

### TOWARD INCREMENTAL DENSITY IN INNER-RING SUBURBS: OVERCOMING POLITICAL OPPOSITION THROUGH CONTEXT SENSITIVE DESIGN

Written By Cameron Bourne Date 07/29/2019 Supervisor Richard Shearmur

### ABSTRACT

This research investigates strategies to increase density through "missing-middle" dwelling typologies in the inner-ring suburbs of Canadian cities. Precedents from cities across North America are used to understand the typical concerns that residents of singlefamily dominated neighbourhoods have to increased density and, based on these concerns, a set of policy recommendations are provided to inform policymakers on how to implement densification strategies in a contextual, and politically-feasible manner. The opinions of residents in the precedent cities have been obtained through an analysis of several hundred public engagement responses, and by in-person resident interviews. Interviews with planners and developers in the precedent cities have been conducted to understand how these resident concerns were addressed, or not, in the planning and development process.

This research finds that residents of single-family dominated neighbourhoods tend to be most concerned about the loss of the aesthetic and garden-like character of their neighbourhoods that comes with increased density, as well as the strain that that they believe increased density will have on infrastructural capacity. This research proposes strategies to overcome these concerns, particularly through context-sensitive, incremental densification strategies that limit the scale of new dwellings, maintain the existing mature landscaping of a neighbourhood, and provide opportunities for homeowners and small-scale builders to capitalize on the unused equity of oversized, suburban lots.

These policy recommendations are then applied to a case study of an inner-ring suburb in the mid-sized city of Kelowna, British Columbia. A new, "missing-middle" zoning bylaw and accompanying design guide is presented to show how context-sensitive, incremental densification can be implemented in a suburban context without disrupting the characteristics of the neighbourhood that residents value, while also increasing density to a level that will support frequent transit and local business.

# RÉSUMÉ

Cette recherche examine les stratégies afin d'augmenter la densité des "missingmiddle" types de logements, dans les banlieues des villes canadiennes. Des exemples de villes d'Amérique du Nord sont utilisés pour comprendre les préoccupations des résidents des quartiers périphériques, en vue d'accroître la densité et, sur la base de ces préoccupations, des recommandations de politique sont fournies afin d'informer de la mise en œuvre des stratégies de densification. Les opinions des résidents des villes utilisés comme exemple ont été obtenues à travers l'analyse de plusieurs centaines de réponses publiques et par des entretiens en personne avec les résidents. Des entretiens avec des planificateurs et des promoteurs dans ces villes ont été menés pour mieux comprendre comment les préoccupations des résidents étaient prises en compte ou non dans le processus de planification.

Cette recherche montre que les résidents se trouvent particulièrement préoccupés par la perte potentielle de caractère de leurs quartiers, ainsi que par l'impact de l'accroissement de la densité sur les infrastructures. Cette recherche propose des stratégies pour répondre à ces préoccupations, notamment par le biais de la densité incrémentielle, qui limitent la taille des nouvelles maisons, conservent les arbres matures et les jardins existants des quartier et offrent aux propriétaires et aux constructeurs la possibilité de bénéficier de lots de banlieue surdimensionnés.

Ces recommandations de politique sont appliquées à une étude de cas d'une banlieue de la ville de Kelowna, en Colombie-Britannique. Un nouveau règlement de zonage et un nouveau guide de conception sont présentés pour montrer comment ces politiques peuvent être mises en œuvre dans cette banlieue sans nuire aux caractéristiques du quartier que les résidents valorisent.

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### **1** INTRODUCTION AND METHODOLOGY

Much maligned but little understood, Canada's suburbs are at a crossroads. While sprawling expanses of new self-contained housing developments and power centres continue to be built at the suburban edge of major and minor metropolitan areas of this country, increasing attention is being focused on central city, transit corridor and arterial intensification efforts in order to meet smart growth inspired goals. Between these two forms of urban growth, the inner-ring suburbs, those built immediately after the Second World War to house the baby boom generation, are languishing. These inner-ring suburbs are characterized by an aging and predominantly single-family dominated housing stock and auto-oriented design which make them less attractive to the demographics of the 21st Century (Lee & Leigh, 2005). Downsizers, retirees and young professionals increasingly gravitate to newer dwellings closer to city cores, while the decreasing number of families as well as many new immigrants and some young professionals and downsizers move out to newer suburban settings at the outer edges of Canadian cities, which still constitute the fastest-growing parts of Canada's metropolitan regions (Gordon et al., 2018).

Despite these obstacles, the inner-ring suburbs seem well-positioned to accept new growth through intensification. Already, corridor intensification is increasing the previously stagnant populations of these neighbourhoods, with new mixed-use developments rising up along arterial roads and near transit stops. Unfortunately, these types of developments create 'spotty' density, where the easiest targets of the built environment, for example strip malls and fast-food drive-through restaurants, are redeveloped with little political opposition, while the vast areas of single-family dwellings off these arterials remain untouched. While this type of intensification is necessary, it is not enough. Cities across Canada have identified the need for more "missing-middle" in new housing (City of Kelowna, 2012; Clayton & Petramala, 2019). This means grade-oriented, medium-density housing that is suitable for a wide range of household types, from downsizers to families, including duplexes, triplexes, four-plexes, rowhouses, townhouses, bungalow courts, and courtyard apartments (City of Portland, 2019).

This research project explains potential solutions to this imbalance by assessing the political feasibility of building new missing-middle housing in single-family neighbourhoods of inner-ring suburban areas, drawing them into an extended, higher-density urban core., with a focus on the mid-sized Western Canadian city of Kelowna.

#### 1.1 Purpose, Goals and Objectives

This research project examines politically feasible infill design strategies to increase the supply of missing-middle housing and applies them in a case study neighbourhood of an inner-ring suburb in Kelowna, British Columbia (the "Study Area"). The City of Kelowna was chosen for this research project for several reasons. First, under the City's Official Community Plan, which guides development over a two-decade period, an increased focus has been placed on intensifying already built-up areas, making it a receptive candidate city for missingmiddle intensification. However, much of Kelowna's intensification is expected to be in the form of mixed-use commercial-residential apartment buildings in designated urban centres, while single-family neighbourhoods adjacent to these urban centres will remain relatively untouched. Second, Kelowna's demographics are shifting toward young professionals and retirees, meaning that household sizes are getting smaller even though the City has a high proportion of existing single-family housing units (Statistics Canada, 2017). Third, small and medium-sized cities in Canada, those with a metropolitan population of 50,000 to 500,000 such as Kelowna, are rarely studied by Canadian urban scholars (Lewis & Donald, 2010; Jayne, Gibson, Waitt, & Bell, 2010). Despite this lack of attention, these cities face many of the same issues as their larger Canadian peers. Seven of the 10 fastest growing Canadian metropolitan areas between 2011 and 2016 were small and medium sized cities, including Kelowna (Statistics Canada, 2017). These fast-growing cities face the same issues as larger cities, such as sprawl, with Kelowna ranking as Canada's eighth most sprawling city (Doberstein, Hickey, & Li, 2016). Housing prices are also elevated, with Kelowna ranking as one of Canada's most expensive housing markets (Michaels, 2018).

Although this research uses Kelowna as a case study, the recommendations are designed to be generally applicable to mid-sized census metropolitan areas ("CMAs") across Canada. This is for four reasons. First, smaller CMAs are vastly under-represented in published work and in planning studies more broadly in Canada, particularly when it comes to their suburban development patterns, as indicated by a recent study of planning journals which

found that 87% of its articles concerned CMAs with one million people or more (Filion, et al., 2007). This research project will help to fill the gap in research related to suburban densification in small and mid-sized Canadian CMAs.

Second, these smaller CMAs do not have as easy a path to increasing density outside of their downtowns. Where larger CMAs can use transit-oriented development as a "default" path for suburban densification, small and mid-sized CMAs often lack widespread rapid-transit networks. The missing-middle densification strategies proposed in this research project are intended to provide incremental densification over larger-pockets of suburban areas, and therefore do not rely on proximity to a rapid-transit station, unlike new, large-scale transitoriented developments in larger CMAs.

Third, local resistance to densification can be particularly acute in the context of small and mid-sized CMAs because large increases in density are often associated with large CMAs in the residents' imagination, and among local elected officials. The negative connotations of density in these small and mid-sized CMAs are often rooted in a belief that increasing density will not contribute to community building and may result in isolated pockets of density that will age poorly in future decades. This public opposition can result in planners and policymakers showing a weak commitment to increasing density and housing type mix (Brewer & Grant, 2015). The recommendations provided in this research project are intended to be context-sensitive, and therefore avoid much of the political opposition that can be inherent in tower densification.

Fourth, the institutional capacity for planning and urban design is often more limited in small and mid-sized CMAs compared to Canada's major CMAs. This problem is compounded by the fact that market conditions in these smaller CMAs tend to favour traditional suburban developments of single-family housing tracts, as opposed to denser mixed-use and walkable neighbourhoods (Brewer & Grant, 2015). Given the fact that developers often have considerable influence in the development of master plans for new development areas, these plans often trend more conservative than they do in larger CMAs (Brewer & Grant, 2015). The recommendations in this research project are smaller-scale in nature, therefore requiring less capital and less risk than the creation of new communities "from scratch". These smaller-scale projects should therefore be able to attract developers of all sizes, from existing homeowners and "mom and pop" builders to more established developers, therefore reducing the influence of any one developer.

#### 1.2 Document Structure

This research project consists of two parts. Part I begins with a comprehensive literature review which defines inner-ring suburbs and examines the issues that these areas face, as well as the assets that they contain. This literature review also considers infill as a strategy for increasing the supply of missing-middle housing in established, single-family neighbourhoods, examining how a misunderstanding of not-in-my-backyard ("NIMBY") sentiments by policymakers has led to political difficulties when zoning for infill development in these neighbourhoods, and looks at strategies to overcome this impediment.

The second section of Part I examines three precedents of cities, Kelowna, British Columbia, Seattle, Washington and Portland, Oregon, that have implemented, or are in the process of implementing strategies to densify established, single-family neighbourhoods to increase their supply of missing-middle housing. These three precedents provide key insights into why some residents of single-family neighbourhoods resist change in their neighbourhood, and how this resistance can be overcome through the planning process.

Part II of this research project applies the lessons learned from Part I in order to create a zoning bylaw that allows for the development of missing-middle housing in an inner-ring suburban neighbourhood of Kelowna, British Columbia. A design strategy is presented for the housing typologies that can be built under this adapted infill zone.

#### 1.3 Overview of Data and Methods

The data and methods used for this research project are varied. In Part I, Chapter Three, more than 400 comments from public engagement in Seattle and Portland were analyzed and categorized based on the respondents' perceptions of increased density in single-family neighbourhoods. This analysis provides insight into the recurring concerns that residents in single-family areas have with respect to accommodating increased density in their neighbourhoods. In conjunction with these comments, five long-term residents of central city neighbourhoods in Kelowna that have been rezoned for increased density were interviewed to gain a more nuanced understanding of their opinions on neighbourhood change. These interviews supplement the analysis of the public engagement comments from Seattle and Portland. Interviews with planners in the three precedent cities were conducted to gain a better understanding of both the political and functional challenges to implementing zoning changes in established single-family neighbourhoods. Finally, interviews with architects and infill housing builders were undertaken to gain a better understanding of the economic and practical challenges to building infill housing.

Data for the Part II was obtained from Statistics Canada census data and municipal policy documents. A site analysis of the Study Area is informed by an analysis of key long-term planning documents from the City of Kelowna, Statistics Canada data, and a field observation of the study area conducted in February and March of 2019. The second section of Part II, the drafting of a new infill housing zoning bylaw for the Study Area was informed by several infill housing zoning bylaws from Canadian and American cities. The third section of Part II, the infill housing design guide, was also informed from precedent infill housing guidelines from several Canadian and American cities.

# PART I

### **2** LITERATURE REVIEW

This literature review comprises two separate topics. The first part of this literature review considers inner-ring suburbs, differentiating these suburbs from other regions of an urban area, and then provides an overview of the common issues, both socio-economic and structural, that afflict these areas. Following this discussion on the issues facing innerring suburbs is an overview of their assets, with a focus on factors that make these regions good candidates for retrofit through infill development. The second part of this literature review looks at the use of infill development as a tactic to retrofit suburban areas and return investment to stagnant, single-family neighbourhoods. This second part also provides an overview of the primary obstacle to infill development in single-family neighbourhoods, NIMBY sentiments of existing homeowners. Instead of assuming that these sentiments are misguided, this literature review seeks to provide a better understanding of what drives these resident concerns so that they can be better addressed in the planning and design processes for infill development.

#### 2.1 Inner-Ring Suburbs

Before assessing potential retrofit solutions for inner-ring suburbs, it is first important to define inner-ring suburbs, trace their historic development, and understand the common planning issues associated with these areas of North American cities.





TRADITIONAL STRUCTURE VERSUS MULTI-RING POLYCENTRIC STRUCTURE OF SUBURBAN DEVELOPMENT. CREDIT: LEE AND LEIGH, 2005

FIGURE 2.1:

Multi-Ring Polycentric Structure

#### 2.1.1 Defining Inner-Ring Suburbs

Despite the term 'suburb' often being used to describe any place between a central city and the rural hinterlands, many different types of suburbs exist (Hanlon, 2010). Among these varied suburban areas are inner-ring suburbs, middle-tier suburbs, outer suburbs, exurbs on the rural-urban fringe, and edge cities (Hanlon, 2010). These are distinct suburban geographies with their own built form, street layout, problems and advantages. This paper considers the first of these suburban areas, the inner-ring suburb.

Inner-ring suburbs are generally defined as those areas of a city that were built after the Second World War, particularly between the years of 1945 and 1970 (Seaver, Morrish, & Rapson, 1998; Lucy & Phillips, 2000 as cited in Lee & Leigh, 2005). Schwarz (2003, as cited in Lee & Leigh, 2005) finds that inner-ring suburbs were constructed rapidly to provide housing for the post-war baby boom generation, and tend to have homogenous architecture and automobile-dependent neighbourhoods. The focus on the automobile as the primary mode of transporation provides a distinction between these inner-ring suburbs and earlier-developed, more compact streetcar suburbs (Lee & Leigh, 2005). Lee & Leigh (2005) find that inner-ring suburbs are characterized by low-density, single-family, residential suburban areas, that do not necessarily conform to political boundaries due to subsequent amalagamations. Hanlon and Vicino (2007 as cited in Hanlon, 2010) further define inner-ring suburbs according to two criteria: first, that they share a boundary with the central city, and secondly that more than 50% of their housing stock has been built prior to 1970.

It should be noted that inner-ring suburbs have, confusingly, been given a large array of names in recent literature. These names include old suburbs, inner suburbs, inner-ring suburbs, older inner-ring suburbs, sitcom suburbs, post-World War II suburbs, first suburbs, first-ring suburbs and first-tier suburbs (Persky & Kurban, 2001; Bollens, 1988; Downs 1997; Bier & Post, 2003; Lucy & Phillips, 2000; Fishman, 2000; Hudnut, 2003, as cited in Lee & Leigh, 2005). As these differing terms are generally used by scholars to refer to the same areas of a metropolitan region, this paper will use the term inner-ring suburb for clarity and conciseness.

#### 2.1.2 Historic Development of Inner-Ring Suburbs

The inner-ring suburbs are often described as being a second phase of suburbanization in North America, following the movement of the urban elite to the "bourgeois utopias", the low-density, green villages far from dirty, industrial central cities during the late 19th century and early 20th century (Short, Hanlon, & Vicino, 2007). This second phase of suburbanization was characterized by decentralization of housing and employment after the Second World War, with mass production allowing for the development of standardized housing and massive-scale subdivisions on greenfield sites, a built landscape made famous by Levittown in New York (Short, Hanlon, & Vicino, 2007). These large-scale suburban developments were made possible by the construction of cross-continent highway networks connecting central cities to their peripheral areas. Cheap, rural land along the highway system continued to be redeveloped for new, low-density and single-family dwelling dominated suburban housing developments, for shopping malls, and for office parks, turning these highways into the main streets of post war suburbia (Fishman, 2000).

In Canada, government policies, particularly Canada Mortgage and Housing Corporation mortgage financing, and comprehensive zoning bylaws that encouraged a separation of uses between residential and commercial districts, acted as the catalyst for institutional developers to build these suburban tract developments, and continue the outward expansion of the nation's metropolitan areas (Fiedler & Addie, 2008) . This outward expansion predominantly took the form of neighbourhood units of curvilinear residential streets, focused on a school, and framed by an arterial grid (Harris, 2015). It should be noted that Canadian inner-ring suburbs do have some features that distinguish them from those built in the United States, particularly the presence of higher-density apartment pods, usually in the form of slab-high-rise towers or walk-up apartments (Harris, 2015). A second distinguishing feature of the inner-ring suburbs in Canadian cities is that they did not necessarily supplant the desirability of central city neighbourhoods, which did not see largescale middle-class flight as comparable areas did in the United States (Harris, 2015).

Regardless of these differences, many Canadians were attracted to the inner-ring suburbs for the same reasons as their American peers. Postwar suburbanites desired privacy, quiet, and control over an affordable living space (Harris, 2015). This was a pragmatic ideal, as there was only a limited amount of space and housing in the central cities, much of which was dilapidated, and so the suburbs provided cheaper, and more plentiful parcels of private living space (Harris, 2015). Furthermore, ownership of a home in the "uniform" and "ubiquitous" inner-ring suburbs was seen a "leading symbol of a new consumer lifestyle" (Harris, 2004, as cited in Fiedler & Addie, 2008).

#### 2.1.3 From Urban Periphery to the "In-Between" City

In the decades following the initial growth period immediately after the end of the second World War, the inner-ring suburbs evolved to comprise a core component of the "inbetween city". The term "in-between city" was first devised by Tom Sieverts, who defined it to mean the parts of the urban region that are perceived as neither the traditional city, nor the traditional suburb (Sieverts, 2003). According to Filion, et al (2011):

"As the expanding outer suburb encircled it, the [inner-ring] suburb became an inbetween city, that is, an entity that is not as urban as the inner city and not as suburban as the outer suburb and that is increasingly a residential location for people who do not have economic access to these two other urban zones" (p. 181).

The transition to in-between city status began during the Keynesian economic regime following the Second World War, when North American suburbs accommodated new industry, often in single-storey assembly-line plants, and a large proportion of blue- and white-collar middle class citizens, often in developments with copious amounts of low-density housing that was quickly built, and suitable for the accumulation of mass-produced, durable goods



FIGURE 2.2: EXAMPLE OF AN "IN-BETWEEN" CITY LANDSCAPE. CREDIT: GEOHILFE.DE

(Filion, Osolen, & Bunting, 2011). In the decades following the explosive growth of the inner-ring suburbs, globalization brought about large-scale de-industrialization in North America just as neo-liberal economic policies became popular. This rise of neoliberal economic policy is associated with a reduction of government intervention which could have alleviated the impacts of heavy job losses (Filion, Osolen, & Bunting, 2011). According to Filion et al (2011),

> "the proportion of employed innersuburban residents working in the

manufacturing sector declined precipitously between 1971 and 2006. This same logic pertains to the housing stock. As new residential development was taking place in the outer suburb, households responsive to modernity were attracted to this sector. Meanwhile, the inner city was gentrifying rapidly, thanks to the lure of its traditional architecture and land use configuration, active street life, cultural scene, and proximity to the downtown concentration of employment" (p. 187).

Despite the decreasing attractiveness of the inner-ring suburbs for both jobs and housing investment, the landscape has been described by Keil and Young (2011) as representing a "remarkable new urban form" where large portions of the population still live, work and play, despite being a seemingly unplanned, untypical collection of "remnant spaces of Fordist urbanization" that include airports, industrial facilities, large-scale housing estates, marginal agriculture lands, parks and woods, strip malls, landfills, and universities.

#### 2.2 Issues Facing Inner-Ring Suburbs

Despite the rapid development of the inner-ring suburbs in the two decades following the end of the second World War, these neighbourhoods are now at risk of long-term decline due to disinvestment (Hudnut, 2003 as cited in Lee & Leigh, 2005). It has been observed that suburban decline generally occurs where there are large numbers of smaller houses with little aesthetic charm, located in inconvenient settings, with a lack of public amenities and few alternatives to automobile transportation (Lee & Leigh, 2005). The following sections of this literature review will consider the characteristics of disinvestment in relation to the inner-ring suburbs.

#### 2.2.1 Landscapes of Sprawl

Among the most common criticisms of inner-ring suburbs is their sprawling nature. Suburban sprawl signifies a particular form of urban growth characterized by low densities, segregated land uses, the presence of dysfunctional, unused spaces left over after development, and automobile dominated landscapes (Fischler, 2004).

This form of 'sprawl' development, prevalent both in inner-ring suburbs and more recent suburban developments, brings with it several well-documented issues. First, these low-density developments, which remain attractive for their greenness, tend to be far from day-to-day amenities, requiring a car for most necessary trips, such as grocery shopping (Charmes & Keil, 2015). This auto-dependence leads to higher per capita greenhouse gas emissions than in central cities and older cities (Giratalla, Senbel, Zhang, & Kissinger, 2014). The higher greenhouse gas emissions are not only a result of higher automobile use, but also because detached residential dwellings have the highest embodied emissions per dwelling, due to their large size, lack of shared walls, and because their operation emissions are greater than those for dwellings located closer to the urban centre (Giratalla, Senbel, Zhang, & Kissinger, 2014).

Second, conventional forms of auto-dependent suburban development are unsustainable from an economic perspective. Greenfield suburban developments at peripheral areas of metropolitan regions require significant investments in new infrastructure, costs that can be difficult to recover through development charges. Furthermore, municipalities are burdened with the maintenance and repair costs of this infrastructure through its life-cycle (Gordon, et al., 2018). Finally, from a public health perspective, evidence suggests that suburban lifestyles are correlated with higher obesity rates as the built environment does not promote physical activity with, for example, walkable transit and amenities (Gordon, et al., 2018).

The sprawling nature of inner-ring suburbia, while unhealthy to many, can be devastating to marginalized populations living in poverty. For those who cannot afford to buy a private automobile, or sustain monthly costs of automobile ownership, suburban sprawl means that every task, whether going to work, to the doctor or grocery shopping is time consuming and expensive, as public transit operates on a user-pay approach (Dippo & James, 2011). Unsurprisingly, marginalized inner-ring suburban residents experience increased levels of alienation and disillusionment (Dippo & James, 2011).

#### 2.2.2 Outdated and Deteriorating Housing Stock

Inner-ring suburbia's initial housing boom is now over 60 years old, and these once prized locations for families are exhibiting symptoms of aging. Housing in inner-ring suburbs remains largely outdated, lacking the size and amenities that would allow it to compete with newer, larger housing on the outer fringes of metropolitan areas (Hanlon, 2010). Often, this aging housing stock in the inner-ring suburbs is devalued, and investment is instead directed toward edge-city developments, greenfield suburban developments, and the revitalization of housing in central cities (Hanlon, 2010). The deterioration of inner-ring suburban housing stock lends these places a 'gothic' element, according to Short, et al (2007). The term gothic, as used by these authors, refers to the "grotesque or desolate" nature of suburbs built in the postwar period. These can be "bleak places" struggling to survive in the twenty-first century (Short, Hanlon, & Vicino, 2007). While some inner-ring suburbs have seen older housing stock either expanded and renovated or torn down and replaced with larger, newer housing, this type of capital intensive upgrading only happens in metropolitan regions where there is an affluent middle-class and overheated housing market (Short, Hanlon, & Vicino, 2007).

While capital disinvestment in the housing stock of most inner-ring suburbs fuels their decay, the demand for larger, newer housing and commercial buildings results in large-scale suburban development at the metropolitan fringe, a system promoted by the development industry and enacted by local land use planning (Short, Hanlon, & Vicino, 2007). In recent years, the primary alternative in major Canadian and American metropolitan areas to the development of new, single-family dwellings of outer-ring suburbia has been central city intensification. In order to combat sprawl development and meet the income needs of local governments, municipalities have increasingly removed supply-side constraints in certain, already established, central city neighbourhoods. The new, dense, mixed-use buildings that are subsequently built in these neighbourhoods are then marketed to consumers on their walkability, liveability and sustainability (Quastel, 2009). This creates what Bunce (2018) refers to as 'new-build gentrification', a type of instant gentrification where new residential projects are built to automatically meet the demands and financial abilities of middle-class and higher-income individuals. These large-scale, dense developments are increasingly expensive and time-consuming to build, making it difficult for them to contain any affordable housing (Wegmann & Chapple, 2014). Furthermore, these dense central city environments have created self-sustaining worlds that increasingly appeal to the growing ranks of singles, childless couples, empty nesters and retirees (Harris, 2015).

Inner-ring suburbs are caught between the processes of central city gentrification and outer suburb sprawl, losing the battle for investment resources to these two regions, a phenomenon termed 'devalorization' by Short, Hanlon, & Vicino (2007). Neither are they as attractive for families as outer-ring suburbs, nor are they as attractive as central city condominiums to the growing number of singles, couples and downsizers.

#### 2.2.3 Population Stagnation

Suburbs are typically viewed as experiencing continuous population growth. A study by David Gordon and Mark Janzen found that by 2006, 68% of all Canadians and 82% of urban Canadians (which includes inner-city, suburban and exurban areas) live in suburban areas (Gordon D. , 2018). This is a dramatic growth in the suburban population, as it is estimated that Canada did not become a majority suburban nation until the 1980s (Gordon & Janzen, 2013). However, this growth is not evenly distributed throughout suburban areas of Canadian or American metropolitan areas. Often, it is the inner-ring suburbs that have lagged behind their outer-ring neighbours for suburban growth. A study of suburban growth throughout the United States found that inner-ring suburbs witnessed substantially smaller population increases than both central cities and outer suburbs between 1980 and 2000 (Hanlon, 2010). A corresponding phenomenon of population decline or stagnation has been observed in Canadian inner-ring suburbs (see Babin, 2016).

#### 2.2.4 Declining Incomes

High income residents are increasingly moving toward the central city neighbourhoods, whereas incomes are declining in the inner-ring suburbs. In 1981 deep neighbourhood poverty was largely contained in the inner-city, but by 2001 neighbourhood poverty was an inner-ring suburban story with the inner suburbs now disproportionately home to those most negatively impacted by post-Fordist restructuring (Fiedler & Addie, 2008).

#### 2.3 Assets of Inner-Ring Suburbs

Despite the challenges facing inner-ring suburbs, these areas also have assets that make them good candidates for reinvestment. The inner-ring suburbs are increasingly affordable, diverse places with a street network that, while not ideal, is generally well connected and lacks the high percentage of cul-de-sacs found in the outer-ring suburbs.

#### 2.3.1 Population Diversity and Affordable Housing

Suburbs have been characterized by a number of deep-rooted mythologies. Perhaps no mythology has been more entrenched than that of cultural and racial homogeneity. Despite the strength of the notion of the white, middle-class suburban resident, studies in the United States and Canada have proven that this characterization is incomplete (Harris, 2015). Much of this diversity can be attributed to neighbourhood life cycles. According to the "life cycle" model of suburban change, the majority of suburbs are subject to the impacts of neighbourhood life cycles (Hanlon, 2010). These life cycles, initially observed by Edgar Hoover and Raymond Vernon (1962, as cited in Hanlon, 2010) in relation to central city neighbourhood decline, involve five distinct phases: development, transition, down-grading, thinning-out and renewal. Suburbs are initially developed, and grow quickly through the first phase, transition into even higher density development during the second phase, begin to lose investment in the third phase, lose population in the fourth phase, and finally gain reinvestment in the fifth phase of development, with obsolete housing being renovated or replaced (Hanlon, 2010).

Derived from the neighbourhood life cycle concept, other scholars have observed the "trickle-down" process of neighbourhood change, where older neighbourhoods that are beyond the first two phases of their life cycles become occupied by more diverse, or lowerincome households (Downs, 1981, as cited in Hanlon, 2010). In the United States, older, innerring suburbs have begun to filter down to new arrivals to that country, who had traditionally migrated to ethnic neighbourhoods in city centres (Hanlon, 2010). This process has led to the rise of what Li (1998) has termed "ethnoburbs". Ethnoburbs are defined as suburban ethnic and multi-ethnic clusters of residential and business districts in metropolitan areas that, due to the globalizing economy, act as outposts in the emerging international ethnic system (Li, 1998). In the Canadian context a similar trickle-down process has occurred to such an extent that it has been argued by Harris (2014) that the term "ethnoburb" is unnecessary as, in many suburban areas of major metropolitan areas, immigrant settlement is so taken for granted that the presence or dominance of ethnic minorities is part of a new "local suburban mythology" (p. 39). In Canada's largest metropolitan region, Toronto, the trickle-down effect has meant that, while more affluent new immigrants to Canada settle in the newer housing developments of the outer-ring suburbs, less affluent immigrants have gravitated toward the inner-ring suburbs (Lo, 2011). A study by Moos and Kramer (2012, as cited in Harris, 2014) found that the suburbs located between 10 and 30 kilometres from the old city centre had the highest concentrations of visible minorities at over 50% of their populations. Clearly, the post-war stereotype of inner-ring suburbs, that of white middle-class families in single-detached dwellings, is a gross mischaracterization of the on-the-ground reality of these neighbourhoods.

In contrast to the increasingly diverse suburban areas of Canadian cities, the gentrifying central cities have seen their share of the immigrant population drop (Lo, 2011).

One study found that Toronto's traditional immigrant gateway neighbourhoods in the central city saw their share of immigrant population fall from 47% in 1971 to just 23% in 2001 (Lo, 2011). The dramatic increase in immigrant populations in the inner-ring suburbs in contrast to the decreasing share of immigrants in the central city has led Filion et al. (2011) to describe the inner-ring suburbs as the new "port of entry for recent immigrants" to Canada (p. 181).

#### 2.3.2 Built Form

It may seem counter-intuitive to refer to the built form of inner-ring suburbs as an asset. As noted above, these areas of the city are generally criticized for their sprawling, autodependent and inefficient built form. Despite these major challenges, the built form of innerring suburbs sets a solid foundation for repair and reinvestment.

First, inner-ring suburbs are better connected than later built suburban areas. While outer-ring suburbs often consist of disconnected cul-de-sacs and isolated subdivisions, inner-ring suburbs, despite their curvilinear streets, are mostly connected and link up to one another (Steuteville, 2017). Additionally, these streets are not only connected, but they often contain plentiful and underutilized on-street parking, a valuable resource for incremental densification (Steuteville, 2017). Second, inner-ring neighbourhoods are generally closer to the regional downtown, and therefore closer to jobs and transit than later built suburbs (Steuteville, 2017). Furthermore, because these inner-ring suburbs are squeezed between the central city core and the expanding outer suburbs, they are effectively landlocked and must expand through intensification as opposed to outward growth (Sweeney & Hanlon, 2017). Third, as inner-ring suburbs have had decades to mature, they often have plentiful civic assets including parks, schools and cultural institutions, preventing the need to build these from scratch at great expense to the municipality (Steuteville, 2017). Fourth, and perhaps most important, inner-ring suburbs contain relatively small single-detached dwellings on larger lots (Chow, 2005). While these small dwellings were previously discussed in this chapter as being a liability for inner-ring suburbs, as they are considered outdated in comparison to new, larger dwellings of outer ring suburbia, the diminutive size of these dwellings is beneficial for retrofit opportunities. Inner-ring suburban dwellings generally take up between 10 and 20% of a lot (Chow, 2005). In contrast, new suburban houses are often up to three times larger than those of the inner-ring suburbs and are generally situated at the centre of smaller lots (Chow, 2005). This results in new suburban houses taking up between 40 and 50% of their lot (Chow, 2005).

As infill development requires open space to build on, these new suburban developments are becoming increasingly "ossified" and unable to reinvent themselves (Chow, 2005), a problem that is not as widespread in the inner-ring suburbs.

#### 2.4 Suburban Retrofitting

The first section of this literature review problematized the simple central city/suburbia dichotomy that so often dominates urban planning rhetoric. As opposed to being monolithic expanses of a singular built form containing the majority of the urban Canadian population, suburbs are complex, differentiated spaces that require contextual interventions depending on their age and built form to spur reinvestment and rehabilitation. This research project focuses on the rehabilitation of the inner-ring suburbs and will not consider interventions for the outer-ring suburbs that flourished from the 1980s through the 2000s, which are characterized by power centres and often gated, single-use housing pods (Tachieva, 2010). The following section of this literature review considers the use of infill densification as a method for bringing investment and population growth back to inner-ring suburbs.

#### 2.4.1 Transforming Suburbia

The interventions proposed in this paper will be considered in the context of the adaptive design process as developed by Paul Lukez (2007). The adaptive design process provides a strategy for transforming suburban areas that evolves, as opposed to replaces, the pre-existing suburban built form to create an identity built through the passage of time (Lukez, 2007). The adaptive design process is informed by six key principles, which are:

- 1. Evolving identity over applied identity
- 2. Rooted to place over absent of place
- 3. Historical over a-historical
- 4. Temporal over a-temporal
- 5. Acquired meaning over marketed meaning
- 6. Community as place over community as commodity

These principles go to the core of the adaptive design process, the idea that over the passage of time, cities become layered, evolving to show how "individuals and institutions have sought to find the right fit between places and the societies they support" (Lukez, 2007, p. 23).

According to Lukez (2007), the actions that comprise the operations of time are

reading, erasing, and writing. A site should be read, that is analyzed, first on its surface and secondly in a deeper way that allows its structure and meaning to be better understood, using maps, quantitative data, satellite images and three-dimensional visualizations (Lukez, 2007). Whereas reading involves a passive analysis of a site, erasure is an active, destructive act. Erasure removes evidence of previous actions to allow for their renewal and regeneration, and when implemented selectively can activate potentials for new possibilities (Lukez, 2007).

Erasure can be complete eradication (for example, "tear downs" of single family dwellings in order to replace them with larger dwellings), partial erasure (which removes only certain elements from a site so that its context remains apparent), etching (which leaves a trace of past interventions), excision (a deliberate cut through existing buildings, or urban fabric), entropy (the natural force of degradation and disintegration over the lifecycle of a building or infrastructure), and excavation (Lukez, 2007).

Writing is the corollary active intervention to erasure. Writing is a deliberate act of construction, to create volumes of space for residential, private and public uses (Lukez, 2007). The first act of writing tends to be parcelling, which defines the boundaries of future acts of writing and erasing on a particular site (Lukez, 2007). Once a site has been parcelled, further acts of writing will generally follow, including infilling (filling or constructing a void by taking advantage of underutilized capacity), addition (which consists of an outward or upward expansion of a pre-existing structure), and morphing (where the material and volume of a form remain constant, while its shape and configuration take new forms) (Lukez, 2007).

#### 2.4.2 Infill as Incremental Densification

The current fabric of inner-ring suburbs often lacks a cohesive or consistent structure in the organization of building types, open spaces and street networks. To achieve more consistency in this fabric, a range of new building types similar in size and structure will need to be developed to provide visual and spatial continuity between buildings and open spaces (Lukez, 2007). This research project is primarily concerned with examining strategies for finegrain infill development in single-family dwelling dominated neighbourhoods, whether that involves the erasure of previous fabric or an addition to that existing fabric.

In addition to providing cohesion and consistency to suburban built form, the use of infill development is also an integral component to smart growth policies to densify already built-up areas of a metropolitan region (Alexander & Tomalty, 2002). Although the definitions

of smart growth are broad and varied (Lee & Leigh, 2005), the core components of smart growth are best encapsulated by Nelson's (2001) definition as:

"a set of policies designed to achieve five goals: (1) the preservation of public goods; (2) minimization of adverse land use interactions and maximization of positive ones; (3) minimization of public fiscal costs; (4) maximization of social equity; and (5), very broadly, maximization of public life" (p.1).

It is contended by smart growth advocates that public goods can be preserved through more efficient use of land in urban areas, which reduces development pressure for natural habitats and farm lands (Alexander & Tomalty, 2002). Positive land use interactions are maximized as higher densities allow for a greater mixing of land uses, which in turn allows for more retail and employer businesses to be established within walking distance, or a short drive, from residential areas (Alexander & Tomalty, 2002). Public fiscal costs are minimized through a reduction of water and energy consumption due to smaller residential unit sizes, and less lawns and gardens, as well as through the reuse of existing infrastructural systems, such as roads, sewage and storm drainage systems (Alexander & Tomalty, 2002). Social equity is promoted through an improved variety of housing types, which are better to accommodate a wide range of people in various stages of their life cycles, as well as through greater housing affordability as unit sizes become smaller and the range of housing types broadens. Finally, public life and residents' own quality of life are improved through an increase in the availability of services and amenities closer to home, as well as through a more vibrant and active pedestrian realm (Alexander & Tomalty, 2002).

While the effectiveness of smart growth policies in reducing auto-dependency and improving affordability are not certain (see Filion & McSpurren, 2007 and Jeongseob & Larsen, 2017), these policies have been effective at revitalizating older suburban and inner city real estate markets (NAHB, 2002). According to Hudnut (2003, as cited in Lee & Leigh, 2005), this revitalization through infill development is especially important in inner-ring suburbs as a strategy to prevent further loss of population and investment to outer-ring suburbs. Additionally, despite the lack of clear evidence that smart growth inspired central city densification policies increase affordable housing, infill housing in the inner-ring suburbs may provide the best opportunity for new, affordable housing. According to Hudnut (2003, as cited in Lee & Leigh, 2005),

"[t]he affordable housing crisis offers [inner-ring] suburbs an opportunity to promote

aggressively the development of workforce housing and mixed-income communities... located as they are, halfway to everywhere, it makes sense for [inner-ring] suburbs to capitalize on their geographical advantage by providing a broad spectrum of housing choices for a range of incomes, combining the benefits of affordability with better proximity to jobs for low-and moderate-income workers" (p. 339).

#### 2.4.3 Obstacles to Infill Intensification

The most common obstacle to densification of single-family neighbourhoods noted in the existing literature is anti-development, not-in-my-backyard ("NIMBY") sentiment of existing homeowners (Bervoets, et al., 2015; Davidoff, Pavlov, & Somerville, 2018). Although for many in the planning profession, urban intensification or compactness is an essential ingredient for sustainable development, the psychological transition in residents' minds to different modes of accommodating growth is a slow and at times painful reconceptualization of community values and traditions, as evidenced by patterns of hostility to densification observed in rapidly growing communities all across North America. (Doberstein, Hickey, & Li, 2016).

Although NIMBYism is generally framed as a "moral struggle between rational/ civic-minded planners and irrational/self-interested opponents" (Gibson, 2005, p. 381) this dichotomy oversimplifies NIMBY concerns and sets up binary constructions of "good" and "bad" public participation – "welcome" and "unwelcome" contributions to the democratic process (Mcclymont & O'hare, 2008). Mcclymont and O'hare (2008) have found that local neighbourhood groups labeled as "NIMBYs" are often engaged in a process of communicating the strong sense of place that they feel for the neighbourhoods they inhabit, illustrating their pride in the community and their desire to preserve and enhance what, for them, makes it distinctive and special. This is unsurprising, as sense of place and neighbourhood attachment are strong indicators of an individual's perceived quality of life (Mao, Fornara, Manca, Bonnes, & Bonaiuto, 2015), and residents will fight to not have their quality of life diminished. Mao, et al (2015) find that a person's satisfaction with their neighbourhood is associated with the following factors:

• Architecture and planning: which encompass attitudes toward building volume, building aesthetics, building density, external connections, internal practicability, and green areas.

• Socio-relational characteristics: consisting of views on security and tolerance, sociability and cordiality among neighbours, and discretion and civility.

• Functionality: which includes indicators concerning social care services, school services, sports services, sociocultural activities, commercial services, and transport services.

• Contextuality: comprises views on pace of life, environmental health, and upkeep and and care (Mao, Fornara, Manca, Bonnes, & Bonaiuto, 2015).

If residents perceive intensification as jeopardizing these factors and by extension their quality of life, they will become an impediment to that intensification. In suburban areas neighbourhood satisfaction is generally linked to an affection for an idealized suburban life (Bervoets, et al., 2015). Studies have found that residents fear a loss of this idealized life when greater intensification is proposed for their neighbourhoods. Kazig and Paris (2016) note that two of the most common concerns with increased density in suburban single-family neighbourhoods are a loss of intimacy and a loss of idyllic character. The preservation of one's intimacy means establishing a certain distance between oneself and their neighbours, which is possible in a single-family dwelling but not an apartment, townhouse, or other forms of attached dwelling (Kazig & Paris, 2016). The loss of intimacy is especially concerning for those whose plots are directly in contact with a densified plot (Kazig & Paris, 2016). Often, to avoid this loss of intimacy, residents must change the location of certain activities, moving them to less exposed parts of their house or garden (Kazig & Paris, 2016).

Loss of idyllic character relates to both the loss of a certain idyll at home and life, and also at the level of the neighbourhood in the sense of it as a district (Kazig & Paris, 2016). At home, the idyllic nature of suburban living is partially based on the garden of the neighbour. Where densification is accompanied by a reduction in trees and other vegetation, as is often the case, this leads to a less pleasant view of the immediate environment from one's home (Kazig & Paris, 2016). At a district scale as well, densification is seen as undermining the garden-like idyll of the neighbourhood, where more uniform style of newly built architecture and landscaping reduce the pre-existing character of the vegetation and architecture (Kazig & Paris, 2016). The resistance to densification is therefore "an extension from the home to the local environment of the domain over which people consider that they have property rights" because homeowners do not only buy a home, but also the environment that it is situated in (Charmes & Keil, 2015). This mobilization of local groups of homeowners then gives

rise to 'anti-growth coalitions' that thwart intensification efforts in established single-family neighbourhoods (Touati-Morel, 2015).

Given the difficulty in overcoming NIMBY arguments against intensification in established, single-family dwelling neighbourhoods, cities both in Canada and abroad have focused their intensification efforts on arterial streets and nodes around frequent transit stops. The intensification of these arterials is seen as the most realistic way of adding density to established neighbourhoods by concentrating it in a limited number of locations, leaving the majority of a neighbourhood untouched (Filion & McSpurren, 2007). In other words, intensification efforts have largely been directed at the 'easy-to-reach fruit' of the built environment such as strip malls and parking lots. The resulting 'spotty' density of this type of intensification does not only create awkward islands of high-density in a sea of low-density, single-family dwelling neighbourhoods, but it is also wasteful for public transit operators who are forced to run services through large expanses of low-density housing before reaching the target pockets of high-density (Filion & McSpurren, 2007).

Corridor intensification is also undesirable, if used as the sole mode of densification, because it results in all multi-family housing being built exclusively in areas with a lowerquality of life. These corridors are often hostile to pedestrians and other non-motorized road users as they prioritize the preservation of 'through' traffic capacity (Duckworth-Smith, 2012). Furthermore, these locales face high exposure to pollutants generated by their proximity to heavy vehicle traffic, including noise pollution, airborne particulates and gases, and visual pollution. On the busiest routes, this exposure can impact residences up to 100 metres away from the road's edge (Duckworth-Smith, 2012). To mitigate these pollutants, larger development sites are preferred as the establishment of a longer continuous 'barrier' building fronting the corridor allows a greater proportion of the plot to be situated within an acoustic shadow (Duckworth-Smith, 2012). Larger development sites on busy corridor roads are also more desirable to developers for intensification, as they allow for a greater flexibility in design and yield substantially higher densities (Dovey, Pike, & Woodcock, 2017). Buildings of this scale can be challenging to build in a suburban environment, and particularly in small and midsized CMAs because they often require substantially more demand than currently exists in the market (Dovey, Pike, & Woodcock, 2017). Furthermore, there are risks of lengthy delays in the planning approval process, or even outright rejection by planning authorities as a result of resident resistance (Dovey, Pike, & Woodcock, 2017).

#### 2.4.4 Soft Densification

In order to overcome the challenges related to spotty density and the limited availability of suitable sites for large-scale corridor intensification projects, more multi-family density must be provided in predominantly single-family dwelling neighbourhoods. In order to advance intensification policies in established, single-family neighbourhoods, policies must address the concerns that residents have of the impact that this density will have on their neighbourhood satisfaction. One method for addressing these concerns is to allow for modest, contextually-sensitive increases in density, known as "soft densification". According to Touati-Morel (2015), soft densification measures are easier to implement than intensive forms of densification as this soft densification does not dramatically change the prevailing urban form of a neighbourhood, with new buildings being similar in height to those that they replace (Touati-Morel, 2015). As opposed to large developers replacing existing singlefamily dwellings on multiple lots as happens with more intensive densification policies, soft densification largely benefits individual homeowners, as they have a vested economic interest in the partition of land, or because the value of their land rises as a result of the increased density potential (Touati-Morel, 2015). As soft densification often provides an incentive to individual homeowners without comprising a radical transformation to the existing built environment, it tends to be a politically feasible method for increasing population in stagnating neighbourhoods (Touati-Morel, 2015). Soft densification does not only benefit homeowners, but it also benefits smaller-scale professionals involved in these projects, including local developers, land surveyors, architects and individual home builders (Touati-Morel, 2015). These benefits create what Touati-Morel (2015) calls a 'soft growth' coalition, insofar as an alliance in favour of soft densification in suburban neighbourhoods can form, enabling the municipality to enact pro-growth policies. It should be noted however that while soft densification has been found to be the least politically fraught intensification strategy, it is still often contested by neighbours who do not actively participate in the process (Kazig & Paris, 2016).

In order to alleviate the contestation of soft densification by non-participants, land use planners should engage in a context sensitive design approach to intensification policies. Context sensitive design ("CSD") is a well-established principle in transportation planning, and is an approach that considers the total context within which a transportation planning, and is an approach that considers the total context within which a transportation improvement project will exist, and then attempts to preserve the scenic, aesthetic, historic and environmental resources of the location, while still achieving functional goals, for example maintaining safety and mobility (Dondi, Simone, Lantieri, & Vignali, 2011). It has been argued that a similar approach to CSD should be taken when it comes to implementing infill housing. Vallance et al. (2005), argue that policies seeking to redirect growth to inner suburbs and other already developed areas can represent "simplistic and deterministic tendencies that ignore the historical and sociocultural aspects of urban life" (p. 715). Gordon and Richardson (2007, in Whittemore, 2016) similarly criticize the "command-and-control" methods in pursuing more compact cities, underscoring the importance of the local acceptability of infill when pursuing densification. Guidelines for infill will not necessarily quell controversy if they do not take the particulars of neighbourhood form and design into account. Therefore, infill should be designed "to accommodate people's geographic imagination" of their neighbourhood through contextual design (Vallance, Perkins, and Moore 2005, 732).

### **3** PRECEDENTS

As discussed in Chapter Two, soft densification is generally a more politically feasible form of intensification for single-family dwelling dominated neighbourhoods (Touati-Morel, 2015). While more politically feasible, soft densification can remain controversial to residents who do not intend on taking advantage of the increased density on their property (Kazig & Paris, 2016). This chapter will assess three precedents where cities have rezoned, or are in the process of rezoning, established single-family dwelling neighbourhoods for increased density, primarily through forms of soft densification, in order to understand the concerns that existing residents have in respect to this intensification, and how their concerns were addressed by planners, if at all.

The first of these precedents, Kelowna, implemented its zoning changes in 2016 and therefore provides important insight into residents' lived experience with neighbourhood intensification as a process in action. In Seattle, the second precedent, rezoning legislation was passed in March of 2019, and therefore provides an important example of how public concerns shaped the ultimate outcome of the legislation. In the third precedent, Portland, single-family zoning changes are still being revised.

#### 3.1 Policy Background

#### 3.1.1 Kelowna's RU7 Zoning

The City of Kelowna, British Columbia is Canada's sixth fastest growing metropolitan region (Statistics Canada, 2017), but also ranks eighth in Canada for urban sprawl (Doberstein, Hickey, & Li, 2016). To combat sprawl, Kelowna has adopted smart growth policies to develop more compactly. As part of its efforts to reduce sprawl, the City of Kelowna organized a design competition in 2015 for architecture firms to create a new typology for infill development that would be permitted on more than 800 lots in pre-war, central city neighbourhoods. This competition, known as the "Infill Challenge" produced two winning concepts, both of which can be built on a single, standard lot of 15 metres by 37 metres with lane access, and both

FIGURE 3.1: WINNING DESIGN FROM KELOWNA'S INFILL CHALLENGE. CREDIT: ARCHITECTURALLY DISTINCT SOLUTIONS



contain up to four units (see Figures 3.1 and 3.2). Following this design competition, the City rezoned the subject neighbourhoods to a new infill zoning designation known as RU7. If a builder uses one of the two winning concepts to construct infill housing in the RU7 zone, the building permit application is fast tracked, and no development permit is required. A development permit is only required if a builder wants to build a design different from the two winning concepts.

The aim of the RU7 zoning is to bring forward new, missing-middle housing types for Kelowna's core neighbourhoods, while respecting the values of existing residents (City of Kelowna, 2015). RU7 zoning is limited, as noted above, to just over 800 lots in central city neighbourhoods, and is therefore not intended to be a complete infill housing strategy for the city. Instead, RU7 zoning is intended to be a catalyst to demonstrate that infill housing can make positive contributions to neighbourhoods and move the community dialogue forward on the topic (City of Kelowna, 2015). According to the senior planner in Kelowna interviewed for this research, in the two years since the RU7 zoning change was enacted, there have been approximately 60 projects built or in the pre-development application process (Personal Correspondence).



FIGURE 3.2: WINNING DESIGN FROM KELOWNA'S INFILL CHALLENGE. CREDIT: INHABIT RESIDENTIAL
# 3.1.2 Seattle's Mandatory Affordable Housing Legislation

In 1971 two real estate agents in Seattle, Washington erected a billboard reading "Will the last person leaving Seattle – Turn out the lights". Seattle at that time was heavily dependent on jobs from Boeing, and the company had cut more than 60,000 of them, leaving unemployment at a staggering 13 percent. An article in the London based The Economist named Seattle the "City of despair" (Lacitis, 2009). In the more than four-decades since that billboard was erected, Seattle has undergone a renaissance. Home to major corporations such as Amazon, Microsoft, Starbucks, Costco Wholesale, and Boeing, Seattle today is among the fastest growing large cities in the United States, with population growth of nearly 19 percent in the period between 2010 and 2018 (Balk, 2018).

To accommodate this fast-growing population, the City has set a goal of generating a net increase of 50,000 new housing units over a 10-year period with 20,000 of the units being affordable (HALA Advisory Committee, 2015). In March 2019 Seattle City Council passed the Mandatory Housing Affordability ("MHA") legislation, which includes a set of zoning changes as well as affordable housing requirements intended to accomplish the City's lofty housing goals. A core strategy of the MHA legislation is to relax zoning to allow for more density and increased housing types in wider areas of the city, including areas previously zoned exclusively for single-family dwellings (HALA Advisory Committee, 2015). Prior to the passing of the MHA legislation, nearly 75 percent of Seattle's land was zoned for single-family dwellings (HALA Advisory Committee, 2015). The cost of housing in areas zoned single-family in Seattle has been rising twice as fast as the city's overall average, reaching \$753,600 in 2018, even though many predominantly single-family neighbourhoods of the city have experienced population decline (Seattle Planning Commission, 2018).

In a 2015 report recommending strategies to achieve the 10 year goal of generating 50,000 new units of housing, the HALA advisory committee noted that in a city experiencing rapid growth with an intense pressure on access to affordable housing, the historic level of single-family zoning was no longer realistic or sustainable (HALA Advisory Committee, 2015). The report posited four recommendations to increase housing supply and diversity in the single-family zones, which were (HALA Advisory Committee, 2015):

- Increase Supply of Accessory Dwelling Units and Backyard Cottages
- Allow a Broader Mix of Lower Density Housing Types within Single Family Areas
- Allow Flexible Reuse of Large, Unique Development Sites

Oppose Neighborhood Conservation Districts

Of particular importance to this paper is the second of these recommendations. To increase the mix of lower density housing types within single-family zoned areas, the report recommends that a broader mix of housing, including small-lot dwellings, cottages or courtyard housing, rowhouses, duplexes, triplexes and stack flats be permitted in single-family neighbourhoods, while maintaining a massing similar to existing single-family dwellings (HALA Advisory Committee, 2015). A draft of the final report recommended that the City of Seattle abandon the term "single-family zone" altogether, and create a new zone known as "low-density residential" (HALA Advisory Committee, 2015b). When the draft report was leaked in the media, a negative reaction from single-family homeowners throughout the city resulted in the abandonment of the recommendation for a city-wide single-family zoning change (Beekman, 2015). In an interview with a senior planner at the City, the senior planner expressed regret that the draft report was released to the public without further context. The senior planner noted that the recommendation was just a concept, and that they wanted to open a dialogue with the public to discuss the proposal, stating that:

"[a]s planners we were hopeful that we could go forth and develop a nuanced policy on how [the rezoning] could work, and what is compatible, [looking at] things other cities have done such as duplexes and triplexes only on corner lots or large lots, or within a certain distance to transit. But we were never able to have that conversation because it was so polarizing and interpreted as just allowing triplexes everywhere. So the mayor at the time, very publicly walked back that recommendation before it had a chance to go through the process (Personal Correspondence)."

Seattle's bold proposal to rezone all of its single-family zones to allow for incrementally higher density did not become a reality. Despite this, Seattle's City Council was able to pass the MHA legislation, which still constitutes an ambitious law intended to expand housing affordability and diversity.

The MHA legislation has two key components. The first is to expand developer contributions for affordable housing, and the second is to rezone large areas of the city for increased density, including some single-family neighbourhoods.

The MHA legislation focuses on 27 "urban villages" (see Figure 3.4) that have the highest concentrations of transportation infrastructure, commercial and retail activity. Under the MHA legislation, new multi-family buildings in the urban villages must either include Bourne

affordable housing or contribute to an affordable housing fund (City of Seattle, 2019). In addition to requiring affordable housing, the MHA legislation expands the boundaries of the urban villages and increases multifamily density in these areas. Areas within the urban villages that were already zoned for multifamily housing have had their density limits increased, and single-family zones adjacent to the urban villages have been rezoned to allow for multifamily housing. In total, six percent of the city's land zoned exclusively for singlefamily housing was rezoned to allow for higher density.



Single-family areas that were rezoned generally fell into one of two categories of new, multifamily zoning. Approximately half of the rezoned single-family lots were rezoned to Lowrise 1 ("LR1"), and the other half were rezoned to the lower-density Residential Small Lot ("RSL") zone. The LR1 zone is intended to provide a transitional step-down in density from the higher density, mixed-use commercial-residential developments at the core of the urban village to the lower-density RSL and single-family zones (HALA Advisory Committee, 2017).

Under both the LR1 and RSL zones, new housing is not limited by typology, but instead by floor area ratio ("FAR"), height limits, and the maximum number of units allowed per square metre. According to the Seattle senior planner, the City expects that builders and homeowners will find creative solutions to supply a mix of housing types and tenure under these new zones (Personal Correspondence).



FIGURE 3.3: EXAMPLE INFILL HOUSING IN SEATTLE RSL ZONING (LEFT 2 IMAGES) AND LR1 ZONING (RIGHT 2 IMAGES). CREDIT: HALA ADVISORY COMMITTEE, 2017.

# 3.1.3 Portland's Residential Infill Program

Three hours drive south of Seattle, the city of Portland, Oregon, colloquially referred to as a "giant suburb" for its plentiful single-family dwellings on large lots (FitzMaurice, 2018), has also been experiencing rapid population growth and house price inflation. Portland is expected to grow by approximately 123,000 households between 2018 and 2035, with an increasing proportion of those households being older couples and young professionals (City of Portland, 2017). To support this increase in population without a corresponding increase in the city's footprint (it should be noted that Portland is encircled by an urban growth boundary), the City is targeting 20 percent of its new household growth to take place in pre-existing single-family dwelling neighbourhoods, where a variety of missing-middle housing types can be built in areas near pre-existing schools, parks and other amenities (City of Portland, 2017). The remainder of the City's growth is expected to occur in the form of apartments and condominiums in mixed-use centres along transit corridors, akin to the urban village centres in Seattle, and in Portland's central city (City of Portland, 2017).

To meet the goal of expanding the quantity and variety of housing types in established single-family dwelling neighbourhoods, Portland's planning department began work on the Residential Infill Project ("RIP") in 2015. The goal of RIP is to infuse, over time, single-family neighbourhoods with the addition of 24,000 units of missing-middle multi-family housing by 2035 (City of Portland, 2019). Unlike Seattle's MHA legislation, Portland's RIP does not, as proposed, restrict the rezoning of single-family neighbourhoods to just those areas surrounding urban centres. Instead, RIP proposes to change the zoning for almost all single-family zones in the city to allow for more housing options city-wide (City of Portland, 2019).



FIGURE 3.5: EXAMPLES OF ALLOWABLE NUMBER OF UNITS FOR INFILL DEVELOPMENT IN PORTLAND'S RESIDENTIAL INFILL PROJECT ZONING CHANGES. CREDIT: CITY OF PORTLAND, 2019.

# 3.2 Public Response

Providing options for more missing-middle housing types in single-family dwelling neighbourhoods has considerable benefits for cities. The densification of these neighbourhoods allows a city to increase the supply of new housing to meet the needs of modern demographics, while capitalizing on infrastructure that has already been built. Given the expected benefits, implementing these zoning changes seems to be a foregone conclusion for most growing cities. Yet, altering the existing fabric of neighbourhoods that people have invested their money and lives into is generally not an easy proposition, as has been discussed in Chapter Two of this research. The political feasibility of implementing the types of zoning changes that Kelowna and Seattle have done, and that Portland is in the process of completing, is where the best laid plans often go to ruin. This section explores common concerns that residents in the rezoned neighbourhoods have had in the three precedent cities.

# 3.2.1 Methodology

To analyze public concerns regarding the rezoning of single-family areas adjacent to Seattle's urban villages, more than two hundred archived comments from Seattle's online public engagement tool, *hala.consider.it*, were analyzed (City of Seattle, 2019). The *hala. consider.it* platform was one of several official methods of community outreach conducted by the City of Seattle in respect to rezoning and mandatory affordable housing requirements. The city also conducted several rounds of Open Houses, received comments through e-mail, and held community focus groups and design workshops. Only those comments related to rezoning in single-family neighbourhoods were considered for this research, there was no analysis for comments respecting the rezoning of urban village centres and corridors, or in relation to the MHA's affordable housing contribution requirements.

Resident reaction to Portland's RIP was also assessed based on public comments. Between June 15 and August 15, 2016, a questionnaire was opened to the public for feedback regarding the RIP proposal. This questionnaire was available both at open houses and online. More than 1,200 public comments from the questionnaire were collected (Envirolssues, 2016). Of those more than 1,200 public comments, more than 300 were analyzed for this research as they related directly to the rezoning of single-family neighbourhoods for increased density.

Resident perception of increased density in Kelowna's RU7 neighbourhoods was

assessed based on semi-structured interviews with stakeholders. Five residents in the rezoned neighbourhoods were interviewed for this research, and their opinions supplement, with more nuance, the concerns identified in the public consultations in Seattle and Portland.

The comments from both Seattle and Portland's public engagement processes were categorized in two ways, first they were separated based on whether they were pro- or anti-rezoning. The comments were then placed into broad categories based on their core sentiment. Where a comment referenced more than one reason for being either for or against the rezoning, it was counted in each category. In general, most public comments analyzed for this paper reflect concerns about factors that Mao, et al (2015) associate with neighbourhood satisfaction, as discussed in Chapter Two, including building aesthetics and loss of green space, declining community relations and changing demographics, and the adequacy of social and municipal services and infrastructure.

The sentiment categories for the anti-rezoning comments are as follows:

- Home Values: this category encompasses concerns expressed by residents that the proposed rezoning would reduce their home's value and their built equity;
- 2. Aesthetic Character: this category encompasses concerns related to the aesthetic character of new, higher density developments. It includes comments related to the look or quality of new infill buildings, the incongruity between modern architecture and pre-existing architecture, the loss of heritage dwellings, and the scale and bulk of new infill buildings as they relate to the pre-existing scale of residential buildings in the neighbourhood;
- Loss of Amenity: this category encompasses comments related to loss of neighbourhood amenity, including loss of green space, interruption of views, and diminished access

to light;

- Density: this category encompasses comments broadly related to concerns over increases of population density being proposed;
- Infrastructure: this category encompasses concerns expressed over inadequate infrastructure for the anticipated population growth, including school and parks capacity, traffic, and parking;
- Developer Mistrust: this category encompasses concerns expressed over developer intentions and suspicions of profit maximization over community concerns;

 Family Housing: this category encompasses concerns expressed over the unsuitability of new, higher density housing to accommodate the needs of families; encompasses concerns over a loss of a sense of community, displacement, and gentrification because of increased development.

- Affordability: this category encompasses concerns over new infill housing not being affordable to lower- and middle-class residents; and,
- 9. Loss of Community: this category

The sentiment categories for the pro-rezoning comments are as follows:

- Density: this category encompasses positive comments regarding increasing density, including those comments suggesting that it was the right amount of density, or that density should be further increased;
- Scale: this category encompasses comments relating to the appropriateness of the scale of new development, for example appropriate height limits and transition zones;
- Infrastructure: this category encompasses comments relating to the need to maximize existing infrastructure, particularly transit, through increasing population density in pre-existing neighbourhoods;
- Retail/Walkability: this category of comments relates to the need for more development in neighbourhoods to bring retail opportunities and to increase walkability;
- Population Diversity: this category encompasses comments relating to the need to accommodate more socio-economic and racial diversity in the single-family zoned

neighbourhoods;

- Housing Type Diversity: this category encompasses comments relating to the need to increase the diversity of housing types to provide more options in predominantly single-family neighbourhoods;
- Affordability: this category encompasses comments relating to the need for more affordable housing in the city; and,
- 8. Environmental Sustainability: this category encompasses comments relating to the need to densify the city to protect the environment, including comments related to the lowering of greenhouse gas emissions and sprawl reduction.

#### 3.2.2 Results

The split between pro- and anti-rezoning comments on Seattle's outreach tool *hala. consider.it* were close to even. However, according to the Seattle senior planner, there was an obvious split in the geography of pro- and anti-rezoning sentiment. The Seattle senior planner found that, in his experience, there was a lot of pushback from local neighbourhoods to the rezones, but there was broad-based support for the rezones from city-wide voices, particularly affordable housing and climate advocacy groups. The planner noted that it created "an interesting dynamic between broad shared goals and local opposition to change" (Personal Correspondence). The Portland senior planner found the public reaction in that city to be similarly divided. Homeowners, invested in their neighbourhoods, had lots of concerns but there was a clear line between their opposition to rezoning for increased density, and voices from outside of the neighbourhoods, particularly non-homeowners and younger residents of the city, who favoured the density increases (Personal Correspondence). The Portland senior planner noted that this younger, non-home owning demographic saw their only option to access the housing market as apartments on corridors and wanted more options (Personal Correspondence).

The highest proportion of anti-rezoning comments were in the category of Aesthetic Character, with nearly half of the negative character comments referring to the scale of new buildings, and a belief that these buildings will be incongruous or out of context with existing single-family dwellings. Concerns over scale were also reflected in interviews conducted with residents in Kelowna. One resident of a rezoned, RU7 neighbourhood suggested that while he found carriage houses an appropriate size and scale for pre-existing single-family dwelling neighbourhoods, he thought that the four-unit buildings allowed under the RU7 zoning "[were] too much" (Personal Correspondence). Concern was also expressed that too many demolitions were occurring, which detracts from the neighbourhood character, as "usually what people put up instead is very modern [and] doesn't really fit the neighbourhood" (Personal Correspondence).

Following this, the next most common concerns were that the proposed densities are too high and, correspondingly that existing infrastructure is inadequate for the proposed increase in population. These concerns were also reflected in conversations with residents in Kelowna. One resident noted that "infill housing, as a homeowner, is a bit [problematic] because of the car problem", and in particular, that there has been a noticeable increase in

traffic and "where they've put in four-plexes you are having people parking two deep, because they don't provide [enough] off-street parking" (Personal Correspondence). Another resident stated that "vehicles on the road are the biggest impact for me" because their "elderly parents can't find parking, but they also can't [park down the street] because they can't walk that far" (Personal Correspondence).

The next most common concern that residents in Seattle and Portland had with rezoning was a loss of amenity in their neighbourhoods. Again, this concern was reflected in interviews with residents in Kelowna, where one resident worried that "with infill housing there [will not be] enough green space left on the property" (Personal Correspondence).

On the other hand, nearly half of all pro-rezoning comments relate to the need to increase density in the city. Most of the density-related comments suggest that the rezoning does not go far enough, and that even more density should be proposed (see Figure 3.11. Two of the residents interviewed in RU7 neighbourhoods in Kelowna were also strongly in favour of the densification of their neighbourhood, with one stating that "we are actually quite gratified to see the infill. We like that densification, which we are hoping will result in more mature arts and entertainment in town, [and] more transit" (Personal Communications). The next most common pro-rezoning comment categories were Scale and Housing Type Diversity.



FIGURE 3.6: OCCURENCE OF ANTI-REZONING SENTIMENTS IN SEATTLE'S PUBLIC ENGAGEMENT, BY CATEGORY



FIGURE 3.7: OCCURENCE OF ANTI-REZONING SENTIMENTS IN PORTLAND'S PUBLIC ENGAGEMENT, BY CATEGORY



FIGURE 3.8: OCCURENCE OF ANTI-REZONING SENTIMENTS IN BOTH SEATTLE AND PORTLAND'S PUBLIC ENGAGEMENT, BY CATEGORY





CATEGORY





FIGURE 3.11: OCCURENCE OF PRO-REZONING SENTIMENTS IN SEATTLE AND PORTLAND'S PUBLIC ENGAGEMENT, BY CATEGORY

# 3.3 Addressing Resident Concerns

The following section discusses strategies employed by planners in each of the three precedent cities to address common concerns held by residents. According to a senior planner in Kelowna, there was not much public opposition to the RU7 rezoning plan, and many of the changes being considered to that zoning designation relate to concerns that residents have now that the projects are being built, and neighbourhoods are seeing the impacts of the rezoning (Personal Correspondence). In Seattle, public concerns were addressed, if at all, between the conception of the MHA legislation and associated rezoning and the passing of the legislation in March 2019. In Portland, revisions to the rezoning strategy remain ongoing.

# 3.3.1 Home Values

Concerns about declining property value are not easily addressed through legislation. However, studies suggest that infill housing generally increases the value of neighbouring properties (Ooi & Le, 2013). The Kelowna architect interviewed for this research agreed with that finding, stating that while he thinks some people dislike the fourplexes being built in Kelowna's RU7 zone,

"[the dislike] is kind of tempered by the fact that developers are banging on their doors and offering more than the house is worth, so there is no need for them to stay and watch this happen" (Personal Correspondence).

# 3.3.2 Aesthetic Character

Concerns that increased density through infill housing will jeopardize the aesthetic character of a neighbourhood were prevalent in both Portland and Seattle. Aesthetic character is a difficult concern to address in policy because it is a subjective assessment. For example, some residents may favour development that attempts to re-create the pre-existing architectural styles of a neighbourhood, while others may prefer modernity. Despite the subjectivity of this category, considerable effort has been spent in each of the cities discussed in this chapter to ensure that new developments are not too disruptive to the pre-existing aesthetic character of a neighbourhood.

In Seattle, much of the focus on protecting the aesthetic character of neighbourhoods was in relation to the scale of new buildings. To ensure that the scale of new development does not overwhelm existing single-family dwellings, the MHA legislation plans for transition

zones between higher- and lower-scale zones as additional development capacity is accommodated (HALA Advisory Committee, 2017b). The MHA legislation promotes smooth transitions between different densities by zoning full blocks instead of partial blocks, and by gradually decreasing density from the urban village centres and corridors to the single-family zones through a step-down approach. Therefore, blocks of higher-density development do not abut single-family, or RSL zones, but instead abut LR1 zones, which abut RSL zones (City of Seattle, 2018). According to the Seattle senior planner, these transitions helped to win the support of neighbourhood residents, stating that

"[t]hrough approximately two and a half to three years, the public perception really changed. By the end of the process a lot of neighborhoods became supportive of RSL zone as something of a compromise, because in some areas they had proposed slightly more intensive zoning. So some neighborhood groups said that they were ok with RSL, as [a form of] incremental change" (Personal Correspondence).

Stakeholders who were interviewed in Kelowna similarly appreciated infill development that was sensitive to the pre-existing scale of their neighbourhood. In an interview with the Kelowna-based architect, the architect noted that, because the city's earlier growth periods were rooted either in orchard and worker housing or summer, lakeside cabins, planners today have "inherited a city that is generally one and a half storeys tall, so if you put up a three-storey building it stands out and draws criticism" (Personal Communication). To address concerns over building scale, Kelowna planners set a maximum height of two-storeys for the RU7 infill housing zone. However, due to this pre-existing, lowrise scale of the city, one of the residents interviewed in an RU7 neighbourhood undergoing considerable infill-densification still found the RU7 infill housing to be out of character, stating that "many [residents] support carriage houses as a way of preserving the look and feel of the neighbourhood" due to their sympathetic scale with existing dwellings, however "the fourplexes are too large" (Personal Correspondence).

A second subset of concerns related to changing neighbourhood aesthetic character in Kelowna, Seattle and Portland was in respect to dwelling demolitions. Concern over the demolition of existing character dwellings was most prevalent in Portland, but also came up repeatedly in comments in Seattle, and were mentioned by several of the interviewees in Kelowna. To limit demolitions, Seattle's MHA legislation provides incentives for the retention of existing dwellings. In RSL zones, if an existing single-family dwelling is retained with a Bourne

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new dwelling built in the backyard, 50 percent of the floor area of the preserved dwelling is exempt from the maximum FAR limit, allowing the lot to have more total floor area than if the dwelling is demolished (City of Seattle, 2018). This retention provision is intended to preserve and enhance architectural variety and scale relationships with existing buildings in the neighbourhood (City of Seattle, 2018). According to the Seattle senior planner, developers are interested in using this retention provision to maintain the existing house while building a stacked duplex in the back, and he is "cautiously optimistic" that there will be a good amount of this type of development (Personal Correspondence).

In Portland, the City has taken a balanced approach to dwelling demolitions. The senior planner noted that residents in some single-family neighbourhoods have had concerns over the compatibility of the new dwellings built in their neighbourhoods, which are generally characterized by older, modestly sized single-family dwellings with "personality" (Personal Correspondence). As part of the City's RIP, new size limits have been placed on single dwellings. Single dwellings built on smaller lots cannot be larger than 1,600 square feet (148.6 square metres), with larger lots allowing dwellings of around 3,000 square feet (279 square metres). There are higher building size allowances for multiple-dwelling buildings (City of Portland, 2019). These house size limits are intended to stem the demolition of older dwellings that are replaced with larger "McMansions", and encourage construction of multiple-dwelling units that include more affordable, smaller units. Although demolitions are expected to rise modestly after the introduction of the RIP zoning amendments (Personal Correspondence), this slight increase in demolitions is justified by the fact that dwellings will be demolished in order to increase the number of units, and not just the size of the dwelling.

#### 3.3.3 Loss of Amenity

As discussed in Chapter Two, residents value their neighbourhoods for increasing their perceived quality of life, and one important factor to quality of life in suburban areas is the idyllic character of the neighbourhoods with plentiful green space. Loss of amenity was a prevalent concern in Kelowna, Seattle, and Portland.

To avoid diminishing neighbourhood amenity with increased density, Seattle's rezoning of single-family neighbourhoods was guided by a principle to maintain publicly visible green space and to allow light and views in shared and public spaces (HALA Advisory Committee, 2017b). The MHA legislation operationalizes this principle in several ways. First, in RSL zones, a lot coverage limit of 50 percent has been set, along with front and rear setbacks

of 10 feet (3 metres), and side setbacks of five feet (1.5 metres), and in LR1 zones, minimum front and side setbacks have been set at five feet (1.5 metres) with rear setbacks a minimum of 10 feet (3 metres). These setback and lot coverage requirements are intended to promote open space, yards and planted areas in new developments (City of Seattle, 2018). To ensure that an appropriate amount of attractive greenspace is provided in these open areas, the City also requires that either existing trees on site be preserved or new trees be planted. The specific number of new trees required is based on lot size and a scoring system that rewards the preservation of existing trees, particularly large coniferous trees (City of Seattle, 2018). To preserve sunlight and protect views, the maximum height for buildings in both RSL and LR1 zones is set at 30 feet (9.1 metres). To ensure privacy, neighbouring dwelling units must minimize placement of proposed windows where they would align directly with windows on the side facade of a structure on an abutting lot within 20 feet (6 metres) of the side property line, or privacy can be preserved through the addition of fencing, screening, landscaping, or translucent windows (City of Seattle, 2018).

In Kelowna, the senior planner noted that one of the complaints that the City has heard most often in the three years since the zoning was implemented is that mature landscaping is being removed during the construction of infill housing. According to the senior planner, the mature trees in the neighbourhood are "one of the features of the neighbourhood that residents really care about" (Personal Correspondence).

Builders in the RU7 zone who are using one of the two winning designs from the Infill Challenge do not require a development permit for construction. With development permits, the City receives bonding to ensure that landscaping is completed to a satisfactory level. Without that bonding, the City is finding that developers are not providing adequate landscaping and are often replacing mature trees with shrubs (Personal Correspondence). The City is looking at changing those rules to ensure that they have a mechanism to enforce mature tree retention and ensure that the residents' valued landscapes are maintained.

#### 3.3.4 Density

Density concerns are difficult to address in legislation, as rezoning is targeted at increasing the population density of a neighbourhood. Density is also often used as a catch-all term for concerns over neighbourhood change generally. It should, however be stressed that while increased personal space (in the form of larger lots) has been found to have a small

positive impact on the sense of community in a neighbourhood, use of shared public outdoor space (in the form of natural and semi-developed areas) has a stronger positive impact on sense of community. This seems to indicate that neighborhood density rather than personal density is of primary importance to neighborhood sense of community (Rogers & Sukolratanametee, 2009).

## 3.3.5 Infrastructure

Concerns were expressed that both soft and hard infrastructural assets will not be sufficient to handle increased density. Inadequate capacity in soft infrastructural institutions, including schools and community centres, was not directly addressed in the rezoning legislation in any of the three cities studied in this section. Instead, the rezoning policies in Kelowna and Seattle have been specifically targeted at areas that already have enough infrastructural capacity. The Seattle senior planner noted that the "[MHA legislation] zoning changes [have been] made within urban villages, and these are the areas that are already highly prioritized to receive public investment in infrastructure....[such as] community centres, schools, and parks (Personal Correspondence)." The senior planner in Kelowna similarly stated that the schools in the rezoned neighbourhoods will be able to handle the increased density, and there are enough large parks in these areas, although they may need to consider adding a few more small parks (Personal Correspondence).

The most common infrastructural concerns relate to parking and traffic congestion. According to the planners interviewed, parking is the most difficult issue to solve. The Kelowna senior planner noted that "parking will be the number one issue for the average person, principally for people utilizing free on-street parking" as now they must compete for that onstreet parking as populations increase (Personal Correspondence). The Kelowna senior planner believes that parking is both the biggest political limitation for expanding infill throughout the city, and the most prominent functional limitation, as only a certain number of parking stalls can be included for each infill lot. If they allow more than four units on a single infill lot, they would need to reduce parking requirements, which is not currently feasible (Personal Correspondence). The Kelowna senior planner does believe that the new infill housing types will cater to a demographic who own less vehicles, and therefore as there is a transition between existing residents with lots of vehicles and new buyers with fewer vehicles, parking will become less politically contentious (Personal Correspondence).

In some rezoned neighbourhoods in Seattle, particularly those in the inner-ring suburbs, the Seattle senior planner admitted that there is not sufficient sidewalk or road infrastructure, although he explained that they made clear to residents during community consultation that the best and quickest way to fund those improvements is to allow for more development because they can require the builders to add sidewalks as they develop properties (Personal Correspondence). The Kelowna senior planner also indicated that in some rezoned areas, sidewalks are deficient. However, like the senior planner in Seattle, he believes that the best and fastest way to improve the sidewalks, a major expense for the city, is to require builders to contribute to these enhancements (Personal Correspondence).

#### 3.3.6 Developer Mistrust

Some residents in Seattle and Portland perceived the rezoning of single-family neighbourhoods as "gifts to developers" who do not have the interests of the neighbourhood at heart. This is not an easy concern to address. However, it should be noted that the soft densification of single-family neighbourhoods proposed or implemented in the three precedent cities are not expected to attract large-scale developers. Instead, these projects attract small, often local, "mom and pop" builders who either buy a property to develop, or who are commissioned by the existing homeowners (Touati-Morel, 2015). According to one infill home builder in Kelowna, "these are tiny projects [built by] guys that only do one or two projects. Sometimes they are a syndicate that [buy] up three or so houses" (Personal Correspondence).

## 3.3.7 Family-Sized Housing

There was a thread of negative comments in the public consultations in both Seattle and Portland suggesting that infill housing was not suitable for families, and therefore should not replace detached dwellings. Partially, this is by design. Expanding housing diversity with missing-middle housing is one of the primary objectives of the rezonings in each of the three precedent cities. According to the Kelowna senior planner, the RU7 zoning is intended to create neighbourhoods with a full and complete range of housing sizes and tenures, including rental houses, stratified condominium-style infill dwellings, and fee-simple ownership. The RU7 zoning was implemented in neighbourhoods that were already experiencing a transition to smaller household sizes (Personal Correspondence). This transition was observed by one

resident in a neighbourhood zoned RU7, who stated that one of the key changes noticed in the area over the past two decades is the "disappearance of families and children" (Personal Correspondence). Despite the goal to increase housing diversity in the three precedent cities to accommodate changing demographics and smaller household sizes, measures were taken to ensure that an adequate supply of family housing will remain.

In Seattle, one of the core principles guiding the implementation of the MHA is "Housing Options" which seeks to encourage or incentivize a wide variety of housing sizes, including family-sized dwellings (HALA Advisory Committee, 2017b). This principle has been operationalized in the MHA legislation through the requirement that, in new developments in the LR1 zone, one "family-sized" unit is required for every four smaller units built. A family sized unit is defined as two- and three-bedroom units of at least 850 square feet (90 square metres) (if a development requires two family-sized units, this can be substituted with one threebedroom unit of at least 1,050 square feet [98 square metres]) (City of Seattle, 2018).

In Kelowna, family housing is encouraged in the RU7 zones through the incentives provided for using one of the two winning designs from the Infill Challenge. Both winning designs include family-sized housing units. In one of the winning designs, the single-building four-plex, each of the units are at least two or three bedrooms and nearly 1,500 square feet (139 square metres). In the other winning design, two of the units are detached dwellings with two or three bedrooms, and the other two units are smaller, one- to two-bedroom dwellings (Personal Correspondence).

#### 3.3.8 Housing Affordability

In the analysis of comments from Seattle and Portland, there was a belief among some opponents of infill housing that it will not provide housing affordable to lower- and middle-class residents. On the other hand, a core consideration in each of the precedent cities' rezonings was the need to provide more affordable housing options in pre-existing singlefamily dwelling neighbourhoods. There was a belief among the planners and in the policy documents that if more infill housing is constructed in these neighbourhoods, it will provide affordable home ownership opportunities to different demographic groups. There have however been doubts raised about the ability for infill to create more affordable housing, as noted in Chapter Two of this research. These concerns appear to be manifesting themselves in Kelowna as, according to the infill builder in that city, the greatest obstacle to building housing in the RU7 zone is land costs. When asked if land costs had risen in the RU7 areas since the rezoning, he stated that they had "big time" and that "two years ago you could buy a lot in those areas for 375 [thousand dollars] or 400 [thousand dollars] and now those are almost 720 [thousand dollars] today" (Personal Correspondence).

To attempt to remedy this deficiency, a core component of Seattle's MHA rezoning is to combine the City's intensification strategy with an affordable housing provision. This provision requires that housing affordable to households with incomes up to 60 percent of the area median income be provided in each new development or that a payment be made toward an affordable housing fund in lieu. Depending on location, new developments in rezoned neighbourhoods in Seattle must make either five to 11 percent of the units affordable or pay between seven and 33 dollars per square foot (355 dollars per square metre) into an affordable housing fund (City of Seattle, 2018). If a builder chooses the latter option, then the money would go into an affordable housing fund managed by the City's Office of Housing and be spent strategically in locations across the city to either build or preserve affordable housing (City of Seattle, 2018). Although the Seattle senior planner expects that, given the small number of units yielded in RSL and LR1 zone infill development, they will instead choose to make the payment, he is "hopeful that builders and long-term property owners will add [affordable units to] their projects [by doing] some creative things" (Personal Correspondence).

## 3.3.9 Loss of Community

Fears that infill intensification in single-family neighbourhoods will lead to a loss of community manifested themselves in different ways in both Seattle and Portland. Some of these concerns relate to the loss of families or long-term homeowners, pushed out because of an unhappiness with neighbourhood change, and replaced by more transient residents with fewer connections to the area. Others feared that rezoning would lead to gentrification and displacement of lower-income residents, particularly renters.

The Seattle senior planner admitted that displacement was a big concern both for the City and residents, noting that

"[a] common critique is that with upzoning, you're just creating more displacement pressure. But, you know we did a whole lot of analysis on the number of displacements that would happen, but at the policy level, the economic displacement is already taking place. In Seattle there is a very high number of teardowns of houses on a smaller

home, and they are being replaced with large three thousand square foot (279 square metre) homes. The City's perspective is that displacement is a major concern, but it is already happening today, and we cannot do nothing" (Personal Correspondence).

To alleviate the displacement impacts of rezoning for increased density, the Seattle senior planner noted that the City targeted larger zoning increases in areas with high access to transit and amenities, but low displacement risk. These were generally more affluent neighbourhoods. In less wealthy neighbourhoods and those with larger minority populations, less aggressive zoning changes were made (Personal Correspondence).

The Seattle senior planner also stressed the need to spread density out more evenly across the city, and not just in high-density developments along busy corridors, to ensure equitable growth. The senior planner noted that in many of the auto-oriented, inner-ring suburban areas, residents wanted the City to add all new density to the large arterial roads where there was a considerable amount of under-utilized commercial land, thus protecting the single-family context off of the arterial streets. The senior planner stated that the City had a very intentional policy of "saying no, we don't want to just add all the homes to those less desirable areas, we also want to open up those leafy green neighbourhoods" as a matter of fairness (Personal Correspondence).

The Portland senior planner made a similar comment, noting that the City was originally looking at increasing density only in single-family neighbourhoods within a certain distance from corridors and neighbourhood centres, but these areas also had the highest risk of displacement for marginalized residents (Personal Correspondence). Therefore, the plan was changed to rezone nearly all single-family neighbourhoods in the city.

# 4 PRINCIPLES AND RECOMMENDATIONS FOR SOFT DENSIFICATION IN SINGLE-FAMILY NEIGHBOURHOODS

The previous chapter provides an overview of how three cities rezoned, or are in the process of rezoning, single-family neighbourhoods for increased densification through infill housing. This chapter will apply the lessons learned from those three cities, while taking into consideration the public reactions, both positive and negative, toward infill densification in those cities, to provide recommendations on how planners can overcome NIMBY sentiments and rezone inner-ring suburban, single-family neighbourhoods for missing-middle housing.

The connections informing these recommendations acknowledge that the contemporary suburban fabric represents a vast area of Canadian cities already serviced, and these investments cannot simply be abandoned; instead they must be built upon. Rather than a total demolition and overhaul of these suburban communities, as was promoted so destructively during the North American highway building boom half a century ago, the rebuilding of the inner-ring suburbs should be incremental, opportunistic and safe to fail (Tachieva, 2010). As can be observed in the public reaction discussed in Chapter Three, residents of single-family neighbourhoods are both financially and emotionally invested in their communities, and are resistant to large-scale change, preferring to maintain the character and amenity of their neighbourhoods as much as possible. As noted by Whittemore (2016), "whatever the welcome social and environmental impacts of infill, universal approaches to infill development - upzoning without controls for character, boiler plate design guidelines - may be just as resisted as past decades' context-blind policy solutions" (p. 107). Therefore, when considering how to densify suburban areas, and return investment to the inner-ring suburbs, the existing neighbourhood context should be taken into account. It is important to keep in mind the ideas of Lukez (2007) discussed in Chapter Two. The densification of inner-ring suburban areas should make use of both the concepts of erasing and writing. Rather than devaluing the landscape already built, new housing should should be sensitively layered on top of it, maintaining as much of the character as possible in order to limit resistance of existing residents.

# 4.1: Avoid Methodological Cityism

## 4.1.1 Be Green

In Chapter Two of this research, it was noted that many local neighbourhood groups labeled as "NIMBYs" are often communicating the strong sense of place that they feel for their neighbourhoods and fight interventions that they believe will diminish their quality of life (Mcclymont & O'hare, 2008). In suburban settings, that strong sense of place is often connected to the garden-like and perceived idyllic character of their neighbourhood. This garden-like character refers to an urban space in which landscape elements provide a setting for a series of separated buildings. In a garden-like setting, the presence of vegetative mass is equal to or greater than the building mass, and its height is generally greater than that of the buildings. Its green nature and softer shapes directly contrast with the character of a more urban, central-city environment which is defined by a hard-edged architectural environment, with buildings enclosing public space (Kendig & Keast, 2010).

While the enclosed nature of urban environments appeals to many who choose to live in central city neighbourhoods, in suburban areas planners should attempt to preserve the aspects of the environment that appeal to existing residents as much as possible. Densification of single-family neighbourhoods should therefore maintain the negative space characteristic of these areas, that is the green space that surrounds and radiates out from a building. In these areas, dwellings 'borrow' views of greenspace from open land, lawns and vegetated areas (Kendig & Keast, 2010). The maintenance of this negative space can be achieved by maintaining setbacks sympathetic to those that already exist, as has been done to some extent in Kelowna, Seattle and Portland. However, the maintenance of setbacks alone will not contribute to the garden-like character that residents value unless there is sufficient landscaping. As observed in Kelowna, when adequate landscaping is not required for infill housing, existing residents can feel that the quality of their neighbourhood has been diminished. It is important therefore to incentivize the retention of existing trees, as has been done in Seattle or, alternatively, to require the planting of sufficient young trees to offset the loss of mature foliage.

Front garages and setbacks dominated by paved driveways should also be avoided, as these can interrupt the character-defining landscaped setbacks of neighbourhoods and limit opportunities for trees and other vegetation that help integrate infill development with the surrounding community.

#### 4.1.2 Find the Right Height

The scale of infill development can cause anxiety among existing residents in singlefamily neighbourhoods. It is important to not overwhelm existing buildings with new development that is too tall. Planners should therefore restrict the height of new development to match, as much as possible, the character of the existing housing stock. This has been done in Kelowna, Seattle and Portland to an extent. However, in Seattle and Portland, new zoning changes to allow for infill intensification were applied consistently across the rezoned neighbourhoods of the city. This one-size-fits-all approach to height limits can lead to contextually-insensitive infill. For example, in Seattle a 30-foot (9.1 metre) height limit is consistent with the height of many dwellings in early 20th century neighbourhoods, which tend to be three storeys. In inner-ring suburbs characterized by low-slung bungalows and split-level dwellings, the same 30-foot (9.1 metre) high infill development may loom over neighbouring properties, reducing light and privacy for existing residents.

Height limits should be developed contextually, based on an assessment of the height of existing properties in a neighbourhood or for a specific era of construction. Thankfully, different eras of single-family development are often strikingly uniform in layout and housing type, allowing for some standardization in the design-led approaches to augment the existing housing stock (HTA Design LLP, 2015).

When the height between new and existing development is jarring, it can lead to backlash that may hamper future efforts to encourage soft densification in other neighbourhoods. For example, the incompatibility of height between existing housing and small-lot infill housing has recently led the city of Winnipeg, Manitoba to adjust its height restrictions down after public outcry led to a petition among neighbourhood residents to stop building infill housing altogether (Kives, 2019). By developing height restrictions contextual to each neighbourhood, or to an era of neighbourhood construction at the outset of a rezoning policy, these after-the-fact conflicts can be avoided.

# 4.1.3 Create Smooth Transitions

When rezoning predominantly single-family neighbourhoods for varying degrees of increased density, transition zones should be established to prevent incompatible densities from abutting one another. In a study on options for increasing missing-middle housing in Toronto, Clayton and Petramal (2019) recommend the establishment of Density Transition

Zones where, over a distance of several hundred metres, a transition from higher to lowerdensity housing takes place. Therefore, the higher density developments are built along corridors, with decreasing densities constructed in the quieter, predominantly singlefamily zones. This Density Transition Zone acts as a sort of Transect Principle on a small, neighbourhood-specific scale. In Seattle, these Density Transition Zones form a core component of the rezoning scheme under the MHA legislation. The block-by-block transition of density, and from higher to lower-scale buildings, was generally well received by the public. Many comments analyzed in this research project from the public engagement that were favourable to the rezoning made explicit reference to these transitions as providing an appropriate scale for new development that would not overwhelm existing dwelling.

# 4.2: Encourage Fine-Grain Development

# 4.2.1 Provide Opportunities for Single-Lot Densification

Soft densification should not require lot consolidation. According to a Kelowna infill housing builder interviewed for this research, lot consolidation is often out-of-reach for small developers and home builders who are attracted to soft densification projects (Personal Correspondence). Single-lot densification can provide incremental change in neighbourhoods, increasing density as opportunities arise, without dramatically altering the landscapes that existing residents value. Moreover, single-lot densification maintains the 'feel' of the neighbourhood by respecting the established neighbourhood lot pattern. Often, multifamily infill designs that require lot consolidation appear as an interruption to the fine-grain pattern of the surrounding neighbourhood.

# 4.2.2 Balance "Erasure" and "Writing"

Lukez (2007) describes two processes for editing the suburban built landscape. These are erasure, which removes evidence of past interventions on a site, and writing, which includes the processes of infilling by constructing on open space, and addition, which is the expansion of an existing building. Both of these processes should be part of any plan to densify single-family neighbourhoods. In some circumstances an existing single-family dwelling will have to be demolished to create a new, higher-density development, for example rowhouses. In other circumstances, increased density should be encouraged in conjunction with the conservation of an existing dwelling, as has been done in Seattle and Portland, where

FAR bonuses are provided in developments where an existing dwelling is maintained.

The conservation of existing buildings should be encouraged for several reasons. First, where a dwelling is preserved, the changes to the aesthetic character of the neighbourhood are minimized. As noted in Chapter Three, the primary concern regarding rezoning among residents in Portland and Seattle was that it would jeopardize the aesthetic character of their neighbourhoods. Where a dwelling is retained, the street-facing character of the property does not change. Second, the demolition of existing dwellings creates considerable waste and results in a loss of the embodied energy of the building (Bullen, 2007). Thus, while higher density development can often be more sustainable, some of the environmental benefits of increased density are counteracted by the demolition process due to the loss of embedded energy. Third, if a homeowner can unlock unused equity on their property through the construction of infill housing, they may be incentivized to use some of the profits gained to renovate the existing dwelling, therefore extending the useful life of the building while also remaining a member of the neighbourhood that they have invested their money and time into. A study by Puustinen et al. (2017) noted that, where the financial benefits of constructing infill are significant to a homeowner, they will be more likely to use that windfall to finance major repairs to their home. Fourth, retention of an existing dwelling can help to offset concerns regarding displacement, an important concern among opponents of densification. Many concerns about displacement relate to the loss of affordable, secondary suites. Where a dwelling with an existing secondary suite is retained, density is added to the property without the loss of that affordable rental supply.

#### 4.2.3 Limit Unit Sizes

One sentiment that arose in comments both in favour of and in opposition to rezoning in Seattle and Portland was a disdain for the demolition of existing dwellings to be replaced by larger houses that take up more of the lot space. This sentiment was also reflected in an interview with one Kelowna resident who was, at best, lukewarm to the RU7 zoning. This resident stated that they are "not favourable to knock-down and rebuild houses" as they "[don't] really fit the neighbourhood" (Personal Correspondence). Planners should consider adopting rules similar to those of the RIP in Portland. If passed in its current form, the RIP legislation will place a limit on the maximum size of new units constructed in the rezoned neighbourhoods, preventing older dwellings from being torn down and replaced by larger,

newer "McMansions". In conjunction with these unit size limits, the proposed RIP legislation also imposes a requirement that if an existing single-family dwelling is knocked down, it must be replaced by a structure containing at least two units. Therefore, the only reason to knock down existing dwellings in the rezoned neighbourhoods will be to increase density, and not just add square metres.

# 4.3 Set the Groundwork for Increased Density

# 4.3.1 Obtain Buy-In From a Soft Growth Coalition

As illustrated in Chapter Three, residents of single-family neighbourhoods often mistrust the intentions of the development industry. To counteract this mistrust, homeowners should be provided opportunities to become the developers themselves. One method for incentivizing homeowners to get involved in the densification process is to allow them to add density to oversized backyards, while still being able to live in their own home. While this is an established principle for rental accessory dwelling units, such as laneway or carriage houses, these units cannot generally be sold. Seattle's RSL zone and Portland's RIP envision new opportunities for homeowners to be able to build on their backyards and sell the resulting units.

# 4.3.2 Don't Go from 'Zero to 60'

It may be difficult to go from 'zero to 60' in terms of densifying single-family dwelling neighbourhoods. If residents are not accustomed to a single lot having more than one housing unit, then they may be more resistant to zoning changes that would allow that lot to contain three, four, five, six or more housing units. According to the senior planner in Kelowna, there was little resistance to the RU7 zoning due to the groundwork having already been laid for increased density. The Planner noted that because many of the RU7 neighbourhoods had already been receiving a large number of accessory dwelling units in the form of secondary suites and detached carriage houses, residents were accustomed to changes to the demographic and tenure dynamics of their neighbourhoods (Personal Correspondence). Owners were therefore already over one of the first hurdles to densification. If fierce political opposition is anticipated for the densification of a neighbourhood, planners should perhaps consider easing residents into the idea of higher-densities, smaller units and more renters by allowing only accessory dwelling units at first, and then expanding allowable housing options at a later date. Permitting and incentivizing secondary suites in existing single-family houses is one of the quickest and most cost-effective ways to create a large increase in the supply of missing-middle housing in a neighbourhood (Clayton & Petramala, 2019).

# 4.4 Capitalize on Infrastructural Advantages

# 4.4.1 Build Around Past Investments

Many of the comments in favour of infill development in Seattle and Portland identified the importance of maximizing past infrastructure investments, particularly transit. The greatest increases in density in existing single-family dwelling neighbourhoods should be directed near transit stops, as well as schools and parks. Higher-density developments, for example apartment buildings or larger rowhouse developments often lack private green space for residents, and therefore green space can be 'borrowed' from a neighbourhood park, or school field.

# 4.4.2 Promote Infrastructural Improvements

Some residents will, rightfully, argue that their neighbourhood lacks sufficient infrastructure for increases in residential density. This is especially true in single-family neighbourhoods where roads are inadequate, and sidewalks are lacking. If rezoning to allow for increased density in these areas, planners should highlight the fact that the increased density will result in more contributions from builders and developers to provide improvements for roads and sidewalks. According to the senior planner in Kelowna, the costs of providing these improvements is often too great a burden for the City to manage alone, and therefore developer contributions are required for these improvements to occur on a neighbourhood-wide scale (Personal Correspondence). These benefits should be promoted to existing residents. A study by Doberstein, Hickey and Li (2016) found that residential attitudes against densification are not completely calcified and may be shifted towards tolerance with careful messaging that stresses the benefits derived from more compact growth. While some residents may argue that further investments should not be made in these already established neighbourhoods on the basis of sunk capital, improving this infrastructure in conjunction with increased population is cheaper than providing new infrastructure systems at the outskirts of the city.

# PART II

# **5** STUDY AREA SITE ANALYSIS

The following two chapters apply the recommendations from Chapter Four to present a set of design options for implementing politically feasible, context-sensitive infill housing in the inner-ring suburban neighbourhood of Rutland, in the City of Kelowna. This chapter consists of three parts. The first part provides a site analysis of a single-family neighbourhood in Rutland (the "Study Area"). The site analysis begins with a review of the long-range planning policy documents adopted by the City of Kelowna, including the city's Official Community Plan, Housing Strategy and Transportation Master Plan, and then presents an overview of the built form and demographic characteristics of the Study Area.



FIGURE 5.1: LOCATION OF THE STUDY AREA (HIGHLIGHTED) IN THE CONTEXT OF THE CITY OF KELOWNA

# 5.1 Policy Background

Kelowna, the largest city in the British Columbia interior, is growing fast. Between 2011 and 2016 Kelowna's metropolitan growth rate was ranked sixth in the country and first in British Columbia. This rapid growth is not a new phenomenon. The population of Kelowna's city proper has risen from just over 8,000 in 1951 to more than 130,000 in 2016. With such a dramatic population increase between the middle of the 20th century and 2016, it is unsurprising that the city has grown up around sprawl: Kelowna is ranked the eighth most sprawling city in Canada (Doberstein, Hickey, & Li, 2016). Despite this history of sprawl, Kelowna's future growth is oriented toward compactness and sustainability. Four key policy documents have been adopted to set the course for this compact and sustainable future.

# 5.1.1 Official Community Plan

In May, 2011, Kelowna City Council passed its Official Community Plan (the "OCP") titled "Greening Our Future". In British Columbia, an Official Community Plan is a statement of long-term objectives and policies that guide decisions on planning and land use management. Bylaws enacted and works undertaken by a municipality after the passing of an Official Community Plan must be consistent with the policies and objectives set out in the plan. Kelowna's OCP sets out a community vision for the city in 2030, which sees a city of compact and walkable urban communities, with available and affordable housing, a protected natural environment, and a growing, vibrant economy (City of Kelowna, 2011). A key underlying theme throughout the OCP is the creation of a "sustainable city" through land use, transportation and infrastructure policies (City of Kelowna, 2011). In order to grow sustainably, the OCP sets out 10 goals, which are:

- 1. Containing Urban Growth through the reduction of greenfield urban sprawl, with new growth focused on compact, connected and mixed-use urban and village centres;
- 2. Addressing Housing Needs of All Residents through the provision of an adequate supply of a variety of housing types;
- 3. Featuring a Balanced Transportation Network that increases the attractiveness, safety and convenience of all modes of transportation;
- 4. Improving Energy Efficiency and Performance of Buildings by improving the energy and environmental performance of buildings and infrastructure;

- Fostering Sustainable Prosperity by encouraging economically sound investment and providing environmentally sound growth that improves the quality of life for Kelowna's residents;
- 6. Protecting and Enhancing Natural Areas by creating an open space network that protects sensitive ecosystems and habitats;
- 7. Providing Spectacular Parks where people can pursue an active and healthy lifestyle;
- 8. Including Distinctive and Attractive Neighbourhoods by developing a distinctive and attractive network of neighbourhoods and urban centres with safe, accessible public spaces
- 9. Enabling Healthy and Productive Agriculture through diverse strategies that protect farmlands and food production; and,
- 10. Encouraging Cultural Vibrancy by supporting initiatives that celebrate the city's history, arts and cultural identity.

To achieve these goals, the City is focused on growing more compact to maximize the use of existing infrastructure and contribute to more "energy efficient settlement patterns" (City of Kelowna, 2011, p. 5.3). Assuming that, by 2030, the average household will contain 2.15 persons, the City estimates that it will need an additional 20,000 housing units, with nearly two-thirds of those units being multifamily developments, including condominiums, townhouses, rowhouses, and plex developments (City of Kelowna, 2011). This focus on multifamily housing development is intended to prevent future sprawl into protected agricultural land, and to begin densifying established neighbourhoods. To contain outward expansion, the City has enacted a permanent growth boundary, intended to prevent new greenfield developments and to protect vital agricultural land. The OCP states that the City will not support exclusion applications to remove land from the Agricultural Land Reserve, the British Columbia provincial zone in which agriculture is recognized as the priority use and non-agricultural uses are restricted. Currently, much of the land outside of Kelowna's growth boundary is designated as agricultural land by the provincial government.

The majority of the required housing units in the city are to be built in five newly designated "urban centres" (see Figure 5.2). The increased density in the urban centres will predominantly be in the form of corridor intensification, with new land use designations to

allow, generally, four to six storey mixed-use commercial and residential buildings along arterial main streets in the urban centres, and along some adjacent blocks (City of Kelowna, 2011). Adjoining these higher density centres, land use will, with the exception of the RU7 zone in the city centre, remain restricted to single-family housing, with at most an additional secondary suite or carriage house (City of Kelowna, 2011). While the OCP does not designate existing single-family neighbourhoods as being locations for intensification, it does state that the city should support carriage houses and accessory apartments through zoning regulations (City of Kelowna, 2011). However, current zoning only allows one secondary unit on a property, either a carriage house or secondary suite in a main house, but not both (City of Kelowna, 1998).

Within the urban centres, the City is committed to increasing active transportation infrastructure through the funding of sidewalks where sidewalk infrastructure is lacking and by promoting mid-block pedestrian linkages between buildings, and from side streets to the main arterial roads where the greatest mix of commercial, residential and office uses will be located (City of Kelowna, 2011). Transit service is also prioritized. The city intends to develop high-frequency and convenient bus routes (including late night bus service) that connect urban centre areas to each other, the downtown, and to adjoining, lower-density neighbourhoods.



#### 5.1.2 Urban Centres Roadmap

The OCP envisions that the five major urban centres will accommodate 44 percent of all future growth in Kelowna (City of Kelowna, 2011). These urban centres will develop following a general framework that sets out 'core ingredients' for their growth to transform them, over many years, into an interconnected network of amenity rich, mixed-use and walkable urban places. This general framework is set out in the City of Kelowna's Urban Centres Roadmap Report (the "Roadmap"). The Roadmap designates the five urban centres based on their existing characteristics . These designations include "early" stage urban centres which are in a nascent stage of development and may hardly be recognizable as urban centres, "developing" urban centres which are showing signs of becoming vibrant and engaging places, while significant progress is still yet to be made, and "mature" urban centres which have achieved high standards in many of the key elements to what makes a great urban centres (City of Kelowna, 2016).

To transform each of the five urban centres into mature neighbourhoods, the Roadmap sets out numerous policies and targets under eight key principles: "Mix it Up", "Places for People", "Healthy Housing Mix", "Social Spaces", "Placemaking", "Going Green", "People First Transportation", and "Make it Walkable" (City of Kelowna, 2016). Of these principles, four are most important. The first is "Mix it Up", which seeks to promote a mix of land uses in the urban centres that encourage activity at different times of the day, activate street life on retail corridors, and adds significant residential population, particularly near transit corridors, to ensure viable local services and amenities (City of Kelowna, 2016). In the five urban centres, the City is targeting 150-250 people and jobs combined per hectare, with one and a half square metres of local retail space per household within a radius of 3 kilometres (City of Kelowna, 2016).

The second is the principle of "Healthy Housing Mix" which seeks to ensure a diversity of housing types. The City intends to promote affordable housing in areas well served by transit and in close proximity to services and amenities, as well as a mix of unit types, building forms and tenures in multi-family residential developments. The City's target is to have 80% of new housing built in the urban centres be apartments, with the remaining 20% being ground-oriented units, such as townhouses and attached housing. The City is also targeting 20% of new units in multi-family developments to be family-oriented units with at least three bedrooms (City of Kelowna, 2016). Currently, Kelowna's housing stock is heavily weighted

towards apartments and single-family dwellings, and the City has recognized that it must increase the amount of missing-middle housing forms (City of Kelowna, 2012).

The final two principles seek to guide the city toward more sustainable, multi-modal forms of transportation. The principle of "People First Transportation" seeks to ensure that future high-density housing and employment areas are within walking distance to frequent transit service and are connected to other urban centres through active transportation corridors and linear parks. With this principle, the City is targeting that 90% of residents and jobs in the urban centres are within five-minute walking distance to both an active transportation corridor and a frequent transit stop (City of Kelowna, 2016). In conjunction with the "People First Transportation" principle, the principle of "Make it Walkable" seeks to encourage walkability within the urban centres by encouraging sidewalk design that integrate landscaping and furniture to buffer traffic noise, and that there is a consistent street network with 0.8 intersections per hectare (City of Kelowna, 2016).

Most new development in the urban centres is intended to take place on politically uncontroversial greyfield redevelopment sites, including surface parking lots, small preexisting retail buildings, and strip malls (City of Kelowna, 2016). While it is anticipated that these urban centres will grow into more densely populated, mixed-use miniature downtowns, the considerable swathes of single-family dwellings adjacent to the urban centres are, for the most part, not anticipated to experience substantial or incremental change to take advantage of the increased transit service and amenities in their immediate vicinity.

#### 5.1.3 Housing Strategy

In 2012, the City of Kelowna adopted a Housing Strategy that set out to increase the supply of diverse and affordable housing. The Housing Strategy indicates that there is an imbalance in Kelowna of income versus housing supply, with many residents living in housing that costs more than 30% of their income, indicating a need for more rental and affordable home ownership (City of Kelowna, 2012). To increase the supply of affordable and diverse housing the Housing Strategy sets out several policy recommendations.

The first policy recommendation is that the City support housing alternatives for families when single-family dwellings are too costly. This includes requiring outdoor space, direct access to grade, and larger units in developments in neighbourhoods with familyoriented amenities, including schools, parks and community centres (City of Kelowna, 2012). The second policy recommendation is that the City foster healthy and inclusive communities by encouraging a diverse mix of housing forms, sizes and tenures that remain consistent with the appearance of the pre-existing neighbourhood. Tied to this, the third policy recommendation states that the City should provide good information to help neighbourhoods and individuals understand the need for new housing in their communities, and to recognize and address NIMBY concerns (City of Kelowna, 2012).

A fourth policy recommendation considers, more specifically, what alternative housing forms, sizes and tenures could be implemented. These include changing the City's zoning bylaw and associated regulations to allow for fee simple rowhouses, which are the preferred alternative for families who cannot afford single-family dwellings and courtyard housing, neither of which are currently permitted under existing regulations (City of Kelowna, 2012).

## 5.1.4 Transportation Master Plan

Kelowna is currently in the process of drafting a Transportation Master Plan, which is expected to be released in late 2019. Although the Transportation Master Plan is still in development, the City has released a Facts in Focus: Transportation discussion paper, intended to supplement the vision for expanded transportation set out in the OCP. The OCP sets out a hierarchy for transportation infrastructure priorities. Under this hierarchy, the first priority is investment in active transportation (including walking and cycling), followed by transit infrastructure, infrastructure intended to move goods and services, infrastructure for high occupancy vehicles, and finally infrastructure for single occupant

vehicles (City of Kelowna, 2011). The five urban centres play a crucial role in the shift away from vehicle travel and toward transit and active transportation. Under the OCP, the City will provide transportation infrastructure to the urban centres based on the expectation that not more than 45% of total trips will be by motor vehicle (City Kelowna, 2011). To achieve this, the City intends to prioritize investment in sidewalks, bicycle corridors and a core transit network of high-frequency and convenient bus routes (City of Kelowna, 2011).

In conjunction with increasing investment in transit and active transportation infrastructure, the City recognizes that land use and development patterns will be the most significant determinants of transportation behaviour (City of Kelowna, 2018b). If the majority of new residents moving to the city in the coming decades continue to live in car-dependent areas at the edge of Kelowna, then infrastructure investments will necessarily be directed at an expansion of the road network (City of Kelowna, 2018b). Therefore, the City's OCP goal of creating a compact urban form through a network of urban centres is fundamental to the prioritization of transit and active transportation infrastructure investment (City of Kelowna, 2018b).

#### 5.1.5 Development Following the OCP

The current policy direction in Kelowna is directed at growing more compact through densification. This densification is intended to take place, predominantly, within the five areas designated as urban centres in the OCP. These urban centres are intended to grow from autodependent, low-rise clusters of retail and strip malls into secondary downtowns with increased employment activity and residents in the form of mixed-use, low and mid-rise buildings. In conjunction with increased amenities, employment opportunities and residents in the urban centres, the City intends to improve transit and active transportation nodes to decrease reliance on the automobile. As of 2018, 79% of all residents in Kelowna commuted to work by driving (City of Kelowna, 2018b).

Despite the desire for a more compact city form, current densification opportunities are predominantly limited to the urban centres themselves. Abutting these urban centres are areas consisting of single-family housing. These single-family neighbourhoods are not expected to densify, either dramatically or incrementally, over the 20-year OCP period, failing to take advantage of an opportunity to increase missing-middle housing near the urban centres. This is despite the fact that transit and active transportation investments will not only
benefit the newly developing urban centres, but also these adjacent automobile-oriented single-family neighbourhoods (City of Kelowna, 2018b).

In the years following the passing of the OCP, the number of multi-family units in Kelowna has risen dramatically. Between 2012, the first full year with the OCP in force until the end of 2017, over 60% of all housing starts have been multi-family developments including apartments, condominiums, plexes, stacked townhouses, and row houses with just over 37% of new housing starts being single and semi-detached dwellings (Canada Mortgage and Housing Corporation, 2017). The trend toward multi-family forms of housing has been increasing in recent years, with multi-family housing making up more than two-thirds of housing starts in 2016 and 2017 compared to nearly 40% of housing starts between 2012 and 2015 (Canada Mortgage and Housing Corporation, 2017). In the census tracts that include the urban centres, the proportion of multifamily dwellings built since 2012 is even greater, at more than 80% of all housing starts (Canada Mortgage and Housing Corporation, 2017). The number of housing starts in 10 times the number of housing starts in 2017 as there were in 2012 (Canada Mortgage and Housing Corporation, 2017).

Despite the dramatic growth in multi-family residential developments, the housing diversity goals set out in the Housing Strategy remain elusive. Apartment units account for nearly 80% of all new multi-family housing starts (City of Kelowna, 2017). This has resulted in the city being largely characterized by clusters of high density in the form of multi-family apartment buildings or alternatively, single-family dwellings. It seems unlikely that many would consider a small one- or two-bedroom apartment on an arterial road a proper substitute or alternative to a single-family dwelling. The City has recognized this, noting that the OCP has not provided the required diversity of housing types required for the growing population, lacking missing-middle housing forms while providing an overabundance of apartments and single-family dwellings (City of Kelowna, 2018b).

# 5.2 Study Area Site Analysis

The infill housing typologies presented in this chapter focus on the Study Area, which is a predominantly single-family neighbourhood adjacent to the high-density, mixed-use Rutland urban centre. This area has been chosen because of its classic, inner-ring suburban built form, with connected, curvilinear streets, large lots and small dwellings. The Study Area is also demographically consistent with other inner-ring suburban areas across North America, as it has a stagnating population, decreasing incomes relative to the citywide average, and increasing immigrant population. As an established neighbourhood, the Study Area also has considerable existing infrastructural investments, including numerous parks and schools and relatively consistent bus service. Finally, the Study Area has a moderate number of decades-old duplexes, as well as secondary suites and carriage houses. As discussed in Chapters Three and Four, the prevalence of these alternative dwelling types in an otherwise single-family neighbourhood can set the groundwork for increased intensification, as residents have become accustomed to multiple-dwelling housing and increasing renter populations.





5.2.1 Historic Development

Through much of its history, Rutland was an independent municipality with a rural character. Rutland amalgamated with the City of Kelowna in 1973 after more than a decade of dramatic growth, with new neighbourhoods springing up along a recently developed Highway 33 (Okanagan Historical Society, 1991), which had previously been a rural service road surrounded by farmland. One of the core areas of growth in Rutland between the mid-1950s and mid-1970s was the Study Area. As can be observed in Figures 5.4, 5.5 and 5.6, over the course of two decades the Study Area grew from a collection of farm parcels to a fully-formed residential neighbourhood. Since that initial period of growth, the Study Area has stabilized, with little new development occurring in recent years, except along Highway 33 in the Rutland urban centre.



FIGURE 5.4: STUDY AREA ROAD NETWORK IN 1959



FIGURE 5.5: STUDY AREA ROAD NETWORK IN 1976



FIGURE 5.6: STUDY AREA ROAD NETWORK IN 2015

## 5.2.2 Street Pattern

The Study Area is built on a super-grid and super-block structure, akin to most innerring suburbs, and is characterized by a clear street hierarchy. While much of the street network is comprised of narrower, residential side streets, the Study Area is bordered by two key arterial roads. Springfield Road, on the southern edge of the Study Area, leads to the downtown core. On the northern border of the Study Area, Highway 33 provides the spine of the mixed-use Rutland urban centre, and leads to Highway 97, the main north-south corridor for the City of Kelowna. Connecting these two arterials and cutting through the centre of the Study Area are three smaller east-west arterial roads, Rutland Road, Hollywood Road, and Gerstmar Road. Although less porous than older areas of the city, the curvilinear side streets of the Study Area are moderately well connected to one another and to the arterials, but sometimes "dead-end" or lead to cul-de-sacs.

There are no rear alleys in the Study Area. The lack of alleys and the curvilinear nature of the streets differentiate the Study Area from the central city neighbourhoods that have been rezoned RU7. These RU7 neighbourhoods are characterized by their street-car era network of a gridded pattern, with rear alleys.

Along the sides of all streets in the Study Area except for Highway 33, is copious and generally underutilized street parking. On smaller side streets, this parking is not paved. Sidewalks are generally lacking in these areas as well, and the Study Area as a whole only has sidewalks on 50% of its street network (City of Kelowna, 2016).

The street network is supplemented by a series of pedestrian pathways that provide easier connections between the residential side streets.





FIGURE 5.8: UNDERUTILIZED STREET PARKING

FIGURE 5.7: STUDY AREA ARTERIAL ROADS. CREDIT: CITY OF KELOWNA, 2011

## 5.2.3 Lot Pattern

Lots in the Study Area are large. Most lots are between 800 and 1200 square metres (City of Kelowna, 2019), with narrower frontages, generally between 18 and 23 metres, and deeper side lots, generally between 35 and 45 metres in length. Lot setbacks vary but are generally a minimum of seven metres and a maximum of 13 metres (City of Kelowna, 2019). There are few consolidated lots in the Study Area.



FIGURE 5.9: STUDY AREA LOT PATTERN. CREDIT: CITY OF KELOWNA OPEN DATA CATALOGUE



FIGURE 5.10: TWO VEHICLE ACCESS POINTS

Parking is commonly contained in covered parking structures attached to dwellings, whether a garage or carport. Many dwellings also have additional parking at the side or rear of the house which is accessed by a side-lot driveway. Generally, there is only one double-wide vehicle entrance per lot that provides access to both the garage or carport and the rear yard parking. Some lots contain two structures, with a main house and an accessory building in the rear yard. The accessory structures are typically carports, but there are some carriage houses in the Study Area as well.

# 5.2.4 Landscaping

While there are few street trees in the Study Area, it is well-landscaped due to private landscaping, as deep front yard setbacks provide adequate space for tree plantings and vegetation. Some of the landscaping in the front yards comprise little more than a lawn next to a driveway, while others have large trees, gardens, formal fencing and mature hedges. Most of the mature trees and hedges in the Study Area are in the



FIGURE 5.11: LANDSCAPED FRONT SETBACK

rear yards and provide privacy between dwellings, and therefore their retention should be prioritized.



FIGURE 5.12: MATURE TREES IN THE STUDY AREA CREATE GARDEN-LIKE CHARACTER

#### 5.2.5 Dwellings

The Study Area is predominantly single-family in nature, with 60 percent of dwelling units being single-family dwellings (Statistics Canada, 2017c). There are, however, a small number of walk-up apartment buildings, mostly located near the main arterial, Highway 33, in the Rutland urban centre. There are also some older duplex housing units, generally on larger lots. Single-family dwelling heights vary, but are generally one storey or split-level, and rarely exceed two-storeys. As is common in inner-ring suburban neighbourhoods, despite the large lot sizes, dwellings are relatively small with footprints that occupy between 10 and 30% of the lot, providing opportunities for both infill and house retention.

The housing stock in the Study Area is aging. More than 75% of the Study Area's current housing stock was built before 1980, with most of that housing built between 1961 and 1980. The proportion of older housing in the Study Area far exceeds that of the City of Kelowna as a whole, where only 35% of all units were built before 1980. Only 6% of housing units were built between 2001 and 2016, considerably less than the 29% of housing units built after the year 2000 in the City of Kelowna as a whole (Statistics Canada, 2017c).

As can be anticipated with older housing, the percentage of dwellings requiring major repairs is higher than in the City of Kelowna as a whole. 7.15% of housing in the Study Area requires major repairs, compared to less than 4.5% for the City of Kelowna (Statistics Canada, 2017c).



FIGURE 5.13: FIGURE GROUND SHOWING BUILDING PATTERN IN THE STUDY AREA. CREDIT: CITY OF KELOWNA OPEN DATA CATALOGUE Bourne



FIGURE 5.14: EXISTING PARK INFRASTRUCTURE

#### 5.2.6 Existing Infrastructure

The Study Area is a long-established residential neighbourhood. As a result, it has considerable infrastructural assets. There are five schools overall, including one high school, one middle school, and three elementary schools. These schools generally have sufficient capacity to handle increased population. According to the Central Okanagan School District's Long-Term Facility Plan, the elementary schools and the high

school in the Study Area have surplus space. The Study Area's middle school is over capacity; however, its replacement is a top-priority investment for the School District (School District No. 23 (Central Okanagan), 2013). There are seven parks in the Study Area, not including the sports fields connected to the schools. The south side of the neighbourhood borders the Mission Creek Greenway, a 16.5-kilometre-long linear park that leads toward the downtown core and provides bike and walking trails.

The Study Area is also relatively well connected by bus lines, with three bus lines running through it, or adjacent to it. Two of these lines run along the arterial spine of the Rutland urban centre, the Number 8 and 10 lines. The Number 8 line runs to the University of British Columbia Okanagan campus every fifteen minutes during peak hours and every 30 to 40 minutes offpeak hours. The Number 8 line connects to downtown and runs every 15 minutes during peak hours and once every



FIGURE 5.15: BUS LINES AND STOPS FOR THE NUMBER 8 AND 10 BUS (RED) AND THE NUMBER 11 BUS (BLUE)

hour during non-peak hours. The Number 11 bus runs through the core of the Study Area, along the arterials of Rutland Road, Hollywood Road and Springfield Road, with service every 15 minutes during peak hours and once every 40 minutes during off-peak hours.

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#### 5.2.7 Population

Although the City of Kelowna grew by nearly nine percent between 2011 and 2016 (Statistics Canada, 2017d), the Study Area only grew by two point seven percent over this same time period. This two point seven percent growth is also the amount that the Study Area has grown between 2001 and 2016 as its population fell between 2001 and 2006 (Statistics Canada, 2001). This population stagnation is in sharp contrast to Kelowna as a whole. Between 2001 and 2016, the City of Kelowna has grown by more than 30%. The lack of population growth in the Study Area is characteristic of inner-ring suburbs, as discussed in Chapter Two, as central city gentrification has become the favoured destination for young professionals and downsizers and outer-ring suburban expansion has attracted families.

While the population of the Study Area has stagnated, the new immigrant population is growing. Although the overall immigrant population in the Rutland Study Area is similar to that of Kelowna as a whole, new immigrants, those who have moved to Canada in the last five years, comprise 2.5% of the population of the Study Area compared to 1.5% for Kelowna as a whole (Statistics Canada, 2017e). The Visible Minority population in the Rutland Study Area is 17.5%, also considerably higher than the 13.8% of the Kelowna as a whole (Statistics Canada, 2017f).

## 5.2.8 Income

Median household incomes in the Study Area, approximately \$69, 500 per year, are falling behind those of the City of Kelowna at just more than \$71,000 per year (Statistics Canada, 2017g). In 2011, incomes in the Study Area were slightly higher than those of the City of Kelowna as a whole (Statistics Canada, 2012). This decline in incomes is not surprising as the Study Area also has a considerably lower proportion of university educated residents than Kelowna as a whole. Although 18% of residents in the City of Kelowna have a university degree, only 11% of residents in the Study Area have one (Statistics Canada, 2017g).

# 6 PROPOSED INFILL HOUSING ZONES AND DESIGN GUIDE

The following chapter applies the recommendations from Chapter Four to present a set of design options for implementing politically feasible, context-sensitive infill housing in the Study Area. The first section of this chapter contains hypothetical infill housing zoning bylaws that apply to the Study Area. These zoning bylaws are modified versions of Kelowna's RU7 zone, adapted to the specific context and built form of the Study Area. The second section of this chapter presents a design guideline illustrating the housing typologies and densities that could be built under the hypothetical zoning bylaw and provides a tactics to avoid common design pitfalls inherent in these typologies.

Two new zones are proposed, the MRU7 zone which applies to the majority of the single-family dwelling neighbourhoods in the Study Area, and the MRU7 Transition zone which is intended to provide a transition in height and density from the six story, mixed-use Rutland Urban Centre, and the low-rise MRU7 zone.

# 6.1 Modified RU7 Zones

While the MRU7 and MRU7 Transition zones are based on the RU7 zone, established neighbourhood infill zoning regulations from several other cities were also used as precedents. These precedents include the RSL and LR1 zones in Seattle, the proposed infill zoning changes in Portland's RIP, Vancouver's newly revised RS zone which allows for duplexes to be built in previously single-family neighbourhoods, Calgary's R-2M Low Density Multiple Dwelling District and R-CG Grade Oriented Infill District, and finally Edmonton's RF2 Low Density Infill Zone and RF3 Small Scale Infill Development Zone.

## 6.1.1 RU7 Zone Amendments

The following section of this research project presents two modified versions of Kelowna's RU7 infill zone, the MRU7 zone and the higher density MRU7 Transition zone. The changes to the original zoning regulations are illustrated using a legal blackline in *Appendix C*, a common method in the legal industry for comparing two documents to highlight changes made.

This document is formatted to facilitate readability by showing the proposed amended MRU7 and MRU7 Transition Zones on a section-by-section basis, followed by explanatory notes that provide the rationale for the changes made to each particular section. These zoning changes have been influenced by the recommendations from Chapter Four of this research and the zoning codes of the other cities that have allowed missing-middle infill housing in single-family neighbourhoods.

6.1.2 Proposed MRU7 and MRU7 Transition Zones

The following definitions will be added to the Interpretation section of the Kelowna Zoning Bylaw No. 8000:

COURTYARD APARTMENT means a multi-family housing building centered on a shared outdoor open space or garden and surrounded by one or two storeys of apartment units accessed by courtyard from the street;

FLAG LOT means a small parcel off of the rear end of an existing lot to accommodate a dwelling structure on its own separate title, with vehicle and servicing access off a narrow street frontage.

These definitions have been added to Kelowna's Zoning Bylaw No. 8000 to accommodate the new housing typologies and subdivision options available under the proposed MRU7 and MRU7 Transition zones.

Section 1. Purpose (Both Zones)

The purpose is to provide a zone for infill development on selected properties with or without lane access in established neighbourhoods.

Section 2. Permitted Uses (MRU7 Zone)

The permitted principal uses in this zone are:

- (a) agriculture, urban
- (b) community garden
- (c) single dwelling housing
- (d) two dwelling housing
- (e) three dwelling housing
- (f) four dwelling housing
- (g) five dwelling housing
- (h) six dwelling housing

Section 2. Permitted Uses (MRU7 Transition Zone)

The permitted principal uses in this zone are:

- (a) agriculture, urban
- (b) community garden
- (c) single dwelling housing
- (d) multiple-dwelling housing

For the MRU7 zone, an addition to allow five and six-dwelling houses has been made to the base-RU7 zone. This change is based on the lot-characteristics of the Study Area. While density limits will ensure that most lots are improved with, at maximum, four dwelling units, there are some uncharacteristically large lots in the Study Area where six dwelling housing could be permitted, only in certain structures, such as courtyard apartment buildings or cottage clusters.

Under the MRU7 Transition zone, there are no limits on the number of dwellings in permitted structures, except as determined by the density, FAR and site coverage limits set out in this bylaw.

Section 3. Secondary Uses (Both Zones)

The permitted secondary uses in this zone are:

- (a) child care centre, minor
- (b) group homes, minor
- (c) home based businesses, minor
- (d) secondary suite
- (e) short term rental accommodation subject to Section 9.17 of this bylaw

Section 4. Buildings and Structures Permitted (MRU7 Zone)

- (a) single detached house which may contain one or two secondary suites
- (b) duplex housing
- (c) semi-detached housing
- (d) three-plex housing
- (e) four-plex housing
- (f) row housing
- (g) town housing
- (h) cottage cluster housing
- (i) courtyard apartment housing
- (j) permitted accessory buildings or structures

Section 4. Buildings and Structures Permitted (MRU7 Transition Zone)

- (a) single detached house which may contain two secondary suites
- (b) duplex housing
- (c) semi-detached housing
- (d) three-plex housing
- (e) four-plex housing
- (f) row housing
- (g) town housing
- (h) stacked town housing
- (i) cottage cluster housing
- (j) courtyard apartment housing
- (k) permitted accessory buildings or structures

Although only pre-existing secondary suites are allowed in single-detached houses in the base RU7 zone, secondary suites will continue to be allowed in the MRU7 and MRU7 Transition zones, regardless of whether they were legally in existence prior to the passing of this zoning bylaw. Secondary suites will be encouraged as a key supply of affordable rental housing (see Section 7 of these bylaws). Drawn from the precedent of Portland's proposed infill zoning changes, single family dwellings will be able to contain up to two secondary suites (City of Portland Bureau of Planning and Sustainability, 2019b).

Housing typologies have been added to the MRU7 and MRU7 Transition zones compared to the base RU7 zone, expanding the range of housing options allowable under these zones. Several of the precedent cities, including Portland, Seattle and Edmonton, allow for a mix of housing options in their infill zones (City of Portland Bureau of Planning and Sustainability, 2019b; City of Seattle, 2018; City of Edmonton, 2019). This mix should be encouraged as a way of providing increased housing diversity and tenure options. In an interview with a builder in Kelowna who designed one of the two winning design options for the RU7 zone, he believed that the RU7 zone could be improved with more flexibility in building typologies to respond to different site contexts and unit sizes (Personal Correspondence). Cottage clusters and courtyard apartments have been added as permitted buildings and structures as they provide opportunities for more units on larger sites, while their divided building volumes match the scale and bulk of neighbouring single-family dwellings (City of Portland Bureau of Planning, 2008). Furthermore, these unit types contain shared courtyards that contribute to the landscaped character of neighbourhoods where single-family dwellings predominate (City of Portland Bureau of Planning, 2008).

Unlike the infill zoning bylaw in Edmonton, which restricts row and town housing to corner lots, or lots abutting arterial roads (City of Edmonton, 2019), the MRU7 and MRU7 Transition zones are written to ensure that these types of higher-density developments are allowed on all lots throughout the Study Area. This conforms to the principle behind the infill zoning bylaw enacted in Seattle and, the proposed infill zoning changes in Portland (City of Seattle, 2018; City of Portland Bureau of Planning and Sustainability, 2019b). According to the senior planner in Seattle, restricting higher-density development to arterial roads is problematic from an ethical point of view, as it restricts affordable housing options to less desirable areas of the city (Personal Correspondence).

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Section 5. Subdivision Regulations (MRU7 Zone)

- (a) The minimum lot width is 16.5 m, except it is 20 m for a corner lot.
- (b) The minimum lot depth is 30.0 m, except it is 16.5m for a corner lot.
- (c) The minimum lot area is 500 m2, except it is 250 m2 for an existing lot that has been subdivided to create a flag lot, and it is 150 m2 for row housing.
- (d) The maximum lot width is 40m
- (e) The maximum lot area is 1750m2

Section 5. Subdivision Regulations (MRU7 Transition Zone)

- (a) The minimum lot width is 16.5 m, except it is 20 m for a corner lot.
- (b) The minimum lot depth is 30.0 m, except it is 16.5m for a corner lot.
- (c) The minimum lot area is 500 m2, except it is 250 m2 for an existing lot that has been subdivided to create a flag lot, and it is 150 m2 for row housing.

The minimum lot width and depth remain consistent with the current single-family zoning in most of the Study Area, at 16.5 and 30 metres respectively. These minimum lot requirements will allow for up to two units to be built on a single lot, for example duplexes or two primary dwellings, with one located on a "flag lot". These minimum lot dimensions will also prevent horizontal lot splitting on most regular-sized lots in the Study Area. Horizontal lot splitting is discouraged as it creates narrow lot housing. Narrow lot housing is out of character with the Study Area for three reasons. First, it disrupts the rhythm of the lot pattern and built form by allowing narrow lots with narrow houses in an area generally defined by wide lot frontages and long, but shallow dwellings. Second, to maximize living space, narrow lots generally require taller houses that are unlikely to fit under the height limits proposed for the MRU7 zone. Tall, narrow houses have raised issues among residents of established neighbourhoods in Winnipeg, Manitoba, where zoning changes have recently been brought in to reduce the building heights of narrow lot infill housing (Kives, 2019). Third, most parking in the Study Area is accessed from the side yard. Split lots will not have sufficient lot area to dedicate to parking access and will therefore require parking to be contained in a front garage. This arrangement will lead to increased paving on the front setbacks of these lots,

detracting from the garden-like character of the neighbourhood. Exceptions to the lot minimums have been made for rowhouses, which are attached units on individually owned lots.

Lot maximums have been set in the MRU7 zone to prevent the consolidation of more than two lots for a single project which will help maintain existing lot patterns, preventing long, monotonous rowhouse developments that detract from the rhythm of pre-existing development in the Study Area. The maximum lot size will allow for the construction, on two consolidated lots or on the currently existing oversized lots, courtyard apartments and cottage cluster developments, a goal of the Kelowna Housing Strategy (City of Kelowna, 2012). These lot maximums have been removed in the MRU7 Transition zone as this zone is intended to allow for higher density projects than the regular MRU7 zone. Section 6. Development Regulations (MRU7 Zone)

- (a) The maximum site coverage is 45%.
- (b) The maximum floor area ratio is 0.6. For the purpose of calculating floor area ratio in the MRU7 zone, detached garage floor area and accessory building and structure floor area shall be excluded from the net floor area.
- (c) The maximum height for residential buildings is the lesser of 7.5m or 2 storeys.
- (d) The maximum height for accessory buildings or structures on a flag lot is the lesser of 6.4m or two storeys.
- (e) The minimum site front yard is 5.0 m or 6.0 metres where there is a garage on the street-facing side of the building, except for a flag lot where the minimum site front yard is 2.0 m.
- (f) The minimum site side yard is 2 m except it is 3.0 m from a flanking street.
   For lots 17.0m or wider, the minimum site side yard is increased to 2.0 m.
   i. Side yards are not required for semi-detached housing on a lot line that has a party wall.
- (g) The minimum site rear yard is 3.0 m.
- (h) Detached dwelling units must be separated by a minimum distance of 5.0m.

Section 6. Development Regulations (MRU7 Transition Zone)

- (a) The maximum site coverage is 55%.
- (b) The maximum floor area ratio is 0.8. For the purpose of calculating floor area ratio in the MRU7 zone, detached garage floor area and accessory building and structure floor area shall be excluded from the net floor area.
- (c) The maximum height for residential buildings is the lesser of 11m or 3 storeys.
- (d) The maximum height for accessory buildings or structures on a flag lot is the lesser of 6.4m or two storeys.

(e) The minimum site front yard is 3.0 m or 4.0 metres where there		
		on the street-facing side of the building, except for a flag lot where the
		minimum site front yard is 2.0 m.
	(f)	The minimum site side yard is 2 m except it is 3.0 m from a flanking street.
		i.Side yards are not required for semi-detached housing on a lot line that
		has a party wall.
	(g)	The minimum site rear yard is 3.0 m.
	(h)	Detached dwelling units must be separated by a minimum distance of
		5.0 m.

The maximum site coverage in the MRU7 zone is higher than the 40% currently allowed under the existing single-family zoning in the Study Area but is lower than the maximum lot coverage of the base-RU7 zone. Maximum lot coverage has been reduced from the base-RU7 zone for several reasons. First, the lots in the Study Area do not back onto a laneway, requiring parking access to be located on-site. In the base-RU7 zone, parking is accessed from a rear lane. As a result, more of the open space for infill developments in the MRU7 zone will be dedicated to vehicle access and parking, reducing opportunities for greenspace. Therefore, building coverage will be required to take up less of the lot space, allowing for more landscaping which will reinforce the garden-like character of the Study Area. Second, lots in the base-RU7 zone are substantially smaller than those in the Study Area. The proposed 45% maximum lot coverage for the MRU7 zone is consistent with established-neighbourhood infill zoning in areas that have larger lot sizes, for example Edmonton and Portland (City of Portland Bureau of Planning and Sustainability, 2019b; City of Edmonton, 2019). A corresponding decrease to the maximum floor area ratio has also been proposed in the MRU7 zone to 0.6, which is consistent with the proposed regulations in Portland (City of Portland, 2019).

Building heights have also been reduced from both the existing single-family zone of the Study Area and the base-RU7 zone. The reduction in height is intended to make the introduction of infill housing more politically feasible and contextually-sensitive. The scale contrasts between new infill housing and existing, single-family dwellings is often cited as the primary concern by residents opposed to this type of development, as discussed in Chapter Three. The height limit of seven and a half metres, or two-storeys, is intended to overcome this political obstacle. Currently, the Study Area's single-family zone allows for heights up to nine and a half metres, despite nearly all dwellings in the neighbourhood being between one and two storeys and less than six metres high. This zoning is intended for new, single-family developments and can lead to dwellings that are out-of-context with the neighbourhood. The proposed height limits would help to prevent the construction of "McMansions" in the neighbourhood and encourage new development to be context-sensitive to the existing built form. A lower maximum building height of six point four metres has been proposed for dwellings on flag lots, or accessory dwellings in the rear yard. The lower height limit is justified by a desire to protect the privacy of neighbouring properties and will mitigate against overlook concerns. This limit is higher than the existing height allowance for carriage houses in the Study Area, which is four point eight metres, as carriage houses cannot be more than one and a half storeys, whereas buildings on flag lots or accessory structures in the rear yards of the MRU7 and MRU7 Transition zones will be a maximum of two storeys. This height limit is consistent with the proposed height limit for flag lots in Portland's proposed infill zoning changes (City of Portland Bureau of Planning and Sustainability, 2019b).

The minimum rear yard setback has also been increased to three metres, compared to point nine metres in the base-RU7 zone, and the side yard setbacks have been increased to two metres. These setbacks are intended to increase privacy and avoid overlook concerns that may arise due to the increased height and density of new infill developments. Front yard setbacks have been set at five meters, which is greater than the four metres required under the base-RU7 zoning. This increased setback is intended to respond to the current context of the Study Area, where front setbacks are generally seven or more metres. This extended front setback will ensure that sufficient front landscaping can be maintained, reinforcing the garden-like character of the Study Area. The minimum front setback is extended by one metre where a structure contains a garage on the front. This increased minimum setback is intended to allow for more landscaping to help screen the garage from street level and is consistent with regulations in Edmonton's infill zoning bylaw (City of Edmonton, 2019)

Maximum height limits have been increased, and setback requirements have been decreased for the MRU7 Transition zone, as this zone will act as a transition between the Rutland urban centre, with its urban-character defined by low setback requirements and four to six storey building heights and the MRU7 zone which seeks to gently increase density, while

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maintaining the garden-like character of most of the study area.

Section 7. Density Regulations (MRU7 Zone)

Residential density shall be a maximum of one unit per 250 m2 of lot area area. Accessory dwelling units are exempt from density regulations if they are contained in a single-detached home that is more than five years old.

Section 7. Density Regulations (MRU7 Transition Zone) Residential density shall be a maximum of one unit per 150 m2 of lot area. Accessory dwelling units are exempt from density regulations if they are contained in a singledetached home that is more than five years old.

Density limits in the proposed MRU7 zone are lower, per square metre, than those for the base-RU7 zone. They are also lower than maximum densities in Seattle, Portland, Calgary, and Edmonton (City of Edmonton, 2019; City of Portland Bureau of Planning and Sustainability, 2019b; City of Seattle, 2018); City of Calgary, 2019). These lower densities are justified due to the suburban context of the Study Area. While the proposed increases in density are dramatic, compared to the existing allowable density, the Study Area is not as well connected to the downtown core and employment centres as Kelowna's central city neighbourhoods that have been rezoned to RU7, or the neighbourhoods in the cities of Seattle, Portland, Calgary and Edmonton. The density limits for the proposed MRU7 zone are intended to introduce opportunities for soft densification that can capitalize on infrastructure investments that are already made, but not overwhelm this existing infrastructure.

The density limits have been raised, allowing for one unit per 150 square metres of lot area for the higher density, MRU7 Transition zone. This higher density is justified as this zone is only intended to be used in strategic locations near transit and community amenities, and directly adjacent to the mixed-use Rutland urban centre. The use of a density transition zone in Seattle, between LR1 and RSL zones, has been a core strategy in that city for introducing density into existing, single-family neighbourhoods in a politically feasible manner (City of Seattle, 2018). The maximum density for the MRU7 Transition zone is lower than the RU7 zone in order to accommodate parking on-site without having laneway access.

Pre-existing secondary suites are excluded from the density regulations for two reasons. First, this exemption is intended to encourage the retention of existing dwellings by adding infill density in the rear yard. Similar density exemptions have been proposed in both Seattle and Portland as a method for retaining existing houses, therefore not disrupting the aesthetic character of the neighbourhood (City of Portland Bureau of Planning and Sustainability, 2019b; City of Seattle, 2018). Second, the exemption is intended to encourage the preservation of existing secondary suites, which provide important opportunities for affordable rental housing.

Section 8. Other Regulations (MRU7 Zone)

- (a) Minor group homes are only permitted in single dwelling housing.
- (b) In addition to the regulations listed above, other regulations may apply. These include the general development regulations of Section 6 (accessory development, yards, projections into yards, lighting, stream protection, etc.), the landscaping and fencing provisions of Section 7, the parking and loading regulations of Section 8, and the specific use regulations of Section 9.
- A minimum of two parking stalls are required per dwelling unit, except

   a minimum of one parking stall is required for units located within 500m
   of an existing transit stop. Accessory dwelling units are exempt from
   parking regulations if they are contained in a single-detached home that
   is more than five years old.

Section 8. Other Regulations (MRU7 Transition Zone)

- (a) Minor group homes are only permitted in single dwelling housing.
- (b) In addition to the regulations listed above, other regulations may apply. These include the general development regulations of Section 6 (accessory development, yards, projections into yards, lighting, stream protection, etc.), the landscaping and fencing provisions of Section 7, the parking and loading regulations of Section 8, and the specific use regulations of Section 9.
- (c) A minimum of one parking stall is required per dwelling unit. Accessory dwelling units are exempt from parking regulations if they are contained in a single-detached home that is more than five years old.

Minimum parking requirements in the MRU7 zone have been increased from the base-RU7 zone and are higher than those of the enacted or proposed zoning bylaws referred to in this section. The base-RU7 zone currently allows for a minimum of one parking stall per unit. As noted in Chapter Three, parking is a primary concern among residents whoseneighbourhoods are being rezoned for increased density. Due to the suburban location of the Study Area, and its distance from Kelowna's downtown core, parking minimums have been increased to the requirements of the current zoning in the neighbourhood. The parking minimums have been reduced to one per unit if the development is located within half a kilometer from a transit stop. As the demographic context of the Study Area changes, however, these parking minimums could be revised down.

The parking minimums are however set at one per dwelling unit in the MRU7 Transition zone due to its proximity to the mixed-use Rutland urban centre, and better access to transit lines.

# 6.1.3 Chapter Four Recommendations and Proposed Zoning Changes

The zoning changes presented in the previous section of this Chapter have been influenced by the recommendations set out in Chapter Four. The following chart provides an overview of how these recommendations have been incorporated into the MRU7 and MRU7 Transition Zones.

CHAPTER 4	ASSOCIATED MRU7 ZONING	ASSOCIATED MRU7 TRANSITION
RECOMMENDATIONS	CHANGES	ZONING CHANGES
4.1.1 Be Green	Maximum site coverage is 45%	Maximum site coverage is 55%
	[Section 6(a)], allowing for	[Section 6(a)], allowing for
	considerable permeable space	considerable permeable space and
	and mature tree retention.	mature tree retention.
	Increased minimum front	Minimum front setback provides
	setback to provide street-facing	transition between Rutland urban
	landscaping [Section 6(e)].	centre and MRU7 zone [Section 6(e)].
4.1.2 Find the Right	Maximum height reduced to	Maximum height set at 11m or
Height	7.5m or two storeys [Section	three storeys to provide transition
	6(c)] to not overwhelm	between Rutland urban centre and
	neighbouring properties	MRU7 zone [Section 6(c)].
	Narrow lot subdivisions	Maximum height set at 6.4 metres or
	prohibited [Section 5(a)].	two storeys for accessory dwelling
	Maximum height set at 6.4	structures to protect privacy of
	metres or two storeys for	neighbouring properties [Section
	accessory dwelling structures to	6(d)].
	protect privacy of neighbouring	
	properties [Section 6(d)].	
4.1.3 Create Smooth	N/A	MRU7 Transition zone height
Transitions		limits, setback requirements and
		density limits intended to transition
		between high density Rutland urban
		centre and MRU7 Zone (Section 6;
		Section 7).
4.2.1 Provide	Lot width and lot area limited	Flag Lots permitted to allow for rear-
Opportunities for Single-	to prevent large-scale lot	lot infill densification [Section 5(c)].
Lot Densification	consolidation [Section 5].	
	Flag Lots permitted to allow	
	for rear-lot infill densification	
	[Section 5(c)].	

CHAPTER 4	ASSOCIATED MRU7 ZONING	ASSOCIATED MRU7 TRANSITION
RECOMMENDATIONS	CHANGES	ZONING CHANGES
4.2.2 Balance "Erasure" and	Incentives provided for the	Incentives provided for the
"Writing"	retention of existing dwellings	retention of existing dwellings
	[Section 7; Section 8(c)].	[Section 7; Section 8(c)].
	• Flag Lots permitted to allow for	Flag Lots permitted to allow for
	rear-lot infill densification while	rear-lot infill densification while
	maintaining existing dwelling	maintaining existing dwelling
	[Section 5(c)].	[Section 5(c)].
4.2.3 Limit Unit Sizes	Maximum site coverage is 45%	Maximum site coverage is 55%
	[Section 6(a)].	[Section 6(a)].
	Maximum FAR is 0.6 [section	Maximum FAR is 0.8 [Section
	6(b)].	6(b)].
4.3.1 Obtain Buy-In From a Soft	Flag Lots permitted to allow	Flag Lots permitted to allow
Growth Coalition	rear-lot infill densification while	frear-lot infill densification while
	maintaining existing dwelling	maintaining existing dwelling
	[Section 5(c)].	[Section 5(c)].
4.3.2 Don't Go from 'Zero to 60'	MRU7 zone proposed for	MRU7 Transition zone proposed
	neighbourhood that already	for neighbourhood that already
	allows secondary suites and	allows secondary suites and
	accessory dwelling units.	accessory dwelling units.
4.4.1 Build Around Past	MRU7 zone proposed for pre-	MRU7 Transition zone proposed
[Infrastructural] Investments	established neighbourhood	to abut Rutland urban centre,
	with sufficient school capacity,	capitalizing on frequent bus
	parks, street parking and bus	service and pre-existing schools
	service.	and parks.
4.4.2 Sell Infrastructural	Increased density will provide	Increased density will provide
Improvements	opportunities for developer	opportunities for developer
	contributions to infrastructural	contributions to infrastructural
	improvements (e.g. sidewalk	improvements (e.g. sidewalk
	expansion) [Section 7].	expansion) [Section 7].

# 6.2 Design Guide for Infill Housing in the MRU7 and MRU7 Transition Zones

The previous section of this chapter set out modified versions of Kelowna's RU7 infill housing zone, the MRU7 zone and the MRU7 Transition Zone (see Figure 6.1 for where these hypothetical zones will apply in the Study Area). This section presents a design guide for the infill housing typologies that can be built under these hypothetical zones. These housing typologies are intended to be suitable for typical lot sizes and layouts in the Study Area. The housing types presented here should help the City of Kelowna meet the affordable and family-oriented housing goals contained in its Housing Strategy by introducing a diverse mix of housing forms, sizes and tenures that remain consistent with the appearance of the preexisting neighbourhood, including fee simple row houses and courtyard housing options.



FIGURE 6.1: PROPOSED FUTURE ZONING FOR STUDY AREA

#### 6.2.1 Guiding Principles

While specific to the Study Area, this design guideline will illustrate solutions to the challenges of building infill in inner-ring suburban areas generally, including balancing parking needs with pedestrian-friendly design and usable open space, fitting the pre-existing neighbourhood character, and ensuring an adequate supply of both affordable housing and family-sized housing.

This design guideline is based on an assessment of missing-middle design guidelines in other cities in Canada and the United State. The design guide takes into consideration the principles set out in Chapter Four of this research project. This means that each design will seek to:

- Preserve and enhance the garden-like quality of the Study Area by:
  - Respecting front setback patterns and ensuring that areas within setbacks incorporate plantings to create a green interface between the building and street.
  - Minimizing the prominence of parking and vehicle access along building frontages to reinforce patterns of landscaped front setbacks and to contribute to a pedestrian friendly environment. This is achieved by locating parking to the rear of the site, or by providing structured parking that does not detract from the building façade.
  - Promoting the use of landscaping and trees, whenever possible, to break up expanses of rear vehicle areas.

- Locating driveway access in a way that preserves existing tree canopy
- Minimizing the impact of garage doors and vehicular entries by recessing them from the facade to emphasize residential unit entries.
- Provide sufficient parking in accordance with Kelowna's Parking and Loading Bylaw and capitalize on underutilized on-street parking by:
  - Accommodating up to two parking stalls per unit (City of Kelowna, 1998).
- Respect the existing scale and bulk of pre-existing buildings.
- Respect the "rhythm" of development along the street by:
  - Maintaining lot and building patterns to ensure that each unit of an infill development has significant

architectural features (rooflines, front entrances, windows, and design details) that distinguish it from the other units to break up the building bulk.

- Incorporating fundamental design elements found within the neighbourhood (e.g. entrance features, rooflines, or other architectural elements.
- Ensuring that attached structures are parallel to the street with unit entrances oriented to, and directly accessed from, the fronting street.
   Both front and rear yards should be provided.
- Respect the "rhythm" of development along the street by:
  - Ensuring that the views from upper stories of new buildings minimize overlook into adjacent private yards with primary windows of habitable spaces not facing overlooking neighbouring properties.

Providing landscaped screening
 to separate properties, protecting
 privacy of properties adjacent to infill
 development.

- Provide a layered neighbourhood that balances preservation of existing buildings with new construction and encourages self-build opportunities for existing homeowners by:
  - Allowing for the creation of "flag lot" subdivisions on large properties to promote the retention of existing dwellings while adding density.

## 6.2.1.1 Rowhouse/Townhouse

Lots in the study area that are between 750 and 1200 square metres, which includes the majority of lots in the hypothetical MRU7 zone would allow for townhouse or rowhouse developments consisting of three or four attached units. These rowhouse developments are intended to blend in with the massing and scale of surrounding single-family dwellings, as they are only two storeys tall, and their width is limited by the side yard setbacks. Stacked townhouses would only be permitted in the MRU7 Transition Zone, as they would exceed height limits in the MRU7 Zone.

## Rowhouse

Row housing is a building containing three or more dwellings joined in whole or in part at the side only by a vertical party wall which is insulated against sound transmission. No dwelling is placed over another in whole or in part in a row housing configuration. Each dwelling has individual and direct access to the street and typically contains some private open space in front and back (Fletcher & Company Municipal Consulting Inc, 2009). Each rowhouse unit is owned individually, as is the land below it.



FIGURE 6.2: EXAMPLE ROWHOUSE, CREDIT HOUSING.COM



FIGURE 6.3: EXAMPLE TOWNHOUSE, CREDIT DOMAIN.COM.AU

#### Townhouse

A townhouse is also a building containing three or more dwellings joined in whole or in part at the side. Dwelling units can be placed over another in whole or in part, as stacked townhouses. Stacked townhouses would only be permitted in the MRU7 Transition zone, as they would exceed the height limits of the MRU7 zone, potentially overwhelming neighbouring properties. Unlike a rowhouse, townhouses are owned in a condominium structure, with common property being owned by the condominium corporation (City of Victoria, 2018).

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## 6.2.1.2 MRU7 Example

The development on the example MRU7 lot contains three units of more than 160 square metres, however, as the example lot is 980 square metres in size, three units of more than 180 square metres would be possible, as long as the structure does not exceed the maximum lot coverage of 45%.

*Parking:* Two parking stalls for each unit are provided at the rear of the lot for the townhouse development, with parking accessed from the side yard, consistent with the parking arrangement of most single-family dwellings that currently exist in the Study Area. In the rowhouse development, two tandem parking stalls are provided for each unit (one covered), with vehicle access provided separately for each unit from the street.



FIGURE 6.4: MRU7 TOWN HOUSE, 980 SQUARE METRE LOT

FIGURE 6.5: MRU7 ROW HOUSE, 980 SQUARE METRE LOT



*Site Layout*: A front yard setback of five metres is required, except that it is six metres for the rowhouse, which is consistent with neighbouring properties. Private outdoor space is provided at the rear of each unit. A vegetative screen or fencing protects the privacy of neighbouring properties. Attached residential buildings, such as rowhouses and townhouses should be designed parallel to the street with unit entrances oriented to, and directly accessed from, the fronting street.

*Housing Targets:* Although a rowhouse or townhouse development with three units would require the demolition of the existing dwelling, and therefore not allow for the retention of a pre-existing secondary rental suite, these units would provide family-sized housing.

## 6.2.1.3 MRU7 Transition Example

In MRU7 7 Transition zones, height and density allowances would permit stacked townhouse developments. A stacked townhouse is a townhouse development where units are built two deep, either horizontally so that dwellings may be attached at the rear as well as the side, or vertically so that dwellings may be placed over others. Each dwelling has an individual access to outside, not necessarily at grade,



TOWNHOUSES



BACK-TO-BACK

TOWNHOUSES



STACKED TOWNHOUSES

FIGURE 6.6: TOWNHOUSE TYPOLOGY. CREDIT: FORTRESS REAL DEVELOPMENTS

provided that no more than two units share a corridor, steps or path (City of Kelowna, 1998).

Stacked townhouses would be permitted in the MRU7 zone, where they can be used to allow nearly twice the density of regular townhouses, while providing a street-oriented residential form. Units, when clustered at the street frontage, provide opportunities for backyards (City of Portland Bureau of Planning, 2008). Private outdoor space is provided either through front or rear yard patios.



FIGURE 6.7: STREETSCAPE CONTEXT WITH MRU7 TRANSITION STACKED TOWN HOUSE BUILT TO MAXIMUM HEIGHT LIMIT

# 6.2.1.4 Benefits and Drawbacks

## Rowhouse

# Benefits:

- Fee-simple ownership allows for diverse tenure options.
- Larger private yard space.
- Better opportunities for mature tree retention.

## Drawbacks:

- More expensive to build due to necessary covered parking at the front.
- Three vehicle access points creates more curb cuts, reducing the pedestrian environment.
- Front yards are paved, reducing street-facing greenspace.

## Townhouse

## Benefits:

- Allows for rear, tuck-behind parking reduces curb cuts, and is cheaper to build.
- Provides opportunities for front landscaping.
- Kelowna developers more familiar with building condominium/stratified developments
   (Kelowna Senior Planner, Personal Correspondence).

# Drawbacks:

- Less opportunities for tree retention due to rear parking.
- Smaller private yard space for each unit.



FIGURE 6.8: STREETSCAPE CONTEXT WITH MRU7 TOWN HOUSE OR ROWHOUSE BUILT TO MAXIMUM HEIGHT LIMIT

## 6.2.1.5 Pitfalls and Work-Arounds

*Scale:* Rowhouse and townhouse developments can, if not carefully designed, overwhelm the existing scale and rhythm of a neighbourhood. This tends to happen when these developments present a monolithic face to the street.



FIGURE 6.9: EXAMPLE OF ASSYMETRIC BALANCE IN BUILDING DESIGN CREDIT: CITY OF VICTORIA, 2018

*Work-Around:* To avoid this common pitfall, rowhouse and townhouse developments should be designed with either an asymmetric balance in the building form and proportion, or be designed so that each unit has significant architectural features distinguishing it from other units (for example rooflines, front entrances, windows and design details (Fletcher & Company Municipal Consulting Inc, 2009). Building entrances should also be located and designed to create building identity, distinguishing individual units and creating visual interest for pedestrians (City of Victoria, 2018). Visual interest can also be maximized by ensuring that each unit is oriented toward the fronting street (City of Victoria, 2018).

## 6.2.1.5 Pitfalls and Work-Arounds

*Privacy:* Rowhouse and townhouse, and especially stacked townhouse developments can also reduce privacy of neighbouring units, detracting from neighbourhood amenity, especially when they are deeper in length than neighbouring properties, as windows can look down onto neighbouring yards and dwellings.

*Work-Around:* To avoid this common pitfall, windows on upper levels of the new development should not align with adjacent, facing windows on a neighbouring property (City of Victoria, 2018). Upper level balconies should be set back from the building edge and should be oriented toward the backyard of the developed lot (City of Victoria, 2018). Landscape screening, through mature tree retention and large hedges should separate the rowhouse or townhouse dwelling from the neighbouring property to maximize privacy (City of Victoria, 2018).



This





Not this FIGURE 6.10: PROPER WINDOW PLACEMENT CREDIT: PORTLAND BUREAU OF PLANNING, 2008



FIGURE 6.11: GRASSCRETE. CREDIT: GRASS CONCRETE LTD

Parking: For rowhouse developments, the necessity of front garages prevents a fully landscaped front setback. Work-Around: The prominence of paved surfaces on the front setback can be mitigated with the incorporation of greenery within the driveway, for example tread paving or grasscrete (City of Portland Bureau of Planning, 2008). Front balconies can also be placed above the garage to make garage doors subservient to other elements of the structure (City of Portland Bureau of Planning, 2008).

## 6.2.2.1 Backyard Infill

Lots in the study area that are between 750 and 1200 square metres, which includes the majority of lots in the hypothetical MRU7 zone would allow for backyard infill consisting of one or two attached units.

*Scale:* These duplex developments are intended to blend in with the massing and scale of surrounding single-family dwellings, as they are only two storeys tall, and therefore will not be out of scale with the existing one and a half to two-storey retained house. As single-unit carriage houses are already allowed in the Study Area, these backyard infill developments will not be out of character with existing infill policies.

Housing Targets: where carriage houses in Kelowna must be rentals (City of Kelowna, 2014), backyard infill in the MRU7 and MRU7 Transition zones would be able to be either sold or rented. These units could be rented as accessory dwelling units, or sold either as part of a condominium corporation, or through subdivision with the creation of a "flag lot". Flag lots lie behind a principle residence, as depicted in Figure 6.11, and are generally less desirable as they do not have street frontage, apart from their vehicle access. Despite this drawback, flag lots have been encouraged in Portland as a method of preserving an existing house, while also allowing for infill development

City of Portland, 2019). The preservation of an existing house helps to both maintain the aesthetic character of the neighbourhood and retain affordable rental suites, as the MRU7 zone would exempt accessory dwelling units in retained dwellings from density limits. Flag lot subdivisions have not been used in Kelowna for infill housing in most neighbourhoods, but they are allowable in Heritage Conservation Areas in order to preserve existing heritage dwellings, while allowing for increased density on oversized lots (City of Kelowna, 2011).



FIGURE 6.12: BACKYARD INFILL CREDIT: HTA DESIGN LLP

#### 6.2.2.2 MRU7 Example

*Site Layout:* In the example infill development, two duplex units of more than 100 square metres have been constructed in the backyard of a retained singlefamily dwelling. There is ample private outdoor space for each of the new units, more than 70 square metres, and more than 50% of the newly created duplex lot is permeable, open space.

The aesthetic character of the neighbourhood has been maintained as the existing dwelling and setbacks have been retained.

Parking: Two parking stalls for each unit are provided at the rear of the lot, and a vegetative screen or fencing protects the privacy of neighbouring properties. Parking is accessed from the side yard, consistent with the parking arrangement of most single-family dwellings that currently exist in the Study Area.



FIGURE 6.13: NEW FLAG LOT (PINK) SUBDIVIDED FROM EXISTING LOT (GREY)



FIGURE 6.14: DUPLEX BUILT ON FLAG LOT IN MRU7 ZONE, 980 SQUARE METRE LOT

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## 6.2.2.3 Benefits and Drawbacks

Benefits:

- Provides opportunities for self-build by existing homeowners, eliminating land acquisition costs.
- Does not change the street-facing character of the property.
- Allows for the retention of existing rental accessory dwelling units.
- Provides opportunities for homeowners to "age in place" with the addition of smaller units on property.
- Builders and developers in Kelowna are familiar with backyard construction in neighbourhoods without laneways, as carriage houses have been permitted for more than a decade.

Drawbacks:

- Flag lots do not have street frontage.
- Two-storey structures in the backyard may infringe on the privacy of neighbouring dwellings.
- Less opportunities for mature tree retention in the backyard.
- Depending on lot layout and size, it may require a second vehicle access point

creating two curb cuts on the street, reducing the pedestrian environment.



FIGURE 6.15: STREETSCAPE CONTEXT WITH MRU7 REAR YARD INFILL BUILT TO MAXIMUM HEIGHT LIMIT
## 6.2.2.4 Pitfalls and Work-Arounds

Privacy: The use of flag lots and the construction of accessory dwellings behind a single-family dwelling can infringe on the privacy of neighbouring dwellings. Rear yard infill developments can also reduce privacy of neighbouring units as windows can look into neighbouring yards.

*Work-Around:* To avoid this pitfall, upper level balconies should be set back from the building edge and should be oriented toward the backyard of the developed lot (City of Victoria, 2018). Landscape screening, through mature tree retention and large hedges should be used to separate the rear yard infill dwelling from the neighbouring property to maximize privacy (City of Portland Bureau of Planning and Sustainability, 2019b).



FIGURE 6.16: PROPER WINDOW PLACEMENT TO AVOID OVERLOOK. CREDIT: CITY OF VICTORIA, 2018



FIGURE 6.17: WESTERN AUSTRALIA FLAG LOT WITH TOO LITTLE GREEN SPACE RETAINED. CREDIT: TLD SETTLEMENTS

*Lack of Permeable Space:* Flag lots are used extensively in parts of Western Australia, where they have run into criticism for reducing the amount of permeable space in suburban areas, and for not providing adequate housing diversity (Duckworth-Smith, 2015).

*Work-Around:* The hypothetical MRU7 and MRU7 Transition zones seek to alleviate these problems by having maximum site coverage limits to preserve green space and permeable surface area, and FAR restrictions would help to limit oversized dwelling units. 6.2.3.1 Retention of Existing Dwelling with Expansion and Multifamily Conversion

Lots in the study area that are between 750 and 1200 square metres, which includes the majority of lots in the hypothetical MRU7 zone would allow for a backyard extension of a retained house consisting of one to three attached units. An addition to an existing dwelling would be constrained by the two-storey height limit and the original house would be retained.



FIGURE 6.18: EXAMPLE OF ADDITION AND CONVERSION IN KELOWNA'S RU7 ZONE

*Scale:* The preservation of the existing house will help to both maintain the aesthetic character of the neighbourhood and retain affordable rental suites, as the MRU7 and MRU7 Transition zones would exempt accessory dwelling units in retained dwellings from density limits. Dwelling conversions have not been used in Kelowna for infill housing in most neighbourhoods, however they are allowable in Heritage Conservation Areas in order to preserve existing heritage dwellings, while allowing for increased density on oversized lots (City of Kelowna, 2011). Dwelling conversions are also encouraged in Vancouver, British Columbia to incentivize the retention of character dwellings while increasing density. In Vancouver's design guidelines for additions and conversions of existing single-family



FIGURE 6.19: ADDITION AND CONVERSION WITH TWO NEW UNITS BUILD IN MRU7 ZONE, 980 SQUARE METRE LOT

dwellings, additions are prohibited from being built at the front of the dwelling and are instead encouraged to be located at the rear. Additions are meant to be subordinate to the existing dwelling to not overwhelm it (City of Vancouver, 2018).

*Housing Targets:* The expansion of an existing dwelling would allow for condominium ownership, with common ownership of parking and vehicle access areas, or rental as accessory dwelling units.

# 6.2.3.2 Benefits and Drawbacks

Benefits:

- Provides opportunities for self-build by existing homeowners, eliminating land acquisition costs.
- Does not change the street-facing character of the property.
- Allows for the retention of existing rental accessory dwelling units.
- Provides opportunities for homeowners to "age in place" with the addition of smaller units built on property.

Drawbacks:

- It may be difficult to meet building code requirements.
- Two-storey structures in the backyard may infringe on the privacy of neighbouring dwellings.
- Less opportunities for mature tree retention in the backyard.



FIGURE 6.20: STREETSCAPE CONTEXT WITH MRU7 ADDITION BUILT TO MAXIMUM HEIGHT LIMIT

# 6.2.3.3 Pitfalls and Work-Arounds

*Privacy:* Like rear yard infill and flag lot developments, an addition to a single-family dwelling can infringe on the privacy of neighbouring dwellings, especially when they are deeper in length than neighbouring properties, as windows can look into neighbouring yards. *Work-Around:* To avoid this pitfall, upper level balconies should be set back from the building edge and should be oriented toward the backyard of the developed lot (City of Victoria, 2018). Landscape screening, through mature tree retention and large hedges should be used to separate the rear yard infill dwelling from the neighbouring property to maximize privacy (City of Portland Bureau of Planning and Sustainability, 2019b).

*Scale:* A second common design pitfall for additions is their potential to overwhelm the primary dwelling.

*Work-Around:* To avoid this pitfall, additions should, as much as possible, appear subordinate in visual prominence to the retained house. While this does not mean that a rear addition should replicate the style or period of construction of the original house, it should not overwhelm the form and massing of the original house (City of Vancouver, 2018).

### 6.2.4.1 Cottage Cluster

Large lots in the study area would allow for cottage clusters with up to six individual units, or more units if located in the MRU7 Transition zone.

*Scale:* These cottage cluster developments are intended to blend in with the massing and scale of surrounding single-family dwellings, as they are only one to two storeys tall, and therefore will not be out of scale with the neighbouring properties.



FIGURE 6.21: COTTAGE CLUSTER, PORTLAND. CREDIT: CITY OF PORTLAND BUREAU OF PLANNING, 2008

*Parking:* The example cottage cluster development utilizes a shared driveway as its single vehicle access point. Open space is shared between the six units. This arrangement requires condominium ownership, or a rental arrangement due to the use of shared outdoor space and parking.



FIGURE 6.22: COTTAGE CLUSTER DEVELOPMENT IN MRU7 ZONE, 1200 SQUARE METRE LOT

Housing Targets: Although a cottage cluster development would require the demolition of the existing dwelling, and therefore would not allow for the retention of a preexisting secondary rental suite, these units would provide family-sized housing.

# 6.2.4.2 Benefits and Drawbacks

Benefits:

- Maintains the scale and character of a single-family dwelling.
- Provides large, landscaped central yard that contributes to neighbourhood amenity.
- Large, shared central yard provides opportunities for mature tree retention.
- Can use rear, tuck-behind parking reduces curb cuts, and is cheaper to build than covered parking.
- Fosters interaction among residents, building and a sense of community.

Drawbacks:

- Cottage clusters are not common in Kelowna, and therefore builders and developers may be hesitant to build them.
- No private yard space for each unit.
- Cost to build per square metre is higher than an attached dwelling (Altus Group, 2019).



## 6.2.5.1 Courtyard Apartments

Large MRU7 lots in the Study Area would allow for courtyard apartments with up to six individual units, or more units if the lot is located in the MRU7 Transition zone. *Site Layout:* Courtyard apartments were common during the streetcar-era and provide an apartment building with a shared central courtyard and broken up building volumes (as opposed to the wall-like form of rowhouses and townhouses) (City of Portland Bureau of Planning, 2008). Courtyard apartments provide density while continuing the landscaped character of neighbourhoods that are predominantly single-family in nature. Moreover, courtyard apartment buildings often provide larger, usable outdoor spaces that are not possible with the private yards in some multifamily dwellings.



FIGURE 6.24: EXAMPLE OF A COURTYARD APARTMENT BUILDING. CREDIT: CITY OF PORTLAND BUREAU OF PLANNING, 2008

#### 6.2.5.2 MRU7 Example

*Scale:* The example courtyard apartment shows a six unit structure, each approximately 130 square metres, for a total floor area ratio below 0.6. A large central courtyard provides shared outdoor space for the residents.

Parking: Two parking stalls are provided for each unit at the rear of the lot. Parking is accessed from the side yard, consistent with the parking arrangement of most single-family dwellings that currently exist in the Study Area.

Site Layout: The garden-like character of the neighbourhood has been maintained as a five-metre front setback is required. Furthermore, the large shared courtyard space provides opportunities to enhance the vegetative mass of the Study Area.



FIGURE 6.25: COURTYARD APARTMENT IN MRU7 ZONE, 1200 SQUARE METRE LOT



FIGURE 6.26: STREETSCAPE CONTEXT WITH MRU7 COURTYARD APARTMENT BUILT TO MAXIMUM HEIGHT LIMIT

# 6.2.5.3 Benefits and Drawbacks

### Benefits:

• Maintains the scale and character of a single-family dwelling.

• Provides large, landscaped courtyard that contributes to neighbourhood amenity and enhances the garden-like character of suburban neighbourhoods.

- Large, shared courtyard provides opportunities for mature tree retention.
- Can use rear, tuck-behind parking which reduces curb cuts, and is cheaper to build than covered parking.

• Fosters interaction among residents, building and a sense of community.

Drawbacks:

- No private outdoor space for each unit.
- May require lot consolidation which could be difficult to arrange, and be costprohibitive.



FIGURE 6.27: STREETSCAPE CONTEXT WITH MRU7 TRANSITION COURTYARD APARTMENT BUILT TO MAXIMUM HEIGHT LIMIT

#### 6.2.5.4 Pitfalls and Work-Arounds

*Privacy:* Courtyard apartments and cottage clusters, when used as infill housing in established, singlefamily neighbourhoods can have negative impacts on the privacy of abutting properties, since they are often pushed to the rear or side edges of a site (City of Portland Bureau of Planning, 2008).

Work-Around: To avoid this common pitfall, additional building setbacks are recommended for courtyard apartment buildings, on the example lot, the side setbacks have been doubled to four metres (see Figure 6.26). Screening through fencing or foliage can also be used to protect the privacy of neighbouring properties (City of Portland Bureau of Planning, 2008). Within the property, privacy between units that face each other can be maintained through the offsetting of window placement between opposing sides, and through screening and landscaping within the courtyard (City of Portland Bureau of Planning, 2008).

4.00m Setback



FIGURE 6.28: POTENTIAL OVERLOOK ISSUES FOR COURTYARD APARTMENT BUILDINGS. CREDIT: CITY OF PORTLAND BUREAU OF PLANNING, 2008

*Street Orientation:* Street-fronting units can result in large areas of blank walls facing the street, which impedes walkability and visual interest for pedestrians.

*Work-Around:* Street-fronting end units should also be designed to have a strong orientation to the street, with windows and architectural detailing to break up large areas of blank walls (City of Portland Bureau of Planning, 2008).

FIGURE 6.29: OPTIONS TO PROTECT PRIVACY OF NEIGHBOURING BUILDINGS WITH COURTYARD APARTMENT INFILL

# 7 CONCLUSION

The built form of the City of Kelowna is changing as it moves from sprawl to compactness. This transition is now trends toward increasing density by adding multistorey condominium and apartment buildings along mixed-use commercial and residential corridors and in designated urban centres. This strategy parallels what been happening across Canada and the United States, with planners typically focusing on the easy parts of the built environment for new large-scale housing developments, including greenfield and greyfield areas along major arterial roads. These large-scale, dense developments entail timeconsuming procedures that favour large, institutional developers, diminishing the role of smaller players who lack access to the necessary capital and capacity (Weggman & Chapple, 2014). While these are important for increasing the supply of housing, they generally contain smaller units that are not a good alternative to a single-family dwelling. As a result, the missing-middle is a real concern (City of Kelowna, 2012). While the City of Kelowna has made inroads into increasing missing-middle'housing stock through the RU7 zoning regulations in central neighbourhoods, these areas were already desirable and relatively expensive. This research project has identified how missing-middle housing can be introduced, in a politically feasible manner, to one of the city's inner-ring suburban neighbourhoods.

As discussed in Chapter Two, North America's inner-ring suburbs are at risk of decline due to aging housing stock, declining populations, and stagnating incomes (Hanlon, 2010). Yet, these are typically diverse parts of the city, with plentiful and sometimes underutilized infrastructural assets, and built form that is relatively well-connected with plenty of room for growth. The Rutland Study Area discussed in this research project is subject to many of the same problems as inner-ring suburbs in other North American cities. It is at a low point in its neighbourhood life-cycle, seeing decreasing investment, stagnant population and aging housing stock. Yet, it should not be considered a lost cause. As noted by Lukez (2007), the processes of time are crucial for building the identity of a city or a neighbourhood, and the time is now for reinvestment in the Study Area. Fowler (2007) observes that a "subtle organic mix of old and new development is scarce in Canada and the United States" (p.23). Given the abundance of underutilized space in the Study Area — particularly in the oversized yards — a process of layering new housing types onto the existing built landscape can help to both return investment to this area, grow its population, and better utilize existing infrastructural assets.

However, the process of neighbourhood change is politically fraught and, as noted in Chapter Three, residents of predominantly single-family neighbourhoods such as the Rutland value their home landscapes for reasons that can be threatened by increased density. For this reason, Chapters Five and Six propose adding new infill-housing zones; the accompanying design guidelines are intended to maintain the character of the neighbourhood while increasing density to a useful degree to provide affordable housing and to support increased bus service. At their core, these two new infill housing zones seek to organically and incrementally increase the number of dwellings in the Study Area with buy-in from local residents.

As discussed in Chapter Three, some of the core complaints that residents of singlefamily neighbourhoods have in respect to increased densification relate to how these new developments will change the character of their neighbourhood, whether that is through the demolition and replacement of existing dwellings, the scale of new development, or the loss of neighbourhood amenity and greenspace. The infill housing zones proposed in this research project are intended to respond to these concerns by encouraging development that is contextually compatible with the pre-existing built form of the Study Area. This has been achieved through limitations on building height to ensure that new buildings do not overwhelm the low-rise, one- to two-storey dwellings that currently exist in the Study Area, and the maintenance of deeper setbacks and maximum lot coverage restrictions to encourage the retention of mature foliage, or the planting of sufficient new foliage to maintain the Study Area's garden-like character. Lessons have also been drawn from successful attempts to increase density in single-family neighbourhoods in Seattle and Portland, where incentives have been provided to add new housing units while maintaining the pre-existing structure. These types of incentives can help prevent displacement, while also maintaining neighbourhood character. Therefore, the MRU7 and MRU7 Transition zones allow for forms of densification that maintain existing single-family dwelling forms while offering incentives for the retention of pre-existing secondary-suites (for example through flag-lot subdivisions and backyard infill).

The new zones proposed for the Study Area provide an alternative form of suburban

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intensification to that of New Urbanism, which itself is an alternative form of development seeking to create new suburban landscapes based on the principles of traditional neighbourhood development (Lukez, 2007). Where New Urbanism often gets applied in large projects built on greenfield sites separate from existing suburban communites, they fail to deal with the legacy of older suburbs (Fowler, 2007). The 'soft densification' interventions proposed in this research project seek to enhance the existing suburban form by weaving new housing and other uses into areas that are already built up, which is a more sustainable approach than rebuilding from scratch at the outskirts of a city. Sustainable districts must be appreciated as organisms that grow and adapt to their changing socio-demographic environments (Fowler, 2007).

The interventions proposed in this research project can also be distinguished from the New Urbanism as they are rooted in the specific neighbourhood context of the Study Area and the era of its built form. New Urbanism projects are often generic and unlikely to incorporate local idiosyncrasies and individualistic expression (Lukez, 2007). The interventions proposed in this research project on the other hand seek to reflect an understanding of the unique built form of the Study Area, making it easier to sell the benefits of infill housing and begin to transition these areas away from suburban sprawl. Therefore, these interventions incorporate a context-sensitive approach to densification, based on the principles set out in Chapter Four, in order to achieve change by engaging the processes of time, as discussed by Lukez (2007) through the "acts of 'repair' and 'infill', as the old and new [are able] to coexist side by side in an ever evolving community" (p.19).

The interventions proposed in this project can also provide forms of density that complement the type of large-scale projects being developed on arterial roads. While those projects require complex planning processes and high-costs that are not available to smaller builders, gentle densification projects are most commonly undertaken by small, locally-based home builders (Personal Correspondence, Kelowna Infill Housing Developer). The small-scale nature of these projects may make them more attractive to homeowners who are looking to unlock unused equity in their oversized backyards, allowing a soft growth coalition to form. The absence of large-developers in the construction of these projects may also reduce political opposition. As discussed in Chapter Three, developer mistrust is one of the core factors that lead local residents to oppose development in their neighbourhoods.

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While the interventions proposed in this project are small in scale, the proposed increases in neighbourhood density are not insignificant. The MRU7 Transition zone, which is intended to be more urban in nature, would permit approximately 65 dwelling units per gross hectare, and the MRU7 zone would permit a maximum of 40 dwelling units per gross hectare. At these densities, a neighbourhood is able to support express bus services during rush hour, and service once every ten or fifteen minutes during off-peak hours (Metrolinx 2008).



FIGURE 7.2: STREETSCAPE IN MRU7 ZONE

Suburban single-family neighbourhoods have been allowed to 'mummify' as a result of strict zoning regulations that are reinforced by NIMBY sentiments, which are at the root of political opposition to neighbourhood change (Bervoets et al., 2015). This creates landscapes of ossification (Chow, 2005). This research project has formulated and applied a set of policy recommendations that respond to the anti-densification concerns of local residents in order to counteract this process of ossification in inner-ring suburban areas. By responding to the legitimate concerns of local residents, and capitalizing on the potential of small-scale builders and architects, this research project contends that it is possible for a low-rise, missing-middle hybrid form to develop in deference to the established character of Canada's inner-ring suburbs. This hybrid form will weave new housing into the pre-existing suburban landscape, maintaining mature landscaping and respecting the spatial pattern of these post-Second World War suburbs, which constitute a significant event in Canadian city building history and embody important cultural values in both their design and construction. Works Cited:

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# APPENDICES

# **APPENDIX A: LIST OF INTERVIEWEES**

Anonymous. (March 2017). Resident of RU7 Zoned Neighbourhood, City of Kelowna.
Anonymous. (March 2017). Resident of RU7 Zoned Neighbourhood, City of Kelowna.
Anonymous. (March 2017). Resident of RU7 Zoned Neighbourhood, City of Kelowna.
Anonymous. (March 2017). Resident of RU7 Zoned Neighbourhood, City of Kelowna.
Anonymous. (March 2017). Resident of RU7 Zoned Neighbourhood, City of Kelowna.
Anonymous. (March 2017). Resident of RU7 Zoned Neighbourhood, City of Kelowna.
Anonymous. (March 2017). Senior Urban Planner, City of Seattle.
Anonymous. (April 2017). Senior Urban Planner, City of Kelowna.
Anonymous. (April 2017). Senior Urban Planner, City of Portland.
Randi Fox. (February 2017). Architect, Fox Architecture.
Shane Styles. (March 2017). Development Planning, Inhabit Residential.

# APPENDIX B: ETHICS APPROVAL

Research Ethics Board Office James Administration Bldg. 845 Sherbrooke Street West. Rm 325 Montreal, QC H3A 0G4 Tel: (514) 398-6831 Fax: (514) 398-4644 Website: www.mcgill.ca/research/research/compliance/human/

#### **Research Ethics Board I Certificate of Ethical Acceptability of Research Involving Humans**

**REB File #: 297-1218** 

Project Title: Toward Incremental Density in Single-Detached Neighbourhoods in Kelowna, Canada

Principal Investigator: Cameron Bourne

Department: School of Urban Planning

Status: Master's Student

Supervisor: Prof. Richard Shearmur

#### Approval Period: January 25, 2019 to January 24, 2020

The REB-I reviewed and approved this project by delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct For Research Involving Humans.

Deanna Collin Senior Ethics Review Administrator

<sup>\*</sup> Approval is granted only for the research and purposes described.

<sup>\*</sup> Modifications to the approved research must be reviewed and approved by the REB before they can be implemented.

<sup>\*</sup> A Request for Renewal form must be submitted before the above expiry date. Research cannot be conducted without a current ethics approval. Submit 2-3 weeks ahead of the expiry date.

<sup>\*</sup> When a project has been completed or terminated, a Study Closure form must be submitted.

<sup>\*</sup> Unanticipated issues that may increase the risk level to participants or that may have other ethical implications must be promptly reported to the REB. Serious adverse events experienced by a participant in conjunction with the research must be reported to the REB without delay.

<sup>\*</sup> The REB must be promptly notified of any new information that may affect the welfare or consent of participants. \* The REB must be notified of any suspension or cancellation imposed by a funding agency or regulatory body that is related to this study.

<sup>\*</sup> The REB must be notified of any findings that may have ethical implications or may affect the decision of the REB.

# APPENDIX C: ZONING CHANGE BLACKLINES

# MRU7 Zoning Changes, Legal Blacklines

Note: Underlined formatting indicates added text, while strikethrough formatting shows what text is deleted.

# 13.17 RU7 – Infill Housing

#### 13.17.1 Purpose

The purpose is to provide a **zone** for infill development <del>of a maximum of four</del> dwelling units on selected properties with <u>or without</u> lane access in <del>the central</del> <del>city.established neighbourhoods.</del>

#### 13.17.2 Permitted Uses

- The permitted **principal uses** in this **zone** are:
- (a) agriculture, urban
- (b) community garden
- (c) single dwelling housing
- (d) multiple-two dwelling housing
- (e) three dwelling housing
- (f) four dwelling housing
- (q) five dwelling housing
- (d)(h) six dwelling housing

#### 13.17.3 Secondary Uses

- The permitted **secondary uses** in this **zone** are:
- (a) child care centre, minor
- (b) group homes, minor
- (c) home based businesses, minor
- (d) secondary suite
- (e) short term rental accommodation subject to Section 9.17 of this bylaw
- 13.17.4 Buildings and Structures Permitted
  - (a) single detached house which may contain up to two secondary suites-
  - (b) duplex housing
  - (c) semi-detached housing
  - (d) three-plex housing
  - (e) four-plex housing
  - (f) row housing
  - (g) stacked row housing
  - (h)(q) town housing
  - (i) stacked town housing
  - (j)(h) cottage cluster housing
  - (k)(i) courtyard apartment housing
  - (I)(i) permitted accessory buildings or structures

#### 13.17.5 Subdivision Regulations

- (a) The minimum **lot width** is <u>716</u>.5 m, except it is <u>9.520</u> m for a corner lot.
- (b) The minimum **lot depth** is 30.0 m, except it is 16.5m for a corner lot.
- (c) The minimum lot area is <u>277.5500</u> m<sup>2</sup>, except it is <u>350250</u> m<sup>2</sup> for <u>a cornerlotan existing lot</u> <u>that has been subdivided to create a flag lot, and it is 150 m<sup>2</sup> for row housing</u>.
- (d) The maximum lot width is 40m
- (e) The maximum lot area is 1750m<sup>2</sup>

13.17.6	Development Regulations
	(a) The maximum site coverage is <del>5545</del> %.
	(b) The maximum floor area ratio is 0.86. For the purpose of calculating floor area ratio in the MRU7-Transition zone, detached garage floor area and accessory building and structure floor area shall be excluded from the net floor area.
	(c) The maximum height for residential buildings is the lesser of 8.0m7.5m or 2 storeys.
	(d) The maximum height for accessory buildings or structures is 4.8mon a flag lot is the lesser of 6.4m or two storeys.
	(e) The minimum site front yard is 45.0 m- or 6.0 metres where there is a garage on the street-facing side of the building, except for a flag lot where the minimum site front yard is 2.0 m.
	<ul> <li>(f) The minimum site side yard is 1.2 m except it is 3.0 m from a flanking street. For lots 17.0m or wider, the minimum site side yard is increased to 2.0 m.</li> </ul>
	i. Side yards are not required for semi-detached housing on a lot line that has a party wall
	(g) The minimum site rear yard is <u>3.</u> 0 <del>.9</del> m.
13.17.7	(h)_Detached dwelling units must be separated by a minimum distance of <del>2</del> 5.0 m. Density Regulations
	Residential density shall be <del>based on the width<u>a maximum</u> of <del>the<u>one unit per 250 m</u>² of</del> lot<del>.</del></del>
	(a) For lots narrower than 13.5 m in width, up to two dwellings area. Accessory dwelling units are permitted.
	(b) For lots <u>exempt</u> from 13.5 m to 15.0 m wide, up to three dwellings <u>density</u> regulations if they are permitted.contained in a single-detached home that is more than five years old.
	(c) For lots greater than 15.0 m wide, up to four dwellings are permitted.
13.17.8	Other Regulations
	(a) Minor group homes are only permitted in <b>single dwelling housing</b> .
	(b) Where a <b>site</b> has access to a <b>lane</b> , vehicular access is only permitted from the <b>lane</b> . Otherwise, vehicular access may be taken from the <b>front yard</b> , or where a property has two <b>street frontages</b> , access shall be taken from the <b>street frontage</b> which is not the <b>front yard</b> .

(b) In addition to the regulations listed above, other regulations may apply. These include the general development regulations of Section 6 (accessory development, yards,

projections into yards, lighting, stream protection, etc.), the landscaping and fencing provisions of Section 7, the parking and loading regulations of Section 8, and the specific use regulations of Section 9.

(c) A minimum of two parking stalls are required per dwelling unit, except a minimum of one parking stall is required for units located within 500m of an existing transit stop. Accessory dwelling units are exempt from parking regulations if they are contained in a single-detached home that is more than five years old.

# MRU7 Transition Zoning Changes, Legal Blacklines

Note: Underlined formatting indicates added text, while strikethrough formatting shows what text is deleted.

# 13.17 RU7 – Infill Housing

# 13.17.1 Purpose

The purpose is to provide a **zone** for infill development <del>of a maximum of four dwelling units</del> on selected properties with <u>or without</u> lane access in <del>the central city.established neighbourhoods.</del>

# 13.17.2 Permitted Uses

The permitted **principal uses** in this **zone** are:

- (a) agriculture, urban
- (b) community garden
- (c) single dwelling housing
- (d) multiple-dwelling housing

# 13.17.3 Secondary Uses

The permitted **secondary uses** in this **zone** are:

- (a) child care centre, minor
- (b) group homes, minor
- (c) home based businesses, minor
- (d) secondary suite
- (e) short term rental accommodation subject to Section 9.17 of this bylaw
- 13.17.4 Buildings and Structures Permitted
  - (a) single detached house which may contain up to two secondary suites-
  - (b) duplex housing
  - (c) semi-detached housing
  - (d) three-plex housing
  - (e) four-plex housing
  - (f) row housing
  - <del>(g) stacked row housing</del>
  - (h)(g) town housing
  - (i)(h) stacked town housing
  - (j)(i) cottage cluster housing
  - (k)(j) courtyard apartment housing

(a) permitted accessory buildings or structures

# 13.17.5 Subdivision Regulations

- (a) The minimum **lot width** is <u>716</u>.5 m, except it is <u>9.520</u> m for a corner lot.
- (b) The minimum **lot depth** is 30.0 m, except it is 16.5m for a corner lot.
- (C) The minimum lot area is 277.5500 m<sup>2</sup>, except it is 350250 m<sup>2</sup> for a cornerlot.
- (c) an existing lot that has been subdivided to create a flag lot, and it is 150 m<sup>2</sup> for row housing.

#### 13.17.6 Development Regulations

- (a) The maximum site coverage is 55%.
- (b) The maximum floor area ratio is 0.8. For the purpose of calculating floor area ratio in the MRU7 Transition zone, detached garage floor area and accessory building and structure floor area shall be excluded from the net floor area.
- (c) The maximum height for residential buildings is the lesser of  $\frac{8.0m_{11}}{23}$  storeys.
- (d) The maximum height for accessory buildings or structures is 4.8mon a flag lot is the lesser of 6.4m or two storeys.
- (e) The minimum site front yard is <u>43.0 m or 4.0 metres where there is a garage on the</u> street-facing side of the building, except for a flag lot where the minimum site front yard is <u>2.0 m</u>.
- (f) The minimum site side yard is <del>1.</del>2 m except it is 3.0 m from a flanking street. For lots <del>17.0m or wider, the minimum site side yard is increased to 2.0 m.</del>
  - i. Side yards are not required for semi-detached housing on a lot line that has a party wall.
- (g) The minimum site rear yard is <u>3.</u>0<del>.9</del> m.
- (h) Detached dwelling units must be separated by a minimum distance of  $\frac{25}{25}$  om.

#### 13.17.7 Density Regulations

Residential density shall be based on the widtha maximum of the one unit per 150 m<sup>2</sup> of lot-

(a) For lots narrower than 13.5 m in width, up to two dwellings area. Accessory dwelling <u>units</u> are permitted.

(b) For lots exempt from 13.5 m to 15.0 m wide, up to three dwellings density regulations if they are permitted.contained in a single-detached home that is more than five years old.

(c) For lots greater than 15.0 m wide, up to four dwellings are permitted.

#### 13.17.8 Other Regulations

- (a) Minor group homes are only permitted in single dwelling housing.
- (b) Where a site has access to a lane, vehicular access is only permitted from the lane. Otherwise, vehicular access may be taken from the front yard, or where a property has two street frontages, access shall be taken from the street frontage which is not the front yard.

- (b) In addition to the regulations listed above, other regulations may apply. These include the general development regulations of Section 6 (accessory development, yards, projections into yards, lighting, stream protection, etc.), the landscaping and fencing provisions of Section 7, the parking and loading regulations of Section 8, and the specific use regulations of Section 9.
- (c) A minimum of one parking stall is required per dwelling unit. Accessory dwelling units are exempt from parking regulations if they are contained in a single-detached home that is more than five years old.

<del>(c)</del>