INCOME POLARIZATION AND THE EMERGENCE OF A LOW INCOME SKYTRAIN CORRIDOR IN METRO VANCOUVER, 1971-2006

by

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Abstract

Income inequality is on the increase internationally, in Western Anglophone nations, and in Canadian cities. In Metro Vancouver, broad processes of socio-spatial polarization in the region have led to the emergence of a low-income corridor that follows the SkyTrain Expo Line rapid transit alignment from East Vancouver to North Surrey. Within this low-income corridor there are processes of significant and varied neighbourhood change. The population of Metro Vancouver continues to expand, with this growth largely fueled by immigration. In order to accommodate population growth, increased residential density and transit-oriented development near SkyTrain stations has become a common public policy prescription.

A mixed-methodology was pursued in order to conduct research at three geographical scales. At the scale of the Vancouver region, quantitative analysis is employed to discover associations between the demographics and the housing stock of neighbourhoods, and the average incomes of census tracts as well as changes in average incomes. At the sub-regional scale of the low-income corridor, semi-structured interviews were conducted with 14 key informants. Finally, at the local scale, two neighbourhoods were selected for further study. Four focus groups were conducted with a total of 26 residents of two neighbourhoods within the low-income corridor.

The key findings of these methods are generally complementary. At the regional scale, the Vancouver CMA has seen an increase of income inequality. The socio-spatial polarization of neighbourhoods is a consequence of income inequality and these processes are strongly associated with visible minority status, immigration, and apartment unit dwellings. These three factors are central to understanding the emergence of, and dynamics in, the low-income corridor.
Policies which encourage high-density development near SkyTrain stations in the low-income corridor have increased development pressure; particularly so for one district of affordable rental apartments which is largely occupied by recent immigrants of visible minority status.

I urge scholars conducting research in urban income inequality to incorporate mixed methods and multi-scalar analysis into their research design. In doing so, our findings will be enriched, textured and challenged, and our projects made stronger.
Preface

The design of the research program, all primary and secondary research, and all analysis of data in this thesis was conducted exclusively by Craig E. Jones. For Chapter 3 a series of six multivariate regressions were conducted using data from the 1996 and 2006 Canadian censuses. For Chapter 4 semi-structured interviews were conducted with fourteen key informants. All key informants were contacted via email by Craig E. Jones, and all interviews were conducted by Craig E. Jones. For Chapter 5 four focus groups were conducted in two neighbourhoods with a total of 26 participants. Participants were recruited by two third-party organizations, and the focus groups were conducted by Craig E. Jones. All interviews and focus groups were transcribed and analyzed by Craig E. Jones.

The field-work for this thesis was granted ethics approval by the UBC Behavioural Research Ethics Board under certificates: H13-01282, H13-03225.
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List of Abbreviations

CMA: census metropolitan area
CT: census tract
FAR: floor-area ratio
GAR: government assisted refugee
ISSoBC: Immigrant Services Society of BC
NHS: National Household Survey
OLS: ordinary least squares
PBRH: purpose-built rental housing
SBTC: skills-biased technological change
SEG: socio-economic group
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Chapter 1: Introduction

Recent research into urban income inequality has revealed a transition in Canadian cities over the last 40 years (see Hulchanski et al. 2007, Brzozowski 2010, Ades et al. 2012, Chen et al. 2012, Ley & Lynch 2012). Traditional inner-city areas of poverty have become revalorized in post-industrial cities while some middle-income suburban districts have transitioned into low-income areas, reversing our traditional understanding of the geography of urban income distributions.

Within this context of transition and polarization in Greater Vancouver, a distinctive zone of districts along the rapid transit Skytrain corridor has moved into low income status since 1971, a trend that has accelerated since 2000. This thesis identifies some of the factors associated with socio-spatial polarization in the Vancouver census metropolitan area (CMA) which have led to the development of a low-income (and in several neighbourhoods, very-low income) region in formerly middle-income neighbourhoods, straddling four municipalities from inner city Vancouver through to the suburbs of (South) Burnaby, New Westminster and (North) Surrey.

This thesis has been guided by a series of six research questions:

1. What factors, such as demographics and housing characteristics are associated with differences in the average income of census tracts (CT) and changes in the average income of CTs over time?
2. Why has this corridor of low-incomes developed, and what does the location provide its population?
3. What are the demographic characteristics of households along this corridor?
4. What share of the corridor’s population is new immigrants and have co-ethnic clusters formed?
5. What has been the role of public policy in the development of this low-income region?
6. How might future policies – e.g. the redevelopment of sites near Skytrain stations - affect
the stability of affordable housing in this district?

This research has been informed by and builds upon the work of Hulchanksi et al. (2007) which has generated interest in socio-spatial polarization in Canadian cities, and Ley & Lynch (2012) which provides the guiding framework for this thesis. The findings of Ley & Lynch (2012) are expanded upon through a mixed-methods approach at three geographical scales.

2. Sub-regional scale: Semi-structured interviews with 14 professionals and community leaders.
3. Neighbourhood scale: four focus groups in two neighbourhoods with a total of 26 participants, drawn from service agency lists.
4. Supplemental sources: review of newspaper accounts, planning reports and other public documents.

This thesis is organized as follows. Chapter 2 serves as a literature review of recent scholarship on income inequality. Income inequality in developed nations has increased drastically in the last 40 years (see Piketty & Saez 2006) and there are two broad theoretical frameworks which are prominent in explaining income polarization; skills-biased technical change (Bound & Johnson 1992; Berman et al. 1994; Katz & Murphy 1992; Krueger 1993; Levy & Murnane 1992; Juhn et al. 1993) and the world and global cities hypothesis (Friedman 1986; Sassen 1988). These theoretical frameworks are either challenged or supported by empirical studies which employ several methods at a variety of scales. Income inequality has increased at the international scale (Piketty & Saez 2006) and at the national scale of the US (Autor et al. 2006, 2008; Lemieux 2008; Doussard et al. 2009; Heathcote et al. 2010; Cassiers & Keseloot 2012) and Canada (Green & Kesselman 2006; Frenette et al. 2007; Osberg 2008; Brzozwski et al. 2010; Bolton &
Breau 2012). This increase in inequality is evident at the urban scale with inequality rising between and within cities (Hamnett 2003; Volscho & Fullerton 2005; Korpi 2008; Borel-Saladin & Crankshaw 2009; Doussard et al. 2009; Van der Waal & Burgers 2009; Van der Waal 2010: Timberlake et al. 2012). Rising inequality leads to segregation of neighbourhoods based upon incomes, which can exacerbate the consequences of income inequality (Hulchanski et al. 2007; Watson 2009; Beeson et al. 2010; Reardon & Bischoff 2011; Chen et al. 2012; Ley & Lynch 2012). Fundamentally, this thesis is a study of neighbourhoods, and the expression of growing income inequality at the neighbourhood scale is of central concern.

Chapter 3 is a quantitative study of regional income inequality at the first scale of analysis, the Vancouver CMA. Three series of paired multivariate regressions are conducted using data from the 1996 and 2006 censuses in order to gain insight into significant associations between demographic characteristics and features of the housing stock, and the average income of CTs as well as changes in average income.

Chapter 4 focuses on the second scale of analysis, the emerging corridor of low and very-low average income CTs that follow the SkyTrain Expo Line from East Vancouver through to North Surrey. The methodology of this chapter is a combination of semi-structured interviews with 14 key informants (elected government officials, municipal and regional planners, and community development and immigrant services professionals), supplemented by a review of newspaper accounts and policy documents. All of the key informants have a professional mandate which concerns them with some part of the low income corridor. Several of the key findings of Chapter 3 are supported by the dominant themes discussed by key informants, indicating that the combination of quantitative and qualitative methods in this thesis is complementary.
As neighbourhoods are central to both Hulchanski et al. (2007) and Ley & Lynch (2012) and increasing income inequality is expressed at the geography of the neighbourhood, certain neighbourhoods were selected for further study. Chapter 5 narrows the scale of analysis to two neighbourhoods within the low income corridor. The dominant method of this chapter is a series of four focus groups with a total of 26 participants recruited by two community services organizations operating in the corridor.

Chapter 6 integrates the findings of chapters 3 through 5. The analysis of income inequality at three scales in the Vancouver CMA, through the complimentary use of three distinct methods revealed common themes which are relevant at every scale of analysis.
Chapter 2: Literature Review

There is a general consensus that urban income inequality in developed nations has increased since the 1970s, but scholars’ conclusions regarding the causes of growing inequality vary depending on their theoretical framework and scale of analysis. This literature review considers the theoretical frameworks of skills-biased technological change (SBTC) and the world and global cities hypotheses as explanations of increasing income inequality, and reviews a range of empirical studies on urban income inequality in a variety of contexts.

2.1 Theoretical Frameworks

Two broad explanations for income inequality emerged in the 1990s. Among economists, the consensus of the early 1990s was that income inequality had grown during the 1980s and that the primary cause of this was skill-biased technological change (SBTC) driven by the computer revolution (Bound & Johnson 1992, Berman et al. 1994, Katz & Murphy 1992, Krueger 1993, Levy & Murnane 1992, Juhn et al. 1993). The SBTC thesis focused on differentials in human capital and relative demand for skills while it rejected globalization as the main source of rising inequality.

Another view which places globalization at the heart of rising inequality, particularly in cities, is the ‘world’ or ‘global city’ thesis. First put forward by John Friedman (1986) and further developed by Saskia Sassen (1988), the global city thesis predicts that the integration of the local urban economy into international flows of capital and people will lead to a growing share of both low-income and high-income occupations, with stagnant growth or decline for middle-income jobs. This trend is otherwise known as the ‘polarization thesis.’ For both Friedman and Sassen,
the degree to which a city is central to the global economy will structure the class polarization within. Economic restructuring, and high rates of international migration drive the gap between the very high incomes of those who sit atop the urban occupational structure in professional and managerial services and the routine, low-wage, service-provision jobs often filled by women and immigrants (see Friedman 1986 and Sassen 1988, 2001, 2006, 2008).

Within the global cities literature, the polarization thesis has been problematized by a ‘professionalization thesis,’ introduced by Chris Hamnett (1994, 1996). Hamnett argues that the polarization thesis is conceptually underdeveloped, and fails to take into account the political and social context within which a given city exists. He argues that exposure to the global economy in some cities has led to the upgrading of skills in the local labour market, or that the professionalization of workers has occurred (Hamnett, 1996). The empirical basis of the professionalization thesis is covered in more detail below.

2.2 Income Inequality at the International and National Scales

Motivated by dissatisfaction with available data on international income and wealth concentration, Piketty & Saez (2006) constructed a database from historical tax statistics for a number of mostly Western countries. Their data runs from 1917 to 2002, and they discover a remarkably similar trend for the US, UK, and Canada. During the inter-war period, the top ten percent or decile of earners had a share of national income which fluctuated at around 40 to 45 percent, but then declined sharply after the Great Depression and WWII. The top decile’s share stayed relatively constant at 31 to 32 percent until the 1970s when it slowly began to rise. As of 2002 the share of national income that went to the top ten percent of earners had recovered to close to the pre-war level. Two of their other findings are especially of note: first, fluctuations in
income for the top ten percent can be accounted for mostly by fluctuations in income for the top one percent; second, the primary source of income for the very top earners before WWII was capital income, whereas after the 1970s the source of income for the very top of earners had shifted to salary income. At the national and international scale, growing income inequality is largely a result of growth in salary income for the top one percent of earners.

Rising income inequality has not been a steady process since the 1970s. A number of studies (Autor et al. 2006, 2008; Lemieux 2008; Doussard et al. 2009; Heathcote et al. 2010) found that in the 1980s, US income inequality grew at a faster rate than in the 1970s. Whereas the 1980s saw inequality increase across the earnings distribution, in the 1990s inequality in the bottom half of the distribution stagnated and all recent inequality growth has occurred in the top half. Lemieux (2008) and Cassiers & Keseloot (2012) agree that the growth of the financial sector in the economy can be implicated as a cause of this trend, while Autor et al. (2006, 2008) argue that rapid growth in employment at the bottom and top end of the skills distribution relative to the middle was due to the computerization of middle-income, routine cognitive tasks such as bookkeeping and repetitive production work, lending support to the SBTC thesis.

But a political thesis could profitably be accommodated here as well. The 1980s are the decade in which the Regan-Thatcher leadership in the USA and the UK was association with striking institutional reforms, ushering in the ideology and practice of neoliberalism. There is not space here to discuss this development in detail (see Harvey 2005; Peck and Tickell 2002), but suffice to say it involved sweeping deregulation, the erosion of the welfare state, and the liberation of market processes as the normative logic of policy decision-making. Changes to tax regimes were advantageous to the top 10 percent, while ‘welfare reform’ and later, after 2008, austerity
policies, have disproportionately penalised poorer groups (and poorer cities), reducing take-home income (Peck 2012).

Frenette et al. (2007) and Brzozwski et al. (2010) show that income inequality in Canada increased substantially from the 1980s, and that much of the polarization in Canada has occurred within the extreme bottom and top of the income distribution. They use census data augmented with tax estimates to show that in Canada, inequality in after-tax disposable income is substantially higher than previously thought. They cite institutional changes made in the 1990s to tax rates and transfer payments (a key moment of federal neoliberalism) as being a leading cause of disposable income inequality. Due mostly to social assistance, income transfers, and child benefit programs, disposable income inequality in Canada was basically flat until 1990, but since that time income inequality in Canada has been rising rapidly as federal policies attacked the national deficit through welfare cuts and entrepreneurial initiatives (Bolton & Breau 2012; Green & Kesselman 2006; Osberg 2008). Canada is a multicultural country with a large visible minority population and high rates of immigration. It has been found that Canadian-born visible minorities face “substantial and significant earnings penalties” which have not diminished since 1985, despite the considerable growth of this population (Hou & Coulombe 2010; Pendakur & Pendakur 2011).

2.3 Income Inequality in Cities

Empirical studies of income inequality in and between cities employ a variety of methods and offer differing explanations for rising inequality. Glaeser et al. (2009) find that the dispersion of educational achievement is positively associated with income inequality and that in US cities half and one-third of the variance in income inequality could be explained by occupation-based
inequality and education respectively. Also consistent with the SBTC thesis was the finding that cities with large numbers of both college graduates and high school drop-outs were especially unequal.

Timberlake et al. (2012) set out to test the polarization thesis through a systematic analysis of 57 large US cities. They found mixed support for the polarization thesis; income polarization was not clearly associated with centrality in the global economy, but when centrality was combined with high rates of immigration a positive relationship was discovered, which supports Sassen’s (2008) argument that low-paid service work at the bottom of the occupational hierarchy tends to be filled by immigrants. In a study of 22 Dutch cities, Van der Waal (2010) found support for the polarization thesis in that cities with a higher share of advanced producer services (a measure of integration into the global economy) had lower unemployment rates and a platykuritic income distribution.

Deindustrialization and a decline in union density (another facet of neoliberalism) are often implicated as a cause of growing income inequality in cities. Doussard et al. (2009) adapted a method developed by Wright & Dwyer (2003) which codes industry-occupation groups and sorts these groups into equally sized, wage- sorted quintiles. They examined changes in the occupational structure of a number of US cities with a particular focus on Chicago. They were able to show that polarization of Chicago’s labour market had occurred, and cited deindustrialization and diminishing union density as a major cause of income inequality. Volscho & Fullerton (2005) found that income inequality was lower in cities with greater union density and greater government sector employment. The positive benefit of union density was strongest for workers in the middle of the income distribution, and less so for those at the
They also found that unemployment was positively associated with income inequality, as was greater dispersion in education and age. Further support for this explanation of growing income inequality was found by Moller et al. (2009) who used US counties as their unit of analysis to show that rising inequality in the US reflects “the growth of large, deindustrialized urban areas.” Some of the most important factors influencing inequality in their study were the high school completion rate, the size of the black population, the size of the government sector, union density, and women’s labour force participation.

The polarization thesis predicts that global cities will see growth at the top and bottom of the earnings distribution, with stagnation or shrinkage in the middle. Hamnett’s (2003) case study of London, England suggests that growth in the relative size of groups at the top of the income distribution significantly outweighs growth at the bottom. Hamnett’s (2003) analysis has been critiqued by Watt (2008) for relying upon occupational categories as a proxy of class, thereby excluding the economically inactive. To this charge Hamnett (2009) responded that those left out of the analysis were largely excluded from the labour market because they were students, retired, or looking after the home and family, and that by no means should this group be assumed to be working class. Davidson & Wyly (2012) counter the assertion that London could be characterized as increasingly middle class and argue that conflating changing occupational structures with class relations is a mistake repeatedly made by Hamnett & Butler (2008). This is important because Hamnett’s claim that London’s working class population has been replaced by an expanding middle class depends upon the decline of traditional working class occupations. Davidson & Wyly (2012) argue that labelling the diverse occupations contained within socio-economic group (SEG) categories as broadly middle class is highly problematic, and the
application and interpretation of UK social class categories must be conducted in a more critical manner. They argue that Butler et al. (2008) lack an appreciation of the relational nature of class. In response, Hamnett and Butler (2013) argue that there is no viable alternative to using comprehensive official data sets because they can be used to consistently analyse change over time and space. In defence of their use of SEGs to demonstrate the growth of the middle class, they argue that the growth of professional and managerial groups was far more marked in Inner London than in either Outer London or the UK as a whole (Hamnett and Butler 2013). A key insight is that the debate over the professionalization thesis has largely been concerned with questions of method, which shows how important decisions regarding data sources and methodology are in forming conclusions in empirical studies of urban income inequality.

Borel-Saladin & Crankshaw (2009) found support for the professionalization thesis through their study of Cape Town, South Africa. Although Cape Town experienced an absolute growth in highly paid professional jobs and an absolute increase in unskilled, low-wage occupations from 1980 to 2000, for every job that was lost in the manufacturing sector, three middle-income white-collar jobs were created. They argue that these white-collar middle-income jobs were comparable in pay to the lost manufacturing jobs, and that other studies’ assumption that workers in the service sector make less than those in manufacturing may have led to an overestimation of the degree of polarization and an underestimation of the extent of professionalization.

Further support for professionalization was found by Van der Waal & Burgers (2009) who focused their analysis on firms located in Amsterdam and Rotterdam in the Netherlands. By focusing on individual firms they argued that they were able to form a direct connection between firms’ levels of international integration and income inequality. They conclude that second-tier
cities such as Rotterdam experience professionalization because they are forced to compete more aggressively in the international market.

A unique explanation of urban income inequality comes from Korpi (2008), who found that the size of a local urban labour market has a significant positive effect on the extent of income inequality, and that top level incomes were the most affected. These findings support a rank-size rule thesis of income inequality, because labour markets become more diversified as population increases. However, Korpi admits that this may just be an observation of a spurious correlation rather than a causal insight.

### 2.4 Income Inequality at the Neighbourhood Scale

It has been observed that the residential segregation of people according to income, a process labeled by Hulchanski et al. (2007) as ‘socio-spatial polarization’, is a consequence of income polarization. Watson (2009) argues that segregation of people along the lines of income has increased in the US since the 1970s. The 1980s saw the highest levels of income segregation because the poor faced “increasing concentration and isolation within the central city” as the wealthy segregated themselves into suburban neighbourhoods. As incomes become polarized and concentrated in particular places, there is greater inequality between neighbourhoods (Reardon & Bischoff 2011). There is some evidence for path-dependency of inequality, as those cities that were more unequal in 1980 tended to be more unequal in 2000 (Beeson et al. 2010).

In order to map neighbourhood income segregation, Chen et al. (2012) adopted a method developed by Franette et al. (2007) to determine after-tax income for households and found that neighbourhood income segregation in Canada’s eight largest cities had increased between 1981
and 2006. In a study focused on the City of Toronto, Hulchanski et al. (2007) document processes of socio-spatial polarization from 1970 to 2005. They argue that Toronto has become divided into three cities along lines of income and cite “changes in the economy, in the nature of employment (more part-time and temporary jobs), and in government taxes and income transfers,” as the primary causes of “a growing gap in income and wealth and greater polarization among Toronto’s neighbourhoods.” Adopting Hulchanski et al.’s method, Ley & Lynch (2012) show similar processes of socio-spatial polarization in Vancouver neighbourhoods. It is worth noting that both Hulchanski et al. (2007) and Ley & Lynch (2012) find that the inner cities of Toronto and Vancouver have experienced relative increases in income while some suburban areas have experienced income decline. Oreopoulos (2008) found that many households living in low-income areas are recent immigrants who tend to move out of such areas within five years. Given that in 2001, 62% of residents in areas of Toronto that experienced relative income decline since the 1970s were not born in Canada, and that in Vancouver lower than average incomes and income loss over time were associated with a high rate of non-English as mother tongue, immigration must play a role in Canadian neighbourhood socio-spatial polarization.

Oreopoulos (2009) conducted a field experiment with six thousand constructed resumes which were sent in response to online job postings across multiple occupations in Toronto. He found that interview requests rates were three times higher for English-named applicants with Canadian education and experience, than for resumes with non-English names with foreign education and experience. However, he found that foreign applicants from Britain faced no such discrimination. All else held constant, Canadians with English-sounding names received interview requests 40%
more often than applicants with non-English-sounding names (11% vs. 8% respectively), which may be one reason that skilled immigrants struggle in Canada’s labour market.

Whereas the empirical studies discussed above focus on the labour market and demographics to explain neighbourhood income segregation, Glaeser et al. (2008) argue that having access to public transportation is a key variable in explaining the concentration of the poor in particular neighbourhoods.

The major findings of this thesis are generally supportive of the polarization thesis in global cities. Consistent with the SBTC thesis, there has been a transition in the relative demand for job skills as the importance of the industrial sector has declined in the City of Vancouver and there has been a considerable rise in the importance of the service sector (Miro 2011). However, the Vancouver CMA is one of three major landing sites of immigrants to Canada, and this study finds that polarization in the region is strongly associated with visible minorities and recent immigration, which is far more consistent with the global cities’ argument that polarization is strongly related to globalization and the immigration of visible minorities.

2.5 Methods and Data

In the empirical studies above there is a wide variety of measures of inequality and a broad range of methods used to analyze data from various sources. Of the material surveyed in this literature review the most common sources of data were the US Census and the 5% or 1% integrated public use micro-sample (Volscho & Fullerton 2005; Autor et al. 2006, 2008; Glaeser et al. 2008, 2009; Lemiuex 2008; Beeson et al. 2010; Heathcote et al. 2010; Timberlake et al. 2012), and micro-data from the 20% sample long-form Canadian Census (Frenette 2007; Hulchanski et
al. 2007; Pendakur & Pendakur 2011; Chen et al. 2012; Ley & Lynch 2012). Some relied on survey data (Brzozoski 2010; Heathcote et al. 2010) while others created their own database (Korpi 2008; van der Waal 2010). The most commonly used measure of inequality was the Gini coefficient (Glaeser et al. 2009; Moller et al. 2009; Reardon & Bischoff 2011; Chen et al. 2012) but many created their own measure (Hulchanski et al. 2007; Doussard et al. 2009; Watson 2009; Ley & Lynch 2012). In short, very few projects follow the same methodology, and I argue that in order to study income inequality across contexts and time periods, methods must be consistent. For this reason I have chosen to build upon the methodology and findings of Hulchanski et al. (2007) and Ley & Lynch (2012). These studies provide a frame for researching income inequality in cities as a temporal process, and highlight neighbourhoods that are changing and in need of further study.
Chapter 3: Quantitative Study of Income Inequality in the Vancouver CMA

Urban income polarization is a complex and multi-scalar process. In order to account for this complexity, this thesis is divided into three scales of analysis. The scale of analysis for this chapter is that of the region, using census tracts (CTs) as the geographical unit of measurement. The intention is to present a general context that forms the backdrop for the more narrowly focused chapters that follow. In this chapter extensive methods are used to interrogate income polarization in the Vancouver census metropolitan area (CMA).

Three multivariate regression methods were chosen in order to gain insight into processes and consequences of income polarization in the Vancouver CMA. In building the OLS model it is assumed that many of independent variables have a causal relationship with the dependent variable, the average income of CTs. In the logistic regression models that follow, a causal relationship between the independent and dependent variables is not assumed, but insight is gained into the characteristics and changes we could expect to find in CTs in which average incomes have declined between 1971 and 2006.

The majority of the selected independent variables are statistically significant in at least two of the regression models. The results of each regression are briefly discussed and a conclusion provides an analysis of the entire series of six regressions, identifying patterns and contradictions. The key finding of this chapter is that visible minority status is the most important variable by far, suggesting that this is a key variable for understanding income disparity and income decline in Vancouver CMA. In conjunction with this finding, concentrations of recent immigration were strongly associated with income decline.
Through the selective testing of 15 independent variables in a series of six paired multivariate regressions, insight is gained into some of the factors which are associated with processes of socio-spatial polarization and the geographical distribution of low incomes in the Vancouver CMA. The first series of regressions tests variables for statistical significance in relationship to average individual and household incomes at the CT level in 2006. In the second and third series of regressions the focus shifts to CTs which were identified by Ley & Lynch (2012) as both experiencing a 15% or greater decline in average individual or household incomes relative to the regional average, and being of low or very low income status in 2006. Income polarization is effectively mapped and described by Ley & Lynch (2012) and this chapter aims to take their analysis one step further by highlighting associations between declining average incomes and differences between neighbourhoods.

Three distinct methods are employed in order to identify statistical significance in the independent variables using the SAS statistical software package:

1. Ordinary least squares (OLS) linear regressions using 2006 census data.
2. Logistic regressions using 2006 census data.

3.1 Selection of Independent Variables

The independent variables listed below were created using data from the 2006 Canadian Long Form Census. Data from the 2011 National Household Survey was not used due to a lack of reliability for income data at the census tract scale (Hulchanski et al. 2013). The variables were
selected based on the expectation that they would be associated with the presence or absence of low incomes. Recent publications on income dynamics include relevant findings:

- Walks (2014) found that in Vancouver individuals aged 65 and above were associated with lower debt-to-income-ratios, and the greatest decrease in the incidence of low income since 1980 has been amongst seniors (HRSDC 2014).
- Haan (2010) found that residential crowding in Vancouver is a housing affordability strategy used most often by recent immigrants and visible minorities. Walks & Bourne (2006) found a connection between apartment housing, high levels of racial diversity, and the neighbourhood patterning of low income in Canadian cities.
- The link between recent immigration, visible minorities, and a prevalence of low income in Vancouver has been established in Smith & Ley (2008).
- Lone parents are more at risk of experiencing low income that other Canadians (HRSDC 2014).
- The development of new dwellings was included as a proxy for new-build gentrification which transforms the characteristics of class in given areas (Davidson & Lees 2010).
- Glaeser et al. (2008) found a link between low incomes in cities and access to public transit.
- Other independent variables were selected based on their association with the condition of the housing stock, and the residential mobility of residents.

### 3.1.1 The Independent Variables for 2006

1. Percentage of the population aged 65 and older.
2. Percentage of households composed of 6 or more members.
3. Percentage of the housing stock in apartment units in buildings five storeys or taller.
4. Percentage of the housing stock in apartment units in buildings four storeys or less.
5. Percentage dwellings that are rented.
6. Percentage of the population that self-identifies as a visible minority.
7. Percentage of households that are headed by a lone parent.
8. Percentage of the population that are recent immigrants, having landed between 2001 and 2006.
9. The unemployment rate.
10. Percentage of individual income that is derived from government transfer payments.
11. Percentage of dwellings in need of major repairs.
14. Percentage of the working population that uses public transit to get to work.
15. Percentage of the population that moved within 5 years.

These variables were regressed in turn against the dependent variables, individual and household average incomes for CTs reported for 2005. As I am using CTs as the scale of analysis the following models do not provide insight into the incomes of individual people, but they do allow us to see what variables are shaping landscapes of wealth and poverty. Therefore, we gain insight into the channeling factors that get people of a particular socio-economic status to be in one part of the city vs. another.

3.2 Regression Series 1: OLS Multivariate Regressions

The first series of regressions performed are simple, linear, OLS regressions. Of the 15 independent variables listed above it was necessary to remove variable 14 (the percentage of the working population that uses public transit to get to work) and variable 15 (percentage of the population that moved within 5 years) in order to avoid problems of multi-collinearity. Tolerance statistics have been included in table 1 as a measure of multi-collinearity. A tolerance statistic shows the variance in a given independent variable that is not predicted by variance in the other

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1 It should be noted that lone-parent families in Metro Vancouver in 2006 were overwhelmingly headed by women.
independent variables. In effect, each independent variable is regressed against the others. A tolerance statistic of less than 0.20 is considered to be too low to include in a regression model, as this indicates that more than 80% of the variance of a given independent variable can be predicted by the variance in the other independent variables. In this model, the percentage of dwellings that are rental has a tolerance statistic of 0.20. It was decided that rental housing was an important variable and would be included despite strong multi-collinearity with the other independent variables.

Independent variables 1 through 13 were tested for statistical significance and for strength of relationship to the dependent variable. The strength of this relationship is measured through a standardized estimate which indicates the effect that variance in the independent variable has on variance in the dependent variable, *ceteris paribus*. A standardized estimate of 0.30 indicates that an increase of one standard deviation in the independent variable will lead to an increase of 0.30 of one standard deviation in the dependent variable. A standardized estimate of -0.30 indicates that a standard deviation increase in the independent variable will cause a 0.30 standard deviation decrease in the dependent variable. In interpreting the standardized estimates of the independent variables in this and all following regression models, the reader is reminded that beta values such as the standardized estimates show the specific impact of changes in an independent variable when all other independent variables are statistically controlled. For example, the standardized estimate for visible minorities shows us the effect on the average income of a CT if there was an increase in visible minority persons whose aggregate characteristics would have no effect on the other independent variables in a CT.
3.2.1 Dependent Variables of the OLS Regressions of Average Individual and Household Incomes, 2006

The dependent variable for the OLS regression of average individual incomes was created by importing the average individual incomes of all 409 CTs of Vancouver CMA in the 2006 census into the SAS statistical analysis software package. The dependent variable for the OLS regression of average household income was created by importing the average household incomes of the 409 CTs into SAS.

3.2.2 Results of OLS Multivariate Regressions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance Statistic</th>
<th>Standardized Estimate</th>
<th>Significance Level</th>
<th>Standardized Estimate</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>****</td>
<td>0.29579</td>
<td>****</td>
<td>0.23427</td>
<td>****</td>
</tr>
<tr>
<td>Population aged 65+ (%)</td>
<td>0.57</td>
<td>-0.12266</td>
<td>****</td>
<td>-0.21018</td>
<td>***</td>
</tr>
<tr>
<td>Households with 6 or more members (%)</td>
<td>0.37</td>
<td>-0.11549</td>
<td>-0.02963</td>
<td>-0.16204</td>
<td></td>
</tr>
<tr>
<td>Housing units that are apartment buildings 5+ storeys (%)</td>
<td>0.33</td>
<td>-0.09549</td>
<td>-0.21031</td>
<td>-0.14497</td>
<td>*</td>
</tr>
<tr>
<td>Housing units that are apartment buildings 4 storeys or less (%)</td>
<td>0.30</td>
<td>-0.06392</td>
<td>-0.16204</td>
<td>-0.14497</td>
<td>*</td>
</tr>
<tr>
<td>Housing units that are rental (%)</td>
<td>0.20</td>
<td>-0.25222</td>
<td>****</td>
<td>-0.14497</td>
<td>*</td>
</tr>
<tr>
<td>Population that self-identifies as a visible minority (%)</td>
<td>0.32</td>
<td>-0.28468</td>
<td>****</td>
<td>-0.26671</td>
<td>****</td>
</tr>
<tr>
<td>Households headed by a lone-parent (%)</td>
<td>0.56</td>
<td>-0.01235</td>
<td>0.01172</td>
<td>-0.02275</td>
<td>-0.01196</td>
</tr>
<tr>
<td>Population that is a recent immigrant (landing 2001-2006) (%)</td>
<td>0.39</td>
<td>0.04258</td>
<td>0.01172</td>
<td>-0.02275</td>
<td>-0.01196</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>0.54</td>
<td>-0.31949</td>
<td>-0.26572</td>
<td>-0.02275</td>
<td>-0.01196</td>
</tr>
<tr>
<td>Individual income derived from government transfer payments (%)</td>
<td>0.61</td>
<td>-0.31949</td>
<td>-0.26572</td>
<td>-0.02275</td>
<td>-0.01196</td>
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<tr>
<td>Housing units in need of major repairs (%)</td>
<td>0.58</td>
<td>-0.03910</td>
<td>-0.04873</td>
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<td>Housing units that were built 1996-2000 (%)</td>
<td>0.67</td>
<td>0.01904</td>
<td>-0.00687</td>
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<td></td>
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<tr>
<td>Housing units that were built 2001-2006 (%)</td>
<td>0.71</td>
<td>0.01904</td>
<td>-0.00687</td>
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<td></td>
</tr>
</tbody>
</table>

Number of observations: 409

*Statistically significant at the 5%; ** at 1%; *** at 0.1%; **** at 0.01%.


Table 1 Results of OLS Multivariate Regressions

3.2.3 Discussion of OLS Multivariate Regression Results

The OLS regression models do a reasonably good job of predicting variance in average individual and household incomes. The adjusted R² of 0.40 and 0.41 indicates that the model
successfully predicted 40% and 41% of the variance in individual and household average incomes respectively.

For both of the OLS regression models, the only statistically significant variable that had a positive effect on average incomes was the share of the population aged 65 and over. Also consistent between the two regressions was the statistically significant and negative effect of visible minorities, lone-parent families and government transfer payments on average incomes.

Apartments, whether in buildings 5 storeys and above, or in buildings 4 storeys and below, has a statistically significant, negative association with average household incomes. As this was not the case for individual incomes, this result suggests a link between housing type and household incomes. It is possible that this could be the result of the lower housing cost of apartments, or due to the presence of more single-earner households in apartments.

It should also be noted that the coefficient for visible minorities was much stronger for individual income than for household income. This is entirely consistent with Ley’s (1999) findings of the differences between the rank of individual and household incomes for ethnic minority groups in the Vancouver CMA. There are multiple earners in some visible minority households that diminish the effect of individual low incomes. A key consideration here that relates to the findings for both apartments and visible minorities is that household incomes, not individual incomes, determine where people can afford to live.

It is worth noting that the percentage of dwellings that are rental is not statistically significant in this model. This is likely a result of suppression due to the high rate of multi-collinearity with the other independent variables. This is particularly true for apartments in buildings 5 storeys and
taller and for apartments in buildings 4 storeys or less, which have a correlation coefficient with rental dwellings of 0.55 and 0.67 respectively. That rental housing has a negative relationship with the average income of CTs is supported by the correlation coefficients between the percentage of dwellings that are rental and the average individual and household income of CTs at -0.32 and -0.52 respectively.

The weak coefficient against new immigrants is unexpected, but is suppressed due to collinearity with the statistically significant visible minority variable (r=0.63). The unemployment rate variable is weaker than expected as it has a strong correlation coefficients with the statistically significant variables of visible minorities (r=0.40) and lone-parent families (r=0.49).

3.3 Regression Series 2: Logistic Regressions Using 2006 Census Data

The method developed in Hulchanski et al. (2007) and employed in Ley & Lynch (2012) compares changes in the average incomes of CTs to changes in the regional average between two census years; that of 1971 and 2006. In order to allow for comparison between the census years, the CT boundaries of 2006 and the data within these boundaries were altered so that the boundaries and data conformed to those of 1971. In the case of the Vancouver CMA, those CTs in which average incomes had increased or decreased by 15% or more relative to the regional average income between 1971 and 2006 were considered to be significant, and mapped. Because this method treats income as relational, it automatically controls for inflation.
Figure 1 Change in Census Tract Average Individual Income, 1970-2005. Source: Ley & Lynch (2012) (reproduced with permission)

Figure 2 Change in Census Tract Average Household Income, 1970-2005. Source: Ley & Lynch (2012) (reproduced with permission)
Much of this thesis is guided by the findings of Ley and Lynch (2012) and as a further interrogation of these findings I sought to discover correlations between the independent variables and the CTs in which the average income had declined between 1971 and 2006. CTs in which average incomes had increased relative to the regional average are indicated in blue in figures 1 & 2, and those CTs in which average incomes had decreased are marked in brown. A distinction was made between two types of CTs in which incomes had declined; those that were in low or very income status in 2006 are indicated in solid brown while those in middle or higher income status in 2006 are indicated in hatch-marked red/brown. A low income CT was defined as one with an average income of 80% to 60% of the regional average, and a very low income CT was defined as having 60% or less of the regional average income in 2006. The focus of the logistic regressions below are the CTs which had experienced relative average income decline of 15% or more from 1971 to 2006 and were in low or very low income status in 2006; in other words, all of the CTs marked solid brown in Ley & Lynch (2012). For the sake of brevity, all CTs in which incomes declined by 15% or more relative to the regional average and were in low or very low income status in 2006 will be hereafter referred to as ‘experiencing individual or household income decline.’

It was beyond the scope of this research project to convert 2006 census data to conform to 1971 census data, but it was necessary to establish a method that would make it possible to relate the findings of socio-spatial polarization in Ley & Lynch (2012) to the boundaries and data of the 2006 census. Over the course of 35 years, the 178 CTs of Vancouver CMA in 1971 had been divided into 409 CTs by 2006. The splitting of CTs is a practice of Statistics Canada to keep the population of a CT around the average of 5000 individuals. As the population of Vancouver
CMA grew significantly from 1971 to 2006, the result is a large increase in the number of CTs. Despite the remarkable increase in the number of CTs during this period, the 409 CTs of 2006 can be easily related back to the CT boundaries of 1971, as new CTs normally remain within the boundary of the CT from which they are split. Being able to relate the CTs of 2006 to the CTs of 1971 made it possible to employ a logistic regression methodology to bridge the gap between the findings of Ley and Lynch (2012) and data in the 2006 census.

A logistic regression is a multivariate regression in which the dependent variable is binary; in this case either a ‘1’ to mark an event or a ‘0’ to mark a non-event. Those CTs of 2006 which were within the 1971 CT boundaries that experienced income decline were coded as an event, and all other CTs were coded as a non-event. This will be explained further for each of the logistic regressions. The independent variables listed above and included in the OLS regression models were used in the following logistic regressions. Variables 14 and 15 were excluded from these models to avoid problems of multi-collinearity.

3.3.1 Dependent Variable for Logistic Regression of Individual Income Decline

In the map above of average individual income change in Ley & Lynch (2012), 23 of the 178 CTs according to the boundaries of 1971 are identified as experiencing individual income decline. According to the CT boundaries of 2006, there are 73 CTs that fall within these 23 CTs of declining individual income. In order to create a dependent variable for this regression, these 73 CTs in 2006 were coded with a ‘1.’ Hereafter these CTs will be referred to as being within the
boundaries of individual income decline. All other CTs were coded with a ‘0.’ Of the 409 CTs in 2006, 73 were coded as an event and 336 were coded as a non-event2.

3.3.2 Dependent Variable for Logistic Regression of Household Income Decline

In order to create the dependent variable for average household income decline, the process described above was repeated according to the map of household income change in Ley & Lynch (2012). There are 60 CTs in 2006 that fall within the 1971 CT boundaries of household income decline. Hereafter these CTs will be referred to as being within the boundaries of household income decline. These CTs were marked with a ‘1,’ and all others were marked with a ‘0.’ This process created a dependent variable with 60 events and 349 non-events.

2 I tested whether 2006 CTs that were of low- or very low-income status according to 1971 CT boundaries fit that definition. For average individual incomes in 2006 the designation proved to be accurate with 60 of 73 CTs (86%) contained within the 1971 low-income boundaries conforming to the definition of low income. For average household incomes 36 of 60 CTs (60%) within the 1971 boundaries met the definition. The neighbourhood effects of particularly low household income areas were sufficient to bring down the average household income of CTs when reformatted to 1971 boundaries.
### 3.3.3 Results of Multivariate Logistic Regressions of Income Decline

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized Estimate</td>
<td>Significance Level</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population aged 65+ (%)</td>
<td>-0.1235</td>
<td>****</td>
<td>0.799</td>
</tr>
<tr>
<td>Households with 6 or more members (%)</td>
<td>0.6262</td>
<td>***</td>
<td>3.113</td>
</tr>
<tr>
<td>Housing units that are apartments in buildings 5+ storeys (%)</td>
<td>0.1606</td>
<td>1.339</td>
<td>0.8094</td>
</tr>
<tr>
<td>Housing units that are apartments in buildings 4 storeys or less (%)</td>
<td>0.2102</td>
<td>1.464</td>
<td>0.5325</td>
</tr>
<tr>
<td>Housing units that are rental (%)</td>
<td>0.2913</td>
<td>0.590</td>
<td>0.5304</td>
</tr>
<tr>
<td>Population that self-identifies as a visible minority (%)</td>
<td>0.6134</td>
<td>**</td>
<td>3.042</td>
</tr>
<tr>
<td>Households headed by a lone-parent (%)</td>
<td>0.2358</td>
<td>1.534</td>
<td>0.2701</td>
</tr>
<tr>
<td>Population that is a recent immigrant (landing 2001-2006) (%)</td>
<td>0.711</td>
<td>****</td>
<td>3.632</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>-0.0432</td>
<td>0.925</td>
<td>-0.0533</td>
</tr>
<tr>
<td>Individual income derived from government transfer payments (%)</td>
<td>0.091</td>
<td>1.179</td>
<td>0.2771</td>
</tr>
<tr>
<td>Housing units in need of major repairs (%)</td>
<td>0.3906</td>
<td>**</td>
<td>2.032</td>
</tr>
<tr>
<td>Housing units that were built 1956-2000 (%)</td>
<td>-0.0272</td>
<td>0.952</td>
<td>-0.1487</td>
</tr>
<tr>
<td>Housing units that were built 2001-2006 (%)</td>
<td>-0.2011</td>
<td>0.694</td>
<td>-0.1713</td>
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<td>Number of observations</td>
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<tr>
<td>Number of events</td>
<td>73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of non-events</td>
<td>336</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant at the 5%; ** at 1%; *** at 0.1%; **** at 0.01%.


### Table 2 Results of Multivariate Logistic Regressions of Individual and Household Income Decline

#### 3.3.4 Discussion of Multivariate Logistic Regressions Results

In discussing these results it is important to note that the independent variables are drawn from 2006 data and the dependent variable is a proxy of income change from 1971 to 2006. Due to the temporal nature of the dependent variable it is not possible to claim causality in these models, because the independent variables observed in 2006 could not have a causal relationship with processes of income decline beginning in 1971. What these models can show us are the correlations between the independent and dependent variables. It should also be noted that in something of a reversal of normal statistical logic, the dependent variable is ‘explaining’ the independent variables; that is to say if the average income of a CT declined, the independent
variables tell us what we could expect to see there, but not what caused average incomes to decline.

In order to facilitate interpretation, an odds ratio has been provided. The odds ratio is a measure of the strength of the relationship between an independent and the dependent variable in a logistic regression. An increase of an independent variable in a given CT will affect the odds that this CT will be within the boundaries of income decline by a factor of the odds ratio to one, \textit{ceteris paribus}. For example, an odds ratio of 2 indicates that a standard deviation increase of the independent variable within a given CT will increase the odds that the CT will be within the boundaries of income decline by a factor of 2 to 1. Alternately, an odds ratio of 0.5 indicates that a standard deviation increase in the independent variable will decrease the odds of a CT being within the boundaries of income decline by a factor of 0.5 to 1. An odds ratio of 1 indicates an extremely weak relationship.

The logistic regression model for average individual income decline performed remarkably well, returning a max-rescaled R² of 0.60. The logistic regression of average household income decline performed quite well, returning a max-rescaled R² of 0.48.

The percentage of the population aged 65 or over had a negative influence on the odds. In a CT in which incomes had declined, we would expect the percentage of the population aged 65 and over to decline as well. This result is consistent with the OLS regressions above, in which there was a statistically significant relationship between an aging population and higher average CT incomes.
For both individual and household incomes, households of 6 members or more and recent immigrants were statistically significant with a strong positive odds ratio. For CTs in which incomes declined we could expect to see an increase in these variables.

In the regression of average individual income decline, visible minorities and housing in need of major repair were statistically significant and increased the odds ratio. In CTs in which individual incomes had declined we could expect to see an increase in the share of visible minorities and housing in poor condition.

In the logistic regression of household income decline, housing type proved to be of much greater importance. The largest odds ratio in either of the logistic regressions above was 4.34 for apartment units in buildings 5 storeys tall or above. Apartment units in buildings 4 storeys or less was also statistically significant, but with a weaker odds ratio. In CTs in which household incomes had declined we could expect to see an increase in the share of apartments within its boundary. This result is consistent with the results of the OLS regression in which apartment units had a statistically significant and negative influence on average household incomes.

That visible minorities were not significant in the regression of average household income decline could be explained by a higher propensity for visible minorities to have larger households with multiple earners, which obscures the lower individual earnings of visible minorities (Ley 1999, Haan 2010).

It is somewhat puzzling that CTs in which household incomes had declined, we could expect to see a lower share of dwellings that are rental. It was assumed that rental housing would be
associated with lower incomes, but as in the case of the previous OLS regressions, it is possible that this variable is being suppressed due to multi-collinearity with the apartment variables.

### 3.4 Regression Series 3: Logistic Regressions of Change, 1996-2006

The method developed in Hulchanski et al. (2007) and employed in Ley & Lynch (2012) is an examination of changes in income over time. In keeping with their method it was deemed necessary to conduct a series of logistic regressions that could take into account correlations between changes in the independent variables and CTs which experienced income decline. Examining how the independent variables had changed from 1971 to 2006 would offer little insight into recent processes of income polarization in Vancouver CMA, and as inequality in Canada began to increase sharply in the 1990s (Conference Board of Canada 2011) the decision was made to examine changes in the variables between 1996 and 2006. The independent variables listed below are based upon the independent variables used in the previous OLS and logistic regressions, but these variables have been transformed in order to reflect change over time. As discussed earlier, in 2006 there were 409 CTs, and in 1996 there were 298. In order to make the CT boundaries and data of 2006 conform with those of 1996 it was necessary to re-join some of the 2006 CTs so that they could be compared to the CTs from which they were split after 1996. By looking through Statistics Canada Census Conversion Files I was able to determine which of the CTs in 2006 had been created in both 2001 and 2006. In order to re-join a CT, I created a weighted average of the independent variables (using relevant statistics as weight) and then converted the data into percentages. In this way I was able to reduce the ‘n’ of 2006 CTs from 409 to 298. It was then a simple matter of subtracting the percentage values of the independent variables in 1996 from the percentage values of the independent variables in
2006 to create independent variables of change from 1996 to 2006. An inevitable consequence of re-joining CTs that were split because of population growth is that CTs with much larger populations were given an equal weight to CTs with much smaller populations\(^3\).

When the independent variables were converted to reflect changes from 1996 to 2006, there were no issues of multi-collinearity as there was little correlation in how the variables changed over time. Therefore, variables 14 and 15 could be included in this series of logistic regressions.

1. Change in the percentage of the population aged 65 and over.
2. Change in the percentage of households composed of 6 members or more.
3. Change in the percentage of housing units which are apartments in buildings 5 storeys tall or above.
4. Change in the percentage of housing units which are apartments in buildings 4 storeys tall or less.
5. Change in the percentage of housing units which are rental.
6. Change in the percentage of the population which self-identifies as a visible minority.
7. Change in the percentage of households which are lone-parent.
8. Change in the percentage of the population which is recent immigrant, those having landed between 1991-1996 and 2001-2006.
9. Change in the unemployment rate\(^4\).
10. Change in the percentage of individual income derived from government transfer payments\(^5\).

\(^3\) Some notable outliers in terms of re-joined 2006 CTs which conform to 1996 boundaries and have very large populations are as follows: 0059.02 (2006 pop. 19,665), 0147.03 (2006 pop. 17,455), 0182.00 (2006 pop. 17,220) 6 CTs re-joined, 0183.02 (2006 pop. 19,970) 4 CTs re-joined, 0185.02 (2006 pop. 17,145), 185.03 (2006 pop. 22,345), 187.02 (2006 pop. 27,450) 5 CTs re-joined, 0188.00 (2006 pop. 19,545) 6 CTs rejoined, 287.03 (2006 pop. 27,595) 6 CTs rejoined.

\(^4\) When rejoining CTs in 2006 which were split from CTs in 1996, a weighted mean for the unemployment rate was created according to the total population aged 15 and above in the labour force.

\(^5\) In re-joining 2006 CT data to conform to 1996 boundaries, a weighted mean of this variable was determined using total individual income as the weight. One CT of special interest in terms of government transfer payments was CT 0059.01. Between the 1996 and 2006 census this CT was split into 0059.05 and 0059.06. The percentage of
11. Change in the percentage of dwellings in need of major repairs.
12. The percentage of housing units which were developed between 1996 and 2000.
13. The percentage of housing units which were developed between 2001 and 2006.
14. Change in the percentage of workers who use public transit to get to work.
15. Change in the percentage of the population which had moved within 5 years.

The dependent variables for this series of regressions were built in a similar way to the previous series of logistic regressions. Those 1996 CTs which were within the 1971 CT boundaries that experienced individual and household income decline were coded with a ‘1’ and all other CTs were coded with a ‘0.’
3.4.1 Results from Multivariate Logistic Regressions of Change, 1996-2006

The multivariate logistic regressions of change performed quite well, returning a max-rescaled R² of 0.41 and 0.42 for individual and household income decline respectively. The variable with the strongest association to both individual and household income decline was visible minorities. In fact, the odds ratio of 4.591 for individual income decline is the strongest in any of the logistic regressions. Therefore, in CTs in which incomes had declined from 1971 to 2006 we could expect to see an increase in the concentration of visible minorities over the 1996-2006 period. It is worth noting that in this series of logistic regressions, visible minority status is statistically significant in relationship to household income decline. It appears that by measuring changes in the concentration of visible minorities, the obscuring effect of residential crowding and multiple earners is overcome.
Surprisingly, for both individual and household incomes, CTs which experienced a decline in income could be expected to have a shrinking unemployment rate between 1996 and 2006. This can also be thought of in the reverse, that a CT with a declining unemployment rate had greater odds of being within the boundary of declining incomes. Further investigation revealed that the unemployment rate in 1996 was 8.6, whereas the unemployment rate for the Vancouver CMA in 2006 was 5.6 (Metro Vancouver 2013). The four CTs which experienced the greatest decline in the unemployment rate were 0058.00 (-17.5) located in the DTES, 0059.01 (-17.0) in downtown just west of the DTES, 0185.05 (-12.3) located in the Newton neighbourhood of Surrey, and 0190.03 (-12.2) located in the Whalley neighbourhood of Surrey. Except for 0059.01, these CTs experienced household income decline into low income status, and the two CTs in Surrey experienced individual income decline into low income status. That the unemployment rate should decline the most in neighbourhoods which are recognizable for their low-income status suggests that this variable reflects changes in the labour market, increased barriers to unemployment benefits and the rise of the working poor (Mendelson & Battle 2011; Stapleton et al. 2012). When this result is considered in conjunction with visible minorities, we can see that an increasing concentration of visible minorities and a decreasing unemployment rate have a strong association with income decline. This coincidence is consistent with the world and global cities hypotheses in which racialized minority groups work for diminishing returns (Friedman 1986; Sassen 2001).

An increase in the percentage of dwellings in need of major repairs was statistically significant in relationship to individual incomes, with a fairly strong odds ratio, which comes as little surprise
as areas that experience income decline would be expected to experience a progressive decline in the quality of the housing stock.

Households with 6 or more members and recent immigrants both have a statistically significant, negative association with individual income decline which is somewhat counterintuitive when we consider the previous series of logistic regressions. In the logistic regression of 2006 data, we would expect to see more households of 6 or more and recent immigrants in a CT which had experienced both individual and household income decline. However, when we consider that these are change variables, meaning that an increase in either variable would reduce the odds of an association with income decline, we can reconcile these findings with the previous logistic regressions. The percentage of households that had 6 members or more declined from 4.4% in 1996 to 4.1% in 2006, and the percentage of individuals who were recent immigrants declined from 10.5% in 1996 to 7.2% in 2006. There was an overall relative decrease in both of these variables and those CTs which saw the decrease in either variable between 1996 and 2006 may have already had a high percentage in 1996. For example, the two CTs which saw the greatest decrease in the percentage of six-person plus households (0225.00 and 0187.01) also had the highest percentage of six-person plus households in 1996 (22.2% and 17.1% respectively). Further, all of the five CTs which saw the greatest decrease in the percentage of recent immigrants from 1996 to 2006 were in the top ten CTs for the percentage of recent immigrants in 1996.

Variables 14 (workers taking public transit to work) and 15 (percentage of the population that moved within 5 years) were excluded from the first two series of regressions due to problems of multi-collinearity. When included as a measure of change in this series of regressions, changes in
the percentage of workers who took public transit to get to work was not significant. An increase in the percentage of the population that had moved within the last five years was significant at the 1% level, and modestly increased the odds. It is plausible that some CTs which have experienced household income decline are attractive to new residents with lower household incomes.

3.5 Conclusion

The majority of the independent variables were statistically significant in at least two of the regression models. The only variable that had a positive association with both individual and household incomes was the percentage of the population that was aged 65 or older, and this variable reduced the odds that a CT would be within a boundary of household income decline. These results are consistent with the findings of Walks (2014) and the fact that the incidence of low incomes in seniors has been decreasing in the last 30 years (HRSDC 2014).

The story that emerges from the remaining results of statistical significance is consistent with the world and global cities hypotheses (Friedman 1987; Sassen 2001). Recent immigrants, especially if they are of visible minority status, face an income disadvantage which is compounded by difficulty accessing government transfer payments. As they have a lower propensity than the Canadian-born to draw from social services, many are forced into the ranks of the working poor in the tertiary sector. In this context it is necessary to engage in housing affordability strategies, such as residential crowding of multiple income generators in deteriorating dwellings, with apartments being of particular significance to households.
Although recent immigration was not statistically significant for average individual and household incomes in 2006, we would expect to see more recent immigrants in CTs which experienced household income decline between 1971 and 2006. The percentage of the population that self-identified as a visible minority was significant in 5 of the 6 regressions performed. Clearly, the residential distribution of visible minorities in the Vancouver CMA has much to tell us about socio-spatial polarization. Hiebert et al. (2006) found that immigrants and visible minorities, whether owners or tenants, are more vulnerable than the Canadian-born in Vancouver’s housing market, and that visible minorities are overrepresented in the high risk category of devoting more than half of their income to housing. In addition Smith and Ley (2008) found that immigrant status (and therefore visible minority status) was becoming a more important correlate of poverty in Vancouver and Toronto from 1991 to 2001.

In the first series of OLS regressions both the percentage of individual income that was derived from government transfer payments and the percentage of households that were headed by a lone parent had a negative effect on both the average individual and household incomes of CTs. It must be noted that the vast majority of lone-parent households in the Vancouver CMA in 2006 were headed by women. CTs which experienced household income decline could be expected to have a higher share of income derived from government transfer payments, but the strong correlation in 2006 between government transfer payments and the elderly (r=0.50) due to pensions complicates this relationship.

The unemployment rate was not significant in the OLS regressions or in logistic regression series 2. However, in CTs which experienced individual or household income decline, we could expect to see a decrease in the unemployment rate from 1996 to 2006. There are several possible
explanations of these results; changes in the labour market, the increasing difficulty of qualifying for benefits such as employment insurance and welfare, the lower propensity of immigrants to draw upon social services than their Canadian-born counterparts, or the rise of the working poor (Hiebert 2006; Mendelson & Battle 2011; Stapleton et al. 2012).

Households of 6 members or more did not have a significant effect on average incomes in 2006, but we could expect to see more households of 6 or more in CTs which experienced individual or household income decline. Visible minorities are far more likely than the Canadian-born to experience residential crowding in the Vancouver CMA, and they are more likely to live in households with multiple earners which explains why visible minorities were not significant in the logistic regression of household income decline (Ley 1999; Haan 2010).

In CTs in which individual incomes declined, we could expect to see more dwellings in need of major repairs and an increase in the percentage of dwellings in need of major repairs but this variable was not significant in any of the regressions of household income decline.

Consistent with the findings of Walks & Bourne (2006) apartments had a statistically significant effect on household incomes. A prevalence of apartments was associated with lower average household incomes in 2006, and those CTs in which household incomes declined would be expected to have a proportionally large share of apartments. This relationship may be due to the demographic characteristics of apartment occupants, the relatively lower cost of apartments to houses, or as apartments are typically smaller than other forms of housing, they may house fewer income earners.
The complementary findings for visible minorities, recent immigration, government transfer payments, the unemployment rate, and residential crowding in deteriorating apartment units are all consistent with theories of income polarization within global cities. The finding of this chapter offers further support to the world and global cities’ argument that income polarization is a starkly racialized process (Friedman 1987; Sassen 2001).

The development of new dwellings, whether completed during 1996-2000 or 2001-2006, was not significant in any of the regression models. This is a surprising result as it was expected that the presence of recent development would contribute to polarization through new-build gentrification (Davidson & Lees 2010). Future research should examine the relationship between development and increasing average incomes to determine if these variables have an effect on income polarization at the upper end of the income distribution.

It was surprising that rental housing was not statistically significant in any of the regressions except for the logistic regression of household income decline, and a further surprise was that within CTs that had experienced income decline we would expect to see a reduction in the percentage of dwellings that are rental. I had assumed that a higher percentage of rental dwellings would lead to lower and declining incomes, but due to suppression and multicollinearity the interpretation of rental housing in this model is problematic.

This chapter must conclude with a measure of caution. As I adapted 1996 and 2006 census data to allow for their comparison with CTs experiencing declining average incomes from 1971-2006 as identified by Ley & Lynch (2012), the dependent variables created for the four logistic regressions are merely a proxy of income decline, not a precise measure of income change over time. A more rigorous approach would develop a dependent variable of percentile changes in
average incomes for a variety of time periods. In addition to this it would be necessary to calculate changes in the independent variables so that, for example, percentage changes in average income and other independent variables between 1986 and 2006 could be compared to similar processes between 1996 and 2006. An undertaking such as this would require a significant investment of time and resources, which sadly was beyond the scope of this current research project. The development of this method could be of use in a variety of contexts as it could be applied to many Canadian CMAs to generate valuable insights into processes of income polarization across Canada.
Chapter 4: The Emerging SkyTrain Low-Income Corridor

In the time period 1971-2006 there were significant changes in the prevalence and distribution of low-income CTs in the Vancouver CMA. These changes are the focus of this chapter. In figure 3 below, Ley & Lynch (2012) mapped average individual incomes in 1971; low income census tracts are defined as having an average individual income of 60-80% of the CMA average, and very low income census tracts are defined as having an average income of 60% or less of the CMA average. As we can see, the majority of census tracts fall within the middle-income category, there is a concentration of low and very low income census tracts in downtown Vancouver, with a few outliers of low income in New Westminster, Coquitlam, Surrey, and Richmond.
Figure 3 Census Tract Average Individual Income, 1971. Source: Ley & Lynch (2012) (reproduced with permission)

Figure 4 below maps average individual incomes in 2006 and shows that the number of middle-income CTs had shrunk significantly relative to 1971. Along with the decrease of middle-income CTs there was an increase in the number of both high- and low-income CTs. Notice the emergence of a low income corridor that roughly follows the Skytrain Expo Line; starting in East Vancouver, stretching through South Burnaby, being briefly interrupted in New Westminster, but then carrying into North Surrey.
The trend is repeated in figures 5 and 6 when average household incomes are measured. In 1971 the majority of census tracts fall in the middle-income category, but by 2006 there is evidence of polarization and the presence of a low-income corridor is even more pronounced along the Skytrain Expo Line. It is this emerging low-income corridor which is the focus of this chapter and the second scale of analysis in this thesis.
Figure 5 Census Tract Average Household Income, 1971. Source: Ley & Lynch (2012) (reproduced with permission)

Figure 6 Census Tract Average Household Income, 2006. Source: Ley & Lynch (2012) (reproduced with permission)
The primary source of data for what follows are semi-structured interviews conducted with 14 key informants, all of whom have professional work mandates in a neighbourhood or several neighbourhoods within the corridor. Key informants are elected government officials, regional and municipal planning professionals, and community development and immigrant services professionals. The names of key informants have been coded to protect their identities. The interviews are supplemented with newspaper accounts and policy documents.

The main finding of this chapter is that the low income corridor must be understood via the presence of three key factors, their inter-relationships, and their interaction with the SkyTrain Line. The first factor in explaining the presence of low incomes in the corridor is the presence of rental housing in a variety of forms. Of significance to particularly low incomes is the presence of aging three- to four-storey, wood-frame, purpose-built rental housing (PBRH). The second factor, which is closely related to the first, is the occupancy of rental housing by vulnerable groups, particularly recent immigrants and refugees. The third factor is the presence of contingent development near public transportation stations in every municipality that the SkyTrain Expo Line runs through. This development is contingent because it varies greatly in its form, process, and community response, but throughout the corridor neighbourhood change is taking place; creating issues where development pressures come to bear upon areas of disinvestment, particularly when these are areas of affordable rental housing occupied by vulnerable groups. The interactions between these factors vary across the four municipalities that the corridor runs through and this is illustrated through a brief discussion of these interactions in each municipality.
4.1 Origins of the Corridor

The Kingsway and SkyTrain Expo Line corridors have their roots in BC’s colonial era. In 1860 a trail was cut through the forests of what would later become the Municipality of Burnaby. Its purpose was to allow for the movement of European troops and settlers from New Westminster to the salt waters of False Creek. In 1872 this path was widened to allow for the passage of a horse team and renamed Vancouver Road. In 1891 the communities of New Westminster and Vancouver were connected by a tramway. The orange line in figure 7 below indicates the path of the Inter-Urban Line that operated until 1954. Settlement along Vancouver Road was sparse until 1913 when further improvements were made, and the thoroughfare was renamed Kingsway (Beasley 1976).

![Figure 7 Route of the Inter-Urban Line. Source: Wrigley Street Map (reproduced with permission from the Burnaby Village Museum)](image-url)
A significant share of the Vancouver region’s settlement patterns and movements were established by this ‘trail through the forest’ as it cuts diagonally across the grid system, making it an efficient route for rail, rapid transit, and automobile traffic. It is along this right of way from Mount Pleasant in Vancouver to the waterfront of New Westminster that the Skytrain Line was routed in the early 1980s. The degree to which these movement possibilities have influenced the emergence of a low income corridor is difficult to quantify, but a qualitative link was assumed by several key informants.

At first blush when you look at that corridor, you associate it immediately with the rail corridor that already existed. It’s not surprising that lower incomes are around rail corridors, because rail corridors generally decrease property values. So you find that very often that kind of a corridor will have lower income around it (B4).

I think one of the things that is really interesting to explore is that because the rapid transit links these older historic centres where there has already been purpose built (rental) housing or there’s lower income people who have lived in those areas. Is it because transit already linked these areas together, or has it attracted more lower income people who rent to those areas because of higher levels of accessibility by transit it affords? (R2).

Rather than being a cause of low incomes, the route of the Skytrain Line may be a result of both an existing rail right-of-way and the existing presence of low incomes. The high-income neighbourhoods of Shaugnessy and Kerrisdale were able to successfully resist a rapid transit line that was proposed to follow an existing rail right-of-way to connect Richmond and the Vancouver International Airport to Downtown Vancouver for the 2010 Olympic Winter Games (Chrunik 2007). However, resistance to the SkyTrain Line in the Vancouver neighbourhood of Grandview-Woodland, a traditionally lower-income area, was unsuccessful.
Typically one of the things that happens with rail lines and public transportation is they don’t go through areas that have higher incomes. There’s kind of a self-fulfilling prophesy that happens there, that areas that have higher incomes are insulated [from rapid transit infrastructure] (B4).

There was quite a lot of mobilization around the Expo Line in this area here when it was going in and… resistance to it, particularly the elevated component (V3).

### 4.2 Rental Housing and Immigration

The concentration of low incomes in the corridor can be explained to a certain degree by the presence of a variety of forms of affordable rental housing occupied by low income people. Rental housing in the corridor is found in purpose-built low-rise apartment buildings and towers, secondary suites in houses, or condominium units rented out privately by an owner. In the majority of interviews it was 3-4 storey, wood-frame, purpose-built rental housing that was cited as explaining the presence of particularly low incomes in the corridor. The Expo SkyTrain Line carries far more passengers than any other line in the region’s transportation network (TransLink 2007) and regardless of whether the SkyTrain Line is a cause or just a correlate of lower property values, housing costs, and incomes, rapid transit plays an important role in the lives of low-income people. They have a higher propensity to rely upon public transit, so having access to transit is an important consideration in residential choice.

Public transit for low income people and for young people is definitely significant; and new immigrants. Across the region that’s the case (S1).

We know renters have a much higher propensity [to use public transit] than owners… For some people it also depends on household income and auto ownership. Those are the two key variables. If you have lower household income, or if you don’t own a car, well it
doesn’t matter how old you are. You’re going to need at least to have access to transit (R2).

I think that what happens is having Skytrain attracts people who maybe can’t afford to have a car and they’re going to be renting cheaper housing… It also attracts some students… because it’s right on Skytrain (V2).

The presence of affordable rental housing occupied by vulnerable recent immigrants emerged as a major theme; particularly in areas that are well served by public transit. Refugees are closely associated with the prevalence of low incomes in certain places.

[The area] is providing affordable housing to people who have recently arrived, and as you say, it’s close to transit. So when you’re getting your feet on the ground it’s pretty important (B2).

One of the things I’ve noticed, and people have talked about with Collingwood Village… I think it does attract a number of immigrants because it’s right on Skytrain (V2).

CEJ: How important is public transportation to the [recent immigrants and refugees] you serve?

B5: It's huge. They're all on public transportation.

CEJ: When someone asks you for help to find new housing do they ask for access to good public transit?

B5: Totally.

[Finding affordable housing for newcomers] is probably one of the biggest challenges… Some of the other factors that come into consideration is being near their ethno-cultural community, or being near other newcomers is really important, so having that support nearby would also become a factor. And then access to transportation. Most people won’t have cars (R1).
It was also noted by informants that the number of vulnerable recent immigrants and refugees arriving in the City of Vancouver has been declining. Ley and Lynch (2012) show how important this corridor was for recent immigration in 2005, and figure 8 below shows that the corridor continues to be an important landing site for new immigrants, but recent immigration does not become concentrated until close to the eastern boundary of Vancouver, then continuing into North Surrey.

![Figure 8 Recent Immigrants in Vancouver CMA. Source: Hiebert & Jones (2014) (reproduced with permission)](image-url)

An immigrant services professional with an agency that finds housing for new immigrants commented that in Vancouver, apartment buildings and single detached houses tend to be
interspersed, whereas in suburban developments there is often a separation between districts of apartments and of houses. The concentration of low incomes becomes visible at the CT level when there is a massive grouping of affordable apartments.

I think in some places the visibility and the concentration becomes visible because there is this massive grouping of affordable apartments… it’s block after block… four buildings with another block of three or four buildings, and then another one… So I can see the newcomers there in part because I can see the apartment buildings (R1).

One group of newcomers that arrives in Canada with very limited resources are government assisted refugees (GARs). GARs spend the first two weeks after landing in Canada in the downtown Welcome House operated by the Immigrant Services Society of BC (ISSofBC). Amongst other services, ISSofBC finds initial housing placements for GARs, and they record the postal code of where they successfully find housing. Figure 9 shows GAR initial housing placements for the years 2005-2009.
The low income SkyTrain corridor is clearly evident, as is the diminishing role that Vancouver plays in receiving refugees. Finding appropriate housing for GARs can be challenging as they have limited incomes upon arrival and tend to have larger families. Although the number of GARs arriving every year is unlikely to have a significant effect on average incomes at the CT level, the initial housing placements of GARs acts as an indicator of the location of the region’s affordable rental family housing. Figure 10 shows a series of maps I prepared for ISSofBC to extend the analysis through 2010-2013. The corridor continues to be visible as is the lower number of GARs finding housing in Vancouver.
Figure 10 Metro Vancouver GAR Arrivals, 2010-2013. Source: Friesen & Daily (2014) (reproduced with permission)

Figure 11 maps the residential location of refugees in 2011; the corridor is evident, and a handful of CTs within the corridor can be seen as being of particular significance to the regional distribution of refugees. In these areas refugees strikingly represent at least 5-10% of the total population.
4.3 A Corridor of Contingent Development

The SkyTrain route is a corridor of contingent development in addition to being a low-income corridor where affordable rental housing is often occupied by vulnerable recent immigrants for whom access to public transit is particularly important. In each of the four municipalities that the corridor runs through, high density developments can be found near SkyTrain stations, with several high-density projects currently under construction or being proposed. A common argument in support of these projects is that increased density near public transit infrastructure is a sustainable way to accommodate population growth. Within the next 20 years it is expected
that several neighbourhoods around SkyTrain Expo Line stations will see significant growth in their populations and in the number of high-density developments. However, the process of development is contingent upon a number of factors and the presence of rapid transit does not automatically mean that development will take place. It is the interaction between rapid transit infrastructure, municipal policy, and the market which determines whether or not development takes place at a given SkyTrain station (Coriolis 2013).

The bottom line… is that rapid transit is an important, but not dominant factor for influencing high density development. You also need support of municipal policy, and a supportive market as well (R2).

4.3.1 Vancouver

Close to the SkyTrain corridor, the Vancouver neighbourhood of Mount Pleasant used to be a landing site for recent immigrants, but it is currently undergoing gentrification, making it difficult for new arrivals to find housing there. However, some affordable private rental housing remains in the form of secondary suites in houses and there is a considerable stock of purpose-built, low-rise rental apartments.

Mount Pleasant used to be very much a place where new immigrants could come and get low income housing, seniors were able to find low income housing but over the last five to ten years this community has really changed a lot and it’s certainly being gentrified and working its way [eastward]… So we’ve got the hip, the artistic, the young professionals in the neighbourhood that own these beautiful houses around us, but inside those beautiful houses there are basement suites and on the north side of the street there are a lot of apartments that are still reasonable rents and so that actually still means that we do have some families and some other people who are low income (V1).
Ground is currently being broken for a controversial tower development in Mount Pleasant. This project initiated by the Rize development group features a 19-storey tower that will dwarf other buildings at the intersection of Main Street and Broadway. The proposed height drew “considerable community opposition” which was debated at council during an exceptional six evenings of public hearings (Lee 2012). Council approved this project despite the opposition as it was seen as necessary to plans for denser transit-oriented housing along the Broadway corridor. Vancouver Mayor Gregor Robertson’s position was that, “We need to think in the long term and ensure we have lots of housing along the transit routes” (ibid).

To the east of Mount Pleasant, and on the SkyTrain alignment, the neighbourhood of Grandview Woodland has one of the largest proportions of renters in Vancouver. Rental housing in the area comes in many forms: low-rise apartments, secondary suites, and compartmentalized heritage houses.

It actually gets built out in a number of different ways, you know, two-storey, three-storey typically… apartments and that’s a part of that affordable stock there. You also get within the neighborhood… [a] heritage core area (V3).

An ‘emerging land use directions’ map was released by the City of Vancouver which proposed zoning for a 36-storey tower next to the SkyTrain station at the intersection of Broadway and Commercial in Grandview Woodland (Vancouver 2013). The proposal came as a shock to many and drew criticism from local residents for proposing a level of density and height that was inconsistent with their vision of the neighbourhood (Cole 2013). In the face of community opposition the City backed away from the plan and established a citizens’ assembly to re-think land use decisions for the area (Metcalf 2013).
In these two Vancouver neighbourhoods, decisions which from a planning perspective reasonably aim to introduce high-density developments near transit have come into conflict with the priorities of local residents.

To me, Broadway and Commercial is a significant SkyTrain station surrounded by single and 2 family dwellings [interviewee laughs], so from a planning perspective in terms of densification [this doesn’t make sense] (B1).

We expect… another 140,000 people in a few decades… and so when we think about how to accommodate that growth, there’s a number of different choices you could make. You could map out an even distribution. You could carry on [with] the development patterns that’s already taking place or you can… adopt a more sophisticated approach where you look to the areas where there’s significant public investment, where there’s significant transit. Now do we want more people driving in cars around town? No, ideally we’d like to give them options that allow them to make use of sustainable transportation. Do we want to try and maximize the public investment in the social and cultural infrastructure that we’ve got? Absolutely, and so… this helps to set the table for some land use [decisions]. When we look ahead... over the next few decades in Vancouver, I think we see one of the significant opportunities is the presence of our SkyTrain and rapid transit infrastructure… Broadway and Commercial seems to have on that basis alone, some pretty significant opportunities around it… This is already a transit oriented community in that sense…That’s not going to change and we’ve got hard choices to make when we look down the road into the future about how we want to accommodate people (V3).

The neighbourhood of Joyce Collingwood in South-East Vancouver is just west of the boundary that separates Vancouver from Burnaby. It is home to one of Vancouver’s first transit oriented developments; a high-density area known as Collingwood Village, next to the Joyce SkyTrain station. Concert Properties owns and operates several purpose built rental building towers, and
there are several condominium towers in which many units are rented privately by owners. Secondary suites are also an important part of the area’s rental housing stock. The purpose-built rental tower apartments in Collingwood Village and privately rented condominium units in strata title towers are home to large numbers of recent immigrants. Although data on the turnover-rate in the rental towers is unavailable, one informant believed that residential turnover among recent immigrants is high.

There are a lot of rental suites that are in houses. We're expensive and so people have to put in a rental property… There are condominiums, a lot of them rented out. So you do find that there is quite a movement of people… an immigrant might come there and then move within a year or two. Then somebody else is coming in…(V2).

In this already dense neighbourhood, high-density development was seen as necessary for the continued growth of the city.

We have to densify in Vancouver. There’s just no question in my mind… What’s happening in Grandview Woodlands and what was happening around Main Street, as well, with the Rize development, people don’t want to see that density. They want affordability, but they don’t want to see that density (V2).

4.3.2 Burnaby

Metrotown is a regional town centre with a SkyTrain station, anchored by a major retail mall and one of the region’s largest concentrations of suburban office space. The Edmonds town centre of Burnaby, also with a SkyTrain station, is a well-established landing site for recent immigrants because the stock of low-rise purpose-built rental apartments provides newcomers with opportunities to find affordable housing in larger units. Informants in Burnaby expressed a clear understanding of the link between affordable housing, immigration, public transportation, and
the concentration of low-income people in particular places. Burnaby is second only to Vancouver in terms of the absolute number of aging purpose-built rental units and along the SkyTrain Line in Burnaby there is a large stock of purpose-built, low-rise rental apartment buildings which predate the construction of the rapid transit line (Coriolis 2012b). Many of these units are affordable and large enough for families with limited incomes. In both Metrotown and Edmonds there is concern that this housing stock is aging.

The purpose-built rental was there way before the Expo Line came in. The fact that it’s all rental… it’s going to be for lower income people… Because you need a landing area when you're recently arrived, you're going to go to the purpose-built rental (B2).

In the case along the corridor in Burnaby, I think it was a lot of three-storey walk-up apartment buildings that have gradually over the years deteriorated so that they’ve become really the lowest form of housing… we've retained two- and three- and sometimes four-bedroom apartments along the corridor that are almost non-existent anywhere else in the Lower Mainland, so families move into those, particularly refugee families will move into those because they're going to have more space in those apartments for families that are larger (B4).

Metrotown is expected to receive approximately 30,000 new residents during the next 20 years and several condominium towers are currently under construction to accommodate some of this growth (Smith 2013). Burnaby Councillor Colleen Jordan says, “Part of our responsibility to the region is to allow more places for people to live… So those are the places where we have designated for high density: density around transit, housing around transit” (ibid). There are several high-density developments in the Edmonds town centre of Burnaby with more planned for the near future. Highgate Village is a recently completed development of four residential towers anchored by a village-style mall, and Cressey Developments has plans for a three tower
development at the intersection of Kingsway and Edmonds Street. These towers will stand at 28-, 31-, and 37-storeys and planning is in process for the redevelopment of a huge 48-acre site to the east of the Edmonds SkyTrain station (Burnaby Newsleader 2014).

At the centre of Burnaby’s development boom are policies that encourage transit-oriented development. Developers are investing heavily in Metrotown due to high residential demand and because the City of Burnaby has good working relationships with developers. According to Michael Ferreira, real estate expert and co-owner of Urban Analytics Inc., “Burnaby is an attractive market because of its central location… with two Skytrain routes going through it” (Jang 2013). Bob Ransford, an urban development consultant praised Burnaby for doing, “a great job developing density around the SkyTrain stations, more so than what Vancouver has done” (ibid). According to Hani Lammam, vice president of development and acquisitions for Cressey Development Group, “Burnaby is a good place to do business because you know what you’re getting into… You know what it’s going to cost you” (ibid).

Public opposition to development in Burnaby is minimal and a project that will make Burnaby home to the highest building in the Vancouver region was approved with “barely a whimper” (Smith 2013). However, some key informants were concerned that densification in Burnaby will lead to the displacement of low-income families.

People are having to move out because of housing. Housing is a definite challenge and issue. We have developers coming in, tearing down the housing stock and building towers that aren’t going to be affordable for families. One example of that is a tower that was rental housing and from what I gather… (the developer) provided those families with a buy out of money for rent for a couple of months so they could get relocated, but I would guess that those families didn’t relocate in Burnaby, that they had to relocate
maybe in Surrey or somewhere else. So those towers are going up but they're not affordable towers (B3).

4.3.3 New Westminster

For a geographically small municipality, New Westminster has a remarkably large stock of aging PBRH; second only to Vancouver as a proportion of overall housing (Coriolis 2012a). In the uptown area of Brow of the Hill, which is close to the Edmonds area of Burnaby, there is a concentration of wood-frame, three-storey walk-up PBRH. These older apartments are affordable and tend to be larger than basement suites and the new rental housing stock, which makes them attractive to recent immigrants with children.

We have close to 40% of the population that are in Brow of the Hill in uptown that are immigrants. When you look at those areas, we also know they have higher proportions of new immigrants, higher proportions of government-assisted refugees and the reason is in a lot of cases, some of that rental housing is larger... It’s all three story walk-ups, it’s all purpose-built rental... In a lot of cases, that rental housing is a lot older so they can’t charge as much for rent (N1).

In New Westminster there has been a return of capital investment and development to the downtown area around the SkyTrain stations. As BC’s former capital city, New Westminster has a long-established urban downtown that is atypical of other Vancouver suburbs. New Westminster Councillor Jonathon X. Cote credits, “The urban environment,” for the return of capital to the downtown because it, “is actually becoming a value: being able to walk everywhere, being able to take public transit, being able to jump on a SkyTrain to go downtown” (Smith 2012). As of August 2013 there was such a high level of interest from the private sector that not all proposed projects could be approved.
We’ve got seven potential proposals [for downtown next to a SkyTrain station]… the difficulty there is there’s just too many competing towers. Where is all that interest coming from? Part of that is just the convenience of being close to the SkyTrain and [therefore being able to] command higher sales prices (N1).

But it’s not just the urban environment and the convenience of SkyTrain which is attracting development; there are policies in New Westminster that are designed to attract development to the downtown, particularly around the SkyTrain stations.

The city offers a whole bunch of incentives to develop there. If you develop near the SkyTrain, you reduce the parking allotments and you’re looking at underground parking. That can be up to $40,000 per stall and we’re actually saying you don’t need as much if you’re near a SkyTrain (N1).

4.3.4 Surrey

Particularly low income people are attracted to North Surrey because they can find a larger apartment unit that is more affordable than elsewhere in the region. Recently built condominium towers also present an opportunity for home ownership to first-time buyers with lower incomes. There are huge complexes of PBRH in North Surrey. Built mostly in the 1970s, this aging stock of affordable housing plays an important role in providing housing options to those near the bottom of the region’s housing market.

I think it’s more about rental housing. I would guess it’s more about rental housing than anything... I think why particularly low income people are attracted to [North Surrey] is the cost of housing… It’s that four-storey, wood frame [PBRH], the complexes here are huge... At this point some of them are very run down… In terms of ISS placing GARs in housing in the region, this is where they can find larger apartment units that are more reasonably priced than elsewhere in the region (S1).
There are concerns that the concentration of refugees in apartment complexes in North Surrey has created an ethnic enclave that is excluded from the rest of the city, making integration more challenging.

Where the concern is coming is on the refugee enclaves. It’s creating challenges up in the Guildford area in particular. Part of it is they are settled, often many families in one complex, so you’ve got a number of families, which I would imagine there’s pros and cons. The pros being the support that they would offer each other; the cons being they’re having more challenges integrating. I know I’ve heard from a youth worker that works in that area [mainly with refugees]… her comment to me was the young people she works with… don’t have any Canadian friends. They’re afraid to even approach anyone at school because they feel like such outsiders (S1).

A transformation is taking place in the City Centre area of Whalley in North Surrey. In order to create a downtown core the City has invested heavily in this area. Simon Fraser University has opened a new campus, a new library designed by Vancouver architect Bing Thom has been built, and a new Surrey City Hall is under construction. At least 10 more towers are expected in the next decade along with other projects that aim to create a dense, urban core around the SkyTrain stations in North Surrey (Sinoski 2013). The population of the area is expected to double, and density is expected to reach a level comparable to two of the region’s most developed areas, Yaletown and Metrotown. This is generally welcomed by the community.

I was expecting that there would be people in that neighbourhood who were upset with the change. I think that if this were happening in many areas of Vancouver there would be a lot of people coming out upset. There wasn’t that at all… They’re seeing this improvement; they’re seeing the new library… For the most part there is a lot of support (S1).
As there is a substantial land base in North Surrey that has yet to be developed at even medium
density, development pressure around SkyTrain stations is focused on areas of single family
houses.

We’re not getting any pressure to demolish any of the old rental stock… there’s so much
land… so if a developer is assembling land for redevelopment, they’re going after single
family lots at this point (S1).

4.4 Issues Associated with Development: Land Speculation and Displacement

Although it is apparent that densification in the corridor is varied in its implementation, form and
the community’s response to it, a common issue emerged; land speculation as a consequence of
the expectation that greater densities will be allowed in transit corridors. Some landowners are
simply holding onto properties with the expectation that future land values will surpass current
land use designations. This expectation acts as a disincentive to invest in the maintenance of
buildings, which is a particular problem for rental properties when landlords weigh the cost of
proper maintenance against the potential to sell for redevelopment.

There have been a couple of apartment buildings… on the north side of [Broadway in
Mount Pleasant] that have been recently renovated. However, if you have a walk in that
area you can really see that there are some that are really challenged. I think that they
have lost their prime, they aren’t always as well maintained as they should be. There are
some beautiful places, but you notice which ones which would be ready for major
renovations and I think the challenge is that because of the development of the area I
think that some owners would rather develop as opposed to renovate (V1).

There is some affordable rents [in Burnaby] and they're not subsidized rents, but they're
affordable so that families can still live in them. But the apartments are getting old. It
makes sense that whoever owns that land is going to sell it to a developer and make
money and that’s good for who owns the land, but [not] the people who are renting… (B3).

We’ve got a few situations [in Edmonds] where clients are living in these buildings, landlord is trying to sell it; building is falling apart, literally. Like there might be a deck on it that our clients cannot go out onto because it’s literally unsafe to go out onto. Landlord’s planning on selling the place [so they won’t do maintenance] (B5).

There’s all these towers that’s going in. At some point, [a landlord is going to make a] decision, “Do I want to invest in my building and try to prolong its life into 30 years or am I just going to leave it because look what’s happening down the block?” (N1).

What [Surrey City Centre] is experiencing is the classic of what happens as an area is going through [a change in density]. There’s a lot of vacant lots, and some of the issues that go along with people holding on to pieces of property and not maintaining the property. I mean a lot of investors who are property owners, but aren’t invested in the community… So there’s been issues with grow ops and crack houses and things like that. I think that’s the challenging side of an area in transition [from low to high density] (S1).

Land speculation is a consequence of policies designed to encourage high-density development near rapid transit, as is the threat of redevelopment to affordable rental housing near SkyTrain stations. For vulnerable groups living in affordable rental housing near SkyTrain stations, the demolition of aging PBRH could lead to displacement further from the City of Vancouver.

I think transit-oriented developments are great, but they often come with gentrification. And we’re seeing that challenge right now… if you look at how many of those two- to three-storey walk-ups there are now compared to 5 years ago, my sense it that the numbers are declining, because people can rip them down, put up a high-rise. [Then] rents go up because it’s more of a desirable location (R1).
CEJ: Does development pose a threat to the stock of affordable housing around Skytrain stations?

B1: I can be up front about that and say that it does. The plan reviews aren’t complete yet, but there is a very good chance that those areas will be re-designated for high density development. Certainly higher than 3 and 4 storey wood frame.

More towers are going up. And that stock of housing that used to be affordable for our refugee clients has really been decreasing… People are just moving south. People are going to Surrey. That's basically where the refugees have to settle… they’re going where the housing is and that's where it is and that's where they can afford to live (B5).

Along the SkyTrain Line there is a coexistence of affordable rental housing occupied by low income people, and high density development near SkyTrain stations. Conflicts arise between the two when policies that encourage high-density developments lead to the deterioration or demolition of affordable rental housing, which can cause the displacement of vulnerable people near the bottom of the housing market who rely upon access to public transit for mobility.

CEJ: Do you think there’s an unavoidable tension between access to public transportation and affordability?

V3: Well wouldn’t that be like the irony of it all, of course, in trying to do this more affordable, environmentally sustainable [development]… I think the kind of the missing component to that discussion and the one that’s like the big elephant in the room, is that transit should be something that is easily accessible for all folks… Right now we have so many components of our transit system that are at capacity or near to capacity and so we can talk all we want about the importance of doing these sorts of things, and you’re right, you hit this sort of strange supply-demand thing where if we
actually don’t have a whole pile of transit everywhere then you have it in a more specialized series of routes or locations… you do run the risk of that sort of thing, so my answer’s a bit hypothetical but, no, I don’t think there should be a tension or link there because ideally we’ve got enough transit...

However, funding for transit has been a complicated issue of late (CTV News 2014) and it is beyond the mandate of the regional transit authority, TransLink, to consider the effect that rapid transit has on affordable housing. Although TransLink is aware that frequent transit networks, “May increase the demand for and therefore market value of land in proximity to the network, providing incentives for the highest and best use of the land for tax revenue” (Walker et al. 2009), it is the responsibility of municipalities to ensure that affordable housing near transit is protected.

When it comes to PBRH, we would see that as a municipal and local government responsibility. From our perspective we don’t get into that level of detail, so if we have some alignment, we are not going to assess the impact of PBRH because… all a municipality needs to do is say we’re going to put a policy in to not touch this or have no net loss of PBRH so that’s outside of our control, and at the end of the day there’s all different forms and types of development that are transit supportive, so it’s up to the municipality to do that. The main thing is that we’re getting the mix of uses and the density that support the transit ridership or the future transit ridership (R2).

Therefore, the management of the tension between affordable housing and access to public transit falls into something of a regulatory vacuum, with no authority responsible for making sure that transit is available to those struggling in the region’s housing market with the greatest need for access to transit.
4.5 Conclusion

The Kingsway SkyTrain corridor was established in the colonial era and has shaped regional migration patterns. Lower property values are one consequence of this being a long-established rail, tram, and automobile corridor, and the development of rental housing provides affordable options to those with lower incomes. Whether or not the SkyTrain Line itself can explain the emergence of low incomes in the corridor is therefore unlikely, as the route of the SkyTrain may be more a consequence of an existing rail right-of-way and a lack of effective political resistance. Regardless, there is a considerable stock of rental housing in a variety of forms in the corridor, and some of this rental housing provides opportunities to low-income people near the bottom of the region’s housing market.

Areas of affordable rental housing that are well served by transit are particularly important for vulnerable recent immigrants living in the region, and this is especially true for refugees. Data from ISSofBC and the 2011 Canadian National Household Survey show that the low income corridor is an important site for initial housing placements of GARs, and for the long-term residential location of refugees, with suburban municipalities receiving an increasing share of refugees over time (Brunner & Friesen 2011; Friesen & Daily 2014; Hiebert & Jones 2014). Although it is unlikely that the number of refugees in a CT could have a major effect on average incomes, where refugees are able to find housing is a proxy for locating the Vancouver region’s most affordable rental housing stock. And as public transportation is particularly important for refugees, it also serves as an indicator of where affordable rental housing is well-served by transit.

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There are examples of development, often at high densities in every municipality in the corridor. As the population of Metro Vancouver is expected to grow significantly in the next 20 years, accommodating population growth through high-density development has become a widely accepted policy option, as long as high-densities are well served by public transit. This is not to say that there will be high-density developments at every SkyTrain station in the corridor, for this is a process that is mediated by a variety of factors. The presence of rapid transit is important, but so are municipal policy, private investment, and community response to high-density rezoning.

In the City of Vancouver, two traditionally low-income neighbourhoods with a large stock of affordable rental housing have seen proposals to allow for high-density development in recent years. From a planning perspective, adding density at two key intersections that are well served by public transit is an effective way to accommodate growth, but public reaction to these proposals was largely negative. Although the Rize development in Mount Pleasant was approved by Vancouver City Council despite opposition, an emerging land use directions document for Grandview Woodland was tabled for further community consultation after public outcry over proposed increases to density. Both Mount Pleasant and Grandview-Woodland have a history of immigration, but recent immigration in these neighbourhoods is no longer as significant as it once was. Recent immigration in Joyce-Collingwood continues to be significant, particularly in the high-density developments of Collingwood Village, where densification was seen as inevitable.

Low income areas in Burnaby were generally explained by the presence of rental housing, and particularly low incomes were strongly associated with a stock of low-rise PBRH that pre-dates
the construction of the SkyTrain Line. This aging housing stock is important to recent immigrants and refugees with larger families, as the apartments are affordable and large; a pairing that is becoming increasingly difficult to find in the Lower Mainland. In anticipation of population growth, the City of Burnaby is increasing density near SkyTrain stations. These policies are welcomed by the development community and public opposition is minimal, but there are concerns that increased density is putting redevelopment pressure upon affordable PBRH which could lead to the displacement of vulnerable families.

In New Westminster there is a stock of aging PBRH in the Brow of the Hill area that provides housing opportunities to vulnerable recent immigrants. There is a huge amount of development interest from the private sector and the City of New Westminster is promoting high-density development in the downtown core near SkyTrain stations.

North Surrey possesses a huge stock of concentrated, aging PBRH in which refugees are able to find larger units at a lower price. There are concerns that this may be creating an ethnic enclave which inhibits the integration of young people into the community, but there is little concern that displacement could happen soon. In an effort to create a downtown core the City of Surrey is transforming the City Centre of Whalley into a high-density transit oriented community. As there is a large land base of low density housing that can be assembled by developers, there is little redevelopment pressure on the aging stock of PBRH at present.

Rental housing, vulnerable recent immigrants and high-density development must be considered together in relationship to the SkyTrain Line in order to understand the processes of neighbourhood change taking place within the corridor. The region-wide policy discourses which favour high-density developments near public transit routes make sense from a planning
perspective, but there are issues associated with the expectation that land values near transit will increase because of these policies. For one, land speculation is causing problems in many places as landowners are not investing in the proper maintenance of their properties. This is a particular problem when landlords of aging PBRH weigh the cost of maintenance against the potential to sell for redevelopment. Another consequence of high-density development in the corridor is the displacement of vulnerable residents, forcing them to look for affordable rental housing which may not be as well served by transit. The end result verges on the ironic: for a variety of reasons affordable rental housing was developed along a rail right-of-way which was established long before the SkyTrain Line was built in the early 1980s; access to rapid public transit made these areas more attractive and as the population of the region is expected to continue to grow, high-density developments near SkyTrain stations make sense from a planning perspective; policies which aim to encourage higher densities put redevelopment pressure upon the stock of aging PBRH which could lead to the gentrification of these areas and the displacement of those who have the greatest need for access to transit. This type of situation is superbly critiqued by Grube-Carvers & Patterson (2014):

If transit is not made accessible to those populations who would receive the greatest marginal benefit from its use, then it is not fulfilling its role of increasing the equity and accessibility of urban spaces.
Chapter 5: Neighbourhood Change in the Low-Income Corridor

In this chapter I further narrow the focus of my research to the third scale of analysis; two neighbourhoods that are within the low-income corridor. The primary research method at this scale was a series of four focus groups with residents of the two selected neighbourhoods. The goal of this method was to gain insight into income polarization and neighbourhood change from the perspective of those who live within the corridor. A variety of indicators were used in the process of selecting the neighbourhoods. I developed measures of recent immigration and the residential distribution of refugees, which were then layered with indicators of low income and rental housing disadvantage from census sources. Those areas in which several of these indicators proved to be significant were selected for focus groups.

In this way the neighbourhoods of Maywood and Richmond Park in Burnaby were selected. It was found that these neighbourhoods possessed many of the qualities that were found to be significant in chapter 3. Both neighbourhoods have seen a significant increase in the population of visible minorities since 1986, they are important sites of recent immigration, the majority of the housing stock are apartments occupied by renters who were spending a large share of their income on housing, and the incidence of low-income families in these neighbourhoods is much higher than the Burnaby average.

Focus group participants were recruited by staff at the South Burnaby Neighbourhood House and the Edmonds office of MOSAIC BC. The characteristics of these participants fit well with the indicators that led to the selection of these neighbourhoods. Findings from the focus groups were
supported by a review of policy documents and rezoning applications and an interview with an elected government official.

The key findings of chapters 3 and 4 informed the selection of these neighbourhoods, the recruitment of participants and the line of questioning pursued in focus groups. Focus groups proved to be an excellent method for gaining a textured account of these neighbourhoods which both confirmed and confronted expectations.

5.1 Neighbourhood Selection Process

In order to gain insight at the neighbourhood scale it was determined that the best research method would be to conduct a series of four focus groups with residents of two neighbourhoods within the low-income corridor. The neighbourhood selection process was guided by a series of indicators from a variety of external sources and from my own research at the regional scale. The neighbourhoods that I selected are both in Burnaby and they are identified by the City of Burnaby as Maywood and Richmond Park.

One of the original indicators in this research project is average household income as mapped by the Cities Centre (Ley & Lynch 2012). In figure 12 below, CTs in Maywood and Richmond Park are amongst a handful of CTs in the region which are defined as very low income status in 2006.
In the OLS and logistic regressions in chapter 3, recent immigration was a statistically significant and meaningful variable in determining the average income of a CT and was likely to be high in areas that experienced income decline. I refer to figure 13 below which maps recent immigration as derived from 2011 National Household Survey data. As in Ley & Lynch (2012) the corridor is evident and one of the CTs in Maywood has one of the highest concentrations of recent immigrants in the region.
Figure 13 Recent Immigrants in Maywood and Richmond Park. Source: Hiebert & Jones (2014) (reproduced with permission)

Figure 14 shows the residential location of refugees (landing 1980-2011) in 2011. In this case the corridor is not as well-defined, but some of the CTs which comprise Maywood and Richmond Park are amongst the most significant in the region.
The data for refugees landing in Canada from 2006 to 2011 are particularly informative, and it is evident in figure 15 that CTs in and around Maywood and particularly in Richmond Park are key landing sites for recent refugees to Canada.
Figure 15 Recent Refugees in Maywood and Richmond Park. Source: Hiebert & Jones (2014) (reproduced with permission)

Figure 16 maps a rental housing disadvantage index based on the 2006 census, which identified CTs in Maywood and Richmond Park as having the highest rental housing disadvantage in the region. This is a distinction shared only with one CT in Richmond as well as Vancouver’s well known district of poverty, the Downtown East Side (DTES).
Although the boundaries of neighbourhoods as defined by municipalities do not align perfectly with CT boundaries, I am confident that there is sufficient overlap of the indicators above to have selected Maywood and Richmond Park as sites in which to conduct focus groups.

5.2 Community Profiles of Maywood and Richmond Park

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</thead>
<tbody>
<tr>
<td>Burnaby</td>
<td>43%</td>
<td>51%</td>
<td>90%</td>
<td>62%</td>
<td>45%</td>
<td>36%</td>
<td>19%</td>
<td>39%</td>
<td>43%</td>
</tr>
<tr>
<td>Maywood</td>
<td>63%</td>
<td>66%</td>
<td>94%</td>
<td>41%</td>
<td>1%</td>
<td>49%</td>
<td>50%</td>
<td>65%</td>
<td>51%</td>
</tr>
<tr>
<td>Richmond Park</td>
<td>40%</td>
<td>59%</td>
<td>95%</td>
<td>55%</td>
<td>29%</td>
<td>48%</td>
<td>23%</td>
<td>70%</td>
<td>51%</td>
</tr>
</tbody>
</table>

Table 4 Community Profiles of Maywood and Richmond Park

Source: City of Burnaby Neighbourhood Profiles, 2006 Census
Table 4, above, shows that the City of Burnaby, Maywood and Richmond Park have all experienced some remarkable changes in the 20 years between 1986 and 2006. All areas experienced significant population growth, which has largely been the result of immigration as the majority of the populations of Burnaby, Maywood and Richmond Park are now immigrants. The drastic reduction in the percentage of people that speak English at home reflects the changing trends in country of birth for immigrants to Canada. We can see that the characteristics of the housing stock in Maywood and Richmond Park differs significantly from that of Burnaby as a whole. Whereas the dominant form of housing unit in Burnaby is single- and two-family houses, apartments are the dominant form of housing unit in Maywood and Richmond Park. It should be noted that the number of apartments in a high rise building is far greater than that of townhouses or low rise buildings, so the number of high rise properties is significantly less than the number of townhouses and low rise apartment properties. It is far more common for residents of Maywood and Richmond Park to be renters than for Burnaby as a whole, and renters in these neighbourhoods are more likely than not to be spending more than 30% of their monthly income on housing, therefore experiencing housing stress. In addition to this, families in Maywood and Richmond Park have a significantly higher incidence of low income than for Burnaby as a whole.

As almost half of all housing units found in both Maywood and Richmond Park are apartments in townhomes or low rise buildings, it begs the question as to why there are so many units of this type in these neighbourhoods? The presence of this housing stock can be explained by four factors:
1. Planning decisions made in the 1950s favoured the development of apartment buildings in town centres to meet growing residential demand (Beasley 1976).

2. During the time that much of Burnaby’s purpose-built rental housing stock was developed, there existed a number of tax incentives at the federal and provincial levels of government to support the development of market rental housing (Carter 1997).

3. Low-rise PBRH in Burnaby has been protected from strata conversions since 1974 when the City of Burnaby adopted a moratorium on all such conversions (Burnaby 1974). Although this moratorium is still in effect, it will be shown below that in no longer applies to in Burnaby’s four town centres.

4. The zoning for many of these low-rise rental buildings has not changed since they were originally developed (B1); therefore it has not been possible to redevelop these sites at higher densities.

5.3 Focus Groups in Maywood and Richmond Park

5.3.1 Recruitment

I relied upon third-party recruitment to gather participants for each focus group. Two focus groups were conducted in Maywood, and two focus groups were conducted in Richmond Park. In Maywood, participants were recruited by South Burnaby Neighbourhood House, and in Richmond Park participants were recruited by the Edmonds office of MOSAIC BC. Individuals had to have prior contact with one of these organizations in order to be recruited. For the two focus groups in Richmond Park an interpreter was present in order to ensure understanding between myself and participants. English was a second language for the majority of participants and I have decided not to edit their words unless absolutely necessary for clarity.
5.3.2 Selected Demographic Characteristics of Focus Group Participants

<table>
<thead>
<tr>
<th></th>
<th>Maywood</th>
<th>Richmond Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of participants</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
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<td>8</td>
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<tr>
<td>Average Age</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>Age Range</td>
<td>16-58</td>
<td>25-70</td>
</tr>
<tr>
<td>Immigrant</td>
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<td>13</td>
</tr>
<tr>
<td>Visible Minority</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Resident of neighbourhood for less than 3 years</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Resident of neighbourhood for 3 years or more</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Resident of neighbourhood for 10 years or more</td>
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<td>2</td>
</tr>
<tr>
<td>Working full time</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Working part time</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Participant or member of family owns home</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Average number of persons per household</td>
<td>3.9</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 5 Selected Demographic Characteristics of Focus Group Participants

All participants were immigrants, and most self-identified as a visible minority. Most participants had lived in their neighbourhood for 3 to 9 years, and few had lived in their neighbourhood for 10 years or more. Only one participant was working full time and all participants but one were renters. I cannot claim that participants are representative of their neighbourhoods, but they do bring a perspective that is particularly salient in the context of this research; that of mostly visible minority immigrants, from a variety of ethnic backgrounds, who are renting apartments on limited incomes.

5.3.3 Major Insight from Focus Groups

With the measures of low income, rental housing disadvantage, refugee concentrations and high rates of recent immigration, I must admit that going into the focus groups I expected participants to express a perception of their neighbourhood that was generally negative. However, I was
pleasantly surprised that participants expressed unanimous appreciation of the neighbourhoods.

Some of the major themes of appreciation for the neighbourhoods were their walkability, an attractive and bustling street environment, easy access to a variety of services, and safety.

I moved here to south Burnaby, because to raise the kids there is lots of things which are convenient for the kids. There is the shopping mall and library and swimming pool and so convenient for the kids… And for me because I don’t have a car it is easy for me to get around.

There are a lot of resources… not too far from your house. There are settlement workers… there is a newcomers’ centre for children and families which is really good for everybody if you need information.

[T]he schools are very close. You can drop your kids walking; they can walk to school.

It’s beautiful, it’s quiet, sophisticated. With the passage of time it becomes better. I like it very much.

The area is amazing. It’s beautiful, clean, safe. Everything here is more than what we imagined.

We go out at night, we see neighbours… we want our community to be open, to be mixed.

Like I don’t feel scared or threatened by anything… I have been here for 9 years now. I feel very safe walking at night like when I am taking the bus; I’m not scared at all.

It’s a good area. It’s a very safe area. Sometimes we don’t even have to lock [our doors].

Another theme that was important to participants was the welcoming nature of the community.

This welcoming character was due in part to the presence of co-ethnic communities, as well as a sense of welcome from the population in general.
My sister is in Montreal right now for school and she says she has just recently found the first... person from Sudan in Montreal, and that’s amazing... Every street I turn I see a... person from Sudan. I really like that, even though I’m in a different place, I still get to see people from the same country... I really like Burnaby because there is a lot of diversity.

My mom, she’s had a lot of help from people in Burnaby and locally, with finding jobs and just helping out the family. I have 7 siblings with a single mom.

I like the people here. They are very welcoming to us. They show respect. When I was a volunteer, I like they smile at me every time. The people I like.

Here I found it not too bad to settle in because there’s a lot of community things that you can go to, to meet people. The schools are quite good for getting families together. I found it not too hard to start making a network. Obviously the first few months are hard anywhere, but I didn’t find it too bad here.

When my son started kindergarten... they were very welcoming, saying, “Come volunteer.” I volunteered a few times here and the teacher was very welcoming.

Here people seem more open to taking in new people.

An additional benefit of the walkability of the neighbourhoods was that public spaces were occupied by local residents at all times of the day. This created a lively street environment that was important to the neighbourhoods’ character.

Participant A: [In other places of the region] you don’t find what you find here. Over in North Burnaby you have bigger houses and nice streets maybe, but there is no life in there. No motion, no movement. Here you feel…

Participant B: Action! [Interrupting P A and drawing laughter and enthusiastic agreement from all other participants.]

Participant C: I like that the area has action.
You can see motion, people moving around.

The combination of a walkable, attractive built environment, and a community in which participants felt welcomed meant that the neighbourhoods of Maywood and Richmond Park were much more desirable than other parts of the Vancouver region in which some participants had lived.

When I lived in North Burnaby and Coquitlam I had to ride to go to the library, I had to ride to go to swimming pool, everywhere I had to ride. But in this here, very convenient. I walk!

It’s not like Surrey. If you go to Surrey you see the places, like some villages… so dark and some places are in the bush… you cannot see the shopping centres or stores around. Everything looks like a rural area. But here you are just like in the city… the place is beautiful, you can see the people around. Everything is good. The shopping centres, the community centres, the schools, the environment… everything is there. If you want to see the people you can see them. But if you are in Surrey you cannot see people around. Like just walking… you have some people that you know, you can just see them anytime you want. You are going out you can see them, say, “Hi,” have time, like two, three minute talking to each other.

At first it was after we just moved to Canada… we couldn’t meet so many people from our community, it was far, so that’s why we moved [to Burnaby from Surrey].

The Skytrain was clearly important to all participants, and the central location in the region meant that less time was spent commuting long distances. In many cases participants mentioned that they or a family member could not drive, or that they did not own a car, so access to the Skytrain gave them a mobility that they would not have otherwise. Those participants or their
family members that did have access to a vehicle would often choose the SkyTrain over their car to get around.

[T]he SkyTrain transportation is also good. With little kids and family it is very convenient. It’s a central place right, Burnaby is the central place I think. We moved to Langley but it was too hard to come to downtown. Burnaby is quite good. Everything is convenient nearby.

For us it’s the SkyTrain, because we don’t have a car so SkyTrain is very important for us. It’s a pretty central point. You can get downtown easily but it’s not the cost of downtown.

We like very much this area because we live very close to SkyTrain station. It’s very accessible for my mother in law. We live together and she doesn’t drive and it’s very accessible for her.

My husband works in (Metrotown) and at first we lived in Port Coquitlam, and he was spending lots of time and money commuting, so we decided to move.

I think it’s a little expensive, but at the same time it’s very convenient you don’t spend so much time in the commute.

I have a car, but if I have the opportunity to go somewhere on the SkyTrain, I prefer the SkyTrain.

If you don’t have car you can just go shop around, you don’t have to go far. If you want to go to Metrotown the transport is available. It doesn’t matter if you drive or you don’t drive.

Participants’ individual use of SkyTrain varied, but having access to rapid transit was appreciated by all.

CEJ: Does everyone use the SkyTrain?
Participant: Yes.

CEJ: Would that be every day, once a week, once a month?

Participant: Some of us daily, some of us whenever we need it.

CEJ: So it’s a good thing to have in the neighbourhood? [This question drew an enthusiastic “Yes!” from all participants.]

On aspect of the neighbourhoods that was not regarded as positive was the high cost of housing relative to incomes.

So many good things except rent is a little bit expensive.

It is a bit expensive… we have everything around the neighbourhood, but the rent is expensive.

Also of concern to all participants was the expectation that rents would continue to increase over time.

CEJ: Do you expect that rents will increase in this area?

Participant: It already is.

Concerns over increasing rents translated into negative thoughts about having to live in other parts of the Vancouver region. Some feared the difficulties they would face in finding affordable housing of decent quality in a neighbourhood that would offer the benefits found in Burnaby.

I was thinking about moving away from here and if I look at some other places, I don’t feel comfortable moving out from Burnaby, it’s like I’m born in Burnaby… it’s the background, where I came from.
When I came here we were renting two bedrooms for $750 and it was a nice place. Now it’s a lot higher than before and my children are growing. We need to move and I don’t know where to go. I can’t afford to get out of that place because once I get out of that place I need to get a different place and it’s for sure going to be more expensive. And I don’t want to go away from Burnaby because I like the school and I like everything.

I pay $1005 in rent. If they increase that by anything, I will have to move. Maybe to Coquitlam, and over there is going to be like death, not life.

They will push us to live in places like Surrey because it will be cheaper there for someone like me. It will be very difficult.

5.3.4 Perception of Development in Richmond Park

There was a significant difference between the neighbourhoods in how participants perceived recent development. In Richmond Park there have been a handful of developments of condominium towers in the last few years. These towers have been accompanied by improvements to the public realm, such as a shopping centre, a new library and community centre. Participants in Richmond Park noticed and appreciated the positive effect that that new amenities were having on the area.

We have the new library now, which is a good thing.

We used to go to Metrotown to use the community centre, but now it is very close to our neighbourhood so we can use it whenever we like. Especially our children, we can walk there.

Before the community centre, we used to be discouraged by the distance because to go there and come back takes a while, but now it’s walking distance so we are using it as much as we can.
New amenities for the neighbourhood, made possible through density bonuses from condominium tower developments were seen as obviously good for residents.

Participant: We have lived here for long, so it’s improving every time there is a change.

CEJ: Do you like the changes?

Participant: Yes, who doesn’t like good thing? [This comment drew laughter from the other participants.]

Opinions on the towers themselves were somewhat ambivalent. Participants appreciated the aesthetic value of the towers and hoped that increased residential density in the area could make the cost of housing more affordable.

The towers are nice.

A few of them are OK, but if we keep having more and more it’s going to be like downtown…

A few for aesthetics, it’s OK.

At first the impression is that increasing high rises will lower rent.

Right now we don’t have the intention to look for new house, but if they built more maybe the price would be cheaper.

An increase in residential density was welcomed by participants if it offered an opportunity to find housing for their community, friends and children.

CEJ: How would you feel about an increase in density in this neighbourhood? More residential towers?
Participant A: If the price is reasonable, we would like more houses.

Participant B: It’s better to have more houses here.

Participant C: Whether they build more it doesn’t matter as long as the price is high. For us if the price is [not] going to be the same it makes no difference for us, whether they build more or not.

Participant D: When I came here 2 years before [we found housing in this area], we ask them [if we could] rent house, but all of the apartment it was full. So I have to go to another area. So it’s better to have [more housing] because many people are coming, our children also [are getting older], so they have to [find a place of their own]. So it’s better for the future.

CEJ: Are there lots of people in your community that want to live here but aren’t able?

P B: Yes. We have so many friends; they ask us if there are new houses because they want to move to this area.

However, there was a disconnect between the hope that an increase in residential density would improve housing options and the reality that none of the participants lived in one of the new towers, nor did they expect to in the future.

CEJ: Does anyone live in one of the new towers? [All participants answered no.]

Participant: No. It’s expensive. We just think it’s expensive [so we don’t try to live there].

The perception that units in the new towers were too expensive was accompanied by a concern that the improved amenities that accompanied new developments could drive up rents.
These [new developments in the area] increase the rent.

With every improvement in the area, the rents increase. Those who suffer the most are us, people with limited income.

5.3.5 Perception of Development in Maywood

In Maywood the current development of towers was unanimously perceived as negative. One participant labeled development in the neighbourhood as an “attack of high rises,” and the towers were viewed as an immediate threat. Participants were concerned that landlords were seeing the new buildings as a future opportunity to sell their land to a developer, and that this was acting as a disincentive for landlords to properly maintain their buildings.

I’ve noticed in just the two years I’ve been here I saw high rises over there, over there, over there [pointing south, west and north]. And I think they are very expensive. I’ve noticed where we are staying, they are not changing and they are not renovating anymore. If it is old they are not changing, that is why we are looking [to move].

[T]he new builds are so expensive to rent; there’s either old places that need renovating that they’re not doing because they’re waiting to just sell and then something new will go up that most people are priced out of it.

Participants in Maywood also expressed feelings of exclusion. One form of the exclusion was an inability to influence the political process which approved the development of towers leading participants to conclude that they had no control over the changes happening in their neighbourhood.

I think, for example the high rises in Metrotown area might be part of the plan of the City of Burnaby, because when they started, there is a new high rise coming out… because we live nearby that place we went to City Hall to have a public hearing. They invited people
from the neighbourhood and with the City Council; Mayor and everybody. There were some people from the low-rise in that area, they talked and they said with all the new high rises coming out, that will push away low income families because they can’t afford the high prices, but they like the convenience of living in the Metrotown area; the SkyTrain, library, shopping mall, everything. But the Mayor was there, the Councillors were there, I think they had a public hearing but after that meeting, then I saw the sign came up already. So people can make their noise and go talk to the Mayor or something, but I don’t know if it’s going to change the plan of the city or not.

There is so many high rises coming up, one after another, I think we can talk to the media or to the City Hall, but I don’t know how it’s going to affect the decisions of the City.

The plan is changing the neighbourhood. What I see is just they have to build more high rises, they not care about the people living in this area… It is plan to build high rises and the people’s concern is not their concern, because they can make more money from building more high rises.

If we could ask the Mayor to put up the high rise, but affordable. But who can talk to them?

We cannot stop this trend of having more high rises.

The physical spaces of the towers themselves were perceived as another form of exclusion, because it was thought that the new units would be too expensive for participants to rent.

Participant A: Everywhere you look it’s high rise, high rise and noise. Even my daughter, she is 8 years, youngest one, and we came out after swimming classes and [she said], “OK Mom, we can buy one of these beautiful [condos],” and I said, “No.” She thinks it cheap.

Participant B: Yeah the same thing, my daughter she is just 11 and she says, “Mom, we can take one condo. OK we will take?” Because in my family we have 4
members and my husband is the only one who is having the income [we could not afford to rent a condo].

Many participants in Maywood feared that they would soon be pushed out of the neighbourhood because it was changing so rapidly.

This neighbourhood is changing fast… The construction is growing fast; it is changing the landscape of the city. It is attack of high-rises. People who are interested in development are coming to this neighbourhood and I know our neighbourhood is changing so fast. 5 years ago I was here, living here. It was quiet, we never thought here would change. And now we see every building in this area is going to be demolished [this comment drew general agreement from the other participants], it will be high rise, and people will change… I believe in next 5 years it will change and people will move from here. And it is so sad that change is going so fast… It is just so sad and what we see is destruction, inconvenience… In this area all low rise buildings completely gone in 3 years.

I feel less secure [in tenure] than before... In my opinion they will destroy our old building because both sides they built a high rise. That means in maybe two years they [will replace our building with a high rise]. We have to think about the future. Move out or buy something. We are scared to move out…

Especially on the south side of the Skytrain there, where they’re knocking down the low rises and building the high rises, there’s going to be a completely different demographic of people moving into those high rises compared to the people who were living there before… And I think that the people who could have afforded to live there are going to be shifted further along because they can’t afford to live there anymore.
5.4 Understanding the Different Perceptions of Development

I set out to understand why the perception of development would differ so much between the two neighbourhoods and discovered a 2011 text amendment to Burnaby’s zoning bylaw. The text amendment introduced ‘s’ zoning, which applies a special status to all multiple-unit dwellings within Burnaby’s four town centres, and enrolls them into a density bonus program which establishes a negotiation framework for discretionary zoning between developers and the City if Burnaby (Burnaby 2011). Developers are able to negotiate for an increase in the maximum floor area ratio (FAR) of a site in exchange for the conservation or provision of amenities or non-market housing (Burnaby 2014).

The ‘s’ zoning was originally intended to be implemented through individual Town Centre development plan updates, but because there were numerous opportunities for the application of the ‘s’ category, the City of Burnaby considered it appropriate to fast-track the ‘s’ zoning by approving it as a text amendment to the existing zoning bylaw (Burnaby 2011). A public hearing at Burnaby City Hall regarding ‘s’ zoning was held on 23 November 2010 and no submissions were received from the public regarding the text amendment (Burnaby 2010b). Public consultation regarding the text amendment was terminated at the end of the hearing and as of this point no further presentations regarding the text amendment would be received by Council (Burnaby 2010a). In each of Burnaby’s four Town Centres, the ‘s’ zoning category is applied to all multiple-unit residential buildings which are zoned as RM3, RM4, or RM5. Table 6 below outlines some of the limits and requirements of these zoning designations.
The FAR is a measure of the maximum buildable area of a development. Using RM4 as an example; on a 1,000m² site with a maximum FAR of 2.0, a developer has a limit of up to 2,000m² of buildable space. As 25% of the lot area may be covered, the structure that would take full advantage of the maximum FAR would be an 8 storey building of 250m² per storey. In an RM4’s’ zone the FAR could be increased to 3.6, the building that would take full advantage of this maximum FAR would be 15 storeys tall. As we can see in the table above, the application of ‘s’ zoning has a remarkable potential to increase the maximum allowable FAR on a site and therefore a remarkable increase in buildable area – and site value.

In order for the ‘s’ zoning to be applied to a site it has to meet certain criteria. It must:

1. be located in a town centre.
2. be approved for density bonus in the community plan.
3. be rezoned to a comprehensive development district.
4. include in the comprehensive development plan the conservation or provision of amenities or non-market housing.

The conservation or provision of amenities or housing must be “equivalent in value to the increase in the value of the lot attributable to the increase in floor area ratio” (Burnaby 2014).

When the City of Burnaby approves the rezoning of a site to comprehensive development district under the ‘s’ zoning designation, the increase of maximum FAR increases the maximum buildable area, which increases the value of the land itself (an effect known as ‘land lift’). It is

<table>
<thead>
<tr>
<th>Zoning Category</th>
<th>Max. Height</th>
<th>Min. Storeys</th>
<th>Max. Storeys</th>
<th>Max. Lot Coverage</th>
<th>Max. FAR</th>
<th>Max. FAR 's'</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM3</td>
<td>30m</td>
<td>NA</td>
<td>3</td>
<td>NA</td>
<td>1.1</td>
<td>1.5</td>
</tr>
<tr>
<td>RM4</td>
<td>30m</td>
<td>4</td>
<td>NA</td>
<td>25%</td>
<td>2.0</td>
<td>3.6</td>
</tr>
<tr>
<td>RM5</td>
<td>55m</td>
<td>4</td>
<td>NA</td>
<td>30%</td>
<td>2.8</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Source: City of Burnaby Zoning Bylaw

Table 6 ‘s’ Zoning and Maximum FAR
the policy of ‘s’ zoning that the City of Burnaby capture the full value of the land lift from a developer through an investment in amenities or non-market housing on site, or as cash-in-lieu of a physical amenity (Burnaby 2014). Figure 17 below, shows that after the introduction of ‘s’ zoning in 2011, the number of permits granted by the City of Burnaby for the demolition of apartment units has increased sharply.

![Figure 17 Apartment Demolition Permits in Burnaby, 2002-2014](image)

This uptick in demolitions is due to the fact that ‘s’ zoning includes almost all of the low-rise PBRH in Burnaby under the density bonus program. In 2012, there were 363 PBRH properties in Burnaby that were built before 1980, and almost all of this housing stock was located in areas of Maywood and Richmond Park which lie within the boundary of Metrotown and Edmonds Town Centre respectively (Coriolis 2012a, 2012b). Although detailed information on the location of apartments demolished in 2012 was not readily available, the vast majority of apartment demolition permits approved in 2013 and 2014 were located in Metrotown, within or just outside the boundary of Maywood. The geographical concentration of apartment demolition permits in
and around Maywood might explain why participants in Maywood had such a different perception of development from those in Richmond Park.

One caveat of figure 17 is that a fire caused the demolition of one building containing 34 apartment units in 2013. The remaining 77 demolished apartment units were located at 6350-6550 Nelson Avenue in Metrotown, just east of Maywood. The estimated value of the amenity bonus for this project was $9.5 million, given to the City of Burnaby by a developer as cash in lieu of a physical amenity on site. At the public hearing which approved the rezoning of this site, concerns over the loss of affordable housing in the neighbourhood were raised. The City’s response was this:

It is acknowledged that the issue of housing affordability is complex and challenging and influenced by many external factors such as market conditions – supply and demand, projected population growth, income, and market costs of land and building construction. While these existing units may provide a measure of affordable housing within the Town Centre, like many buildings that are nearing the end of their life-cycle, they are advanced for redevelopment based on market conditions, and as it becomes increasingly uneconomic to continue to repair and maintain older building stock as they age (Burnaby 2013a).

A critique of this line of reasoning is that it applies to an entire region of affordable housing. Under this logic, almost all of the aging stock of PBRH in Burnaby is a candidate for redevelopment. A 2012 report for Metro Vancouver concluded that about 3% of Burnaby’s purpose-built rental housing stock was at risk of redevelopment (Coriolis 2012b). The report cautioned that this figure was likely to rise in the future as the value of land often increases faster than the value of apartment buildings. Had this report taken into account the introduction of ‘s’
zoning, which has the potential to drastically increase the value of a parcel of land, the estimate of risk would surely have been much higher.

These concerns were raised in an interview with an elected government official. The official was aware that the housing stock of Maywood and Edmonds was unique in the Vancouver region because there are affordable rental apartments which are larger than most, making it attractive to low-income families. Of concern to the City of Burnaby was that the majority of the PBRH had been built in the 1960s and 1970s and several apartment buildings were deteriorating as they approached the end of their useful life. This housing had not been designed to exist for more than 50 or 60 years and none of the buildings had been maintained to extend their life cycle beyond that. Speculation on the value of land and the expectation of increased density in the area acted as a disincentive for landlords to properly maintain the quality of their buildings. As the housing stock depreciated it became affordable for low-income people, but in some cases the housing deteriorated to a point at which the City was forced to intervene to address poor living conditions. The City became concerned that the deteriorating housing stock could contribute to a further concentration of poverty in these areas which could lead to social issues that the City would not be equipped to manage. Ideally the City would have liked to introduce a diversity of housing within these areas to achieve a ‘social mix’ of income levels. However, without support from the federal and provincial levels of government to provide incentives or funds for social or rental housing, it was seen as inevitable that densification would lead to gentrification and displacement. The City of Burnaby approached the Provincial Government with a plan to create a zone exclusively for rental housing; a plan which was rejected by the Province. Efforts to invest municipal funds in subsidized housing were unable to have a significant impact upon the
demand for affordable housing and investment of funds directly into housing reduced the City’s ability to fulfil other responsibilities. It was determined that funds gained through density bonuses could be better directed at the provision of amenities or put into an affordable housing fund which could be used to offset permitting and licensing costs for projects that sought to develop subsidized housing. The decision to introduce ‘s’ zoning came after a long and arduous process, during which many solutions were considered, but none were found to be ideal. In the end it was decided that redevelopment in Maywood would be facilitated through ‘s’ zoning.

You’ve got to remember we’ve been resisting for 25 years the redevelopment of this area, and there’s only so far you can go before the writing is on the wall.

There's no easy equation and I can tell you, we went through a study early on in regard to Metrotown, looking at ways we could try to stimulate the recreation of that amount of [rental] housing that existed, by the new development density that we brought in. Impossible. Every consultant we had said, “Can’t do it, can’t do it, can’t do it.” The numbers don’t work. And you can’t get that rental housing built because rental housing is just not marketable…

So what I’m doing is accepting the inevitable, which is that you can’t have this low a density around a Skytrain station in the middle of an urban centre. And so I’ve only got that broad sort of brush to paint with. Which is saying by creating more housing, then hopefully, on the trickle-down theory, is that eventually this is going to create better housing opportunities for others. I can’t hold back the sea of change. We eventually, despite being a left wing council, one that’s very conscious of these issues, we came to the conclusion that we couldn’t continue to stop development from happening in the Maywood area [just] because we thought that the people in there should somehow be protected from that reality. Because we were no longer doing them any favours as there was such a downturn in the quality of housing that they were turning into fire traps, rat traps and it was not going well. We spent a lot of money on consultants and trying to find
some magic solution that didn’t exist. We worked very hard at it and no matter how many meetings we had, and no matter what we went through, we couldn’t find a way. Even if we took all of what we had and increased density in ‘s’ zoning and threw [all of the funds collected through density bonuses] back in, we still couldn’t accomplish that goal [of retaining the stock of rental housing]. At that point people threw up their hands and said, “We’ve just got to allow this…” Unless we were told that we could [zone the area exclusively for] rental housing, and we could have froze everything and said, “You’re all in a rental housing character.” Then that would be a successful way to move on. Aside from that, as soon as we got to the point that we were allowing the first high-rise in, we knew that the flood gates would open. Either you freeze this area and you ghettoize it, which was what it was becoming, or you say, “Alright, once I open this door we know that everybody’s going to be saying, ‘What about me? You let them, what about my property?’” And it’s hard to deny that in Metrotown, which is a regional town centre and the area that’s closest to transit with the highest transit ridership station in the Lower Mainland that we’re not going to allow density... That would work against everything we're saying in every other area. It was never a comfortable and easy decision and I think you should be aware of that. We don’t make these decisions in a cavalier way. We agonize over the decisions we’re making.

I can’t stimulate the other orders of government… to be involved in any of this. And without their participation, I've got no option to be able to deal with this [housing issue].

After several attempts to find another solution to the issue of deteriorating housing, the City of Burnaby decided that the redevelopment of Maywood would take place, and the demolition of PBRH in this neighbourhood would be permitted. It is obvious that the City of Burnaby found itself in a difficult position with hard choices to make. In the face of deteriorating housing quality and a vacuum of support from other levels of government the decision was made to facilitate redevelopment in Maywood through the introduction of ‘s’ zoning, and the inevitable demolition of deteriorating PBRH had to be accepted. However, there are unintended
consequences to this line of reasoning. Now that the City of Burnaby has introduced ‘s’ zoning, low-rise PBRH in Maywood that is in good condition is as much a candidate for redevelopment as low-rise rental housing in poor condition. As Coriolis Consulting found, age and condition are only part of a building’s redevelopment potential. They note that, “The ratio of existing floorspace to permitted floorspace is a good indicator of whether a property is financially attractive for redevelopment” (2012a). The introduction of ‘s’ zoning has skewed that ratio in Maywood and facilitated the demolition of 63 units of PBRH at 6225 and 6255 Cassie Avenue, which according to a council report was in ‘fine condition’ when the site containing a low-rise PBRH building was rezoned to RM5s with a maximum FAR of 6.28 (Burnaby 2011, 2013b). The broad brush of ‘s’ zoning addresses the issue of deteriorating housing, but it also colours housing in good condition green for redevelopment.

5.5 Conclusion

My attention was brought to Maywood and Richmond Park by the indicators of low income, rental housing vulnerability, recent immigration, and refugee location. Community profiles based on 2006 census data for Maywood and Richmond Park showed that these neighbourhoods are occupied mostly by immigrants and that between 1986 and 2006 the percentage of the population that spoke English at home dropped drastically, reflecting changing trends in country of origin for immigrants to Canada, and suggesting that the share of visible minorities in these neighbourhoods increased sharply. These two neighbourhoods are predominantly occupied by renters in apartments and the majority of these renters were spending more than 30% of their monthly income on housing. The prevalence of low income families in Maywood and Richmond Park was much higher than for Burnaby as a whole. Based on this evidence I expected to find
neighbourhoods in decline, but in the process of conducting focus groups in Maywood and Richmond Park, I found vibrant communities that were appreciated by local residents.

The neighbourhoods offer a variety of benefits to the participants of my focus groups; all of whom were newcomers to Canada, many self-identifying as a visible minority, and almost entirely renters who struggled with the high cost of rent relative to their household incomes. These neighbourhoods are walkable, well-served by rapid transit, central to the region, and have easy access to valued services and public amenities. They are more than districts of low-income renters living in poor housing; they are desirable, complete, welcoming communities that offer a quality of life that is difficult for low income people to find in other parts of the region, particularly if they are refugees or newcomers to Canada.

The high cost of housing relative to incomes, and the steady increase of rents over time put those on limited and fixed incomes in housing stress and the possibility of having to move to find lower cost housing was of great concern. There has been very little in the way of affordable housing created in the Vancouver region in the past 20 years, and rental housing supply has failed to keep up with demand (Hiebert et al. 2006). Therefore, it is highly unlikely that the occupants of the 200-plus apartment units for which demolition permits were issued in the last 3 years would have been able to find affordable housing in their neighbourhood, and an elected government official agreed with this assessment.

Density bonuses gained through ‘s’ zoning have made it possible to bring new amenities and services to Maywood and Richmond Park, and the residents of these neighbourhoods have benefitted as a result. Redevelopment through ‘s’ zoning is continuing in these neighbourhoods, but the experience of redevelopment differs greatly between the two. The perception of
development in Richmond Park was somewhat ambivalent as the construction of condominium towers had so far taken place without the demolition of low-rise PBRH buildings. Recent improvements in the neighbourhood such as a new library and community recreation centre were made possible through the density bonus program for new developments. The spatial concentration of demolition permits within or close to the boundary of Maywood meant that redevelopment there was viewed with much greater concern. In Maywood several low-rise PBRH buildings have been demolished to make way for towers, and participants in this neighbourhood expressed feelings of helplessness to intervene in the political process that was facilitating redevelopment.

I must admit that I thought it was an exaggeration when one of the focus group participants said that in three years all of the low-rise buildings in Maywood would be demolished, but after interviewing an elected government official who was involved to the introduction of ‘s’ zoning, I’ve come to question how far from the truth this statement might be. The process through which the redevelopment of Maywood will take place will be mediated through the market, and the neighbourhood’s transformation will be influenced by “external factors such as market conditions” and the probability that a given building will be “advanced for redevelopment” will depend upon “market conditions,” but as the case of 6225-6255 Cassie Ave. shows, this will not solely depend upon whether buildings are “nearing the end of their life-cycle” (Burnaby 2013a). Although it is unlikely that the entire stock of low-rise PBRH in Maywood will be demolished in three years, it is likely to be just a matter of time. The “writing is on the wall” that the days of low-rise purpose-built rental apartment buildings in Maywood are numbered. Whether it takes three years or twenty, the floodgates have opened.
It is understandable how the City of Burnaby arrived at the decision to facilitate redevelopment in Maywood through ‘s’ zoning. The municipality is operating in a context of expanding responsibilities and limited resources, with little support from the provincial or federal levels of government to tackle issues related to housing (Hiebert et al. 2006). However, in attempting to address a concern that a deteriorating housing geography would lead to a deteriorating social geography, the blunt tool of ‘s’ zoning made the redevelopment of all low-rise PBRH in Maywood financially feasible, regardless of the actual condition of the building. Even buildings that are in ‘fair’ condition are now attractive for redevelopment because the ratio of permitted floorspace to existing floorspace can be ‘s’ zoned to the point where the value of the land becomes much greater than the value of the building. Under these conditions age and state of repair become irrelevant, which ironically was the reason why ‘s’ zoning was introduced in the first place.
Chapter 6: Conclusion

The main objectives of this thesis were:

1. To identify which selected characteristics of neighbourhoods are associated with differences in the average incomes of Greater Vancouver CTs and changes in the average income of CTs over time.
2. To discover what may have caused the emergence of a district of low- and very low-income CTs along the SkyTrain Expo Line from East Vancouver to North Surrey.
3. To investigate how regional processes of socio-spatial polarization are expressed in particular neighbourhoods.

Method and data are extremely important for research in this area, as research design decisions can have an influence on findings (see Hamnett 2003, 2009; Watt 2008; Hamnett & Butler 2008, 2013; Davidson & Wyly 2012). With this in mind, I adopted a mixed methods approach to conduct research at three scales of analysis. This approach allowed me to use quantitative analysis to establish a regional context of income inequality that guided qualitative research at the sub-regional and neighbourhood scales.

In chapter 3 extensive methods were employed in order to gain insight into processes of income inequality and change over time in the Vancouver CMA. Although the results must be interpreted with a measure of caution and several of the key findings must be seen as associations with, not causes of, income polarization, the results of this chapter are useful for guiding thinking about income polarization at the regional scale. Of the many findings in chapter 3, those that have the most relevance to the major themes of this thesis are the significant associations between the variance in average CT incomes and changes in average incomes, with visible minorities and recent immigrants who engage in residential crowding in poor quality
apartments as an affordability strategy. The interpretation of these key findings is generally supportive of the global cities hypothesis, in which the integration of the local urban economy into global flows of capital and people will shape the polarization of the labour market, leading to increased income inequality. Immigration is an important aspect of this process as it is often new immigrants that find work in the low-wage service sector (Friedman 1986; Sassen 1988). This is not to deny the merit of the SBTC thesis. The labour market of the City of Vancouver has transitioned from a resource extraction and manufacturing base, and witnessed the rise of a post-industrial service economy (Miro 2011). In this context it follows that the relative demand for job skills would change, but the findings of this thesis place immigration at the centre of rising income inequality, which is not consistent with the SBTC thesis. The distinctive effects of neoliberal policies were also evident in the helplessness of a municipal government to protect affordable housing as the existing stock aged, in the absence of any political will from senior levels of government to use revenue sources to build new subsidised housing. In true neoliberal fashion the state withdrew from social need opening the door to private market redevelopment.

The major findings of chapter 3 were generally supported by interviews with key informants in chapter 4. One of the expressions of increasing income inequality in the Vancouver CMA has been the emergence of a low income corridor which follows the SkyTrain Expo Line. This corridor follows the region’s oldest overland migration route and a former rail right-of-way, which for one key informant explains lower average CT incomes because property values tend to be lower near rail corridors. As this was a rail and automobile corridor long before rapid transit was introduced, and the concentration of low-rise PBRH pre-dates the SkyTrain Line, rapid transit could not been seen an original of low average income CTs in the corridor. Over the
course of conducting semi-structured interviews with 14 key informants, several major themes emerged concerning low-income census tracts in the SkyTrain corridor:

1. A basic factor is the significant presence of recent immigrants and refugees in the corridor, with visible minority status being an important consideration.

2. Housing is central to the emergence of the low-income corridor. All key informants cited the importance of rental housing for explaining the presence of low incomes in the corridor, and although rental housing was not found to be statistically significant in chapter 3, the significance of apartments is supported by statistical analysis. In particular, it was low-rise, wood-frame, PBRH apartment buildings that were most often cited by key informants as explaining the presence of particularly low incomes in the corridor.

3. A major finding which emerged through interviews with key informants was the importance of contingent high-density redevelopment in the corridor. Whereas the development of new dwellings was not statistically significant in chapter 3, in the SkyTrain corridor high-density redevelopment near stations emerged as a major theme. While the expression of development and the community’s response varied across the municipalities that the corridor runs through, a common justification for increasing density was the need to accommodate population growth in an environmentally sustainable way by concentrating high-density development near rapid transit stations.

Whether it is through the politically mediated routing of transportation corridors or accidents of planning, the SkyTrain corridor is home to a district of affordable rental apartments and suites which provide opportunities for recent immigrants and refugees, many of whom are of visible minority status, to find housing that is large enough for families. That the average income of CTs should be lower in this corridor is at least partly a result of this housing stock and its occupancy by recent immigrants, refugees and other vulnerable groups. Housing emerged as a central factor in all three scales of analysis and I argue that housing has not received adequate attention in research on urban income inequality and socio-spatial polarization. Hiebert (2009) illustrates the
polarized housing outcomes among immigrants to Canada, and as incomes continue to become more unequal, housing will continue to play a key role in the neighbourhood channelling of low-income people.

As the population of the region is expected to continue to grow in the coming decades, municipal governments are looking for ways to accommodate this growth in an environmentally sustainable way. For many, adding density at places where there is good access to public transit makes sense from a planning perspective. In those places well-served by rapid transit, where municipal governments introduce policies to facilitate increased densities in order to upgrade the physical and social geography of an area, and where the private sector can make a profit by capitalizing on a value gap, densification is likely to happen. In some parts of the region, increased densities are opposed by the community, in others there is ambivalence, and in some there is support.

There are issues associated with contingent development in the corridor. The most prominent issues were speculation and disinvestment by land and property owners. As land owners are aware of policies which encourage high-density development in the corridor, there is a disincentive to invest in the maintenance of properties as the potential value of land after rezoning far outstrips the value of land in its current use. Speculation can cause issues such as vacant lots in key locations, rented single-family detached houses used for illegal activities, and rental apartment buildings falling into disrepair as landlords weigh the cost of maintenance against the potential for sale.

Although the causes are difficult to identify, the concentration of affordable, aging, low-rise PBRH apartments found along the SkyTrain Line corridor has become an increasingly rare housing type which offers opportunities to those near the bottom of the region’s housing market.
However, as densification near rapid transit has become a common policy framework to accommodate population growth, a conflict has emerged between the preservation of affordable rental housing and densification near SkyTrain stations.

All of the major findings and significant themes that emerged in chapters 3 and 4 are relevant to the neighbourhoods selected for further interrogation in chapter 5. The neighbourhoods of Maywood and Richmond Park in Burnaby exhibit several of the key characteristics identified at both the regional and sub-regional scales. Many of the residents are recent immigrants of visible minority status, and a number are refugees. Half of all dwellings in 2006 were low-rise, wood-frame, PBRH apartments. High density development is also present in these neighbourhoods, with condominium towers perceived to be a major threat to security of tenure in Maywood in particular.

Contradictions and issues arise when areas near transit that are in decline from one perspective or scale of analysis, are seen by local residents as vibrant communities providing a high quality of life to those with limited incomes. This is a contradiction that speaks to a larger methodological matter. It is unlikely that quantitative analysis at this point in time would have identified Maywood as a site of gentrification. Regional indicators suggest that this neighbourhood is one of the most disadvantaged, but from a local perspective, gentrification is clearly taking place and is likely to continue. I must admit that I experienced this contradiction first-hand. Whereas the regional indicators suggested that the neighbourhoods selected would be problematic, and it was clearly the impression of one elected government official that they were problematic neighbourhoods on their way to becoming ghettos, my assumptions about these neighbourhoods were challenged by the unanimous feedback from focus group participants. I cannot claim that
participants were representative of their neighbourhood as there was a selection bias in that each individual had to have prior contact with either South Burnaby Neighbourhood House or the MOSAIC BC office in Edmonds; but according to them, these are vibrant, liveable neighbourhoods that offer accessibility, social services, public amenities, community engagement and co-ethnic networks of support.

Regardless of the obvious benefits that Maywood offers to low-income residents, it is difficult to argue that affordable housing should be protected if it is nearing the end of its life cycle, is poorly maintained, is becoming a liability for the municipality, and is in a location in which the value of land is far greater than that of the building on site. According to a “planning perspective” and market logic, demolition is inevitable. However, it has been recognized that since the 1980s the provision of affordable and rental housing in the Vancouver CMA has not kept up with demand (Hiebert et al. 2006). When these affordable rental apartments in Maywood, built between 1950 and the early 1980s are demolished, an irreplaceable element of the region’s housing stock will be lost. In addition to the loss of this increasingly rare type of housing, for the displaced residents of these buildings there are no other viable housing options in their neighbourhoods, forcing them to look for housing in more peripheral areas. Affordable housing in the Vancouver CMA is a regional issue, and the tension between population growth, transit-oriented development, and gentrification is in need of further critical study (Kahn 2007; Duncan 2011; Grube-Cavers & Patterson 2014).

A text amendment to Burnaby’s zoning bylaw has exposed to demolition a district of affordable rental housing in the Maywood neighbourhood of Burnaby. When the market deems, this housing will be demolished. It is highly unlikely that current residents will be able to find
housing that meets their needs at a cost they can afford in the neighbourhood they have come to call home. Displaced residents will have no alternative than to move further into the more peripheral districts of the region. There are established co-ethnic communities in Maywood and Richmond Park that offer networks of support for newcomers to Canada. Should these communities be disrupted, a valuable resource for newcomers could be lost.

It is beyond the scope of this project to study specific processes of displacement and their consequences, but this is a project worthy of further study. I do not wish to make an alarmist claim that all affordable housing in the corridor will be demolished within the next few years; this is a corridor of contingent development and the future of affordable housing in the corridor is far from predetermined. However, in those places where municipal policy and the market agree that redevelopment should take place, affordable rental housing near SkyTrain stations is sure to come under immense redevelopment pressure. As municipalities expect to see their populations grow, they choose to add density near transit in order to reduce reliance upon automobiles, but these policies could reduce access to transit for those who need it most: recent immigrants, refugees and other vulnerable households on limited incomes without access to a car. Now that municipal policy and the market agree that redevelopment should happen at SkyTrain stations, those who live in aging affordable rental housing find themselves in the way of change. It is unfortunate that in Maywood so many of these people are refugees and immigrants who are struggling in the labour market. From an equity perspective it makes little sense to provide housing near rapid transit for those with relatively less need for it. For low-income people and recent immigrants, having access to public transit is particularly important and demolishing affordable housing near transit stations denies them access to this needed
amenity. As visible minorities, recent immigrants and refugees struggle in the Canadian labour market (Hiebert et al. 2006; Oreopoulos 2008; Hou & Coulombe 2010; Pendakur & Pendakur 2011), having access to rapid transit for commutes to work is especially important, particularly when the work performed is not particularly well-paid. Although it is beyond the scope of this project to quantify the social costs of long work commutes, it follows that to deny low-income parents time with their children by displacing them further from their place of work could have harmful effects, especially if this hampers the integration of the children of immigrants to Canada.

The creation of a theory of urban income inequality is a work in progress. The world city and SBTC hypotheses are not conceptually robust enough to capture the myriad ways in which urban inequality becomes manifest in a particular place. Processes of deindustrialization, diminishing union density, immigration rates, levels of educational attainment and the policy emphases of neoliberalism are all causes of income inequality, but as of yet no theoretical framework has successfully accounted for all of these factors as they relate to globalization and economic restructuring. A goal of geographers should be the creation of a theory of urban income inequality that accounts for the life chances of individuals in a given labour market as it relates to the economic base of the city. The development of a standard measure of inequality, based on reliable and widely available data, which uses a well-recognized and replicable method, is an important project to undertake in order to produce results which can be compared across contexts and time periods. This should be of primary concern to research on urban income inequality in Canada, as the scrapping of the mandatory long-form Canadian Census and its replacement by the voluntary National Household Survey in 2011, has compromised the reliability of census-
derived income data (Hulchanski et al. 2013). With these considerations in mind, this thesis has started from the methodology of Hulchanski et al. (2007) and Ley & Lynch (2012), and has further interrogated the findings of Ley & Lynch (2012) at the regional, sub-regional and neighbourhood scale using qualitative sources as well as data bases. Geographers must be concerned with urban income inequality as it relates to income segregation at the neighbourhood scale, as it is especially at this scale that growing international income inequality and socio-spatial polarization hits the ground. This is particularly true in Canada as research on neighbourhood poverty and segregation is sparse (Chen et al. 2012) and Canadian cities are finding themselves increasingly economically divided without knowing why (David Hulchanski quoted in Paperny 2010). Fortunately there are some valuable precedents in this field (Ley & Smith 2000; Ades et al. 2012) and academic interest in neighbourhoods is building in Canada (Oreopoulos 2008).
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