

# **Micro suites: Does size really matter?**

by

**Nadine Einarson**

B.A., University of Victoria, 2008

Project Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Public Policy

in the

School of Public Policy

Faculty of Arts and Social Sciences

**© Nadine Einarson 2016**

**SIMON FRASER UNIVERSITY**

**Spring 2016**

All rights reserved.

However, in accordance with the *Copyright Act of Canada*, this work may be reproduced, without authorization, under the conditions for "Fair Dealing." Therefore, limited reproduction of this work for the purposes of private study, research, criticism, review and news reporting is likely to be in accordance with the law, particularly if cited appropriately.

# Approval

**Name:** Nadine Einarson  
**Degree:** Master of Public Policy  
**Title:** *Micro suites: Does Size Really Matter?*  
**Examining Committee:** **Chair:** Doug McArthur  
Professor, School of Public Policy, SFU

**Nancy Olewiler**  
Senior Supervisor  
Professor

---

**Dominique M. Gross**  
Supervisor  
Professor

---

**Joshua Gordon**  
Internal Examiner  
Assistant Professor

---

**Date Defended/Approved:** March 17, 2016

## Ethics Statement



The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

- a. human research ethics approval from the Simon Fraser University Office of Research Ethics

or

- b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University

or has conducted the research

- c. as a co-investigator, collaborator, or research assistant in a research project approved in advance.

A copy of the approval letter has been filed with the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library  
Burnaby, British Columbia, Canada

Update Spring 2016

## **Abstract**

Housing affordability is a major issue for the City of Vancouver. The ever-increasing cost of housing is pricing many Vancouverites out of the housing market. Millennials, with interests in homeownership, are starting to move out of Metro Vancouver to more affordable locations. Loss of this generation creates serious concern for the labour market and the growth of the economy. One proposed way to help retain millennials in Vancouver is to develop micro suites. These apartments are smaller than what is currently allowed under Vancouver zoning bylaws, which should make them more affordable. This Capstone examines the possible consequences of developing micro suites by compiling research, looking at four other jurisdictions, and conducting interviews. In the end three options are presented with the benefits and disadvantages of each. A recommendation is made to submit the options to City Council and let elected officials decide the best option for Vancouver.

**Keywords:** Micro suites; Housing; Vancouver; Unaffordability; Millennials

## **Acknowledgements**

There are many people who helped to guide me through the Capstone process and who I would like to thank.

Thank you to Dr. Judith Sixsmith for her help in framing my topic and guiding me through the first months of writing and research.

Thank you to Dr. Nancy Olewiler whose insights helped the development of my Capstone, and whose nature always calmed my uncertainties.

Thank you to Dr. Josh Gordon for his comments, feedback, and insightful questions.

Thank you to all my classmates for always being willing to talk, listen, suggest ideas, and commiserate. You all made the last two years better than I could have expected. A special thank you to Danielle Woolsey and Caitlin Williamson for the never-ending support and friendship.

Thank you to everyone outside of the program who contributed to the ideas, information, and questions that helped shape my topic, including a former MPP graduate who introduced me to the issue of micro suites.

Thank you to my parents who allowed me to make micro suites the main household topic of conversation for the last eight months.

# Table of Contents

|   |           |
|---|-----------|
| Approval .....  | ii        |
| Ethics Statement .....  | iii       |
| Abstract .....  | iv        |
| Acknowledgements .....  | v         |
| Table of Contents .....                                       | vi        |
| List of Tables .....  | viii      |
| List of Figures .....   | viii      |
| List of Acronyms .....  | ix        |
| Glossary .....  | x         |
| Executive Summary .....                                       | xi        |
| <br>  |           |
| <b>Chapter 1. Introduction .....</b>                          | <b>1</b>  |
| <br>  |           |
| <b>Chapter 2. Background .....</b>                            | <b>3</b>  |
| 2.1. Affordability in Vancouver .....                         | 3         |
| 2.2. Wages .....  | 7         |
| 2.3. Unaffordability and Millennials .....                    | 8         |
| 2.4. Labour shortages .....                                   | 10        |
| 2.5. Micro suites .....                                       | 11        |
| 2.6. Examples of smaller units in the City of Vancouver ..... | 15        |
| 2.7. Current barriers .....                                   | 16        |
| 2.8. Conclusion .....   | 18        |
| <br>  |           |
| <b>Chapter 3. Methodology .....</b>                           | <b>20</b> |
| 3.1. Methodological justification .....                       | 20        |
| 3.2. Literature review .....                                  | 20        |
| 3.3. Exploratory case studies .....                           | 20        |
| 3.3.1. Jurisdiction justification .....                       | 22        |
| 3.3.2. Case study framework .....                             | 26        |
| 3.4. Semi-structured interviews .....                         | 27        |
| 3.5. Policy analysis .....                                    | 28        |
| <br>  |           |
| <b>Chapter 4. Case Studies .....</b>                          | <b>29</b> |
| 4.1. Case study backgrounds .....                             | 29        |
| 4.2. Case study data .....                                    | 32        |
| 4.2.1. Unit characteristics .....                             | 32        |
| 4.2.2. Characteristics of neighbourhood .....                 | 36        |
| 4.2.3. Policy variables .....                                 | 38        |
| 4.3. Summary .....  | 40        |

|   |           |
|---|-----------|
| <b>Chapter 5. Criteria for evaluation</b> .....           | <b>42</b> |
| 5.1. Human development .....                              | 42        |
| 5.2. Effectiveness .....                                  | 43        |
| 5.3. Stakeholder acceptability.....                       | 44        |
| 5.4. Administrative ease .....                            | 44        |
| 5.5. Summary matrix .....                                 | 45        |
| 5.6. Other considerations .....                           | 45        |
| 5.6.1. Safety and well-being .....                        | 45        |
| 5.6.2. Development cost levies and financing growth ..... | 46        |
| 5.7. Immeasurable criteria .....                          | 47        |
| <br>  |           |
| <b>Chapter 6. Policy options and analysis</b> .....       | <b>49</b> |
| 6.1. Option 1: Status Quo .....                           | 49        |
| 6.1.1. Affordability of housing .....                     | 49        |
| 6.1.2. Supply and demand.....                             | 50        |
| 6.1.3. Stakeholder acceptability.....                     | 51        |
| 6.1.4. Administrative ease .....                          | 51        |
| 6.1.5. Option 1: Matrix .....                             | 52        |
| 6.2. Option 2: Initial Cap .....                          | 52        |
| 6.2.1. Affordability of housing .....                     | 53        |
| 6.2.2. Supply and demand.....                             | 54        |
| 6.2.3. Stakeholder acceptability.....                     | 54        |
| 6.2.4. Administrative ease .....                          | 55        |
| 6.2.5. Option 2: Matrix .....                             | 55        |
| 6.3. Option 3: Market Freedom.....                        | 56        |
| 6.3.1. Affordability of housing .....                     | 56        |
| 6.3.2. Stakeholder acceptability.....                     | 57        |
| 6.3.3. Administrative ease .....                          | 57        |
| 6.3.4. Option 3: Matrix .....                             | 58        |
| 6.4. Summary Matrix .....                                 | 58        |
| <br>  |           |
| <b>Chapter 7. Regulatory design</b> .....                 | <b>60</b> |
| <br>  |           |
| <b>Chapter 8. Recommendation</b> .....                    | <b>64</b> |
| <br>  |           |
| <b>Chapter 9. Limitations</b> .....                       | <b>66</b> |
| <br>  |           |
| <b>References</b>   | <b>68</b> |

## List of Tables

|         |  |    |
|---------|--|----|
| Table 1 | Mortgage payments for Condo.....   | 6  |
| Table 2 | Jurisdiction comparison.....   | 22 |
| Table 3 | Criteria and measures matrix.....  | 45 |
| Table 4 | Monthly cost of ownership for median priced unit (2014), yearly<br>income, and difference from millennial median income..... | 50 |

## List of Figures

|          |   |    |
|----------|---|----|
| Figure 1 | Rent per square foot by unit size, United States..... | 53 |
|----------|---|----|



## List of Acronyms

|      |   |
|------|---|
| CMHC | Canada Mortgage and Housing Corporation |
| COV  | City of Vancouver                       |
| DCL  | Development Cost Levy                   |
| EDU  | Efficiency Dwelling Unit                |
| NOS  | National Occupancy Standards            |
| RAHS | Regional Affordable Housing Strategy    |
| ULI  | Urban Land Institute                    |

## Glossary

|                          |   |
|--------------------------|---|
| Affordable housing       | The Canada Mortgage and Housing Corporation (CMHC) defines 'affordable' as spending no more than 30 percent of total before-tax income on dwelling costs.                       |
| Condominium              | A building or complex of buildings that contain a number of individually owned apartments   |
| Gross debt service ratio | The percent of an average annual household income required to service housing costs   |
| Housing tenure           | The financial arrangement under which someone has the right to live in a house or apartment. Generally either renter-occupied with rent paid to landlord, or owner-occupied.    |
| Inclusionary zoning      | An American term that refers to municipal and county planning ordinances that require a given share of new construction to be affordable by people with low to moderate incomes |
| Micro suite              | Ultra small apartments that are less than 320 square feet in size and contain fully functioning kitchens and bathrooms.   |
| Millennial generation    | Those born from approximately the early 1980s to the early 2000s  |

## **Executive Summary**

The cost of housing in Vancouver has seen a dramatic increase over the last 15 years and shows no signs of slowing down. High costs are increasingly pricing Vancouverites out of the housing market. Many of those most affected and most likely to move to more affordable locations are in the millennial generation. Losing millennials to other regions is likely to cause a labour shortage and lead to challenges with economic growth. One proposal for helping retain millennials in the region is the development of micro suites, which are ultra small apartments below 320 square feet in size that contain fully functioning kitchens and bathrooms. Current bylaws prevent the development of this size of housing unit in the City of Vancouver. Developers and proponents claim micro suites will be a more affordable housing option and fill a niche of the housing market that is currently being unmet.

The first goal of this research is to discover the potential positive and negative impacts of allowing micro suites to be part of Vancouver's housing stock. The second goal is to assess what policy or set of policies should be required to govern micro suite construction and associated characteristics.

To address these goals, this study draws on the literature, case studies, and interviews. The research finds many potential benefits and concerns regarding micro suite development. Four municipalities in North America serve as case study jurisdictions in order to gain an understanding of the current approaches to micro suites. Interviews supplement the case studies and the literature by filling in gaps wherever needed, as well as gaining perspective from Vancouver housing experts. While other jurisdictions with affordable housing issues are considering micro suites, many of these jurisdictions are in the initial phases of consideration, exploration, and development. There is no long-term evidence of the social and economic consequences associated with micro suite development. The research did provide information on current approaches to policy and regulatory design as well as what issues are important to consider.

Three policy options are developed for the City of Vancouver. The options include the status quo, an initial cap or pilot program, and market freedom. These options are evaluated against four criteria: human development, effectiveness, stakeholder acceptability, and administrative ease. Also considered, but not used as criteria, were safety and well-being and development cost levies. Additionally, I explore issues of regulatory design that includes important aspects of micro suite policy such as unit size, tenure, design and amenities, building size and unit-mix, location and parking, and occupancy requirements.

The recommended policy option is the initial cap or pilot program. This option allows the City to move forward and create a new, diverse, and more affordable type of housing. It may also help retain millennials in the city by providing more affordable homeownership and rental options. Additionally, it will likely be acceptable to developers, the public, and the City, as it allows micro suites, but also allows for monitoring and oversight. Two additional recommendations are made, the first being an appeal to the Province to change the requirements for development cost levies to include smaller units, and the second being to conduct a survey of Vancouver residents to get a baseline understanding of micro suite interest and issues.

The housing market is complex and affected by many variables both inside and outside the housing market. Predicting the impact of micro suites on Vancouver's housing market is challenging, especially considering the lack of evidence from other jurisdictions. The research was limited by time and scope and was unable to answer questions about the longevity of affordability or the actual impact on the target (millennial population). However, a survey and a pilot program may go a long way in helping to understand the so far unanswerable questions and allow for more informed future decisions about micro suites in Vancouver.

# Chapter 1.

## Introduction

The lack of affordable housing options in Vancouver is causing millennials to migrate to more affordable locations, which may end up causing a labour shortage and putting economic growth at risk. One proposal for helping to retain millennials in Vancouver is the development of micro suites, which are housing units smaller than what is currently allowed. These units, in theory, provide more affordable options for both ownership and rental. Current zoning bylaws prevent the development of this type of unit in Vancouver. The issue I explore is whether the City of Vancouver should allow micro suites, and if so, what sort of conditions should be required.

To help understand the potential positive and negative impacts of micro suites I first looked at recent research on micro suites. Second, I used four other jurisdictions as case studies to better understand how micro suites are being approached in other locations in North America. Finally I used interviews, from case study locations as well as Vancouver, to help round out my understanding of the potential impacts of micro suites.

From the information gathered I created three policy options for the City of Vancouver and analyzed each option based on a set of criteria. Option 1 retains the status quo and does not allow the development of micro suites. Option 2 allows for a set number of micro suites to be built as a pilot project with a review taking place after the allotted number have been built. Option 3 allows for unrestricted development of micro suites by allowing the market to decide how many are built. Additionally, I created a chapter on Regulatory Design in the case that micro suites are implemented, addressing topics such as size, rental versus sale, and location. However, because micro suites are so new to North American cities there is a lack of information on the long-term effects

resulting from micro suite development. It is also necessary to understand that the housing market in Vancouver is complex and the possible impacts of micro suites cannot be treated in a silo separate from the rest of the housing market. I present the benefits and drawbacks of each policy option and recommend Option 2 as the best choice for exploring micro suite development in Vancouver.

## **Chapter 2. Background**

### **2.1. Affordability in Vancouver**

Vancouver is known internationally as one of the most liveable cities in the world but, also one of the most unaffordable. In 2015, Vancouver was ranked the third most liveable city in the world after Melbourne, Australia, and Vienna, Austria, based on factors such as safety, healthcare, educational resources, infrastructure, and environment (The Economist, 2015). In 2016, Vancouver was rated the third most unaffordable city in the world after Hong Kong and Sydney, Australia, based on a comparison of housing costs and income (Cox & Pavletich, 2016). Declining affordability, while not a new problem in Vancouver, has seen a dramatic increase over the past 15 years, with housing prices increasing over 200 percent. While housing affordability affects all age groups this research will focus on millennials<sup>1</sup> as they are at the prime age for entering the homeownership market but are increasingly being priced out of the city. A report by Vancity<sup>2</sup> (May 2015) has raised concern that the lack of affordable housing options in Vancouver is, and will continue, to cause millennials to migrate to more affordable locations, which will end up causing a labour shortage and putting long term growth at risk. Solutions for retaining millennials will have to come in many forms including better employment opportunities, higher wages, lower cost of living, better transportation, and better housing opportunities and diversity for both rental and ownership. There are many different approaches to bettering housing options. This research is addressing only one proposed solution to the problem; the development of micro suite condominiums, which in theory provide more affordable options for both

<sup>1</sup> For the purposes of this research millennials will be defined as those born between the early 1980s and the early 2000s

<sup>2</sup> Vancity, as a value-based financial co-operative with a mandate for corporate social responsibility, values research of this nature and has released several recent reports on housing affordability, wages, and labour.

ownership and rental to young childless millennials. Currently, zoning bylaws and other barriers have blocked micro suite development in Vancouver, and uncertainty about the positive and negative impacts of micro suites creates an opportunity to assess the options for a micro suite policy for Vancouver.

Metro Vancouver, surrounded by mountains, ocean, and an international border, is limited in geographical growth opportunities. Within Metro Vancouver, the City of Vancouver is restricted to its municipal boundaries, which leaves little room for changing land use. Vancouver is expecting a population increase of 186,000 people by 2041. This 30 percent increase will bring the total population to 830,039 (BC Statistics, n.d.). A growing population will undoubtedly contribute to decreasing affordability as a larger population vies for space in a constrained housing market. However, a growing population does not equate to a growing labour force of the necessary age and with the necessary skill set that will increasingly be required to fill in-demand occupations. An Angus Reid poll from 2015 found that those most likely to leave the region in search of more affordable housing are some of the youngest and most educated in Metro Vancouver (Angus Reid, 18 June, 2015). Additionally, while the population is growing, local business owners have recently discussed the difficulty in recruiting and retaining young professionals (Dmitrieva, 15 March, 2016; Mason, 11 February, 2016)

The challenges associated with a constrained housing market in a world-class city have been on the rise over the past 15 years. This time period has seen a dramatic increase in the cost of owning a home. From 2001 to 2014 the average resale value of a home in Vancouver rose by 211 percent (Vancity, May 2015). In 2015, the median price for a single-family detached home in Vancouver was \$1.77 million, and the median price for a new condominium ranged from \$555,613 to \$670,073 (The Vancouver Sun, 13, November, 2015). The average size of a new condominium was approximately 850 square feet with the average price per square foot ranging between \$650 and \$790 (The Vancouver Sun, 13, November, 2015). The 'inner' Metro Vancouver suburbs (including West Vancouver, North Vancouver, Burnaby, New Westminster, Richmond, South Delta, Coquitlam, Port Moody, and Port Coquitlam) had a single-family home median price of \$1.2 million. The 'outer' suburbs (including Langley, North Delta, Surrey, White Rock,



Pitt Meadows, and Maple Ridge) had a single-family home median price of \$692,000 (The Vancouver Sun, 13, November, 2015).

The Real Estate Board of Greater Vancouver estimates the sale price of benchmark properties each month. The benchmark represents a typical property within each market and takes into account lot size, age, number of rooms, and more. The composite benchmark for all property types (including detached house, townhouse, and apartment) in January 2016 was \$819,400 in East Vancouver and \$1,058,600 in West Vancouver. The benchmark price for a condominium in East and West Vancouver (as of January 2016) was \$373,800 and \$599,200 respectively (REBGV, n.d.).

The Canada Mortgage and Housing Corporation (CMHC) defines 'affordable' as spending no more than 30 percent of total before-tax income on dwelling costs (CMHC, n.d., A). According to the 2011 National Household Survey, 38 percent of households in Vancouver spend more than 30 percent of total household income on shelter costs (Statistics Canada, 2013). It is clear from the numbers above that housing is not affordable for many Vancouverites.

The median gross household income in Vancouver in 2016 was \$61,816 (NHS, 2011). It is important to note that the median income for individuals is much lower than that for households, at \$30,642 (NHS, 2011)<sup>3</sup>. For households with the median income, dwelling costs could not exceed \$1,545 per month without going over the 30 percent affordability cut off. Individuals at the median income are left with \$766 per month (30 percent) to spend on dwelling costs. The table below illustrates the mortgage costs associated with different down payments. The home price was chosen based on the middle point between condo prices for East and West Vancouver. The RBC Mortgage Calculator was used to create the data for the table.

<sup>3</sup> Both household and individual incomes from the 2011 census (data from 2010) were inflated using the Bank of Canada's Consumer Price Index Inflation Calculator to reflect 2016 incomes.

**Table 1 Mortgage payments for Condo**

| Condo Price: \$486,500 |                |                |                |                |                |
|------------------------|----------------|----------------|----------------|----------------|----------------|
| Percent down payment   | 5%             | 10%            | 15%            | 20%            | 25%            |
| Down payment           | \$24,325       | \$48,650       | \$72,975       | \$97,300       | \$121,625      |
| Total mortgage         | \$478,813      | \$448,358      | \$420,968      | \$389,200      | \$364,875      |
| Monthly payments       | <b>\$2,263</b> | <b>\$2,119</b> | <b>\$1,990</b> | <b>\$1,839</b> | <b>\$1,724</b> |

Note: These calculations assume a 2.99% interest rate and an amortization period of 25 years.

It is clear that even with a large down payment, the monthly cost exceeds the 30 percent cut off for a median income household. Even if the members of a household were able to save 25 percent for a down payment (\$121,625) the monthly payments would still be more than \$200 per month over the affordability limit. For a single person household, the monthly payments are even further out of reach. Keep in mind this is the mortgage for a condominium. The median price for detached single-family homes is double or more the price chosen for the above table.

Another way to measure the cost of housing is to use the gross debt service ratio. This ratio measures the percent of an average annual household income required to service housing costs (Vancity, March 2015). CMHC determines 32 percent of gross monthly income as the highest affordable debt service ratio (CMHC, n.d., B). In 2014, Vancouver had an average gross debt service ratio of 76 percent (Vancity, March 2015). Projections to 2030 show a continued increase in the trend of unaffordability with the gross debt service ratio increasing to 108 percent (Vancity, March 2015). Vancity's

projections show that the rest of Metro Vancouver will also be following trend with only Langley left below the 32 percent affordability cut off by 2030 (Vancity, March 2015).

Although housing costs have been dramatically rising, costs are not evenly distributed by type of housing. The increase in prices comes largely from the market for single-family homes. As mentioned above, the benchmark price for single-family homes is over one million dollars. The reason for the dramatically increased price of single family homes is explained succinctly in a CBC radio interview, with developer Bob Rennie: "I think the problem we have with single family homes in Vancouver is we're not making anymore of them. We'll never create another single-family lot in my lifetime. There's depleting inventory and increasing demand" (Cluff, 19 May, 2015). Additionally, between 2001 and 2011 there was a 28 percent decline in the number of single detached homes in the City of Vancouver (Pablo, 7 May, 2015).

Condominiums, however, have so far remained more affordable because of the ability to continue to add condominium developments to the housing stock in Vancouver. A report by Vancity (March 2015) projects the Vancouver condominium market to rise by about 4.4 percent per year until 2030, meaning the average price of a condominium will rise to over \$800,000 and reach levels of unaffordability by 2018. However, in all the other Metro Vancouver municipalities, the price of condominiums is projected to remain generally affordable meaning that over the next 15 years condominiums will become a more probable way of entering the housing market for first time buyers (Vancity, March 2015).

## **2.2. Wages**

One important reason behind the decreasing affordability of housing in Vancouver is wages. During the same period that housing prices rose 211 percent, wages rose by only 36.2 percent or 2.2 percent per year (Vancity May 2015). This small yearly increase is slightly higher than the average inflation rate over the period, which was 1.52 percent (Inflation Calculator, 12 November, 2015). Projections estimate that by 2025 there will only be three job categories that earn high enough incomes to afford a house in Vancouver; senior managers in the financial and business sector, senior

managers in the construction and utility sector, and engineering managers (Vancity, May 2015). Additionally, even in-demand occupations are only expected to have wage rate growth increases of 0.6 percent to 3.2 percent (Vancity, May 2015).

### **2.3. Unaffordability and Millennials**

The unaffordable nature of housing in Vancouver is a growing issue for the millennial generation. This generation, while reaching an age that is increasingly ready to purchase a home, is being priced out of the Vancouver housing market. In a recent survey of Canadian millennials aged 15 to 33 almost all indicated that they intended to buy a home at some stage of their life (yconic, 2014). To fulfill this desire, millennials will be forced to look to more affordable markets. Additionally, 78 percent of millennials indicate they intend to have two or more children (Vancity September 2015). These future families will need housing large enough to accommodate at least four members, which will create an additional incentive for moving to locations where larger housing is more affordable.

The median income of millennials (aged 25 to 34) in 2016 was \$34,258<sup>4</sup> (NHS, 2011). While this median income is actually higher than the overall median income for individuals (\$30,642), a BMO economic report suggests that millennials have higher levels of debt than young people 30 years ago (BMO Financial Group, 15 May, 2015). According to this same report, the average house price, in 2011, was 10.4 times the median income of young families. This is more than double rate from 30 years ago. When surveyed about finances only about half of millennials aged 30 to 33 say they had achieved financial independence (yconic, 2014).

If millennials are unable to fulfil their homeownership goals in Vancouver they are likely to migrate to more affordable locations. With prices steadily increasing in the surrounding Metro Vancouver municipalities, millennials are likely to look farther afield when choosing where to settle. Migration from the Lower Mainland has already been

<sup>4</sup> The income data from the 2011 census was inflated using the Bank of Canada's Consumer Price Index Inflation Calculator to reflect 2016 incomes

observed. While Statistics Canada shows an overall increase in the population for this region, the population of those 20 to 30 is declining as this age group migrates to other provinces (Metro News, 6 November, 2014). “The region saw a net loss of 1,571 residents in that age group in 2013, adding to the 770 that left Vancouver the year before” (Metro New, 6 November, 2014). These numbers show that in one year the number of 20 to 30 year olds that migrated from Vancouver doubled.

BC Statistics shows that those aged 20 to 34 made up 27.2 percent of the total Vancouver population in 2015. Population projections predict that by 2041 this same age group will make up 19.7 percent of the Vancouver population (BC Statistics, n.d.). Several factors could contribute to this decrease, but the overall trend shows a declining population in the 20 to 34 year age group. Further evidence of this trend comes from an Angus Reid poll from June 2015, which suggests that 150,000 families are seriously considering leaving the region because of the cost of owning a home (Angus Reid, 18 June, 2015). According to the poll this group makes up some of the youngest and most educated in Metro Vancouver (Angus Reid, 18 June, 2015).

A Vancity report (May 2015) discusses the economic implications of high housing costs impacting the ability to attract workers to the region. The report asserts that because of the high cost of housing “the future labour market holds a significant risk of decreased supply” (p.2). Without enough workers the growth of businesses as well as the ability to maintain public services will be affected (Vancity, May 2015). This sentiment was echoed in two recent news articles from Globe and Mail (Mason, 11 February, 2016) and the Vancouver Sun (Dmitrieva, 15 March, 2016). The articles discuss rising housing costs, the departure of millennials from Vancouver, and the increasing problems of recruiting and retaining young professionals in the city.

A recent CBC article reported an emerging trend in the locations where young families are purchasing homes outside of the lower mainland, namely Squamish and Bowen Island (Larsen, 12, November, 2015). A new condominium complex in Squamish, BC went on sale in early November 2015 and sold out in 90 minutes, with more than half of the condo buyers as first time purchasers between the ages of 30 and 45 (Larsen, 12, November, 2015). The condominiums ranged in price from \$167,000 to \$449,900.

According to this same article, Bowen Island has seen a recent influx of young families from the greater Vancouver area.

Another emerging trend is that of millennials house sharing with their parents. A Vancouver Sun article explores how more millennials and their parents are entering into co-ownership agreements as a way for the millennials to enter into the housing market (Lindsay, 13, November, 2015). The article quotes a real estate lawyer stating, “Their (millennials) options right now, by and large, are buy a small condo or work with their parents (Lindsay, 13, November, 2015, paragraph 3). These emerging trends show that millennials are interested enough in homeownership that they are attracted to options like moving outside of the lower mainland and co-ownership with parents. As argued above, losing millennials to other regions will negatively impact the labour market. Co-ownership with parents may be a good option for some but is not available to all those who wish to enter the housing market.

While homeownership is a goal for most millennials, this research considers both ownership and rental options. The objective is to retain more millennials in the city and more affordable rental may play a role in achieving that objective.

## **2.4. Labour shortages**

In British Columbia baby boomers have been, and will continue to be, retiring in large numbers. In a labour market forecast to 2024, the majority (68 percent) of projected job openings in the Mainland/Southwest region are expected to come from replacing retired workers (Work BC, 2014). The BC Labour Market Outlook for 2012 to 2022 projects the demand for jobs exceeding the supply, in the Mainland/Southwest region, by 2019 (Work BC, 2012). This trend continues to grow until demand exceeds supply by 20,300 jobs in 2022. Two years later the updated report for 2014 to 2024 shows a much less constrained labour market with supply exceeding demand by 16,400 by 2024 (Work BC, 2014). Factors considered in labour market forecasts are not static and can change quickly in a short period of time. These factors include the pace of economic growth, the pace of retirement for baby boomers, and the number of immigrants entering the region. While the updated report no longer shows labour

shortages, the previous report as well as several other reports (discussed below), indicate the high potential for labour shortages in the near future.

Projections from Urban Futures (2014) suggest that by early 2020 there will not be enough workers to meet demand in British Columbia. The report also suggests that this mismatch between labour supply and demand will be a potential limiting factor in economic growth in the province (Urban Futures, 2014). A report on the Vancouver Coastal Mountains tourism industry explains that the difficulty in retaining qualified workers lies in the high cost of living in the area and the low wages paid in this industry (RKA Inc, 2009). A Vancity report (May 2015) argues that the high, and rising, cost of housing in Metro Vancouver will be one of the major factors leading to a labour shortage.

## **2.5. Micro suites**

One type of housing that may help retain millennials in Vancouver is the micro suite. Micro suites are ultra small apartments that are less than 320 square feet in size and contain fully functioning kitchens and bathrooms. To give perspective to the size of micro suites, a 300 square foot micro suite is smaller than a two-car garage (Urban Land Institute (ULI), 2014).

Micro suites could help millennials enter the housing market, and add to the diversity of ownership and rental options. Increasing homeownership opportunities may help retain millennials in the region by giving them more ownership options and decreasing the need to look further afield. Renting out micro suites may also increase the availability of housing options at a lower price level. More affordable rental can also make it easier to save for a down payment. While the millennial survey discussed above (yconic, 2014) shows that millennials wish to own homes and have families these two desires do not have to co-occur. Millennials may be interested in entering the housing market while still single, or before they have children, in order to build equity and have more purchasing power in the future when a larger space is required.

Since micro suites are so compact they are often furnished with 'flexible furniture' such as murphy beds and other convertible furniture to help retain functionality in such a

small space (ULI, 2014). In order to ensure functionality, livability, and durability, the suites are often finished with high-end custom finishings and millwork (Heather Evans Consulting, Forbes, & Godard, 2015). The necessity of a well-designed and well-built unit causes the cost per square foot of a micro suite to be higher than larger units (Heather Evans Consulting, 2015). However, because the units are smaller in size overall, they can be a less expensive option (to own or rent) than traditional housing units.

Micro suite developments often offer additional building amenities outside of the small units. These amenities are intended to add living space outside the units and create communal gathering environments. Frequently offered are fitness rooms, cafes, and roof top gathering areas (ULI, 2014). A micro suite condominium building in Victoria, BC, offers a bookable boardroom and dining room, and a roof top lounge and deck with full kitchen and barbeque. These features are intended to give residents 'living room' space outside their individual units.

The suites are being promoted as a way of retaining young professionals in urban areas (Ross, 2013) and creating a more diverse housing stock (Been, Gross, & Infranca, 2014). The suites also allow individuals to remain in urban centers instead of being forced out of metropolitan areas to suburbs or small towns where work opportunities may be scarce and the environmental and economic costs of commuting are higher. The ability to live in an urban area can also increase livability by decreasing commute time and associated expenses. In a survey conducted for the Urban Land Institute, the top three reasons a potential renter would choose a micro suite over a more conventional sized unit were lower rent, location, and desire to live alone (ULI, 2014). Micro suites are also seen as environmentally friendly as the suites use less energy because of the small square footage (Been, Gross, & Infranca, 2014). Additionally, micro suite developments are generally located in urban centers, and can lead to increased use of sustainable modes of transportation such as walking, biking, and public transportation, and decreased car dependency.

Jon Stovell, a Vancouver developer and micro suite advocate, is encouraging the City of Vancouver to change the bylaws around dwelling unit size. Stovell says, "Young



people just love them (micro suites), either to rent or to buy, because it lets them get into the market. It's trading space for place. It's having all the stuff outside the four walls that makes up your lifestyle" (Macnair, 10 February, 2015). To date there is not enough research to confirm or refute Stovell's claims. The 'stuff outside the four walls' referred to by Stovell includes the neighbourhood characteristics and surrounding amenities including proximity to work, coffee shops, parks, transportation, retail, restaurants, and other urban amenities. Because micro suites developments are usually proposed for the most urban locations in a city, residents may be closer to amenities than those living outside of the urban core, however it is important to remember that other more conventionally sized apartments and condominiums in urban cores enjoy the same 'stuff outside the four walls' while also having a higher square footage inside the four walls. There has however, been research on the price at which renters will choose a micro suite over a more conventional sized unit; when the micro suite is 25 to 30 percent below the cost of a more conventional sized unit (ULI, 2014).

Concerns have also been raised about the development of such small units. The higher cost per square foot of micro suites, and therefore higher rent per square foot, has caused concern over potential increases in the cost of larger sized units (Been, Gross, & Infranca, 2014). There is also concern that micro suite buildings may cause an increase in land values, which could push developers of affordable housing out of the market (Been, Gross, & Infranca, 2014). There may also be a disproportionate impact on the lower income population as smaller units may qualify for affordability incentives pushing this population into smaller housing units even when the space would be unsuitable for the family size (Been, Gross, & Infranca, 2014).

Crowded living is also a concern. A report published in 2015 (Ekstam) concludes that research on crowding is not definitive. Much of the research to date suggests that crowded living can be harmful for children and adults. Some research has shown that 'crowding related stress can increase rates of domestic violence and substance abuse' (Urist, 2013, paragraph 6). Susan Saegert, professor of environmental psychology at the CUNY Graduate Center, worries about the effects of micro suites on families and children. She explains that crowded living and a lack of privacy can have negative consequences for developing children (Urist, 2013).

However, there are two important critiques of these conclusions. The first critique suggests that health problems arise from other housing factors (e.g., mold) and not the actual fact of crowding (Ekstam, 2015). The second critique suggests that health problems may be related to other socio-economic factors (which are often left out of analysis) and not the crowded living environment (Ekstam, 2015). Research on crowded living often uses objective measures, like a crowding scale (usually by number of rooms needed per family size), and not by subjective individual perceptions of crowding (Ekstam, 2015). The Ekstam (2015) report concludes that little is known about the actual impact of lack of space, how people prioritize size and location, and in what instances crowding leads to problems.

Dak Kopec, the director of design for human health at Boston Architectural College, is concerned that the novelty of living in a small apartment with furniture that requires daily conversion might subside. He explains that people may stop reconfiguring their furniture multiple times a day, which may lead to the small space feeling even smaller (Urist, 2013). However, both Kopec and Saegert agree that micro suites could be beneficial to young professionals who might be already be paying high rents to live in shared small spaces (Urist, 2013).

Many major metropolitan centers around North America are exploring micro suites as a potential solution to increasing unaffordability. In the United States, cities including New York, Boston, Seattle, and San Francisco are currently exploring the allowance and implementation of micro suites (Been, Gross, & Infranca, 2014). Municipal bylaws govern minimum size, parking requirements, density, and other zoning requirements. Because these are municipal regulations each municipality can have different bylaws. Not all municipalities have a minimum dwelling size restriction but parking, density requirements, and other zoning bylaws can also hinder the development of smaller units. Some jurisdictions are allowing micro suite pilot projects before any bylaw changes and others are changing bylaws but requiring micro suite developments to abide by location and zoning requirements (Heather Evans Consulting, 2015).

## **2.6. Examples of smaller units in the City of Vancouver**

Currently, the City of Vancouver requires that all dwelling units be at least 398 square feet with occasional allowances to 320 square feet (City of Vancouver (COV) 2015b). Below are several examples of dwelling types in Vancouver that are allowed below the 398 square foot minimum. These examples make clear that there have been, and are, exceptions even to the 320 square foot rule. These examples provide insight into past and current development options in Vancouver.

The City of Vancouver's Rental 100: Secured Rental Market Housing Policy encourages developers to develop buildings that are 100 percent rental and must remain rental for the life of the building. The policy, which aims at increasing the rental market stock by 5000 units by 2021, has incentives for developers including: increased allowable density, decreased parking requirements, and decreased minimum size to 320 square feet as long as the design meets the City of Vancouver's livability criteria (COV, 2015a). Livability criteria include tower spacing, setbacks, shadowing, view impacts, and contextual fit (COV, 2012).

The City of Vancouver also approved lock-off units in 2009 (COV, 2013). Lock-off units are small units within a condominium, which are rented out by the condominium owner. The units are self-contained and must include a small kitchen and bathroom as well as direct access to a hallway or outside. The minimum size of these units is 280 square feet with allowances down to 205 square feet.

In 1990, the City of Vancouver approved the proposal for the development of 600 Drake, a twelve-story market rental apartment building. The proposal requested a decrease in the minimum unit size to 275 square feet (Sidjack, 1995). The request to decrease unit size was approved and the apartment building was built with a total of a 192 studio and one-bedroom units. Out of the 192 units 64 percent are below 320 square feet (Geller, 15 April, 2013). Concert Properties, the developer of 600 Drake, reports that after 20 years this development has one of the lowest vacancy rates in its portfolio (Geller, 15 April, 2013).

In 2011, the City of Vancouver approved Reliance Properties' application to redevelop Burns Block, a former single room occupancy hotel in Vancouver's Downtown Eastside (Shore, 20 December, 2011). The redevelopment created 30 rental micro units ranging from 226-291 square feet. The units were fully rented out within a week with the age of most tenants between 25 and 35 years old (Shore, 20 December, 2011).

In 2014, Vancouver City Council adopted Micro Dwelling Policies and Guidelines (COV, 2014). These guidelines are exclusively for the Downtown Eastside neighbourhood, and were developed with the purpose of encouraging 'the creation of new livable, affordable micro dwelling rental units' (COV, 2014, paragraph 1). The guidelines allow for a decrease in dwelling unit size with units allowed from 250 to 320 square feet. However, applications for any development with micro units require approval from the Director of Planning or the Development Permit Board (COV, 2014). Additionally the guidelines contain a set of livability requirements including those for light and ventilation, privacy, amenities, outdoor space, and affordability, with rents required to be below market rate (COV, 2014).

These examples show a number of different ways to develop units with sizes below the minimum of 398 square feet. The Rental 100 policy is trying to add stock to the rental housing market in Vancouver as is the policy for lock-off rental units. To date however, developers cannot apply for development permits to build for-sale condominiums at a decreased size or build rental units under 320 square feet outside of the Downtown Eastside.

## **2.7. Current barriers**

Currently the main barrier to the development of micro suites is the requirement, by the City of Vancouver, that all dwelling units be at least 398 (COV 2015b). However, there are other bylaws that impact the size and number of units that can be approved for development. Regulations that impact density such as parking requirements, setback requirements, minimum lot size, and open space and indoor space requirements can directly affect the number and size of units allowed (Gabbe, 2015). These requirements vary by zoning district and addressing and defining each one is beyond the scope of this

research. However, it is important to note that such barriers exist and that they can be changed or altered for certain developments if implementation of micro suites is seen as favorable by the City of Vancouver. It is also important to understand that the minimum size bylaw is not the only regulation that impacts unit size in multi-dwelling developments and removal of this barrier would not immediately allow unrestricted micro suite development. Some of these barriers will be touched upon in case studies where one of these regulations is particularly relevant.

Another barrier is lack of knowledge about the broad consequences of micro suites. As has been pointed out in a study by Been, Gross, & Infranca (2014), there has been little research to date on the consequences of living in such compact sized units. There is also a lack of research on the impact that micro suites have on communities or how micro suites will impact the surrounding housing market. This lack of information creates barriers to the development of micro suite policy, as policy makers are unsure of future impacts and consequences of policy decisions.

Additionally, because micro suites increase density it is essential to consider whether they affect requirements for infrastructure in the surrounding areas. Several studies have suggested that the location and surrounding amenities are highly important factors for the attractiveness and livability of micro suite developments (Been, Gross, & Infranca, 2014; Heather Evans Consulting, 2015; ULI, 2014). Consideration needs to be given to the ability to maintain acceptable levels of livability. Municipalities need to consider the available capacity for increasing infrastructure as well as the current zoning requirements. These considerations ensure that community needs are taken into consideration when developing micro suite policy.

The last barrier is the uncertainty of micro suite performance in the housing market. According to the Financial Post (Posadzki, 9 February, 2015), Canada's five largest banks are uncertain about financing mortgages on micro apartments. This uncertainty comes from the concern that any downturn in the housing market will lead to a sell-off of micro suites with banks not knowing the likelihood of being able to sell the units and recover the mortgage financing (Posadzki, 9 February, 2015). Demand is also uncertain. While smaller units often achieve higher occupancy rates than more

conventional sized units, it is uncertain if this is because of an untapped demand or because of the relative lack of units of this size (ULI, 2014).

## **2.8. Conclusion**

The lack of affordable housing options in Vancouver may be causing millennials to migrate to more affordable locations, which could end up causing a labour shortage and putting long-term growth at risk. The development of micro suites, which in theory provide more affordable options for both ownership and rental, may contribute to retaining more millennials in Vancouver. To date, current bylaws and uncertainty about micro suite impacts has inhibited the development of micro suites in Vancouver.

While homeownership is important to many millennials, it is uncertain if micro suites are the answer to their needs. Most millennials also indicate they wish to have families and micro suites are not suitable for more than one (or potentially two) people. Additionally, while buying a micro suite may allow a millennial to enter the housing market the ability to move up the housing ladder when a larger home is needed is not a given. The price of single-family homes in Vancouver has risen exorbitantly and the gap in ability to purchase a micro suite and a single family home is wide.

More affordable rental is also an important potential outcome from the development of purpose built rental micro suites, however; again there is uncertainty about the reduction in rent that might be enabled by living in smaller units. Uncertainty also remains about other potential impacts and consequences stemming from micro suites including questions regarding livability, impacts on community and required infrastructure, extent of contribution to affordable housing, and land values. This research will attempt to understand the impacts and consequences of micro suites, which will help in answering the following research questions:

### **Research Questions:**

What are the potential positive and negative impacts of including micro suites in Vancouver's housing stock?

If the construction of micro suites is allowed, what policy or set of policies should be required to govern their construction and associated characteristics?

This research seeks to explore if, and how, to reduce the barriers to micro suite development as part of the solution to housing unaffordability for the millennial generation. It also seeks to better understand the potential impacts of micro suites on Vancouver's housing market. Will this type of housing create more affordable options for millennials, helping to retain them in Vancouver?

## **Chapter 3. Methodology**

### **3.1. Methodological justification**

This is a qualitative multi-method study. Multiple methods were used in order to ensure a comprehensive understanding the potential impacts of micro suites, and how those impacts affect potential policy options and solutions. The methods, explained below, included a literature review, exploratory case studies, semi-structured interviews, and a policy analysis.

### **3.2. Literature review**

A literature review was conducted to provide an overview of the recent history of micro suites in North America, as well as information on current approaches to micro suite policy. The literature review also helped create a better understanding of the current barriers surrounding the development of micro suites as well as which other jurisdictions would be important to explore in the case study phase. Publicly available online information was explored using the SFU Library database and Google. Three recent studies on micro suites (Been, Gross, & Infranca, 2014; Heather Evans Consulting, 2015; ULI, 2014) gave an overview of the current state of micro suites in North American jurisdictions, as well as what type of research is being conducted in this field. Additionally, I use information from news articles, journal articles, books, and online content.

### **3.3. Exploratory case studies**

Case studies are the preferred method when the focus of research is on a contemporary phenomenon within a real life context (Yin, 2014). Case studies are also



the preferred method when the aim is to answer 'how' or 'why' questions and when the researcher has little control over the events (Yin, 2009). This research fits well into each of those categories: micro suites are a contemporary phenomenon, the majority of research questions are 'how' and 'why' questions, and the researcher has no control over the development of micro suites in Vancouver or any of the other jurisdictions. This research fits best within the context of exploratory case studies. The aim of exploratory case studies is to explore what is currently unknown (Streb, 2010). Additionally, exploratory case studies are characterized by a lack of a preliminary hypothesis (Streb, 2010).

While micro sized dwelling units are a newer concept in North America, small apartments are not new in many other parts of the world. However, the case studies undertaken in this paper focus exclusively on North America to ensure the scope of this project is reasonable and that the information gained is culturally relevant.

Multiple jurisdictions in Canada and the United States are currently exploring and testing policy options in response to the increased interest in micro suite development as a potential solution to the affordable housing crises. Exploratory case studies examine four of these jurisdictions in order to gain a better understanding of the current reasons for interest in micro suites, any positive or negative impacts of micro suites, solutions for mitigating any negative impacts, and policy responses to micro suite development. Because micro suites are a relatively new phenomenon in North America there are limited measures to indicate the degree of success for this type of housing. The case studies explore any measures of success other jurisdictions are using and any best practices that emerge from trends across jurisdictions. Case studies are essential to understanding the factors that should be given consideration when developing a micro suite policy for the City of Vancouver.

The case study phase involved exploring publicly available information, including newspapers, journal articles, books, and other online content, to gain a comprehensive understanding of micro suite development in other North American jurisdictions. From the research it became clear which cities in the United States and Canada were the most relevant to the current micro suite discussion. Initially seven cities were identified

and generally explored: Surrey, Victoria, Toronto, New York, Boston, San Francisco, and Seattle. These cities were compared to Vancouver across several factors including: population, population density, unaffordability rating, micro suite sizes, minimum dwelling size requirements, micro suite tenure, rationale for pursuing micro suites, median home value, and amount of information available.

After comparing the seven jurisdictions along the above variables, four jurisdictions were chosen based on relevance to the Vancouver context as well as best potential for lessons learned and best practices. The four jurisdictions chosen were: Surrey, New York, San Francisco, and Boston. Although not all of the seven jurisdictions were chosen for case studies, the three not chosen have still had influence on this research.

### 3.3.1. Jurisdiction justification

**Table 2 Jurisdiction comparison**

| Case                               | Vancouver: Base Case | Surrey  | Victoria | Toronto      | NYC Manhattan | Boston  | SF      | Seattle |
|------------------------------------|----------------------|---------|----------|--------------|---------------|---------|---------|---------|
| Country                            | Canada               | Canada  | Canada   | Canada       | USA           | USA     | USA     | USA     |
| Population                         | 664,078              | 542,678 | 220,192  | 2.79 million | 1.6 million   | 655,000 | 849,744 | 662,400 |
| Population density (persons/sq km) | 5,776                | 1,715   | 1998     | 4,427        | 27,733        | 8,431   | 7,023   | 3,049   |

|   |  |                              |           |           |   |                               |                 |                               |
|---|--|------------------------------|-----------|-----------|---|-------------------------------|-----------------|-------------------------------|
| Unaffordability rating <sup>5</sup>                             | 10.6                                       | not separated from Vancouver | 6.9       | 6.7       | 5.9<br>(NY-NJ-PA)                             | 5.4                           | 9.4             | 5.2                           |
| Median condo value <sup>6</sup>                                 | East<br>\$364,500<br><br>West<br>\$590,400 | \$200,000                    | \$291,000 | \$345,700 | \$797,000                                     | \$567,000                     | \$837,000       | \$316,00                      |
| Micro suite sizes   | 260  | 297                          | 250       | 276       | 250   | 350                           | 220             | 220                           |
| Rent/Strata   | n/a  | Strata                       | Strata    | Strata    | Rental with market and below-market component | Rental                        | Rental & Strata | Rental                        |
| Percent population spending over 30% of income on shelter costs | 38%  | 30%                          | 31%       | 32% (CMA) | Renters 55.1%                                 | Renters 50%<br><br>Owners 38% | Renters 42.5%   | Renters 45%<br><br>Owners 30% |

## Surrey

Surrey was chosen based on its contextual relevance to Vancouver. Surrey and Vancouver are two of the 21 municipalities that makeup Metro Vancouver. Each Metro Vancouver municipality is expected to contribute to the regional strategy and so contextually, Surrey and Vancouver have many common goals including: drinking water, air quality, waste, regional parks, regional growth, and affordable housing. Surrey is the

<sup>5</sup> The 12th Annual Demographia International Housing Affordability Survey covers 367 metropolitan markets in nine countries. The Survey rates middle-income housing affordability using the “Median Multiple,” the median house price divided by gross annual median household income. It is widely used for evaluating urban markets, and has been recommended by the World Bank and the United Nations. A rating of severely unaffordable comes from a median multiple of 5.1 or higher, seriously unaffordable 4.1 - 5.0, moderately unaffordable 3.1 – 4.0, and affordable 3.0 and under.

<sup>6</sup> For the US cities the website Zillow was used to obtain the median sales price for one-bedroom units for December 2015. For the Canadian cities I obtained the Benchmark prices for apartments for December 2015 using the real estate board websites for each jurisdiction.

second biggest municipality after Vancouver in the Metro Vancouver region with approximately 543,000 people, compared with Vancouver's 664,000 (BC Statistics, n.d.). While Surrey has a lower density than Vancouver, its population is expected to increase faster. By 2041, Surrey's population will be 801,999 and Vancouver's population will be 830,089 (BC Statistics, n.d.). As was made clear in the background, the problems of affordability are not restricted to the City of Vancouver but affect the surrounding municipalities as well. According to Vancity (March, 2014) by 2030, an average household in Surrey will require 48 percent of its gross annual income to cover housing costs.

To date Surrey has no minimum dwelling size requirements, so the development of micro suite condominiums has been able to proceed. It is the first municipality in Metro Vancouver that has experienced the development and sale of condominiums below 320 square feet. The allowance of suites this small for sale is uncommon amongst cities exploring micro suite development and so particularly relevant to the Vancouver context. Currently there is one micro suite condominium development that has been completed. Two other micro suite condominium developments are under construction with expected completion in 2018.

Even though micro suite developments have been allowed in Surrey, the municipality does not have a micro suite policy. Although Surrey does not have a minimum unit size the city uses floor area ratio calculations of density. However, floor area ratios essentially measure the bulk of a building and do not regulate the size, number of suites, or number of people living in a building. Surrey has had internal discussion regarding the need to develop a micro suite policy (Informant Interview, Personal Communication, 11 December, 2015).

## **New York**

New York City was chosen as a case study to show the approach to micro suite development taken by a city with a much higher population and density than Vancouver's. Like Vancouver, New York has limited land and limited space to create new housing. Also like Vancouver, New York has a minimum unit size bylaw of 400 square feet. Minimum unit size bylaws vary by jurisdiction so finding a city that has the

same minimum size requirements as Vancouver, and is currently exploring micro suites, is rare.

Approximately 55 percent of renters in New York are spending more than 30 percent of their income on housing costs (Woo & Tseng, 27 October, 2015) which is slightly higher than the 46 percent of Vancouver renters spending more than 30 percent (NHS, 2011). I chose New York to show that a city of this size and density, with a long history of unaffordability and housing issues, is taking a very cautious approach to micro suites. New York is currently allowing a pilot project for micro suites.

### **Boston**

Boston was chosen as a case study for several reasons. The populations of both Boston and Vancouver for 2014 were similar at 655,884 and 658,485 respectively (United States Census, 2014; BC Statistics, 2015). Boston requires dwelling units to be a minimum of 450 square feet (50 square feet higher than Vancouver) and one mile from public transit (ULI, 2014). Boston is only allowing a decrease to 350 square feet for micro suites, which is not as small as the proposed size decrease in Vancouver.

Boston's micro suite justification is the most similar to Vancouver's; affordable housing for millennials. Approximately one-third of Bostonians are aged 20-34, which makes Boston the city with the highest percent of millennials in the US (Khalid, 2014). According to Barry Bluestone, a housing economist at Northeastern University "What we really need to do is have an effort to build housing for this particular (millennial) population" (as cited in Khalid, 2014). Bluestone argues that groups of singles living in family housing need housing built specifically for them. This would create more affordable housing for young people as well as free up family housing for families (Khalid, 2014). Because of Boston's justification, as well as population and minimum size restrictions, I thought it would be important to include this jurisdiction's approach. Boston is currently allowing a capped number in a specified neighbourhood.

## **San Francisco**

San Francisco is one of the jurisdictions in the US that does not restrict the development of micro suites to purpose built rental. Because Vancouver is considering these micro units for sale it is important to explore the policies and reasoning behind San Francisco's decisions. This jurisdiction also has a clear policy and future direction regarding micro suites, which sets it apart from the other jurisdictions.

San Francisco, like Vancouver, is one of the least affordable cities in the world ranking ninth, in the top ten most unaffordable cities (Cox & Pavletich, 2016). Its affordability rating makes it the most similar, of the four cases, in affordability to Vancouver. Both cities have similar median home prices as well according to the 12<sup>th</sup> Annual Demographia International Housing Affordability Survey with Vancouver's median home price at \$756,200 and San Francisco's at \$809,400 (Cox & Pavletich, 2016).

The case studies were not chosen to represent highly similar situations but instead to give a greater understanding of the many current approaches being taken. These cases are intended to show more and less cautious approaches as well as provide insight into what commonalities and differences emerge from these four approaches.

### **3.3.2. Case study framework**

The framework for the case studies will include two dependent variables and multiple independent variables. The dependent variables of supply and demand for micro suites will be evaluated on the basis of the independent variables. Because there are a large number of variables that affect the supply and demand of micro suites, the independent variables were grouped into three main categories: characteristics of the dwelling unit, the characteristics of the neighbourhood, and the policy variables that affect the supply and demand outcomes for micro suites. Certain independent variables, such as price, overlap both the supply and demand sides of the equation. The variables within each category are listed below.

**Characteristics of dwelling unit:** minimum unit size, design, building amenities, and enabled price reductions.

**Characteristics of neighbourhood:** location, proximity to transit, and neighbourhood amenities.

**Policy variables:** tenure, percent of micro suites per development, maximum occupancy requirements, parking requirements, and review processes.

The information gained in this phase will help in understanding potential positive and negative impacts of micro suites, current practices and potential policy options from other jurisdictions, and potential measures of success. The case studies will give an understanding of what range of policies are being used in other jurisdictions and which policies seem the most important and relevant. This will help in the formation of policy options and recommendations for the City of Vancouver.

### **3.4. Semi-structured interviews**

Interviews were chosen in order to obtain relevant information and fill in the gaps for the case study jurisdictions. Additionally, interviews were also seen as a way to obtain expert opinions on the Vancouver context. Semi-structured interviews were chosen as they allowed for flexibility in participant answers however remain structured enough to keep the interview on track to answer the research questions. Semi-structured interviews are effective when the researcher has some understanding of the topic area but wants to expand their knowledge (Barlow, 2010). After reviewing the relevant literature and case studies, interview themes and questions were developed to guide the semi-structured interviews.

Interviews were conducted with at least one expert from New York, San Francisco, and Surrey. Attempts to obtain information from Boston were unsuccessful. Two interviews were conducted with Vancouver housing experts. These expert interviews were intended to supplement the literature, the case studies, and to provide information on potential impacts and policy options for Vancouver.

Contact information for participants was obtained through personal contacts, publically available web sources, and the snowballing recruitment method. Three interviews were conducted in person in the Metro Vancouver area, and three interviews were conducted over the phone with participants from the United States. The interviews with experts in Metro Vancouver were all face-to-face. The interviews with experts in the United States were conducted over the phone as I did not have the time or budget to travel to the case study jurisdictions. The interviews lasted in length from 15 to 85 minutes.

### **3.5. Policy analysis**

Three policy options were created with information obtained from the literature, case studies, and interviews. The consequences of the policy options were evaluated according to a number of objectives. The objectives chosen were: human development, effectiveness, stakeholder acceptability, and administrative ease. Options were evaluated quantitatively where numbers were the best measure and qualitatively when no numbers were available or if numbers would not have been an appropriate measure. A more detailed explanation of the policy analysis and the criteria and measures can be found in chapter 6.



## **Chapter 4. Case Studies**

### **4.1. Case study backgrounds**

#### **San Francisco**

Prior to 2012, the San Francisco Planning Code did not define Efficiency Dwelling Units (EDUs) aside from a set of criteria requiring units to have at least a 220 square foot living room including a kitchen with additional square footage for a bathroom and closet. In 2012, the Planning Code was revised to allow units to be 220 square feet total including the bathroom and closet. A new category of dwelling unit was added to the Planning Code called “Efficiency Dwelling Units with Reduced Square Footage.” The change in dwelling unit size was only applicable to new development and a cap on the number of units was set at 375 (with a review taking place after 325 were built). The cap did not include affordable, group, or student housing. To date no EDUs have been built. There were several proposed developments with EDUs however these developments changed to student or other housing not counted towards the EDU cap.

San Francisco also has Group Housing, which is defined separately from ‘dwelling unit’ as it provides smaller shared or private bedrooms with limited cooking facilities. There are common shared spaces such as living rooms, kitchens, and often bathrooms. The bedrooms/units themselves are defined as below 350 square feet and there is no minimum size requirement. In the past, Group Housing was exempt from inclusionary zoning policies and was generally built to serve populations with special needs however, more recently the target population has changed and these units are being developed as market rate private bedroom suites. A 2015 change to the Planning Code has required Group Housing to comply with inclusionary zoning policies. However, Group Housing requirements are more flexible than EDU requirements and recent years have seen the development of small units of Group Housing.

This background is necessary to understand the current practices in San Francisco. While there are not currently any developments with EDUs there was policy created for these small units that takes many of the case study variables into account. Additionally San Francisco does have units below 300 square feet that would be considered 'micro' in Vancouver, as well as Group Housing developments with units below even 220 square feet. I will use their EDU policy as well as examples of units below 300 square feet to discuss the variables related to the case study. Additionally a developer in San Francisco had a graduate student live in a micro suite and give feedback on design and livability (Disbrow, 2013).

### **Surrey**

Surrey was developed as a suburb of Vancouver and does not have the high density usually associated with micro suite development. To date the smallest built or proposed units are 297 square feet. The city has one completed development containing micro suites and two others that are under construction. The condominiums under construction went up for presale in April and May of 2015. The city however, is in the process of developing policy and guidelines to guide the future development of smaller units. Under consideration are factors such as minimum size, location, unit-mix requirements, proximity to transit, and building and neighbourhood amenity requirements. (Personal Communication, 11 December, 2015).

### **New York**

New York's current minimum dwelling unit size requirement of 400 square feet was not enacted until 1987, and there are many apartments in New York under the 400 square foot requirement. According to an article in the New York Times it is estimated that there are approximately 3000 units below the minimum size in Manhattan alone (Shutler, 20 February, 2015). In addition to size requirements New York also has unit-mix requirements that prohibit a building from developing units that are all the same size. In 2012, New York City launched the adAPT NYC competition which sought design proposals for a development made up entirely of suites in the 275 to 300 square foot range, which is not allowed under current regulations. City owned land was provided as the development site and certain zoning regulations were waived for the pilot project.

The intent was to test the creation of a new housing model in order help to keep up with the changing population demographics. The number of one and two person households in New York is greater than the number of studio and one-bedroom suites. The competition was part of Mayor Bloomberg's New Housing Marketplace Plan; an initiative to create or preserve 165,000 units of affordable housing by the end of the 2014 fiscal year. The request for proposal was downloaded over 1,600 times from national and international cities and 33 submissions were received by the deadline.

The winning team's project, originally called My Micro NY and now called Carmel Place, will be completed February 1, 2016. The nine-story building is composed of 55 units ranging from 250-370 square feet and 40 percent of the units are designated as below market rate.

## **Boston**

The situation in Boston is not entirely clear. The idea of micro suites or 'innovation units' emerged in 2010. Mayor Menino decided to allow the development of units down to 350 square feet (from the 450 square foot minimum) but only in the South Boston Innovation District. The initial number of units allowed was capped at 195 and the City of Boston partnered with the Harvard Rappaport Institute to study the social and economic effects of these smaller units to help in deciding the future of micro suite housing in Boston. The reasoning for smaller units was to help create more affordable housing in an urban area for the millennial demographic. The population of Boston residents' aged 20-34 is high, around 35 percent, and a survey of this population found that a large percent of the respondents would make compromises to live downtown (Ross, 13, December, 2011). Nick Martin, spokesperson for the Boston Redevelopment Authority, was quoted in an online article stating, "What we really intended when we started the innovation housing unit experience was that we'd incentivize building smaller units because they could be constructed, leased, and rented at a lower price. But we were surprised the level of demand was so high for these, so the prices were higher than we expected" (Hofherr, 10 April, 2015). As of February 2014 there were 77 units under construction and 205 more approved, with no plans to expand beyond the seaport district (Khalid, 17 February, 2014).

## 4.2. Case study data

The case studies are set up below by the independent variables. All four cases will be discussed under each of the three sections to allow for immediate comparison and context. It was not possible to find information on every characteristic for each jurisdiction so each of the independent variables contains the information that was available. Some of the independent variables overlap into more than one category.

### 4.2.1. Unit characteristics

This section will discuss factors related to the dwelling unit in each jurisdiction including characteristics such as: minimum unit size, design, building amenities, and enabled price reductions.

**Minimum unit size.** The minimum unit size is one of the most relevant characteristics as the minimum size bylaw in Vancouver is currently the main barrier to the development of micro suites. Surrey does not have a minimum size bylaw but has allowed the development of suites as small as 297 square feet. However, the City of Surrey is in the process of developing a micro suite policy and would likely not support units below approximately 300 square feet. The city is considering 320 square feet as its minimum unit size (Informant Interview, Personal Communication, 11 December, 2015). New York has the same minimum size bylaw as Vancouver at 400 square feet. This bylaw has been waived for the city's current micro suite pilot project and suites as small as 250 square feet have been allowed. In September 2015, the New York Department of City Planning proposed the removal of 400 square foot requirement for dwelling units. The proposal argued that the building code, density requirements, and other regulations would effectively limit unit sizes so the 400 square foot bylaw is unnecessary and restricts flexibility in unit size (New York City Department of City Planning, 2015). On February 3, 2016, the City Planning Commission approved this proposal for review and consideration by City Council.

Boston has the highest minimum unit size requirements of the four cases. Boston requires a dwelling unit to be a minimum of 450 square feet and within one mile of transit (ULI, 2014). In testing out micro suites Boston has allowed for a decrease to 350 square

feet (Been, Gross, & Infranca, 2014). The Mayor of Boston has also proposed a change in minimum size to allow many units in the 375 to 400 square foot range (Heather Evans Consulting, 2015). In 2012, San Francisco approved a change to allow suites as small as 220 square feet including bathroom and kitchen. This change only applies to new housing and not to existing units (San Francisco Planning Department, 2013). Currently there are not any developments in San Francisco with units at the 220 square foot minimum. There have been developments dubbed 'micro units' by developers but so far many of these have become student housing or other types of non-market housing.

**Design.** Design has been an important factor to date in studies on micro suites. Because of the small size the design of micro suites has been a challenge, albeit one greeted by architects and developers. The New York adAPT NYC program asked for submissions for the design, construction, and management of a micro unit building. The winning design included ceilings over nine feet tall, sliding glass doors to Juliet balconies, and convertible furniture with a bed that pulls down from the wall and a desk that converts to a dining table. Additionally, tenants are offered the option of buying an 'Ollie Box,' which is filled with items to decorate a small space (Kaysen, 20 November, 2015).

The type of design described above is not unique. In San Francisco, developer Patrick Kennedy created a prototype micro suite and had a graduate student live in it and provide feedback. The unit was only 178 square feet, which is smaller than most proposed micro suites to date. The feedback was to help with the design of an upcoming micro suite development (Anderson, 13 February, 2015). The development, completed in 2013 and now used as student housing, includes nine-foot ceilings, custom built-ins, washer/dryers, and 'TableBeds,' which are queen-sized beds that fold up into the wall and contain a table that folds out from the underside of the bed. The units also have very high-end interior finishes including porcelain tiled bathrooms, Caesarstone countertops, and Plyboo hardwood floors (Panoramic Interests, n.d).

Design mock-ups and pictures from micro suite developments in Surrey echo these same design features. Design features are also used to help create the illusion of a larger space. Ceilings are approximately nine feet tall, sliding glass doors or floor to

ceiling windows bring in natural light, and white or light color palates help to create a more spacious experience. Additionally, flexible and convertible furniture, as well as custom millwork, help to maximize the small space.

Design is especially important in these micro suites in the context of demand. Marketing for one micro suite condo in Surrey explains “We’ve created the micro-lofts at Balance to make homeownership accessible for people who choose quality construction and intelligent design over sprawling square footage” (Tien Sher, n.d.). Additionally, the City of Surrey has a city architect considering what aspects of design and what amenities contribute to increasing livability. These considerations will likely be outlined in an urban design guideline (Informant Interview, Personal Communication, 11 December, 2015).

Because micro units in Boston are not as compact as the other jurisdictions being explored the design and inclusion of convertible furniture is not as important. However, the quality of the units was still a highly important factor in design and feature inclusion. As advertised on the website of one micro unit development in Boston “Each apartment is furnished with striking, sustainable features, and smart design” (Factory 63, n.d.)

***Building amenities.*** Another important characteristic of micro suites are the building amenities offered outside of the individual units. Reduced unit size can be partially offset by providing communal spaces outside the units that are accessible and available to all residents. This gives residents more living space than their small suite alone. One of the micro suite developments in Surrey, upon completion, will be offering a fully equipped gym, a wellness area with a yoga studio and massage room, sauna and steam room, private music practice rooms, private study rooms, entertainment rooms with kitchens, a rooftop garden, a fully equipped business center, a meeting and group study room, and a roof top lounge and patio with a fully landscaped garden, full kitchen, large dining room, cocktail lounge, and outdoor barbeque (Prime on the Plaza, n.d.).

In New York, Carmel Place will be offering amenities that are intended to encourage resident interaction. These amenities include a gym, a resident lounge, and an outdoor terrace. Additionally, the building will offer a virtual doorman (an off-site

monitoring service), laundry facilities, storage room, and a bike room (NYC HPD, 20 May, 2015). Boston's most reported on micro suite development offers shared workspace, conference rooms, a deck with a grill, and a common kitchen (Factory 63, n.d.). Additionally each resident is entitled to a nine-foot storage cube that is included in the rent (ULI, 2014).

In San Francisco the developments with units below 300 square feet include common amenity space. Amenity spaces include rooftop decks and patios, indoor lounges, accessible laundry facilities, and bike storage. One building even features a rooftop outdoor cinema and fitness centre.

**Enabled price reduction.** The price reduction enabled by micro suite development is a measure of affordability. In New York the first round of the market rate micro units are to lease for \$2,500 to \$2,900 per month. In October 2015 the average studio size in New York was 550 square feet and the median rent was \$2,555<sup>7</sup> (Kaysen, 20 November, 2015). These numbers indicate that aside from the below market rate units there is no real price reduction enabled by these smaller units. Residents will be paying approximately the same rent as the median but for 200 square feet less.

In Boston the rents at one micro suite development range from \$1,699 to \$2,450 per month (ULI, 2014). In 2014, in the same neighbourhood as the micro suite development, the median rent for a studio in Boston was \$2,225 (Zillow Data, n.d.). This on the higher end of the micro suite rents but still within the micro suite rent range indicating there is little enabled savings from renting a micro suite.

In Surrey all micro suites have been developed for sale. The first micro suite building developed (with units as small as 297 square feet) went on sale in April 2013 with prices starting at \$109,000 (Huffington Post BC, 18 April, 2013). The next two micro suite developments, which are still under construction, have presale prices starting at \$93,900 and \$139,900 (Macnair, 10 February, 2015). For comparison, the median price

<sup>7</sup> The median may not accurately reflect the median rents for newer studio apartments as there is still rent controlled and rent stabilized apartments. Data for rents for newer studio apartments was not available.

of a condo in the 400 to 700 square foot range in North Surrey as of November 2015 was \$161,900 (based on data from 12 months of activity) (Fraser Valley Real Estate Board, 17 December, 2015). These numbers show that a person can save between 14 and 42 percent by buying a smaller unit over a more conventional sized one.

While developers may be interested in micro suite supply as a way of achieving higher returns, none of the cases make clear the point at which micro suite demand would decrease as a result of price. Research from the Urban Land Institute suggests that survey respondents expect the rents for micro suites to be 21 to 30 percent less than that of a comparable studio (ULI, 2014). However, whether or not that expectation will translate to the actual demand of micro suites is unknown.

Evidence from the case studies suggests there is demand for micro suites. In Surrey, hundreds of people lined up in April 2015 to purchase a condominium at Evolve Tower where the cheapest listing was \$93,900 for a 316 square foot unit (CTV, 11, April 2015). Most of the 80 micro units in this development (which had a total of 406 units) were sold by the end of the day. In Victoria, presales for The Janion development saw the micro suite units sell out in one weekend with prices starting at \$110,000. The remaining larger units were reconfigured into smaller units to meet market demand (Heather Evans Consulting, 2015).

In, 60,000 people applied to live in the 14 below-market rate units in the micro suite pilot project development (Kaysen, 20 November, 2015). In Vancouver the micro suites at Burns Block and 600 Drake do not currently have any units available.

#### **4.2.2. Characteristics of neighbourhood**

This section will discuss factors related to the neighbourhood in each jurisdiction including characteristics such as: location, proximity to transit, and neighbourhood amenities.

***Location, transit, and neighbourhood amenities.*** Location is a major factor in micro suite development. Because the intent of micro suites is to allow residents to live in an urban area with easy access to work, retail, shopping, and entertainment, it is



necessary to consider the location of these developments. Vancouver developer Jon Stovell believes that with such small units the neighbourhood and surrounding amenities function as a person's living room. "We are saying it's a 300-square-foot condominium with a two-million-square-foot living room" (Cleverley, 26 October, 2013).

In Surrey, all three micro suite developments are located in the City Center, a downtown core. The area is close to transit, Simon Fraser University's Surrey Campus, Surrey City Hall, recreation facilities, a large shopping centre, a park, and new commercial and residential developments. Surrey is considering requiring all developments with micro suites to be within 400 meters of transit and the only neighbourhood where micro units will be allowed is City Center (Informant Interview, Personal Communication, 11 December, 2015).

In New York, the micro suite development is located in Manhattan, all of which is a dense urban center with easy access to city amenities. Boston has restricted the development of micro units to the 'Innovation District.' This district is a waterfront area that Mayor Menino wanted to transform 'into an urban environment that fosters innovation, collaboration, and entrepreneurship' (Boston's Innovation District, n.d.). Part of the strategy is to develop a neighbourhood with many amenities including restaurants, nightlife, cultural institutions, and easy access to transit. San Francisco has not limited the area in which micro units can be built.

Walkability is often discussed in relation to the location of micro units. New York, San Francisco, and Boston have the top three highest walk scores in the United States ([www.walkscore.com](http://www.walkscore.com)). In Canada, Vancouver rates at the number one city for walkability. Surrey is the anomaly in this case with a much lower walkability score.

The Urban Land Institute survey found that when asked why respondents would consider a micro suite, the primary reason after price was desired location (ULI, 2014). The highly urban locations under discussion, excluding Surrey, all have very low vacancy rates and very high ownership costs. These factors contribute to the increased demand for more affordable options, as well as increasing pressure on municipalities to supply more affordable options.

### 4.2.3. Policy variables

This section will discuss the policy variables that can impact the supply of, and demand for, micro suites. These policy variables include: tenure, percent of micro suites per development, tenant restrictions, parking requirements, and review processes.

**Tenure.** One interesting question to ask is if micro suites are for rent or for sale. Surrey's micro suite developments to date have all been for sale. San Francisco does not have a bylaw restricting the development of micro suites to purpose built rental. On the contrary New York and Boston, to the best of my knowledge, have only allowed the micro suite developments as purpose built rental. In New York, a portion of the units are designated as affordable. Out of the 55 units, 14 are below market rate and eight are reserved for formerly homeless veterans (Kaysen, 20 November, 2015). The remaining 33 apartments are to be leased out at market rate.

**Percent of micro suites per development.** The number of micro units in each development is also an important consideration as this relates to certain zoning policies. Overlay zoning is a type of zoning where certain policies are layered on top of one another to ensure certain requirements are met. For example, an overlay might include one layer of unit-mix requirements (like 50 percent studio or one-bedrooms and 50 percent two or more bedrooms) and a second layer that requires a certain parking regulations per number of units. These types of policy vary by jurisdiction as well as by zoning area within each jurisdiction. This type of zoning often prohibits a building from being entirely composed of one type of unit, i.e., micro suites.

In Surrey to date, neither the completed or under construction micro suite developments have been 100 percent micro suites. The first development in Surrey that included micro suites had 60 percent of the suites below 312 square feet. The largest suite in the development was a one bedroom at 653 square feet (The Huffington Post BC, 18 April, 2014). One of the developments under construction will have 38 percent of the units below 399 square feet with 16 percent being below 312 square feet. The last proposed micro suite development has not yet release exact sizes for its studio units. Surrey does not currently have unit-mix requirements for residential developments but is considering instituting mix requirements for buildings containing micro suites. One

reason for this is that smaller units can attract more transient residents, which leads to more difficulty in community and neighbourhood development (Informant Interview, Personal Communication, 11 December, 2015).

Boston's most frequently discussed micro suite development also has approximately 60 percent micro suites. The micro suite pilot project that is taking place in New York has waived the zoning requirements and has allowed a building that is entirely micro suites (260-360 square feet). However, unless potential future developments received an exemption, regular zoning would apply and require buildings that were not entirely micro suites.

**Building size.** The New York development and the Surrey development that has 60 percent micro units have a total of 55 units and 56 units respectively. The Boston development with 60 percent micro suites has a total of 38 units. These are all small compared to the two other Surrey developments, which contain far fewer micro units, and are proposed to have 398 and 402 units total.

**Maximum occupancy requirements.** In an attempt to prevent crowded living, San Francisco has placed a two-person limit on the number of people who can occupy a micro suite. There is no such requirement in Surrey and as far as I can tell this requirement is also non-existent in Boston and New York. Additionally, the third most important factor that would make a potential renter choose a micro suite over a more conventional sized unit was the ability to live alone (ULI, 2014).

**Parking requirements.** Parking requirements can be a considerable barrier to developing micro units. An average parking spot in Metro Vancouver costs between \$10,000 (on-street) and \$40,000 (underground) to construct (Surrey, 1 October 2013). The cost of constructing parking is then passed onto the consumer, which raises the sale price of the units. Proposed micro and group housing projects in San Francisco are in areas where parking is not a requirement (Seattle Department of Planning and Development, June 2014). In New York parking is not required in the area of the new micro suite development. Boston bases the requirements on floor area ratios and off street parking is not required in all neighbourhoods (Seattle Department of Planning and Development, June 2014). In Surrey staff have proposed reducing parking requirements

for some uses and require cash in lieu for any parking relaxations beyond these rates. The cash in lieu is used by the city to invest in other transportation options including parking facilities, community improvements, and more in order to mitigate any shortfall of parking from reduced requirements (City of Surrey, 18 June, 2012). One micro suite development in Surrey was required to mitigate the reduction of five parking spaces with one car-share vehicle and \$10,000 per space for each of the remaining four spaces (City of Surrey, 1 October, 2012).

**Review processes.** Boston and San Francisco both indicate that they will be undertaking a review after certain number of micro units have been built to determine the impacts of units and help make informed decisions moving forward. New York currently has no plans of a review but is using its pilot project as a starting point, and waiting to see how the project, as well as the proposed elimination of minimum unit size bylaw, unfolds. Surrey is not conducting a review but is currently in the process of considering and developing micro suite policies in response to the micro suite development that has taken place to date.

The policies decided upon by each jurisdiction will contribute to the ability and interest developers have in supplying micro suites, with less stringent regulations likely leading to more micro suite development.

### **4.3. Summary**

- All case study jurisdictions are having problems with housing affordability and are considering or experimenting with reducing dwelling unit sizes.
- Design and amenities are important considerations for livability and making micro suites attractive to consumers.
- Price reductions in the rental market have thus far not been significant. In the condo market micro suites have been less expensive than more traditional sized units.
- All considered jurisdictions, except Surrey, are highly urban cities with high walkability scores.

- Outside of Surrey the micro suites have generally been developed for the rental market.
- Outside of the New York pilot project, micro suite developments generally have a mix of unit sizes within the development.
- Parking requirements are an important to consider as they can have an effect on the cost of development. They can also hinder development where parking requirements are high.
- Review processes to study the social and economic impacts of micro suites have been discussed by two of the jurisdictions indicating the unknown nature of the consequences of micro suite development. However, it is unknown if these review processes are actually going to be completed.

The next chapter will use the information from these case studies as well as from the literature and interviews to consider and analyze the options facing Vancouver regarding the development of micro suites.

## **Chapter 5. Criteria for evaluation**

Assessment of each policy option was based on societal goals or objectives. First, I picked societal objectives that related to my topic area and research including human development, effectiveness, stakeholder acceptability, and administrative ease. Second, I created one or more criteria for each of the societal objectives to focus in on my specific topic. Lastly, I chose measures for each of the criteria so that each policy option could be measured against the others on each criterion. This chapter will discuss each objective, how it was chosen, and how it will be measured.

### **5.1. Human development**

As discussed in the background, millennials are being priced out of the Vancouver housing market, and if they choose to move elsewhere the city could face a labour shortage. The goal is to retain millennials in, and attract millennials to Vancouver by providing more affordable housing options. The Canada Mortgage and Housing Corporation (CMHC) defines 'affordable' as spending no more than 30 percent of total before-tax income on dwelling costs (CMHC, n.d., A). While I cannot measure how many millennials would be retained if micro units were developed in Vancouver I can provide information on the price of housing for the policy options. This will be measured in two ways. First, by the income required for to buy or rent in Vancouver without spending more than 30 percent of income on shelter costs and second, by the cost per square foot of units. These measures will focus on the downtown peninsula to ensure consistent comparison.

## 5.2. Effectiveness

From the arguments in this paper it is clear that housing supply does not meet demand in Vancouver. Having appropriate housing is considered a human right, however appropriateness varies greatly by factors such as age, gender, desired location, family size, income, and culture. Appropriate housing does not have a one-size-fits-all solution and it is very important to have a diverse housing stock. The first goal of the Metro Vancouver Regional Affordable Housing Strategy (2015) is to “Expand the supply and diversity of housing to meet a variety of needs” (p. 22). It also states “This goal recognizes that to meet the growing and changing needs of the workforce and other residents, it is desirable that the market produce a wider variety of housing forms and tenures at a variety of price points, including for specific populations with distinct needs (p.22).” There are four goals within this larger goal and two are particularly relevant here. Goal 1.1 Diversify the housing supply in terms of unit and lot size, number of bedrooms, built form and tenure. Goal 1.3 Plan for the special housing needs of specific populations.

The City of Vancouver’s Housing and Homelessness Strategy states, “the City is committed to policies and actions to improve housing affordability and diversity at all points along the continuum” (p. 5). Strategic direction 2, Action 3 states, “Use financial and regulatory tools to encourage a variety of housing types and tenures that meet the needs of diverse households” (p. 6).

Vancouver’s increasing population will require a wide variety of housing. To meet projected housing demand Vancouver needs 42,200 additional housing units by 2021 (Eberle, Woodward, Thompson, & Kraus, 2011). The Metro Vancouver Regional Housing Strategy indicates that the focus for homeownership should be on creating diversity and choice in entry-level homeownership category (Metro Vancouver, 2015).

The effect of each policy option on housing supply and demand will be discussed based on qualitative information from the literature, case studies, and interviews.

### **5.3. Stakeholder acceptability**

The relevant stakeholders in this research are the developers, the City, and the public. The acceptability of each option to each group will be measured based on qualitative information from interviews, case studies, and the literature. More specifically the measure of each option will be on a continuum of the type and level of concern that each option raises.

### **5.4. Administrative ease**

Administrative ease refers to the number of resources required to implement each option. I will use the number of processes required for each policy option to measure the administrative ease, with fewer resources corresponding to greater ease. Processes include:

- Re-writing bylaws
- Administrative changes to the development proposal acceptance process
- Implementing pilot projects
- Public consultation processes
- Conducting reviews
- Monitoring the consequences

More specifically, the policy options will be ranked by the following:

High = No increase in processes

Medium = Requires some increase in processes

Low = Requires most of/all of the processes



## 5.5. Summary matrix

**Table 3 Criteria and measures matrix**

| Societal Objectives               | Criteria  | Measure  |
|-----------------------------------|---|--|
| Human Development (Affordability) | Retain millennials in Vancouver by providing more affordable housing  | 1. Income needed to buy and to rent<br>2. Cost per square foot   |
| Effectiveness                     | Supply and demand   | Qualitative  |
| Government Objectives             |   |  |
| Stakeholder acceptability         | Expression of support or opposition: Developers, City of Vancouver, Public/neighbourhood  | Qualitative  |
| Administrative ease               | <ul style="list-style-type: none"> <li>• Re-writing bylaws</li> <li>• Administrative changes to development proposal acceptance process</li> <li>• Implementing pilot projects</li> <li>• Public consultation processes</li> <li>• Conducting reviews</li> <li>• Monitoring consequences</li> </ul> | <p>High = No increase in processes</p> <p>Medium = Requires some increase in processes</p> <p>Low = Requires most of/all the processes</p> |

## 5.6. Other considerations

### 5.6.1. Safety and well-being

Having suitable living conditions is an important contributor to feelings of safety and wellbeing. The CMHC defines suitable housing as housing that has enough bedrooms for the size and make-up of resident households, according to National

Occupancy Standard (NOS) requirements. These requirements state that it is suitable for a single person to occupy a bachelor unit. Adequate is defined, by CMHC, as housing that does not require any major repairs, according to residents. Livability is often discussed as important aspect to safe and suitable housing but can be very difficult to define. The City of Vancouver does not clearly define livability anywhere. As discussed in the background, the city did develop design guidelines for its Downtown Eastside micro suite policy. The guidelines contain a set of livability requirements including those for light and ventilation, privacy, amenities, outdoor space, and affordability (COV, 2014). Any new policy on micro suites should follow the same livability requirements set out in the Downtown Eastside micro suite design guidelines. However, these guidelines alone cannot predict livability. The effect of long-term livability from residing in smaller units has not yet been studied in North America. As discussed in the section on regulatory design (Chapter 7), there are factors that can help contribute to the livability to micro suites including: size, design, location, building size, unit-mix, and amenities.

### **5.6.2. Development cost levies and financing growth**

Development cost levies (DCLs) are a charge on most new developments paid by property developers and based on the square footage of the development. The DCLs help to pay for new capital costs in the city such as parks, childcare facilities, social and non-profit housing, and engineering infrastructure. The charge is based on how much is required per person. Developers pay the DCLs, which help to finance the growth of the city and ensure that there is enough money to pay for new infrastructure. Under the Vancouver Charter, and based on a Provincial requirement, DCLs are not charged on units that are below 312 square feet.

DCLs are currently waived for developments that are entirely rental when the tenure is secured through a Housing Agreement. This is to encourage the development of rental as there is a high need for rental in the city but it is less financially lucrative than building strata developments.

Micro suites, if allowed, would be exempt from DCLs whether developed for rent or sale. Rental only micro suite developments would be exempt from paying the DCL

under the current waiver for rental only developments, which leads to no change from the status quo for developing rental housing. Strata titled micro suite developments would be exempt under the Charter for units below 312 square feet. This would be a departure from the current requirement for DCL payment on new development. New development equates to more people living in an area who require more services in that area. For every new strata titled micro suite development the city would lose the money it requires to accommodate more people and to help finance the growth of the city.

Developers must factor DCL payments into the overall project budget. Developers not required to pay DCLs would have a slightly higher budget to bid for land, which may give them an incentive to develop micro suites and may lead to them outbidding other types of housing developments, all else being equal. These are important factors to consider when trying assessing the consequences of micro suite development.

## **5.7. Immeasurable criteria**

There are three criteria that I initially hoped to use to compare policy options but I have concluded these are not possible to measure at this time. However, I believe it is still important be aware of these are as they should become measurable in the future. These criteria are important considerations and can alert policy makers to what they should be watching for as micro suite development unfolds, here and/or in other jurisdictions.

The first immeasurable criterion is equity. While micro suites may contribute a type of housing suitable and appropriate for some, its size will not be suitable for many individuals and families. Could micro suites replace bachelor suites as the new most affordable size of housing? Will this disproportionately impact lower income individuals and families? Will certain populations be forced into living in small spaces because other options have increased in price? These questions are extremely important but unfortunately beyond the scope of my research. There are not currently enough measurable outcomes to predict the answer to any of the above questions. However, awareness of these problems is essential so that they are easily recognizable if they

start to arise. Consideration should be taken for how to approach potential problems if they arise.

The second immeasurable criterion is the longevity of the affordability. How long would micro suites remain more affordable than larger units and how long would they remain affordable in general? One way to measure this would be to watch the increase in price over time and compare it to the increases in other housing types. Alternatively, one could measure the proportion of the population for which micro suites remain affordable for over time.

Lastly is the question of the ability to attract the target population. While it cannot be predicted who exactly will want to buy or rent, the characteristics of millennials, especially those who are single and childless, are the logical demographic for the micro suite market. However, will millennials be the main demographic interested in purchasing or living in micro suites? Who would actually buy or rent a micro suite? Is there a difference in the demographic that would purchase versus rent a micro suite? Will micro suites be effective in helping retain millennials in Vancouver? How effective? These questions are all important but not measurable at this time.

## **Chapter 6. Policy options and analysis**

After gaining insight on the approaches of other jurisdictions as well as insights from interviews with experts, three policy options were formed. These three policies represent the options the City of Vancouver has in responding to the push for micro suites as a way to help retain millennials in the region. These policy options are the initial steps the City needs to consider in whether or not to allow micro suites. If the answer is yes, a secondary set of questions needs consideration. These will be noted in the chapter on regulatory design, but are beyond my scope to fully analyse. Option 1 prevents the development of micro suites and maintains the status quo until such time as more information about micro suites is available. Options 2 and 3 allow for the development of micro suites but proceed using different approaches.

Following this analysis is a chapter dedicated to regulatory design. This chapter addresses important aspects of micro suite policy design such as appropriate unit size, strata versus rental, design and amenities, location and parking, building size, unit-mix, and maximum occupancy.

### **6.1. Option 1: Status Quo**

Option one is to maintain the status quo. This option would not allow any changes to the current bylaws. Micro suites would continue to be prohibited until such time as more favourable and comprehensive evidence appears.

#### **6.1.1. Affordability of housing**

As has been discussed repeatedly in this paper, housing is not affordable in Vancouver. In Chapter 2, I discussed income and affordability for purchasing and renting a home in Vancouver. What is most relevant here is the annual median income for

individuals (in the millennial age range) as micro suites are only really conducive to single person households. The annual median income for a millennial is \$34,258. The current income required to own a studio unit in three areas of Vancouver is shown in the table below.

**Table 4 Monthly cost of ownership for median priced unit (2014), yearly income, and difference from millennial median income**

|  | Downtown<br>(Zone 1-3) | Eastside<br>(Zone 8-10) | Westside<br>(Zone 4-7) |
|--|------------------------|-------------------------|------------------------|
| Studio: median monthly cost to own       | \$2,255                | \$1,721                 | \$1,868                |
| Yearly income required                   | \$90,200               | \$68,840                | \$74,720               |
| Difference from millennial median income | \$55,942               | \$34,582                | \$40,462               |

Note: Monthly costs of Ownership are based on the following assumptions: median of all BC Assessment recent sales prices in Vancouver Eastside in 2014 by unit type, 10% down payment, 5% mortgage rate, 25-year amortization, \$150 – 250 monthly strata fees and monthly property taxes at \$3.68 per \$1,000 of assessed value. Data from City of Vancouver.

The average rent for a studio downtown (zone 3) is \$1,084 per month meaning a person would need a minimum income of \$43,360 per year to pay rent without spending more than 30 percent of their income. Again this is higher than the median income for millennials. The average rent for a studio, downtown peninsula (zone 1 – 3), in a newer building (2005 or newer) is \$1,324, requiring an income of \$52,960 per year.

The current cost per square foot of a studio in Vancouver was calculated using the average monthly rent for a studio in Vancouver and dividing by the smallest possible unit size of 398 square feet. From this equation I have an estimate of the cost per square foot at \$2.37.

### 6.1.2. Supply and demand

Evidence presented in the case studies shows that there has been demand for micro suites where they have been developed. While I cannot predict the exact demand for micro suites in Vancouver, Option 1 does not meet any of the potential demand.

### **6.1.3. Stakeholder acceptability**

Developers: Option 1 will not be received well by developers. Jon Stovell, the president of Reliance Properties, has been outspoken on his beliefs that Vancouver should lower its minimum unit size requirements and allow the development of for sale micro suites.

City of Vancouver: Option 1 maintains the city's current position towards micro suites as well as allowing them more time to watch the impacts of micro suites unfold in other jurisdictions. Uncertainty about the consequences of micro suites has led to continued hesitation by the city to approve any changes that could lead to unknown negative consequences.

The public: I have not found any real public reaction to the potential for micro suites in Vancouver or in other jurisdictions. None of the case study jurisdictions reported any backlash from the public at allowing micro suite development and I have not found documentation of any public groups in Vancouver pushing for or opposing micro suites. Public consultation would certainly help clarify the public reaction to any proposed changes in Vancouver.

### **6.1.4. Administrative ease**

Option 1 is not administratively complex. As the option retains the status quo there are no real administrative changes that would occur from choosing this option. There is potential monitoring of other jurisdictions or having to reconsider the matter in the future, however currently Option 1 scores 'high' for administrative ease as it does not increase any administrative processes.

### 6.1.5. Option 1: Matrix

| Criteria   | Human development (Affordability)                                      | Supply and demand | Stakeholder acceptability  | Administrative ease |
|------------|--|-------------------|--|---------------------|
| Status quo | Income needed<br>Buy: \$90,200<br>Rent: \$43,360<br>Cost/sq ft: \$2.37 | Unmet demand      | Developers: Will be poorly received<br><br>City: Maintains current position and allows more time<br><br>Public: No change from status quo would not create any public reaction | High                |

### 6.2. Option 2: Initial Cap

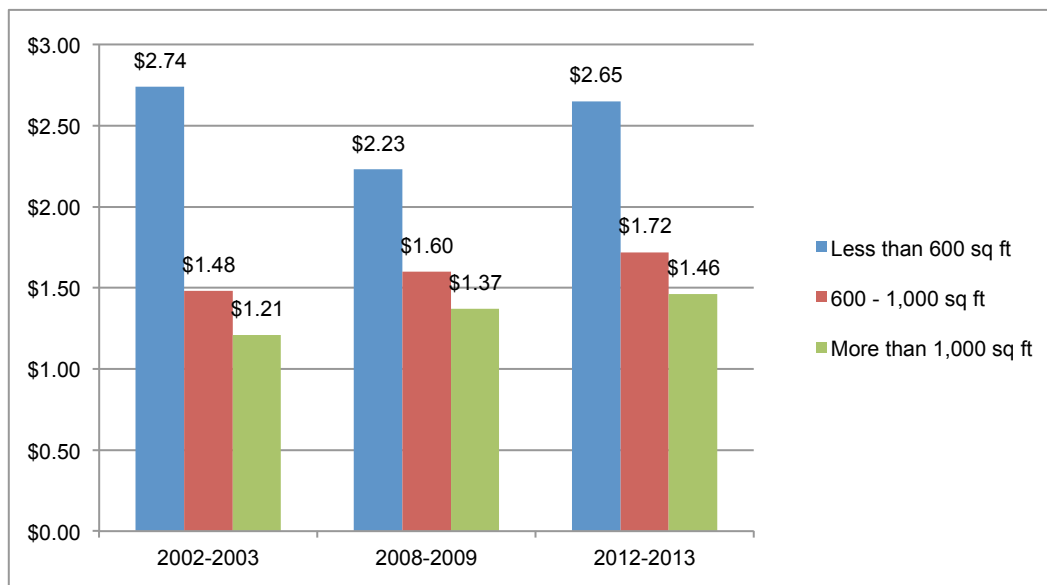
This option would reduce minimum dwelling unit size to 275 and cap the initial number of units allowed at 250 units. This is above the initial cap Boston placed on its micro suite development (195) and below the San Francisco cap of 375. Building size will not be regulated, as developments with micro suites come in many sizes. Unit-mix requirements should be considered based on the size of the building and approved by the Director of Planning. This will be discussed further in Chapter 7. This is essentially a pilot project. Following the development of the 250 units a review would be conducted to assess social and economic impacts of the developed suites. This information would be used to inform future decisions on micro suite policy.



### 6.2.1. Affordability of housing

Micro suites cost more per square foot to develop but are usually less expensive overall because of their smaller size. A unit's cost per square foot tends to go up as the size of a unit goes down, as evidenced in a graph by the Urban Land Institute showing the per square foot price differences of three sizes of units over time (ULI, 2014). The smaller the unit size the higher the price per square foot. High costs come from building bathrooms and kitchen, not from floor space.

**Figure 1 Rent per square foot by unit size, United States**



The cost per square foot for this option was calculated using the average rent of the two micro suite developments in downtown Vancouver. I obtained the current market rates for 600 Drake and Burns Block. At 600 Drake an unfurnished studio ranges from 300 to 400 square feet and costs \$900 to \$1,080 per month, including heat and hot water. At Burns Block the units are furnished and are approximately 250 square feet. These units rent out for \$1050 per month and include cable and Internet but do not include hydro. The cost per square foot at 600 Drake ranges from \$2.70 to \$3.00 and at Burns Block \$4.20.

Using the same monthly rents as above I estimated the approximate yearly income required to rent one of these micro apartments without spending more than 30

percent of annual income on rent. An individual would require an annual income of approximately \$36,000 to \$42,000.

In an interview with Anna Maria Tremonti, Jon Stovell estimated the starting price for a 300 square foot micro suite in Vancouver at \$180,000 (Tremonti, 18 February, 2015). To afford an \$180,000 mortgage (with a 25 year mortgage, interest rate of 2.99%, and a 5% down payment of \$9,000) monthly payments would be \$837. This indicates a person must have a monthly income of \$2,790 and a yearly income of \$33,480. This is just under the \$34,258 median income for individuals and thus affordable for the median individual millennial, and the half of millennials who are above the median.

### **6.2.2. Supply and demand**

The potential demand for micro suites was discussed in the case studies. As it is clear that there has been demand where micro suites have been developed Option 2 would help to meet some of this demand. As this option caps the initial number of micro suites allowed it is unlikely that it will fully meet demand. As demand in Vancouver is not known this option would help provide evidence of the popularity of micro suites in Vancouver. If this option proved a large enough demand then further development could be reconsidered after the initial number of units had been developed.

### **6.2.3. Stakeholder acceptability**

Developers: Option 2 would meet the developers half way by allowing them to develop a certain number of micro suites. Developers would likely prefer an unrestricted policy, however they would support movement in the direction of micro suite development.

City of Vancouver: Option 2 would provide the city with the ability to be on the forefront of a new option in housing diversity while at the same time allowing the maintenance of control and oversight for this new type of development. The city would likely accept this option as lets them move forward cautiously. Additionally option 2 would likely see less backlash from any members of the public who might have concerns. This option is the most politically palatable.

The Public: Option 2 would likely have support and opposition from different members of the public. Sales of micro suites in Surrey have been high indicating demand from the public for more affordably priced condominiums.

#### 6.2.4. Administrative ease

Option 2 is the most administratively complex of the three options. This option would entail making the most administrative changes including: rewriting bylaws, making changes to the development proposal acceptance process, implementing the pilot project, undertaking public consultation, and monitoring and reviewing micro suites. Option 2 has a low score for administrative ease. However, these changes are all possible and similar changes have been made in the past, such as when laneway housing was introduced in 2009.

#### 6.2.5. Option 2: Matrix

| Criteria    | Human development (Affordability)  | Supply and demand    | Stakeholder acceptability  | Administrative ease |
|-------------|--|----------------------|--|---------------------|
| Initial cap | Income needed<br>Buy: \$33,860<br>Rent: \$36,000 - \$42,000<br>Cost/sq ft: \$2.70 - \$4.20 | Partially met demand | Developers: Meets this group half way.<br>City: Allows moving forward cautiously with less chance for public backlash<br>Public: Likely to see both support and opposition | Low                 |

## **6.3. Option 3: Market Freedom**

This option would see minimum dwelling unit size requirements reduced to 275 square feet and then allow the market to meet the demand.

### **6.3.1. Affordability of housing**

The price and rents for micro suites is much more uncertain for Option 3. The usual convention is that when the market is free to supply as many units as people will buy, the price/rent will remain stable or be reduced. For the purpose of this analysis I will assume that the income required to purchase or rent a micro suite as well as the price per square foot would be similar to that in Option 2 at \$33,680 to \$42,000 and \$2.70 - \$4.20.

However, with the popularity of Vancouver's housing market I am unsure that the price would ever remain stable or be reduced. Additionally concerns have been raised about whether the higher price per square foot of micro units will impact other sizes of units, driving up cost or rent of more conventional sized units (Riley, 20 November, 2012). Conversely, it has been noted that an increase in smaller units has the potential to reduce the demand among singles for shared two to four bedroom units, which could free these units up for families and households that require larger unit sizes (Been, Gross, & Infranca, 2014).

Option 3 may serve to keep prices among smaller suites stable as increases in demand would lead to increases in supply, limiting the chance of price escalation.

One informant interview suggested that it is only a limited segment of the population that would be interested in micro suites and that developers will only build as long as it is profitable to them (Informant Interview, Personal Communication, 9 Decemeber. 2015). However, I have concerns that because of Vancouver's housing market, supply would never meet demand. A portion of the demand could come from investors looking for an affordable way to invest in Vancouver's housing market and in this way there could be continued demand pressures and escalating prices. This concern could be alleviated if micro suites were only allowed for rent as this would help

to ensure that the units were actually occupied and not just used as investment properties. The policy challenge of 'for rent' versus 'for sale' micro suites is addressed more fully in the following chapter on Regulatory Design.

### **6.3.2. Stakeholder acceptability**

Developers: Option 3 would be highly acceptable for developers. This option would give them an unrestricted ability to develop according to market demand and to supply micro suites as long as they are a profitable endeavour.

City of Vancouver: Option 3 would likely be the least acceptable for the city. This option gives the city no control over potential negative consequences and opens the city up to criticism from the public for not proceeding cautiously.

The public: Option 3 would likely receive some public backlash. Moving from no micro suites to unlimited development is a large step and may cause concern from the public, especially in neighbourhoods where the micro suites would be developed.

### **6.3.3. Administrative ease**

The administrative ease of Option 3 falls in between Option 1 and Option 2. There would be a need some change administrative processes, such as bylaws, but not as many as it would take to implement and monitor a pilot project. Option 3 is Low-medium for administrative complexity.

### 6.3.4. Option 3: Matrix

| Criteria                            | Human development (Affordability)   | Supply and demand | Stakeholder acceptability  | Administrative ease |
|-------------------------------------|---|-------------------|--|---------------------|
| <b>Option 3:<br/>Market Freedom</b> | <p>Income needed</p> <p>Buy: \$33,860</p> <p>Rent: \$36,000 - \$42,000</p> <p>Cost/sq ft: \$2.70 - \$4.20</p> | Met demand        | <p>Developers: Most acceptable as allows for developers to freely respond to market demand</p> <p>City: Likely to create unease for the City with no control over potential consequences</p> <p>Public: Likely to see backlash</p> | Low-medium          |

### 6.4. Summary Matrix

|                                | Human development (Affordability)                                    | Supply and demand | Stakeholder acceptability   | Administrative ease |
|--------------------------------|--|-------------------|---|---------------------|
| <b>Option 1<br/>Status Quo</b> | <p>Buy: \$90,200</p> <p>Rent: \$43,360</p> <p>Cost/sq ft: \$2.37</p> | Unmet             | <p>Developers: Will be poorly received</p> <p>City: Maintains current position and allows more time</p> <p>Public: No change from status quo would not create any public reaction</p> | High                |

|  |  |                      |  |                   |
|--|--|----------------------|--|-------------------|
| <p><b>Option 2</b><br/><b>Initial Cap</b></p>    | <p>Buy: \$33,860<br/>Rent: \$36,000 - \$42,000<br/>Cost/sq ft: \$2.70 - \$4.20</p> | <p>Partially met</p> | <p>Developers:<br/>Meets this group half way<br/><br/>City: Allows moving forward cautiously with less chance for public backlash<br/><br/>Public: Likely to see both support and opposition</p>   | <p>Low</p>        |
| <p><b>Option 3</b><br/><b>Market Freedom</b></p> | <p>Buy: \$33,860<br/>Rent: \$36,000 - \$42,000<br/>Cost/sq ft: \$2.70 - \$4.20</p> | <p>Met</p>           | <p>Developers:<br/>Most acceptable as allows for developers to freely respond to market demand<br/><br/>City: Likely to create unease for the City with no control over potential consequences<br/><br/>Public: Likely to see backlash</p> | <p>Low-medium</p> |

## Chapter 7. Regulatory design

This section is intended to explain the regulations that should be written into any policy that allows for micro suites. These regulations themselves are not the overarching policy options but are components of any micro suite policy. Additionally this section was necessary because I wanted to keep the policy options as consistent as possible in the evaluation process. Below I will discuss the best options for size, tenure, design and amenities, location and parking, building size and unit-mix, and maximum occupancy requirements.

**Size.** The minimum size allowable is one of the more controversial factors in the allowance of micro suites. None of the case study jurisdictions had the exact same original minimum unit size requirements nor did they have the same allowable decrease for micro suites. The only jurisdiction to allow suites below 250 square feet is San Francisco. Two expert interviews suggested a minimum for Vancouver of 275 and 300 respectively (Informant Interviews, Personal Communication, 9 December, 2015 and 8 January, 2015). Vancouver already allows purpose built rental down to 320 square feet and has two micro unit apartment buildings with the smallest units at 226 and 275 square feet respectively. The development with units as small as 275 square feet is approximately 20 years old and there have not been any reported negative impacts from living in units this size. Additionally Vancouver allows the size of micro dwellings in the Downtown Eastside to be relaxed down to 250 square feet. **I would recommend a micro suite minimum unit size of 275 square feet.** This is larger than New York and San Francisco's requirements as well as the Burns Block units in Vancouver, and only slightly smaller than Surrey's smallest unit.

**Rent versus sale.** Surrey and San Francisco allow micro suites for sale while New York's pilot project and Boston's initial cap only allow purpose built rental. Victoria, BC also just allowed the development of a micro suite building for sale. It is important to



have diverse housing options in the city and I think it is important to try to add to the stock available for affordable homeownership as well as rental housing. While most millennials indicate a wish to own, providing more affordable options for both ownership and rental will likely help retain millennials in the city. More affordable rental could increase the ability to save for a down payment and more affordable ownership allows millennials to enter the housing market earlier on. While micro suites might not be a long-term option for all, the ability to enter the housing market earlier will likely be an attraction for many who wish to gain equity. Those who own also have the option of renting to a tenant once they decide to move to larger housing.

Additionally, any purchasers that intend to buy and then rent the units out will contribute to the stock of affordable rental. However, without being able to charge DCLs on smaller units the city would lose out on money it requires to finance the growth of the city. Additionally strata units have a higher likelihood of being unoccupied and/or being used as investment properties. Restricting micro suites to rental only would allow the city to better maintain affordability by requiring certain numbers of units be below market rate and would not have an effect on the current status of DCL payments to the city. However, rental units have so far not proven to be considerably more affordable, but this may be a result of the limited market of micro suite rentals currently in Vancouver. The two rental only micro suite developments in downtown Vancouver may be seen as a novelty, which may allow for higher rents. Additionally, because the vacancy rate for private apartments in downtown Vancouver is 0.4 percent (CMHC, Fall 2015) units of any size can fetch premiums with so few other options available. If micro suites can increase the supply of rental and increase the vacancy rate then micro suites prices may become more reflective of their size in comparison to studio and one-bedroom units. The estimated cost of purchasing a micro suite suggests it will be considerably more affordable than the current cost of purchasing a larger unit. For this reason I recommend that there be no restriction on tenure for micro suites as increasing both rental and ownership are goals for the City of Vancouver.

***Design and Amenities.*** As stressed in the literature, the design is a crucial aspect in developing small units that are functional and livable. Smart design features, high quality furnishings, and flexible furnishings help give the illusion of more space.

Good design and attractive amenities also makes small units more attractive to buyers and renters. Common spaces are frequently discussed in the literature as an important component to making tiny apartments more livable. Units could be designed with convertibility in mind in case micro suite living is a trend that does not last. Then two or more units could be converted into larger units. However, it is important to keep in mind that designing and developing in this way can be expensive and may increase the price of micro suites (Informant Interview, Personal Communication, 8 January, 2016). The City may wish to create some design guidelines for micro suites. Additionally, because most micro suites would be in new developments, the buildings are more likely to be LEED certified, making them more energy efficient.

***Location and parking.*** Micro suite development should be restricted to urban, transit oriented, walkable locations. In a survey on why a person would choose a micro unit over a more conventional sized unit the second most important factor was desired location (ULI, 2014). In order to make the development of micro units more affordable the parking requirements for micro unit buildings are often lowered, which increases the need for transit oriented and walkable locations. In Victoria, a micro suite condominium development has a total of 11 purchasable parking spaces for 122 units. As of February 2015, 118 units had been purchased and there were still three spaces for sale (Tremonti, 2015). This points to decreased demand for parking from those interested in micro suites. The City should consider the impact of parking regulations on developments with micro suites and lower, waive, or require in lieu contributions where necessary.

***Building size and unit-mix.*** From my research it is clear the developments containing micro suites do not follow much of a pattern in building size. The smallest development I have come across had 30 units (the only all micro suite development) and the largest had 402. As long as developments are well designed and have proper management I think the size of the building can be left up to the developer. As addressed in Option 2, unit-mix requirements should be considered based on the size of the building and approved by the Director of Planning. Smaller developments with 30 units or less should not require a mix. Developments larger than this size should have other sizes of units mixed into the development.

**Maximum occupancy requirements.** While San Francisco has a two-person limit on micro suite occupancy this type of regulation is almost impossible to enforce. I did not come across this type of occupancy restriction anywhere else. Concern may be raised about livability standards if too many people are living in a very small space however, because these types of regulations are not enforceable this is not important to include.

## **Chapter 8. Recommendation**

Given this research and analysis it is clear that there are many trade-offs as well as many unknown consequences. Because of the intricately linked nature of all aspects of the housing market there is no certain way of knowing how successful micro suites would be in retaining millennials in Vancouver. This type of housing does not exist in a silo unaffected by other affordability issues. Without a broader solution to issues such as unoccupied homes and foreign investment, the allowance of a smaller type of housing unit is not, in itself, going to be able to overcome the affordability issues that trickle in from other parts of the housing market. Each of the options has benefits and weaknesses. Additionally, because of Vancouver's unique housing market, no amount of evidence from other jurisdictions will allow us to fully understand how micro suites will impact Vancouver.

However, affordable housing issues will not be solved with only one policy and the city should use whatever tools it can to work towards bettering housing affordability. For this reason I recommend Option 2, the Initial Cap. The only way to better understand the potential impacts of micro suites in Vancouver is to allow development and monitor the outcomes. This option allows for the creation of a new diverse housing choice for Vancouver residents and helps work towards Metro Vancouver and Vancouver's housing diversity goals. I also suggest allowing micro suites to be developed as purpose built rental as well as for sale, the reasons for which were detailed in the 'Rent versus Sale' section of the Regulatory Design chapter.

While developers will not have to pay DCLs on for-sale units for the time being I suggest an appeal to the province to change the requirement for DCL payments to include smaller units. The Green Communities Act, which mandates the exemption on DCL payments for units below 312 square feet, describes the exemption on small units as an "incentive for developers to build small, affordable housing units for those who

may otherwise not be able to afford current rental or for-purchase housing stock” (Bill 27 Green Communities, 2008). However, the Act also states that 312 square feet is the optimal minimum size for a self-contained dwelling unit. These pieces of information are contradictory as the first tries to incentivize the development of units below 312 square feet, and the second describes this as the smallest practical size. This piece of the Green Communities Act is out-dated and should be repealed.

Option 2 allows the market to be tested. How fast will developers be interested in developing micro suites and how many will they be interested in developing? How much demand will there be for smaller units? These questions can be answered by allowing a maximum of 250 micro suites to be developed.

Obtaining answers from the pilot project will, however, take time. Lastly, I recommend conducting a survey of Vancouver residents, particularly millennials, as this may help to start answering some of the questions before development takes place. A survey may help in some aspects of regulatory design and well as create an understanding of the interest and issues from the public’s point of view. Additionally, the survey can help to answer some of the questions laid out in the section on immeasurable criteria I recommend using the survey conducted by the Urban Land Institute as a starting point for survey design (ULI, 2014). The survey can help to serve as a baseline and be a point of comparison after micro suite development has taken place.

## **Chapter 9. Limitations**

This research encountered some limitations that prevented me from answering everything I hoped to answer at the outset. Full information from other jurisdictions was not always available. Multiple attempts to speak with someone in Boston went unanswered and interviews from other jurisdictions were less informing than I had hoped. Additionally as each jurisdiction has different approaches to planning and different zoning bylaws it is challenging to understand if situations in other jurisdictions reflect those in Vancouver.

The lack of information on consequences also proved to be limiting. As other jurisdictions are currently facing many of the same questions as Vancouver, potential consequences of micro suite development remain unknown. Looking to other jurisdictions helped in understanding the current issues faced by other cities but not the long-term effects from micro suite development.

More time would also have allowed me to gather more information on how much interest millennial would have micro suites. A survey on interest in micro suites, acceptable sizes, locations, and buying versus renting, and interest in leaving the city for more affordable locations, would have helped increase the understanding of the market demand in Vancouver. Additionally, only four jurisdictions were researched as case studies. There are other jurisdictions across Canada and the United States that are exploring the possibility of smaller units in the form of micro suites, group housing, and co-op housing. Further exploration of approaches from other locations would give a more well-rounded view of the current state of micro suite development in North America.

Finally, it is challenging to predict who will be interested in buying in the Vancouver housing market. Will micro suites be bought as investment properties, second homes, or rented out on Airbnb? Would demand only come from a small

segment of the population suited to micro suite living or would anyone buy in attempt to get into the Vancouver housing market, creating a demand that far exceeds the necessary number of smaller units? The recommended survey, as well as Option 2, the pilot program, may help answer these questions without opening the door to unfettered development of micro suites.

## References

- Angus Reid (18, June, 2015). Lotusland Blues: One-in-five Metro Vancouverites experience extreme housing & traffic pain; most of them think of leaving. Retrieved from [http://angusreid.org/wp-content/uploads/2015/06/2015.06.18\\_Housing\\_ARI.pdf](http://angusreid.org/wp-content/uploads/2015/06/2015.06.18_Housing_ARI.pdf)
- Anderson, L. (23 February, 2015). Test-Driving a 178 Square-Foot Micro-Units, for Science. *Curbed San Francisco*. Retrieved from [http://sf.curbed.com/archives/2015/02/23/testdriving\\_a\\_178squarefoot\\_microunit\\_for\\_science.php#more](http://sf.curbed.com/archives/2015/02/23/testdriving_a_178squarefoot_microunit_for_science.php#more)
- Barlow, C. (2010). Interviews. In Albert J. Mills, G. Durepos, and E. Weibe (Eds.), *Encyclopaedia of Case Study Research*. (pp. 496-500). Thousand Oaks, CA: SAGE Publications, Inc.
- BC Statistics (n.d.). Sub-Provincial Population Projections. Retrieved from <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/PopulationProjections.aspx>
- Been, V., Gross, B. & Infranca J. (2014). Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units (Working paper). Retrieved from NYU Furman Center website: [http://furmancenter.org/files/NYUFurmanCenter\\_RespondingtoChangingHouseholds\\_2014\\_1.pdf](http://furmancenter.org/files/NYUFurmanCenter_RespondingtoChangingHouseholds_2014_1.pdf)
- Bill 27 Green Communities (2008). *Frequently Asked Questions, Local Government (Green Communities) Statutes Amendment Act, Bill 27*. Intergovernmental Relations and Planning Division, Ministry of Community Development. Retrieved from [http://www.cscd.gov.bc.ca/lgd/intergov\\_relations/library/Bill27\\_Green\\_Communities\\_FAQs.pdf](http://www.cscd.gov.bc.ca/lgd/intergov_relations/library/Bill27_Green_Communities_FAQs.pdf)
- Boston's Innovation District (n.d.). The Strategy. Retrieved from <http://www.innovationdistrict.org/the-strategy/>
- BMO Financial Group (15 May, 2014). The Kids Are (Mostly) Alright: BMO Report Suggests Today's Youth On Firmer Financial Footing Than Their Parents Were in the 1980s [Press Release]. Retrieved from <http://newsroom.bmo.com/press-releases/the-kids-are-mostly-alright-bmo-report-suggests-tsx-bmo-201405150946023001>



- Canada Mortgage (2015). Housing Affordability Calculator. Retrieved from <http://www.canadamortgage.com/calculators/affordability.cgi>
- Canada Mortgage and Housing Corporation, Housing in Canada (n.d., A). Definitions. Retrieved from [http://cmhc.beyond2020.com/HiCODefinitions\\_EN.html#\\_Affordable\\_dwellings\\_1](http://cmhc.beyond2020.com/HiCODefinitions_EN.html#_Affordable_dwellings_1)
- Canada Mortgage and Housing Corporation (n.d., B). Mortgage Loan Insurance – How Much Can You Afford? Retrieved from [http://www.cmhc-schl.gc.ca/en/co/moloin/moloin\\_004.cfm](http://www.cmhc-schl.gc.ca/en/co/moloin/moloin_004.cfm)
- Canada Mortgage and Housing Corporation (Fall 2015). Rental Market Report Vancouver and Abbotsford-Mission CMAs. Retrieved from [http://www.cmhc-schl.gc.ca/odpub/esub/64467/64467\\_2015\\_A01.pdf?fr=1459103657155](http://www.cmhc-schl.gc.ca/odpub/esub/64467/64467_2015_A01.pdf?fr=1459103657155)
- City of New York (2014). Housing New York, A Five-Borough, Ten-Year Plan. *The City of New York*. Retrieved from [http://www.nyc.gov/html/housing/assets/downloads/pdf/housing\\_plan.pdf](http://www.nyc.gov/html/housing/assets/downloads/pdf/housing_plan.pdf)
- City of Surrey (1 October, 2012). Planning & Development Report. File: 7909-0254-00. Retrieved from [https://www.surrey.ca/bylawsandcouncillibrary/PLR\\_7909-0254-00.pdf](https://www.surrey.ca/bylawsandcouncillibrary/PLR_7909-0254-00.pdf)
- City of Surrey (18 June, 2012). Transportation and Infrastructure Committee Minutes. Retrieved from [https://www.surrey.ca/bylawsandcouncillibrary/MIN\\_TIC\\_2012\\_06\\_18.pdf](https://www.surrey.ca/bylawsandcouncillibrary/MIN_TIC_2012_06_18.pdf)
- City of Surrey (1 October, 2013). Corporate Report: City of Surrey Community Climate Action Strategy. Council date: 7 October, 2013. File: 0512-02. Retrieved from [http://www.surrey.ca/bylawsandcouncillibrary/CR\\_2013-R193.pdf](http://www.surrey.ca/bylawsandcouncillibrary/CR_2013-R193.pdf)
- City of Vancouver, Social Development (8 May, 2012). *Secured Market Rental Housing Policy council report*, contact Jim de Hoop. Vancouver: Deputy City Manager Responsible for Housing and Strategic Public Amenities, 15 May, 2012. Retrieved from [http://vancouver.ca/files/cov/secured\\_market\\_rental\\_housing\\_council\\_report.pdf](http://vancouver.ca/files/cov/secured_market_rental_housing_council_report.pdf)
- City of Vancouver (2015a). Creating and preserving market rental housing. Retrieved from <http://vancouver.ca/people-programs/creating-new-market-rental-housing.aspx#rental-100>
- City of Vancouver (2015b). Zoning and Development Bylaw 3575: Section 10 General Regulations. *Bylaw 10.21.2*. Retrieved from <http://former.vancouver.ca/commsvcs/BYLAWS/zoning/sec10.pdf>

- City of Vancouver (24 April, 2015). Housing Design and Technical Guidelines. Version 9.6. Housing Delivery and Operations, Housing Policy and Projects, Facility Planning and Development. Retrieved from <http://vancouver.ca/files/cov/housing-design-and-technical-guidelines.pdf>
- City of Vancouver (2013). Principle Dwelling Unit Combined with a Lock-Off Unit Guidelines. Adopted by City Council 8, September, 2009, amended 15, May, 2013. Retrieved from <http://former.vancouver.ca/commsvcs/guidelines/P008.pdf>
- City of Vancouver (2014). *Micro Dwelling Policies and Guidelines*. Adopted by City Council 15, March, 2014. Retrieved from <http://former.vancouver.ca/commsvcs/guidelines/D015.pdf>
- City of Vancouver (2011). Vancouver's Housing and Homelessness Strategy 2012-2021. Retrieved from <http://vancouver.ca/files/cov/Housing-and-Homeless-Strategy-2012-2021.pdf>
- Cleverley, B. (26 October, 2013). Victoria council gives nod to redevelopment of vintage Janion, near Blue Bridge. *The Times Colonist*. Retrieved from [www.timescolonist.com/news/local/victoria-council-gives-nod-to-redevelopment-of-vintage-janion-near-blue-bridge-1.673816#sthash.aqeuU5Uo.dpuf](http://www.timescolonist.com/news/local/victoria-council-gives-nod-to-redevelopment-of-vintage-janion-near-blue-bridge-1.673816#sthash.aqeuU5Uo.dpuf)
- Cluff, R. (19 May, 2015). Bob Rennie on Real Estate. CBC: The Early Edition. Podcast Interview. Retrieved From <http://www.cbc.ca/earlyedition/podcast/2015/05/19/bob-rennie-on-real-estate/>
- Cox, W. & Pavletich, H. (2016). 12<sup>th</sup> Annual Demographia International Housing Affordability Survey. Retrieved from <http://www.demographia.com/dhi.pdf>
- Craigslist. Retrieved 17, November, 2015, from <http://vancouver.craigslist.ca/van/apa/5320497995.html>
- CTV (11 April, 2015). \$94K micro-condo in Surrey attracts hordes of homebuyers. CTV Vancouver. Retrieved from <http://bc.ctvnews.ca/94k-micro-condo-in-surrey-attracts-hordes-of-home-buyers-1.2323058>
- Disbrow, R. (2013). *The Economic Viability of Micro Units in New York City: When the Market Wants to Build Big*. Master Thesis, Massachusetts Institute of Technology.
- Dmitrieva, K. (15 March, 2016). Millennials flee high cost of Vancouver living. *The Vancouver Sun*, p. C4.

Eberle, Woodward, Thompson, & Kraus (2011). Municipal measures for housing affordability and diversity in Metro Vancouver. *Metro Vancouver*. Retrieved from [http://www.metrovancouver.org/services/regional-planning/PlanningPublications/MuniMeasuresforHsngAfford\\_DivstyinMV2011.pdf#search="municipal%20measures%20for%20housing%20affordability"](http://www.metrovancouver.org/services/regional-planning/PlanningPublications/MuniMeasuresforHsngAfford_DivstyinMV2011.pdf#search=)

The Economist (18 August, 2015). The World's most 'liveable' cities. Data prepared by the Economist Intelligence Unit. Retrieved from <http://www.economist.com/blogs/graphicdetail/2015/08/daily-chart-5>

Ekstam, H. (2015). Residential Crowding in a "Distressed" and a Gentrified" Neighbourhood – Towards an Understanding of Crowding in "Gentrified" Neighbourhoods. *Housing, Theory and Society*, 34 (2), pp.429-449.

Factory 63 (n.d.) Apartment Interiors. Retrieved from <http://factory63.com/apartments-for-lease/apartment-interiors/>

Fraser Valley Real Estate Board (17 December, 2015). *Median Sales Prices*. Retrieved from <http://stats.fvreb.bc.ca/infoserv/s-v1/mdqs-pPp>

Gabbe, C.J. (2015). Looking Through the Lens of Size: Land Use Regulations and Micro-Apartments in San Francisco. *Cityscape: A Journal of Policy Development and Research*, 17(2), pp. 223-237.

Geller, M. (15 April, 2013). Why smaller housing is better for some; Surrey project offering Canada's smallest condos raises questions about minimum suite sizes, need for parking and consumer expectations. *The Vancouver Sun*. Retrieved from [http://www.vancouversun.com/business/smaller+housing+better+some/8243824/story.html?\\_\\_lsa=2414-335e](http://www.vancouversun.com/business/smaller+housing+better+some/8243824/story.html?__lsa=2414-335e)

Heather Evans Consulting, Forbes, M., & Goddard, L. (2015). Project Report: Research Study Exploring Best Practices and Lessons Learned with Small Market Units. The Real Estate Institute of British Columbia. Retrieved from [http://www.reibc.org/\\_Library/Documents/Report\\_and\\_Appendices\\_-\\_Research\\_Study\\_Exploring\\_Best\\_Practices\\_and\\_Lessons\\_Learned\\_with\\_Small\\_Market\\_Units\\_Final\\_report\\_Jan\\_30\\_2015\\_.pdf](http://www.reibc.org/_Library/Documents/Report_and_Appendices_-_Research_Study_Exploring_Best_Practices_and_Lessons_Learned_with_Small_Market_Units_Final_report_Jan_30_2015_.pdf)

Hofherr, J. (10 April, 2015). The Faces Behind Boston's Mini-Apartment Movement. *Real Estate, a Boston.Com website*. Retrieved from <http://realestate.boston.com/buying/2015/04/10/the-faces-behind-bostons-mini-apartment-movement-2/>

The Huffington Post BC (18 April, 2013). Canada's Smallest Condos Going on Sale in Surrey. Huffpost British Columbia. Retrieved from [http://www.huffingtonpost.ca/2013/04/18/canada-smallest-condo-surrey\\_n\\_3109773.html](http://www.huffingtonpost.ca/2013/04/18/canada-smallest-condo-surrey_n_3109773.html)

- Inflation Calculator. Accessed November 12, 2015. Retrieved from <http://inflationcalculator.ca/british-columbia/>
- Innovation District (2015). <http://www.innovationdistrict.org/>
- Kaysen, R. (20 November, 2015). Leasing Begins for New York's First Micro-Apartments. *The New York Times*. Retrieved from [http://www.nytimes.com/2015/11/22/realestate/leasing-begins-for-new-yorks-first-micro-apartments.html?\\_r=1](http://www.nytimes.com/2015/11/22/realestate/leasing-begins-for-new-yorks-first-micro-apartments.html?_r=1)
- Khalid, A. (17 February, 2014). Micro-Apartments: Boston's Housing Solution Or Developers' Cash Cow? *WBUR News*. Retrieved from <http://www.wbur.org/2014/02/17/micro-apartments-boston>
- Larsen, K. (12 November, 2015). Squamish, Bowen Island real estate deals luring Vancouver buyers. *CBC*. Retrieved from <http://www.cbc.ca/news/canada/british-columbia/squamish-bowen-real-estate-deals-1.3315660>
- Lindsay, B. (13, November, 2015). Making it work under one roof. *The Vancouver Sun*. Retrieved from <http://epaper.vancouversun.com/epaper/viewer.aspx?noredirect=true>
- Macnair, J. (10 February, 2015). Micro suites in Surrey for under \$100,000 are 'trading space for place.' *The Province*. Retrieved from <http://www.theprovince.com/business/Micro+suites+Surrey+under+trading+space+place/10797902/story.html>
- Mason, G. (11 February, 2016). A crisis in Vancouver: The lifeblood of the city is leaving. *The Globe and Mail*. Retrieved from <http://www.theglobeandmail.com/opinion/a-crisis-in-vancouver-the-lifeblood-of-the-city-is-leaving/article28730533/>
- Metro News (6 November, 2014). Metro Votes: Young Vancouverites fleeing to more affordable pastures. *Metro News*. Retrieved from <http://www.metronews.ca/news/canada/2014/11/06/metro-votes-young-vancouverites-fleeing-to-more-affordable-pastures.html>
- Metro Vancouver (2015). Regional Affordable Housing Strategy Update. Retrieved from <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RegionalAffordableHousingStrategyUpdateAug19-2015.pdf>
- Metro Vancouver (2014). Regional Affordable Housing Strategy Update, Stakeholders Consultation Report: Where do we go from here? Retrieved from [http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RAHS\\_Update\\_Stakeholder\\_Consultation\\_Report\\_Nov\\_2014.pdf](http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RAHS_Update_Stakeholder_Consultation_Report_Nov_2014.pdf)

- National Household Survey (2011). National Household Survey, Statistics Canada Catalogue no. 99-014-X2011032. Retrieved from <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/dt-td/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=106736&PRID=0&PTYPE=105277&S=0&SHOWALL=0&SUB=0&Temporal=2013&THEME=98&VID=0&VNAMEE=&VNAMEF=>
- New York City Department of City Planning (2015). *Housing New York Zoning for Quality and Affordability*. City of New York. Retrieved from [http://www.nyc.gov/html/dcp/pdf/zoning-qa/extended\\_project\\_description.pdf](http://www.nyc.gov/html/dcp/pdf/zoning-qa/extended_project_description.pdf)
- New York City Housing Preservation & Development (n.d.). Winner of adAPT NYC Competition to Develop Innovative Micro-Unit Apartment Housing Model. Retrieved from <http://www1.nyc.gov/site/hpd/developers/adapt-nyc-rfp.page>
- New York City Housing Preservation & Development (20 May, 2015). NEW YORK CITY OFFICIALS JOIN MONADNOCK DEVELOPMENT AND PARTNERS TO BEGIN STACKING MODULES FOR NEW YORK CITY'S FIRST MICRO-APARTMENT DEVELOPMENT [Press Release]. Retrieved from <http://www1.nyc.gov/site/hpd/about/press-releases/2015/05/05-20-15.page>
- Pablo, C. (7 May, 2015). "No more land" for single-family houses in Vancouver, Urban Futures Planner says. *The Georgia Straight*. Retrieved from <http://www.straight.com/news/446946/no-more-land-single-family-houses-vancouver-urban-futures-planner-says>
- Panoramic Interests (n.d.). Retrieved from <http://www.panoramic.com/cityspaces/#>
- Posadzki, A. (9, February, 2015). How micro condos are facing their first real test in Canada this year. *Financial Post*. Retrieved from <http://business.financialpost.com/personal-finance/mortgages-real-estate/how-micro-condos-are-facing-their-first-real-test-in-canada-this-year>
- Priceonomics (12 August, 2015). The San Francisco Rent Explosion Part III. Retrieved from <http://priceonomics.com/the-san-francisco-rent-explosion-part-iii/>
- Prime on the Plaza (n.d.) Retrieved from <http://www.liveprime.ca/amenities.html>
- Real Estate Board of Greater Vancouver (n.d.) MLS Home Price Index for January 2016. Retrieved from <http://www.rebgv.org/home-price-index>
- Riley, N.J. (20 November, 2012). S.F supervisors back micro apartments. *San Francisco Chronicle*. Retrieved from <http://www.sfgate.com/default/article/S-F-supervisors-back-micro-apartments-4055493.php>

- RKA Inc. (2009). Vancouver Coast Mountains Tourism Region (Excluding Sea-to-Sky Corridor) Tourism Labour Market Study Final Report. Retrieved from <https://www.go2hr.ca/sites/default/files/legacy/reports/RKA-VCM-Tourism-Rpt-Final-Revised-090529.pdf>
- Ross, Casey (27 March, 2013). Growth of micro-units will be slow in Boston. *Boston Globe*. Retrieved from <https://www.bostonglobe.com/business/2013/03/26/micro-units-will-slow-coming-boston/rR5RM6OBJIDad203rgsdKk/story.html>
- Ross, Casey (13, December, 2011). Menino pushes micro units to lure young to waterfront. *Boston Globe*. Retrieved from <https://www.bostonglobe.com/business/2011/12/13/waterfront-housing-formula-views-viable-rents-very-little-space/Qye00OdXNMV3DI5NESi50K/story.html>
- San Francisco Planning Department (7 January, 2013). *Efficiency Dwelling Units: Numerical Cap and Open & Common Space Requirements*. Board File No. 12-0996, Ordinance No. 242-12.
- Seattle Department of Planning and Development (June 2014). City Comparison: Micro-Housing/Congregate Residence/Group Housing.
- Shore, R. (20, December, 2011). Downtown Eastside apartments the smallest in Canada. *The Vancouver Sun*. Retrieved from <http://blogs.vancouversun.com/2011/12/20/downtown-eastside-apartments-the-smallest-in-canada/>
- Shutler, N. (20 February, 2015). Home Shruken Home, New York's First Micro-Apartments, Prefabricated in Brooklyn. *The New York Times*. Retrieved from <http://www.nytimes.com/2015/02/22/realestate/micro-apartments-tiny-homes-prefabricated-in-brooklyn.html>
- Sidjack, C. (1995). *Residents Satisfaction with Mini-Suite Housing: A Case-Study of 600 Drake*. Masters Thesis, University of British Columbia.
- Streb, C. (2010). Exploratory Case Study. In Albert J. Mills, G. Durepos, and E. Weibe (Eds.), *Encyclopeida of Case Study Research*. (pp. 372-374). Thousand Oaks, CA: SAGE Publications, Inc.
- Statistics Canada (2013). Vancouver, CY, British Columbia (Code 5915022) (table). National Household Survey (NHS) Profile. 2011 National Household Survey. Statistics Canada Catalogue no. 99-004-XWE. Ottawa. Released September 11, 2013. <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/index.cfm?Lang=E>
- Teitell, B. (5, July, 2014). How to live in a Boston microunit. *The Boston Globe*. Retrieved from <https://www.bostonglobe.com/lifestyle/style/2014/07/04/when-comes-studio-living-small-state-mind/tmOJbw63VCaHG5oQ9wXESK/story.html>

- Tien Sher (n.d.) Balance. Retrieved from <http://www.tiensher.com/balance>
- Tremonti, A.M. (18, February 2015). 'Micro-Condo' makes room for Millennials who want affordable housing. *The Current*. CBC Radio. Retrieved from <http://www.cbc.ca/radio/thecurrent/the-current-for-feb-18-2015-1.2962214/micro-condo-makes-room-for-millennials-who-want-affordable-housing-1.2962268>
- United States Census (2014). *Quick Facts, Boston City, Massachusetts*. Retrieved from <http://www.census.gov/quickfacts/map/PST045214/2507000>
- Urist, J. (19 December, 2013). The Health Risks of Small Apartments. *The Atlantic*. Retrieved from <http://www.theatlantic.com/health/archive/2013/12/the-health-risks-of-small-apartments/282150/>
- Urban Futures (2014). *People and Jobs in British Columbia's Future: A Scenario for BC's Labour Market to 2041*. Retrieved from <http://www.urbanfutures.com/bc-labour-2041-pdf>
- Urban Land Institute (2014). The Macro View on Micro Units. Retrieved from [http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit\\_full\\_rev\\_2015.pdf](http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit_full_rev_2015.pdf)
- Vancity (May 2015). *Help wanted: salaries, affordability and the exodus of labour from Metro Vancouver*. Retrieved from [https://www.vancity.com/SharedContent/documents/News/Help\\_Wanted\\_May\\_2015.pdf](https://www.vancity.com/SharedContent/documents/News/Help_Wanted_May_2015.pdf)
- Vancity (March 2015). Downsizing the Canadian Dream: Homeownership Realities for Millennials and Beyond. Retrieved from [https://www.vancity.com/SharedContent/documents/News/Downsizing\\_Canadian\\_Dream\\_March2015.pdf](https://www.vancity.com/SharedContent/documents/News/Downsizing_Canadian_Dream_March2015.pdf)
- Vancity (September 2015). Houstrapped: The growing inability of Metro Vancouver families to move out of starter homes. Retrieved from [https://www.vancity.com/SharedContent/documents/News/HousingReport\\_Sept\\_2015.pdf](https://www.vancity.com/SharedContent/documents/News/HousingReport_Sept_2015.pdf)
- The Vancouver Sun (13, November, 2015). UDI/Vancity Housing Affordability Index. *The Vancouver Sun*, p. 39.
- Woo, A., & Tseng, C. (27 October, 2015). Which cities and states have the most cost-burdened renters? *Apartment List Rentonomics*. Retrieved from <https://www.apartmentlist.com/rentonomics/which-cities-and-states-have-the-most-cost-burdened-renters>
- Work BC (2014). British Columbia 2024 Labour Market Outlook. Retrieved from <https://www.workbc.ca/WorkBC/media/WorkBC/Documents/Docs/BC-LM-Outlook-2014-2024.pdf>

Work BC (2012). British Columbia 2022 Labour Market Outlook. Retrieved from <https://www.workbc.ca/getmedia/0fe6f15a-dcd9-4316-b0fa-488b3fab9920/BC-LM-Outlook-2012-2022.pdf.aspx>

yconic Staff. (2014). *Infographic: Millennial Finances and Plans for the Future*. Retrieved from <http://we.are.yconic.com/Youth%20Insights/Infographic-Millennial-Finances-and-Plans-for-the-Future.aspx#.Vhl3EShGSZO>

Yin, R.K. (2009). *Case Study Research Design and Methods*. 4<sup>th</sup> Edition. Thousand Oaks, CA: SAGE Publications, Inc.

Yin, R. K. (2014). *Case Study Research Design and Methods*. 5<sup>th</sup> Edition. Thousand Oaks, CA: SAGE Publications, Inc.

Zillow data. (n.d.) Median rental list price studio, by neighbourhood. Retrieved from <http://www.zillow.com/research/data/>