple artists and calls for public input the initiative must in some way be a calculated curation (Pender 2019). The 10 new works selected to accompany stations in Phase 1 of the transit line are part of the experience of space; the curation of these works reflects and amplifies the placemaking strategies of each city - unifying and intensifying the effects of slow and fast foreclosures.

The process of public consultation is highlighted in the reporting of this project (Weidner 2017, 2016; Region 2016). Consultations were planned before a call went out to determine a community vision for public art and after proposals were selected to refine the final works. However, I question how effective the first consultation could be if the call for proposals was devised after two 2-hour sessions and an online survey.

I wonder if the methods of the consultation were accessible to the diversity of people who make up the incoherent public. The example of the blocked-off crossing paths at Block Line station suggests that certain people are not invited or thought of as part of the public.

FIG. 5. 38. Fairview "factory". The water tower in the parking lot of the mall has a faux-patina that reminds me of the new horse and buggy garage at the Waterloo Corporate Campus.

FIG. 5. 39. The south end of Phase 1. The terminal sculpture is not so far from low income neighbourhoods that have had their mobility reduced by the LRT. There's a visual tension between the nessecary power infrastructure that looms in Fairview's parking lot and the sanitization that the LRT represents.

Phase 2 and Ainslie Terminal

The boundary between Kitchener and Cambridge is sprawling and as of yet shifts from agrarian to industrial, only reaching a quaint pedestrian density well past Highway 8 close to the planned terminus of Phase 2 of the LRT. Spatially separated from the shared Uptown-Downtown core of Kitchener-Waterloo, Cambridge has retained a specialized manufacturing economy between the historic downtown cores of the three townships and a settlement that amalgamated into the City of Cambridge in 1973.

In the innovation city, the proximity of specialized manufacturing is considered advantageous for the local network, allowing entrepreneurs to move their innovation from start-up to production more quickly. With limited inter-firm linkages between manufacturers in Cambridge and start-ups in Kitchener-Waterloo, this network is more imagined than concrete (OECD 2009). Globally, proximity alone becomes a competitive edge (Ibid.).

The future LRT route is serviced by a bus running from Fairview Mall through the commercial-industrial fabric of one former township, to the major interior mall in Cambridge, adjacent to the historic downtown of the second former township, across the Grand River to terminate in the historic downtown of the former township of Galt. Transit stops along the route are renovated with digital displays and extended seating to match the bright and night-lit stations of Phase 1. The new stations will need to be replaced when the tracks and cables are extended south. I imagine, this renovation is a means to introduce the aesthetics of innovation quickly, while the details of Phase 2 are resolved.

Cranes mark projects to intensify and densify along the recently approved route. Billboards sell verdant plots between the built-up boundaries of Kitchener and Cambridge. As sites of construction and exchange the already present transformations along the route for Phase 2 don't necessarily fit into the categories of slow and fast foreclosure. In more contemporary industrial fabrics, without a clear connection to the Germanic and Mennonite histories of KW, the aesthetics of the innovative narrative depend more on making and manufacturing.

FIG. 5. 40. Connecting to Cambridge. This otherwise bleak parking-lot-of-a-station is one of the two public transit connections to the Toronto-Waterloo Innovation Corridor.

The network of innovation-through-making is extended into Cambridge with Conestoga College expansions. Speeding past a billboard for Conestoga College's newest Skilled Trades Campus, to open in the Fall of 2022, the growth-oriented logic of public institutions is re-affirmed. The college, with origins neighbouring the University of Waterloo, has expanded as a project of knowledge infrastructure with federal funds and international tuition fees (J. Jackson 2020).

A global politics emerges in the public space of institutions that foster a mythos of locality while relying on the significantly more expensive tuitions of international students for rapid growth. Federal policy brings more international students to Conestoga, to pay for Canadian accreditation in fields they may already have degrees, experience, and expertise (J. Jackson 2020). The racial violence enacted by slow foreclosures in the local network of the LRT occurs at a global scale. The newcomer, a prospective citizen in the process of immigration, is subject to a labour market that does not value the existing skills of people from other places; their contribution to the growth of the local network is unvalued in an urban sensorium fixated on the mythos of settlement.

A billboard on the highway between Sportsworld and Preston Stations marks a new campus for the college. The method of development along the LRT introduces spaces and institutions of innovation to otherwise "un-innovative" pockets of the Region. While I've never managed to get a good picture of the billboard from the bus running at highway speed, the CTC in Cambridge is peppered with satellite campuses.

FIG. 5. 41. Global to local growth. The strip of hotels off a planned station of the LRT suggest another push to produce a trans-territorial innovation network. New residential construction is already fueled by the influx of post-secondary students in the expanded post-secondary spaces in Cambridge.

Surrounding the School of Architecture, new development produces fast foreclosures as a result of intensification and public-private partnerships for innovation. In the under-construction Gaslight District, Grand Innovation is advertised as "a centre for applied research, development and innovation in the tech industry" (Melloul Blamey). The space, like much of the LRT's route, is anchored by public institutional tenants: Conestoga College Institute of Technology and Advanced Learning and the City of Cambridge Economic Development Division.

FIG. 5. 42. Satellite centre. The institutional space of innovation extends across the Grand River, couching the planned terminus of the LRT in the ideology of the Region.

Terminals

In the station-by-station account that I presented in this chapter, I found repetitions in an approach to public space that diminished the political function of such space. I argued that foreclosures, introduced through aesthetic and spatial transformations, limit the future possibilities of public space by imposing the coherent ideology of the innovation city. The foreclosures I've documented present differently, shifting from the scale of a poster imposing innovation on the side of the road to renovated daylight factories reorienting the centre of the city. At some stations, the foreclosures I described are still in the planning process. In other examples, existing spaces are capitalizing on the new connectivity of the LRT to introduce and enhance foreclosure. At each station, I found examples where the Region categorized those who are racialized, less affluent or less engaged in the network methodology of innovation as less important. The input and presence of those who do not cohere is made irrelevant in space where rights are replaced with interests. The LRT presents a unified narrative of innovation by redefining who belongs in public space.

To conclude the photographic method, I shift from the scale of the station to the city. The three cities are in different stages of developing an innovation network and different stages of gentrification. This difference which is visible while moving through the CTC is reflected in how people responded to public spaces in the survey. As part of the survey (limited to LRT stations in Waterloo and Kitchener), I provided a space for respondents to list features of the public space they were surveyed in that made them feel like they belong and a second space to list things that made them feel like they did not belong. I suggest that depoliticization is experienced as a neutral feature of public space in the City of Waterloo based on the features of public space people listed in the open-ended question. In contrast, I argue that the more recent and rapid introduction of innovation space in Kitchener creates a more active condition of depoliticization experienced by new and old residents of the city.

In the City of Waterloo, respondents disassociated the built environment from socio-economic transformations. This depoliticization can be attributed to the much longer history of innovation in the City of Waterloo that has paved the way for built environment transformations to be more acceptable. UW has celebrated entrepreneurship in the City of Waterloo for at least 40 years (since the maker-owned IP policy was

introduced). In Chapter 4, I described how investment in a rail-based transit system was encouraged by the longstanding presence of the R+T Park and other public-private institutions of innovation. Already entangled in innovation and distanced from visible housing insecurity (by offering limited supported services in the city) intensification in the city does not have the dramatic effect visible in downtown Kitchener.

Overall, the people surveyed in Waterloo had a positive impression of the built environment and a negative impression of the affluence and security associated with it. In other gentrifying cities, people who were not displaced socially or geographically sometimes experienced transformations in the built environment positively while acknowledging socio-economic inequity (Doucet 2009; Walters and McCrea 2014; Zuk et al. 2018). Respondents mostly described impositions of wealth such as new luxury developments near Waterloo Park or referenced added surveillance cameras as features that made them feel like they didn't belong. These newer transformations of space may be perceived as "big-bad-developer" led interventions as opposed to the "homegrown" developments associated with innovation in the city. Walters and McCrea note a similar distrust of development in an already gentrified neighbourhood of Brisbane where interviewees felt that newer interventions would diminish the authenticity that had brought them to the neighbourhood as demand-side gentrifiers (2014, 363-4). Similarly, respondents in the City of Waterloo described access to community and space at the universities, in parks, and around shops as features of public space that enhanced their sense of belonging. In line with other research, being aware of socio-economic division in the CTC might not pose a threat to an individual's sense of belonging if they are not economically burdened by gentrification (Doucet 2009; Walters and McCrea 2014; Zuk et al. 2018).
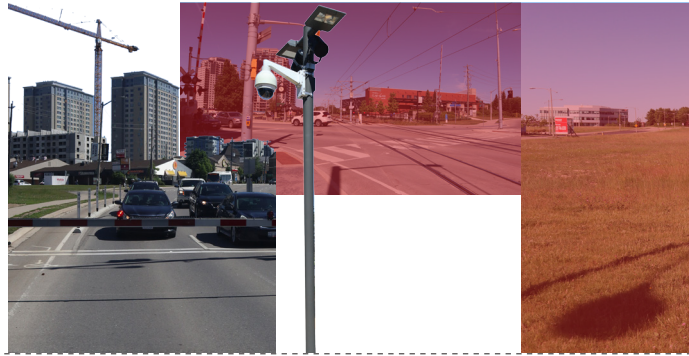
Since construction for Phase 1 of the LRT began, Kitchener has capitalized on the local and provincial innovation network to dramatically intensify downtown and beyond. In Kitchener, where homelessness and poverty are far more visible, more respondents categorized people and places as unwanted—expressing a desire for the city to 'clean up' as features that made them feel like they did not belong. In contrast to responses in Waterloo, increased surveillance and security cultivated a sense of belonging for multiple respondents. These results were surprising in the context of anti-gentrification activity in Kitchener but align with categorizations of the unwanted that Deutsch (1996) finds in New York in the 90s and Ellis-Young and Doucet

(2021) find in interviews with residents of a gentrifying Kitchener. In Kitchener, the spaces of innovation include the very recent addition of tech companies that are known to introduce well-compensated employees to the city (Buhayar and Bass 2018; Harrison 2021). The responses to the open-ended question of the survey suggest that the nascent expansion of innovation into Kitchener, with spaces like Google and Workhaus and institutions including the University of Waterloo and the Accelerator Centre, cause a conflict between the entrepreneurial and often more affluent newcomer for whom spaces are produced and the less affluent resident whose entrepreneurship does not align with the method of the network.

Although I did not collect data in Cambridge, I predict that responses to my survey question would align with the shift in responses I observed moving north to south. Like Kitchener, Cambridge attached itself to the City of Waterloo's innovation strategy in the 2000s. Now that plans for Phase 2 of the LRT are solid, the built environment is rapidly densifying with programs similar to Kitchener's Market Station. However, Cambridge is dispersed in three cores with different development trajectories. Areas around some planned stations are already homogenously more affluent like parts of Waterloo. These differences may lead to greater variation or stronger resistance to gentrification in service of innovation.

In an inventory of slow and fast foreclosures, the categories of who belongs in the public space of the CTC become clear. As new and existing residents ascribe the ideology of the innovation city the difference in how depoliticization manifests in people's experience of public space becomes significant to a conversation on belonging. Repeatedly, settler colonialism is conflated with a potential for innovation; the voices of affluent residents are heard over low-income, often racialized people in the production of new public space. The responses that the survey yielded led me to consider an inversion from the threat to belonging to the threat of belonging. Belonging, as I discussed in Chapter 2, affords individuals a right to participate in a democratic society. I consider the threat of belonging a depoliticization of the spaces in which participation occurs wherein belonging is not attached to asserting one's self in public. In public space, citizens entrust democratic governments to represent their rights and desires for the city (Blackmar 2006). As this space is depoliticized, the assumptions of belonging as an individuated experience obscure the representational relationship between citizens and government.

Strongly Disagree

Somewhat Disagree

Neither Agree or Disagree

Conestoga — Northfield — R+T Park — UW — Laurier/Waterloo Park — Waterloo Square — Willis Way — Allen — Grand River Hospital
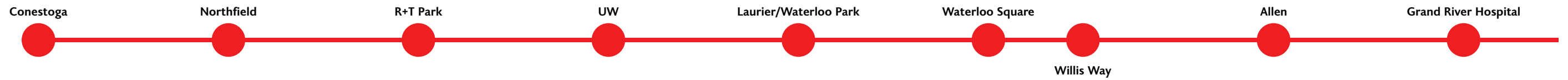
Somewhat Agree
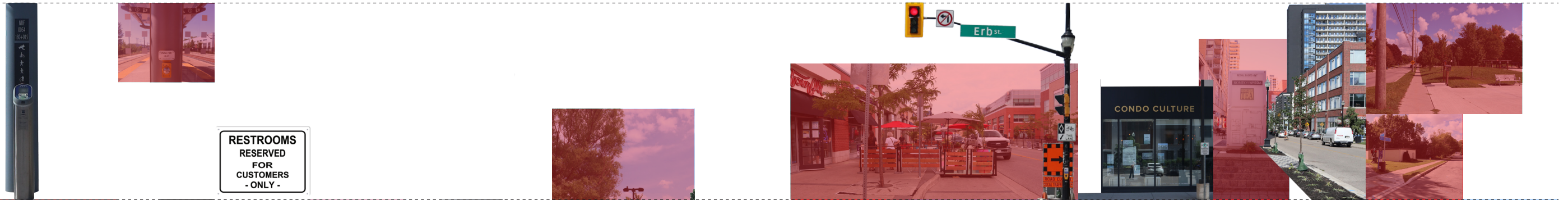
Strongly Agree

FIG. 5. 43. Can you identify features of this public space that make you feel like you belong here? Can you identify features of this public space that make you feel like you do not belong here? (City of Waterloo)

Strongly Disagree

Somewhat Disagree

Neither Agree or Disagree

Central Station   Kitchener City Hall   Frederick   Kitchener Market   Borden   Mill   Blockline   Fairview

Victoria Park   Queen

Somewhat Agree

Strongly Agree

FIG. 5. 44. Can you identify features of this public space that make you feel like you belong here? Can you identify features of this public space that make you feel like you do not belong here? (City of Kitchener)

Belonging and Refusal

To conclude the chapter that has largely focused on my close reading of public space in the CTC, I consider the nature of belonging in foreclosures produced through the lens of refusals. My goal with this section is to revisit belonging with the combined support of data from the survey and a reflection on the experience of distributing the survey. I did not expect that a willingness and ability to participate in the survey would become an indicator of belonging, or that these refusals would represent a type of belonging that is otherwise missed. Although I didn't collect demographic data on who refused to participate in the survey, I find the conceptualization of refusal productive to enrich and critique belonging in the urban sensorium of the LRT.

While recruiting survey respondents in public space, I observed three ways in which individuals refused to engage with the project and questions on public space: by only partially completing the survey, by refusing to participate in the survey when approached, and by being absent from the spaces in which the survey was distributed. In the first form of refusal, a sizable portion of respondents balked a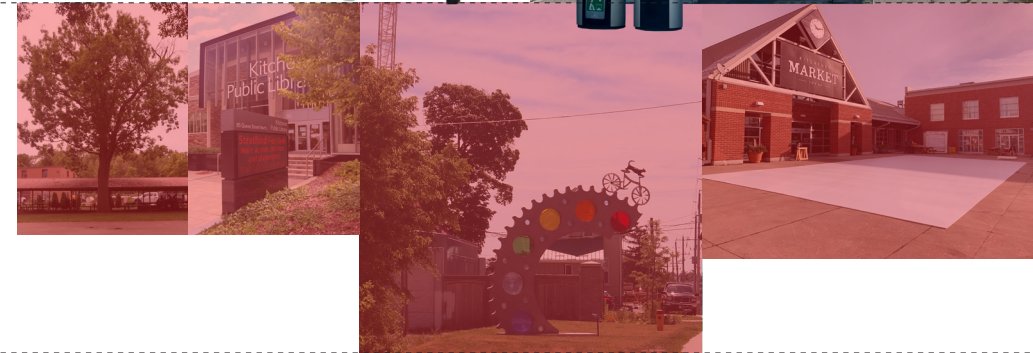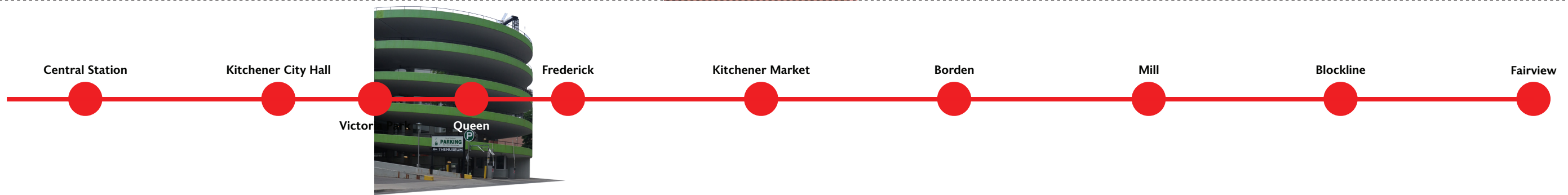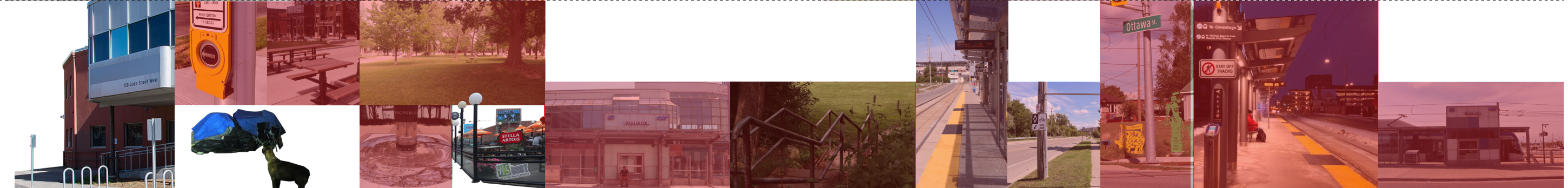t the space to elaborate on their sense of belonging—leaving it blank even when prompted with a second chance to respond to the question. This first category of refusal is expressed in the data collected during the survey. A second refusal occurred in cases where people visibly belonging to marginalized socio-economic groups declined requests to participate in the survey. The third refusal was a result of absence—a refusal to participate in the public space. I draw on the theory I explored in Chapter 2 to develop the second and third categories of refusal as they are based on my observations while distributing the survey. The three refusals critically frame the very consistent sense of belonging survey respondents expressed.

On a Likert scale, 80% responded that they somewhat or strongly agree with the statement: "I belong in this public space and the public spaces around this station". With space to elaborate on their experience of public space 19% of the individuals surveyed left the room to state features of public space that made them feel like they belong intentionally blank. 50% of the respondents left the inverse question intentionally blank. Interestingly, respondents who reported a higher income were more likely to disagree with the statement

about belonging. This was actually consistent with the first refusal—enforcing my critique of belonging in the CTC.

A refusal to criticize the public space one is in suggests a depoliticized sense of belonging as the individual forgoes the chance to shape the city to their heart's desire (Harvey?). I noticed this sort of depoliticization in relation to respondents' income in the section of the survey where respondents were asked to describe features of the public space that made them feel like they did not belong in the space they were surveyed in. Respondents who reported a higher annual income were more elaborate with their responses and more likely to describe the things that made them feel like they do not belong. I read the willingness or comfort to criticize the public space that respondents occupied as an ability to belong in itself. Applying this interpretation to the results of this section of the survey suggests that belonging is framed by income rather than a socio-political right to consider and express one's thoughts on public space. What Rancière describes as the talent to speak is bought with better-paying labour ([2000] 2004).

In a large qualitative study of individual perspectives on inclusion in Canada, Stewart et al. (2007) note similar results, suggesting that belonging is mediated by a difference in the scale of participation in activities in the public realm between low and higher-income individuals. The study found that higher-income respondents were more likely to find belonging by accessing activities which cost money or in the context of work (Stewart et al. 2007, 83, 86). Conversely, low-income respondents were less likely to participate in public life beyond close community activities because of the cost associated with participation (Stewart et al. 2007). The study concludes that low-income respondents internalize the economic barrier to participation. In doing so, like the higher-income respondent in the CTC survey, the respondents in this study depoliticized their sense of belonging.

Admittedly, the section of the survey that I am basing this reading of refusal on demands more time from the participant. The open-ended question required that the respondent take time to interpret the question, reflect on the space and then articulate specific elements of the space. Time, like space, is not politically neutral. Rancière suggests that both are relevant to being visible and participating in the politics of public space (2010). In the book In The Mean Time, Sarah Sharma (2014) suggests that the inequity of time is not so much a binary between those with time and those without. Rather, some people's time is spent

Income Distribution of Respondents

I belong in this public space.

reported annual income

Strongly Agree / Somewhat Agree / Neither Agree or Disagree / Somewhat Disagree / Strongly Disagree
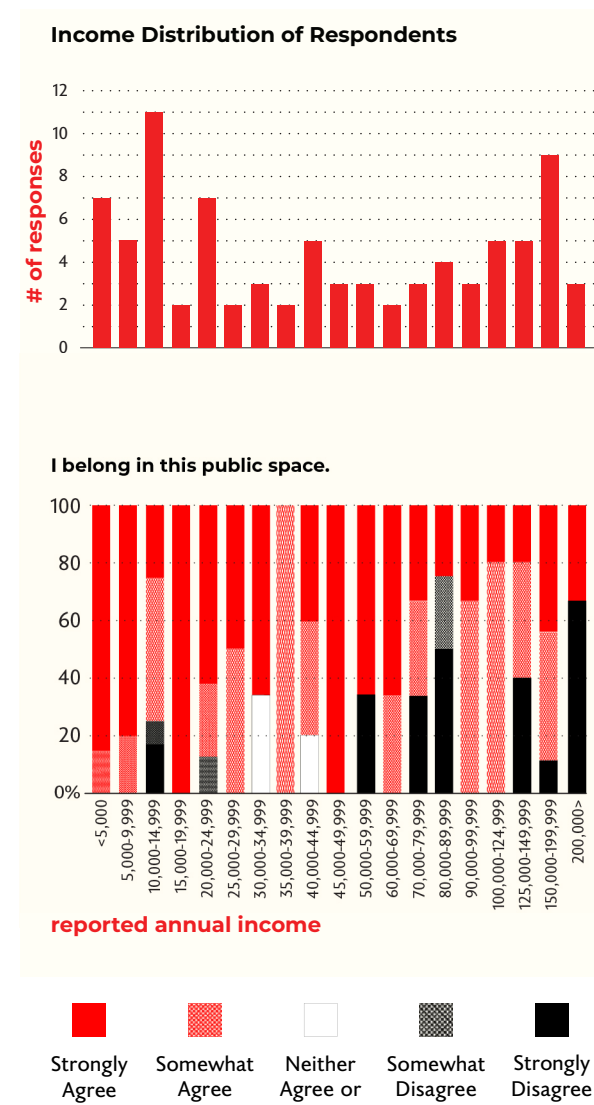
FIG. 5. 45. Sense of belonging in public spaces based on survey responses stacked below income distribution of respondents.
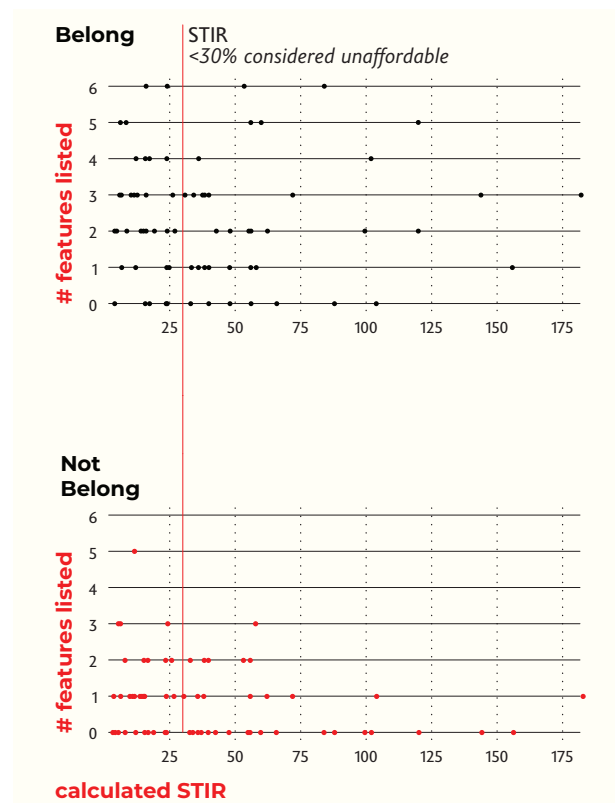

FIG. 5. 46. Number of features listed in relation to STIR for respondents in Waterloo and Kitchener.

maintaining the flexibility of time for others (Harris 2015). This relational interpretation of time is particularly potent in the context of innovation where work that was not traditionally considered work becomes part of entrepreneurial labour in the method of the network (Terranova 2004). Although entrepreneurs may perceive their time as more flexible, in actuality they may be working for longer hours—in some cases sacrificing emotional and bodily well-being for the project (Cockayne 2016). Amongst well-paid participants of the innovation economy, this perceived flexibility may be facilitated by the rigidity of service labour. I imagine that the refusals I've noted are, in part, a reflection of one's perceived access to time. Correlated to income, this time inequity could further depoliticize the experience of belonging.

I conceptualize the second refusal as what I perceived as distrust while conducting the survey. While I did not collect data to support this category of refusal, I present my observations as an extension of the first category of refusal. Drawing on a lifetime of living in the Region and my experience of the LRT I noticed that certain kinds of racialized and marginalized populations that have been present in the Region for most of my life refused to participate in the survey when randomly approached. Hijab-wearing women would quickly decline as I approached them. The African men that have hung out in certain places around Downtown Kitchener since I was in high school similarly stopped me before I had a chance to complete my introduction. Street-involved (homeless and housing insecure and temporarily sheltered) individuals refused with less consistency but always refused out of distrust of "another survey". Given that the first refusal is tied to income, this refusal by visually marginalized groups is no surprise. All three demographics are becoming more present in Kitchener; as more visible groups they appear to be more easily categorized as not belonging (Senoran 2021; Region of Waterloo 2016). Simultaneously, the national and local state depends on the forces that produce these categorizations of not belonging.

Hate crimes and racism increased as the Region's population of visible minorities introduced heterogeneity in historically homogenous Mennonite, German, and Anglo-Saxon cities (Muszynski and Gassim 2014). Amongst various visible minorities, African men and Hijab-wearing women are likely to bear the brunt of systemic racism and xenophobia (Chaarani 2022; Di Sabatino 2020; Ponciano 2016). Visually stereotyped as a threat to Canadian values, these groups are perceived as incoherent with public space (Dua, Razack, and Warner 2005). Similarly, street-involved people pose a threat to coherence

by reminding housed individuals of a crisis of propertied citizenship (Sparks 2017). Although differently marginalized, all three groups that refused to participate in the survey conflict with the ideology of innovation presented in public space.

Arguing that the municipality is more able to deliver quality services to a growing population, as I discussed in Chapter 4, the national state encourages population growth through immigrants (Immigration, Refugees And Citizenship Canada 2020, 5). The Region, like much of Canada, is dependent on racialized groups to address the gaps in the local workforce. Immigration, Refugees and Citizenship Canada states:

Along with other efforts to boost the workforce, increasing the number of immigrants settling in the Waterloo Region could be a strategic move to ensure the talent pipeline is large and strong enough to meet local industry demands and provide a source of new entrepreneurs. These immigrants could come as students, workers and business owners, who would fill important roles in the economy and boost demand for local goods and services. (Immigration, Refugees And Citizenship Canada 2020, 5)

Similarly, the local state depends on the forces that produce homelessness and housing insecurity to grow the networked method, uncover a new market, and perpetuate the innovations of the state. Housing insecurity is a "predictable, consistent outcome […] of capitalist spatial development" that takes the shape of "global wealth congealed into tower form" (Marcuse and Madden 2016, 11).

Groups that do not cohere to engrained interests are given no right to speak (Rancière 2010; Deutsche 1996). In the context of depoliticized belonging, I interpreted the refusal of the three marginalized groups that I identified as a shift from the threat to one's ability to belong to the threat of an a-political belonging. Belonging represents an internalization of pathologization and racism in a framework that assumes belonging is a socio-economic privilege rather than a right to public space (Muszynski and Gassim 2014; Stewart et al. 2007, 83, 86). In a political space where these people are robbed of belonging for the sake of the innovation city, refusing to belong may take on a political role.

The third refusal is most apparent in the overlap between polarization and intensification I describe in the gentrification portion of Chapter 4. I chose to recruit survey respondents in the spaces I photographed to capture in-placed experiences

from the respondent. This method misses the voice of those who are already erased from the public spaces I recruited from and members of the growing population who are experiencing exclusionary displacement (Marcuse 1985). In Chapter 2 I describe a political life of being in public space and participating in agonistic conflict. I've argued that asserting belonging is essential to expanding the public realm and that public space is the venue for this interaction to occur. A refusal to participate because one cannot be present in public space poses a possible expansion to the threat of belonging. In public space reoriented towards the method of the network, a refusal to participate has political possibility for those who want no part in this form of governance.

The LRT quiets the voice of descent by producing a network of public space aestheticized for innovation. Socially and geographically displaced individuals recognize the effect of the LRT and choose not to participate (Social Development Centre Waterloo Region n.d.). Alienated from once familiar spaces, respondents to an interview by the Social Development Centre Waterloo Region wondered what the public investment in the LRT would do for them and the cities they lived in.

The LRT, to me, it's a joke. I think it's a big waste of taxpayers' money […] here we are going back to students and the tech sector

Well, Google seems to be running the City, and there is no real City, and most people who have been here are very dissatisfied

It's not people are moving, it's just the way the city wants it; just like everywhere else

Everything is closing. And then, they put a condo up. But, I don't see any affordable housing coming up, right. None whatsoever, right, so. Well, nothing, nobody wants to rent down here anymore. (Social Development Centre Waterloo Region n.d.)

The individual refusal, by people who are aware that they are afforded no part in the city, is reflected in a larger refusal in Ontario. When the Haudenosaunee Confederacy declared a moratorium on development in 2021 on the Haldimand Tract (Forester 2021), the nation refused to belong within the ideological condition of development along the Grand River while simultaneously demanding the autonomy to belong.

In her study of the Kahnawà:ke Mohawks' struggle for political sovereignty, anthropologist Audra Simpson theorizes various forms of "refusal": the refusal to recognize others or to be recognized, the refusal to cede or to retreat when that recognition doesn't come, the refusal to participate or consent, the refusal to reveal particular privileged knowledge, and so forth. Unlike "resistance," refusal decenters the state and traditional forms of authority and hierarchy […] (Simpson 2014 in Mattern 2021)

As construction continues along the LRT, refusal may be the only method to reassert political agency in a depoliticized environment.
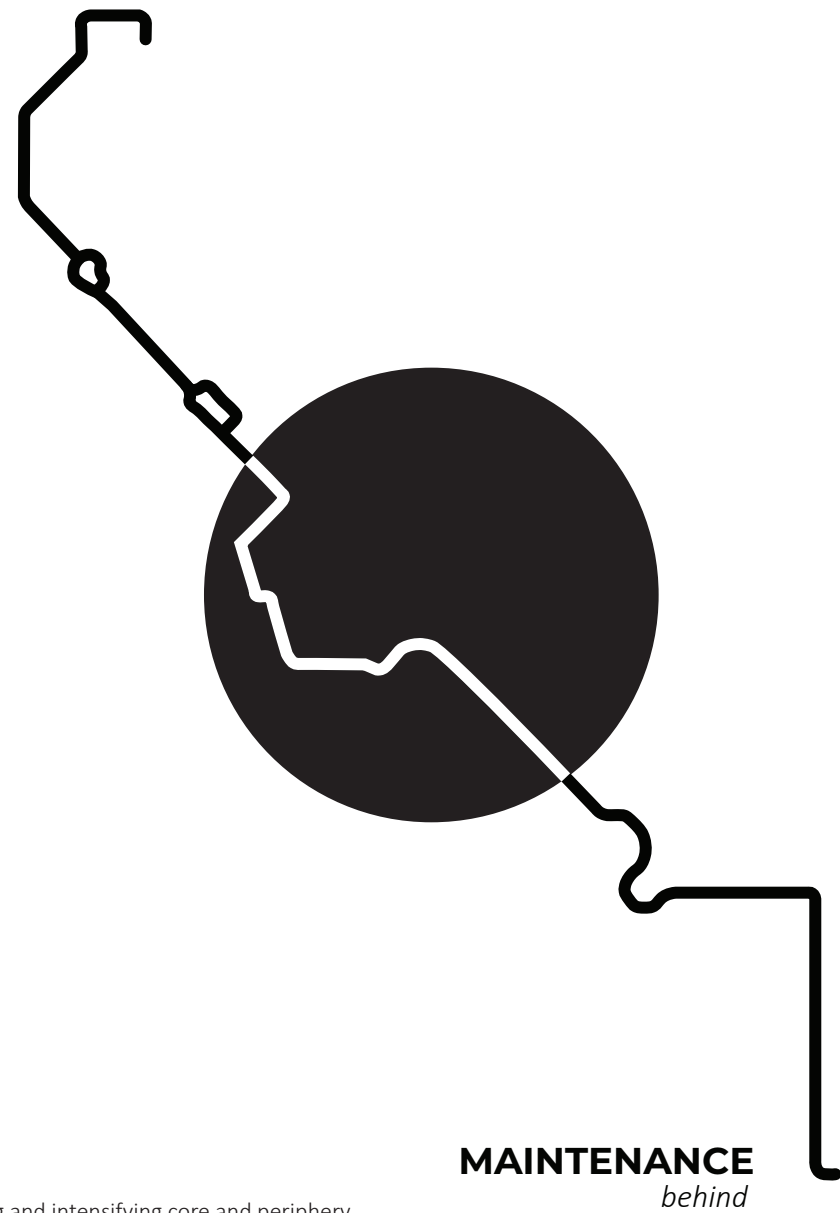
FIG. 6. 1. Maintaining and intensifying core and periphery.

MAINTENANCE
behind

Creative Destruction, Innovative Production

I began the thesis by theorizing the innovation city as an ideological condition expressed in the geography and aesthetics of public space. Guided by an exploration of theories of gentrification, innovation, and public space, I argued that the ideological space produced by the simultaneity of innovation and gentrification enacts a series of creative destructions orchestrated by the subjectified regional municipality. At the same time, the individual forms a subjectivity that obscures the role of the state in producing space for entrepreneurship. To conclude the thesis, I reiterate the nature of the ION LRT as a means to maintain and intensify, rather than restructure, existing distributions of wealth, agency, and access to public space in the development strategy of the Region of Waterloo. I suggest that this work raises questions about innovation in an environment where the state actively participates in Schumpeterian entrepreneurship. Finally, I return to the "behind" represented by Erb Street and Fischer-Hallman Road to examine what is at stake as the Region transforms.

This research illustrates a state-led socio-spatial process that maintains existing distributions of wealth and agency through public investment in public space and intensifies these inequities for the growth of the municipality. The advent of the neoliberal state created new theoretical and practicable possibilities for gentrification as the production of space, rationalizing creative destruction in the built environment (Hackworth 2002). A concurrent shift from an industrial to a knowledge-based economy put pressure on the municipalities to create new kinds of infrastructure and policy for the sharing, protection, and privatization of knowledge to perpetuate socio-economic creative destruction (Jessop 2002). The state relies on gentrification to maintain and grow the debt-financed public space and municipal infrastructure called for by an innovation economy. No longer a simple class relationship, in the innovation city, gentrification produces the ideological terrain for entrepreneurship.

Through a combination of exploratory and communicative maps, I tracked the spatial and socio-economic transformation of the Region since construction for the LRT began. The method of mapping allowed me to consider the LRT as a connection, both spatial and economic, between innovation

and gentrification. At the scale of the Region, the LRT's path between spaces of innovation and its correlation to the socio-economic demographic transformations in the CTC reinforce the critique of growth planning and innovation policy that I presented in Chapter 4. However, the map alone cannot assert causation, nor can it describe what is consumed in the process of producing space for entrepreneurship. This is doubly difficult in the space of new-build gentrification. Mapping as a method was illustrative of an ideological space that I explored in more detail through photography and survey.

The ideology of the innovation city, when fully embraced, reduces social experience to the entrepreneurial labour of networking in order to maintain a balance between the privatization and sharing of knowledge. The geographic polarities in income, population growth, and affordable living across neighbourhoods produced by gentrification organize who has greater access to space and thus agency within it. The space itself is produced to impose and maintain ideological practices that support the interests of the dominant group. Public space is depoliticized in the hegemony of this labour-space relationship such that presentations of a self are homogenized. The willing entrepreneurial participant divorces their alienation from the state by imagining entrepreneurship as a state-free activity.

In my critique of the LRT, I draw on Goonewardena's concept of the urban sensorium to connect public space to innovation and gentrification. In the Region, the network of institutions and incubators that produce entrepreneurship seeks to maintain an entrepreneurial culture while the growth plan put forth by the province rationalizes extractive forms of intensification. The LRT is subsumed into a state-led project to grow the population and the innovation economy. Creating slow and fast foreclosure, a network of innovation facilitated by the LRT reconstitute the aesthetics of public space to produce an experience of belonging that is in part mediated by income. Publicly funded transformations of public space and public-private reorganizations of the Region produce an ideology of innovation that is presented by the state and consumed by the subject.

Like Harvey's examples of the boulevards in Paris or highways in New York, the construction of the LRT destroyed excess capital, fueling the growth of new construction and renovations in public space (Harvey 2015). Engaged

in Schumpeterian entrepreneurship, the state expands local and global networks for innovation through built infrastructure—in the process, encouraging more expansive private development. In the survey, these transformations were perceived with a homogeneity that suggests the efficacy of the LRT as a hegemonically economic and ideological project. Thus the ION LRT is an infrastructure of maintenance. Moving beyond its role as public infrastructure the LRT is a vector for spatial, political, and economic intensification.

I use the word maintain to evoke the role of the municipality in the socio-political lives of its residents. In Ontario, the municipality is responsible for providing many of the services that are relied upon daily including transit, public space for recreation, and forums for public participation on matters of the municipality ("Municipal 101" n.d.). Anarcho-socialist, Murray Bookchin, states that "[the] authentic unit of political life, in effect, is the municipality …"(2009). For Bookchin, the scale of the municipality offers an opportunity for a transformative form of citizenship wherein the municipality could become the venue to struggle with the state (Bookchin 2009). Although the municipality that I've described and critiqued over the course of the thesis does not embrace this potential, residents of the Region have the capacity to challenge that. As visible participants in public space, residents define the public sphere of the municipality - at times finding opportunities to expand it. A tangible relationship exists between the two-tier municipality and its constituents through these interactions in public spaces that have the potential to find their way into public forums and other civic avenues. The LRT maintains the city as it grows as much as it encourages intensification.

Entrepreneurship and the Entrepreneurial State

By analyzing the state's involvement and interest in development along the LRT primarily through the Regional map, this thesis has shown that the state produces space for entrepreneurship. In the map, a visible overlap between indicators of gentrification and spaces of innovation successfully suggests a correlation between state interventions in innovation and the LRT. However, the map cannot describe causation. I relied on a combination of theory and policy analysis to describe a cause to the spatial condition I documented.

When gentrification is considered through the lens of labour, following Lefebvre's theory of the production of space, the means by which knowledge is transformed into a profitable good become a spatial practice. The innovation of the contemporary state is found in the capacity of state-made space to produce Schumpeterian innovation while producing an apolitical subject. Creative destruction, rather than being primarily produced by Schumpeter's entrepreneur, is perpetuated by the state and consumed by the entrepreneurial individual as a depoliticized economic experience. I argued, in Chapter 2, that if the gentrifier is the state then the gentrified is the subject of the state. From this position, with the wide acceptance of innovation-related state interventions in the Region, the entrepreneur is not a solo agent of creative destruction - but a participant in an ideology of creative destruction. While the Schumpeterian entrepreneur participates in creative destruction, the Veblenian entrepreneur still perpetuates creative destruction by lending legitimacy to associative governance.

The relationship between the sociality of innovation labour and the space produced by gentrification raises questions about innovation as a collective practice and space as a socio-political product. If Schumpeterian entrepreneurship, through which industries are reorganized and capital growth is perpetuated is done by the state, what is the nature of the individual entrepreneur? As the pretense of innovation, enacted in networking interactions (Hartmann, Krabbe, and Spicer 2019), is structurally embedded in public space, successful entrepreneurship takes on new meaning in the post-industrial economy. The blurring between labour and life, between space for public use and

private interest creates a socio-spatial condition where the state is called upon to be a destructive force. This destruction manifests in public infrastructure and spaces, like the LRT and public space in the CTC, that are tailored to the innovation economy, allowing the entrepreneur to lead a life fully consumed by innovation labour.

Creative destruction in the name of urban renewal is not novel. Harvey describes cycles of creative destruction that have restructured the public realm of cities, from Hausman's boulevards to Mose's highways. In the innovation city, this creative destruction is tied to a service improvement in public space that is not comparable to the highway or the boulevard. It is telling that the data of the survey suggested wide acceptance of this piece of infrastructure. As the urbanists of the 60s sought to destroy the existing fabrics of New York and Boston, authors and activists like Jane Jacobs were arguing against new methods of urbanization. The LRT is different in that it doesn't have a visible wake of destruction. People in the Region can recognize that there is displacement occurring along the LRT, that people are policed off of the train by yellow-vested security guards, and tent camps are cropping up as towers go up but the survey suggests this does not have a significant impact on their sense of belonging.

Earlier theories of gentrification suggest that gentrification results in a clear socio-economic pattern wherein the less affluent are made less present in gentrified neighbourhoods (Hackworth 2002; Slater 2011). As such, one could expect socio-economic homogeneity in public space. While this understanding of gentrification is visible in the Region, a more complicated condition of homogeneity is produced by gentrification as a result of state entrepreneurship. A right to the city, to belong and enact political lives through participation in public space needs to be recalibrated to reflect the politics of the "apolitical" entrepreneurial subject. As new developments repopulate and expand the city, can the idealized entrepreneurial subject find solidarity with other less desired labouring subjects?

The model of development that I've critically described co-opts public space for private interest, but in doing so makes public space more beautiful, cleaner, or otherwise favourable. In the survey, most respondents perceived the LRT and the transformed public space in the CTC positively even when their housing costs exceed affordable measures. Depolitiicized, the right to this

Region's public spaces becomes a right to amenity-rich recreation, commercial exchange, and networking. The subject, immersed in entrepreneurship, is less clearly divided by economic conditions in the ideology of the innovation city. Space is produced for the individual who will participate in the networked methodology of innovation, encouraging an aesthetic and destructive form of entrepreneurship. Broadly accepted as a socio-spatial practice, can the network be re-politicized?

In the thesis, I considered refusal as a means of rejecting the narrow forms of belonging offered by the innovation city. Refusal is a potent practice because it creates the opening for discourse on what it means to belong and what is meant by belonging. Framed through the context of refusal, belonging points to something temporal about participation in public space. The concept harkens back to Ranciere's ideas about dissent and the need for overlap for visibility to happen. Refusal creates the possibility for the repoliticization of belonging by intervening in the temporal normalcy of space in the innovation city.

Reconsidering "Behind"

The thesis challenges conventional ideas about transit-oriented development and the rhetoric of the complete community by contextualizing it in the state's interest in innovation and entrepreneurship - unravelling the relationship between the entrepreneurial state and investment in public space in a post-industrial economy. In doing so, this thesis suggests that connectivity, in the way that it is produced and represented by the Region creates a network of public spaces that lose their public quality.

Having lived in the same spot behind Erb Street and Fischerhallman Road for most of 25 years, I've watched as networks of transit, development, and public space have shifted further from the neighbourhood towards a core of innovation. Simultaneously, development sprawls from the urban sensorium of the LRT and extends into the farmland behind my neighbourhood. These patterns of growth, oriented by state investment in public space, create a condition of "behind" in contradiction with efforts for connectivity. This method of making space obscures the depoliticization of public space in the core and periphery of the Region.

Behind is a product of the "in front" along the LRT and the ideological condition of the innovation city. The innovation city leaves behind forms of innovation that retain a social context by absorbing social activity into the network. Behind doesn't just occur locally, but appears repeatedly in multiscalar networks. Globally, Smith's patterns of uneven development can be reframed in terms of innovation to describe spaces that are ideologically "behind" centres of intense development produced by innovative states and their respective associative governance organizations.

Yet, "behind" offers an opportunity to participate in public spaces that are not spatially and aesthetically transformed to match the ideology of innovation so present in the CTC. As the relationship between core and periphery becomes more clear, the residents of the Region have a chance to demand more distributive schemes for public investment in public space and perhaps image means of improving infrastructure that does not depend on the innovations of the state. Behind might offer a method of refusal that asserts a talent to speak in the connectivity of the Region's network.

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8   APPENDIX

Move

I moved a portion of the survey results to the appendix because the survey design did not address the research questions I set out to answer as well as it might.

How is the state project of "innovation", the product of state-led gentrification, perceived by users of public space in the Central Transit Corridor?

I initially expected to ground-truth the regional scale analysis of gentrification and innovation with the results of the two portions of the survey moved to this section. Methodologically, however, the survey only captured the perception of individuals who are in the public space of the CTC and not individuals who are spatially or perhaps socially displaced from the spaces where the survey was conducted.

The questions that were asked in the gentrification section asked about the benefits the respondent experienced from the development area. In the innovation section, the questions were related to the spatial result of the five categories of state innovation that I outline in Chapter 4. These questions are primarily about transit improvements and don't get to the heart of the issue at hand. In hindsight, I should also have asked about the respondent's experience of the known effects of gentrification and innovation: focusing on housing affordability for themselves and their city or the shift in labour practices experienced by residents. The questions I asked focused on the improvements of public space only.

Excerpts from Ethics Application

This study aims to attain responses from a cross-section of residents in the Region to better understand the social construction of public space transformed by state-led gentrification. The study is part of a larger body of work that aims to critique the process of state-led gentrification and the proliferation of "innovation" as it is produced along the LRT.

Objectives:
1. Collect qualitative data on the social construction of "innovation" amongst public space users in the CTC in relation to quantitative data on the socio-economic backgrounds of respondents.
2. Use data to empirically assess the effect of state-led gentrification on social constructions in specific public spaces.
3. Create an analytical map of constructions of "innovation" in public space, a second analytical map of constructions of "innovation" by the neighbourhood of the respondents with an underlay of known information about neighbourhoods experiencing displacement.

Study Design:
This study necessitates on-site interaction for two reasons. Primarily, an in-person survey reduces some of the language and technology barriers posed by an online survey that may reduce the socio-economic diversity of participants. Additionally, survey participants are more likely to be able to provide accurate answers about their definitions and perceptions of "innovation" when in the public spaces where the presence of "innovation" is felt.

The proposed study is the second half of a two-part ethnographic investigation into the impact of state-led gentrification on the quality of public space in Waterloo Region. It is clear that the gentrification associated with the LRT is tied to the proliferation of "innovation" in the aesthetics and programs of public space in the CTC. In Spatializing Culture: The Ethnography of Space and Place Low (2016), presents an argument for ethnography through dual lenses that space is produced and simultaneously socially constructed. Using policy documents and observations of the built environment, the political and economic motives that have produced the gentrified "innovation" space of Waterloo Region are examined. The proposed survey aims to elucidate social constructions of "innovation" present in the

public space of the Region using embodied spatial analysis and affect analysis. Embodied spatial analysis observes the spatial distribution of people within the study site and the activities that occur across that distribution using surveys. In this lens, the personal and political conflict of social and physical displacement is inscribed in the public space. Affect analysis "provides a basis for an ethnography of space and place where emotion is the socio-cultural fixing of affect in individual lives ...encourag[ing] a more nuanced consideration of what is meant by the feeling" of a place (Low 2016). Observations in public space are essential to understanding social constructions of "innovation".

How individuals construct public space, affects who uses the space and how they use it. Ethnographic work in public parks has an extensive history, with notable examples by the Public Space Research Group at the City University of New York, of documenting how gentrification results in exclusionary public space. In the Region, transit development has resulted in particular transformations of public space in the Region of Waterloo. Understanding innovation through the lens of users of public space can indicate how public space transformations are impacting the quality of public space.

While transit development, freshly painted crosswalks, and plans to densify are not inherently problematic for a region with a rapidly growing population, an entrepreneurial attitude that is intent on creating an environment for tech-innovation at the municipal and provincial level of government leaves little room for socioeconomic diversity in public space. As Rosalynd Deutch writes, a homogenized public can only be "fundamentally coherent [...] by disavowing the conflicts, particularity, heterogeneity, and uncertainty that constitute social life". The quality of a public space, in this theoretical frame, is predicated on the ability of a socio-economically heterogeneous population to access the public space. I argue that public spaces are an essential component of democratic society following Hanna Arendt's conception of the self as something which forms through discourse with the diversity of the public, and John Dewey's description of the formation of community through encounter. Albeit we live in an increasingly digital world, the public spaces of the LRT make up the fabric of everyday life for those that work, live, or access services along it. Through the visibility of diverse populations, a discourse of conflicting aesthetics can unfold in public space. Thus, the quality of public space is defined by the socio-economic diversity of people able to access public space in order to form self, community and public.

Survey Results not Included in Final Thesis

Engaging the production of space for the entrepreneur that I developed in Chapter 2, I consider the reorganization of regional transit that funnels people into the CTC as a possible explanation for the mismatch between a geographic and individual study of gentrification along the LRT. I suggest that the primacy of entrepreneurial subjectification pushes an economic diversity of people into the core while reproducing inequitable spatial and economic relationships. Put differently, I argue that people choose to access public spaces within the CTC because these spaces are made more attractive to the subjectivity cultivated in the innovation city. They are made more attractive even as inequities inherent to entrepreneurial labour are enhanced by the processes of making them more attractive.

As with the gentrification section of the survey, perception of the Region's innovations did not correlate with the socio-economic backgrounds, experiences of gentrification, or experiences of public space. I make sense of the results of the survey by revisiting the differentiation between innovator and entrepreneur I outlined in Chapter 2. I propose that the results of the survey are less consistently correlated to income, not only because the effects of gentrification are still emergent, but because gentrification as a means to cultivate entrepreneurial potential does not beget a more affluent population, even if space is produced for greater affluence. I suggest that those who buy into the innovation strategies of the state may have varied incomes because wilful participation in the innovation economy does not always result in higher incomes and does not exclude low-income participation. As with the gentrification portion of the survey, I argue that the inequity of entrepreneurial labour remains present even if it goes unrecognized as a result of the policies respondents were asked to reflect on.

PART 2: EXPERIENCE OF GENTRIFICATION

Gentrification is the result of a dramatic increase in housing costs and is neighbourhood-specific. For this purpose, the following questions are about your neighbourhood, housing costs, and income.

What are the first three digits of your postal code?	__ __ __
Approximately how much does your household spend on shelter costs such as rent, property tax, maintenance per month? (e.g. $600)	_____
Have you moved since 2015 due to high shelter costs?	○ Yes ○ No

What is your annual household income?						
○ Under $5,000	○ $5,000 - $9,999	○ $10,000 - $14,999	○ $15,000 - $19,999	○ $20,000 - $24,999	○ $25,000 - $29,999	○ $30,000 - $34,999
○ $35,000 - $39,999	○ $40,000 - $44,999	○ $45,000 - $49,999	○ $50,000 - $59,999	○ $60,000 - $69,999	○ $70,000 - $79,999	○ $80,000 - $89,999
○ $90,000 - $99,999	○ $100,000 - $124,999	○ $125,000 - $149,999	○ $150,000 - $199,999	○ $200,000 and over		

The *ION* Light Rail Transit Line has improved my ability to get around the Region of Waterloo.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree
I benefit from new residential development along the *ION* LRT in the Region of Waterloo.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree
I benefit from new commercial development along the *ION* LRT in the Region of Waterloo.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree

FIG. 8. 1. Part 2 of the survey on Gentrification.

PART 3: EXPERIENCE OF INNOVATION

The questions in this section are about your participation and expectations of the local innovation economy. Innovation can be defined as the creation of new products, methods, markets, source materials, or organizational structures.
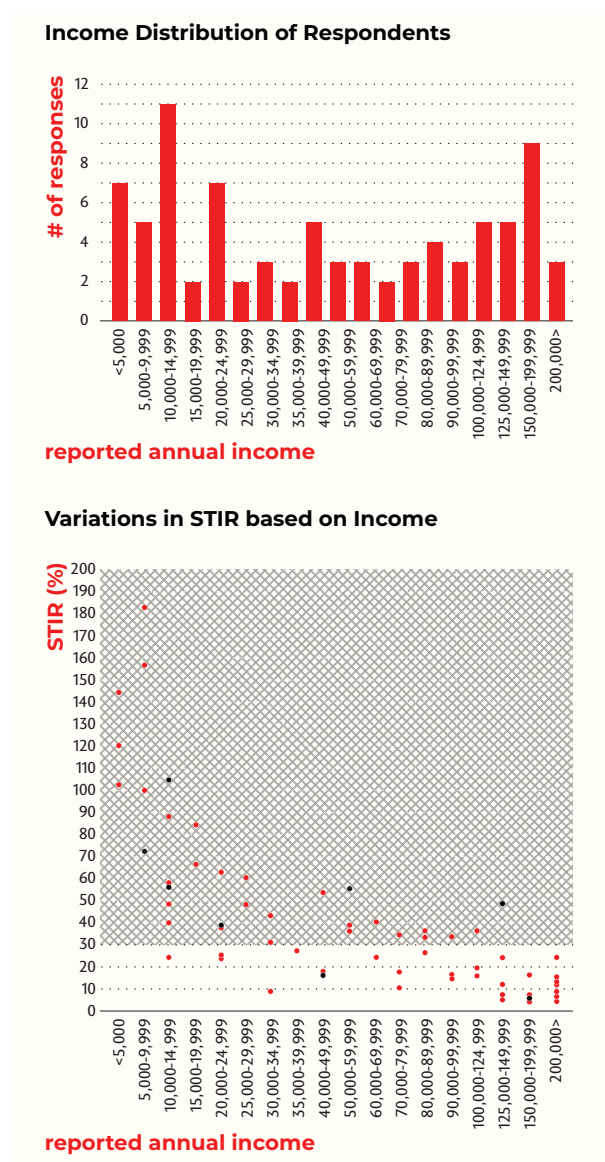
Are you locally employed or an entrepreneur in an innovation sector?	○ Yes ○ No

I believe the Region of Waterloo's success in innovation is a result of its Mennonite and Germanic heritage.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree
I think the *ION* LRT contributes to the Region of Waterloo's success in innovation.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree
I feel that improvements to public spaces (such as the renovations in Waterloo Park) will contribute to the Region of Waterloo's success in innovation.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree
I expect that a stronger transit connection to Toronto will contribute to the Region of Waterloo's success in innovation.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree
I believe that private organizations with influence on the municipal government, such as *Communitech* and the *Waterloo Economic Development Corporation*, contribute to the Region of Waterloo's success in innovation.	○ Strongly Disagree	○ Somewhat Disagree	○ Neither Disagree or Agree	○ Somewhat Agree	○ Strongly Agree

END OF SURVEY

Thank you for your time and responses! Please return the survey to the researcher for information on how to follow this work.

FIG. 8. 2. Part 3 of the survey on Innovation.

Income Distribution of Respondents

of responses

reported annual income

Variations in STIR based on Income

STIR (%)

reported annual income

- • Moved due to housing costs since 2015
- • Have not moved.

FIG. 8. 3. An overview of the economic condition of survey respondents. Interestingly, there is some polarity in the income of respondents that may be explained by the spaces the LRT connects. As was expected, respondents who reported lower annual incomes experienced a greater range of STIR calculated using reported monthly housing cost.

LRT

iXpress Bus

Respondents' Location
(# of respondents)

0.0 km   2.5   5.0   10.0

N

FIG. 8. 4. Postal code of the survey respondents. From this map, the range of people represented in the survey (recruited randomly within public spaces) mostly come from neighbourhoods in or adjacent to the CTC along intensification corridors.

N2V 4
N2L 18
N2J 2
N2T 1
N2H 11
N2G 11
N2K 3
N2M 4
N2N 2
N2C 4
N2K 4
N3H 1
N2R 2
N2P 2
N1R 1

Experience of Development along the LRT: Results from the Survey

I expected to see the polarity I observed at the Regional scale in the survey. I imagined that low-income individuals still present in the CTC would experience limited benefits from new development even if the new transit line enhanced their mobility. Conversely, I expected high-income individuals would see much greater benefits from development and minimal transit benefits. The results of the survey don't account for the social and geographic displacement tied to new-build gentrification that is expected for a region with the visible polarities outlined above. Most respondents, regardless of income or shelter cost, found that the LRT and associated developments are beneficial to them.

One way to understand this broadly positive response to gentrification is through it's ideology- which in the Region is a project of attracting and facilitating the work of the entrepreneur. Looking at Figure 4.9—most of the CTC in Kitchener-Waterloo (where the survey was conducted) has seen a 12% or greater increase in population. Given the type and cost of new housing in the CTC, this change in population suggests that the corridor has transformed through new-build gentrification. The perceived emptiness of the CTC prior to new construction could allow the Region to ignore the exclusionary displacements that occur in the CTC such that the LRT and all the transformation associated with it can be imagined as a progressive improvement. As an ideological project, this is in part a denial of gentrification. By denial, I mean gentrification is conceived of as an activation and amplification of existing innovation capacity through investment in public space.

In the ideology of the innovation city, the inequity of exclusionary displacement and other displacements may be more acceptable to the gentrified subject who makes a trade between mediated access and the improvements in public space that come from catering to the entrepreneur. People who are displaced during or before new build gentrification may appreciate access to more amenity-rich public space even if it means they are accessing it from farther away outside the CTC. New residents of the Region who find housing outside of the CTC are likely to not recognize their experience as displacement because they would not be imagined as displaced in standard economic

theory (Found 2021). Existing residents pushed out during the implementation of the LRT who chose to return to the CTC are apt to favour the transformation that displaced them. As I will describe in greater detail in the following sections, the public spaces of the CTC are oriented to service the sociality and labour of the entrepreneur.

The changing geography of the Grand River Transit (GRT) system is exemplary of the trade for more amenities. As a secondary system of highspeed-high frequency buses is introduced to support the LRT, access to the CTC appears enhanced while the polarizing effect of state-led gentrification pushes more people into longer commutes to access the same public spaces. The secondary system called the iXpress runs in perpendicular bi-directional loops through intensification corridors. People left behind in intensification may perceive general benefits associated with the LRT because the iXpress system is in many ways more efficient than the previous bus schedule. Running at more frequent intervals with fewer local stops, the iXpress system moves through the Region more quickly while reaching the eastern and western peripheries of the three cities. However, simultaneously the local routes that wound through suburban streets are progressively centralized to connect more efficiently into intensified iXpress routes. The hierarchy spatially reinforces the unequal distribution of complete community principles to the people who can afford to live in intensifying and gentrifying neighbourhoods.

Although partially funded within the project budget for the LRT, the iXpress system differs from the LRT as a development strategy. Most clearly, the cost of implementing the iXpress system is negligible in comparison to the capital investment required to construct the more robust infrastructure of the LRT. The iXpress system was also implemented gradually by routing the express buses to stop at existing stations where possible—simultaneously limiting the capital cost of the project and allowing for implementation to occur with greater flexibility. There is less pressure on the bus system to succeed as an ideological project because it does not cost the municipality as much as the LRT. As such, there isn't as great a pressure to recuperate the investment with development charges or a population increase. Still, intensification is occurring along portions of the iXpress because it is an attractive feature in the transit network of the Region.

As a service, the LRT may be more comfortable (equipped with wifi on pothole-free tracks). As an organizing force, it is central to the public space of the Region. Remembering that the survey respondents are autonomously present in the CTC, I propose that the hierarchy of GRT routes convinces the gentrified subject of the benefits of the LRT as a public space. In said space, people are able to enjoy the activity induced by increased residential density or access services brought about by new commercial development. On the ground, it seems like these things are readily available for everyone even as they are progressively made less available to those experiencing social or geographic displacement.

In the next chapter, I further describe the naturalization of inequitable access to public spaces through the aesthetic and spatial transformations in public space within the CTC. In the spirit of improving public spaces, there hasn't been an expansion of public services and opportunities that improve the circumstances of low-income households or individuals within the CTC. In Chapter 5, I present an example between Victoria Station and Queen Station. As I move through the case study, the relationship between an economic phenomenon of gentrification and the culture of entrepreneurship appears to complicate the already complicated production of space for more affluent users. In the following sections on the entrepreneurship of the state, I describe the LRT as an artifact of the network, consuming and producing public space for the labour of innovation. I will suggest that the user isn't necessarily more affluent but wrought with the potential for entrepreneurship, innovation, and affluence.
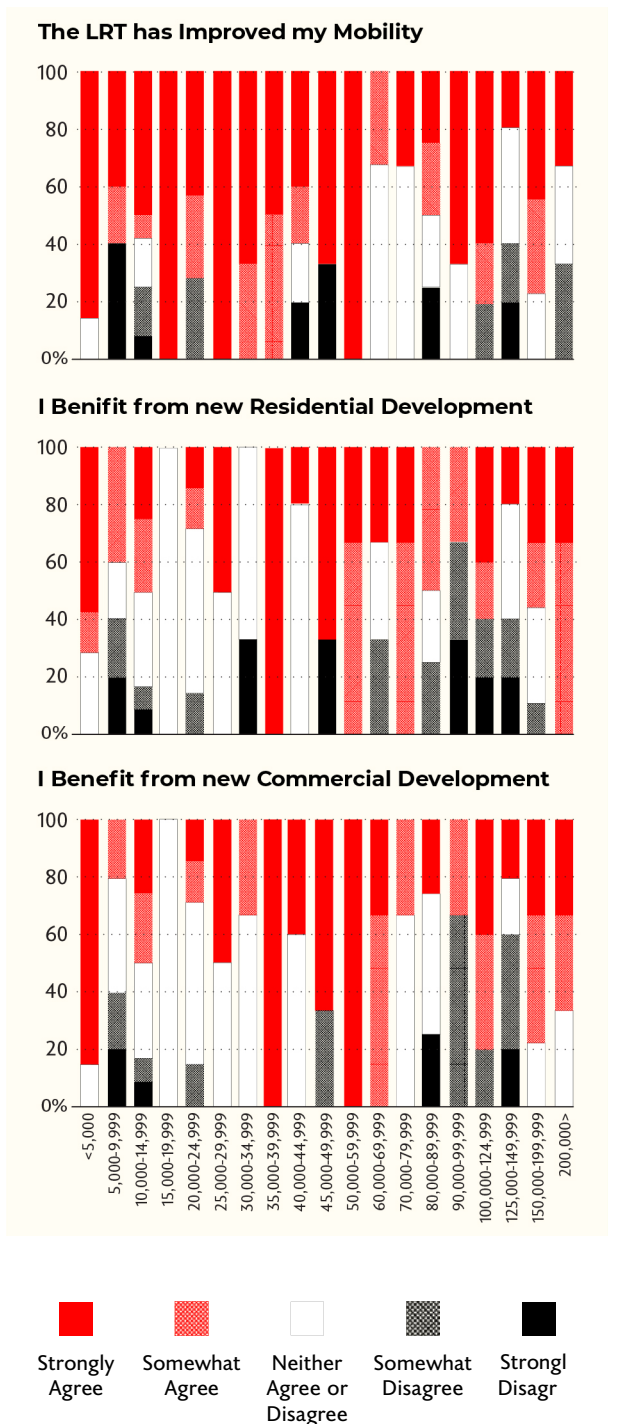

FIG. 8. 5. Perceived benefit from added transit availability of the LRT and development tied to LRT from survey responses.

2012

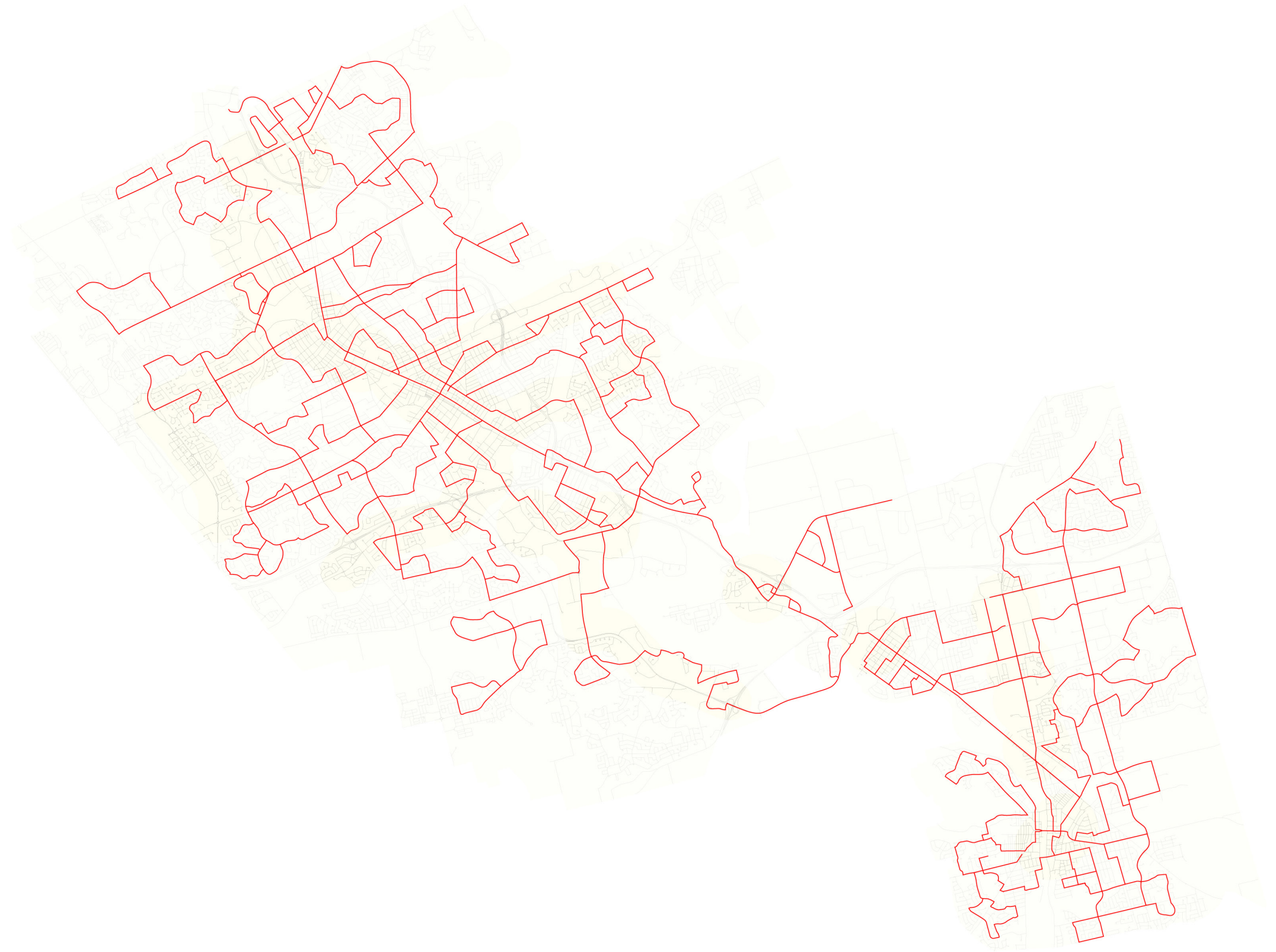0.0 km   2.5   5.0   10.0

N

FIG. 8. 6. Bus system before the introduction of the LRT
and dramatic population growth in the Region. The system
was less frequent but reached more suburban streets.

2019

LRT Phase 1

LRT Phase 2

iXpress Rapid Bus with a minimum frequency of 15 minutes

Neighborhood Bus with a minimum frequency of 30 minutes at peak hours

0.0 km   2.5   5.0   10.0

N

FIG. 8. 7. Bus system after the introduction of the LRT and dramatic population growth in the Region. The hierarchical system is more efficient but becomes less accessible to some suburban residents.

Mennonite and German Herritage leads to success in Innovation

100
80
60
40
20
0%

The LRT leads to success in Innovation

100
80
60
40
20
0%

Transit to Toronto leads to success in Innovation

100
80
60
40
20
0%

Improved Public Space leads to success in Innovation

100
80
60
40
20
0%

Assoc. Governance leads to success in Innovation

100
80
60
40
20
0%

<5,000
5,000-9,999
10,000-14,999
15,000-19,999
20,000-24,999
25,000-29,999
30,000-34,999
35,000-39,999
40,000-44,999
45,000-49,999
50,000-59,999
60,000-69,999
70,000-79,999
80,000-89,999
90,000-99,999
100,000-124,999
125,000-149,999
150,000-199,999
200,000>

Legend:
- Strongly Agree
- Somewhat Agree
- Neither Agree or Disagree
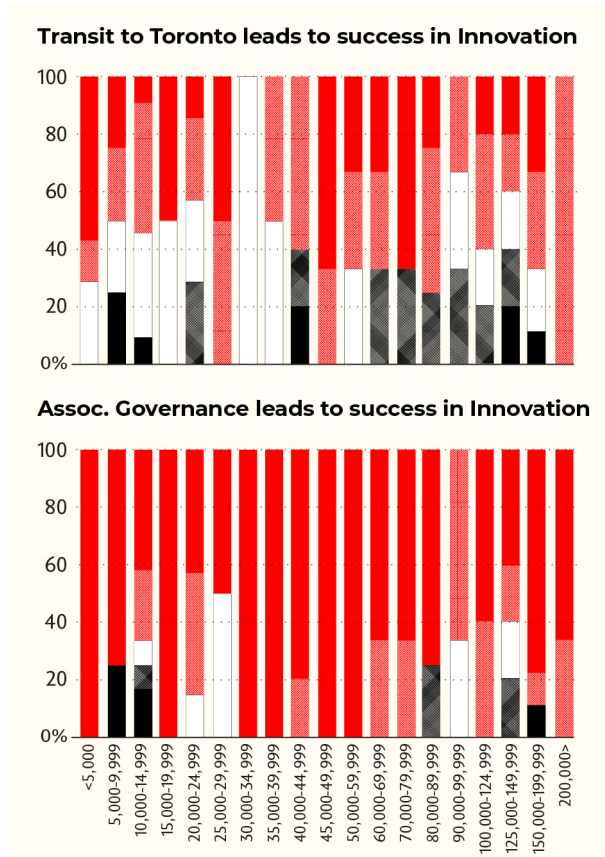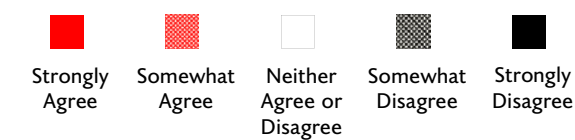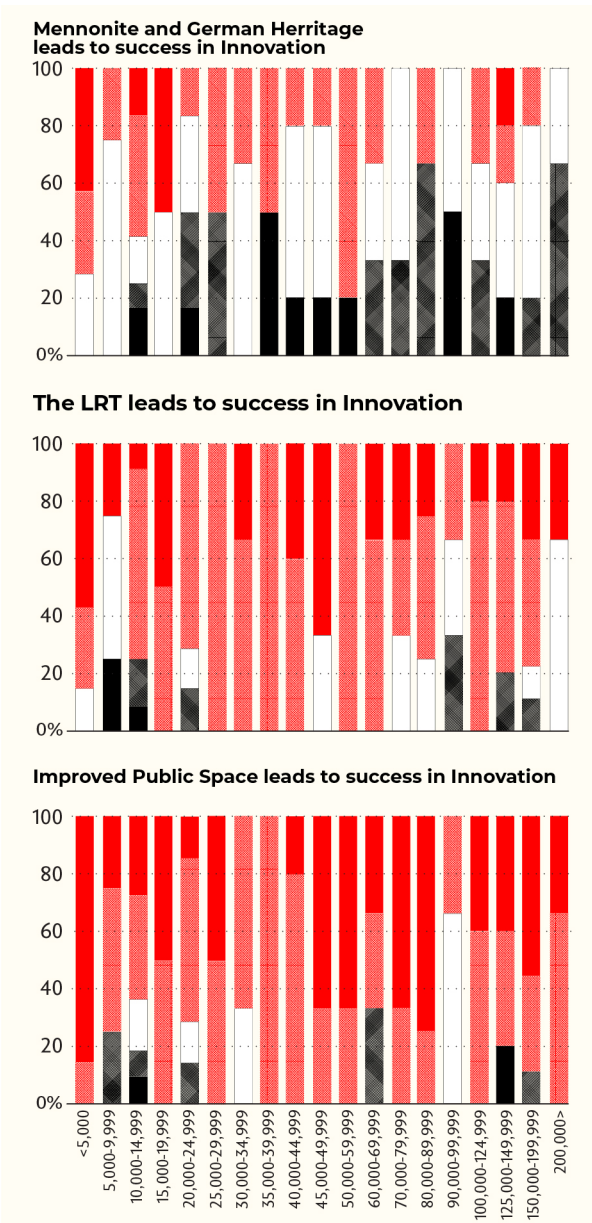- Somewhat Disagree
- Strongly Disagree

FIG. 8. 8. Belief in the innovation ideology implemented by the Region and associative governance organizations along the LRT.

associative governance organizations that aid the state in making "the right investments" to grow the Region's innovation economy. Seen as a means for bottom-up governance (**Gunasekara 2006, 138**), local associative governance organizations obscure the state's presence in maintaining and expanding built and economic innovation networks while engaging the state for private interest.

The mechanisms for material and immaterial development have been transformed as associative governance organizations take on a role in researching, advising, and enacting programs.

The associative state plays an important role in terms of strategic leadership and capacity building in order to empower civic networks. In economic development efforts, the state crucially shapes the institutional environment and underlying conditions conducive to the collective learning processes that link actors… and underpin innovative regions. (Nelles 2014, 92)

Finding 'the right investment' to produce the collaborative environment of the networked society is a challenge for public policymakers. As such, an ecosystem of organizations provides input and expertise as engaged private actors and policy think tanks. In an ethnography of innovation policymakers, William Davies found that they lacked quantitative methods to assess the innovation potential of municipalities but rely on quantifiable data to inform policy decisions (2011, 402). Davies observes:

The crisis of measure is therefore twofold: for not only must policy-makers pursue investment strategies in intangible assets that resist easy quantification or economic valuation, they must also strive to remain agnostic regarding the likely outcome. (Ibid, 403).

An industry of interdisciplinary 'gurus' "centralized around a small number of institutions, personalities and ideas" are followed by the state, directly or through associative governance organizations, to create the impression that their constituent place is innovative (Ibid, 411). Self-interested ideas promoted by the likes of Richard Florida and Micheal Porter are used to rationalize local development in direct contrast to the localized grassroots governance that associative governance is supposed to provide.

Originally established by a community of actors to grow

the high-tech economy, Communitech and the Candian Technology Triangle (CTT) were founded in the late nineties. Although the two associative governance organizations started independently, with Communitech focused on 'homegrown' entrepreneurship and CTT interested in attracting international enterprise, they developed a coordinated and influential relationship (**Nelles 2014, 95**). Currently, the successor to the CTT, the Region of Waterloo Economic Development Corporation (WEDC) is mandated to "invent the future" by providing a concierge service to relocate, grow, or start businesses in the Region (**Waterloo EDC 2022**). They provide on-the-ground information and connections to entrepreneurs, much like the hotel concierge calling up the local restaurant for a reservation; working the new firm into an existing network. Similar to the WEDC, Communitech now describes itself as a founder service to take a business from start-up to scale-up (**Communitech 2022**). However, both the WEDC and Communitech, "have expanded their mandates significantly beyond their original designs and functions as core associations in regional strategic governance" (**Nelles 2014, 95**).

Amongst other organizations in the Region, these entities promote socio-spatial developments that will serve their interest in the growth of local innovation. For example, in a public meeting for the LRT, the CEO of Communitech used an internal survey to argue that the Region needs to support existing workers and new talent by implementing green transit infrastructure (**Region of Waterloo 2011**). In the same period, the CTT supported the LRT on the basis that "there is intense international competition for talent, and we need to offer great infrastructure and lifestyle to remain competitive ("**Canada's Technology Triangle Endorses Light Rail Transit" 2011**). Hosting conferences (**Ansari 2017**), creating arts ventures (**Jackson 2018**), and advocating for greater engagement between tech and the community, these organizations become engaged with public life. With great influence as economic drivers in the Region, they govern through associated power.

From its impact on local business (in 2015 Waterloo Region's GDP was 15 percent higher than the provincial average) to infrastructure (the LRT being built to service the region's core and the provincial government's commitment to railway improvements in the Toronto-Waterloo Corridor are in part due to policy work by Communitech in concert

with government partners), the legacy of collaboration fostered by Communitech is not only written all over the region, it's now national in scope. (Communitech 2017)

Echoing the labour condition of the network society, the social and cultural life of the Region is subsumed into the economic strategy of WREDC and Communitech.

The public-private network of governance is a compelling relationship for the state as a means to avoid a distributive responsibility with investments in new infrastructure. The gentrifying effect of public investment is overshadowed by the imaginary grassroots nature of associative governance founded in the Region. The WEDC, Communitech, and other organizations self describe themselves as part of a local community as their involvement in governance enables the social and spatial displacement of the local community. With a mix of independence and collaboration, these organizations take up the space of residents in the conversation with the state. Producing a narrative that growth in innovation is simply a cultural product of an incredible place, they obscure a reliance on state investment in their organizations and the innovation spaces these organizations support. The California Ideology transferred to its northern cousin, Schumpeterian innovation in the networked society of the post-industrial economy is the privatization of knowledge and space produced through public investment.

Entrepreneurship perceived by the Entrepreneur: Results from the Survey

Initially, I expected to see stronger agreement with the state's engagement in innovation—through infrastructure and policy—amongst survey respondents who reported an involvement in the innovation economy with the assumption that these individuals are benefiting from innovation growth in the Region. I expected that individuals who reported a lower income would be in less agreement with the same statements since low-income individuals are more likely to experience displacement pressure from labour that is made more entrepreneurial or geographic displacements as a result of the innovation economy's reliance on public infrastructure expansions. As with the gentrification portion of the survey, respondents were largely in agreement with the effectiveness of development and policy pertaining to innovation in the CTC.

Considering the emergence of a Veblenian Entrepreneur, I think the results of the survey point to the efficacy of the LRT as the material of ideology. In the Region, the ideology of innovation is present in institutions and spaces, whether one is an entrepreneur or not. The concept of the Veblenian Entrepreneur decouples the gentrification of the innovation city from affluence as the subject the state idealizes does not need to succeed as an entrepreneur as long as the industry of entrepreneurship is facilitated by associative governance thrives. Failure, with all its financial burdens, is accepted and celebrated in an industry of entrepreneurship where the supply of future entrepreneurs is ample. Imagined as an ideological practice in public space, I imagine that people participating in public space may conspicuously behave as the networking-entrepreneur even if they are not financially successful in their entrepreneurial endeavours.

Following the logic of the Veblenian Entrepreneur, it is possible that people who do not produce financial security for themselves as entrepreneurs accept the ideological condition of the Region as conspicuous participants. I propose that individuals participate in the "compulsory sociality" of entrepreneurship willingly, as it is performed in the spaces connected and produced by the LRT. As a material infrastructure of the innovation network, the LRT is successful in disseminating an ideology—in representing the material relationships of production—by the people it transports and the places it connects. Given the distribution of high and low incomes, I focus on two temporary populations present in the CTC, students and temporary tech workers, and the places along the LRT that they may access.

Students and temporary workers make up approximately 2% of the Region's population (Region of Waterloo 2020a, 53). The relatively high portion is due to the "presence of post-secondary institutions and knowledge-based employment opportunities, specifically in tech-related sectors, within the Region of Waterloo" (Waterloo 2020a, 53). As post-secondary institutions expand and the tech section expands in the Region, both kinds of temporary populations are expected to increase. Given the propensity of temporary residents to occupy high-density housing and the prevalence of tech and institutional campuses along the LRT (Waterloo 2020a, 55), it's likely that the temporary population of the Region is disproportionately represented in the CTC.

FIG. 8. 9. Spin-offs since the founding of Blackberry. Adapted from Bathelt and Spigel (2011).

The student, while often reporting a low income and a high income to shelter cost ratio (Moore and Skaburskis 2004), is socialized to have entrepreneurial potential as entrepreneurship is embedded into post-secondary education (Jessop 2017; Hartmann, Krabbe, and Spicer 2019). As an industry of network-linking and entrepreneurship incubators emerges in the Region's innovation geography, students are encouraged to pursue entrepreneurial ventures even if they are not equipped for them (Hartmann, Krabbe, and Spicer 2019, 30). As the culture of entrepreneurship is cultivated within students, I imagine that their reading of new development along the LRT is more positive than the actual experience of the CTC. As Hartmann et. al suggests, many of them may seek out entrepreneurial opportunity and enjoy the connective amenity of the LRT as part of their conspicuous entrepreneurship but never succeed in becoming an entrepreneur.

In a study of students and recent graduates at an American university, Chen and Goldstein (2022) found that entrepreneurial training encouraged a self-identity of entrepreneurial potential. The study, like ethnographies in coworking space (Bandinelli 2020; Cockayne 2016), found that these students were encouraged to create a personal identity that aligned with the entrepreneurial pitch—to attract investors to a life story (Chen and Goldstein 2022). Subsuming life into work, these students gain access to government-funded innovation hubs and special programs in entrepreneurship offered by universities even if they are not equipped to innovate (Chen and Goldstein 2022). Hartmann et. al suggest that a substantial portion of state investment will go into the expansion of an innovation network without ever encouraging high-quality ventures (2019, 30). In the Region, public funding and public space—in the shape of the LRT and the publicly funded innovation spaces it connects—are put towards innovation while the number of spin-offs and start-ups in the Region has remained stable if not declined since early successes like WATCOM and Blackberry (OECD 2009, 197; Munro and Bathelt 2014, 227).

The temporary tech worker also shares in the entrepreneurial potential attributed to students as they are enabled or forced to hop from firm to firm. Although often well-compensated in tech positions, some may also report low annual incomes as co-op students, interns, or sporadically employed labour (Carnoy, Castells, and Benner 1997). Their flexibility represents a form of entrepreneurship where the individuals market

their skilled potential to employers, moving between firms and producing a linkage in the innovation network (Ibid, 29, 43, 44). This entrepreneur may be particularly interested in the build-out of a network of innovation as a means to feel independent and entrepreneurial as the employee of a company. The LRT is the venue to perform Velblenian entrepreneurship—whether that is through an aesthetic valuation of public transit or hoping for a chance encounter with another node for one's entrepreneurial network.