

Room to grow: Building better rental stock for Vancouver families

**by
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Ethics Statement

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Abstract

Finding suitable and affordable housing is increasingly a challenge for families in the City of Vancouver. The City has a limited supply of primary rental units large enough for families. Most family-sized units in Vancouver are in the secondary market, which lacks the security and stability of the primary market. This study starts with a calculation of need for family-sized rental units. It finds that the *Housing Vancouver Strategy* will not meet anticipated need. It then reviews several of the City's current housing policies. Three policy options are presented to address the limited supply of family-sized rental units. The policies are analysed based on how well they fulfill various criteria. The paper recommends expanding the maximum size of laneway houses to enable more 3-bedroom units and using a density bonus to ensure that secure rental projects include at least 12% 3-bedroom units and at least 30% 2-bedroom units.

Keywords: family-friendly housing; rental housing; municipal policy; laneway house; density bonus

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Executive Summary

Young parents are a critical working demographic and key to a complete community. Finding suitable and affordable housing is increasingly a challenge for families in the City of Vancouver, and ownership of a family-sized home is unattainable for most families. As home prices rise, it is critical that families are accommodated in the rental market.

The rental housing market is divided into two components: the primary market, defined as all privately initiated purpose-built rental structures of 3 units or more, and the secondary market, which includes everything outside of the primary market. The primary market provides the advantages of greater security of tenure and greater affordability as buildings age, but has the disadvantage of limited typology - most primary rental buildings are apartments. The secondary market provides lower security of tenure, but greater diversity of typology. Housing forms which may be more suitable to families, such as row-houses, laneway houses, and detached houses, can be found in the secondary market. The City has a very limited supply of primary rental units large enough for families in comparison to other Canadian cities; thus, most family-sized units in Vancouver are in the secondary market.

The City of Vancouver is currently experiencing a period of high primary rental development, due to a convergence of market forces and municipal policy. This presents an opportunity to shape the primary rental stock that serves the City for decades to come.

The purpose of this study is to address the following policy problem: too few market rental units are available in the City of Vancouver that are suitable for families with children. Although important, non-market rental housing is beyond the scope of this paper.

This study uses qualitative and quantitative methods to assess the need for family-sized rental units in Vancouver and to project outcomes of various policies. The study begins by using Census data to present a calculation of rental unit mix need in Vancouver. The results suggest that the ideal unit mix includes between 12% and 19% 3-bedroom units and between 21% and 42% 2-bedroom units. It then evaluates four current City policies using data analysis, literature review, and expert interviews: the

Housing Vancouver Strategy, the *Housing Mix Policy*, the laneway house regulations, and the *Rental Incentive Guidelines*. The *Housing Vancouver Strategy* outlines development targets for the next 10 years. I estimate that the *Strategy* will produce a market rental unit mix consisting of 9.5% 3-bedroom units and 35.1% 2-bedrooms units. The *Housing Mix Policy* requires that rental buildings include at least 35% units with 2 or more bedrooms. A review of the secured rental stock shows that the *Housing Mix Policy* has successfully prompted developers to include more 2 and 3-bedroom units, although it is unclear if the inclusion of 3-bedroom units will be maintained. The laneway house regulations have been designed to accommodate laneway houses with up to 2 bedrooms. A relatively small increase in allowable square footage would allow for creation of 3-bedroom units.

The next two sections of the study present and analyze three policy options: an additional density bonus for the inclusion of more 2 and 3-bedroom units in secure rental buildings, allowance of inboard (windowless) bedrooms in 3-bedroom units, and increasing the allowable size of laneway houses. The policies are analysed using a number of criteria designed to assess how well they meet the policy objective of creating family-sized units while creating minimal negative impacts. Criteria include the following: development of a stable family-sized rental stock, liveability of the units developed, development of a stable stock of studio and 1-bedroom units, security of tenure, acceptability to developers, acceptability to neighbourhoods, cost to government, and administrative complexity.

This study recommends increasing the allowable size of laneway houses and using a density bonus to ensure that secure rental projects include at least 12% 3-bedroom units and at least 30% 2-bedroom units. Laneway houses have multiple features that are particularly appealing to families, although they lack security of tenure. Increasing the maximum size of laneway houses would be relatively simple administratively and would impose low costs for the City, and thus would be a low-barrier means of increasing the number of 3-bedroom units in the rental stock. A density bonus for inclusion of more 2 and 3-bedroom units in secure rental buildings would produce rental units with greater security of tenure that would remain in the rental stock for at least 60 years. However, this is a more administratively complex option with costs to the City.

The adoption of these two policies is projected to increase the percentage of 3-bedroom units included in the rental stock over the next 10 years from 9.5%, as currently projected under the *Housing Vancouver Strategy*, to 14.1%. The percentage of 2-bedroom units would be approximately the same as currently targeted under the *Housing Vancouver Strategy* (34.5%). The projected outcome falls within the target range identified through the Statistics Canada data analysis.

Chapter 1. Introduction

Young parents are a critical working demographic and key to a growing economy; thus, it is concerning that survey data suggests that families and young people plan to leave Vancouver (City of Vancouver, 2017a). Appropriate housing is key to recruiting and retaining talent. Inadequate and unaffordable housing is increasingly a challenge for young families in Vancouver (City of Vancouver, 2016c; Kershaw & Minh, 2016). Fewer young people will be able to purchase homes suitable for a family in Vancouver, so it is critical that they be better accommodated in the rental stock.

The objective of this study is to evaluate policy options that may improve the City of Vancouver's stock of market rental housing suitable for families. The study focuses on policies within the scope of municipal jurisdiction, as the municipality is the level of government closest to the problem.

The City of Vancouver's primary rental market has a pronounced deficit of family-friendly units in comparison to other major Canadian cities. Primary rental is defined by the Canada Mortgage Housing Corporation (CMHC) as a privately initiated purpose-built rental structure of 3 units or more. In the City of Vancouver, 2-bedroom units form 17% of the purpose-built rental stock and 3+-bedroom¹ units form 1% (Canada Mortgage and Housing Corporation, 2016a). The City's primary rental stock is at a critical turning point: much of the existing stock is reaching the end of its lifespan and new stock is being constructed at high rates, creating an opportunity to shape the primary rental stock that will serve the City for decades to come.

The secondary rental market includes all rental units outside of the primary market. Falling under this definition are non-market housing and rentals of condominiums, laneway houses, secondary suites, and houses. Most family-sized rental units in Vancouver are in the secondary rental market (City of Vancouver, 2009). As more of the new housing stock is constructed in the form of apartments, less of the new secondary rental market stock will be suitable for families.

¹ "3+-bedroom unit" is used throughout this report to indicate a unit that has 3 or more bedrooms

In Vancouver, 83% of renters are housed in market-rental units (City of Vancouver, 2017a). This study assumes that the market will continue to be the dominant provider of rental housing in Vancouver. Investments in non-market housing (ie. subsidized housing owned and operated by non-profit or government organizations) are key to ensuring that there is a place for everyone in the city; however, policies directed at non-market housing are beyond the scope of this study.

The primary and secondary rental markets have different advantages and disadvantages. Families would be best served by ensuring options are available in both markets.

This study uses quantitative and qualitative analysis to inform the following research questions: How much family-sized rental housing is needed in the City of Vancouver? What has been the impact of the City's housing policies on the rental stock and what is the projected impact of current policies? What considerations must be taken into account when improving the stock of family-sized rental units?

This paper is organized as follows. Chapter 2 provides background on Vancouver's present family-rental context, a description of the relevant jurisdictions, and outlines the policy problem. Chapter 3 describes the qualitative and quantitative methods used in the study. Chapter 4 explores the outcomes of the data analysis. Chapter 5 outlines three policy options with potential to address the policy objectives. Chapter 6 presents a policy analysis, including the policy objectives, evaluative criteria, and policy option evaluation. Chapter 7 provides the policy recommendation. Finally, Chapter 8 concludes the study.

Chapter 2. Background

2.1. Why is family rental important?

2.1.1. Young people as a City asset

Young people are an economically important demographic. According to the Vancouver Economic Commission (2011), young, talented individuals are likely to be very mobile, but settle in one spot for a longer period once they have a family. A city that caters to the needs of families is likely to attract young talent and keep it, contributing to economic success (Vancouver Economic Commission, 2011).

Young people will become an increasingly scarce resource in Canada over the next 20 years as the population ages and labour force growth declines. According to Urban Futures projections (2014), the slowing growth of the labour supply may constrain the BC economy in the coming decades and BC will be dependent on in-migration for population growth. Urban Futures projects a higher youth growth rate in BC than Canada-wide due to in-migration; however, this is dependent on BC continuing to be attractive to young migrants (Urban Futures, 2014).

Vancouver is already starting to see the effects of population aging. The percentage of the population under age 20 in Vancouver has declined from 17.9% in 2006 to 15.6% in 2016 (Statistics Canada, 2007, 2012, 2017a). A proportionate decline in the percentage of the population under age 20 can be seen across the Vancouver CMA (census metropolitan area), BC, and Canada (Statistics Canada, 2007, 2012, 2017a).

2.1.2. Young families as a City responsibility

A premise of this study is that the City not only has an interest in attracting young people, but also has an obligation to ensure housing is available for all demographics. There are myriad benefits to living in the City. The societal objective of equity demands that these benefits should not be limited to high-income individuals.

First, the ability for children from all income levels to live in opportunity-rich cities such as Vancouver is key to social mobility. Exclusion of low and middle income

populations from cities entrenches class divides (Dembicki, 2017; Mikhitarian, 2016). With family-sized home ownership out of reach for most families, family-sized rental units provide an opportunity for middle-income families to live in the City.

Secondly, as the urban centre of Vancouver CMA, the City of Vancouver has an obligation to limit urban sprawl by providing more opportunities to live in the City. Urban sprawl in Canada has contributed to longer commute times and unsustainable development, among other social costs (Cheung, 2014). Longer commute times are associated with lower levels of life satisfaction (Hilbrecht, Smale, & Mock, 2014).

2.1.3. Housing challenges faced by young people

The majority of households in the City of Vancouver rent (51% in 2011), but families with children tend to be owners (61% in 2011)(Canada Mortgage and Housing Corporation, 2011b). Similar patterns of increased ownership rates by families with children can be seen in Toronto, Montreal, Ottawa, and Calgary (Canada Mortgage and Housing Corporation, 2011b). However, a distinct shift in ownership prospects for young people in Vancouver has occurred over the past decade. While surveys indicate that ownership is still a goal for most millennials (City of Vancouver, 2017a; Resonance Consultancy, 2017), ownership of a ground-oriented family-sized unit in Vancouver is unlikely to be a reality for most families. According to City of Vancouver analysis, purchasing a row-house on the east-side now requires a household income of \$150,000 or higher (City of Vancouver, 2017a). This is well above the median income of couple economic families with children (\$111,636 in 2015)(Statistics Canada, 2017a). Advocacy organization Generation Squeeze estimates that it would take 23 years for the average 25-34 year old in Vancouver CMA to save up enough for a down payment, in comparison to 12 years across Canada (Kershaw & Minh, 2016). Unlike previous generations, many young people who choose to have children and stay in Vancouver will be bound to the rental market.

In addition to a change in ability to acquire a home, changing job dynamics are likely to impact the appropriateness of home ownership amongst young people. Fortin (2015) summarizes the literature around the Oswald hypothesis, which states that home ownership decreases labour mobility, thereby augmenting increases to unemployment rates. Studies across OECD countries have shown a relationship between increased

home ownership rates and decreased labour mobility (Fortin, 2015). With the rise in contract and temporary-term work (Busby & Muthukumaran, 2016), rental housing is likely to better suit the needs of the labour force than home ownership.

Survey data

A Talk Vancouver survey performed by the City of Vancouver between May 10th and June 23rd, 2017 received 8,425 responses from Vancouver residents. The survey was available online and was provided on paper at in-person events. Unfortunately, the survey report does not separately present responses from individuals living with children (n=1,813). Instead, the report presents results from all respondents whose households consist of “Me and my family” (n=2,464). Since 74% of this category consists of individuals living with children under age 17 (n=1,813), responses from this group are suggestive of the needs of families with children. Amongst individuals living with family who were dissatisfied with their housing (n=1,962), areas of greatest dissatisfaction were not having enough space (54%), unaffordable rent (38%), unaffordable mortgage and other housing costs (22%), and not having housing of their own (23%)(City of Vancouver, 2017c). The survey results support the notion that child-friendly housing is an important consideration when deciding whether to remain in the City. When asked “what would make you consider leaving the City,” of individuals living with family, 56% reported needing housing large enough for their family and 39% reported needing housing that is child-friendly.

2.2. Family-friendly housing considerations

Balancing affordability and quality

Historical and current examples of achieving affordability at great cost to quality of life are plentiful (tenements of the late 1800s and early 1900s, poorly maintained SROs, etc.). Governments have an obligation to balance the conflicting objectives of affordability and adequate housing standards.

It is important to note that the amount of space necessary to thrive will vary considerably from family to family. While small spaces may be considered adequate or even beneficial for some families, many will find small space living to be unduly stressful. As Vancouver moves towards housing more of its population in apartment buildings, it is

important to be conscious of the negative social impacts that may result if apartments are not adequately designed with diverse households in mind.

Overcrowding and housing insecurity

The correlation between overcrowding and negative health and social impacts, particularly in children, is well-documented. Overcrowding has been linked to mental health problems, domestic violence, interpersonal conflict, poor academic performance, and transmission of disease (Ormandy, 2014; Solari & Mare, 2012). When children live in overcrowded conditions, they are less likely to get the quiet time needed to study and it can be challenging to sleep, leading to poor educational outcomes. As of 2011, 33.3% of renters (10,465 households) with children in Vancouver were in core housing need as defined by lack of affordability, overcrowding, or living in a unit in need of serious repair (Canada Mortgage and Housing Corporation, 2011a).

Security of tenure is also critical to well-being in children (Ormandy, 2014). Satisfaction with one's home and sense of control over home have been linked to health status in adults (Dunn & Hayes, 2000).

Families and density

The Vancouver housing stock has increasingly shifted from ground-oriented homes to apartments (City of Vancouver, 2015b). Families have followed this trend. Currently, 31% of families with children live in apartments, as compared to 18% in 1991 (City of Vancouver, 2015b).

Discrimination against families

Discrimination against families with children is prevalent in the rental market and discriminatory practices are likely to increase in tight rental markets (Novac, Darden, Hulchanski, & Seguin, 2002). Although overt discrimination is not legal, rental buildings advertised as “adult-oriented”, “ideal for professionals”, or “quiet” are often covert signs that families will not be accepted (Saltzman, 2015). A Talk Vancouver survey found that family-specific barriers to finding 2 and 3-bedroom apartments included concerns about noise (identified by 43% of families), adult-only buildings, and landlord and owners (both identified by 38% of families) (City of Vancouver, 2016c).

2.3. Vancouver rental market

Vancouver's rental stock consists of a diverse mix of unit types, 65% of which are in the secondary market and 35% of which are in the primary (ie. purpose-built) market (see Figure 2-1 below).

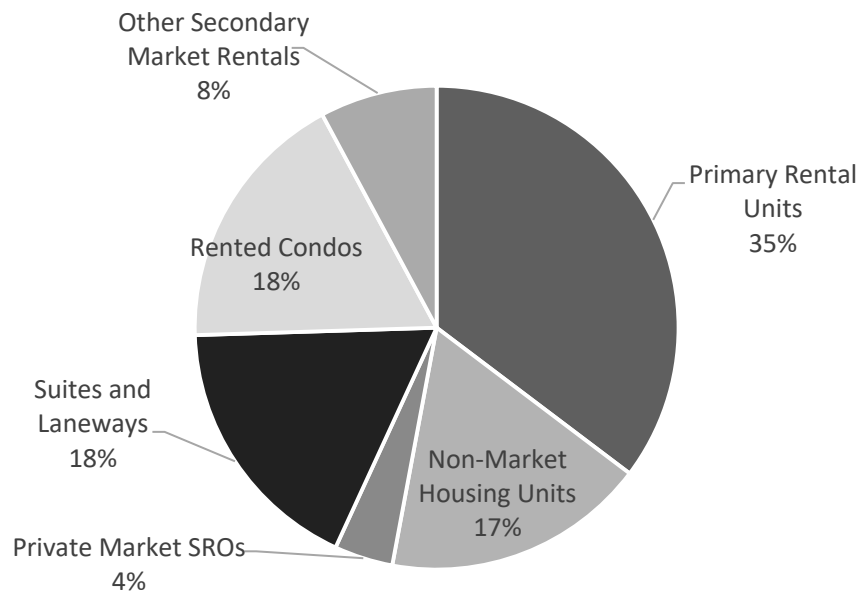


Figure 2-1. Unit type mix in Vancouver's rental stock in 2016, as estimated by the City of Vancouver (City of Vancouver, 2017a, p. 35).

Again, note that this study focuses on the 83% of the rental stock that is market rental. CMHC publishes extensive data on primary rental markets across Canada, including rental rates, vacancy rates, number of bedrooms, and year of construction; however, data on the secondary rental market is very limited. Considering that secondary rental units comprise 65% of the rental stock in Vancouver, this gap in data poses a considerable challenge in assessing the adequacy of the existing family-sized rental stock.

The primary and secondary rental markets are discussed separately in the following sections to explore their differing characteristics.

2.3.1. The primary market

As shown in Figure 2-1 above, the primary market forms only 35% of the rental stock in Vancouver (City of Vancouver, 2017a). In contrast to other Canadian cities, the primary rental stock in Vancouver is very targeted towards singles and couples, with 1-bedroom and studio units comprising 82% of the stock (see Figure 2-2 below).

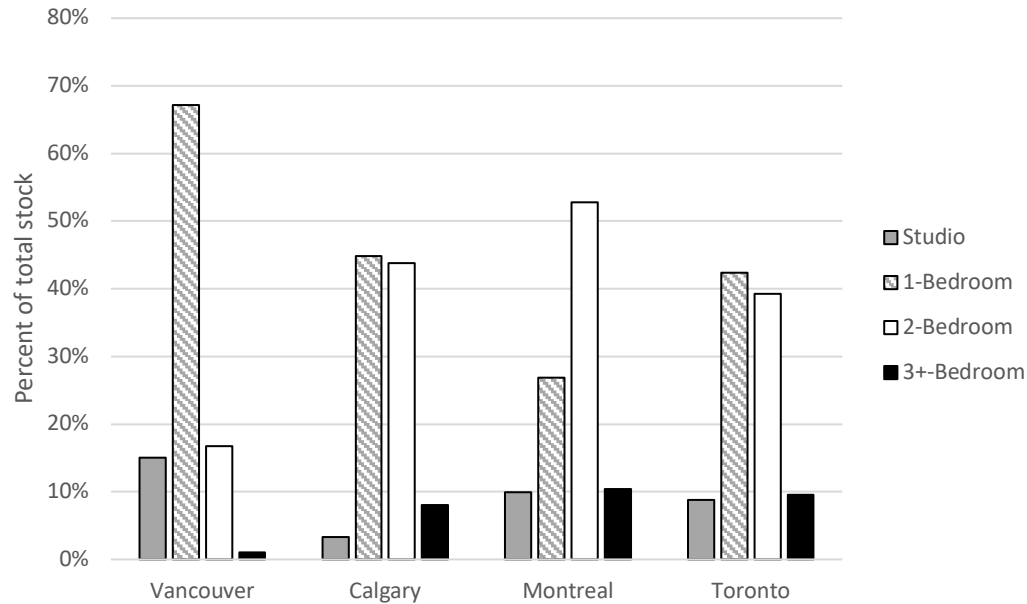


Figure 2-2. Unit mix² in the primary rental stock of four major Canadian municipalities in 2016 (Canada Mortgage and Housing Corporation, 2016a).

In Calgary, Montreal, and Toronto, 2-bedroom units form between 39%-53% of the primary rental stock and 3+-bedroom units form between 8-10%. In Vancouver, 2-bedroom units form 17% of the stock and 3+-bedroom units form 1%.

Current market conditions

Vancouver has experienced an extended period of low vacancy rates in primary rental. A healthy rental vacancy rate is 3% or higher (Ryerson City Building Institute & Evergreen, 2017). The vacancy rate for the primary rental stock has consistently been lower than 2% since 1990, the first year of data available from CMHC (Canada Mortgage

² The term “unit mix” is used throughout this report to indicate the percentage of units with different numbers of bedrooms (ie. the percentage of units with no bedrooms, 1-bedroom, 2-bedrooms, and 3+-bedrooms)

and Housing Corporation, 2016a). Between 2014-2016, vacancy rates were 1% or lower for every unit type (studio, 1-bed, 2-bed, and 3+-bed) and median rent increased by 11% (Canada Mortgage and Housing Corporation, 2016a). The median rent in CMHC reflects rental rates across the primary rental stock rather than across new listings, so the median rent of new listings would be higher than is reflected in the data.

The City of Vancouver has seen rapid development of primary rental in recent years, helped by market conditions and municipal policy. Since 2012, 6,568 primary rental units have been approved (City of Vancouver, 2017a). In contrast, approximately 3,500 units were built between 2000 and 2011. Average capitalization rates³ on multifamily rental buildings have been declining since 2012 (currently 2.5%) (Colliers International, 2017). The fact that investors are willing to accept low capitalization rates indicates that they consider the purchase of multi-family rental buildings to be a low-risk investment (Colliers International, 2017).

Despite Vancouver's high rents and low vacancy rates, investment in developing new rental buildings without subsidy is economically unfeasible. Estimates indicate that 10-year average annual cash-on-cash returns will be negative for a typical, low-end apartment building with 20% 2-bedroom units and no 3-bedroom units (Altus Group Data Solutions, 2016). Land values are dictated by the most profitable use of the land. Condominium buildings generate a higher asset value per square foot than rental buildings in Vancouver, so condominium developers can support higher land values than rental developers. As will be discussed later, municipal policies are in place to increase the profitability of rental buildings, thereby decreasing the gap in supportable land value between rental and condominium buildings.

Family-sized units can be less appealing to developers because they typically rent at a lower rate per square foot than smaller units. This is partially offset by lower development costs per square foot for family-sized units, as the costs of expensive features such as kitchens and bathrooms are spread out over a larger square footage.

³ A property's capitalization rate is the net operating income divided by asset value. This measure is used by real estate investors to value the annual return on their investment.

Comparison between investments in primary rental developments and the ownership market

There is evidence that absentee ownership, empty housing, and short-term renting are on the rise in Vancouver. These phenomena primarily impact the ownership market⁴, and result in a lower “usual resident” household to housing-start ratio. Short-term renting could impact both purpose-built and ownership housing, but it is considered likely that ownership housing is most affected (Griffiths, 2017). Empty and underutilized housing is a product of the attractiveness of the Vancouver market to investors. Evidence suggests that the Vancouver market is flooded with foreign money (Gordon, 2016). Much has been made of recent speculative practices by investors, maximizing profit from sudden increases in land value rather than the value of housing through its use as a home. As of 2016, 25,502 private dwellings (8% of all private dwellings) in Vancouver were not occupied by usual residents (Statistics Canada, 2017a).

In contrast to ownership housing, primary rental buildings are unlikely to be underutilized. Owners of primary rental buildings make their investment decisions based on the long-term return of rental income, which requires maintaining a high occupancy rate. The low rental vacancy rate (0.8% in October 2016) indicates that allocating construction resources to the primary rental market is a more efficient means to house Vancouver residents than the ownership market.

Security of tenure and filtering

Because the primary rental stock in Vancouver is constrained by rules that limit their removal from the rental stock, primary rental buildings are typically part of the rental stock for the lifespan of the building. This provides stability to the tenant and affordability as the unit ages.

The process through which housing becomes more affordable as it ages is referred to as “filtering”. The value of filtering as a means to produce affordable housing has been critiqued, as the filtering process can take decades, units may be extensively deteriorated, and units may never be affordable to low-income individuals (Zuk & Chapple, 2016). An American study found that multifamily rental unit rents decline by

⁴ The term “ownership market” is used in this report to refer to housing units that do not fall under the categories of primary rental or non-market housing

0.31% per year, meaning that the rent for a 30 year old unit would be only 9.3% lower than for a new unit (Rosenthal, 2014).

The filtering effect seems to be higher in Vancouver. In Vancouver, the median rent of two-bedroom rental units built between 1980 and 1999 is 35% less than the median rent of two-bedroom units built after 2000 (Canada Mortgage and Housing Corporation, 2016a). Since there was a period of slow construction of primary rental between the mid-eighties to the mid-2000s, this difference shows the effects of approximately 20-30 years of filtration. Limitations in available data prevent a more precise examination of the change in rent per year. Units built prior to 1980 have a slightly higher median rent than those built between 1980-1999, suggesting that filtration ceases to increase affordability after the unit ages 30 years.

2.3.2. The secondary market

The secondary rental market in City of Vancouver is larger and contains more diversity than the primary market. It consists of ownership-market units rented out by owners. Unit types found in the secondary market include houses, row-houses, duplexes, condominiums, laneway houses, and secondary suites. The secondary share of the rental market in the Vancouver CMA is relatively high (65.4% in 2011) in comparison to the Toronto and Montreal CMAs (50.8% and 39.5% in 2011, respectively) (Canada Mortgage and Housing Corporation, 2016b).

As mentioned previously, very little data is available on the composition of the secondary rental market. Recent statistics on the unit mix of the secondary market are not available.

The share of primary rental units in the Vancouver rental stock has declined over time, and has largely been replaced by a rising share of rented condominiums (McClanaghan & Associates, 2010). Statistics on the unit mix of rented condominiums are not available; however, a 2009 study examined the unit mix of investor-owned condominium units. It found that 41% of investor-owned condominium units had 2 bedrooms and 6% had 3 bedrooms (CitySpaces Consulting & Urban Futures Inc., 2009).

As of October, 2016, there were 28,125 rented condominiums in the City (City of Vancouver, 2017b). If the current rented condominium unit mix is approximately the

same as that found in the 2009 study, the rented condominium stock would include 1,688 3-bedroom units and 11,531 2-bedroom units. However, the mix represented in the study may not have accurately represented the mix of the actual rented condominium stock, since not all investor-owned units are used as rental units. In addition, the proportion of family-sized investor units might have decreased since 2009, given that there was a trend towards decreasing investor unit size between 2001-2009 (CitySpaces Consulting & Urban Futures Inc., 2009).

Current market

Unit characteristics that appeal to condominium investors differ from that of investors in other housing typologies. Investors in Vancouver's condominium market are more likely to own smaller units in newer buildings, in comparison to owner-occupiers (CitySpaces Consulting & Urban Futures Inc., 2009). In contrast, as of 2011, single-detached, duplex, semi-detached, and row-house secondary rental units across Vancouver CMA were typically older than owner-occupied units (Metro Vancouver, 2017).

Although data on the unit mix in the secondary rental market is unavailable, trends in the unit mix of the ownership market may be indicative of trends in the secondary rental market, as secondary rental units are a subset of the ownership market. Between 1991 and 2011, the proportion of 3-bedroom units in the Vancouver housing stock declined from 17% to 14% of the housing stock, replaced by a rising share of 4+-bedroom units and 2-bedroom units (City of Vancouver, 2016c). This may be indicative of a loss of older, smaller houses that might have provided affordable family-sized rental housing in favour of smaller apartments and larger, unaffordable houses. According to Willcocks (2011), financing is a barrier to inclusion of 3-bedroom units in condominium building. They are more difficult to pre-sell, as families are less likely than other demographics to purchase a unit they cannot occupy for years (Willcocks, 2011).

Although data is not available on vacancy rates in the secondary rental market, the vacancy rate is presumed to be similar to that of the primary rental market (ie. very low).

Security of tenure and filtering

Tenants in the secondary rental market are typically more vulnerable to eviction than tenants in the primary market (Canada Mortgage and Housing Corporation, 2016b; McClanaghan & Associates, 2010; Ryerson City Building Institute & Evergreen, 2017). Owners of secondary units may decide to occupy the suite and evict the tenant at any time. They may also sell the unit to a buyer who does not wish to rent out the unit. The flexibility that makes the secondary market insecure is simultaneously an asset: units can appear relatively rapidly when needed. While an important subsection of the market, there is consensus among experts that units in the secondary rental units should not be considered a substitute for primary rental units (McClanaghan & Associates, 2010; Ryerson City Building Institute & Evergreen, 2017).

As discussed above, condominium units tend to transition from renter-occupied to owner-occupied as the unit ages and are less likely to become affordable rental units over time. Other typologies may be more likely to enter the rental market as older, more affordable units.

2.3.3. Policies that shaped the existing stock

Much of Vancouver's existing primary rental stock is a legacy of the post-war period prior to 1980 (see Figure 2-3). Across Canada, the rental stock of that period was designed to accommodate the surge in non-family household formations of the time, resulting from larger populations of elderly citizens, the increasing tendency of non-family singles to live alone, and the entry of young baby boomers into the housing market (Crook, 1998; Suttor, 2009). Families with children in Vancouver were less likely to live in rental apartments at the time (City of Vancouver, 2016c).

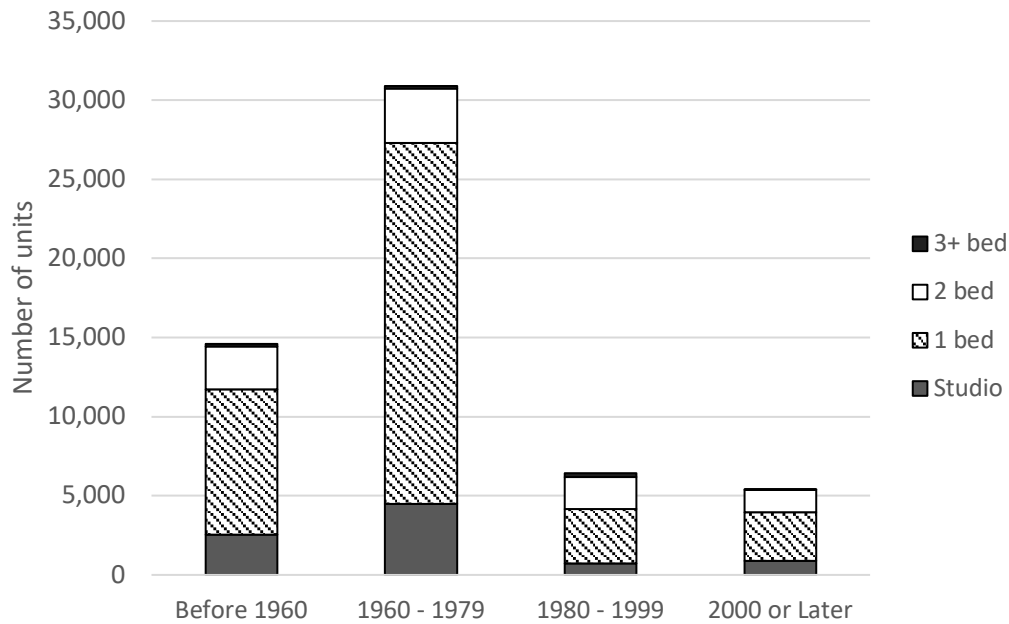


Figure 2-3. Number of units in Vancouver’s current rental stock by period of construction and number of bedrooms (Canada Mortgage and Housing Corporation, 2016a)

Several factors spurred the rapid development of rental apartments in the post-war period across Canada, including federal incentive programs, tax policies, and market dynamics (McClanaghan & Associates, 2010). Construction of primary rental buildings across Canada followed a similar path as other forms of construction, rising from the 1950s until peaking in the 1970s, then declining with the recessions in the 1980s and 1990s (Crook, 1998).

A number of factors contributed to declining investment in primary rental buildings in the 1970s. Changes to federal taxation starting in 1972 made investment in rental buildings less profitable (Clayton Research Associates Ltd., 1998). In the 1970s, costs of construction increased while incomes of tenants declined (Suttor, 2009). Until the 1970s, tenant incomes were similar to the population as a whole (Suttor, 2009). As more of the middle-income population moved into home ownership, real incomes of the tenant population declined (Suttor, 2009). The federal government employed several incentive programs in the 1970s and 1980s, which successfully induced production of rental buildings until they ended in the early 1980s (Clayton Research Associates Ltd., 1998).

Legislation allowing strata title tenure was enacted in BC in 1967. The condominium market started to develop in the early 1970s, but did not become a major part of the housing supply in Vancouver until the 1990s (McClanaghan & Associates, 2010). Condominiums allowed for home ownership at a lower cost, thus reducing market demand for rental units (Crook, 1998). Condominiums also offered significant benefits over rental buildings for investors in the form of high capital gains and greater ease of sale (Crook, 1998).

2.3.4. Vancouver rental market summary

The primary rental market presents the advantages of greater security of tenure than the secondary rental market and increasing affordability as units age. Most of the primary rental stock that exists in Vancouver is a legacy of the post-war era, but a resurgence in rental development has occurred in Vancouver in recent years due to a convergence of market forces and municipal policy. A low proportion of the existing primary rental stock is family-sized. Family-sized units typically rent at a lower rate per square foot than smaller units, making them less appealing to developers.

Most rental units in Vancouver are in the secondary market. In contrast to the primary market, which mostly consists of apartment buildings, the secondary rental market includes a variety of ground-oriented styles, as seen in the ownership market. Variety of form is the key advantage offered by the secondary rental market. Lack of security of tenure is the key disadvantage of secondary rental.

2.4. Policies in other jurisdictions

Policies encouraging the development of family-sized housing have been adopted in many cities across Canada and internationally. Many take a form similar to Vancouver's.

Across Vancouver CMA, municipalities have introduced a range of family-friendly housing policies, including housing design guidelines, amenity guidelines, and encouraging inclusion of family-sized units. The City of New Westminster has adopted a comprehensive family-friendly housing policy that includes minimum family-sized unit inclusion, allowance of a windowless bedroom in 3-bedroom units, and affordability

considerations (New Westminster, 2016). The policy requires multi-family strata buildings to include at least 30% 2 and 3-bedroom units with at least 10% 3-bedrooms. Rental buildings are required to include 25% 2 and 3-bedroom units with at least 5% 3-bedrooms.

2.5. Institutions

Municipal jurisdiction

This project is directed at the municipal government, as the level of government closest to the issue.

The powers of the City of Vancouver are governed by the Vancouver Charter. If the City wishes to adopt policies outside the scope of the Charter, power must be granted by the provincial government. Bohle (2013) summarizes the policy options available to the City as generally falling under four main categories: regulations, incentives, information provision, and public investment. As discussed by Bohle, regulations are effective when a particular land use can be easily provided by the market, while incentives can be used to induce supply of a particular land use for which market demand is insufficient. Bohle reviews the use of a number of general policy tools that have been used by municipalities to include family-friendly development in urban areas, including providing research on market demand, design guidelines, minimum unit requirements, density bonusing, financial incentives, demonstration projects, housing agreements, and family amenity investment.

The City of Vancouver has employed the tools above in a suite of policies with implications for the rental market. These policies will be reviewed in detail in Chapter 4.

Provincial and federal jurisdiction

Provincial and federal governments both have jurisdiction over housing policy and a history of involvement. Both levels may invest in housing or intervene in market dynamics through taxation policy or budgetary expenditure. Canadian housing policy has consistently privileged home ownership over renting through various subsidies, favourable tax policies, and encouraging financial institutions to lend mortgages through development of the federal Mortgage Insurance Fund (Hulchanski, 2007).

Development industry

The residential development industry is constrained in how much housing it can produce by multiple factors, including zoning and community plans, the capacity of City staff to process permits and zoning approvals, availability of labour and skilled trades, availability of development expertise, and availability of financing. These constraints limit the industry's capacity for new development and an equilibrium forms between different kinds of development. Policy can target these constraints to incentivize publicly desired development.

2.6. Policy problem and stakeholders

This study seeks to address the policy problem of how to improve the availability and quality of market rental housing designed for middle income families in the City of Vancouver.

The rental stock in Vancouver is ill-equipped to accommodate the anticipated increase in long-term renter families. A policy window is currently opening that creates the potential for improvements to Vancouver's rental stock. An extended period of low vacancy rates and rapidly increasing rents have drawn public attention to the rental stock. Municipal policy and market forces have produced a period of high development in primary rental. There is an opportunity to shape the rental stock that serves Vancouver for the next 60 years, as occurred in the 1960s and 1970s. It is the City of Vancouver's responsibility to ensure the stock that is constructed best serves the public interest.

The major stakeholders involved in this field are:

- The City of Vancouver, to whom the policy recommendations of this study will be directed
- Current and potential future parents living and renting in the City of Vancouver
- Real estate developers, whose development decisions are affected by City policy

- Landlords, who own and operate rental units

Minor stakeholders include advocacy groups and non-family renters. Advocacy groups have formed around housing and affordability issues in Vancouver, including YIMBY groups and Generation Squeeze. Changes to policies guiding rental development will affect the mix of units available and impacts will be felt by all renters. Non-family renters have an interest in this research as well as family renters.

Chapter 3. Methodology

3.1. Target unit mix calculation

Census 2016 data was used to generate a target unit mix range that the City of Vancouver should aim to enable in newly developed rental stock in order to accommodate the mix of renter household types that presently exists in the City. An assumption of this calculation is that as the City of Vancouver grows in population, the proportions of various household types living in the rental stock will remain the same.

Number of bedrooms, household type, and tenure⁵ was publicly available for the Vancouver Census Metropolitan Area (CMA) (Statistics Canada, 2017b) but not for the City of Vancouver. The number of the following renter households in the City of Vancouver was available: singles (Statistics Canada, 2017d), couples with and without children, lone parents, non-census families, and other census families (Statistics Canada, 2017c). Number of non-census families with 2+ people was calculated by subtracting the number of singles from the number of non-census families.

3.1.1. Minimum family-sized unit target mix

A minimum required family-sized unit target mix was generated by calculating the unit mix necessary to suitably house every renter household in the City of Vancouver, without extra bedrooms, according to the following definition from CMHC.

“Suitable housing has enough bedrooms for the size and make-up of resident households, according to National Occupancy Standard (NOS) requirements. Enough bedrooms based on NOS requirements means one bedroom for:

- each cohabiting adult couple;
- each lone parent;
- unattached household member 18 years of age and over;
- same-sex pair of children under age 18;

⁵ Tenure specifies whether a household rents or owns the housing unit that they occupy

- and additional boy or girl in the family, unless there are two opposite sex children under 5 years of age, in which case they are expected to share a bedroom.

A household of one individual can occupy a bachelor unit (i.e. a unit with no bedroom).” (Canada Mortgage and Housing Corporation, n.d., "Housing in Canada Online: Definitions of variables")

The minimum suitable unit mix for various household types according to this definition is shown in Table 3-1. To generate the minimum family-sized unit mix, the values in Table 3-1 were multiplied by the number of renter households of each household type in the City of Vancouver.

Table 3-1. Unit mix required to minimally house each household type suitably, according to the definition of suitable housing from CMHC.

Household Type	Studio	1-Bedroom	2-Bedroom	3+-Bedroom
Single	100%	-	-	-
Couple without children	-	100%	-	-
Couple with 1 child	-	-	100%	-
Couple with 2 children	-	-	50%	50%
Couple with 3+ children	-	-	-	100%
Lone parent with 1 child	-	-	100%	-
Lone parent with 2 children	-	-	50%	50%
Lone parent with 3+ children	-	-	-	100%
Non-census families with 2+ people	-	-	69%	31%
Other census families	-	-	12%	88%

The minimum suitable unit mix shown in Table 3-1 follows the CMHC definition precisely for singles, lone parent census families without additional persons, and couple census families without additional persons (with and without children). According to the definition, 100% of singles would need studio units, 100% of couples without children would need 1-bedroom units, 100% of couples or lone parents with 1 child would need a 2-bedroom unit and 100% of couples or lone parents with 3+ children would need 3-bedroom units. Since approximately 50% of families with two children have children of the opposite sex, Table 3-1 shows that 50% require 3+ bedrooms. This does not account for the small number of families with two children of the opposite sex under age 5 that could share a bedroom. Together, singles, lone parent census families without

additional persons, and couple census families without additional persons (with and without children) account for 85% of the renter households in the City of Vancouver.

The two other household types accounting for 15% of households, “non-census family with 2 or more people” and “other census families,” are an unknown, heterogeneous mix of different household sizes. At minimum, each of these households require two bedrooms.

Since it is not possible to precisely determine the unit mix that would be required to suitably house these households, the required unit mix shown in Table 3-1 has been estimated. The estimate was generated using Vancouver CMA data, as the necessary data was not available from the City of Vancouver. For each household type, data was available showing the number of renter households in each unit type. For those households for which the unit type occupied was unsuitable, the number of additional bedrooms each household would require in order to have suitable housing according to the CMHC definition was available (Statistics Canada, 2017b). To establish the unit mix shown in Table 3-1 for “non-census family with 2 or more people” and “other census families,” the number of each unit type that would be required to eliminate the bedroom shortfall for unsuitably housed households was added to the number of each unit type containing suitably housed households (see Table A4 in Appendix A for raw data and calculations).

This approximation will result in an overestimate, since some suitably housed households would be living in homes with more bedrooms than necessary. It also assumes that “non-census family with 2 or more people” and “other census families” have a similar composition in the City of Vancouver as across Vancouver CMA.

3.1.2. Upper estimate of family-sized unit need

An upper estimate of family-sized unit need was generated in order to account for many household’s ability and willingness to pay for larger units than are considered “suitable” by CMHC standards. The upper estimate was generated by first determining what percentage of 2 and 3+-bedroom rental units are occupied by households that require smaller units according to the CMHC definition. The stock of 2 and 3+-bedroom units must be large enough to accommodate both the households that require them in

order to be considered suitably housed, and the households who choose to occupy units larger than minimally necessary in order to be considered suitably housed. If we assume that smaller households will continue to occupy 3+-bedroom units at their current rate, and only X percentage of 3+-bedroom units will be occupied by households that require them in order to be suitably housed, the calculation for the upper estimate of 3+-bedroom units required is:

$$\text{3+-bedroom units required} = (\text{minimum necessary \% 3+-bedroom units})/X\%$$

Since number of bedrooms by household type and tenure was not available for the City of Vancouver, Vancouver CMA 2016 data was used to estimate the percentage of family-sized rental units currently occupied by each household type. First, an approximation was calculated of the number of studio, 1-bedroom, 2-bedroom, and 3+-bedroom units occupied by each household type in the City of Vancouver. This was done by multiplying the current rental unit mix occupancy of each household type in the Vancouver CMA by the number of each renter household type in the City of Vancouver. For example, there are 29,730 renter households consisting of a couple without children in the City of Vancouver. Across Vancouver CMA, renter households consisting of a couple without children occupy the following mix of unit types: ~2% studios, ~53% 1-bedroom units, ~35% 2-bedrooms units, and ~11% 3+-bedroom units. Therefore, renter households consisting of a couple without children in the City of Vancouver would be expected to occupy 497 studio units (29,730 x ~2%), 15,793 1-bedroom units (29,730 x ~53%), 10,370 2-bedroom units (29,730 x ~35%), and 3,066 3+-bedroom units (29,730 x ~11%) (see Table A5 and A6 in Appendix A for raw data and calculations).

Next, the proportion of each unit type occupied by each household type was calculated (see Table A7 in Appendix A for raw data and calculations). This estimation shows approximately what percentage of 2 and 3+-bedroom units will be occupied by smaller households, allowing an approximation of how many family-sized units will be needed above the minimum necessary unit mix discussed in 3.1.1.

This approximation assumes that patterns of demand are consistent between City of Vancouver and Vancouver CMA for each household type. However, since larger units are more expensive in the City, smaller households may be less likely to occupy units that are larger than necessary. This is a substantial weakness in the methodology.

3.2. Policy review

I analysed the following City of Vancouver policies for their potential impact on production of family-sized rental units:

- Family Room: Housing Mix Policy for Rezoning Projects
- Housing Vancouver Strategy (2018-2027)
- Rental Incentive Guidelines
- Laneway house regulations

3.3. Evaluation of secured rental stock

A list of secured rental projects approved from 2016-2017, including unit numbers, was obtained from City of Vancouver staff. The list was updated to include four projects approved in late 2017. Applications for secured rental projects that have not been approved were identified through an advanced Google search of the City of Vancouver web domains <http://rezoning.vancouver.ca/applications/> and <http://development.vancouver.ca/> using the search terms “secured market rental” and “Rental 100”.

Information about each project was obtained from the City development permit and rezoning application pages. Number of units, unit mix, and average unit size was obtained from the development permit staff committee report, the rezoning council report, public hearing summary and recommendations, or project statistics documents. If the unit mix and number differed between these documents, data from the document with the latest date was used. Average unit size was recorded in cases where the unit mix was consistent between the document containing the final unit mix and the document containing average unit size. Development cost levy (DCL) waiver information was obtained from the “Financial Implications” section of the rezoning council report.

Application pages for most projects approved prior to 2016 were no longer available on the City website. Aggregate statistics on unit mix and total DCL waivers granted were obtained from the 2015 Housing and Homelessness Strategy Report Card (City of Vancouver, 2016b). The number of secured rental units approved annually between 2012-2015 was obtained from the annual reports on community amenity contributions and density bonusing (City of Vancouver, 2013a, 2014, 2015a, 2016a).

The methodological differences between the data collection of the 2012-2015 data and the 2016-2017 data is a weakness in this analysis. Less information could be obtained about the 2012-2015 projects. An additional limitation of this analysis is that the City websites only include information submitted prior to project approval. Minor changes can occur to projects after they are approved, which would not be included in this analysis.

3.4. Interviews with local housing experts

A series of qualitative interviews with local experts were conducted to contextualize the findings of the data analysis. Interviews were semi-structured and tailored to the expertise of the interviewee. Interviewees were asked open-ended questions exploring their views on the impacts of current policies, underlying factors contributing to the policy problem, areas for potential improvement, and anticipated outcomes of proposed policy options. Interviewees included:

- Anonymous Industry Professional (IP)
- Anonymous Property Manager
- Anonymous City Planner, City of Vancouver (CP)
- Heather Burpee, Senior Planner, City of Vancouver
- Kulwant Chauhan, Director and Owner, Seville Investments
- Bryn Davidson, co-owner of Lanefab Design/Build
- David Hutniak, CEO of LandlordBC
- Jared Stern, Development Analyst, PCI Developments
- Andy Yan, SFU City Program Director

Chapter 4. Data analysis

4.1. Target unit mix

The “minimum suitable unit mix” shown in Table 4-1 represents the minimum percentage of each unit type required to ensure that all renter households in Vancouver could be suitably housed, according to the CMHC definition, in the case that no household has more bedrooms than required to be suitably housed. The values in the “Total renter households” column were generated from Statistics Canada data for the City of Vancouver. The number of each unit type needed for each household type is calculated by multiplying the value in the “Total renter households” column by the relevant value in Table 3-1.

Table 4-1. Minimum suitable rental unit mix required in the City of Vancouver, 2016.

Household category	Studio	1-bedroom	2-bedroom	3+ bedrooms	Total renter households
Single	72210	-	-	-	72210 ¹
Couple without children	-	29730	-	-	29730 ²
Couple with 1 child	-	-	7799	-	7799 ³
Couple with 2 children	-	-	3726	3726	7452 ³
Couple with 3+ children	-	-	-	2080	2080 ³
Lone parent with 1 child	-	-	6338	-	6338 ³
Lone parent with 2 children	-	-	1207	1207	2414 ³
Lone parent with 3+ children	-	-	-	639	639 ³
Non-census families with 2+ people	-	-	11575	5200	16775 ⁴
Other census families	-	-	637	4673	5310 ²
Total	72210	29730	31282	17525	150747
Minimum suitable mix	48%	20%	21%	12%	100%

¹(Statistics Canada, 2017d)

²(Statistics Canada, 2017c)

³Number of couples with children and lone parents in the City of Vancouver from Catalogue Number 98-400-X2016227 (Statistics Canada, 2017c). Proportion with 1, 2, or 3+ children estimated based on Census Profile (Statistics Canada, 2017a). See Table A3 in Appendix A for raw data and calculations.

⁴Calculated by subtracting value for single renter household (Statistics Canada, 2017d) from non-census-family renter household (Statistics Canada, 2017c). See Table A1 in Appendix A for raw data.

As shown in Table 4-1, a minimum 33% of the rental stock needs to be family-sized, including 12% with 3+-bedrooms. One-census families with children generate 5% of the 12% need for 3+-bedroom units and 13% of the 21% need for 2-bedroom units. Non-census families (ie. roommates) and other census families generate the remaining 7% of the 12% need for 3+-bedroom units and 8% of the 21% need for 2-bedroom units.

The minimum suitable unit mix accounts only for the need for each unit type. It does not account for many household’s ability and willingness to pay for larger units than are considered “suitable” by CMHC standards. Table 4-1 shows an estimate of the mix of household types living in each unit type in the City of Vancouver rental stock, based on Vancouver CMA statistics, as described in section 3.1.2.

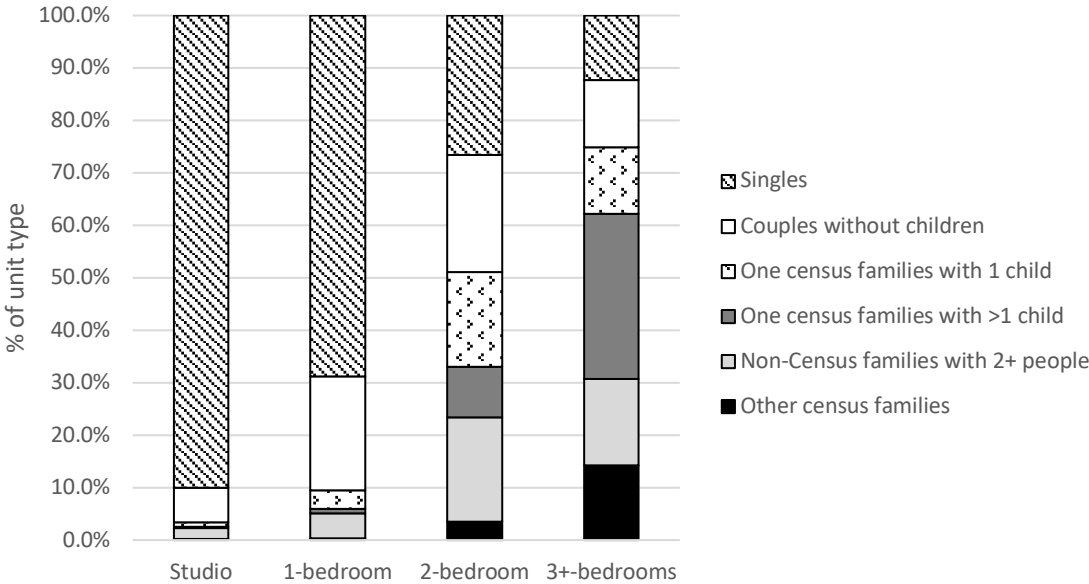


Figure 4-1. Estimated rental household mix in the City of Vancouver, based on Vancouver CMA statistics

Table 4-1 indicates that singles and couples likely create substantial demand for family-sized rental units, particularly 2-bedroom units. In addition, one census family households with 1 child create substantial demand for 3-bedroom units. In this approximation, singles and couples occupy about 50% of the 2-bedroom units and 25% of the 3+-bedroom units, while one census family households with 1 child occupy approximately 13% of 3+-bedroom units. In total, 50% of 2-bedroom units and 38% of 3+-bedroom units are occupied by households that require fewer bedrooms to be suitably housed.

A flaw of this analysis is that data is not available to examine the proportions of one census family households with more than 1 child, “non-census families with 2+ people”, and “other census families” occupying 3+-bedroom units when 2-bedroom units would be suitable.

To ensure that all households were adequately housed, 19% of rental units would need to have 3+-bedrooms (12% minimum/0.62 = 19%) and 42% of rental units would need to have 2-bedrooms (21% minimum/0.50 = 42%).

This approximation likely overestimates the proportion of small households that live in family-sized units, as the areas around the City of Vancouver within Vancouver CMA are comparatively affordable; however, it provides a range within which the City should work to create targets for family-sized rental housing. The rental stock should consist of between 21%-42% 2-bedroom units and between 12%-19% 3+-bedroom units.

A major flaw of this analysis is that it assumes that individuals would prefer to continue living with their existing household in a unit suitably sized for that household. It does not account for individuals who would prefer to live alone, or with a smaller household, in a smaller unit. This biases the analysis towards a requirement for more larger units. Many households in the categories “non-census families with 2+ people” and “other census families” might prefer not to live with their current household members but do so for affordability. For example, many of these households would include people living with roommates or adults living with parents.

4.2. Policy review

4.2.1. Family Room: Housing Mix Policy for Rezoning Projects

The *Family Room: Housing Mix Policy for Rezoning Projects* (from here on referred to as the *Housing Mix Policy*) was approved in 2016 and requires that residential strata and secured market rental projects include at least 35% 2 or 3+-bedroom units. Residential strata projects must include at least 10% 3+-bedroom units. The *Housing Mix Policy* supersedes the unit mix requirements of previous area plans, but not those of official development plans (City of Vancouver, 2016c), so there are still areas of the City where fewer than 35% of units must be family-sized.

When asked what the impacts would be if the *Housing Mix Policy* were to require a minimum percentage of 3-bedroom units in rental developments, several of my key informants thought it would not be feasible without an incentive.

Inboard bedrooms

In the City of Vancouver, all bedrooms are required to have a window. Three-bedroom units are typically placed on premium corners to provide the exterior wall space needed to have windows in all three bedrooms and the living space.

The *Housing Mix Policy* has received criticism from some developers due to the difficulty of incorporating 3-bedroom units in a non-luxury form. According to IP, “One of the issues we had when they imposed the family housing on the strata was without the [windowless] bedrooms, ... you're probably going to end up with larger penthouses in the sky.” As noted by developer Kulwant Chauhan, 3-bedroom units are particularly challenging to incorporate into mid-block buildings due to the lack of corner units.

A solution advanced by some developers is to allow one of the bedrooms in a 3-bedroom unit to be windowless (ie. “inboard”). This provides design flexibility that allows developers to create 3-bedroom units that are not placed on corners and may be smaller and more affordable.

4.2.2. Housing Vancouver Strategy

The *Housing Vancouver Strategy (2018-2027)* was approved in December 2017. The strategy outlines target unit numbers to be added over the next 10 years (summarized in Table 4-2 below).

Table 4-2. *Housing Vancouver Strategy* 10 year targets with estimates of unit mix. Source of unit numbers and unit mix estimate is the *Housing Vancouver Strategy* unless otherwise noted (City of Vancouver, 2017d, pp. 23-24).

Housing Type	Units	Units suitable for families (2+ bedrooms)	Units with 2 bedrooms	Units with 3+ bedrooms
Social housing (independent)	5,900			
Supportive housing	4,100			
Co-operative housing	2,000			
Developer-owned below-market rental	4,000			
Total Below-market	16,000	Unknown	Unknown	Unknown
Primary rental	16,000	5,600 (35%)	4,320 (27%) ¹	1280 (8%) ²
Laneway houses	3,080 ³	1,515 (49.2%) ⁴	1,386 (45%) ⁴	129 (4.2%) ⁴

Rented condominiums	9,900	4,653 (47%) ⁵	4,059 (41%) ⁵	594 (6%) ⁵
Rented row-houses	1,700	1,700 (100%)	799 (47%) ¹	901 (53%) ⁶
Rented coach houses	Estimation not given, <300			
Total Market	30,680	13,468 (43.9%)	10,564 (34.4%)	2,904 (9.5%)

¹Percentage of 2-bedroom units calculated by subtracting projected percentage of 3+-bedroom units from percentage of family-sized units projected in the *Housing Vancouver Strategy*

²Based on the proportion of 3-bedroom units in secured market rental projects in 2017 and proposed projects. See section 4.2.4.

³*Housing Vancouver* targets 4,000 total laneway houses. 77% of laneway house occupants reported renting from a landlord in a recent survey of laneway house occupants, which had a response rate of approximately 11% (Heather Burpee, personal communication, April 9, 2018).

⁴Unit mix reported in a recent survey of laneway house owners (Heather Burpee, personal communication, April 9, 2018)

⁵2009 estimate of unit mix of investor-owned condominium units (CitySpaces Consulting & Urban Futures Inc., 2009)

⁶Percentage of rented row-houses with 3+ bedrooms built between 2001-2011 across Vancouver CMA, 2011 (Metro Vancouver, 2017, p. 53)

While I estimate that 43.9% of the targeted market rental units will be family-sized, I estimate that only 9.5% of market rental units will have 3 or more bedrooms.

There are a number of potential sources of error that impact the reliability of these estimates. First, the proportion of family-sized units in secured market rental projects approved in 2017 and proposed projects is 37% (see section 4.2.4), higher than the 35% projected by the City for the primary rental stock. This results in a potential under-estimate in the number of family-sized units that will be developed.

The estimated unit mix of rented laneway houses is based on a recent survey performed by the City that may not be representative of the rental laneway population. The proportion of laneway houses that will be used as rental units is also unclear. The City estimates 4,000 laneway houses will be built over the next 10 years and 77% of laneway house occupants who responded to the City's recent survey were renting from a landlord. Again, the accuracy of the survey results is unknown, so the number of rental laneway houses produced over the next 10 years may be higher or lower than shown in Table 4-2.

The unit mix projected for rented condominiums is based on a 2009 study that examined investor-owned condominiums. As discussed in section 2.3.2, the unit mix of investor-owned condominiums may have changed since 2009 and, in addition, not all investor-owned condominiums are used as rental units. The unit mix of rental condominium units may not be the same as the unit mix of all investor-owned

condominium units. The 2009 study looked at the unit mix across all condominium units owned by investors in 2009. The unit mix of investor-owned units in new buildings might differ considerably from that of the entire rental condominium stock. This is a notable source of error, since Table 4-2 is projecting the unit mix of new condominiums added to the rental stock. The percentage of rented row-houses with 3+-bedrooms is based on the unit mix of rented row-houses across Vancouver CMA built between 2001-2011. This is likely to over-represent the proportion of rented row-houses with 3+-bedrooms, since unit sizes are larger on average across Vancouver CMA than in the City of Vancouver.

As noted by Andy Yan, these targets may not be fulfilled due to labour and capacity constraints in the building and construction industry. It is also important to note that there is no estimation given of how many units will be lost to redevelopment, so the net gain in family-sized units that will be achieved is unclear. The number of primary rental units projected to be developed in the *Housing Vancouver Strategy* is high relative to the average annual number of secured rental units approved between 2012-2017 (1,097 units/year). If the number of primary rental units developed is lower than the projected 16,000 units, and the number of rented condominiums developed is higher than the projected 9,900, the overall percentage of 3-bedroom units in the rental stock would likely be lower than calculated in Table 4-2.

Rental only zones

The *Housing Vancouver Strategy* states the City's intention to request authority from the province to establish "rental only zones". Implementing rental only zones would address the imbalance in profitability between strata and primary rental developments, as land prices would not escalate beyond a level where profitability could be achieved by a primary rental building. Improved profitability would allow developers to more easily incorporate family-sized units.

4.2.3. Laneway house regulations

Laneway houses are small, free-standing buildings located at the back of a residential lot. Home owners may build a laneway house to obtain income from rent, to create a space to downsize in place as they age, or to provide a space for their adult children to live, among other reasons. Laneway homes are allowed in all single family (RS) zones and some RT and RM zones in Vancouver. They cannot be strata-titled.

There are several key benefits to laneway houses that would be particularly important to families. Bryn Davidson, co-owner of Lanefab Design/Build, described the advantages as follows:

When we build [laneway houses] for rental, they are among the nicest rental units in the city.... They're totally detached, there's nobody above you, there's nobody below you, or next to you, you have your own front door, your own outdoor space. They tend to be in pretty nice walkable neighbourhoods. There's a lot of really compelling things and there's a lot of people who really love the idea of this tiny little cottagey house. In comparison to a condo.

The Laneway house regulations are designed to accommodate units with up to 2 bedrooms. Laneway homes can be at maximum 1.5 storeys and 0.16 floor space ratio (FSR) up to 900 square feet ("Laneway housing how-to guide," 2016). Thus, the maximum unit size is 644 square feet for a standard 33-foot lot and 900 square feet for a 50-foot lot ("Laneway housing how-to guide," 2016).

According to Davidson, it is challenging to produce liveable 3-bedroom units under the current regulations. If the regulations were changed to allow another 200-400 square feet, Davidson believes that 3-bedroom units would be a very popular option on larger sites.

4.2.4. Secured market rental incentives

Policy

The City of Vancouver encourages the development of market rental buildings through several possible incentives outlined in the *Rental Incentive Guidelines* (City of Vancouver, 2017e), including: DCL waivers, parking reductions, relaxation of minimum unit size, additional floor area, and concurrent processing (City of Vancouver, 2017e). In exchange, the development must consist of 100% rental units secured for at least 60 years (ie. secured market rental buildings).

DCL waivers are provided for buildings that meet the affordability criteria stipulated in the DCL bylaw, which include limits on unit size, building amenity space, construction costs, and the rental rates of the first occupants of a building (City of Vancouver, 2017e).

Projects that require rezoning must follow the *Housing Mix Policy*. Buildings that only require a development permit must include at least 25% family housing. Since most secured market rental buildings require rezoning, most will include at least 35% family-sized units.

My key informants generally viewed the *Rental Incentive Guidelines* very favourably and said that the incentives offered can be seen as a model for incentivizing other objectives, such as increasing the number of family-sized units.

Evaluation

Secured market rental projects have included increasingly more family-sized units (see Figure 4-2). Figure 4-2 includes the unit mix of approved and proposed secured rental projects for which unit mix data was publicly available. The 2012-2015 unit mix shown was reported by the City for 2,966 of the 5,119 units approved during that period (City of Vancouver, 2016b). Unit mix was available for 1,584 of 1,595 units approved in 2016, 641 of 781 units approved in 2017, and 524 of 562 proposed units.

The “proposed” category includes project applications submitted in 2017 that have not been approved.

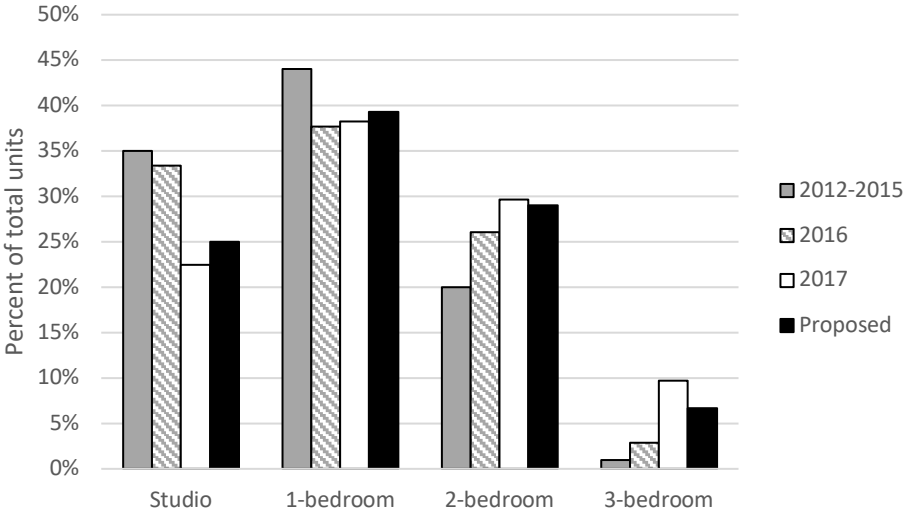


Figure 4-2. Unit mix of secured rental units approved in the City of Vancouver since 2012, and proposed projects submitted in 2017 that have not been approved. Numbers for 2012-2015 were taken from the 2015 Housing and Homelessness Strategy Report Card (City of Vancouver, 2016b)

The 2016 updates to the *Housing Mix Policy* affected 387 out of the 641 units approved in 2017 for which unit mix is known (5 of 8 projects) and none of the projects approved in 2016. Projects not affected by the *Housing Mix Policy* were typically required to include 25% family-friendly units. In 2017, 10% of approved units had 3-bedrooms in comparison to 3% in 2016 and 1% between 2012-2015. The percentage of 2-bedroom units has also increased, from 20% between 2012-2015 to 30% in 2017. Data collected from projects that are currently in application suggest that the percentage of 3-bedroom rental units approved in 2018 will decrease to approximately 7%.

Figure 4-2 suggests that the *Housing Mix Policy* has been highly effective in increasing the percentage of 3-bedroom units, despite the lack of a mandatory minimum. According to CP, although not required, City staff encourage rental developers to meet the same standard as in strata (at least 10% 3-bedroom units). It is too soon to assess the long-term viability of this strategy, but the lower percentage of 3-bedroom units in current applications may be indicative of future inconsistency in meeting the standard.

The number of secured rental units approved each year in the City of Vancouver has averaged 1,097 between 2012-2017, ranging from a maximum of 1,595 units in 2016 to a minimum of 781 units in 2017 (see Figure 4-3).

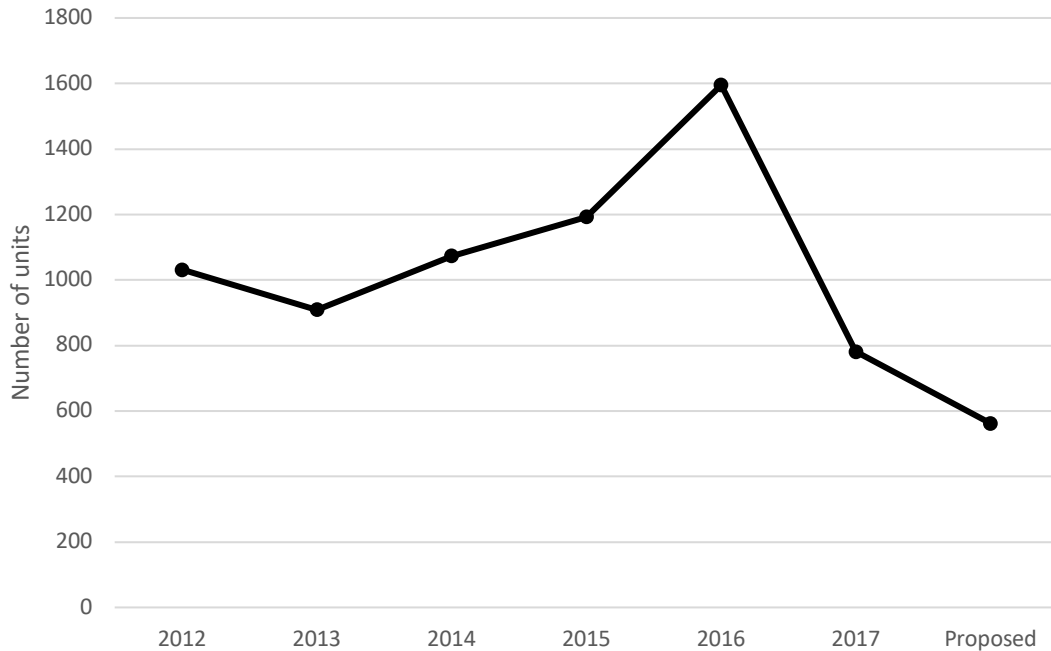


Figure 4-3. Secured rental units approved annually in the City of Vancouver between 2012 and 2017, and secured rental units currently in the application process (City of Vancouver, 2013a, 2014, 2015a, 2016a).

The sharp decline in approvals in 2017 may be related to general uncertainty in the market caused by a number of new policies, including the foreign buyers tax and the empty homes tax. The *Housing Mix Policy* could also have impacted the decision for developers to invest in rental, although this is unlikely considering that rental projects approved in 2016, prior to the *Housing Mix Policy* update, came close to meeting the 35% standard on average.

Average unit sizes were obtained from 12 of the 27 projects approved in 2016 and 2017, accounting for 1044 of 2645 approved units, including 303 2-bedroom units and 72 3-bedroom units. The majority of projects that reported unit size were applying for DCL waivers, which requires average unit size to be smaller than the maximum specified in the DCL waiver bylaw. Across the 12 projects, the average 2-bedroom unit size was 744.9 square feet and the average 3-bedroom unit size was 963.2 square feet (see Figure 4-4).

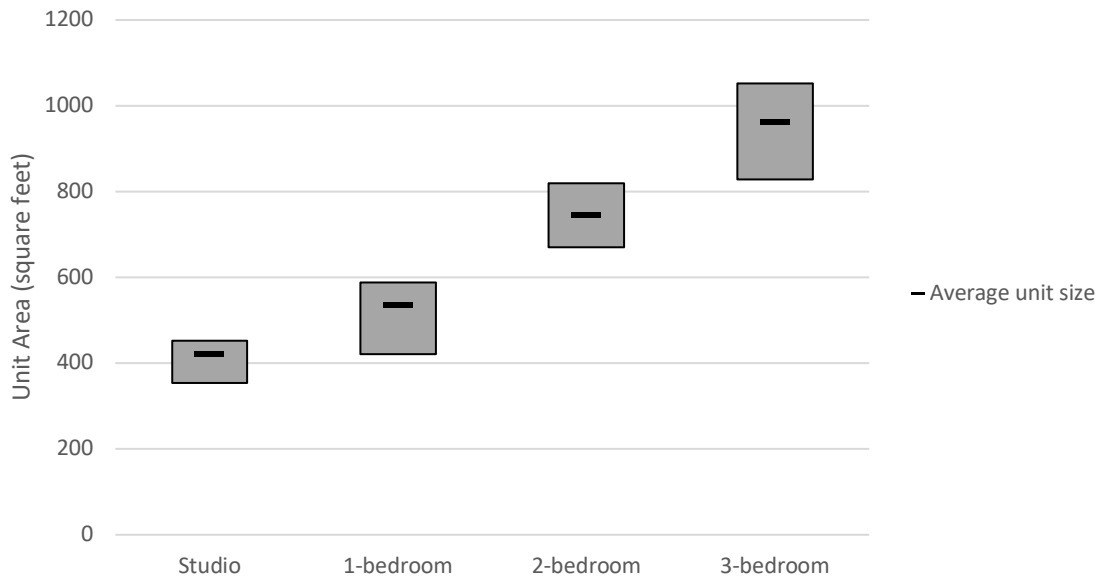


Figure 4-4. Unit sizes by unit type for secured rental projects approved in 2016 and 2017. The black line indicates the average size across approved units of that type. The bottom and top of the box indicate the smallest and largest average unit sizes of the 12 projects examined.

Average unit size varies considerably between projects, most notably for 3-bedroom units. The largest average unit size shown for each unit type in Figure 4-4 is very similar to the maximum average unit size required to qualify for a DCL waiver. The smallest average 2-bedroom unit size is 670 square feet and the smallest average 3-bedroom unit size is 829.

The guidelines for the development of City-owned social housing projects require that 2-bedroom units be at least 700 square feet and 3-bedroom units be at least 900 square feet (City of Vancouver, 2015c). Of the 12 projects reviewed in this study, the average 2-bedroom unit sizes do not meet this standard in 2 projects and the average 3-bedroom unit sizes do not meet this standard in 2 other projects. This suggests the City may need a stricter definition for what constitutes a “family-sized” unit in secured rental projects.

The City will waive approximately \$9,870,528 in DCL fees for the 878 units approved in 2016-2017 that qualified for a DCL waiver (\$11,242/unit). Between 2012-2015, the City waived approximately \$14.4 million and it is unclear how many units qualified for the waiver (City of Vancouver, 2016b).

Chapter 5. Policy options

The three policy options outlined below are designed to increase the proportion of family-sized rental units in newly developed rental stock. The options are not mutually exclusive and could be adopted simultaneously.

5.1. Option 1: Density bonus for family-sized units

Density bonuses are currently an integral component of the *Rental Incentive Guidelines*. This option would increase the density offered in the rezoning policy in certain zones in exchange for a certain proportion of 2 and 3-bedroom units. The proportion of 2 and 3-bedroom units required would be dependent on the value of the increase in density that could be achieved in each zone as well as other objectives the City wishes to achieve using density bonuses.

Density bonuses are the most substantial incentive the City has to offer, and according to key informant CP, the City has multiple objectives they may wish to achieve. These include improved unit quality, affordability, building amenities, sustainability, and design principles to improve sociability. Based on my analysis of need, increasing the proportion of 3-bedroom units and maintaining the level of 2-bedroom units should rank highly amongst these objectives.

The City is constrained in achieving these objectives by the value of the density they can provide. In places where towers are not appropriate, the feasible height limit of a density bonus is generally 6 stories, due to the current constraints on wood-frame buildings. In some zones, the *Rental Incentives Guidelines* already award 6 stories and no further bonus is feasible. According to CP, allowing density increases in single family zones would have to be done through community plans or a separate planning process. Community plans are anticipated to be developed for the areas around 29th Avenue and Nanaimo Skytrain stations over the next few years. If the provincial government grants the City the ability to create rental only zones, these zones will provide additional value for rental developers, similarly to a density bonus, which can be used to achieve more family-sized units.

Determining the proportion of family-sized units that should be required in each neighbourhood would require consideration of existing and planned amenities. Some neighborhoods in Vancouver, such as downtown, do not have the amenities to meet the needs of existing families. Other neighborhoods in East and South Vancouver have underutilized amenities (Woodward & Mangione, 2016).

5.2. Option 2: Inboard bedrooms in 3-bedroom units

This option would be modeled on New Westminister's Design Guidelines which allow the smallest bedroom in 3-bedroom units in multi-family projects to be inboard (ie. no exterior window). Inboard bedrooms would be permitted in both primary rental and strata developments. The inboard bedroom must have access to indirect natural light through at least two sources including the door. Allowing inboard bedrooms provides developers with flexibility in placing 3-bedroom units. This option will affect both the primary rental and secondary rental condominium market.

5.3. Option 3: Increase the maximum size of laneway houses

This option would amend the laneway house regulations to increase the maximum size of a laneway house from 0.16 to 0.2 FSR. The maximum size of a laneway house would be 1100 square feet regardless of lot size. The maximum size of a laneway house on a standard 33-foot lot would increase from 644 square feet to 805 square feet. The maximum size of a laneway house on a 50-foot lot would increase from 900 square feet to 1100 square feet. This would facilitate the development of more family-friendly 2-bedroom laneway houses on standard lots and more 3-bedroom units on larger lots, while limiting the impact on neighbors. This change would require a larger allowable footprint, a larger upper floor, or a combination of both.

Chapter 6. Policy analysis

Chapter 6 outlines an evaluation framework and evaluates the three policy options discussed above. The evaluation framework assesses the outcomes of the three policy options in achieving the policy objectives and minimizing negative secondary impacts.

6.1. Policy objectives, criteria and measures, and policy options

6.1.1. Policy objectives

The main policy objective in this analysis is to develop a stock of secure rental housing units that meet the needs of middle-income families. Achieving this objective is necessary in order to achieve the higher-level, long-term objectives of creating a diverse, complete community; ensuring children and parents have access to the opportunities provided by urban living; limiting urban sprawl; and reducing commute times. Within the main policy objective, the development of 3-bedroom units is the primary objective, as they are most desired by families and more deficient in the rental market. Development of 2-bedroom units is the secondary objective.

6.1.2. Other considerations

In achieving the policy objectives outlined above, negative impacts may be imposed in other areas. Considerations that must be taken into account when evaluating the policy options include perspectives of stakeholders, impact on supply of smaller rental units, cost of implementation to the government, and administrative complexity of implementation.

6.1.3. Policy criteria and measures

This analysis uses eight criteria to evaluate how well each policy option meets the stated objectives while minimizing impacts on other considerations. The matrix shown in Table 6-1 lists each criterion, the measure or measures used to assess the policy option on each criterion, and the values assigned to each possible outcome of the

measure. Higher values indicate that the outcome is preferred. The weight of the values assigned to each outcome indicates the importance of the measure: preferred outcomes for important measures are given higher values than preferred outcomes for other measures. The status quo is the target number of units outlined in the *Housing Vancouver Strategy*.

Table 6-1. Criteria and measures used to assess the policy options.

Criteria	Definition	Measure	Benchmark	Value
Development				
Development of stable family-sized rental stock	Development of a stock of family-sized rental units that will form part of the long-term rental stock	Net number of 3-bedroom rental units created through the policy by 2027	>500 <500	4 0
		Net number of 2-bedroom rental units created through the policy by 2027	Net gain Neutral Net loss	2 1 0
		How many units will be part of the rental stock for the life of the unit?	All Some None	1 0.5 0
Livability of units	Design of the unit fits the wants and needs of families with young children.	Percentage ground-oriented	100% <100%	0.5 0
		Window access to all bedrooms	Yes No	0.5 0
Development of stable stock of studio and 1-bedroom units	Development of a stock of studio and 1-bedroom rental units that will form part of the long-term rental stock	Change in number of studio and 1-bedroom units produced by 2027 due to the policy	Net gain Neutral Net loss	2 1 0
Security/Protection				
Security of tenure	Risk of tenancy ending for landlord use of property	Portion of rental market	Primary Primary and secondary Secondary	2 1 0
Stakeholder acceptance				
Acceptability to developers	How are developers likely to respond to the alternative	Impact on developer profits	Positive Neutral Negative	2 1 0
Acceptability to neighbourhoods	How are neighbourhood residents likely to respond to the alternative	Anticipated general feedback from affected neighbourhoods	Positive Neutral Negative	2 1 0
Budgetary Cost				
Cost to government	Cost of intervention minus revenues	Cost of intervention relative to current policies	Lower than status quo Same as status quo Higher than status quo	2 1 0
Administrative complexity				
Administrative complexity	Administrative time and resources required to implement option	Complexity of actions required to enact regulation change	High Medium Low	2 1 0

The next section describes the criteria, measures, and values outlined in Table 6-1 in further detail.

Development of family-sized rental stock

The criterion “development of stable family-sized rental stock” assesses how well the policy option achieves the key policy objective outlined in section 6.1.1. The criterion is assessed through three measures: development of 3-bedroom units, development of 2-bedroom units, and permanence of the units in the rental stock. The benchmark value for development of 3-bedroom units is double weighted, as the primary objective.

The measure “will the units be part of the rental stock for the life the unit” indicates whether or not the rental unit will be secured through a housing agreement with the City. This measure is important for two reasons. First, it indicates whether the City is enabling the development of a stable stock of family-sized rental units that will consistently provide housing to family renters over time. Second, it indicates whether the City is enabling a stock that will age in the rental market and become more affordable over time.

Livability of units

The criterion “livability of units” assesses how well units created through the policy will meet the wants and needs of families on two measures independent from the number of bedrooms: window access and ground-orientation.

Development of a stable stock of studio and 1-bedroom units

There is high demand and need for studio and 1-bedroom rental units. These units provide affordable and suitable housing for singles and couples, who form a large percentage of the renter population in Vancouver. The impacts of each policy option on the development of smaller units must be considered to ensure that all populations are adequately served.

Security of tenure

The criterion “security of tenure” indicates the risk that a tenant’s lease will be terminated due to reasons outside the tenant’s control. As discussed earlier, units

delivered through the primary rental stock have greater security of tenure than those delivered through the secondary rental stock.

Stakeholder acceptance

The opinions of two key stakeholders, developers and neighborhood residents, will be important to policy adoption. As profit-driven businesses, developers will be supportive of measures that have the potential to increase profits and unsupportive of measures that constrain profits. Neighborhood residents tend to be unsupportive of measures that change the character of their neighborhood.

The interests of several other key stakeholders are represented through other criteria. The interests of families are represented in the “development” and “security/protection” criteria. The interests of smaller households are represented in the criterion “development of a stable stock of studio and 1-bedroom units”. Finally, the interests of the City of Vancouver are represented in the “administrative complexity” and “budgetary cost” criteria.

Cost to government

The criterion “cost to government” evaluates the cost of the intervention to the City of Vancouver relative to policies that are currently in place.

Administrative complexity

The criterion “administrative complexity” evaluates the time and resources required from the City of Vancouver to enact the policy option.

Criteria not included

A key criterion that could not be included is affordability. Without data to assess rental rate differences, there is no way to assess the three policy options on this criterion.

6.2. Evaluation of options

The section below evaluates the three policy options. Table 6-2 summarises the outcome of the evaluation.

Table 6-2. Evaluation of three policy options.

Criteria	Measure	Benchmark	Value	Option 1 – Density bonus	Option 2 – Inboard bedrooms	Option 3 – Laneway house policy
Development of stable family-sized rental stock	Net number of 3-bedroom rental units created through the policy by 2027	>500 <500	4 0	4	0	4
	Net number of 2-bedroom rental units created through the policy by 2027	Net gain Neutral Net loss	2 1 0	1	0	0
	How many units will be part of the rental stock for the life of the unit?	All Some None	1 0.5 0	1	0.5	0
Livability of units	Percentage ground-oriented	100% <100%	0.5 0	0	0	0.5
	Window access to all bedrooms	Yes No	0.5 0	0.5	0	0.5
Development of stable stock of studio and 1-bedroom units	Change in number of studio and 1-bedroom units produced by 2027 due to the policy	Net gain Neutral Net loss	2 1 0	1	1	0
Security of tenure	Portion of rental market	Primary Primary and secondary Secondary	2 1 0	2	1	0
Acceptability to developers	Impact on developer profits	Positive Neutral Negative	2 1 0	2	2	2
Acceptability to neighbourhoods	Anticipated general feedback from affected neighbourhoods	Positive Neutral Negative	2 1 0	0	1	1

Criteria	Measure	Benchmark	Value	Option 1 – Density bonus	Option 2 – Inboard bedrooms	Option 3 – Laneway house policy
Cost of intervention to government	Cost of intervention relative to current policies	Lower than status quo	2	0	1	1
		Same as status quo	1			
		Higher than status quo	0			
Administrative complexity	Complexity of actions required to enact regulation change	Low	2	0	1	1
		Medium	1			
		High	0			
Total				11.5	7.5	10

6.2.1. Density bonus for family-sized units

Development: A density bonus for family-sized units would increase the stock of 3-bedroom units without diminishing the stock of 2-bedroom units. In theory, the density bonus could be used to incentivize a high level of production of 3-bedroom units. In practice, the City is unlikely to allocate a large proportion of their incentive space for this objective.

The strategy of having City staff encourage the inclusion of 3-bedroom units was successful in obtaining 10% 3-bedrooms and 30% 2-bedrooms in 2017; however, the success of this strategy in the long-term is dependent on market forces. Additional incentives will be necessary to maintain this level of family-sized unit inclusion if market dynamics change. Given that developers have been able to include a high level of family-sized units, minimal incentives may be necessary to maintain this level.

The units would be secured under the *Rental Incentive Guidelines*, so would be part of the rental market for at least 60 years.

Liveability: The units would mostly be provided in the apartment typology, so a limited number would be ground-oriented. Some recent rental developments have included several row-houses behind the main apartment building, in order to better integrate the form of the development with smaller neighbouring structures. These row-houses are a good opportunity to provide ground-oriented secured rental family housing.

One current rental application on the West side of Vancouver is exclusively stacked row-houses. According to CP, the City has seen few rental row-house projects, indicating that their viability is limited.

Stable stock of studio and 1-bedrooms units: This option increases the number of 3-bedroom units by adding density to a building, rather than increasing the number of 3-bedroom units by reducing the number of studio and 1-bedroom units in a building. The number of studio and 1-bedroom units will likely be the same as would be enabled through the status quo, but the percentage of units would be lower.

Security of tenure: The units would be delivered through the primary rental stock.

Acceptability to developers: According to key informant IP, clarity of expectations is key to ensuring that members of the development industry do not over pay for land. IP believes that the development industry would be supportive of limiting density increases to rental buildings in areas where there is no prior expectation of an increase in density for strata.

Acceptability to neighborhoods: Vancouver neighborhoods have a history of opposing densification. This option would require density increases in new areas, likely prompting opposition.

Cost to government: The City generally does not require community amenity contributions for primary rental developments and qualifying developments are exempted from DCLs. As of September 2017, the DCL rate paid for rental buildings without DCL waivers was between \$93.22-\$168.13/m² (City of Vancouver, 2018). Between 2016-2017, DCL waivers cost the City \$11,242/unit in lost revenue (see 4.2.4). The City requires these fees to pay for the costs that increased density imposes on infrastructure and amenities. This option would enable more density than the status quo, resulting in larger DCL and CAC subsidies.

Administrative complexity: This policy option would require investment of considerable administrative resources. Economic testing would be required and either district schedules or the secure rental rezoning policy would need to be modified.

The City could take two routes to awarding the density bonus: it could be incorporated into district schedules or it could be incorporated into a rezoning policy.

According to CP, changing a district schedule is a very complex process. It requires multiple iterations, involvement of numerous personnel, and a public hearing. The benefit of a district schedule is that it clearly defines what is required from developers and applications can be approved quickly. Incorporating the bonus into a rezoning policy would require less up front work, but requires extensive work for every application submitted and makes the application process longer and more expensive for the applicant.

6.2.2. Inboard bedrooms

Development: The inboard bedroom policy would result in a higher proportion of 3-bedroom units in secure rental buildings and strata buildings, as inboard 3-bedroom units are easier to fit into floorplans. The inboard 3-bedroom units in strata buildings would be smaller and darker than typical 3-bedroom units. According to IP, inboard 3-bedroom units are less likely to be luxury suites placed in highly desirable locations within the building due to these features. In strata buildings, the increased affordability would make them more appealing to investors planning to rent out the units, as investors look for smaller units (CitySpaces Consulting & Urban Futures Inc., 2009). Hence, this policy option would likely result in more 3-bedroom rental units in the secondary market and in the secure rental market. Strata units bought as investments are often sold to owner-occupiers over time (CitySpaces Consulting & Urban Futures Inc., 2009), so these units would not contribute to a stable rental stock.

The quantity of the increase in 3-bedroom units is difficult to estimate. According to IP, inboard bedrooms are most likely to be incorporated into high-rise towers, suggesting that the greatest impact would be seen in strata buildings located in high-density neighborhoods such as downtown. This policy is likely to have a minimal impact on primary rental units, as most recent rental buildings have been mid-rise. The exception would be mid-block rental developments, where incorporation of standard 3-bedroom units is very challenging.

The City of New Westminster has allowed inboard 3-bedroom units since 2016, but very few applications have included them (Mike Watson, personal communication, March 5, 2018). Calgary also allows inboard bedrooms, but has seen very limited uptake (John Hall, personal communication, March 7, 2018).

This policy is unlikely to result in a net increase in family-sized units, as it does not improve their profitability. Rather, it is likely to result in a small net increase in the percentage of 3-bedroom units and net decrease in the percentage of 2-bedroom units.

Liveability: The liveability of inboard units is controversial, due to the lack of light and ventilation in the inboard bedroom. According to CP, many groups are generally opposed to this option for liveability reasons.

Stable stock of studio and 1-bedroom units: The percentage of studio and 1-bedroom units would likely remain approximately the same.

Security of tenure: This option would result in an increase in 3-bedroom rental units delivered through the primary and secondary rental stock.

Acceptability to developers: According to IP, developers are supportive of this option as it increases their flexibility in providing 3-bedrooms units. Several local development professionals have publicised their support for this option, including Jon Stovell of Reliance properties, Michael Mortensen, and Beau Jarvis of Wesgroup properties (Lindsay, 2016).

Acceptability to neighbours: This policy option will not have any impact on neighbours.

Cost to government: Beyond the administrative costs of implementing the change, there would not be changes to government costs over the status quo. DCLs are charged by floor area, which would not be affected by this policy change.

Administrative complexity: This option would be limited in administrative complexity. The City would need to amend the existing Zoning and Development Bylaw 3575, which would involve a public hearing.

6.2.3. Increase the maximum size of laneway houses

Development: The City has recently finished conducting surveys with owners and occupants to better understand how laneway homes are being used. The survey received 357 responses from laneway house owners, who reported the following unit mix: 33% 1-bedroom, 14% 1-bedroom plus den, 37% 2-bedroom, 8% 2-bedroom + den,

4.2% 3+bedrooms, and 4% unknown (Heather Burpee, personal communication, April 9, 2018). The margin of error for the survey is unknown. Approximately 12% of laneway house owners responded to the survey, but a disproportionate number of responses came from owners who had added a laneway house to their site without redeveloping the main house (87% of respondents but 10% of laneway house owners). Laneway houses built as part of a whole site redevelopment may have a different unit mix than those added to a site where the original main house is being retained, since the main house would pose less of a constraint in a whole site redevelopment. However, the survey response provides an indication of the laneway unit mix. The majority are family-sized, but only a small number have 3-bedrooms.

I estimate that the proposed policy would produce the following unit mix, as explained below: 40% 1-bedroom and 1-bedroom plus den, 30% 2-bedroom, and 30% 3-bedroom.

Under the FSR increase, 3-bedroom laneway houses could become the dominant option on larger lots. The impact this change would have is dependent on the percentage of laneway houses built on 50-foot lots. According to Heather Burpee, approximately 46% of RS-1 lots have a site area greater than or equal to 6100 square feet (equivalent area to a 50-foot x 122-foot lot). The percentage of 50-foot lots in other zones eligible for laneway houses is unknown, and the percentage of laneway houses that have been built on 50-foot lots is unknown. Under the first iteration of the laneway house regulations, 38% of laneway houses had 2-bedrooms (City of Vancouver, 2013b). The maximum size of a laneway house on a standard 33-foot lot was 503 square feet under the regulations in place at that time (too small for a 2-bedroom unit), suggesting that at least 38% of laneway houses were built on lots above standard size (City of Vancouver, 2013b). In 2013, the laneway house regulations were changed to allow laneway houses in more zones. The impact of this change on the proportion of laneway houses built on different lot sizes is unknown.

With the policy I have proposed, I estimate that 30% of laneway houses would have 3-bedrooms. Given the uncertainties discussed above, this estimate is prone to error. The estimate assumes that approximately 38% of laneway houses will be built on 50-foot lots and that some laneway houses built on these lots would have fewer than 3 bedrooms due to owner preference or lot constraints. I have assumed that most owners

will choose to include 3 bedrooms in their laneway house if space allows; however, since the feasibility of developing 3-bedroom laneway houses has been limited up to this point, it is unknown whether or not owners will choose to include 3 bedrooms or will develop more spacious 2-bedroom units.

Under the current regulations, 2-bedroom laneway houses are built on standard lots, but they are not large enough to comfortably house a family (up to 644 ft²). With the proposed FSR increase, 2-bedroom laneway houses would become a more appealing option on standard lots and the units created would be more appropriate for families (up to 805 ft²). However, it is unclear how many standard lots could include a 0.2 FSR laneway house. According to Burpee, on many standard lots, site constraints would prevent developers from creating larger laneway houses (ex. trees, size of main house, slope, site permeability requirements).

According to Burpee, most laneway house developers try to maximize the square footage that can be included on their lot. Most laneway houses that have 1 bedroom were likely constrained in size by site considerations rather than the FSR limit, as it is likely that the property owner would have developed a larger laneway house if they were able. Therefore, I anticipate that the proposed increase to allowable FSR would not result in a change to the proportion of laneway houses with 1 bedroom (approximately 33% of laneway houses). It is more likely that existing 1-bedroom plus den units were constrained by the allowable FSR, since the maximum allowable size of a laneway house on a standard 33-foot lot (644 ft²) would be a reasonable size for a 1-bedroom plus den unit. I anticipate that the proposed increase in FSR would result in the development of fewer 1-bedroom plus den units and more 2-bedroom units on standard lots.

Under the proposed increase in FSR, I estimate that 40% of laneway houses would be developed as 1-bedroom or 1-bedroom plus den units. As discussed above, I estimate that 30% of laneway houses would have 3 bedrooms. The remaining 30% would have 2 bedrooms. The accuracy of these estimates is uncertain, as they were generated using very limited data and speculations about the rationale for developing different unit types. A more reliable projection could be achieved if data were available showing the proportion of different lot sizes that have been developed with laneway houses since the 2013 laneway house regulation amendments. Data pertaining to the

proportion of lots that have constraints that prevent owners from achieving the maximum allowable laneway house size and the proportion of owners that choose to develop the maximum possible laneway house size their property allows would also increase the reliability of projections.

Laneway houses are not a permanent part of the rental stock; however, in theory, they may form a more stable component of the rental stock than other secondary rental units. The laneway house and the main house are separate structures, so they are likely to house two separate households at any given time. In contrast, a basement suite may be taken over by the homeowner if their family requires more space. Laneway houses cannot be stratified and sold separately from the main house under the current regulations. The most common reason for a laneway house to be removed from the market rental stock would be when the property is sold to an owner that wishes to use the laneway house for family. Laneway houses are likely to fluctuate between these two uses, family and rental, for the life of the unit.

Liveability: A key advantage to laneway houses is their liveability. They are always ground-oriented. As a free-standing structure, they have potential for windows on all sides. Ceilings, walls, and floors are not shared with neighbours, reducing noise concerns. With the increase in FSR, they are likely to be more spacious than 2 and 3-bedroom apartments.

Stable stock of studio and 1-bedroom units: As discussed above, this policy option would result in a small net loss of 1-bedroom rental units. The loss would be small relative to the size of the stock of studio and 1-bedroom rental units in Vancouver.

Security of tenure: Laneway houses are part of the secondary rental market and hence have lower security of tenure.

Acceptability to developers: This policy option increases the value of properties eligible for laneway development. Developers would be in favour of this option.

Acceptability to neighbours: This option increases the property value of any property eligible for laneway development. Although neighbours of properties with laneway houses have complained about loss of privacy and street parking, the policy

has also increased their property value. Neighbourhood feedback would likely be a mix of positive and negative.

Cost to government: As with option 2, this option would not have a cost to government beyond the administrative costs of changing the laneway house regulations. The development and permit costs of building laneway houses are not subsidized or incentivized by the City.

Administrative complexity: As described by Heather Burpee, changes to the laneway program require collaboration between multiple members of the planning department, as well as consultation with the development community and the public. The planning team examines various options and performs internal testing to determine what is feasible. To change the laneway housing regulations, the City would need to amend the existing Zoning and Development Bylaw 3575, which would involve a public hearing.

This process requires similar steps to that described for option 1. The administrative complexity is assessed to be lower than for option 1 due to the lower complexity of the testing required.

Chapter 7. Recommendation

My analysis suggests the adoption of two policies to improve the supply of family-sized rental units in Vancouver: increasing the maximum size of laneway houses and a density bonus for inclusion of family-sized units in secure rental projects. Amendments to the laneway house regulations can be used to optimize the number of ground-oriented, comfortably sized 3-bedroom rental units over the short-term. Density bonuses can be used to expand the proportion of 3-bedroom units and maintain the proportion of 2-bedroom units in the primary rental stock, ensuring that a pipeline of stable, secure rental units exist for families.

Inboard bedrooms may be worthy of consideration under certain circumstances, such as in mid-block buildings; however, it is unlikely that their allowance would lead to a substantive increase in availability of 3-bedroom units. At this time, this change is not a priority.

The amendment of the laneway policy is projected to produce an additional 821 3-bedroom units by 2027. The density bonus can be used to ensure 3-bedroom units form approximately 12% of the primary rental stock and 2-bedroom units form approximately 30% of the primary rental stock. These two measures will increase the total 3-bedroom rental stock from the projected 2,904 units to 4,339 units, comprising 14.1% of the total market rental stock developed over the next 10 years. The stock of 2-bedroom units projected over the next 10 years will stay approximately the same, comprising 34.5% of the total market rental stock (see Table 7-1). These projections fall into the target range identified in section 4.1.

These policies should be closely monitored to ensure that the anticipated outcomes are achieved, as the predicted outcomes are based on limited data. As discussed in section 6.2, there are many factors that create uncertainty about the reliability of these projections. With better data, more reliable projections could be developed.

Table 7-1. Existing Housing Vancouver Strategy target estimates and projected targets with recommendations.

Housing Type	Units	Units suitable for families (2+ bedrooms)	Units with 2 bedrooms	Units with 3+ bedrooms
Housing Vancouver Strategy estimates				
Primary rental	16,000	5,600 (35%)	4,320 (27%) ¹	1280 (8%) ²
Laneway houses	3,080 ³	1,515 (49.2%) ⁴	1,386 (45%) ⁴	129 (4.2%) ⁴
Rented condominiums	9,900	4,653 (47%) ⁵	4,059 (41%) ⁵	594 (6%) ⁵
Rented row-houses	1,700	1,700 (100%)	799 (47%) ¹	901 (53%) ⁶
Rented coach houses	Estimation not given, <300			
Total Market Rental, Housing Vancouver Strategy	30,680	13,468 (43.9%)	10,564 (34.4%)	2,904 (9.5%)
Recommended modifications to the Housing Vancouver Strategy				
Primary rental	16,000	6,720 (42%)	4,800 (30%)	1,920 (12%)
Laneway houses	3,080 ³	1,848 (60%)	924 (30%)	924 (30%)
Rented condominiums	9,900	4,653 (47%) ⁵	4,059 (41%) ⁵	594 (6%) ⁵
Rented row-houses	1,700	1,700 (100%)	799 (47%) ¹	901 (53%) ⁶
Rented coach houses	Estimation not given, <300			
Total Market Rental, with recommendations	30,680	14,921 (48.6%)	10,582 (34.5%)	4,339 (14.1%)

¹Percentage of 2-bedroom units calculated by subtracting projected percentage of 3+-bedroom units from percentage of family-sized units projected in the Housing Vancouver Strategy

²Based on the proportion of 3-bedroom units in secured market rental projects in 2017 and proposed projects. See section 4.2.4.

³*Housing Vancouver* targets 4,000 total laneway houses. 77% of laneway house occupants reported renting from a landlord in a recent survey of laneway house occupants, which had a response rate of approximately 11% (Heather Burpee, personal communication, April 9, 2018).

⁴Unit mix reported in a recent survey of laneway house owners (Heather Burpee, personal communication, April 9, 2018)

⁵2009 estimate of unit mix of investor-owned condominium units (CitySpaces Consulting & Urban Futures Inc., 2009)

⁶Percentage of rented row-houses with 3+ bedrooms built between 2001-2011 across Vancouver CMA, 2011 (Metro Vancouver, 2017, p. 53)

The total primary rental stock target of 16,000 units has been held constant in this calculation for simplicity, but an incentive might increase this number.

7.1. Recommendation 1: Increase the maximum size of laneway houses

The proposed amendments to the laneway house regulations effectively meet the objective of increasing the number of 3-bedroom rental units. They will result in a small decrease in the number of 2-bedroom units; however, the loss of units represents only 3% of the target number of 2-bedroom units.

I recommend introducing the changes as soon as possible in order to capitalize on the rapid development of laneway houses that is anticipated over the next 10 years. Laneway housing development will slow over time as eligible sites are developed and the number of single family lots in the City declines. The City should maximize this opportunity to create family-friendly ground-oriented homes. The laneway amendment would not impose any financial implications on the City and could be implemented relatively easily. This policy option is a low barrier opportunity to significantly increase the stock of family-friendly 3-bedroom rental units.

I recommend closely monitoring the unit mix that is produced under this new policy to ensure that the increase in FSR on 50 foot lots achieves the objective of producing more 3-bedroom units, rather than more spacious 2-bedroom units. If the objective is not met, the policy could be modified to allow the FSR increase only if a third bedroom is included in units above a certain square footage.

Considerations

Increasing the allowable FSR would result in a corresponding loss of privacy for neighbours, loss of backyard space on the lot, and removal of trees. Preserving the urban tree canopy is an important objective for the City, according to Burpee.

In the interest of sustainability, densification should occur in a form that will adequately serve the City for the lifespan of the building. A high-quality wood-frame building has a potential service life of many decades. As of 2013, two thirds of laneway house developments occurred as part of whole-site redevelopments. Future densification of these sites may be desired before the end of the building lifespan, necessitating teardowns of houses and laneway houses that are in good condition.

In addition, laneway houses are an inefficient typology, both economically and energetically, according to Davidson. Because of the high ratio of exterior wall to interior space and high fixed costs (due to the costs of permitting, new sewer and water connections, and landscaping), laneway houses are extremely expensive to build on a per square foot basis. Financial, physical, and human capital would be more efficiently allocated elsewhere in the construction industry.

In the long-term, laneway houses will make densification of single family zones more expensive by elevating land values. Gentle densification in the form of row-houses or multiplexes may not be economically feasible on these sites due to their high intrinsic value.

7.2. Recommendation 2: Density bonus for family-sized units in secured rental buildings

In the long-term, family-sized units must be substantively supplied through the primary rental market to ensure stability in the size of the stock and greater security of tenure. In the past, these advantages have mainly been available to smaller renter households in Vancouver. Since most primary rental consists of apartment buildings, the livability they provide for families is generally lower than ground-oriented housing typologies found in the secondary market. As more of the net housing increase in Vancouver takes the form of apartments over time, it will be critical that families are provided for in these buildings.

As discussed in section 4.2.4, it is not yet clear what percentage of 3-bedroom units will be incorporated into primary rental buildings under current policies. In 2017, the first year of approvals impacted by the *Housing Mix Policy*, the City was successful in encouraging rental developers to include a high level of family-sized units in their projects. Applications currently in process suggest that the level of family-sized units and 3-bedroom units in particular will not be maintained without further incentives; however, the level of incentives necessary may be low.

The lower the necessary bonus, the more incentive room the City has to pursue other goals, such as increases in unit quality, building amenities, affordability, sustainability, and improved building design. The analysis of unit sizes in section 4.2.4

shows that many family-sized units are very small. Improvements are needed to make these spaces appropriate for families.

This option will be complex to implement, requiring extensive consultation and economic analysis. It will need to be incorporated into new Community Plans as they are developed in various neighborhoods.

Considerations

The success of including family-sized units in the primary rental stock is dependent on the continued viability of new primary rental developments. A number of factors impact the viability of rental, including interest rates, land prices, market stability, and provincial and federal funding. Interest rates are expected to rise, which will make financing new rental more challenging and less profitable. Land prices are dictated by ownership housing prices, as ownership housing constitutes the “highest and best use” of the land. While rental rates are constrained by local incomes, the ownership market is open to global investment and speculation. Policies addressing land speculation would improve the profitability of building rental housing, lessening the necessity of incentives. Additionally, according to my key informants, it is key that government policies do not “spook” rental investors, as they have a long-term time horizon. Finally, the 2018 BC Provincial budget includes provincial property tax exemptions for primary rental buildings equal to municipal property tax exemptions provided under municipal revitalization agreements. It may be in the City’s interest to capitalize on this opportunity.

In the future, the level of 3-bedroom units in both rental and strata apartment buildings will need to increase beyond 12%, as the proportion of apartment units increases and the proportion of new ground-oriented typologies declines. A significant proportion of the projections for family-sized rental housing over the next 10 years comes from laneway houses and secondary rental row-houses (25% of family-sized market rental units). Over time, more of the new family-sized rental units will be supplied through primary and secondary apartment rental units.

Chapter 8. Conclusion

This study began with an analysis of target unit mix showing that the City should aim to include between 12%-19% 3-bedroom units and between 21%-42% 2-bedroom units in the market rental stock. It then reviewed the impacts of current City policies that directly and indirectly affect the rental stock. Evaluation of secured market rental approvals showed that the percentage of family-sized units has increased following implementation of the *Housing Mix Policy*, including 10% 3-bedrooms and 30% 2-bedrooms in 2017. Applications currently in progress suggest this high level will not be maintained. A review of unit sizes showed that many 2 and 3-bedroom units were not adequately sized for families.

Three policy options were evaluated based on how well they fulfilled the stated policy objectives and minimized negative impacts. The analysis concluded with two recommendations. First, it recommended that the City should modify the laneway housing policy to increase the maximum allowable density, thereby increasing potential for 3-bedroom units. Second, it recommended a density bonus to maintain an overall inclusion of 12% 3-bedroom units and 30% 2-bedroom units in the primary rental stock.

Although these policy options do not address short-term supply of affordable units, creating a pipeline of supply is key to ensuring a future rental stock with units of variable age, condition, and rental rate. The majority of renters in Vancouver cannot afford market rent in new buildings. Affordability is provided in market rental buildings as they age. This is clearly demonstrated with data from the existing primary rental stock.

Future research should examine several areas. Research should investigate family-friendly design considerations, such as optimizing the use of ground-oriented spaces available in rental buildings. Anecdotal evidence suggests that opportunities to develop ground-oriented 3-bedroom units are being missed due to conflicting policies. Another potential way to increase the availability of family-sized units is to improve housing options for other populations, such as students and young people with roommates, who are currently occupying family-sized units. Research should investigate more innovative ways to house these populations. Finally, the target unit mix analysis presented here assumes all renter households are in market rental units. The target

market rental unit mix might be different if the population receiving subsidized housing was analysed separately.

This study would have benefited from greater availability of data in several areas. First, much of the Statistics Canada data needed to calculate the target unit mix range was only publicly available at the CMA level and not the City level. Second, data on the secondary rental market is limited. Since the secondary rental market forms a large component of Vancouver's rental market, this lack of data creates uncertainties in the projections of 2 and 3+-bedroom units that will be generated through the *Housing Vancouver Strategy*. Third, it is unknown how many units currently in the rental market will be lost due to redevelopment. Finally, precise data on the laneway houses that have been developed and the sites they have been developed on would have allowed for a better projection of the potential impacts of changing the policy.

The housing that is available in the decades to come will play a large role in dictating who lives in Vancouver. The vast majority of new stock in the *Housing Vancouver Strategy* is apartments. At present, apartments may not fit the dominant cultural vision of a family home, but this will change over time as other housing typologies diminish. Family-sized stock needs to be available in apartments as older, more affordable houses are torn down.

The decisions made today about unit mix will impact the demographics of Vancouver 40 years from now. As stated by Andy Yan, it takes decades to get into a housing problem and decades to get out of a housing problem. This study has shown that the City requires a clear projection of rental unit mix need. The target unit mix developed in this study is based on current renter demographics; however, the percentage of families who rent is likely to increase as ownership becomes less affordable. The City must make conscious choices now to determine whether the housing stock will continue to accommodate families and other large households.

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Appendix A: Target Mix Calculation Data

This section shows the calculations and data used to generate Figure 4-1 and Table 4-1. All data in this section is for private households, as defined by Statistics Canada.

Minimum suitable rental unit mix calculation (Table 4-1)

The minimum suitable rental unit mix was calculated by multiplying the unit mix required to minimally house each household type suitably (shown in Table 3-1) by the number of each household type in the City of Vancouver. The number of households by household type in the City of Vancouver is shown in Table A1.

Table A1. City of Vancouver renter households by household type, 2016. Data obtained from Statistics Canada Catalogue Number 98-400-X2016227 (Statistics Canada, 2017c) except where noted.

Household Category	Number of households
A) All renter households ¹	150750
B) One couple census family without other persons in the household, with children, renter households	17330
C) One lone-parent census family without other persons in the household, renter households	9390
D) One couple census family without other persons in the household, without children, renter households	29730
E) All other census family households (one-census-family households with additional persons and multiple-census-family households), renter households	5310
F) Non-census-family, renter households	88985
G) one person, renter households ²	72210
H) Two-or-more person non-census-family household (ie. roommates)	16775
H is calculated by subtracting G from F (H=F-G)	

¹The sum of categories B-F (150,745) is different than the number of households in category A due to an irregularity in the Statistics Canada data

²Obtained from Statistics Canada Catalogue Number 98-400-X2016231 (Statistics Canada, 2017d)

The number of renter households in the City of Vancouver by number of children was not available from Statistics Canada; however, the total number of families in the City of Vancouver in 2016 by number of children was available (Statistics Canada, 2017a). These values were used to estimate the proportion of renter households with 1,

2, or 3+ children, as shown in Table A2 and A3. It is assumed that the proportion of families with different numbers of children will be the same between renter households in category B and C in Table A1 and all families in the City of Vancouver, but this may not be correct.

Table A2. City of Vancouver census families, 2016 (Statistics Canada, 2017a)

Family Characteristic	Number of families	Percentage of families (%)
Couple census families with children	63945	Percentage of couple census families with children (%)
Couple census families with 1 child	28895	45%
Couple census families with 2 children	27250	43%
Couple census families with 3 or more children	7805	12%
Lone-parent census families	25640	Percentage of lone-parent census families with children (%)
Lone-parent census families with 1 child	17315	68%
Lone-parent census families with 2 children	6590	26%
Lone-parent census families with 3 or more children	1740	7%

The proportions of families with 1, 2, or 3 or more children in the City of Vancouver (shown in Table A2) were used to estimate the proportion of households in category B and C in Table A1 that would have 1, 2, or 3 or more children. The estimate is shown in Table A3 below.

Table A3. Estimate of renter households by number of children, City of Vancouver, 2016

Household category	Number of children in household	Percentage of couple census families with children (%) ¹	Estimate of number of households
One couple census family without other persons in the household, with children, renter households (n=17330)	1 child	45%	7798.5
	2 children	43%	7451.9
	3 or more children	12%	2079.6
	Number of children in household	Percentage of lone-parent census families (%) ¹	Estimate of number of households
One lone-parent census family without other persons in the household, renter households (n=9390)	1 child	68%	6338.3
	2 children	26%	2413.2
	3 or more children	7%	638.5

¹Values obtained from Table A2

The estimates of number of households in Table A3 and number of households in Table A1 were used in Table 4-1 to generate the minimum suitable rental unit mix required in the City of Vancouver.

Bedroom shortfall data across the Vancouver CMA was used to determine the unit mix needed in Table 3-1 for the household types “all other census family households” (category E in Table A1) and “two-or-more person non-census-family households” (category H in Table A1). These household types consist of a heterogeneous mixture of different household sizes; thus, a precise necessary unit mix could not be generated for Table 3-1. An estimate of the necessary unit mix was generated by examining the unit mix that would be needed to eliminate the bedroom shortfall for the two household types across Vancouver CMA, as shown in Table A4.

In Table A4, “Deficit” is the number of that unit type needed to house the unsuitably housed households according to the CMHC definition of suitable housing. Statistics Canada provides the number of households living in each unit type (no bedrooms, 1, 2, 3, or 4+ bedrooms) that are unsuitably housed according to the CMHC definition with a 1 bedroom shortfall, 2 bedroom shortfall, or 3 or more bedroom shortfall. For example, a household living in a 2-bedroom unit with a 1 bedroom shortfall would require a 3-bedroom unit in order to be suitably housed according to the CMHC definition. The “Necessary number of units” is the number of each unit type needed to

allow households that are currently unsuitably housed to be suitably housed, and households that are currently suitably housed to remain in the same unit type.

As shown in Table A4, the household category “all other census family” renter households is comprised of several sub-categories.

Table A4. Estimate of minimum suitable rental unit mix for “all other census family” renter households and “two-or more person non-census family” renter households across Vancouver CMA, 2016 (Statistics Canada, 2017b)

Household category	Number of bedrooms in unit	A) Number of units occupied by household type	B) Number of units occupied by household type that are unsuitable	C) Deficit ¹	D) Necessary number of units ²	Percentage of total necessary number of units
A) One lone-parent census family with other persons in the household, renter households	No bedrooms	25	25	0	0	0%
	1 Bedroom	235	230	0	5 ³	0%
	2 Bedrooms	1400	1375	0	25 ³	1%
	3 Bedrooms	1770	640	1255	2385	50%
	4+ Bedrooms	1305	155	1165	2315	49%
	Sum	4735	2425	2420	4730	
B) One couple census family with other persons in the household, with children, renter households	No bedrooms	15	15	0	0	0%
	1 Bedroom	205	205	0	0	0%
	2 Bedrooms	1165	1155	0	10 ³	0%
	3 Bedrooms	1590	775	825	1640	34%
	4+ Bedrooms	1840	165	1505	3180	66%
	Sum	4815	2315	2330	4830	
C) One couple census family with other persons in the household, without children, renter households	No bedrooms	10	10		0	0%
	1 Bedroom	270	270		0	0%
	2 Bedrooms	1745	130	255	1870	49%
	3 Bedrooms	1070	50	140	1160	30%
	4+ Bedrooms	750	25	100	825	21%
	Sum	3845	485	495	3855	
D) Multiple-census family, renter household	No bedrooms	0	0	0	0	0%
	1 Bedroom	235	230	0	5 ³	0%
	2 Bedrooms	1255	1070	45	230	5%

Household category	Number of bedrooms in unit	A) Number of units occupied by household type	B) Number of units occupied by household type that are unsuitable	C) Deficit ¹	D) Necessary number of units ²	Percentage of total necessary number of units
	3 Bedrooms	1460	940	515	1035	21%
	4+ Bedrooms	1875	535	2215	3555	74%
	Sum	4825	2775	2775	4825	
E) All other census family households (one-census-family households with additional persons and multiple-census-family households), renter households Calculated by adding A, B, C, and D (E=A+B+C+D)	No bedrooms	50	50	0	0	0%
	1 Bedroom	945	935	0	10 ³	0%
	2 Bedrooms	5565	3730	300	2135	12%
	3 Bedrooms	5890	2405	2735	6220	34%
	4+ Bedrooms	5770	880	4985	9875	54%
	Sum	18220	8000	8020	18240	
F) Two-or-more person non-census-family, renter households (ie. roommates)	No bedrooms	305	305	0	0	0%
	1 Bedroom	6595	6595	0	0	0%
	2 Bedrooms	17845	2145	6520	22220	69%
	3 Bedrooms	4800	385	2085	6500	20%
	4+ Bedrooms	2820	200	1025	3645	11%
	Sum	32365	9630	9630	32365	

¹ Deficit of 2-bedroom units = number of households in studio units with a 2 bedroom shortfall + number of households in a 1-bedroom unit with a 1 bedroom shortfall

Deficit of 3-bedroom units = number of households in studio units with a 3 or more bedroom shortfall + number of households in a 1-bedroom unit with a 2 bedroom shortfall + number of households in a 2-bedroom unit with 1 bedroom shortfall.

Deficit of 4+-bedroom units = number of households in a 1-bedroom unit with a 3 or more bedroom shortfall + number of households in a 2-bedroom unit with a 2 or more bedroom shortfall + number of households in a 3-bedroom unit with a 1 or more bedroom shortfall + number of households in a 4-bedroom unit with a 1 or more bedroom shortfall.

²Necessary number of units = number of units occupied – number of units that are unsuitable + deficit.

³Irregularities in the Statistics Canada data have resulted in the “Necessary number of units” being >0 when it should be 0.

As shown in the Table A4, the estimated unit mix needed to suitably house “all other census family renter households” is 12% 2-bedroom units and 88% 3+-bedroom units (34% 3-bedroom units and 54% 4+ bedroom units). The estimated unit mix needed

to suitably house the “two-or-more person non-census family renter households” is 69% 2-bedroom units and 31% 3+-bedroom units (20% 3-bedroom units and 11% 4+-bedroom units). This over-estimates the proportion of larger units needed because there is no way to determine how many households are living in units with more bedrooms than minimally necessary according to the CMHC definition.

Estimated rental household mix (Figure 4-1)

The data in Table A5 shows the current rental unit mix occupancy of various household types across Vancouver CMA. This data was not available from Statistics Canada for the City of Vancouver. The denominator of the “Percentage of household” calculation is the sum of households living in each unit type within each household category.

Table A5. Vancouver CMA renter households by household type and number of bedrooms in unit, 2016 (Statistics Canada, 2017b).

Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
A) All renter households ¹	No bedrooms	15340	4%
	1 Bedroom	150330	43%
	2 Bedrooms	113715	33%
	3 Bedrooms	46100	13%
	4+ Bedrooms	23210	7%
	Sum of all households	348695	
Category			
	Number of bedrooms in unit	Number of households	Percentage of households (%)
B) One person, renter households	No bedrooms	13640	10%
	1 Bedroom	98840	69%
	2 Bedrooms	24310	17%
	3 Bedrooms	3955	3%
	4+ Bedrooms	1875	1%
	Sum of all households	142620	
Category			
	Number of bedrooms in unit	Number of households	Percentage of households (%)
	No bedrooms	1035	2%
	1 Bedroom	32920	53%
	2 Bedrooms	21615	35%

C) One couple census family without other persons in the household, without children, renter households	3 Bedrooms	4715	8%
	4+ Bedrooms	1675	3%
	Sum of all households	61960	
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
D) One couple census family without other persons in the household, with children, renter households	No bedrooms	140	0%
	1 Bedroom	5890	10%
	2 Bedrooms	26360	44%
	3 Bedrooms	18435	31%
	4+ Bedrooms	8590	14%
	Sum of all households	59415	100%
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
E) One couple census family without other persons in the household, with children, 3 persons household size, renter households (ie. couple with 1 child)	No bedrooms	90	0%
	1 Bedroom	4510	17%
	2 Bedrooms	14705	56%
	3 Bedrooms	5220	20%
	4+ Bedrooms	1770	7%
	Sum of all households	26295	100%
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
F) One couple census family without other persons in the household, with children, >3 persons household size, renter households (ie. couple with >1 child) F is calculated by subtracting E from D (F=D-E)	No bedrooms	50	0%
	1 Bedroom	1380	4%
	2 Bedrooms	11655	35%
	3 Bedrooms	13215	40%
	4+ Bedrooms	6820	21%
	Sum of all households	33120	100%
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
G) One lone-parent census family without other persons in the household, renter households	No bedrooms	170	0%
	1 Bedroom	5145	15%
	2 Bedrooms	18025	53%
	3 Bedrooms	8300	24%
	4+ Bedrooms	2485	7%
	Sum of all households	34125	100%

Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
H) One lone-parent census family without other persons in the household, 2 persons household size, renter households (ie. lone-parent with 1 child)	No bedrooms	145	1%
	1 Bedroom	4250	20%
	2 Bedrooms	13325	64%
	3 Bedrooms	2525	12%
	4+ Bedrooms	635	3%
	Sum of all households	20880	100%
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
I) One lone-parent census family without other persons in the household, >2 persons household size, renter households (ie. lone-parent with >1 child)	No bedrooms	25	0%
	1 Bedroom	895	7%
	2 Bedrooms	4700	35%
	3 Bedrooms	5775	44%
	4+ Bedrooms	1850	14%
	Sum of all households	13245	100%
I is calculated by subtracting H from G (I=G-H)			
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
J) One couple census family with other persons in the household, without children, renter households	No bedrooms	10	0%
	1 Bedroom	270	7%
	2 Bedrooms	1745	45%
	3 Bedrooms	1070	28%
	4+ Bedrooms	750	19%
	Sum of all households	3845	100%
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
K) One couple census family with other persons in the household, with children, renter households	No bedrooms	15	0%
	1 Bedroom	205	4%
	2 Bedrooms	1165	24%
	3 Bedrooms	1590	33%
	4+ Bedrooms	1840	38%
	Sum of all households	4815	100%
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
	No bedrooms	25	1%

L) One lone-parent census family with other persons in the household, renter households	1 Bedroom	235	5%
	2 Bedrooms	1400	30%
	3 Bedrooms	1770	37%
	4+ Bedrooms	1305	28%
	Sum of all households	4735	100%
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
M) Multiple-census family, renter household	No bedrooms	0	0%
	1 Bedroom	235	5%
	2 Bedrooms	1255	26%
	3 Bedrooms	1460	30%
	4+ Bedrooms	1875	39%
	Sum of all households	4825	100%
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
N) All other census family households (one-census-family households with additional persons and multiple-census-family households), renter households	No bedrooms	50	0%
	1 Bedroom	945	5%
	2 Bedrooms	5565	31%
	3 Bedrooms	5890	32%
	4+ Bedrooms	5770	32%
	Sum of all households	18220	100%
N is calculated by adding J, K, L, and M (N=J+K+L+M)			
Category			
Category	Number of bedrooms in unit	Number of households	Percentage of households (%)
O) Two-or-more person non-census-family household (ie. roommates)	No bedrooms	305	1%
	1 Bedroom	6595	20%
	2 Bedrooms	17845	55%
	3 Bedrooms	4800	15%
	4+ Bedrooms	2820	9%
	Sum of all households	32365	100%

¹ Minor irregularities in the Statistics Canada data result in a slight difference between the sum of all household categories and category A (all renter households).

Table A6 shows the estimated unit usage by household type in the City of Vancouver, calculated by multiplying the Vancouver CMA “Percentage of households”

values from Table A5 by the City of Vancouver “number of households” by household type values from Tables A1 and A3.

Table A6. Estimated number of renter households by household type and number of bedrooms in unit in the City of Vancouver, 2016

Household Category		Total	Studio	1-bedroom	2-bedroom	3-bedroom	4+-bedroom
Couples without children ¹	Vancouver CMA mix ²	100.0%	1.7%	53.1%	34.9%	7.6%	2.7%
	City of Vancouver, number of households ³	29730	496.5	15793.3	10369.8	2262.0	803.6
Couples with 1 child ⁴	Vancouver CMA mix ²	100.0%	0.3%	17.2%	55.9%	19.9%	6.7%
	City of Vancouver, number of households ³	7798.5	26.7	1338.1	4362.8	1548.7	525.1
Couples with > 1 child ⁵	Vancouver CMA mix ²	100.0%	0.2%	4.2%	35.2%	39.9%	20.6%
	City of Vancouver, number of households ³	9531.5	14.4	397.1	3354.2	3803.1	1962.7
Lone parents with 1 child ⁶	Vancouver CMA mix ²	100.0%	0.7%	20.3%	63.8%	12.1%	3.0%
	City of Vancouver, number of households ³	6338.3	44.0	1289.8	4043.9	766.3	192.7
Lone parents with >1 child ⁷	Vancouver CMA mix ²	100.0%	0.2%	6.8%	35.5%	43.6%	14.0%
	City of Vancouver, number of households ³	3051.8	5.8	206.2	1082.9	1330.6	426.3
Other census families ⁸	Vancouver CMA mix ²	100.0%	0.3%	5.2%	30.5%	32.3%	31.7%
	City of Vancouver, number of households ³	5310	14.6	275.4	1621.9	1716.6	1681.6
Singles	Vancouver CMA mix ²	100.0%	9.6%	69.3%	17.0%	2.8%	1.3%

Household Category		Total	Studio	1-bedroom	2-bedroom	3-bedroom	4+-bedroom
	City of Vancouver, number of households ³	72210	6906.1	50043.7	12308.4	2002.5	949.3
Non-Census families with 2+ people	Vancouver CMA mix ²	100.0%	0.9%	20.4%	55.2%	14.8%	8.7%
	City of Vancouver, number of households ³	16775	158.1	3419.3	9252.0	2488.6	1462.1
All renter households	Vancouver CMA mix ²	100.0%	5%	48%	31%	11%	5%
	City of Vancouver, number of households ³	150745	7666.2	72763.0	46395.9	15918.4	8003.4

¹ “Couples without children” refers to the renter households in the household category “One couple census family without other persons in the household, without children”

² Renter household unit mix occupancy across Vancouver CMA from table A5

³ Total number of households for each household type in the City of Vancouver is from table A1 and A3. Number of households in each unit type in City of Vancouver is calculated by multiplying the total number of households by the unit mix occupied by the household type across Vancouver CMA (row above). Due to rounding of the unit mix percentages, number of households in each unit type is not exactly equal to the total number of households multiplied by the unit mix percentages shown in the table.

⁴ “Couples with 1 child” refers to the renter households in the household category “One couple census family without other persons in the household, with children” with one child

⁵ “Couples with >1child” refers to the renter households in the household category “One couple census family without other persons in the household, with children” with more than one child.

⁶ “Lone parents with 1 child” refers to the renter households in the household category “One lone-parent census family without other persons in the household” with one child.

⁷ “Lone parents with >1 child” refers to the renter households in the household category “One lone-parent census family without other persons in the household” with more than one child.

⁸ “Other census families” refers to the renter households in the household category “One-census-family households with additional persons” and “multiple-census-family household”

The “City of Vancouver, number of households” values in Table A6 were added together for each unit type to generate a total number of households for each unit type. The proportion of each unit type occupied by each household category was then calculated (see Table A7). The values in the columns labeled “proportion of unit type occupied by household category” in Table A7 were used to create Figure 4-1.

Table A7. Estimated City of Vancouver renter households by household type and number of bedrooms in unit, 2016

Household Category	Studio		1-bedroom	
	Number of households ¹	Proportion of unit type occupied by household category ²	Number of households ¹	Proportion of unit type occupied by household category ²
Couples without children ³	496.5	6%	15793.3	22%
Couples with 1 child ⁴	26.7	0%	1338.1	2%
Couples with > 1 child ⁵	14.4	0%	397.1	1%
Lone parents with 1 child ⁶	44.0	1%	1289.8	2%
Lone parents with >1 child ⁷	5.8	0%	206.2	0%
Other census families ⁸	14.6	0%	275.4	0%
Singles	6906.1	90%	50043.7	69%
Non-census families with 2+ people	158.1	2%	3419.3	5%
Total renter households	7666.2	100%	72763.0	100%
	2-bedroom		3-bedroom	
Household Category	Number of households	Proportion of unit type occupied by household category	Number of households	Proportion of unit type occupied by household category
Couples without children	10369.8	22%	2262.0	14%
Couples with 1 child	4362.8	9%	1548.7	10%
Couples with > 1 child	3354.2	7%	3803.1	24%
Lone parents with 1 child	4043.9	9%	766.3	5%
Lone parents with >1 child	1082.9	2%	1330.6	8%
Other census families	1621.9	3%	1716.6	11%
Singles	12308.4	27%	2002.5	13%
Non-census families with 2+ people	9252.0	20%	2488.6	16%
Total renter households	46395.9	100%	15918.4	100%
	4+-bedroom		3+-bedroom	
Household Category	Number of households	Proportion of unit type occupied by household category	Number of households	Proportion of unit type occupied by household category
Couples without children	803.6	10%	803.6	13%
Couples with 1 child	525.1	7%	525.1	9%
Couples with > 1 child	1962.7	25%	1962.7	24%
Lone parents with 1 child	192.7	2%	192.7	4%
Lone parents with >1 child	426.3	5%	426.3	7%
Other census families	1681.6	21%	1681.6	14%
Singles	949.3	12%	949.3	12%
Non-census families with 2+ people	1462.1	18%	1462.1	17%
Total renter households	8003.4	100%	8003.4	100%

¹ The values in “Number of households” were generated in Table A6 in the rows labeled “City of Vancouver, number of households”

² “Proportion of unit type occupied by household category” is calculated by dividing the number of households (for that particular household type) by the total number of renter households in that unit type.

³ “Couples without children” refers to the renter households in the household category “One couple census family without other persons in the household, without children”

⁴ “Couples with 1 child” refers to the renter households in the household category “One couple census family without other persons in the household, with children” with one child

⁵ “Couples with >1 child” refers to the renter households in the household category “One couple census family without other persons in the household, with children” with more than one child.

⁶ “Lone parents with 1 child” refers to the renter households in the household category “One lone-parent census family without other persons in the household” with one child.

⁷ “Lone parents with >1 child” refers to the renter households in the household category “One lone-parent census family without other persons in the household” with more than one child.

⁸ “Other census families” refers to the renter households in the household category “One-census-family households with additional persons” and “multiple-census-family household”

Appendix B: Affordability

In this section, I calculate the difference in affordability between renting a new 3-bedroom apartment and owning a row-house on the east side of Vancouver. These two options are not directly comparable, as row-houses range in size. A 3-bedroom row-house would be on the large end of the range, so this calculation underestimates the cost of owning a unit equivalent to the rental unit. The benchmark sale price of a 3-bedroom unit was unavailable.

I used the 2017 benchmark price of a row-house in Vancouver (\$879,200), as estimated by the Real Estate Board of Greater Vancouver (Real Estate Board of Greater Vancouver, 2018), and the average 2017 rent of a 3-bedroom rental built since 2005 in East Vancouver (City of Vancouver, 2017e).

This calculation assumes a 20% down payment (\$175,840) with a 25-year mortgage and a monthly strata fee of \$200. The mortgage calculator from Vancity Savings Credit Union was used to estimate the monthly mortgage payment (<https://www.vancity.com/Mortgages/MortgageCalculators/>).

Table B1. Comparison of the affordability of owning and renting a family-sized unit in East Vancouver in 2017.

Row-house ownership		3-bedroom rental	
Expense	Monthly Cost	Expense	Monthly Cost
Mortgage	\$3,398	Rent	\$3,030
Hydro	\$50	Hydro	\$50
Strata fees	\$200		
Property taxes*	\$187		
Total annual cost	\$46,020	Total annual cost	\$36,960
Minimum necessary household income**	\$153,400	Minimum necessary household income**	\$123,200

*The 2017 annual property tax rate in Vancouver was 0.255489% <http://vancouver.ca/home-property-development/residential.aspx>

**CMHC defines affordable housing as shelter that costs less than 30% of pre-tax household income (Canada Mortgage and Housing Corporation, n.d.)

An additional \$30,000 annual income is required to afford purchase of a home. Considering that the purchase price used in this calculation is likely lower than realistic for a 3-bedroom unit and the rental rate used is for a new 3-bedroom unit, the true gap in income necessary to afford these options is wider than shown here. With a salary of

\$153,400 and a savings rate of 15%, it would take nearly 7.6 years to save the down-payment.