Sustainability and Residential Density

Two Western Canadian Case Studies




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Abstract

Municipalities across Canada are implementing policy aimed at increasing residential densities with the goal of creating more sustainable communities. Increasing density is often cited as a means of minimizing sprawl, providing for efficient public transit, reducing infrastructure costs and improving social cohesion. Recent research, however, suggest that the relationship between sustainability and density is more complex than current theory implies. This research project explored the relationship between sustainability and residential density through interviews with key practitioners in two rapidly growing mid-sized cities in western Canada: Airdrie, Alberta and the Township of Langley, British Columbia. Using a qualitative, exploratory research strategy, the study analyzed discourse from interviews with 19 practitioners that included planners, elected officials and developers from the target communities. Research findings revealed insights into how different practitioners use the concepts of sustainability and density and highlight the importance of understanding sustainability initiatives at the local level. Practitioners' discourse suggests a gap between planning theory and practice in understanding density. Findings point to the influence local development realities play in shaping these understandings and how practitioners view increasing densities. Achieving a more sustainable urban form through high density development presents challenges to 'suburban' municipalities and can lead to trade-offs between the different aspects of sustainability and livability.

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LIST OF ACRONYMS

ALR	Agricultural Reserve Land
DCC	Development Cost Charge
GVRD	Greater Vancouver Regional District
LEED	Leadership in Energy and Environmental Design
MDP	Municipal Development Plan (Alberta)
OCP	Official Community Plan (British Columbia)
TOD	Transit Oriented Development
UPA	Unite Per Acre
WCED	World Commission on Environment and Development

***** This report uses the titles 'Langley' and the 'Township' to refer to the Township of Langley. Unless otherwise noted, these names refer to that municipality and not the City of Langley.

1.0 Introduction

Sustainability has become a popular concept in municipal government policy and local economic development strategies. Municipalities frequently use the term to frame policies that address varied economic, social and environmental goals. In the realm of planning the terms sustainability and sustainable development have become important guiding principles for good planning and commonly cited objectives of planning policies (Grant, 2009). In Canada, municipalities are increasingly incorporating aspects of sustainability into their municipal plans and long-term planning strategies with the goal of creating green, economically prosperous and equitable communities (Figure 1). Municipal sustainability initiatives frequently push for more compact urban form and in particular higher-densities (Jenks et al, 1996). While policy espouses the virtues of high density and sustainable urban form, recent research raises questions about the connection between the two (Bramley & Power, 2009; Howley et al., 2009).

This research project investigates how practitioners conceptualize and understand sustainability and residential densities in two western Canadian municipalities. It seeks to shed light on similarities and differences in understanding between three groups of practitioners involved in residential development: elected officials, planners, and developers. Specifically, this research project asks: **how do understandings of the relationship between sustainability and residential density compare across categories of development practitioners and communities?**

Study findings suggest that sustainability is a contested term and that different practitioners understand it in different ways. Local context is important in shaping understandings of sustainability and density as it presents unique challenges to the implementation of sustainability initiatives. Analysis of discourse from practitioners indicates a gap between municipalities' expected outcomes associated with higher densities, developers experiences and development realities. Study findings also point to trade-offs between the various aspects of sustainability as sustainability initiatives are implemented.

The study hopes to contribute to a better understanding of how key practitioners utilize and understand the relationship between sustainability and density with the goal of creating an improved theoretical framework that considers how these concepts operate at the local level.

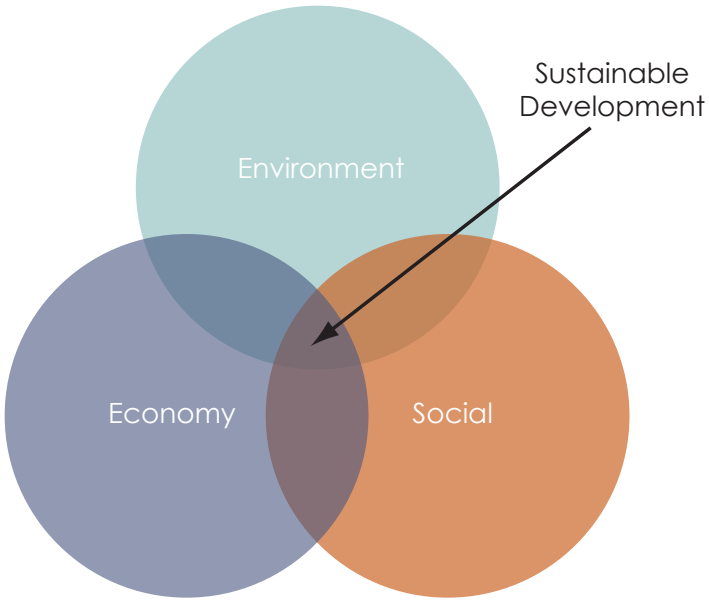

Figure 1.1: Theory suggests that achieving sustainable development requires balancing the three aspects of sustainability.

2.0 Sustainability and Urban Form

Although the relationship between human settlements and the environment have long been important to planning (Berke, 2008), in Canada widespread interest in sustainability entered planning discourse following the publication of the Brundtland Commission's 1987 report, *Our Common Future* (WCED, 1987). The report offered the most widely employed definition of sustainable development as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (WCED, 1987: 8). Following the publication of this report, governments recognized the significant role that cities play in moving toward a more sustainable future. In 1991, for example, Jacobs (1991: 67) wrote that the "role of government in planning the shape and interaction of land uses will inevitably be the crucial factor" in attaining sustainable development. Since then, many provinces in Canada have pushed municipalities to implement more sustainable strategies to reduce urban sprawl through compact urban form and increased densities. In Alberta, for example, plans implemented as part of a new provincial regional planning framework are requiring municipalities to achieve minimum densities in new developments as in the Calgary Metropolitan Plan (Calgary Regional Partnership, 2009).

Previous research on sustainability at the municipal level has largely focused on the development of best practices and evaluating sustainability initiatives (Zeemering, 2010). In Canada, Grant (1994) argued for stronger provincial leadership in promoting sustainable development in residential planning. Addressing the question of whether the political rhetoric of sustainable development had affected planning practice, Grant reviewed planning documents, interviewed key development practitioners (planners, councillors, development officers, developers, provincial staff involved in local planning and citizen activists) and surveyed residential developments in three communities in Nova Scotia. Her analysis suggested that municipalities face jurisdictional, organizational, geographical and cultural barriers to implementing sustainable development. Among the jurisdictional barriers, for example, Grant found that provincial departments often have conflicting notions of sustainability that complicate a consistent approach to promoting sustainable development. She concluded that the land use planning process in Nova Scotia, as in other parts of Canada, generally encouraged development and did not enhance sustainability of

the local landscape. Bridging the gap between sustainable development rhetoric and implementation requires strong direction from provincial governments who are responsible for setting the context for land use planning (Grant, 1994).

More recently in the US, Berke and Conroy (2000) evaluated 30 comprehensive plans based on six principles of sustainability and found that whether plans explicitly used sustainable development language or not had little effect on the presence of sustainability principles in the plan themselves. Some plans incorporated the principles without using sustainability language but their policies nonetheless were consistent with sustainability principles. The authors suggested that the absence of such language may result from particular interest groups not agreeing with sustainability terms or planners who did not have in-depth exposure to sustainability concepts. Berke and Conroy (2000) concluded that plans often do not take a balanced, holistic approach to guiding sustainable development and tend to focus narrowly on the built environment. Specifically, they point out that while compact urban form may help in reducing auto-dependency, air pollution and provide more opportunities to protect sensitive open space, simply increasing densities is not a panacea for sustainable development. In conclusion, the authors recommended that states adopt planning mandates requiring community plans to support sustainability and that planners examine the linkages between plans, implementation efforts and sustainability outcomes.

While studies such as these are useful in understanding how municipalities respond to and implement sustainability principles, they do not directly address how key social actors such as planners, elected officials, and developers conceptualize sustainability itself or strategies for its implementation. Two notable studies from the US have addressed the conceptualization of sustainability.

Jepson (2003) conducted a survey of more than five hundred local planners in the US to understand the extent to which planners' views and opinions adhere to sustainability principles. The survey consisted of questions that dealt with various aspects of sustainable development such as citizen participation, economic development, land use, open space and social aspects. His findings suggest that planners have a high level of conceptual consistency in how they understand

sustainable development. There were some exceptions, however. Planners who had land-use or geography academic specializations, lived in western states, or practiced in rural communities had higher average scores than those from southern states, those with no academic specialization or those who practiced in suburban contexts. These findings suggest not only differences in understanding based on a practitioner's background but also on their geographic context and location.

Zeemering (2009) conducted a more recent study that investigated understandings of sustainability at the local level. Using a mixed-method approach (Q-methodology), Zeemering interviewed 28 local community and economic development practitioners in nine counties in the San Francisco Bay Area. The Q-methodology allowed Zeemering to collect both quantitative and qualitative data on the importance practitioners placed on different aspects of sustainability within their communities. Zeemering identified three distinct approaches to sustainability at the municipal level: (1) Aspiring cities where officials saw a strong connection between sustainability, planning and urban design; (2) traditional development cities where emphasis was placed on economic development and; (3) participatory cities where there was an emphasis on the connection between participation, community development and sustainability. While Zeemering's study did not focus specifically on municipal planners, his findings nonetheless caution against looking for a uniform sustainability agenda across a region as cities within one metropolitan region may demonstrate quite distinct approaches to sustainability.

A recent study by Bramley and Power (2009) on sustainability and urban densities suggested that urban form and in particular higher densities can have both positive and negative effects on a sustainability agenda. Using data from a nationwide interview survey carried out with 20,000 households across England, the authors employed statistical models (regression analysis and logit analysis) to shed light on the social effects of different aspects of urban form. They concluded that while denser, more compact urban form offers improved access to services, it is also frequently linked with higher levels of resident dissatisfaction and possibly higher incidence of neighbourhood problems. Bramley and Power's (2009) study indicated that urban form is associated with trade-offs between disparate dimensions of sustainability, in this case aspects of social sustainability. These conclusions agree with a previous study in Wales by Senior et al.

(2006) that suggested that given the option, owner-occupier household preferences favour semi-detached and detached homes in suburban areas over more sustainable options in higher density mixed use areas.

Howley et al. (2009) similarly looked at neighbourhood satisfaction in new apartment developments in central Dublin. Using a mixed-method approach (surveys and four focus groups), they investigated the relationship between high-density living and neigbourhood satisfaction. Their results imply that while the public may support sustainability principles, people perceive that high-density living compromises quality of life (Howley et al., 2009). Their quantitative results are similar to those of Senior et al. (2006) in that residents living in compact, high-density residential areas reported a greater degree of neighbourhood dissatisfaction than was present nationally. Results from the qualitative component of their study, however, suggested that people's main concern was not necessarily high-density itself but rather other elements of the physical environment such as litter, pollution, lack of greenery, noise, traffic, parking, and access to services. Howley et al. (2009) concluded that achieving sustainable urban form requires more than simply increasing residential densities. Planners must work to create environments that meet both sustainability and livability objectives.

This brief review of the literature suggests two things. First, that sustainability has become and remains an integral aspect of municipal planning. As Gunder (2006: 209) notes, sustainability has become planning's new transcendental ideal. Despite its widespread use, however, conceptions of sustainability can vary substantially across regions and possibly between categories of development practitioners. Studies such as those by Zeemering (2009) and Jepson (2003) prove insightful in that they directly address how the term is understood in the municipal context. Second, while planners often associate sustainable urban form with high-densities, recent research suggests that the relationship between urban form and sustainability is likely more complex than current theory implies (Senior et al., 2006; Bramley & Power, 2009; Howley et al., 2009). The study proposed here, therefore, seeks to explore in greater detail how different practitioners involved in residential development conceptualize the relationship between sustainability and residential densities with the goal of improving the theory connecting the two.

3.0 Research Approach and Method

This research project builds on existing data collected as part of Dr. Jill Grant's study, *Trends in Residential Environments: Planning and Inhabiting the Suburbs.* The suburbs project, based out of Dalhousie University's School of Planning, is funded by the Social Sciences and Humanities Research Council of Canada. It seeks to reconcile the gap between planning theory that promotes livable and sustainable communities with the kinds of communities built in practice. The suburbs project has previously looked at emerging trends in residential development in three Canadian municipalities including: Markham, Ontario; Calgary, Alberta; and Surrey, British Columbia.

In the summer of 2010 the decade long study expanded its geographic focus to include rapidly growing, mid-sized municipalities located on the urban periphery of Vancouver, Calgary and Toronto. During this period, the author became involved in the project as a research assistant where he conducted a review of literature pertaining to suburban development, profiled potential target communities to study and established a sampling frame of participants to interview. Specifically, his focused his work on rapidly growing municipalities in the Calgary region and ultimately assisted in selecting Airdrie as the project's target community for Alberta. Airdrie is a rapidly growing municipality located only 3km north of the Calgary city limits and 30km from its downtown.

This research project relies on data collected from Airdrie as well as from the Township of Langley, a district municipality located approximately 40 km east of Vancouver. In late June of 2010, project members travelled to the target communities where they conducted interviews with elected officials, planners and developers; collected development information; and completed visual surveys on new residential communities.

Interview questions followed the protocol of the *Trends in Residential Environments* project and included specific questions relating to this research project (appendix A). The interviews were semi-structured and lasted between 45 minutes to an hour. By employing a semi-structured interview approach interviewers had the benefit of asking for clarification or elaboration of

points discussed during the interviews. In most cases respondents consented to having the interview recorded on a portable Mp3 recorder; however, in two instances participants declined being recorded (see consent form appendix B). In these cases the interviewer took detailed notes of the interviews. The recorded interviews were transcribed and edited in preparation for analysis while notes from unrecorded interviews were typed up and organized. In total, the interview sample includes 19 participants in 16 interviews (some interviews included more than one respondent). A summary is provided below.

Figure 3.1: Sample of Respondents

Category	Airdrie, AB	Township of Langley, BC	Total Respondents
Elected Official	1	2	3
Planner	3	3	6
Developer	7	3	10
Total	11	8	19

In addition to interviews, projects members collected development information from the communities. This included gathering important planning documents and visual surveys of new residential developments. The visual surveys include information on housing types, kinds of uses present, parks, green space, estimated age of construction and photos (appendix C). Policy documents included municipal planning strategies for both jurisdictions and, for Langley, a sustainability charter. This research project used the development information and policy documents to provide background and contextualize the two case studies.

3.1 Research Question and Objectives

Using Airdrie, Alberta and the Township of Langley, British Columbia as case studies, the research seeks to address the following question:

> *How do understandings of the relationship between sustainability and residential density compare across categories of social actors and communities?*

There are two general study objectives. The first is to better understand how three categories of practitioners conceptualize sustainability in the local context. A review of the literature suggests both that practitioners conceptualize the term in different ways and that the term is what

Connolly (2007) calls a contested one. It is, therefore, important to explore how practitioners, specifically planners, elected officials and developers, conceptualize the term and how these conceptualizations compare across the different categories of practitioners and communities.

The second study objective is to investigate how practitioners understand residential densities in relation to sustainability. High-densities are frequently cited as an important component of sustainable urban form (Jenks et al. 1996; Roseland 2005; Jabareen, 2006). Recent research, however, suggests that higher-density urban form requires trade-offs between the various social, environmental and economic aspects of sustainability (Bramley & Power, 2009). Comparing how sustainability discourse frames ideas of density will aid not only in our understanding of the factors associated with sustainability but also a better understanding of planning theory and practice.

The project uses an exploratory, qualitative research strategy. It employs a multiple case study approach and uses semi-structured interviews as the primary data source. As Yin (2009) notes, the usefulness of a case study approach is not to generalize to a population as is common for quantitative studies, but rather to generalize to theoretical propositions. This study, therefore, seeks to contribute to current theory surrounding urban form and sustainability. Employing a qualitative approach based on interview data allows for a richer understanding of the meaning respondents attribute to concepts than is possible in other forms of enquiry such as surveys.

3.2 Analysis Methodology

Analysis of the interview data proceeded through a discourse analysis technique. Discourse analysis has recently gained validity in housing studies, particularly for its usefulness as an exploratory approach (Hastings, 2000). Discourse analysis recognizes that language has social content as well as social effects (Sharp and Richardson, 2001). Its usefulness in this study was to explore in greater detail how key practitioners in residential development understand sustainability and density. This study focused primarily on discourse available from the interview transcripts.

Analysis of the transcripts began by compiling an evidence bank. The evidence bank consisted of excerpts from the interviews in which respondents addressed one of the research focus areas. Categories for analysis were allowed to emerge from the data and included themes such as: the conceptualization of sustainability; the relationship between sustainability and density; housing mix; service provision and; sustainability and livability. After completing the evidence bank, more detailed analysis identified important trends and meanings within the target communities and categories of practitioners.

The final step of the analysis included a synthesis of the data by comparing the two case studies and looking for trends, similarities and differences between them and the categories of practitioners. Results from the data synthesis are discussed with reference to current literature and contextual data collected as part of the project. These materials are used to inform conclusions reached as part of the data synthesis and frame the discussion in light of current research.

3.3 Data Considerations

Difficulties encountered in the recruitment process and ethical considerations for participants led to several considerations for the study sample which are described here. Both pertain to data collected from Airdrie.

First, there were difficulties recruiting a large sample of elected officials in Airdrie. While project members made contact with two possible participants, they ultimately only interviewed one who was particularly interested in the project. Most elected officials in Airdrie serve on council in addition to their primary employment. It is possible that this affected the elected official's ability to schedule time for an interview. Alternatively, they may not have been interested in participating in the study.

Second, the protocol of the larger study allowed participants to decline having the interview recorded, transcribed, or quoted in project reports and publications such as this one. Two Airdrie planners declined having their interviews recorded and project members, therefore, took detailed

notes during the interview process. While this study used these interviews in the analysis, in the absence of a verbatim transcript it could not quote directly from them.

4.0 Case Studies

The Township of Langley and the City of Airdrie were chosen as the two case studies. They were selected based on various factors. First, both are located on the periphery of large urban centres (Greater Vancouver and Calgary respectively). While they differ in terms of population, Langley has more than double the population of Airdrie, both municipalities function in large part as bedroom communities in their larger metropolitan regions. Comparable locations and functions in two distinct regions of Canada provide a useful opportunity to address the central research question. Second, both municipalities are experiencing rapid growth. With a population growth of 41.9% between 2001 and 2006 (Statistics Canada, 2006), Airdrie is one of the country's fastest growing cities. Langley grew 7.9% from 2001 to 2006 (Statistics Canada, 2006) and faces unique geographic constraints from natural features and agricultural reserve land. Third, both cities have incorporated sustainability principles into their municipal planning documents making them useful cases for better understanding local sustainability initiatives. Finally, specific research questions for this study were incorporated into the question schedule of both these communities prior to interviewing. This increased the likelihood that respondents would discuss their perspectives on sustainability in the interviews.

While the two case studies are similar in many ways, they have several important differences. First, with respect to growth, Airdrie is capable of accommodating growth by annexing land from the neighbouring Municipal District of Rockyview. The Township of Langley, on the other hand, is severely limited in the extent it can accommodate outward growth. It faces extreme development pressure due to geography, political boundaries, proximity to the US border and the agricultural land reserve (ALR). Second, development in Airdrie generally occurs in a contiguous manner outward as farmland is converted to urban uses. In Langley, however, growth occurs in and around urban nodes located throughout the municipal district.

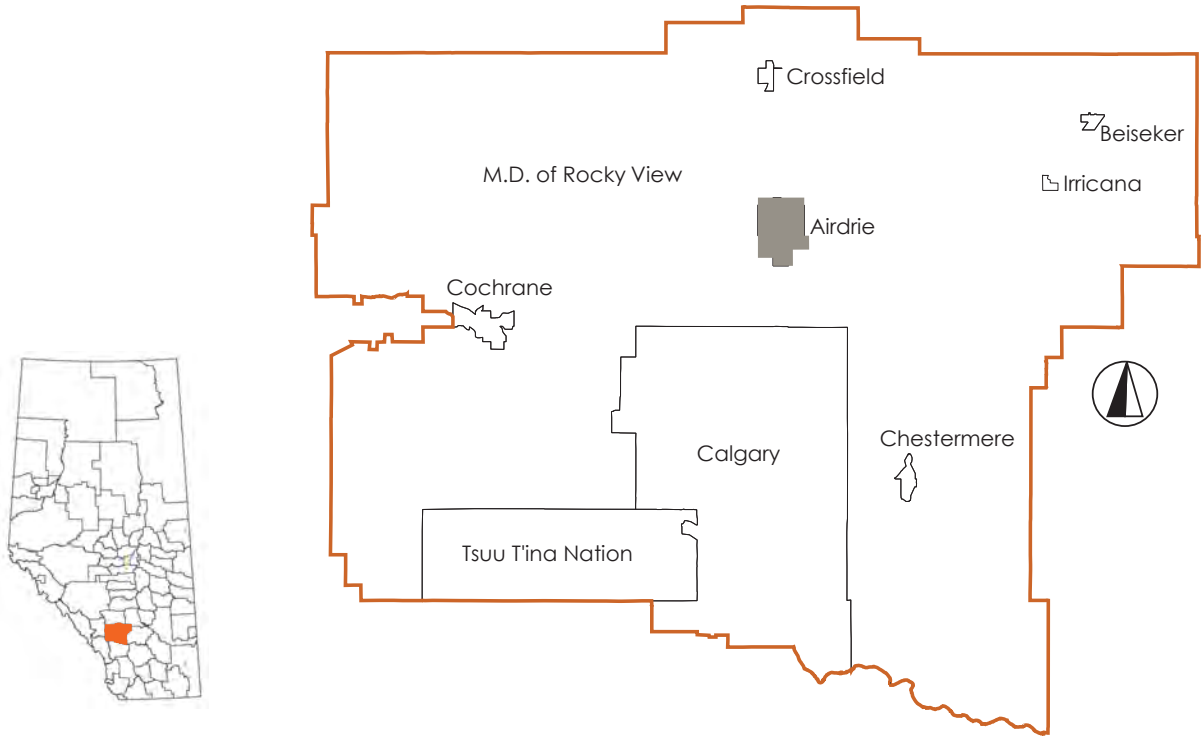

Figure 4.1: Airdrie is located in the Calgary Region
(Modified from: wikimedia.com [left]; Statistics Canada, 2010 [right])

Figure 4.2: The Township of Langley is located in the Greater Vancouver Regional District (GVRD) (Modified from: wikimedia.com [left]; Government of British Columbia, 2010

4.1 Airdrie, AB

Airdrie is among the fastest growing municipalities in Canada. According to the 2010 municipal census, the population of Airdrie is 39,882 and is forecast to rise to over 47,000 by 2013 (City of Airdrie, 2010a). Strong economic growth in Alberta and the Calgary Region has driven a rapid increase in population in recent years that can be seen in the numerous developments occurring around almost every edge of the city. While most residential development has been low-density and conventional in form, newer developments are increasingly incorporating varied housing types and higher densities. Airdrie has adopted a growth strategy that emphasizes sustainability, smart growth and sustainable development.

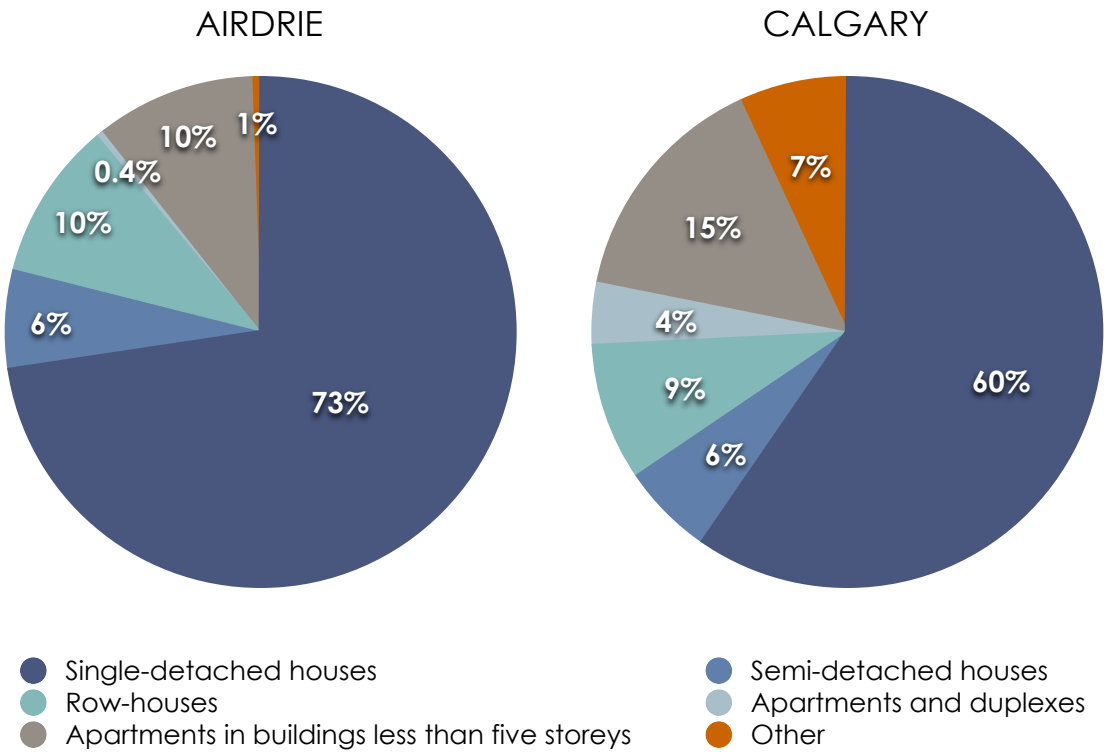

Figure 4.3: Comparison of Housing Types in 2006, Airdrie and Calgary.
(Source: Statistics Canada, 2006)

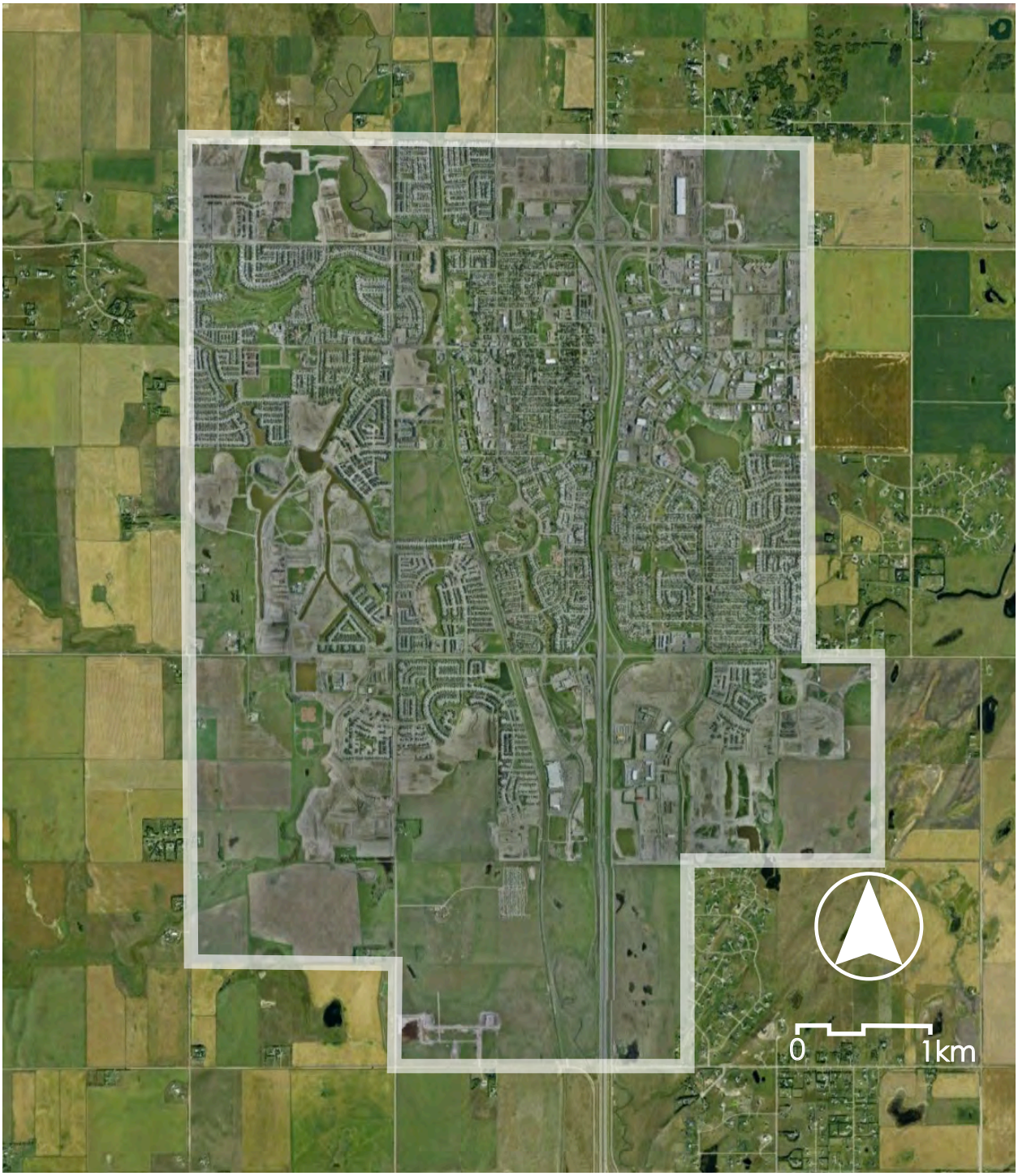

Figure 4.4: Satellite View of Airdrie.
(Modified from google maps: www.google.ca)

4.1.1 Municipal Policy

The primary planning document guiding development in Airdrie is the Airdrie City Plan, its provincially mandated municipal development plan (MDP). This plan sets out a growth management strategy that incorporates concepts of sustainability and sustainable development. Specifically, the growth strategy refers to the "triple-bottom line" of social well-being, environmental responsibility and fiscal accountability, the three domains of sustainability. It characterizes its growth management approach as one that "responds to the needs of today's generation without compromising the ability of future generations to meet their needs" (City of Airdrie, 2009: 5).

With respect to residential development, the MDP contains several policies aimed at ensuring that new developments are "more sustainable". Those principles of importance are:

- Residential land uses shall achieve a minimum density of 7.0 units per net developable acre within all new Neighbourhood Structure Plan areas.
- Ensuring a more compact urban form that more efficiently utilizes land and infrastructure.
- Creating areas of higher residential density to take advantage of alternate modes of transportation (i.e. walking, cycling, transit, etc.) and thus reducing the reliance on the private automobile. (City of Airdrie, 2009: 2-1.1)

In addition to these policies, the MDP encourages high-density development to locate in proximity to commercial uses, institutions, parks and open space (2-1.15).

Overall, the Airdrie MDP expresses a vision for the municipality that clearly associates higher-density urban form with sustainability. Policies such as minimum density targets are important land use tools that the municipality is using to achieve sustainable development and ultimately, from its understanding, a more sustainable urban form.

4.2 Township of Langley

Located 40km east of Vancouver, the Township of Langley is one of Metro Vancouver's fastest growing municipalities. It had a population of 93,726 in 2006 and an estimated population of 104,000 in 2010 (Township of Langley, 2010a). This represents growth of approximately 11% in this four-year period.

Development in the Township is focused in urban nodes that are surrounded by large areas of agricultural land. Established in the 1970s in order to protect important agricultural land from development, the agricultural land reserve (ALR) is a special land use zone that restricts non-agricultural land uses. Approximately 75% of the total land base in the Township is ALR leaving the remaining 25% of land for urban development. In light of a limited land base and high-growth, the municipality has adopted principles of smart growth promoting high-densities, mixed-use nodes and varied housing types.

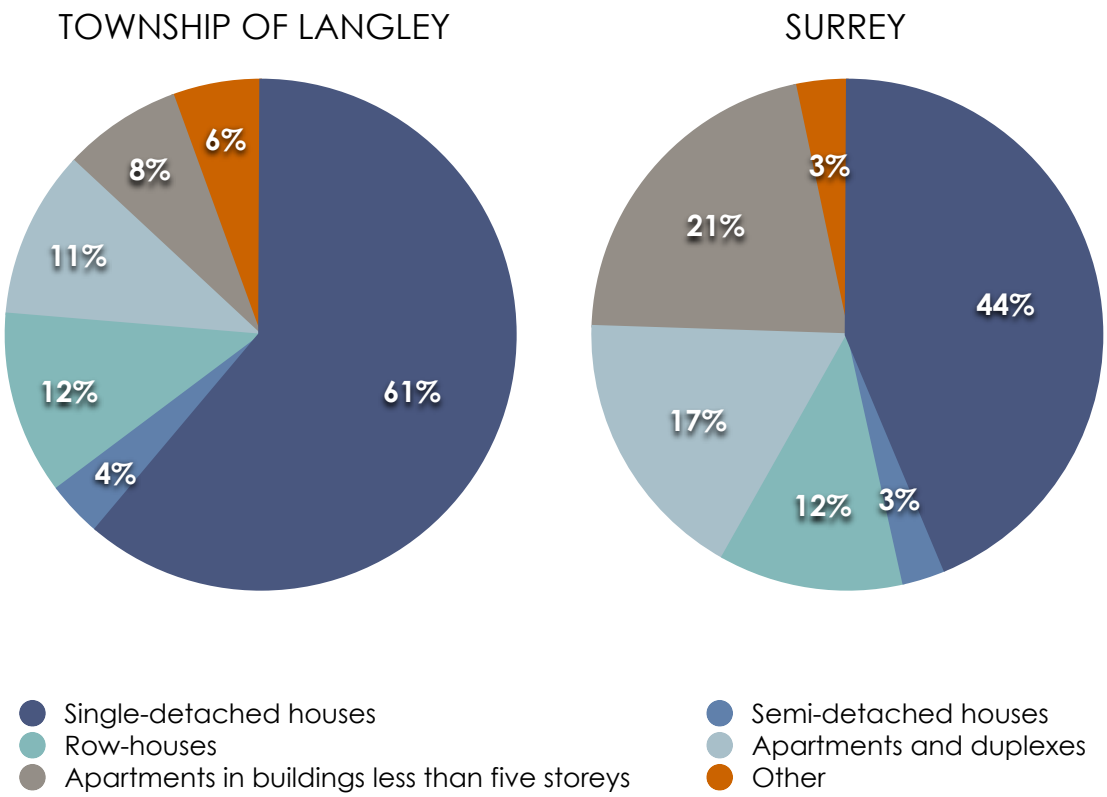

Figure 4.5: Comparison of Housing Types in 2006, Township of Langley and Surrey (Source: Statistics Canada, 2006)

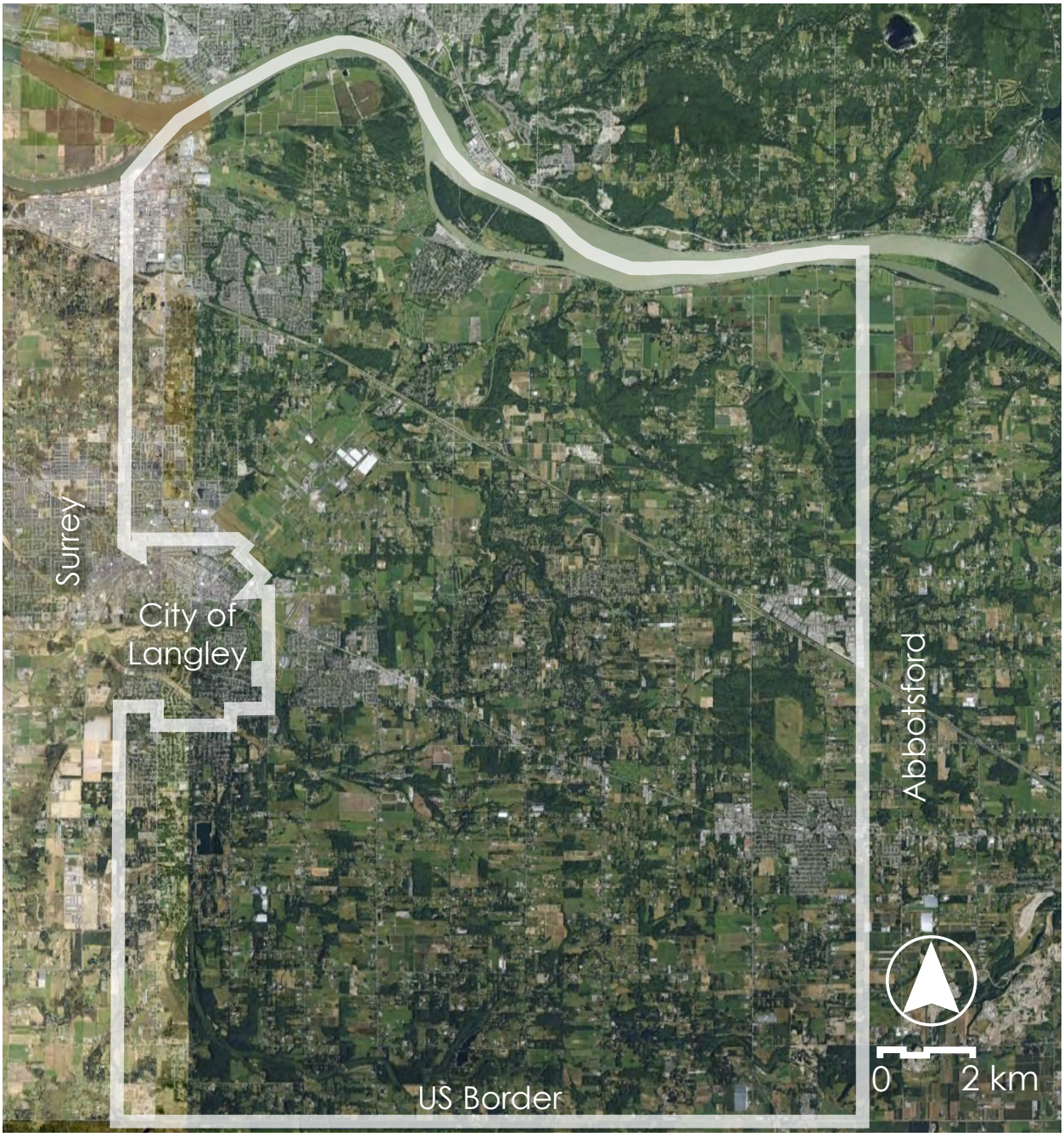

Figure 4.6: Satellite View of the Township of Langley.
(Modified from google maps: www.google.ca)

4.2.1 Municipal Policy

The Township of Langley's Official Community Plan (OCP) is the primary planning policy document that guides development in the municipality. This plan conforms to the larger Livable Region Strategic Plan that, among its priorities, includes strategies for a compact metropolitan area. Unlike Alberta, which only recently moved toward regional planning, British Columbia has a longer history of regional districts. The Lower Mainland is divided into two such districts with the Township of Langley being part of the Greater Vancouver Regional District (GVRD). The OCP, therefore, includes specific policies that are aimed to meet broader regional goals. Among the OCP's cited principles is that new communities should include a mix of housing types (single detached, duplex, townhouse, apartment) and a variety of densities (Township of Langley, 2010b: 4.2).

In addition to providing a range of housing mix and densities, the OCP states that higher density housing should be located near commercial, recreational and education facilities. It recognizes that providing high-density development contributes to municipal goals of creating more sustainable communities. Specifically, it states:

> It is recognized that the provision of high density development:
>
> - is consistent with overall Township objectives of creating a sustainable community; […]
> - better utilizes municipal infrastructure and resources by building at more efficient and sustainable higher densities. (Township of Langley, 2010b: 4.2.1)

In 2008 Langley's council adopted the city's Sustainability Charter that is meant to provide a broad policy framework to guide decision making in the Township. The charter uses strong sustainability language and "presents a vision of the community that meets the social, cultural, economic, and environmental needs of current residents while ensuring that those needs can continue to be met for future residents" (Township of Langley, 2008: 2). Among the economic goals is that the Township develop livable and vibrant communities. One objective focuses on creating compact urban form and mixed neighbourhoods (Township of Langley, 2008: 5).

Taken together, high-level policy in the Township of Langley demonstrates a commitment to becoming a more sustainable community by implementing policy objectives that include high density urban form. While the GVRD sets larger regional goals through the Livable Region Strategic Plan, adopting the Sustainability Charter highlights the municipality's desire to take a proactive position toward enacting change.

5.0 Interview Results

Through data analysis, five major themes relating to sustainability and residential density emerged. Some themes were expected while others were not. Each revealed insights into trends, similarities, and differences in the sample. The following section looks at these themes. It begins by discussing how the various practitioners understand sustainability generally in the target communities. It then discusses the relationship of density to sustainability initiatives and the efficiency of service provision and housing mix. This is followed by a discussion of livability and densities with a focus on Langley.

5.1 Conceptualizing Sustainability

As several interview questions were structured specifically to address the research focus, respondents frequently made reference to the concept of sustainability. Their responses reinforced the idea of sustainability as a contested term (Connolly, 2007; Hopwood et al., 2005) and one that is not uniformly defined amongst practitioners or municipalities and organizations.

Of the three categories of practitioners examined here, elected officials and planners generally emphasized a holistic definition of sustainability and the need to balance its three domains (environment, social and economy). As an elected official from Airdrie indicated:

> "Sustainability is not interchangeable with environmental. It has got to be fully sustainable. […] So it's sustainable on the level of the human factors, on the environment, and certainly on the fiscal side. That is what is really important with us."

Achieving a balance between the three aspects of sustainability was particularly important among planners and elected officials. In discussing Langley's Sustainability Charter, for example, one Langley planner stated that:

> "The Charter is also one way of demonstrating how balanced we are in terms of the three aspects of sustainability. Because sometimes we put a lot of focus on the economic side and then we are not putting as much attention to the other side."

This planner went on to further explain:

> "But I think the most important thing about sustainability is this balance of the three aspects. From the developer's perspective, obviously, the most important perspective is the economic. But we want to develop a list where developers can actually see things from the three aspects, and try to balance the three aspects."

These statements indicate the importance the concept of 'balance' plays in framing sustainability discourse for elected officials and planners. Achieving the proper balance between the three aspects of sustainability was a goal that the two categories of respondents shared in both communities. Encapsulated in the concept of 'balance' was the idea of trade-offs between sustainability's various aspects. An emphasis on economic sustainability, for example, adversely affected the environmental and social domains. This suggests a "zero-sum" understanding of sustainability on the part of these practitioners.

Unsurprisingly, developers were concerned with the profitability of new developments and defined sustainability as such. One Airdrie developer, for example, stated that is was the "end user" who defined sustainability thus emphasizing commercial viability as most important:

> "We've done sustainable development in Calgary for the last 15 years. That's what we do. This is what people want. So we deliver what people want. Not what the theoretical planners downtown want. We deliver what the customers want, the homeowners want. And so that is what we do. And that has been sustainable for the last 100 years and going. […] So that is our definition of sustainable. Not some theory about units per acre or densities or those types of things."

This particular developer suggests a gap between planning theory and development reality. Developers continuously adjust their business models to meet consumers' preferences and described their frustration with theory-based regulations that often require new developments meet specific density targets or other planning objectives. In many cases, developers argued that the market conditions would not support the kinds of development that planning theory demands. One developer from Airdrie, referring to development in Calgary, characterized it like this:

> "…with the City of Calgary, the planning department is so focused on densities and their *Plan It* initiatives and some of their other planning goals and vision that they are

> focused on that today when today really can't address some of those needs. And Calgary will grow into some of those initiatives but they want it in 2010. And 2010 is not producing a market that will accept that. And that is where Airdrie hasn't gotten out of control that way. But others would say they are not nearly as aggressive with some of those policies and concepts."

This developer accepted conventional planning understandings of sustainability but noted that implementation strategies such as smart growth or new urbanism required the "right market and the right circumstances". They cited concerns that developers couldn't be expected to, "plough [those ideas] into Airdrie and make it work."

Echoing policy outlined in the planning documents from both municipalities, planners and elected officials emphasized increasing densities in order to achieve more sustainable urban form. This view was more pronounced in Airdrie than in Langley. For example, one elected official in Airdrie stated: "One of the things is that we recognize in order to be sustainable, we have to increase densities. We have to start driving much higher densities in this community."

While the policy framework in Langley cites increasing densities as consistent with creating sustainable communities (Township of Langley, 2010b: 4.2.1), planners described challenges to higher density development. In particular, they indicated that high density could compromise amenity provision and, as will be discussed, livability. A planner in Langley characterized it in the following way:

> "So there has been this trend or shift to a more compact community but I'm not sure if we are getting the elements such as increased open space or amenity space to support that. So I think that is a challenge for us. And through legislation we are limited as to what we can require for open space. But there are other mechanisms such as bonus density or what have you to try to achieve more open space or more amenities in lieu of this increased density."

5.2 Affordability

Whereas planners and elected officials emphasized the need for municipal policies to push for higher densities, developers cited affordability as the primary factor influencing increasing densities. Developers discussed hitting the consumer 'price point' as a key concern and objective

in residential development and one of the reasons that many developers have moved toward smaller lot sizes and higher density development. In line with an emphasis on the economic aspect of sustainability, developers saw affordability as an important element of sustainability. As one Airdrie developer indicated when asked about their view toward sustainability:

> "Well, the lowest hanging answer for me of that is trying to find a way to keep it affordable. Because costs are rising, and there's upward price pressure on everything. Cost increases. And you will reach a point where the single family option has just become unaffordable for the average Joe worker."

In both Airdrie and Langley, development charges, levies, requirements for open/amenity space, and infrastructure standards (roads, pipes etc.) were viewed as negatively affecting affordability, and by extension sustainability. Describing municipalities' effectiveness in providing affordable housing options, the same developer stated:

> "But if a part of sustainability is affordability, they really give lip service to really being seriously interested in providing any sort of affordable housing. […]
> They have symposiums set up and think tanks and all kinds of people getting together. This is a ludicrous example. I sat in on a council meeting in the City of Kelowna where they debated affordable housing and all the initiatives they could do, and how they can tag multi-family developments with a certain percentage of the units had to be at this price level. They must have spent an hour and a half debating affordable housing. The next item on the agenda was their DCCs. And they talked about it for about four seconds, and raised their development cost charges by $15,000 a door. Like go figure. It's just lip service to try to provide affordable housing. Would you allow manufactured housing to come in? Would the City of Airdrie allow you to zone a quarter section to bring in manufactured housing so you could do a rental trailer park? Are you kidding? The people of Airdrie would revolt. You can't have that. And yet that might very well be a very true affordable, sustainable opportunity."

In Langley, developers expressed similar concerns regarding their ability to meet municipal requirements and regulations while at the same time providing an affordable product:

> "Let's just say that this municipality is now focusing on affordable and accessible housing as their new objective. We've gone through parks and open space, riparian areas, storm and silt management, detention, child friendly play areas. The stack of objectives we are trying to meet on each project is incredible. And there has never been a reconciliation of all those values against delivering affordable product."

One planner in Langley highlighted some of the challenges the municipality is facing in creating more sustainable and livable communities while keeping house prices low:

> "So how do we attract people to get into these units, to have enough amenities for people? We will have more public space, greenways, small parkettes, squares and things like that. So that is the other side of balancing the equation. We have to up the urban amenities. So who is going to pay for them? The developers. But eventually who is going to pay for them? The buyers. And in this region here we are struggling with the concept of affordability. So we are jamming more people here and they will be paying for all these amenities, but can they afford it?

Developers saw the need to provide an affordable product and increasing development costs as the primary factor pushing higher densities in the communities. One Airdrie developer, for example, stated:

> "I think the density will grow out in Airdrie as affordability is lost. So in time, you'll see more higher density projects out there which is a long way from where Airdrie was even five years ago."

Similarly, in response to the high cost of land in the lower mainland, one Langley developer indicated:

> "There is a lot of single family, and right now we can't compete with the single family that is available up there. Price points are high in Murrayville, but our land costs are so high that we couldn't deliver a single family home, even with new, you know, the quality of buying new, we don't think that is really going to make the difference. The lots out there are large, the houses are small, and people can get themselves into a home pretty reasonably. If $600,000 is reasonable. So we're doing a townhome product there in part because there haven't been townhomes in the marketplace for a long time. We think there probably is demand for ground-oriented, affordable program."

Developers' emphasis on affordability as the primary influence on increasing densities suggests that land economics plays a larger role than many planners or elected officials believe. Developer discourse surrounding affordability and density indicates that municipalities play a large role in influencing the final cost of housing and thus what kinds of housing are produced. Simply put, in order to create reasonably priced market housing, developers are focusing on product that is smaller and more dense.

5.3 Housing Mix

In both communities respondents discussed the relationship between residential density and housing mix. Planners and developers from both Airdrie and Langley responded similarly within their category of practitioner One elected official from Airdrie discussed housing mix but elected officials in Langley did not.

Planners in both municipalities associated higher densities with greater housing mix. By requiring developers to develop at higher densities, planners believed that new communities would have a more diverse urban form. A planner from Langley discussed the relationship in this way:

> "[…] we always look at trying to create a variety of different housing types. We always look at that. Whether it's single family, look at the densities. We don't have any assisted type of housing. None of that yet. Who knows, it may come. One step at a time. But we certainly do attempt to get a variety of housing types and a variety of densities because the densities are going to dictate what those types are going to be. Whether it's single level or 3-storey walk-up. Townhouses are very popular as a 3-storey walk-up right now."

Planners suggested that increasing density requirements would force developers to create higher density housing such as multi-family to make up for lower density single-family. This was true of planners in both municipalities. A planner from Airdrie described townhouse, apartment/condo developments as "picking up [the] density" and "allowing the single family large lot homes".

Although they understood a positive relationship between density and housing mix, planners from the two communities discussed it in slightly different ways due to different policy contexts. Airdrie has density targets for new developments but does not require a specific mix of housing types in these developments. The municipality typically negotiates the housing mix with the developer when the city completes an area or neighbourhood structure plan. As long as the development achieves the target density there is no specific form requirements. Airdrie planners saw the absence of policy requiring specific housing forms as a challenge to achieving a greater housing mix as part of higher densities. Responding to how the municipality accommodates a variety of household types, one Airdrie planner said this:

> "It's usually density-wise. That is usually the main concern. We do try for a mix of types. There is no magic formula. […] If they are looking at like 60% of a quarter section, it's just going to be a monotonous repeating pattern. So we try and get them to mix it up. We've tried to put out there the thought of intermingling types of housing. That hasn't really gone anywhere. That is something we'll continue to look at. It's usually pretty much as long as they hit their density number. It's not really a form type. The only things we look for form-wise, there's R-1N, R-1SL[1], which they need to provide us architectural guidelines with. And they are kind of checked over here, and it's like yes, your product looks halfway decent, away you go. But otherwise, all those zones, they can pretty much do whatever they choose."

The statement points to the difficulty planners in Airdrie experience in pushing for greater housing mix within new developments and integrating different types of housing together. Airdrie planners discussed a need for stronger policy to achieve a more integrated mix of housing. The statement indicates that in addition to requiring certain densities, the municipality looked favorably on projects that met certain architectural guidelines, however vague these guidelines might be.

In Langley, municipal policy at the neighbourhood level specifies required densities and housing types that new developments need to achieve. The Yorkson Neighbourhood Plan, for example, requires certain percentages of different housing types in new developments in addition to density requirements. As a planner from the Township described it:

> "In fact, in Yorkson, and we have continued into either of the other two smaller plans that I'm doing right now, but something called mixed residential. […] So we just required X percentage of each for every development. And as well, fit it into a minimum development size. So you have to come in with X amount of acres in order to put in this mixed residential type. And they put in townhouses. They have the option to put in duplexes and coach homes and all the rest. Everything they possibly can, including compact lots. And then they can decide on which one they want to take advantage of. And also we set minimum density requirements so we knew we were going to hit our targets, which is what we wanted. And so we started off at eight units per acre, which is pretty tight anyway, and went all the way up to 10. But you have to understand, a percentage of those are multi-family units. So it certainly offsets it. You get the small multi-family unit. In the same development, you have some larger lot single family. So people can first time come in, buy the

[1] R-1N and R-1SL are small lot single detached residential zones.

> townhouse. And then stay within their neighbourhood and move up to their dream home. Everything well within the neighbourhood."

The statement suggest that in requiring that developers hit both density targets and percentages for housing types, new developments would better cater to different demographics of the population from first-time home buyers to established families and downsizers. They make a logical connection between increasing densities, more varied housing types and increased social mix. Unsurprisingly, planners in both communities discussed this positive relationship between built form and social realities as a desirable goal to achieve.

The elected official in Airdrie who discussed housing mix, expressed a similar view as that of the Airdrie planners. For this person, increasing densities resulted in a greater mix of housing types to house people from varied income brackets. This person indicated that it was important to have various housing forms particularly for those working in service industry jobs where the pay is generally lower:

> "I think it's an imperative. Because you have to be able to provide housing stock... I mean it's the typical 'who is going to work at Tim Hortons?' And not everybody is the CEO of some oil and gas operation downtown. And not every Tim Hortons or McDonalds is going to have just the 16 year old working on the Saturday afternoon. So you've got to have the ability to house all the people that live in your community."

This elected official also pointed to the difficulties of achieving a greater housing mix through higher densities. Whereas planners and elected officials generally believed that increasing densities would create greater housing mix, this person noted that when municipalities required higher densities, developers tended to react negatively and argue that the requirements force them to develop monolithic communities consisting solely of multi-family or small detached homes.

> "We have communities that are monolithic. They are old communities. But you won't see that ever again here. It will be a mixture. And developers when they hear that, a lot of times all they are thinking is 'oh, we're going to make them...' When we talk about densities, it's going to be all small product. And I said, no, you are more than welcome to build all the estate product you want but you have to

> compensate somewhere for that. So you've got to figure out how you are going to do that. You need to meet these minimum densities. And how you do it is for the most part, their business."

Developers from both municipalities pointed to the difficulties in achieving density targets while providing a mix of housing types. In fact, developers indicated that increasing density requirements limited the types of product they could provide. A developer in Airdrie characterized it in this way:

> "We understand our business better than anybody. We know how to sell real estate. We know what to create that the market is looking for. And again, it comes down to planning principles getting in the way of reality. So we've proven that this mixture works really well, and then all of a sudden, you know, they want to build to a 15 UPA today. And so to do that... I mean you know that if we just built single family houses, the best we could do is probably like 5.5 or 6 UPA max. No matter how small the house is, you are never going to go beyond that. So if you are going to 15... I mean it's multi-family all over the place to get up to higher numbers like that. Well, now you are now going to the other extreme. You don't have these big houses. All you've got is small houses. So you are now boxing or cutting out this element to the community."

As this statement suggests, this developer emphasized the gap between planning theory, in this case pushing for higher densities, and market realities that developers face when they create new developments. It also indicates that some developers see higher density requirements as reducing housing choices by forcing the production of only small product.

In Langley, developers recognized that the municipality wants increased densities but that it could not ignore consumer preferences for single detached homes. They pointed to a need to achieve a balance of different housing types to meet market demand. As one Langley developer stated:

> "The Township wants densification. You want to maximize the use of your available resources, and, you know, we have a very very limited supply of land in the Lower Mainland. The ALR and the sea and the mountains… so we have to try and make the best use of the land we've got. So that's the way to do it. But at the same time we must not ignore the fact that there are a significant number of people that aspire to a single family home with their own little lot. So we have to balance that with everybody living in townhouses and apartments."

Another Langley developer discussed the difficulties in integrating housing types in new developments and suggested that in certain situations a poor mix could jeopardize the viability of a project:

> "So, in terms of housing mix then, the Yorkson plan in Langley, they are trying to prescribe a housing mix based on a certain percent of different kinds of uses. Your site certainly needs to be of a significant scale in order to do that. If you aren't looking at 8 or 10 acres you probably don't have that flexibility. Because the different uses require different loading configurations, you know, maybe lanes, maybe not. Maybe they're front loaded, maybe not. Townhomes have a different interface than single family, so you have to manage that transition really well. So on the one hand we've worked with sites where we have had three different housing forms on it, and because of the interface with the road and the trees we have been able to do a really successful job of the mix. And in other cases the mix can be really hard to achieve without compromising the interfaces or losing density and ultimately, you know, in some cases you do compromise the viability of a project."

In sum, planners and developers had very different understandings of the relationship between densities and housing mix. Planners generally tended to see higher density requirements as the primary means of producing more varied housing. Planners in Airdrie, however, discussed the difficulties of relying solely on density targets to achieve a greater housing mix and expressed a desire for having housing form requirements. The elected official from Airdrie highlighted one of the primary concerns of developers that higher densities forced them to produce monocultures of small housing product. While in Airdrie developers saw this as a shift to smaller lot product, in Langley higher densities are resulting in a decrease of single detached housing in favor of townhouses and apartments.

As Langley has recently implemented policy requiring specific percentages of different housing types in new developments in Yorkson, developers there identified two main challenges to meeting these new requirements. First, there is market resistance to increasing densities and, therefore, developers stressed a need to balance high-density housing with a consumer preference for lower density single detached homes. Second, they cited the challenges of integrating various housing interfaces together and suggested that for certain projects these challenges could lead to reduced overall densities or loss of economic viability.

5.4 Density and Service Efficiency

Proponents of higher residential density point to the efficiencies it provides for service provision such as transportation and infrastructure (Jabareen, 2006). Respondents from Airdrie and Langley echoed these ideas. In particular, planners and elected officials highlighted the role that higher residential densities play in achieving sustainability by providing better public transit options, local neighbourhood commercial and reducing infrastructure costs. Developers, for their part, emphasized the need for higher residential densities to support neighbourhood commercial.

Elected officials and planners in both communities talked about the need to increase densities to improve public transportation and decrease dependence on the automobile. These respondents viewed their communities as highly auto-dependent. To become more sustainable, municipalities needed to increase densities to make public transit viable and lay the basis for transit-oriented development (TOD). An elected official from Airdrie stated that increasing densities would "create less of an actual [urban] footprint" and provide the "ability for TODs to establish." Similarly, an elected official from Langley remarked:

> "TransLink just doesn't have the resources to put the kind of transit here that we need. They say we don't have the bodies in place to support that kind of transit. And we have this continual kind of debate amongst ourselves, what comes first, the chicken or the egg? The people or the transit? It's hard to build transit-oriented development when you don't really have a transit to build around. And that's been a big frustration."

This elected official indicated that Langley needed a "critical mass" of people to support transit as well as local businesses. While the statement above outlines this point, it also suggests challenges that municipalities on a metropolitan fringe, like the Township of Langley and the City of Airdrie, face in developing transportation links. These municipalities are pushing for higher densities to create "the ability" for transit to develop; however, attracting people to live in higher density residential environments without sufficient public transit links can prove difficult.

Planners in both municipalities also discussed higher densities as necessary for public transit, neighbourhood commercial and the efficient use of infrastructure. Unsurprisingly, planners

referred to smart growth principles to rationalize this relationship. Planners indicated that a "critical mass" of people was required to achieve smart growth objectives and move toward sustainability. Whereas in Airdrie planners indicated that denser new developments would make more efficient use of infrastructure and create more transit friendly environments, in Langley planners discussed the need for higher densities (more people) to share the capital costs of expensive new infrastructure projects. As indicated, urban development in the Township of Langley occurs in several nodes that are separated from each other by large tracts of ALR. Connecting necessary infrastructure such as water lines is, therefore, expensive. One Langley planner characterized it like this:

> "Because of the water situation and climate change, the water levels in the municipal wells are dropping, and we are now looking at way of securing water, meaning municipal piped water from metro Vancouver. That's another $40 million. So if you add up the big numbers we are looking at about $100 million of investment to get into a small area. That is why we want to up the density, so that more people can share the capital costs. So it is not just a utopian saying: 'Smart growth. New urbanism.' There are other factors that come into the equation."

This planner's statement indicates that while planners push for higher densities as part of larger sustainability or smart growth paradigms, development realities of municipalities such as the Township of Langley require such changes due to the high cost of upgrading and maintaining infrastructure. Interestingly, declining water levels do not appear to have influenced the Township into trying to limit water demand from population growth. In fact, the municipality wants the opposite (additional population) to share the costs of importing the precious resource from elsewhere.

For their part, developers emphasized the need to locate higher density residential development around commercial centres to ensure their economic viability. As a developer from Airdrie noted in reference to one of their developments:

> "We have created sort of a higher density node around the commercial. Because your commercial, the reality is if you don't have enough population mass around the commercial development, you're either going to get someone in it and they are going to fail, or anybody who knows what they are doing won't go there in the first place. So you end up with a dog of a commercial development. There's not enough

> population to support it. So you put your commercial in the centre of a higher density sort of thing and then spread the density out from there."

One developer from Airdrie indicated the need for higher densities for the efficient provision of services like transit and infrastructure but suggested that focusing narrowly on density itself could be misleading:

> "Municipalities are finally catching on that density drives everything basically. It's not even density because density is maybe not the best measure of it but it's intensity of use, we'll call it. In the sense that the number of people you have per acre is really the driver for being able to provide services like transit services, able to be able to support neighbourhood commercial services, that kind of thing. And so density, like I say, it is not the best driver because you could do 600 townhouses but if there's only one person living in each of those townhouses, that is different than say if you are doing 600 single family homes. The townhouses would have a higher UPA but the single family homes may have three people in there. Which means you have three times the number of people. Maybe you do a third of them. So do the calculation. You're getting more people. So the intensity of use. I mean the recognition of that... And it goes along with jobs as well, not just houses or homes but jobs. It's intensity of use that is really the driver of those services. And making those services operate efficiently."

This statement points to the recognition that density, understood simply as a units per acre measurement, is not the primary driver of demand for public transportation or commercial services among other things. Underlying density are social factors such as family size that affect the number of people that live in a given neighbourhood. Accordingly, it is the number of people and not the density that create demand for services.

To summarize, there was a general agreement across the categories of practitioners that the efficient provision of services and infrastructure requires dense urban form. Elected officials tended to focus on improving the efficiency of public transit whereas planners framed their discourse in terms of smart growth principles and sustainability goals. Elected officials from Langley outlined the challenge of the 'chicken and the egg' for high density development and transit provision. Interestingly, planners in Langley argued for the need to attract more people to the municipality to share expensive infrastructure costs thereby recognizing development realities in the municipality. Developers generally discussed the need to locate higher density housing

around commercial nodes. One Airdrie planner pointed to limitations of understanding density on purely a unit per acre basis instead stating that intensity of use was a better measure.

5.5 Density and Livability

Discourse of the relationship between density and livability emerged as a theme in the interviews. Specifically, respondents from Langley discussed this relationship and pointed to the challenges that they face in creating livable communities in a context of increasing densities. Respondents emphasized providing amenities such as open/green space and parks along with pedestrian friendly, safe environments as key to achieving more livable communities. The Greater Vancouver Regional District, to which the Township of Langley is a part, uses livability language in their regional plans, most notably in the current Greater Vancouver Livable Region Strategic Plan and this likely influenced planners' responses.

Apart from one developer in Airdrie who indicated the need to build "quality" communities that follow "community design guidelines" and not building "density just for density's sake", respondents in Airdrie did not discuss livability and density.

Langley elected officials highlighted their concern that existing municipal policy was resulting in higher density development without sufficient amenity provision. Comparing Langley to Vancouver, one elected official stated:

> "The other thing that we haven't done well, and I wish we would have done better, is when you look at larger communities like Vancouver, when they start going into the higher densities like the high rises, the mid rises and the high rises, they have community amenities that are expected as a result of that rezoning. And that community amenity is part of what the developer has to produce in order to get the density."

Elected officials expressed a desire that the municipality have more open/green space requirements for new high density developments as a way of creating more livable communities. They spoke of reducing lot coverage for high density developments to allow for more open space

and were skeptical of pushing too hard for 'density for density's sake'. Discussing the challenges to implementing sustainability and smart growth ideas the same elected official stated:

> "It's all political will. It's all political will. I mean for example, we should be looking at district heating. We should be looking at that. We should be looking at reducing lot coverage, particularly if you are going to density in order to have more green around. We should be looking at green roofs. We should be looking at insisting that all buildings are at least LEED silver, if not gold. And we should be requiring more green space."

Another elected official while indicating the limitations of using density bonuses as a tool to create more livable communities also pointed to offsetting density with more green space:

> "Bonus densities aren't going to work. If you want people there, you've got to figure out a different way of doing it. So instead of doing bonus density, we just did density. You know, we took it up to that level and did it properly. And took more in neighbourhood parks and that kind of thing to offset."

In referring to bonus densities, this respondent pointed to the challenges of managing market forces that may not respond well to municipal regulations aimed at improving livability. In some instances, tools such as bonus densities were not able to deliver the results that municipal officials hoped for.

Langley planners outlined the difficulties they saw in reconciling high density and livability. As indicated, planners were likely more familiar with the concept of livability through regional planning initiatives and they framed their discourse in terms of smart growth and sustainability objectives. A common challenge that Langley planners discussed was the negative relationship between increasing residential densities and livability. One planner discussed it in this way:

> "Everyone is trying to do the same thing [increase densities], and if we don't catch up we will be left behind. And again, looking at the economies of scale, it is much easier for us to service higher densities than six units per acre. But there is one catch. When you put so many people, or if you are proposing so many units without the green space, obviously the livability will drop. So how do we attract people to get into these units, to have enough amenities for people? We will have more public space, greenways, small parkettes, squares and things like that. So that is the other

> side of balancing the equation. We have to up the urban amenities. So who is going to pay for them?"

The statement indicates that for planners, urban amenities are key to achieving more livable urban environments and it points to the challenges that this presents with increasing densities. Underlying these challenges is the fear of failure and worry that other municipalities may become more competitive while the Township languishes. The statement also raises questions regarding who is responsible for paying for these urban amenities, particularly when land prices are high. Planners have tools such as density bonusing and open space requirements that they can use to push developers to provide these spaces; however, discourse from the elected officials questions the effectiveness of some of these strategies. Underlying this planner's comments are not only professional planning expectations of the need for density but also the regional context pressuring the Township to increase densities. The statement suggests that this is not a simple task and requires considerable balancing.

Echoing concerns from Langley's elected officials that some developments compromised livability by focusing too narrowly on density, planners pointed to the need to understand livability and sustainability as "opposing forces" and density as an element of livability. As one planner described it:

> "I personally do not believe we should be just aiming at density. It's really narrow. What a narrow way of looking at it. But we do have planners here that just look at density. I think it's much more important to look at density as an important component of livability. And I don't know if they just forgot that page in their education or they just haven't reflected on that or what, but that is my most recent issue with the way planning is going here in the Township. If I keep beating on that drum, it will get through."

In indicating that this was their personal belief of density, this planner was critical of the way planners as a profession understand density. The planner suggested that through their professional practice, planners have come to view density very narrowly. For professional planners density has become an end in itself rather than a means to an end. It has become the profession's new mantra.

One Langley planner discussed the difficulties that high-density urban development had on livability by pointing to differences in people's perceptions of livability and housing form, particularly in the Canadian context. Discussing sustainability and livability in the suburbs, the planner stated:

> "I think there is still that ideology of growing outward and everyone owning their own little plot of land is still very desirable. And it probably will continue to be desirable. And I think that trend will continue. And I think there will be a challenge to try to integrate sort of some more smart growth and sustainable elements while still trying to achieve at some level a livable housing form. Many people perceive the single family as being livable. Higher density for some people isn't livable. But I think there are two opposing forces in some degree of sustainable and livable. And I think it will be a challenge for the suburbs to try to integrate this higher density, which is required in my opinion. Integrate diversification such as different housing types with commercial nodes. And trying to minimize the reliance on the automobile, which is going to be difficult. I think as you grow out, you get further and further from where the workforce works. So I think it will be an ongoing challenge of trying to achieve the sustainability and livability in the suburban areas. Which I'm sure there will always be that pressure to grow outward. And I think trying to integrate those elements into it, into the suburban fabric is going to be a challenge."

As the statement indicates, pressures from higher density development in the township are challenging consumer's expectations of what constitutes a livable housing form. The statement also points to the subjectivity of the concept of livability itself. It can mean different things to different people and while a high density apartment may be livable to one person it may be the opposite to another. This points to the challenge of accommodating high density housing in a Canadian 'bedroom suburb'.

Developers from Langley cited several challenges they faced in achieving higher density development and still providing sufficient amenity space. One developer discussed the problem that a hot pre-economic crisis real-estate market posed to both sustainability and livability. As residential units decreased in size, densities increased adversely affecting sustainability and livability:

> "I think we swung away from getting smaller, smaller, smaller. And now we're starting to rebound a little bit and getting bigger. And think that wouldn't have happened... It was so damn easy to sell a unit there for a while. Just anything we put

> on the market sold. And that wasn't a good trend for quality and for sustainability and for livability. And now that the buyers are more in charge again, you are getting a better product. Bigger."

Other developers pointed to the difficulty of assembling enough land to achieve high densities while at the same time providing quality open space. They indicated that there was frequently a trade-off between land dedications for amenity space and overall densities. In some cases achieving a balanced mix was difficult without compromising density. As one developer explained:

> "By identifying those community values up front and the kind of parks and land spaces that are going to be required for dedication – that helps us, because we can start to assess the feasibility of the land based on the community plan quite closely. That's very helpful. However, achieving those goals sometimes is almost…those goals of major contiguous parcel redevelopment to achieve these kinds of green spaces and dedications is making it harder to move forward because you can't do it piecemeal. It doesn't make sense from an assembling point of view to not try to get as many of those lands as possible. Right? Because you are having to trade off the land dedications with density in a lot of cases."

This same developer also suggested that certain types of higher density housing might not be acceptable for particular segments of society such as the mobility impaired. Their comments reinforce the idea that livable housing form is subjective and they are critical of the municipality's policy direction. The developer discussed it this way:

> "Do people really want adaptable three level townhomes? Is somebody with a mobility impairment really going to have the patience to go up and down a chair elevator several times a day because they live in such a dense and stacked form? I think apartments and single family are more appropriate and more desirable from the market point of view, but we're still in that dialogue. So here we have the adaptable housing, and this is coming now."

This developer's comment of a dialogue between them and the municipality suggests a point of disagreement with both sides arguing the most appropriate solution. While planners push for density and adaptable housing, developers emphasize practicality and market conditions.

Taken together, respondents from Langley pointed to the difficulties of increasing densities to meet sustainability objectives while still creating livable communities. Due to geographical constraints and a regional smart growth framework, the only effective way that Langley can accommodate growth is through densification. This strategy, however, is not without its challenges. Planners highlighted the difficulties of achieving both high density development and livable communities. For their part, developers indicated the obstacles they face hitting density targets while at the same time providing adequate amenity space in a development context where assembling large parcels of land is difficult. Elected officials tended to look to other municipalities for policy that would aid in effectively balancing sustainable objectives such as density with the concurrent goal of creating livable communities.

6.0 Data Synthesis

Synthesis of the research findings reveals several insights into how various practitioners involved in the development process conceptualize and relate sustainability and residential density in the Canadian context. The findings point to both similarities and differences between the respondents and the target communities. This section highlights the key findings and discusses how they compare between the category of practitioner and the two target municipalities. It also discusses the findings in reference to recent research conducted elsewhere and indicates important areas of convergence and distinction, highlighting implications for our understanding of sustainability and density in the local context.

Research findings relating to the conceptualization of sustainability reinforce understanding the concept as contested (ie. Connolly, 2007; Jacobs, 1991). Gallie (1955, 169) defines essentially contested concepts as "concepts [whose] proper use [...] inevitably involves endless disputes about their proper uses on the part of their users". Findings here indicate that each category of practitioner defined the term in different ways. While these definitions varied most widely between planners and developers, they were more consistent between planners and elected officials. This is unsurprising given that both planners and elected officials operate within the same organization and are in frequent contact with one another throughout the development and approval process. In the case of Airdrie, the elected official was particularly involved in planning issues and had a thorough understanding of planning and sustainability theory. Planners and elected officials typically took a holistic approach to understanding sustainability. They stressed the importance of balancing its environmental, social and economic domains.

Planners framed sustainability discourse within the objectives of a smart growth agenda. One planner from Airdrie most succinctly outlined this by stating that smart growth was the "action plan" for sustainability. Broadly speaking, smart growth is an anti-sprawl development philosophy that allows for economic and population growth through a set of land-use controls and policies. These policies are aimed at encouraging compact development, urban revitalization, public transportation, and housing diversity (Jepson & Edwards, 2010). Smart Growth BC (2010, online), a provincial non-governmental organization, has identified the concept as ensuring that

growth is "fiscally, environmentally and socially responsible and recognizes the connections between development and quality of life." Smart growth has recently gained prominence as a leading planning theory throughout North America and many Canadian municipalities have incorporated its principles into planning policy (Grant, 2009). It is particularly influential in BC where Smart Growth BC promotes its principles through working with planners, developers, community groups and municipalities (Smart Growth BC, 2010). Given that most planners in Canada undergo formal educational training where they are exposed to planning theory before practicing, the consistency in conceptualizing sustainability within this category was expected. This finding also agrees with research from the United States that suggests a high level of conceptual consistency in how planners understand sustainability (Jepson, 2003).

Developers emphasized the economic aspects of sustainability and in some instances rejected what they saw as 'theoretical' understandings of the concept. They highlighted profitability and economic viability as essential to being sustainable and criticized many planning policies that aimed at increasing densities as unrealistic given current market conditions. Developers' comments suggest a gap between planning theory and development realities that are dependent on consumer preferences.

The three categories of practitioners differed in how they understood the relationship between sustainability and residential density. Planners and elected officials interviewed in both communities understood higher density developments as necessary to achieving municipal planning objectives. While planners tended to frame their discourse of density within a smart growth framework their responses were similar to those of elected officials. For both of these categories of practitioners, higher densities were seen as helping to reduce automobile dependence by facilitating more public transit, creating more diverse housing types and ensuring more efficient use of municipal infrastructure. Together these contribute to creating more sustainable communities.

Figure 6.1: Conventional Low-Density Detached Houses, Airdrie. (T.Gonzalez)

Figure 6.2: High-Density Development, Airdrie. (T.Gonzalez)

Developers understood increasing densities differently from planners and elected officials. To them, density was not based on a theoretical proposition such as sustainability or smart growth but rather reflected market realities of bringing land to development. They understood the cost of development and the need to hit consumer 'price points' as the primary factor causing higher density. Many also saw increasing densities as a trend that would continue into the future as housing affordability was lost. This suggests an important divergence in understanding between developers and planners. These findings agree with research from Dr. Grant's larger *Trends in Residential Environments* project that indicated that while cost pressures contribute to rising densities, developers frequently contest planning principles related to urban form and function (Grant, 2009).

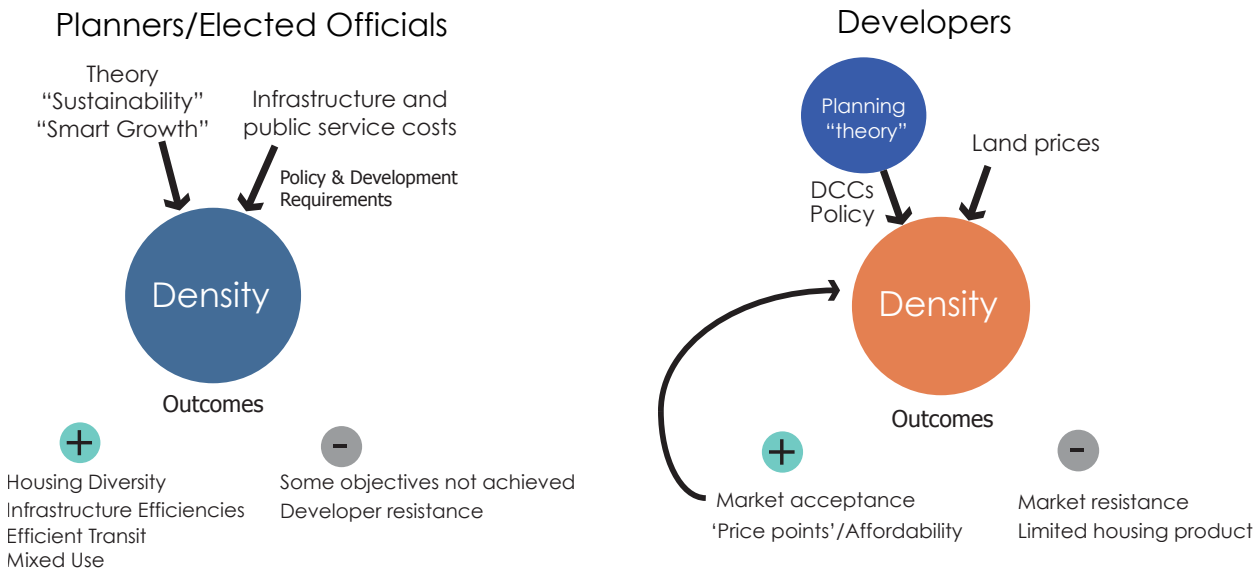

Figure 6.3: Conceptualizing Density

Elected officials in both communities emphasized the need to increase densities to create more opportunities for public transportation. Both Airdrie and the Township of Langley are located on the urban fringe of larger metropolitan areas. This presents significant transportation challenges to them. Low density single detached housing is the predominant housing type in both municipalities. Each municipality functions largely as a 'bedroom suburb'. Officials in Langley characterized the difficulties of attracting people to live in dense housing without sufficient access to public transit as a 'chicken and egg' dilemma. As part of the GVRD, the Township of Langley

is integrated into the regional transit network, Translink. The Township is thus dependent on this larger organization to establish its transit connections. Elected officials and planners indicated the need to create sufficient demand (through increased densities) to warrant transit extensions in the municipality. Planners and elected officials in Airdrie, for their part, made similar arguments and pointed to a need to create regional transit links with Calgary. In both communities, densities were seen as a necessary catalyst for improving regional transportation links, particularly with the central business districts in Vancouver and Calgary.

Planners and, to a lesser degree, elected officials (in Airdrie) promoted high density development as a means of achieving more diverse housing. For them, requiring developers to meet higher density targets would result in diverse communities with more varied housing types. Diverse housing would in turn provide greater housing options for different segments of society thus creating more socially mixed neighbourhoods. A diverse housing mix is an important smart growth principle that its proponents argue creates more equitable and socially diverse neighbourhoods (Smart Growth Network, 2010).

Planners and developers in both communities raised questions as to the effectiveness of relying on density requirements to achieve diverse housing types in new developments. The municipalities differ with respect to policy and, therefore, discourse from each reflected the local context. Whereas Airdrie only requires that developers meet minimum density requirements in new developments, the Township of Langley has both density targets and housing form requirements. Planners and the elected official from Airdrie indicated that in many instances developers were not achieving the housing mix that the municipality hoped for despite hitting density targets. They argued that developers needed to be more innovative in the housing types they provided to create a greater internal mix of housing in new communities. In Langley, however, planners were positive that regulations requiring percentages of different housing types would result in better, more sustainable communities.

Developers understood the relationship between density and housing diversity very differently. For them, higher density targets limited the kinds of housing product they could provide. Developers indicated that rather than creating greater housing opportunities, density

requirements forced them to produce predominantly small housing product. The form of this small product was different in each municipality. In Airdrie, small product could still be single detached homes, albeit on smaller lots. In Langley, small product generally meant different housing forms such as townhouses or condo/apartments. Developers also pointed to the challenges of meeting density requirements and responding to market conditions. They saw a need to 'balance' single family homes with higher density housing and indicated that consumer preferences generally favored lower density housing.

Taken together, responses from the three categories of practitioners suggest challenges to achieving greater housing diversity through density and form requirements. This appears to be particularly true in these urban fringe municipalities where consumer preferences tend to favor lower density single detached homes. Developer discourse from Langley indicates the difficulties intense pressure to densify pose when trying to cater to these preferences.

Figure 6.4: High-density Development, Langley (D.Scott)

One of the most interesting findings to emerge from the analysis was discourse regarding the relationship between sustainability and livability in the Township of Langley. As indicated throughout this report, intense land pressures from geographical constraints, political boundaries and the ALR in the Lower Mainland have resulted in high land prices and costs for development. Higher density housing forms are, therefore, the result of cost pressures as well as a strong regional focus on smart growth. While the Township of Langley is still largely suburban, it is densifying rapidly. Respondents from this municipality pointed to the challenges of densification. As planners understood increasing densities as part of a smart growth and sustainability agenda, they outlined a negative relationship between livability and sustainability. To become more sustainable the municipality wanted to increase densities; however, increasing densities threatened to reduce the livability of the community. Elected officials pointed to the need to include more amenities with increasing density and developers cited challenges of doing so in a context where assembling large parcels of land was difficult.

These findings point to the difficulties of implementing a sustainability agenda of high density development in the context of the Lower Mainland. High density residential development is challenging and being challenged by consumer preferences that favor low density housing, particularly in a suburban municipality such as the Township of Langley. These findings are comparable to studies conducted by Howley et al. (2009) and Senior et al. (2006) in the UK that suggest that consumer preferences generally favor low density over high density housing and that residential satisfaction tends to be lower in higher density residential environments. The Howley et al. (2009) study is particularly insightful in that it looked specifically at sustainability and livability and suggested that dissatisfaction in high density areas was related to among other things a lack of greenery, certain services, open spaces and facilities for children. The findings from Langley indicate the inherent tensions in creating communities that are both sustainable and livable in the Canadian context and suggest trade-offs between achieving these objectives.

Figure 6.5: Amenity Space in Townhouse Development, Langley (D. Scott)

The idea of 'balance' was a theme that appeared throughout the interviews. Respondents from both municipalities used the word in discussing the larger themes indicated above and its use, particularly in light of sustainability discourse, warrants discussion. In Langley, planners pointed to the need to 'balance' the three aspects of sustainability as well as sustainability with livability. In Airdrie, the elected official and planners also pointed to the need for 'balancing' the different dimensions of sustainability and expressed concern with what they saw as developer driven profit seeking that undermined sustainability's social and environmental dimensions. For their part, developers in both municipalities pointed to the need to 'balance' the municipal policy based in planning theory with development realities. In Langley, one developer discussed the difficulties of 'balancing' requirements for different housing types with market demand while in Airdrie a developer indicated that theory needed to be 'balanced' with market realities and profitability.

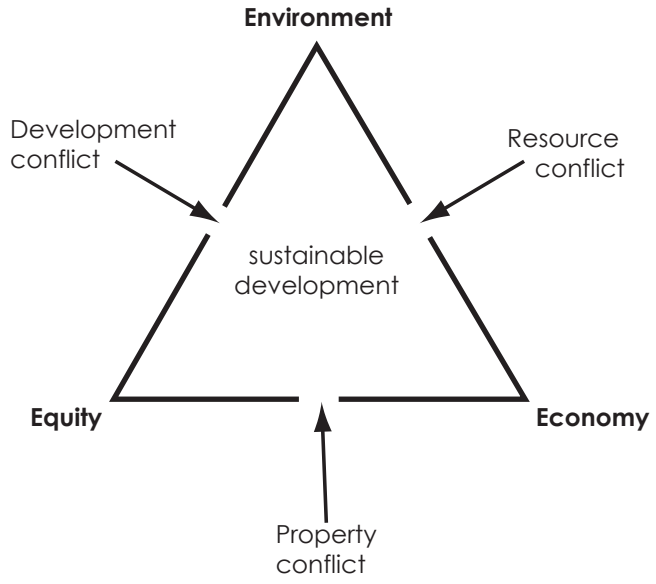

Figure 6.6: Planners' Sustainable Development Triangle (After Campbell, 1996)

Planners and elected officials responses fit closely with theory of sustainability discussed in planning literature. Campbell (1996), for example, notes the inherent contradictions of sustainable development for planning. He points out that the three aspects of sustainability - economy, environment and equity - are frequently in conflict with one another where emphasis on one aspect can undermine the others. To achieve the elusive goal of sustainable development, Campbell (1996) argues that planners should strive to balance the three dimensions and manage the conflict that arises between them. Neuman (2005) similarly points out that the notion of 'balance' stems from the intellectual foundations for sustainability. The idea arose in response to neoclassical economic theory that saw the natural environment as separate from human activity and a source of natural resources to be exploited. The notion of balance sought to correct this view and create a better understanding of the relationship between the environment and the economy (Neuman, 2005). Nueman (2005) argues that the Bruntland Report had much to do not only with the popularizing of the term sustainability but also with establishing the idea of taking a balanced view toward it. Returning to the findings from Langley and Airdrie, by framing sustainability and density discourse in terms of balance, respondents were acknowledging the challenges they experienced in managing the conflicts that arise between planning theory, municipal policies and development realities. Planners and, to a lesser degree, elected officials

highlighted the difficulties in achieving desired social and environmental ends through policy while developers pointed to the challenges municipal policy played to creating a marketable and profitable product.

7.0 Towards Sustainable Density?

Given the research findings, several question arise. What are the implications of these two case studies to understanding sustainability and residential density? How do key practitioners understand the relationship between sustainability and density as these concepts relate to development on the ground? and how do practitioners' understandings compare between the communities?

This research has revealed several findings that are consistent with contemporary planning theory of sustainability and density. Practitioners in both municipalities had different conceptions of the meaning of sustainability. Conceptual understandings were generally consistent within categories of practitioners (with planners and elected officials sharing similar ideas), regardless of their community, but differed most between planners and developers. There was general agreement among the planners sampled here that increasing densities was required to make their communities more sustainable. Demonstrating influence from smart growth principles, these respondents saw increasing density as a catalyst to improving transportation options, creating a diversity of housing types, allowing for neighbourhood commercial and reducing municipal infrastructure costs.

Proponents of compact city form frequently point out that higher densities are needed to make the provision of services viable, particularly to enhance social sustainability (Haughton and Hunter, 1994). In the BC context, "Eco-density" as promoted by the city of Vancouver intends to achieve sustainability by increasing densities to allow for "complete communities" that have diverse housing options, access to services, improved transit and more efficient use of infrastructure (City of Vancouver, 2009). Interviews with elected officials and planners as well as policy from both Airdrie and the Township of Langley demonstrate an emphasis on the part of these municipalities to push for higher densities. Given this emphasis on density, one could ask whether density has become planning's new mantra. Indeed, one planner from Langley suggested that planners tended to focus too narrowly on density and pointed to problems with this. In line with findings by Berke and Conroy (2000), the case studies here indicate that sustainability has become an important guiding principle in municipal planning but has the focus

shifted too narrowly to increasing densities and the means (and end?) to achieving it? In his critique of the compact city, Neuman (2005: 21) indicates that a "problematic aspect of the compact city analyses is that they have placed a premium on a single operational measure: population density." Findings from this study are consistent with Neuman's assertion and suggest that municipalities may be over-emphasizing this urban form characteristic.

Comments from the planner cited above as well as discourse from the Township of Langley and Airdrie indicate that while planners identified increasing densities as necessary for sustainability, higher densities also presented challenges. In Airdrie, planners and an elected official indicated that policy aimed at increasing densities and allowing for greater housing diversity were not necessarily achieving municipal objectives. Their comments suggest a gap between planning policy and development realities in the municipality. Planners in Langley expressed similar concerns with regards to density and housing diversity and have introduced requirements for housing types to address these concerns. The way in which developers conceptualized sustainability and density further suggests a gap between planning theory and practice. For developers, increased density was the product of rising development costs from the price of land to municipal development charges. While they agreed that higher densities were required to ensure the viability of commercial services, they rejected the theoretical basis of policies aimed at increasing densities as not feasible given market conditions. Taken together, while planners and elected officials enact policy to better manage and direct development, market forces driven by consumer preferences can work against municipal objectives.

Findings from this study emphasize the importance that local context plays in understanding sustainability and densities. Studies discussed previously (Zeemering, 2009; Jepson, 2003; Grant, 1994) suggested that understandings of sustainability varied between municipalities. This research is consistent with these findings and also indicates reasons for the conceptual divergence in the context of western Canada. Airdrie and the Township of Langley while experiencing rapid growth must accommodate new development differently. As indicated, Airdrie can expand outward through the annexation of surrounding agricultural land. New developments are typically large scale and occur on quarter-sections of land. While the municipality may experience challenges in achieving sustainability objectives through density requirements, higher

residential densities are occurring in the form of smaller single detached houses, townhouses and some low rise apartments. Given their size, new developments typically have large areas of open space that are connected to the municipality's parks network. The Township of Langley, on the other hand, has a very limited land base in which to grow. Urban growth is focused on several nodes and there is very limited opportunity for expansion outward due to the ALR, jurisdictional boundaries and the US border. Developers discussed the challenge of assembling large parcels of land to do projects and in particular the difficulties they encountered achieving the housing and amenity mix that the municipality required. Local circumstances are important in how practitioners understand sustainability and density. In 2010, Airdrie removed density limits and planners and an elected official there emphasized the need to increase densities to become more sustainable. Elected officials and planners in Langley, while still pushing for higher densities pointed to the challenges they faced in doing so. The development and regional contexts in the Lower Mainland have a strong influence on planning decisions in the Township that was different from Airdrie.

Discourse in Langley regarding livability and sustainability point to the difficulties of increasing densities to achieve sustainability in the Canadian context. Several academics have discussed the relationship between sustainability and livability. Neuman (2005) characterizes what he calls the compact city paradox as an inverse relationship between sustainability and livability. "For a city to be sustainable, the argument goes, functions and population must be concentrated at higher densities. Yet for a city to be livable, functions and population must be dispersed at lower densities" (Neuman, 2005: 16). Studies by Howley (2010; also Howley et al., 2009) for high density inner city developments in Ireland also point to the challenges high density housing poses for livability. Godschalk (2004) building on the work of Campbell (1996), offered a sustainability/ livability prism to conceptualize this relationship arguing that the values of livability encounter conflict with the values of sustainability.

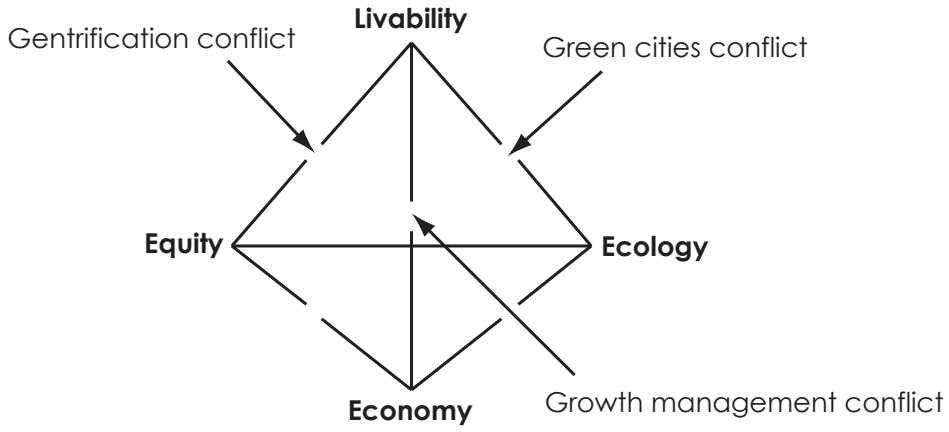

Figure 7.1: Sustainability/Livability Prism. (After Godschalk, 2004)

Findings from this research project are consistent with these studies and suggest trade-offs through implementation of different aspects of sustainability. Specifically, this study points to the challenges of a growth strategy of densification in high growth municipalities that are spatially limited. In 'suburban' municipalities such as the Township of Langley and Airdrie, consumer preferences largely favor single detached housing; however, in Langley, rising densities are challenging these preferences. Practitioners pointed to an inverse relationship between sustainability initiatives that push for high density development and livability in the municipality. Practitioners discussed the importance of hitting the right 'balance' between these two concepts as well as the three main dimensions of sustainability. In employing the metaphor of 'balance' practitioners were pointing to possible trade-offs between disparate sustainability objectives.

8.0 Conclusion

In 1996, Jenks et al. (1996: 11) commented that "the relationship between urban form and sustainability [was] one of the most hotly debated issues on the international environmental agenda". Almost 15 years have passed since then and urban form and sustainability continue to be contested topics in Canadian planning. One particular aspect of urban form, residential density, has taken a prominent place in municipal planning agendas as a key component to achieving sustainability. Municipalities tend to perceive increasing densities as a cure-all to the excesses of sprawl and inefficient land use practices that have dominated much of Canada's post-war residential development. While high-density development can result in more efficient use of municipal infrastructure and public transit, it present challenges to high growth 'suburban' municipalities on the edges of metropolitan areas. Policy and development regulations aimed at promoting high density development do not always produce the results that planners and municipalities hope for. In some instances, translating policy into development practice results in unrealized municipal objectives. Despite such setbacks, sustainability is and continues to be an important guiding principle for municipal policy and long term planning strategies.

This research analyzed how key practitioners understand sustainability and residential density at the local level. It revealed insights into the importance that local factors play in shaping ideas of sustainability and the challenges that increasing densities present to municipalities. While theories of sustainability and sustainable urban form influence practitioners through their education and professional practice, local circumstances necessitate adjusting those theories to local realities. As this report suggests, accommodating growth through densification in circumstances where development pressures are high and developable land is scarce creates difficulties to those involved in the development process. In the suburban municipalities, market forces and policy aimed at higher density development are challenging consumer preferences and expectations for low-density housing.

Although municipalities continue to push for higher residential densities, density is not a panacea for sustainable development. Indeed, planners' emphasis on this unit of measurement may be cause for concern as some respondents indicated. Findings from this report underscore the need

to consider other factors that influence the outcomes that planners expect from higher density development. As a measure, density is limited and focusing solely on it can be misleading. A recognition that societal factors such as family size and the intensity of use in an area is important to bridging the gap between planning expectations and development outcomes.

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Appendix A

Question schedule for semi-structured interviews: 2010
Questions for Planners, Developers, and Councillors:

We are trying to understand current trends in planning and developing the suburbs of Canadian cities. We're hoping that you can help us learn more about those trends here in [name of community].

What is your role in planning or designing the suburbs here?
How would you characterize the rate of growth here in this city compared with other parts of Canada?
How do suburban development patterns and characteristics here compare to trends in other parts of Canada?
How have ideas about smart growth or new urbanism influenced policies and regulations here?
What are the challenges you see to implementing smart growth ideas in suburban development?
How do principles of sustainable development influence current developments here?
How effective are your efforts to make the city more sustainable?
What are some of the challenges to implementing a sustainability agenda?

What **smart growth, new urbanism, or sustainable communities** do you have here?
What role did you and your colleagues play in designing or planning the project(s)?
What were the challenges to making the development(s) happen?
How did municipal planning authorities respond to the project(s)?
    Where did support or resistance come from?
Does the municipal plan support smart growth, new urbanism or sustainable development?
To what extent do municipal authorities promote this kind of development?
What do you see as the benefits of this kind of development?
What are the disadvantages of this kind of development?
How has the local market responded to projects employing these principles?
To what extent are developers following up on the project with other similar ventures?
What do you see as the future of these kinds of projects in this area?

How common are **private communities** here (that is, enclosed areas with private streets or access ways shared by multiple units, often in condominium ownership)?
How extensive are gated communities (that is, private communities with access controlled entries)?
How have municipal planning authorities responded to private communities?
    Where did support or resistance come from?
How does the municipal plan support this kind of development?
To what extent do municipal authorities promote this kind of development?
What do you see as the benefits of private communities?
To what extent is the development consistent with metropolitan smart growth objectives?
What disadvantages do you see to this kind of development?
How has the local market responded to private communities?

How is the development of private communities changing the suburbs?

What are community residents looking for in new suburban areas?
To what extent do you try to accommodate a variety of household types here?
What are some of the benefits of promoting a mix of housing types?
What are some of the challenges to achieving a mix of housing types?
What new development trends do you find appearing in the suburbs here?
What do you see as the key concerns for the future of Canadian suburbs?
What do you see as the long-term challenges to planning and developing sustainable communities?
Planners often prefer new urbanism communities to gated developments, but gated and private communities seem to be proliferating. How do you explain this difference?

Can you comment on how you think the recent economic crisis may affect development in this region?
How do you think the economic crisis may affect suburban areas?

Is there anything you would like to add before we wrap up?

Thank you for your help.

Appendix B
Consent Form

DALHOUSIE UNIVERSITY
Inspiring Minds

Faculty of Architecture and Planning

[date]

Dear

Project Title: **Trends in residential environments: planning and inhabiting the suburbs**
Principal Investigator: **Dr. Jill L Grant**, FCIP LPP
School of Planning, Dalhousie University, Box 1000, Halifax NS, B3J 2X4
902-494-6586 fax: 902-423-6672 Jill.Grant@dal.ca

Dear Study Participant:

I **invite you** to take part in a research study at Dalhousie University. The work is funded by the Social Sciences and Humanities Research Council of Canada. Taking part in the study is voluntary, and you may withdraw at any time. We will use the information collected only for research purposes. This letter explains what you will be asked to do, and any risk or inconvenience you may experience. Participating in the study may not benefit you directly, but we hope to learn things which will improve understanding of community planning. Please feel free to discuss any questions you have with me, Jill Grant. If you agree to participate, please sign the form at the bottom and return it to me, or to my research assistant, Troy Gonzalez, at the address listed here.

The **purpose of the study** is to identify recent trends in suburban development. We are especially interested in the implementation of ideas associated with smart growth, new urbanism and sustainability, and also in the widespread growth in private and condominium developments. We are focussing our research in communities experiencing rapid growth in three provinces: Alberta, British Columbia, and Ontario.

For this research we are arranging **in-person interviews** with people living and working in the cities selected for analysis. We hope to interview **community planners, council members, and project developers** who have been involved in the process whereby new communities get approved for development. We are also interviewing the **residents** of new developments in these communities for their views. My research assistant, Troy Gonzalez, will conduct the interviews. We expect each interview to take about **45 minutes to one hour**; it will consist of semi-structured questions about your experience and opinions. (We have attached an outline of the question topics we will discuss.) If you agree, we will tape record the interview; alternatively we can take notes. You may refuse to answer any question, or end the interview at any point. (If you decide to withdraw from the study, we will destroy any data you contributed.)

We recognize that participating in this study may cause you some **inconvenience**, but we will try to minimize that by visiting at a time and place convenient for you. We will try to limit

the **risk** that anyone reading the results of the research can identify you from your comments. In publications, we will not use any identifying information other than your type of position (for example, "planner" or "project manager") and the city involved.

We will keep your remarks **confidential**. We will never reveal your identity. We will maintain our interview notes and any analysis based on them in a secure location. Only my research team (myself and students working on the project) will have access. Dalhousie University policy requires that data be stored securely. I will retain the data for long-term study of development trends.

We are happy to share the results of the research with you, as we hope that you may find **benefit** in knowing more about the topic. We post the results of our research on our project web site at http://suburbs.planning.dal.ca/index.html . We hope that you may find it helpful to learn about experience in other regions. The work contributes to general knowledge about recent trends in Canadian urban development. (Should any new information arise which may affect your decision to participate in the study, we will let you know immediately.)

In the event that you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact the Human Research Ethics Integrity Coordinator at Dalhousie University's Office of Human Research Ethics and Integrity for assistance. (902-494-1462, patricia.lindley@dal.ca)

If you agree to participate, please sign the consent form attached, and check the boxes to signal your preferences. Thank you for considering our request.

Sincerely yours,

_____ _____

Dr. Jill L Grant, School of Planning Date

Research assistant: _____

Troy Gonzalez, masters student
tgonzalez@dal.ca
902-880-4778

School of Planning 902-494-3260
Dalhousie University
Box 1000, Halifax, NS
B3J 2X4, Canada

PLEASE READ AND SIGN IF YOU AGREE: ***Consent form***

I have read the description of the project and agree to participate as set out in this form. I understand that I may refuse to answer any question and that I may withdraw from the study at any time.

_____ _____ _____

Name Signature Date

I agree that you may record my remarks for transcription:

[ ] Signature or initials: _____

I agree that you may use brief quotes from my remarks:

[ ] Signature or initials: _____

I agree to be contacted for additional information during the course of the study, should that prove necessary.

[ ] Signature or initials: _____

I would like to be informed of the preliminary results of the research:

[ ] Mailing address: _____

_____

_____

_____

Email:

Keep one copy of this form for your records, and **return a signed copy** to:

Jill L Grant, School of Planning, Dalhousie University,
Box 1000, Halifax NS, B3J 2X4, Canada
fax 902-423-6672

Visit our website for further information on the research:
http://suburbs.planning.dal.ca/index.html

Appendix C

Suburbs - Visual Survey

Date: _____ Initials: _____

Map showing main streets:

City: _____
Name of development: _____
Approximate date of development: _____
Photo #s: _____

Housing types: [check all present]
[ ] Single detached [ ] Semi-detached
[ ] Apartments [ ] Townhouses
[ ] Bungalows [ ] Two-storeys
[ ] Live/work units [ ] Condominiums

Street types present:
[ ] Boulevard [ ] Local with parking
[ ] Local no parking [ ] Cul-de-sac
[ ] Lane/alley [ ] Private
[ ] Curvilnear [ ] Grid

Entry features:
[ ] name sign [ ] landscaping
[ ] gate *type:* _____
[ ] boundary *type:* _____
[ ] other: _____

House setbacks from street (metres):
Minimum: _____
Typical detached: _____

House lot frontage-detached (metres):
Minimum: _____
Typical detached: _____

Garage types:
[ ] attached front [ ] attached under [ ] attached at side [ ] attached at back
[ ]detached [ ] detached at back [ ] detached with residential unit over
[ ] carport [ ] for one car [ ] for two or more cars [ ] no garage

Design characteristics:
[ ] Front Porches [ ] Front steps only
[ ] Sidewalk - one side of street [ ] Sidewalk - both sides of street
Building materials: (list) _____
Style/character: _____
Vegetation character: _____

Commerical uses present:
[ ] convenience [ ] "centre" (list): _____
[ ] peripheral (list): _____
[ ] mixed use area (includes): _____

Public transit present:
[ ] bus service available [ ] "future bus stop" [ ] park and ride
[ ] other mass transit

Institutional / recreational uses present:
[ ] church [ ] school [ ] fire station [ ] other:_____
[ ] park [ ] playground [ ] police station [ ] sports field
[ ] accessibility of public amenities: _____

Home prices on several properties if available:

Date:	_____	_____	_____
Address:	_____	_____	_____
Home type:	_____	_____	_____
Home size:	_____	_____	_____
Cost:	_____	_____	_____

Comments / any special features or new trends (continue on reverse if necessary):