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UNIVERSITY OF CALGARY

Gated-ness, Income Segregation and Neighbourhood Cohesion in Two Western Canadian
Metropolises

by

Karim Wagih Fawzi Youssef

A DISSERTATION

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

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ABSTRACT

This research investigated the relation between the degree of gated-ness of a neighbourhood and the level of neighbourhood cohesion among its residents. Such an investigation was prompted by the current practice of municipal planners for promoting a grid pattern of streets for neighbourhoods and linking such a pattern with principles of resilience and connectedness while at the same time condemning altogether the enclave pattern of curvilinear streets, loops and cul-de-sacs as being non-resilient and non-sustainable. Municipal planners seem to overlook the reasons behind the morphological development of postwar suburbs as well as overlook, in particular, socio-psychological effects of their physical structure and access configuration. This research introduces new typologies in order to differentiate neighbourhoods along those two structural aspects. By undertaking a comparative analysis of four case studies in two Western Canadian metropolises, this research argues that semi-gated neighbourhoods raise cohesion among residents. The major findings of the research are that residents' sense of neighbourhood cohesion, for both its affective and interactive dimensions, increased in the case of neighbourhoods that had a sense of enveloping space, a sense of entry into a domain that is signalled by the degree of exclusion and seclusion of the development. This research does not claim that all neighbourhoods need to be single access ones. Rather, it suggests that in as much as a neighbourhood is successful in conveying a cohesive image for such a domain, in as much do residents identify with the neighbourhood and with each other. The aesthetic quality of such a domain plays a role of in-forming residents who gradually develop an embodied space such that residents of the neighbourhood could be identifiable from outsiders. Such a process of in-forming and embodiment sets a common ground for social acceptance, sense of familiarity, and facilitates social interaction among residents who have developed common norms and values over time.

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LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE

Symbol	Definition
AHS	American Housing Survey
ANOVA	Analysis Of Variance
CC&Rs	Codes, Covenants and Restrictions
CID	Common Interest Developments
CMA	Census Metropolitan Area
CMHC	Canadian Mortgage and Housing Corporation
CPTED	Crime Prevention Through Environmental Design
CT	Census Tract
DR	Discovery Ridge
EC	East Clayton
ENVSPACE	Enveloping Space
GC	Gated Community
GIS	Geographic Information System
HG	Hybrid Gated Neighbourhood
HOA	Home Owner Association
JUS	Joint Use Site
LRT	Light Rail Transit
MPRE	Master Planned Residential Estates
NCI	Neighbourhood Cohesion Index
NCP	Neighbourhood Concept Plan
NEIGHBOR	Neighbourliness
NG	Non-Gated Neighbourhood
PLACE ATTACH	Place Attachment
PSOC	Psychological Sense of Community
PUD	Planned Unit Developments
RCMP	Royal Canadian Mounted Police
RH	Rosemary Heights
SG	Semi-Gated Neighbourhood
VR	Valley Ridge

There is not merely an opposition but an antinomy between the experience of solitude and social experience. Each of them claims the rank of a universal experience and manages to account for the other, referring to it particularly as the degradation of an authentic experience.

- Emmanuel Levinas, 1987: 58

INTRODUCTION

1.1 Introduction

The privatization of residential space has been increasing since the late 1970s and 1980s as Common Interest Developments CIDs and since the 1990s as gated communities. The comparative advantage of gated neighbourhoods over non-gated neighbourhoods is usually summarized under three rubrics: the rubric of increased safety from crime; the rubric of preservation of property values; and the rubric of promoting a sense of community (Vesselinov, Cazessus & Falk, 2007).

Gated private neighbourhoods are considered to be an extreme expression of privatization of residential space and seem to readily confirm the hypothesis that they are a physical expression of the 'dual city', characterized by increasing social polarization and inequality.

One of the objectives of this research is to test the third rubric mentioned above, namely, the sense of community or neighbourhood cohesion for semi-gated developments in two Western Canadian metropolitan areas. The literature has generally invalidated the hypothesis that sense of community / neighbourhood cohesion in gated neighbourhoods is higher than non-gated neighbourhoods (Grant, 2007: 493). However, this hypothesis was not empirically tested for the case of Canadian metropolitan areas.

Rationale

Research has shown that income polarization and inequality have an impact on individual physical and mental health, social outcomes, and broad economic performance (FCM, 2003). Canadian metropolises are exemplifying more and more a spatiality of affluence/prosperity in tandem with a spatiality of poverty. More and more Canadian residents may find themselves

spatially confined to a neighbourhood negatively affecting their quality of life in terms of employment opportunities, services, social networks, neighbourhood and school quality.

At the same time, gated neighbourhoods are perceived as providing a better quality of life for those within such enclosures. This research aims to shed light on the effects of gated neighbourhoods in terms of whether such development strategies increase the neighbourhood cohesion of residents or are merely another housing product in the market that is lucrative for sale by developers and advantageous to local municipalities through raising property taxes.

Significance

The apparent complacency of planning authorities, especially in several Canadian provinces, towards formulating guidelines for this form of development (Grant, 2003) needs to be questioned not from the limited spread of the phenomena of gating in their jurisdictions but from the limited understanding of the social effects of such developments.

The research contributes to the fields of urban sociology, urban morphology and urban anthropology as well as environmental psychology and cultural geography by producing knowledge and understanding of socio-spatial quality of neighbourhood gating. Moreover, the research findings will be significant to urban planners who design and layout neighbourhoods with diminished access.

1.2 Problematique

Income segregation and polarization

Canadian cities are becoming more and more polarized. A pattern of greater spatial segregation into both rich and poor areas with a decline of middle-class neighbourhoods is being entrenched in major Canadian cities. Early signs of ghettoization of the poor and enclavism of the affluent are being articulated. In general, the traditional concentric zonal model of income differentiation from center to periphery within Canadian cities still seems to be valid but is becoming more complex (Townshend & Walker, 2002: 27).

Research by Walks & Bourne (2006) has shown that ghettoization is not prominent in Canadian cities but the trend is there and gaining momentum. Such **‘incipient’ polarization** in Canadian metropolises had started since the 1970s (MacLachlan & Sawada, 1997) and researchers are tracking its increase; for example, in Toronto (Hillier & Hulchanski, 2010). In general, however, Canadian research on neighbourhood inequality and economic segregation remains relatively sparse.

Income inequality¹ and income segregation are two factors that contribute to an increase in neighbourhood inequality. The disproportional increase in post-tax mean income for the top decile (for Calgary, +74%) compared to the bottom decile (for Calgary, +4.9%) between 1980 and 2005 has contributed to a significant increase in neighbourhood income inequality, measured by the Gini coefficient² (for Calgary, an increase of 81%) (Chen et al., 2011). Similarly, rising

¹ Income inequality has been shown in the U.S. to affect large-scale patterns of segregation of the affluent rather than the spatial segregation of the poor or small-scale patterns of income segregation (Reardon & Bischoff, 2010).

² There are three quite different measures of inequality linked to Corrado Gini, which are: the Index of Dissimilarity, Gini’s Concentration Ratio, and Gini’s Mean Difference.

spatial economic segregation accounted for a significant share (from one-quarter to one half) of rising neighbourhood inequality in all major Canadian metropolitan areas of which Calgary and Winnipeg saw the largest increase in the economic sorting of richer and poorer families³ (Chen et al., 2011)⁴.

Neighbourhood Gated-ness

The incipient polarization of Canadian cities has been accompanied since the 1990s by a parallel phenomenon concerning the physical aspect of neighbourhoods, namely, **neighbourhood gated-ness**. The three main reasons mentioned in the literature behind gating are seeking prestige, seeking a lifestyle that values cohesion and a sense of community, or seeking security; reasons that might appear to correlate readily with rising income segregation and polarization. The correlation between rising income polarization, reasons behind gating, and the proliferation of gated neighbourhoods becomes strong in the case of U.S. and Latin American cities. The correlation, however, becomes less apparent in the case of Canadian cities, particularly, Western Canadian metropolitan areas such as Calgary and Vancouver⁵.

In Canadian neighbourhoods, in general, gated-ness has mainly taken the form of **implicit and ornamental gating** as opposed to fortified and guarded gated communities such as those in the U.S. or Latin America (Grant & Mittelsteadt, 2004). This marked difference may be attributed to the culture of fear that has not proven as strong in Canada as in the U.S. (Grant, 2003). This makes sense as Canadian cities are generally much safer than their U.S. counterparts. The

³ Some of the effect on neighbourhood inequality attributed here to rising neighbourhood economic segregation may in fact be driven by rising family income inequality. There are reasons to believe, however, that the association between rising inequality and segregation may be weaker in Canada than the U.S. (Chen et al., 2011).

⁴ In a similar and earlier study by Myles et al. (2000), spatial economic segregation was the major factor behind neighbourhood income inequality for four of the eight Canadian metropolises studied.

⁵ It should be noted, though, that gated retirement communities are proliferating in the case of Vancouver.

question that poses itself then is: “*Why are Canadian cities increasingly exemplifying a trend of implicit gating in spite of being relatively safe?*”

Neighbourhood Cohesion

Seeking a lifestyle that values neighbourhood cohesion and a sense of community may be the stronger reason of the three aforementioned for the rise of implicit gating in the case of Canadian cities. Conventional suburban development, in spite of offering a different lifestyle compared to urban neighbourhoods, has not succeeded in filling the need residents have for fostering cohesion and a sense of community. Once seen as an escape from city problems, conventional suburbs are generally assessed by several researchers (e.g. Le Goix & Vesselinov, 2012) as increasingly reflecting the problems and pathologies of city centers. A recent study by Le Goix & Vesselinov (2012) for the cities of Phoenix, Las Vegas, and Seattle argues that gated developments are becoming to suburbs what suburbs were to city centers.

A contemporary trend, along with New Urbanism, that attempts to redefine suburban development, especially from the vantage point of cohesion and sense of community, is Gated Neighbourhoods. Gated neighbourhoods ‘package and sell’ community as a commodity to future residents and seem to promote community through the homogeneity and commonality of their residents (Grant, 2007: 493). The physical ‘substratum’ upon which community is promoted in gated neighbourhoods is articulated by means of diminished accessibility and permeability as well as the provision of focal points such as leisure amenities within gated neighbourhoods as a setting for social interaction. However, do gated neighbourhoods promote more cohesion among residents? Similarly, a second question that poses itself is: “*Is the implicit gating of neighbourhoods in Western Canadian metropolitan areas contributing to higher neighbourhood cohesion among residents compared to non-gated neighbourhoods?*”

1.3 Research Main Question

Is the implicit gating of neighbourhoods in Western Canadian metropolitan areas contributing to higher neighbourhood cohesion among residents?

1.4 Hypothesis and Secondary Questions

The hypothesis of this research is that: “Implicit gating of new suburban neighbourhoods in Western Canadian metropolitan areas raises the neighbourhood cohesion of residents”.

The main research question raises a series of secondary questions that might uncover possible effects pertaining to other variables on cohesion and enveloping space. In particular, neighbourhood effects on cohesion by gender, household income, and length of residence need to be investigated. Those three variables, among others, are generally considered in the literature on neighbourhood cohesion to have an effect (Baum et al., 2009; Forrest & Kearns, 2001; Ziersch & Arthurson, 2007). The question here concerns whether there are differences *across* neighbourhoods. Alternatively, neighbourhood effects on enveloping space by gender, household income, and length of residence also need to be investigated. The secondary questions are:

- 1) Are there gender differences in perceived level of neighbourhood cohesion across neighbourhoods? Alternatively, are there neighbourhood effects on sense of enveloping space by gender?
- 2) Across neighbourhoods, do residents differ in their level of neighbourhood cohesion according to their household income category? Alternatively, are there neighbourhood effects on sense of enveloping space by household income?
- 3) Across neighbourhoods, does length of residence within a neighbourhood impact upon the overall sense of neighbourhood cohesion? Alternatively, are there neighbourhood effects on sense of enveloping space by length of residence?

1.5 Definition of Major Terms

Peripheral suburban neighbourhoods: Suburban neighbourhoods that were built since the year 2000 on the periphery of Canadian metropolitan areas (e.g. suburban neighbourhoods of Calgary located along the west side of 69 St SW).

Implicit gating: A type of neighbourhood gating where access and permeability is diminished, when compared to a grid pattern, without necessarily using explicit gates to signal entry or a continuous walled boundary surrounding the neighbourhood. In some cases gates are present to signal entry but merely function as ornamental gating.

Neighbourhood cohesion: a term that consists of three dimensions: psychological sense of community PSOC, place attachment and social interaction (Buckner, 1988).

Psychological sense of community PSOC: defined by Seymour Sarason as “the perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving or doing for others what one expects from them, the feeling that one is part of a larger dependable and stable structure.” (Colombo, Mosso, & De Piccoli, 2001: 460).

Place attachment: “a bond between an individual or group and a place that can vary in terms of spatial level, degree of specificity, and social or physical features of the place, and is manifested through affective, cognitive, and behavioral psychological processes.” (Scannell & Gifford, 2010: 5)

Social interaction: a term equivalent to neighboring, defined by Unger and Wandersman as: social networking within neighbourhoods as well as social activities such as borrowing or lending tools, asking for help, and informal visiting (Talen, 2000).

1.6 Objectives

The objectives of the research are:

- To examine the relationship between neighbourhood gated-ness and neighbourhood cohesion in Western Canadian metropolitan areas.
- To formulate recommendations regarding neighbourhood gated-ness.

1.7 Main Argument

The main argument of the research opposes the contemporary and dominant trend among urban planners, particularly in the Western hemisphere, that advocates the return to the grid / modified grid and checkerboard pattern of neighbourhood physical design and condemns enclave urbanism for being non-sustainable, non-resilient, and lacking in connectivity. The return to a grid physical structure for the neighbourhood (in terms of accessibility and permeability) seems to be the logical outcome of the relentless pursuit of contemporary urban planners for increased connectivity, resilience, and sustainability. However, such a pursuit need not necessarily translate into a one-way preference for the grid, or modified grid, pattern as *'the solution'* for neighbourhood design over and above the curvilinear, loop, and cul-de-sac patterns of enclave urbanism. Strictly adhering to one or the other pattern is a form of physical determinism and symbolic violence. Rather, a sensible balance needs to be achieved by re-establishing enclave urbanism as an equally viable alternative, rather than a pitfall, to neighbourhood design development.

This research argues, in the first instance, for the social sustainability merits of enclave urbanism, particularly from the perspective of social psychology of residents within semi-gated neighbourhoods. The sense of safety, the sense of familiarity, the psychological sense of community, the neighbourliness, place attachment and the sense of appropriation of space along

with benefits of defining neighbourhood boundaries, degree of accessibility, and permeability have repercussions on the socio-psychological health and well-being of residents as well as to what pertains to the development of their personal creativity, in as much as such a development is influenced by the establishment of a clear and memorable neighbourhood identity and image. Indeed, the idea of a neighbourhood unit stemmed from such concerns with the social dimension of space.

In a second instance, the research argues for an understanding of a quality of space as ‘enveloping’ that accompanies the creation of a domain or precinct effected through diminished accessibility to, and limited permeability of, a neighbourhood.

In as much as semi-gated neighbourhoods succeed in creating such a domain, it is argued that the enveloping quality of space is gradually translated into an embodied quality of space that is distinguishable and perceivable by residents through their body. In other words, there is a dialectic relation between the psychological and the physical dimensions of space such that one is ultimately a reflection of the other. Such a dialectic necessitates the conceptualization of the body as a place and the conceptualization of place as an enveloping entity. In turn, it also necessitates an understanding of space as having the capacity to be minutely differentiated into socio-cultural units that form a mosaic of disparate parts⁶; i.e. each unit being a concatenation / envelope.

⁶ The mosaic paradigm has been hypothesized as the ultimatum of our postmodern era in the work of Rem Koolhaas (*Delirious New York*) and the notion of *keno capitalism* put forward by Dear and Flusty (1998).

1.8 Contribution

The contribution that this research makes to the field of urban planning is twofold. First, at the theoretical level, the research fills the gap in the proliferating literature on gated communities, particularly the literature that examines the social consequences of gating from the point of view of residents within gated or semi-gated neighbourhoods. Scholarly research has mainly focused on examining the social consequences, whether positive or negative, without explaining the ‘why’ behind the research findings; i.e. as if the term ‘gated community’ was self-explanatory and connoted such a relation between ‘gated’ and ‘community’. This was due to a lack of theoretically conceptualizing the relation between gated-ness and neighbourhood cohesion or other positive outcomes such as social capital. The predominant view by scholars is that gated communities do not differ from non-gated communities especially in regards to neighbourhood cohesion among residents as a positive outcome and thus factor out the importance of the number of access points to the neighbourhood from a socio-psychological perspective. This research conceptualizes the missing link between gated-ness and neighbourhood cohesion by the introduction of the enveloping quality of space. Such a quality of space might have been assumed in the case of gated communities by scholarly researchers but has not been made expressly explicit nor sufficiently articulated for understanding nuanced differences in neighbourhood cohesion among even gated communities. Moreover, gated-ness is conceptualized in this research from a socio-psychological and cultural perspective as constituting of two processes: exclusion and seclusion. The research calls for applying Kevin Lynch’s (1960) five elements for the legibility of a city to the scale of the neighbourhood. The research also builds upon the work of Pierre Bourdieu (1995) and Setha Low (2009) by offering an understanding of the notion of embodied space through a preamble sense of enveloping space.

The research also extends Merleau Ponty's (1962) phenomenology of the body from a contingency upon immediate perception to a contingency upon an embodied cognition of space.

Second, at the empirical level, the research fills the gap in the literature for studies on semi-gated residential developments in Western Canadian metropolises. Neighbourhood cohesion among residents in semi-gated neighbourhoods has not been examined in the case of metropolises like Calgary and Vancouver.

1.9 Limitations

There are several limitations for the generalization of the results of this research. The research has undertaken case studies in Calgary and Vancouver which, although being Western Canadian metropolises, are nevertheless not representative of Western Canadian metropolises in general. Each of Calgary and Vancouver are not typical in terms of physical, social, and cultural development. Moreover, the research has only investigated a couple of neighbourhoods within each of the metropolises. Neighbourhoods in Calgary and Vancouver exhibit much diversity such that results from a few case studies do not necessarily extend to a generalization at the metropolitan level. Limitation of time and resources have not made possible a choice of more than four case studies. Future research is needed to corroborate the results of this research.

Another limitation concerns the geographic scale of applicability of the concept of enveloping space advanced in this research. The research has been mainly focused at the neighbourhood scale.

FROM SUBURBAN GRID TO ENCLOSED SUBURBS

Investigating the consequences of gated-ness particularly in terms of income segregation effect and neighbourhood cohesion requires answering a primordial question: why do we enclose neighbourhoods, demarcate their boundaries, decrease points of access to neighbourhoods and decrease their internal permeability?

Many modern cities were originally laid out as a gridiron pattern which allowed flexibility and accommodation of different land uses, ease of land subdivision, and ease of extending the grid to allow for urban growth (Grant, 2001; Marcuse, 1987). The orientation and proportional ratio of the grid differed from city to city ranging from a square grid to markedly long urban blocks / islets such as those found in Montreal. In most instances, though, neighbourhoods were embedded in the grid in such a way that it was difficult to identify boundaries or edges of neighbourhoods except by street names and maps illustrating the limits of each neighbourhood.

The city was considered a totality yet divided early on into quadrants representing a general socio-spatial differentiation of inhabitants (Eisenstadt & Sachar, 1987). The socio-spatial differentiation was a function of the location of industry and infrastructure such as railways, the location of commerce, the location of residences of the affluent and geographical features such as rivers or mountains. With outward growth and expansion of the city, the pattern took on a general concentric and sectoral segmentation (cf. Robert Murdie model in Knox & Pinch 2000: 108) progressing from less affluent in the centre to more affluent in the periphery for North American cities and vice versa for Latin American cities.

This pattern had persisted in cities and was reinforced with the proliferation of postwar gridiron suburban neighbourhoods of the 1950s and 1960s. Such gridiron suburbs were fully

accessible, permeable and were part and parcel of the city. Empirically identifying the boundaries of where one gridiron neighbourhood ends and the other begins remains a relatively difficult task to date. Since the 1970s neighbourhood street patterns generally diverged from the grid and are observed to have changed simultaneously with the neo-liberal economic restructuring of cities. It is noteworthy to mention that the grid pattern seems to convey a non-hierarchical and democratic society (Marcuse, 1987) while a less permeable pattern seems to convey an individualism compatible with a neoliberal society⁷. Of course, as Grant (2001) notes, there are multiple significations of the grid pattern such that a one-to-one correspondence between a grid pattern and diffuse authority may not necessarily be the case as the grid has also symbolized a centralized and globalized authority.

What explanations could be given to the change in neighbourhood patterns? Of particular concern, what explanations could be given to gradually limiting accessibility and enclosing neighbourhoods? Before presenting explanations and arguments for physical change of suburban neighbourhood patterns and accessibility, it may be instructive to diagrammatically represent how Harris (2004) describes the suburbanization of Canadian cities. The following is a simplified diagram by the researcher.

⁷ Spiro Kostof (1993) makes a similar observation concerning the permeability of the grid versus the individualism conveyed by less permeable patterns like the cul-de-sac.

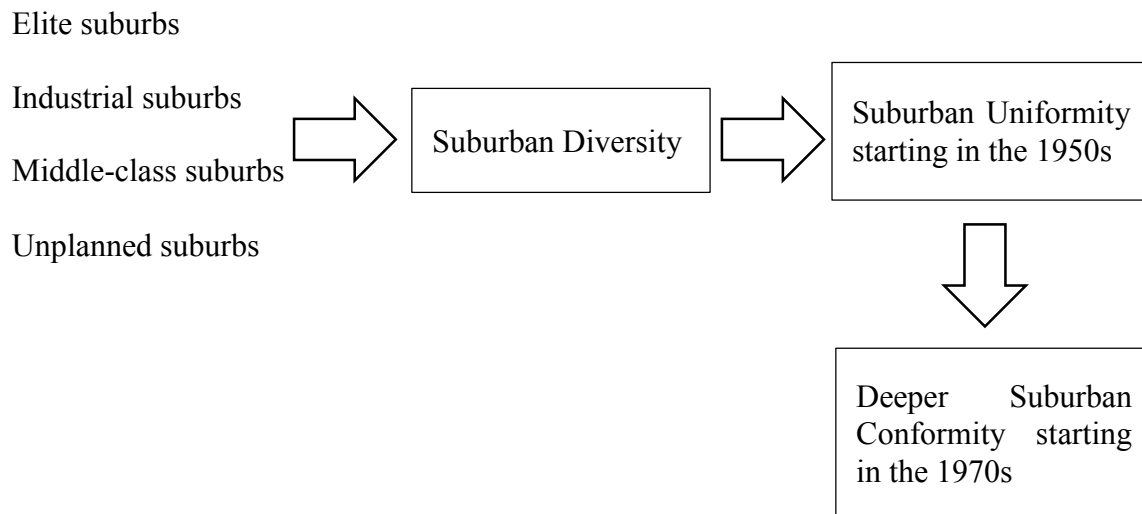


Figure 2.1. The homogenization of suburbs in Canada by the 1950s.

The above figure represents the process of convergence of suburbs from four types in the beginning of the twentieth century to homogeneous suburbs by the mid-20th c. Harris points to the increasing role of federal government, which started in the housing field in 1935, in promoting the emergence of the corporate suburb which, in turn, paved the way for mass builders and the homogeneity in suburbs found in Canada by the 1950s. Suburban homogeneity was not a concern as much as privacy and price for residents whose self-expression need not necessarily be reflected in the physical built environment (Harris, 2004: 144).

Several arguments could be put forward for the subsequent development of the North American suburb and suburban enclosure worldwide. Some arguments seem more likely than others to offer a plausible explanation. The overarching argument that is put forward is that gated suburban residential developments are a continuation of exclusionary suburban practices (Low,

2008) and are rooted in the convergence of several streams of development of the suburb (Le Goix, 2006).

2.1 Socio-Psychological Arguments

2.1.1 Sense of Safety

Neighbourhoods started to become less permeable while remaining outwardly accessible. This was achieved with the introduction of curvilinear and loop street layouts as well as cul-de-sacs. The main reason for using this strategy was to deter through-traffic into the neighbourhood thus reducing noise, pollution, and most importantly, reducing crime. The 'turn' towards curved streets, loops, and cul-de-sacs was not without reason. Indeed, cul-de-sacs were systematically used to offset residences from noisy motor traffic in the design of Radburn, one of the first cul-de-sac developments in the U.S., by Clarence Stein and Henry Wright (Charmes, 2010).

This strategy would presumably result in an increase in the sense of privacy within the neighbourhood and reinforcement of its residential character. Clarence Perry, in devising the neighbourhood unit, emphasized the importance of curved streets as a strategy for promoting neighbourhood cohesion (Patricios, 2002). This strategy is a continuity of similar strategies that commenced in earlier post-war suburbs (Harris, 2004: 165) and that has become a dominant design paradigm contested recently by New Urbanism and the return to the grid.

A recent review comparing the grid and cul-de-sac patterns found that research is conclusive regarding negative aspects of permeable grid patterns such as: higher crime rates in the order of five times; increased risk of pedestrian injuries; less support for an independent pedestrian network; inefficient use of space as the street grid consumes more open space; higher infrastructure cost; and three times higher cost of policing as compared to non-permeable cul-de-sacs (Cozens & Hillier, 2008).

Of course, there were other reasons behind the change of street patterns of neighbourhoods. For example, efficiencies of subdividing land with patterns other than a grid layout may have been higher in some cases such as a loop layout. From another perspective, curvilinear streets close the horizon view for inhabitants passing through them and may provide a sense of enclosure and aesthetic satisfaction. Nevertheless, it can be argued that such concerns were not the main driving force behind the change of street patterns within neighbourhoods.

Subsequently, neighbourhoods in addition to becoming less permeable became less accessible by decreasing access points to the neighbourhood. The decreased permeability of neighbourhoods was not enough to cut off through-traffic especially since many access points to and egress from the neighbourhood remained. Exercising control over the neighbourhood was a difficult task for community associations. The internal sections of the neighbourhood where through-traffic was most frequent divided the neighbourhood and decreased the private residential character of those sections. In other words, the door was still open to free-riders. Adding another defensive layer / strategy to deter through-traffic and crime was therefore necessary.

The debate in the literature on favoring the permeable grid or the non-permeable cul-de-sac has its roots in the observations of Jane Jacobs and Oscar Newman (Cozens & Love, 2009). The debate has recently been framed by Cozens & Love (2009) as a debate between ‘the encounter model’ and ‘the enclosure model’. The encounter model depends on the permeability of the grid to encourage walking, ‘eyes on the street’, and social interaction. Increased safety is assumed to be a consequence of increased pedestrian presence. The enclosure model, on the other hand, depends on limiting permeability of the street pattern in order to discourage occasional access by strangers, reduce opportunities for crime, and increase control of space by residents.

Increased safety and predictability of social encounter is assumed to be a consequence of easily identifying strangers. In addition, a social filtering process seems to be more efficient in the enclosure model. For Oscar Newman, private streets seemed to result in a self-selection of like-minded people (Cozens & Love, 2009).

In light of the above, it seemed a more logical progression towards an increased sense of safety to further define the boundaries of a neighbourhood by erecting enclosing walls and defining entry points to the neighbourhood by means of gates as a third layer / strategy to deter through-traffic and crime (Sanchez et al., 2005). Marcuse (1997) uses the term 'walling out' to describe this process of increased seclusion or cutting off from the surroundings. This third layer of walls is complemented in several gated communities with a fourth layer, namely by means of patrolling security guards and closed-circuit surveillance systems. If for financial reasons, the fourth layer is not implemented, other strategies are used such as the addition of an organizational layer (e.g. neighbourhood watches) or a cultural-symbolic layer through the use of spatial signalling devices. This is especially true for subsequently-enclosed neighbourhoods (Plöger, 2005). The research by Raposo & Cotta (2009), for instance, shows that sense of security is the primary motive of residents to relocate to GCs in Lisbon metropolitan area.

Increasing the sense of safety is seen as a response to a 'psychology of fear' (Low, 2001). It is generally argued that the response to a psychology of fear took two forms: escape and control (Xu & Yang, 2008). The strategy of escape is exemplified morphologically in the process of suburbanization while the strategy of control is exemplified morphologically in the processes of re-agglomeration and gating. The response to the sense of fear is similarly explained by Wu (2005) as a dual process of 'deconstruction-reconstruction' of communities. The deconstruction process explains the emergence of gated communities due to increasing social inequality and the

retreat of the elites from the collective society meanwhile the reconstruction process explains ‘community-building’ by the re-configuration of urban space to a territorially-based organization of gated communities that reflects the shift of control from a hierarchical state. A fortified urban landscape is formed that may, in turn, increase fear and distrust of the other (Németh, 2009: 6).

Increasing the sense of safety is one of the main reasons for the emergence of gated communities. There are, however, two other main reasons. They are the need to symbolize prestige and the need to symbolize a lifestyle (Blakely & Snyder, 1997a).

2.1.2 Symbolization of Prestige

Prestige is symbolized in gated communities through the large size of houses and façade material, usually stone veneer. Prestige is also communicated through the diversity of housing styles within gated communities. This is in contrast to the conventional use of vinyl siding on the façades and smaller sized houses as well as uniformity of architectural style throughout neighbourhoods not concerned about symbolizing prestige. Rofe (2006) shows that symbolization of prestige could be so profuse to the point of being signified as a cognitive barrier preventing outsiders from entry, i.e. the symbolization acts as a virtual wall and initiates a process of ‘*self-othering*’ for outsiders. Gated communities are thus defined by Rofe (2006: 312) as: “elite landscapes that construct a communal persona founded upon belonging and exclusivity”. An element of display of affluence is combined with an element of seclusion, as Rofe explains, in order to construct difference and signify exclusion while at the same time symbolically empowering gated residents.

A question here can be asked recursively whether the symbolization of prestige was present in neighbourhoods prior to the emergence of gated communities. Prestige was present, of course, in earlier developments, in subtle and manifest ways at an individual house scale. What

has changed is the normalization of prestige to a group phenomenon rather than an individual expression. This was made possible by packaging prestige via a demarcation of an enclosing boundary for the neighbourhood.

Aesthetization of the landscape and built environment is used as a strategy to express prestige (cf. Zukin, 1991). For Young (1990), it is also a form of cultural imperialism and social oppression. The use of historicized architecture as an instrument of class identity and class separation for neighbourhoods has been highlighted by Meier & Karsten (2012). Meier & Karsten note that the effectiveness of the symbolization of historicized architecture is contingent upon appropriation of such symbolism by neighbourhood residents. An example of the use of a medieval fortress style is found in the gated community of Knyazhye Ozero (or, Duke's Lake) located 25 km from Moscow (Blinnikov et al., 2006). Another example is the use of Romantic Style for the GC of Andromeda Hill, symbolizing upper class residents in Jaffa (Monterescu, 2009: 420). The aesthetization of the built environment would, in some cases, be pursued at the expense of best practises of climate control. Lara (2011) comments on the aesthetic revivalism of colonial style architecture in the Brazilian gated community of Alphaville as not effective for protection from rain and sun.

Here, it could be argued that the use of aesthetic revival of architectural styles in Alphaville resulted in a hybridization of New Urbanism with the concept of gating. Lara relates how the initial conception of the project as New Urbanist subsequently transformed into a walled and guarded residential development. Similarly, Luymes (1997) found that some neo-traditional developments are also gated. Likewise, in the GC of Kemer Country, Istanbul, the initial inception of the GC used New Urbanism principles for the formation of its built environment where historicized pastiche styles are used to differentiate between neighbourhood subdivisions

named after old Istanbul neighbourhoods as well as the use of the historical remains of an aqueduct as a natural boundary (Geniş, 2007). Geniş translates this appropriation of historicized symbols and Western lifestyles by the gated elites as a struggle for authenticity and identity in the face of rising local middle-classes' claim of appropriating the same local symbols but devoid of Western lifestyles.

Chase (2008) refers to the aesthetic landscape in gated communities in Brazil as taking either a “manicured” or a “controlled tropical” form. She comments on homeowners' upkeep of their private landscape within gated communities as a symbol of their prestige, class and style; i.e. a new signature / display instrument for the rich. This upkeep, though, requires labor intensive maintenance that necessitates the hiring of gardeners. Chase emphasizes the symbiotic relation between the rich homeowners and the poor employees (gardeners) that provides security of property for the former and security of employment for the latter who mostly live in proximity to the gated community. This is an example of the negation of segregation by proximity, intimacy, and circulation. Chase suggests that this type of security through the hiring of gardeners is more effective than armed patrolling guards with motorcycles roaming the gated community. The reason lies behind the informal networks created among gardeners that effectively act as ‘gatekeepers’ in filtering ‘good’, from ‘bad’, employees.

Seeking prestige and seeking a sense of security are not mutually exclusive (Sanchez et al., 2005: 282). In the case of gated communities in Brazil, as Chase demonstrates, prestige and security had recursive feedback loops. The landscape was used as a signal and marker of prestige. This necessitated continual upkeep and the hiring of gardeners which, in turn, acted as an informal layer of security within the gated community. The presence of gardeners reinforced the prestigious image of homeowners hiring them. In addition, Sanchez et al. (2005) interestingly

found in the analysis of AHS 2001 survey that status could not be disentangled from security when comparing upscale homeowner and downscale rental gated communities. Their findings suggest that gated renters were as much concerned about status and appearance as gated homeowners. Similar findings for research on GCs in Latin America such as Texeira de Andrade's research for Belo Horizonte's GCs show that residents of middle- and low-income groups seek gating predominantly for status rather than for security (Irazábal, 2006: 93).

2.1.3 Symbolization of Lifestyle

Lifestyle in gated communities is symbolized through special amenities present within the gated neighbourhood – for example, the presence of a golf course or a lake as recreational amenities or a natural feature such as a forest or urban reserve as aesthetic amenities. Neighbourhoods not symbolizing lifestyle were, of course, devoid of such amenities. Such amenities were present prior to the emergence of gated communities. What has changed is that, like prestige, lifestyle was packaged and sold via associating an amenity with an enclosed neighbourhood thus diminishing and restricting access to such amenities by free-riders.

The symbolization of lifestyle can be interpreted as a shift from the simple need for housing as a shelter to housing that includes 'lifestyle' options bundled within the neighbourhood (Kenna & Dunn, 2009). This shift in the meaning of housing is a global trend that is reflected in marketing strategies that idealize lifestyle options through the use of images of golf courses, tennis courts, and other leisure activities. The following diagram summarizes the three main reasons for the emergence of gated communities and the images associated with each.

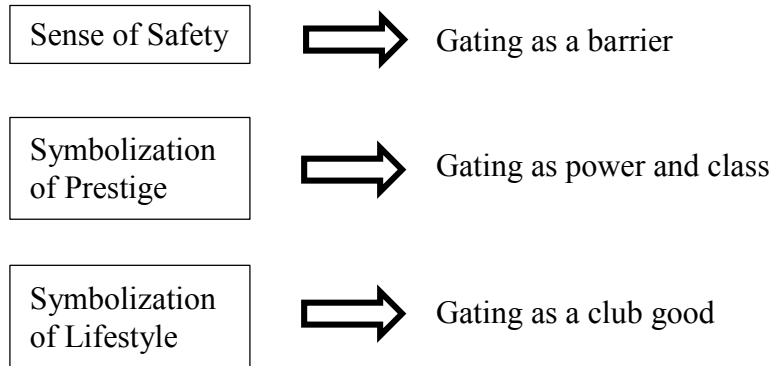


Figure 2.2. Images associated with three main reasons for emergence of GCs

A recent trend is the combination of lifestyle gated community and ecological perspectives to produce the gated eco-estate (Durlington, 2006). It is argued that the addition of ecological concerns is subsumed within a larger trend of eco-tourism and removes any emphasis on security or fear of crime and rather shifts the focus towards environmental consciousness as well as effectuating a shift in discourse away from segregation to more positive perspectives towards GCs.

2.1.4 Place-Identity and Self-Actualization

Neighbourhoods embedded non-differentially in a grid seem to not satisfy the need to identify with one’s neighbourhood as a place. Though, as Fava observed, the attraction of suburban neighbourhoods for young middle-class families emanated from the search for neighborliness and community, suburbs eventually became associated rather with individualism and a decline of place identity (Walks, 2013). Decline in sense of community in post-war suburbs became a concern of citizens that prompted developers to create gated communities (Wilson-Doenges, 2000). Identifying with one’s neighbourhood remains necessary in order to encourage neighborliness and community especially for the ecological suburban concentration of families with children.

Realizing the importance of transforming a neighbourhood into a place in its own right became increasingly necessary especially in the wake of a neo-liberal economic shift and the concomitant trend of privatization of space. In other words, the privatization of residential space occurred in succession to the privatization of public space and contributed to the transformation of neighbourhoods into more well-defined places to which residents could better identify.

Defining a neighbourhood with a boundary does not automatically lead to attaching a place-making function to the boundary. The mass production of gated communities, for instance, in Miami, have led to the loss of the place-making function usually attributed to gates. This loss of place-making was due to the similarity between gated communities and due to the lack of possibilities for outdoor activities and social interaction (Pufe, 2009).

The importance of individuation of gated neighbourhoods is emphasized by Pufe's research findings. From a philosophical point of view, individuation is not merely achieved through external individuation by means of position in space and state or development in time (cf. Schopenhauer) but also involves an internal principle of individuation (cf. Leibniz). Applied to the case of gated neighbourhoods, this would translate to attention to the physical environment (external individuation) and social environment (internal individuation). The importance of the social environment as internal individuation has already been suggested by researchers such as Temkin & Rohe (1998) with their notion of '**socio-cultural milieu**' that acts to impede the cycle of neighbourhood decline.

Townshend (2002) argues that the spatial search for the experience of community especially by seniors in their third-age or phase of their life is a reason for the emergence of age-segregated gated communities or retirement villages which, by virtue of defining a place-based

relatively homogeneous community, partially contribute to the self-actualization of that demographic cohort.

Place-identity, in the case of private neighbourhoods, should not be seen as detached from the covenants, conditions, and restrictions (CC&Rs) that ensure compliance of all residents. Kirby (2008: 85) argues that such private neighbourhoods fill the need of households who do not have “an organic sense of neighbourhood or community”. Those households depend on CC&Rs, that is, a set of mechanistic rules, in order to ensure a functioning community.

Neither should place-identity be seen as detached from the symbolism of the built environment and the relatively homogeneous social environment. Geniş (2007: 792) notes that the purpose of the symbolic imaginaries inherent in the built environment was to forge a new definition of authenticity and identity of ‘real Istanbulites’ as opposed to the cultural heterogeneity and cultural fragmentation and decay of the city proper.

2.1.5 Sense of Interiority

A psychological argument that has been cursorily referred to in the literature on GCs is the issue of interiority. Pow (2009a) links the notion of privacy in GCs to the notion of interiority, or sense of interiority. Pow argues that lack of neighborliness in GCs can be attributed to the conceptualization of increased privacy as interiority; the intention is to depict the gating experience as an intension of nested enclosures. The reclusion of residents shields their private life; an attitude that Pow contrasts with the ‘open-door’ policy of old neighbourhoods.

Although Pow empirically interprets interiority in regards to the prevalence of interior modelling and interior design of housing units in Shanghai, it may also be interpreted from an alternative psychological perspective in reference to Patrick Geddes’ model of the Notation of Life (Welter, 2002). According to Geddes’ model, the development of the self passes through a

sequence of four phases consisting of: (1) a simple exteriority that refers to practical daily life; (2) a simple interiority that refers to critical thinking; (3) a deep interiority that refers to the personal and collective unconscious; and finally (4) an effective exteriority that refers to the phase of self-realization. The four phases are translated by Geddes into four phases of development of the city: the city-as-town, the city-as-university, the city-as-monastery, and the city as full-fledged-city.

Applying Geddes' model to GCs, the third phase of deep interiority and the corresponding image of city-as-monastery best fits a general conceptualization of GCs as enclosed and secluded developments with a general emphasis on interiority.

2.2 Morphological Arguments

2.2.1 Historical

Using walls and gates to restrict access is not a new idea concomitant to the emergence of gated communities. Some cities have been encircled with walls and accessed only through gates since their morphogenesis and subsequent growth in the form of nested walls. Traces of walled fortifications are still present in many cities especially in Europe, the Middle East, Latin America and East Asia. North America also has examples of cities that were once walled; for example, Montreal and Quebec cities. Cities used walls as a defensive strategy to fend off enemies and to separate city from countryside. The walling off of residential neighbourhoods via physical barriers was not common, though, except in the case of work unit compounds in China, residential neighbourhoods in India, and exclusive neighbourhoods in England and France.

Nevertheless, researchers probing the reasons behind the emergence of gating of neighbourhoods have looked back at history to see whether there are links or historical continuities to the phenomenon of gating. Investigating heritage and vernacular landscape in

Southern California, Fu (2009) traced how Spanish-Colonial Revival is a precedent for gated enclaves in California and concluded that collective memory interacts with the real landscape in producing the gated enclaves. Wu (2005) in China and Sheinbaum (2008) in Mexico, each concluded that the phenomenon of neighbourhood gating is different and carries new meaning. For Sheinbaum, despite a continuation of inherited segregation patterns, recent gating is different due to segregation of commercial activities within GCs. For Wu, gating has changed as a response to a post-Fordist market transition as well as a response to post-modern diversity. Marcuse (1997) would agree about the distinctiveness of neighbourhood gating in spite of incorporating old processes and justifies their appellation as post-Fordist residential developments. Coy & Pöhler (2002) posit that new GCs are different from older forms of exclusive housing that propagated Latin American segregation in terms of larger size of projects facilitated by neoliberalism and deregulation as well as in the more sophisticated security measures and degree of fortification.

Rather than investigating links or continuities, researchers such as Judd (1995) have compared and contrasted the walled medieval city with enclosed residential developments. Judd draws similarities in terms of the exclusive function of walls in both. Perhaps it can be argued that the scales of development are different to merit a comparison as one refers to the city-scale while the other to the neighbourhood-scale. The difference is not sheer size but also of differentiation of enclosed land uses within the walls and degree of internal complexity as well as the nature of external threat. Notwithstanding such non-negligible differences, the walls of residential developments have evoked a reminiscence of fortified medieval walls. In a similar fashion, it could be argued that the impermeability of neighbourhoods are reminiscent of the winding and irregular pattern of medieval streets with a major difference of the absence, or lower-

key, in the use of the element of surprise in the urban experience of the neighbourhood via church towers or distinctive urban elements (Sitte, 1945).

Advancing an alternative historical perspective, Le Goix (2006) traces the emergence of contemporary GCs in Paris to its 19th c. first suburbs to argue that a significant number of contemporary GCs have their physical walls and gates coinciding with boundaries of pre-existing gated elite estates or blue-collar gated developments, also bounded by fences or walls. In some cases, the original walls were retained in the new development, a phenomenon Le Goix names ‘resilient enclosures’⁸.

2.2.2 Territorial-Ideological

Another morphological argument is put forward by Charmes (2010). Examining the road network layout of neighbourhoods, the research by Charmes places gated neighbourhoods along a continuum of an ‘**exclusionary residential territorialisation**’ that initiated with Clarence Stein’s Neighbourhood Concept for Radburn in his use of cul-de-sacs and superblocks and which then evolved to environmental areas and later into the garden suburbs and, finally, into gated communities. The outcome of an aggressive physical expression to territorialisation is continued fragmentation of urban and periurban space (Prajoux, 2005; Coy, 2006).

Territorialisation can be achieved by other subtle means without the use of physical walls and gates. Flusty has categorized the type of spaces that would result from such subtle means of territorialisation and exclusion. Bauman (1998: 20) reminds us of Steven Flusty’s typology of spaces: interdictory space (filtering users), slippery space (space that cannot be reached), prickly

⁸ The notion of historical trace in the urban landscape raised by Le Goix is echoed in the notion of ‘engrams’ raised by R. Semon in explaining biological morphogenesis. Engrams refer to the physiological traces left by sensory perceptions and emphasize the role of memory in morphogenetic processes (Cassirer, 1944: 50).

space (space that cannot be comfortably occupied), and jittery space (space that is constantly observed); types of spaces that, as Bauman notes, serve elite residents but disintegrate space for outsiders.

Le Goix (2006) expands the territorial stream leading to gating by including three other streams that intricately and progressively converged to culminate in the recent emergence of gated communities. One stream is that of development in the application of Newman's concept of defensible space towards the creation of defended space. The second stream traces the development of restrictive covenants and private governance that culminated in Home Owner Associations. The third stream is the development of maintaining exclusivity and community through Buchanan's notion of the club. Put differently, Le Goix situates and anchors the emergence of GCs within a convergence of the historical development of four inter-related streams and as such Le Goix posits that GCs subscribe to the same underlying logic of suburban developments.

2.2.3 Developmental-Organic

A third morphological argument may be put forward. It is based on organic theories of urban development. Rather than being based on typological morphologies such as those applied by Aldo Rossi or based on morphological units such as those defined by Conzen, developmental morphologies are better understood as being based on what Sattler calls 'process morphology' (Barabé & Brunet, 1993: 5). Process morphology assumes that the dynamics of (urban) form itself is responsible for the emergence of new forms without necessarily depending on an underlying 'genetic' code (e.g. typology or morphological unit).

The duality between repetitive-unique elements and continuous-discontinuous elements within an urban mass put forward by Eduardo Lozano could be applicable under the paradigm of

process morphology. Gated neighbourhoods, because of the presence of physical walls, present a discontinuity in the urban landscape as well as present a unique packaged environment amid a relatively ‘amorphous’ and monotonous suburban development. For Lozano, contrasting urban elements define urban growth dynamics.

In a parallel way, the emergence of gated residential developments seems to happen, especially in the case of Canadian metropolises, without any explicit guidelines. Gated neighbourhoods are generally not mandatory for new neighbourhood construction except in some places such as for example in China and Singapore. Thus, gated neighbourhoods may be subsumed under what Holcombe (2012) calls ‘nomocratic’ planning, i.e. the work of the invisible hand of market forces as opposed to ‘teleocratic’ planning, i.e. top-down. Put succinctly, gated residential developments are hypothesized as an ‘emergence’.

A diametrically opposed thesis is that by Judd (1995: 146). His thesis is that gated residential enclosures have replaced organic processes that produced ‘organic’ environments such as the residential community and, for the case of commercial activity, enclosed malls have replaced the ‘organic’ marketplace. Judd argues that organic processes have been overtaken by hierarchical control of corporate bureaucracies and developers. The outcome is not only the creation of a purified and simulated environment but also, more importantly, an isolated and secluded one that is more often than not strikingly similar.

Gated neighbourhoods are in one sense an organic outcome of physical morphology and ‘invisible hand’ dynamics and in another sense an impedance to, or negation of, organic development by virtue / vice of their artificial environment.

2.2.3.1 Systems Theory

Closely related to the developmental-organic argument is systems theory. Notions of dynamic equilibrium, feedback loops, and emergence come to the forefront. System theory was applied in the study of gated communities by Karina Landman (2005) in South Africa. Landman's focus was set on feedback loops that are either mutually reinforcing or opposing. For instance, government efforts towards integration and equity with reduced spending on advantaged communities spurs wealthier areas to further privatize and fortify with increased exclusion of the poor. The outcome of both reinforcing and opposing loop types is paradoxically converged towards increased social and physical fragmentation of the urban environment.

Landman argues that the unintended consequences and changes in the state of the system due to the action of reinforcing loops eventually leads to the weakening of the positive feedback loop with an outcome that is similar to the action of opposing loops. This reasoning recalls notions used in developmental-organic arguments of 'channeling' or Waddington's notion of '**morphogenetic landscapes**' where finalities are path-*in*dependent. The social sustainability that Landman advocates becomes a far-fetched reality in the face of a persistent fragmentation dynamic and outcome. Hodkinson (2012: 508) describes such persistent fragmentation as: "enclosure is a logical, evolutionary or continuous feature of market societies".

It is questionable, though, if the system paradigm is appropriate to represent the dynamics of the city. Systems theory assumes a hierarchical relation between parts of the system in such a way that interrelations between parts at different levels in the hierarchy form feedback loops and are responsible for the phenomenon of emergence. The increasingly fragmented city may be better represented by a 'heterarchical' rather than a hierarchical system because parts or fragments in a city are heterogeneous and may not necessarily form 'cross-system' links. A term

in the literature that expresses this fragmentation is Graham & Marvin's '**splintering urbanism**'. Another term used in the literature is '**assemblages**' (Boudon, 2000: 138). The city is presented more accurately as a mosaic of interdependent parts rather than interrelated parts. In other words, links between government-spending on disadvantaged areas may not necessarily, as Landman assumes, influence or reinforce decisions of the wealthy to form private enclaves.

Nevertheless, the thesis by Landman is partially supported by the research findings of Gallegos (2009) for the border city of Tijuana, Mexico. Gallegos found that the real estate construction boom is manifested in the rapid expansion of the city with the growth of GCs and at the same time accompanied by densification of the urban core. Gallegos infers that the densification of the urban core is *systemically* related to the construction of GCs.

2.2.3.2 Chaos Theory

According to chaos theory, gated communities emerged as a counterbalance and response to the social and physical chaos outside the gates. This is perhaps exemplified in the case of Latin American gated communities that are surrounded by squatter settlements. Giglia (2008) emphasizes that the emergence of GCs in Mexico is not only a matter of security but also a reaction to the urban disorder in the use, regulation and control of public space. The relatively ideal environment of the gated community is contrasted with the surrounding relatively disorganized environment. Chaos theory postulates the presence of strong attractors which act as organizing centers for a chaotic mass (Morin, 1982). Such attractors have been also referred to alternatively as implicit centres that materialize through a process of unfolding (Alexander, 2002). Gated communities are hypothesized to be positioned in the vicinity of attractor locations and thus have a relatively higher stability and organization than locations further away from such attractors characterized by a relatively unstable field. Chaos theory does not explain the *a priori*

existence of the attractors but might offer some reasoning behind the locational distribution of gated communities.

The application of chaos theory to gated communities can be read in the work of Diken (2004). Diken portrays the postmodern situation as one where chaos and insecurity abound. Depicting the postmodern condition as disordered and chaotic was also expressed in the work of Bauman (2001b: 35). Both authors observe that the increasing insecurity and unstable condition of the urban poor is countered by the emergence of the secure environment of gated communities. For Diken, the chaos of the outside, on one hand, necessitates the presence of an extreme form of inclusion realized by gated communities, on the other. Diken uses the metaphor of the ‘**camp**’ to express both forms of extreme inclusion and extreme exclusion. The walls of gated communities form simultaneously a boundary for the enclosed inside and an ‘inverted’, so to speak, boundary for those outside. The mutual counteraction or mutual reinforcement of the two forms of development, the disordered and the ordered, is a thesis previously stated by Marcuse (1997).

2.3 Moral Argument

The moral argument for gated neighbourhoods was made by Pow (2007 and 2009a) who studied gated communities in Shanghai. According to Pow, there are instrumental and intrinsic judgements of gated communities. Instrumental judgements involve the creation of a safe environment for rearing children, and a purified environment that excludes the outside world as well as ensures a maintained environment that preserves property values. The dimensions of instrumental judgement are thus: nature (biological need and health), truth (leading an authentic life away from public interference), and justice (eliminating the free-rider problem).

Instrumental judgements are essentially teleological arguments focusing on the goals of creating such environment(s) in gated communities, whereas intrinsic judgements are based on a

morality of good and evil. The good results from a twofold process: first, the good that arises from a greater awareness and second, the good that arises from a ‘plenitudinous reality’, i.e. a diverse and complex environment. From this vantage point, Pow argues that gated communities would be evaluated intrinsically as a source of evil rather than a source of good as they fail on both accounts of not providing a heightened awareness of reality because they shield individuals in such purified environments from a diverse reality outside the gates.

What Pow is referring to is perhaps captured by Bickford’s (2000) notion of ‘**bounded space**’, i.e. the ‘orchestration’ of who and what one perceives in such a manner that ‘the strange other’ vanishes from sight. A stigmatizing of the horizon of one’s world in the bounded space of the ‘similar other’ shapes who are considered as fellow citizens. The effect of bounded space is assumed to become more pronounced for children raised in gated communities as they could develop ‘social paranoia’ towards ‘different’ others (Low, 2001). In other words, according to Bickford, the simple act of physically or legally enclosing / fencing-off formerly public space involves the creation of ‘purified’ versions, sustained by institutional practices and policies, of residential space and public space that enact deep forms of segregation. Alluding to such ‘purified’ environments, Coy & Pöhler (2002: 368) hypothesize the possibility of negative feelings caused by “imprisonment in an ideal world”.

Pow’s argument is not necessarily absolutely valid because it assumes that the diversity outside the gates offers a ‘better / good’ reality due to its complexity. However, if the argument is extended to evaluate such an outside, it could be well argued that the diversity and complexity of that outside is not absolute and there could exist, in principle, a reality that is even more diverse or complex. Fainstein’s (2005) observation that the effect of social diversity depends on context balances Pow’s argument for absolute diversity. For Fainstein, a model of the socially just city

should be based on Martha Nussbaum's concept of multiple 'capacities' / capabilities rather than, as generally assumed by planners, on social 'diversity'.

Equating good to the real or reality raises more questions especially when evaluating particular environments such as the case of an educational institution where the learning environment or learning experience could be readily described as 'gated' as it presents in many respects a purified environment. If the same reasoning is further applied to the subject material that is taught, it would also be deemed not 'good' given that, in Husserlian terms, the 'world of science' is essentially a simplification or abstraction of the complex 'life-world' or plenum (Ruggerone, 2013). Another example would be the creation of a simulated environment such as the 'disneyfication' of a main street. Extending the example further, if architecture is defined by Susan Langer as the illusion of the creation of an ethnic domain, architecture would fail to be categorized as good because it is not real 'enough'.

Although Pow acknowledges that gated communities are a constituent of overall urban form and contribute to the total spectrum of diversity for the outside, gated communities remain non-transparent, as he argues, and therefore obscure the 'seeing through' (a condition for accessing reality) for both those within and outside the gates (Pow, 2009a). Here Pow assumes that the outside reality is intrinsically transparent which may not necessarily be the case. The 'huis clos' or behind closed doors of, for instance, judicial and governmental administrative institutions could be a case in point for a largely non-transparent outside. Examples of a non-transparent outside could also be given for popular media that obscures, or partially covers, certain events.

Bounded-ness and non-transparency, referring respectively to points of view from within and from without the gates, as conditions for 'not' accessing, or hindering access to, reality is not

absolutely convincing. In the first case, the degree of social diversity needed to counter boundedness for residents within would always remain relative, and, similarly, in the second case, the degree of transparency would also always remain relative.

Nevertheless, from a symbolic and cultural point of view, enclosed residential enclaves symbolize the construction of moral geographies of exclusion (Pow, 2009b). The cultural and moral superiority of gated residents is symbolized in the orderly built environment as well as the body care and health of residents; i.e. constructing a layer of symbolic communication in a Bourdieuan sense. Residents on the other side of the gate or boundary are considered less civilized and pose general discomfort to the more civilized residents within the enclosure (Pow, 2009a). Descriptions of the nuisances and discomfort brought about by the less civilized abound in the literature on GCs and may be summarized by the word ‘vulgar’ (for example, Geniş, 2007: 785).

The moral argument puts into spotlight the disparate cultural differences between urban and rural or civilized and less civilized. Gating, however, has also been employed to separate different cultures not necessarily from a moral perspective but from a perspective of difference in values and lifestyles that otherwise would produce potential conflict. This has been shown in the research of Glasze & Alkhayyal (2002: 326) for the case of GCs for foreign professionals in Saudi Arabia.

2.4 Economic argument

2.4.1 Property Value

One argument put forward by Lee & Webster (2006) is that the emergence of boundaries on urban land is the result of land value appreciation. The explanation is based on capitalist gain to capitalize on the value of land through a process of land subdivision. They argue that ‘common’ public land due to rising competition and increase of demand for consumption (what they call

‘congestion’) will inevitably lead to its subdivision into ‘smaller’ publics / club goods for the benefit of certain groups. Clear boundaries demarcate the subdivisions and decrease the transaction costs for real estate developers. It is assumed that such a process would decrease congestion.

To carry the argument further, land value appreciation has also necessitated the need for higher density development. The success for the proliferation of Common-Interest Developments CIDs is argued by Judd (1995: 156) to have persisted due to its ability to re-cast the same principle of income segregation previously utilized via low-density suburban development into a new application in the form of CIDs. Segregation was achieved in this new version of the suburb through covenants, contracts and restrictions (CC&Rs).

Another economic argument is based on the cyclic nature of capitalism (cf. Harvey, 2009). Gated neighbourhoods, termed ‘vulgaria’ by Knox, serve as a re-enchantment for particular target groups in response to disenchantment with Fordist ‘subtopias’; a disenchantment that occurred because of the intrusion of the automobile and Fordist standardized subdivision into the once-enchanted suburbia that were modeled after Ebenezer Howard’s garden city ideal (Knox, 2005). The re-enchantment is realized via packaging, theming, simulation, and gating. From a different perspective but also referring to the cyclic nature of economic recessions of capitalism, Low (2008: 53) argues that the erection of walls is linked to middle class ‘status anxiety’ from downward social mobility. Walls act as a re-assurance of preservation of property values for such residents.

A third argument is to preserve property values and shield the neighbourhood from encroachment of undesired services or land uses that would diminish property values for owners in case of selling their property in the future. Neighbourhood amenities are also ‘shielded’ from

use by non-residents in order to decrease free-riders and misuse / crowding of such amenities (Le Goix, 2006; Pow, 2009a: 143). In the case of middle-class subsequently enclosed neighbourhoods, offsetting the effect of free-riders on the use of neighbourhood amenities such as a neighbourhood park was achieved by informal erection of gates that were subsequently formalized by authorities (Plöger, 2005).

2.4.2 Club Goods and the Gating Machine

Buchanan's Club Goods Theory formulated in 1965 was applied to gated neighbourhoods first by Chris Webster (2001) and also by Manzi and Smith-Bowers (2006). This approach is based on institutional economics theory. The Club Goods theory explains the emergence and proliferation of gated neighbourhoods as a result of an institutional 'gating machine'. Developers profit by lowering their investment risks due to maintenance of the quality of a gated neighbourhood development by a self-administered governance structure. This allows the developers to invest in projects of a larger scale while also providing the common facilities that attract potential buyers. Local governments encourage this form of development because it transfers the responsibility for providing services and infrastructure to the residents. Moreover, this development raises property taxes collected by the local government (Glasze, 2006: 37).

As Roitman (2010) points out in her research, encouraging this form of development by local government does not necessarily mean that local officials agree with the values behind such developments. The role of local government is rather expressed as shifting from 'controller' to 'enabler' of the private sector.

According to Glasze, the Club Goods theory falls short of explaining the regional spread of gated neighbourhoods in many parts of the world and their absence in other parts. To reach an explanation, Glasze presents a model which extends the Club Goods theory to include economic,

political and social changes due to globalization as well as including the local context (shaped by actors and institutions) that renders private neighbourhoods potentially desirable. Glasze emphasizes both the processes of globalization of capital and transnational economic and symbolic networks as well as the specificity of the symbolism and meaning of this form of residential development contingent upon local context. As Geniş (2007: 778) argues, the transition to, or materialization of, dynamics of global market forces needed to be facilitated by local state actors through enabling large capitalists' entry into the housing sector and through public finance support, public investment in infrastructure, and new land use legislations. At the same time, local symbolism and socio-cultural sensibilities of GCs are furnished by developers, planners and architects in order to appeal to local residents.

The 'gating machine' dynamic briefly described above seems a win-win situation to all three parties: local government municipalities, developers, and residents desiring such gated developments. Few empirical studies have proved that a gating machine dynamic is in place although many empirical studies assume that a gating machine dynamic is a favorable outcome. Supporting empirical evidence for a gating machine dynamic have been presented in the research by Suárez-Carrasquillo (2009) in Guaynabo, Puerto Rico. Additional supporting evidence is also provided in the research by Pow (2009c) for GCs in Singapore, albeit described in a positive sense of private-public partnership rather than the negative sense of a gating machine scheme. Pow emphasizes that gating is part-and-parcel of the urban policy development in the land-scarce Singapore where the government is a key-player benefiting from the sale of land to developers. However, at the same time, the government is providing quality public housing, a strategy called 'politics of quality', as well as providing a new type of gated development called '**executive gating**' which is essentially a subsidized gated development by the government for aspiring

middle-class Singaporean families who are looking for access to such a real estate product. After a 10-year period, the gated development is privatized and can then be sold at market prices. Pow observes that such measures reduce the social and spatial divisiveness of GC landscapes in Singapore.

Meanwhile, contrary evidence to the hypothesis of a gating machine has been found in an empirical study conducted by Boyd (2005) for explaining the emergence of gated communities in the St. Louis, Missouri region. As Boyd explains, local officials, banking executives, and realtors, after the construction of one or two gated communities, became unenthusiastic to pursue the gating project. This was due to accessibility issues for emergency vehicles and, more significantly, to low sales for housing units within gated communities. The most relevant thesis that Boyd makes is that the marketing of semi- or quasi-gated developments as a fully gated development has become a trend for developers in St. Louis who are by-passing financial expenses for privatizing streets while at the same time reaping a premium from future residents interested in living in a gated development. It is important to note, as Boyd points out, that the cost of housing construction for the developer does not differ whether the residential development is gated or non-gated. What Boyd is alluding to is that quasi-gated developments may be a viable business model compared to the unappealing gated developments.

2.4.3 Functional Integration

The functional integration argument applies to the emergence of GCs in Latin America rather than North America. In Latin America, GCs have been increasingly situated among low-income neighbourhoods. This phenomenon of stark contrast and proximity between social groups is conceived as an uplifting to the low-income area in terms of services, infrastructure, and local tax-base as well as establishing a sort of functional integration between high-income gated and

low-income non-gated residents. In this case, GCs provide employment opportunities for low-income residents. The research by Salcedo & Torres (2004) in Santiago, Chile evidences this type of functional integration and shows that the wealthy are not disturbed due to their proximity to poor neighbourhoods. Improving the quality of life for low-income residents within the same development, but that were still physically separated, was achieved by the Silvertree GC in South Africa, receiving an award in recognition (Lemanski, 2006). In the GC of Barra da Tijuca in Rio de Janeiro, the functional integration or co-existence spurred by the GCs job market has resulted in the proliferation of new squatter settlements surrounding the GC (Coy & Pöhler, 2002: 361). A study by Asiedu & Arku (2009) of three communities in Accra, Ghana show considerable interaction between residents inside and outside of the GC mainly at the economic level.

Although the example of Chile is contrary to the general bias of seeing GCs as instruments of social segregation, the example of South Africa shows that despite de-racialization of the mixed development, low-income residents felt socially segregated from high-income residents resulting in diminishing the sense of belonging of low-income residents who were originally present before the advent of the GC. The social segregation experience by low-income residents was induced by three layers of spatial exclusion devices: physical walls and restricted access to the GC, limited access to the low-income neighbourhood with indirect access to shared shopping services, and shielding the low-income neighbourhood out of sight from vantage points within the high-income neighbourhood.

2.5 Political Argument

Grant (2008) argues that the proliferation of GCs within a relatively safe context and a general level of security in Western nations, particularly, Canada, is due to a neoliberal political

economic philosophy that emphasizes property rights and entrepreneurial freedom in parallel with a gradual retrenchment of state responsibilities and local provision of services.

2.5.1 Fiscal Transfer

The decisive factor according to Csefalvay (2011) for the rise of gated residential developments, especially in North America, is public choice theory and fiscal federalism theory. Gated communities, contrary to the previous economic arguments, are not seen as a rational economic choice but rather as a politically-driven process. The objective of this process is achieving fiscal transfer and fiscal equivalence between local municipalities and gated residential developments through micro-urban governance.

Huong & Sajor (2010) reveal the close relationship characterized by cooperation, partnership, and complementarity between local authorities and homeowner associations as a new model of micro-neighbourhood governance in Vietnam. The partnership, though, is not from equal standing in terms of power clout, organization or experience. In the U.S. context, Webster observes that homeowner associations suffer from the same administrative problems as municipal governments with a disadvantage of not having administrative experience to effectively resolve the problems. This situation has resulted in dissatisfaction of resident homeowners with the contracts and codes they signed into. The literature and empirical evidence on gated communities indicate that a few interested residents are deeply involved in such micro-governance activities while others are totally uninvolved with the result that local democracy is jeopardized; a democracy that Low, Donovan, & Giesecking (2012) call 'shoestring democracy'.

2.5.2 Post-Socialist Reaction

Other political arguments have been advanced in the literature. For example, Polanska (2010) explains the emergence of GCs in post-communist Poland as a reaction, in terms of scale

of development and housing types, to its communist past. As Polanska notes, this understanding of GCs should be situated within the wider context of the Polish housing market and spatial planning practises and available resources at the municipal level. The general argument is that the undesirability of communist housing has given way to more desirable and exclusive residential enclaves. Most importantly, the specificity of GCs in Poland is the result of political change, demand for better housing, and weakness of municipal government vis-à-vis housing developers.

Polanska's thesis seems generalizable for other post-socialist European cities examined by Tsenkova (2009). Tsenkova highlights the socialist legacy that has differentially left its imprints on the housing markets in post-socialist Europe. Tsenkova argues that divergences had existed between southeastern European cities within an overarching 'socialist housing model'; divergences accruing mainly from the shift in balance between the public and private sectors as well as from the incremental and disjointed policy decision-making processes which have accordingly affected individual cities' path of transformation from a centrally planned to a market-based economy. Particularly, tenure structure has changed differentially with preferential emphasis on private ownership as well as diversity in housing provision and the emergence of differential housing submarkets such as condominiums and luxury gated communities in Sofia, Belgrade, and Chisinau. The overall transition is characterized as sporadic, non-uniform and not smooth in terms of role of the state and institutions due, on one hand, to inherent rigidities in the housing system and, on the other, due to contextual politico-economic factors and a greater role played by the market (Tsenkova, 2003: 197). The deep imprint of the socialist housing legacy continues to be a factor inhibiting the formation of a really mature, market-based delivery system (Tsenkova, 2009: 210).

Tsenkova's main thesis and observations for the pace and quality of transition are not only applicable to housing in general but seem also applicable to the type of gated communities in post-socialist European countries such as Bulgaria. The research by Stoyanov & Frantz (2006) examining GCs in Bulgaria show that the overall size and quality of GCs do not parallel their U.S. counterparts and the reason given, echoing Tsenkova, is tied to Bulgaria's socialist past. Stoyanov & Frantz accordingly argue that though motivations to reside in GCs revolve around concerns of security and prestige, the specific moderate outcome and pace of embracing GCs remains contingent upon political legacy and local factors.

2.5.3 Post-Apartheid Geographies

From a political point of view, the emergence of GCs in South Africa is conceived as a continuation of apartheid geographies and GCs have become a factor in the persistence of apartheid geographies, or forming rather "**a new apartheid**" (Lemanski, 2006: 400). Durlington (2006) seems to put forward a similar argument though he cautions against such a generalized 'racialized' view of GCs in South Africa. He argues that GCs should not be conceptualized as internally homogeneous but are rather internally differentiated behind the walls along racial and social lines. At the same time, however, he argues that white South Africans are forced to fortify behind gates in an increasingly insecure environment wrought about by inevitable crime. Despite wavering between the two arguments, Durlington agrees with Landman that GCs are a challenge to the realization of a non-racial society. A similar view is held by Tedong et al. (2014) in their study of gated residential developments in Malaysia. Tedong et al. conclude that GCs reinforce and reproduce structures of inequality, class and ethnicity in Malaysia.

2.6 Metaphors / Images of Gated Residential Developments

Several images and metaphors can be extracted from the above arguments for the emergence and development of gated communities. The following is a table summary that presents such images / metaphors.

Table 2.1. Metaphors / Images of Gated Residential Developments

Psychological	Sense of Safety	GCs as fortress
	Prestige	GCs as enclave
	Lifestyle	GCs as club good
	Place-Identity and Self Actualization	GCs as island/oasis
	Interiority	GCs as monastery
Morphological	Historical	GCs as microcosm
	Territorial-Ideological	GCs as garden city
	Developmental-Organic	GCs as unique
	System Theory	GCs as fragmentation
	Chaos Theory	GCs as order
Moral	Instrumental	GCs as authentic
	Intrinsic	GCs as paradise
Economic	Property Value	GCs as real estate
	Package / Thematic	GCs as 'vulgaria'
	Club Goods	GCs as exclusive clubs
Political	Integration	GCs as symbiosis
	Fiscal Federalism	GCs as micro-governance
	Post-communist	GCs as liberating
	Post-apartheid	GCs as apartheid geography

Reiterating the above perspectives, at least three ontological stances can be identified for gated communities: 1) resurgence; 2) divergence; and 3) emergence. The first, *resurgence*, was explored by researchers who viewed gated communities as a continuation of a historical trend of

gating medieval cities or residential quarters. Such researchers found that contemporary gating presented a new form of gating differentiated from mere resurgence of historical trends (cf. Sheinbaum; cf. Wu). The second, *divergence*, is the view of gated communities as an aspect of the postmodern situation that necessitates both the security behind the gates and insecurity outside (Diken, 2004). It is also a culmination of the phenomenon of gated-ness in the U.S. where social justice arguments are put forward by gated residents for their double taxation for services within and outside the gates (McKenzie, 2006).

The third, *emergence*, was explored by researchers who viewed gated communities as the next phase in the social (and physical) morphological outcome of suburban development. The overall conception is that gated communities are to suburbs what suburbs are to the city. In this view, gated communities present an attempt at reforming community within the suburbs, a reform to counteract suburbs that have increasingly become diversified in terms of socio-economic status and cultural ethic. Such a view is in line with Harris' (2004) tracing of suburban development in Canadian cities which went from suburban diversity to suburban uniformity and suburban conformity. In other words, gated communities, with rules, restrictive covenants, and architectural guidelines, are a continuation, albeit stricter version, of suburban conformity.

Returning to Fig. 2.1 and in light of the above, suburban development due to the emergence and proliferation of GCs has become physically, socially, and culturally fragmented (see following figure).

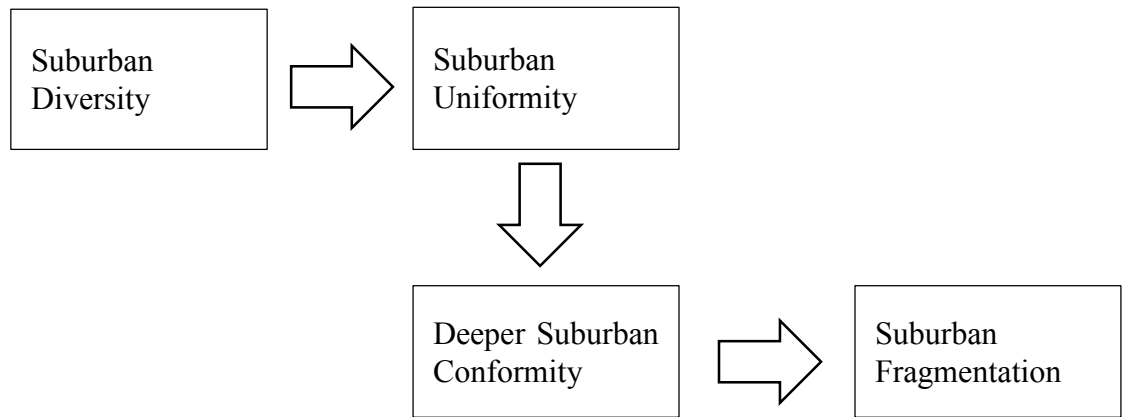


Figure 2.3. Suburban fragmentation as the outcome of gated residential development

SOICIAL SPACE AND PHYSICAL SPACE

3.1 A Dialectic Relation

It is opportune here, in light of the above, to examine the interrelation between physical space and social space. Gated communities are a recent emergent phenomenon that perhaps prompts such an examination between the social and the physical.

An ontological understanding of space seems necessary to begin with. What is ‘space’? Space is understood by many authors as a constitutive component of the social rather than merely a container, a background, or what Soja (1980) calls, contextual space. This had been the dominant view in geography in the 1970s (Massey, 1992). In other words, space is seen as a reflection or mapping of the social; and spatial organization as a form of social construction. Conversely, in the 1980s, the social was understood as constitutive of the spatial. In other words, space has an active role and, in turn, shapes the social. That is, there is a dialectic, and homologous, relation between the spatial and the social (Soja, 1980).

3.1.1 Soja

Soja (1980) roots the dynamics of this socio-spatial dialectic in the development of capitalism from a competitive industrial capitalism to a monopoly capitalism. The socio-spatial dialectic thus becomes a dynamic that parallels the shift from control over means of production or means of consumption to the interweaving and coalescing of control over both production and consumption; a dynamic that is behind the ‘expanded’, rather than simple, reproduction of capitalism and propelled by the increasing role of finance capital. Uneven geographical development at the regional as well as the urban scale is not merely an outcome of physical differentiation of space but is maintained and actively constructed by capitalism in order to ensure

its survival. Put differently, spatial structure, for Soja, should not be subordinated to social space but is, in effect, at par with the social, albeit not autonomous, in the reproduction of capitalist and class relations, i.e. a socio-spatial division.

Later, Soja (2010) strongly advocated understanding space as a trialectic of historicity, spatiality, and sociality. Evidently, Soja wants to include the dimension of time (historicity) when examining the relation between physical space (spatiality) and social space (sociality). Soja brings the social and the spatial on the same plane. Likewise, Massey (1992) argues for an equivalence of the spatial and the temporal such that neither space nor time is subordinate to, or pre-eminent to, the other; rather, the appropriate notion should be a coalescence, a 'space-time'⁹. Massey opposes Ernesto Laclau's conceptualization of space as a stasis and of time as dislocation, possibility, and freedom. For Massey, space carries within it the politics of power and thus she opposes the de-politicization of space as stasis or background.

When using the term physical space or spatiality, the above-mentioned authors usually mean spatial structure. The most widespread spatial structure manifested in cities is the core-periphery structure and is assumed to be generated via a capitalist mode of production (Soja, 1980). The core-periphery structure, in turn, is viewed in dialectic relation with the social and thus actively constructs it.

Walks (2013) views core-periphery as a process rather than a structure. Such a view offers a better understanding of the active role of spatial structure. As Walks explains, referring to

⁹ Philosophers have debated the relation between space and time especially regarding pre-eminence of one over the other, to even total negation of the other. For instance, for Bergson and Heidegger, time is being. For Spinoza, there is a dialectic relation between space and time. For Pradine, and Ledrut, space is a dimension of time. For Kant, Bachelard, Blondel, Neumann, Leibniz, and Cassirer, the relation between space and time is one of emergence.

Lefebvre, urban space results from a first- and second-order synthesis that could manifest similarly in the urban or the suburban. The first-order synthesis is a dialectic tension between centrality and dispersion whereas the second-order synthesis is a dialectic tension between difference and compartmentalization. This second-order dialectic is more pertinent in accounting for the emergence of private residential enclaves which are relatively homogeneous compared to the difference and heterogeneity of the urban core. Walks seeks to identify the underlying conceptual processes that work along an urbanism-suburbanism axis that, at the same time, need not lead to a singular association between suburbanism and the suburban or between urbanism and the urban. Rather, the dialectic tension between such processes may manifest elements of suburbanism in the urban or, alternatively, manifest elements of urbanism in the suburban.

3.1.2 Bourdieu

Bourdieu (1995: 12) defines social space as: “an invisible set of relationships which tends to retranslate itself, in a more or less direct manner, into physical space in the form of a definite distributional arrangement of agents and properties”.

At the most fundamental level, space, in a hierarchical society, is hierarchized and expresses social hierarchies (Bourdieu, 1995). According to Bourdieu, social hierarchy is based on two differentiating principles: economic capital and cultural capital. The sum total of both forms of capital determine one’s position in social space. This social position is translated into a space of “position takings” or stances by the mediation of the space of dispositions or habitus, i.e. the choices made by social agents in their domains of practices. The domains of practices here include the body: its moves and movements, its poses and postures. In other words, the body inscribes within it the structures of social order; structures which, when ‘appropriated’ into physical space, become incorporated structures and cognitive schemas, a symbolic language that

qualifies one's entry or exit, inclusion or exclusion. Saarinen (1948: 125) had previously expressed similar observations to Bourdieu's as: "Every new mental experience sets its traces in the bodily aspect [...]. In this manner his outer aspect develops into an integrality of characteristics which reflect his inner characteristics". Low (2009: 28) extends Bourdieu's notion of body to the notion of 'embodied space'. She argues that the 'bodily experience' or 'embodied reality' of gating experienced by gated residents should be complemented by the discourse of fear propagated by those same residents. For Low, this complementarity is the crux of explaining GCs as a socio-spatial configuration.

Bourdieu's amalgamation of both economic and cultural capital seems to resolve the age-old question of whether residential spatial distribution is a factor of economic competition or social choice and cultural values (cf. Feldman & Tilly, 1960). The 'economic competition' approach normalizes all social agents to one pursuit and that is a competition for location differentially valued from city centre to the periphery. The ability to pay determines one's physical location in space. The 'social choice' approach, on the other hand, differentiates between social agents in terms of their education and cultural values in choosing the location of their residence. The potency of Bourdieu's contribution resides in amalgamating both approaches in such a way that they are not mutually exclusive. For Bourdieu, 'economic competition' is one filtering layer and 'social values' is a second filtering layer.

Bourdieu's social differentiation parallels a physical differentiation whether by distance, proximity or vicinity. For Bourdieu this differentiation is applicable at all scales in such a way that large categorical differences, for example, suburbs versus downtown, are further divided into smaller categorical differences like, for example, high-income versus low-income suburbs or northern versus southern suburbs. When applied to gated enclaves, the social differentiation in

comparison to neighboring suburbs, by proximity rather than by distance, according to Bourdieu would translate into a cultural symbolism that further sets apart the gated residents from non-gated residents in various social contexts. Some caricaturists have illustrated this cultural difference as depicting school children coming from gated enclaves as figuratively surrounded by gates even on school campus. Low has alluded to one way in which kids raised in gated enclaves would differ from other kids and that is by harvesting with time a ‘social paranoia’. Bourdieu, definitely, was alluding to cultural difference rather than social fear. In other words, kids coming from the gated enclaves would tend to socialize together while excluding other kids. However, empirical research is needed to verify such a hypothesis on social exclusion in mixed social contexts. One empirical research in that direction which examines social mix in a neighbourhood and that applies aspects of Bourdieu’s theory of habitus is that by Watt (2009). Watt refers to Savage et al.’s notion of ‘**elective belonging**’ to describe middle-class private estate residents’ uneven spatial attachment and disaffiliated relationship to the proximal low-income part of the residential development. Residents of the private suburb segregated themselves symbolically and in their every day practices from 'local' people and places.

For Bourdieu, physical proximity would translate into less social difference (or more social equality) than would be the case of increasing physical distance. Gated communities in Latin America defy Bourdieu’s assumption about physical proximity where enclaves of affluence are situated within, and proximal to, low-income areas. Thus, a sharp change in social status is observed in Latin America rather than a gradient of social change contingent upon distance. Evidently, the geographic pattern of poverty and affluence plays a role in gating.

Despite scholarly efforts to understand the dialectic relation between physical space and social space, the nature of such relation remains ambiguous. Soja justifies the dialectic relation

through a homology between the physical and the social; a homology that depicts the dialectic relation more as a correlation between the two rather than, for example, a dialectic relation of possibility or a dialectic of opposition, or an assumption of lagging dynamics. Both the physical and the social are assumed to be completely ‘malleable’, mutually shaping each other, while explaining away any persistency or path dependency via the dynamic of an over-arching capitalism. Paradoxically, the socio-spatial dialectic may even develop to a more disjointed dynamic. Dear & Flusty (1998) extend the dynamic of global capitalism in producing a postmodern urbanism where the physical is a mosaic, a *keno capitalism* urban structure, totally disjointed from social structure.

3.1.3 Marcuse

In effect, the difference between the hyper-segregated ghetto, the exclusive suburb, the totalizing suburb, and the citadel, as Marcuse (1997) posits, does not consist in manifest physical boundaries such as walls, which may be implicit and effective through social patterns and legal restrictions. The difference does not consist in the nature of the periphery but what is the ‘center’ of such areas of concentration, i.e. the social, economic and political relationship to power and wealth.

The significance of Marcuse’s thesis is that it correlates the division of society into three socio-economic classes with a physical expression of that division into three corresponding types of residential urban developments. The stronger the divisions, the clearer the demarcations between the residential developments even without using manifest physical boundaries. A study by Hillier & Hulchanski (2010), *The Three Cities within Toronto*, confirms trends of the three-partite division of society and their spatial partitioning. Marcuse does not exclude social diversity

in these areas as long as the diversity, to use Bauman's terms, is a hybrid diversity (i.e. aesthetic) and not a balkanized diversity (i.e. tribal) (Bauman 2001b: 90 & 96).

It could be stated that walling for Marcuse, rather than simply acting as edge-defining boundaries or borders, act effectively as thresholds. The difference between boundary and threshold is explained by Boudon (2000: 149). A boundary is a separation between inside and outside with possibility of creating vacuums around the border. A threshold, on the other hand, is a division of inside and outside where the possibility of links between inside and outside is present.

The distinction between boundary and threshold is perhaps one of the ways that could put in a new light the malaise of some researchers, especially anthropologists, with gated communities. For instance, researchers such as Roitman (2007) emphasized the social segregation effects of *walls as boundary* in limiting social interaction between residents inside and outside the gates except for functional interaction or symbiosis, i.e. providing work opportunities. The social segregation that Roitman alludes to could well exist without physical expression and access restriction by means of walls and gates. Perhaps the real malaise of Roitman for such residential developments is walling that acts as an 'insurmountable' *threshold* for low-income residents to inhabit or reside in such places.

3.2 Social Consequences of Gating

The social consequences of gating have been generally characterized as negative, particularly in regards to raising issues of social injustice such as privatization of space, estrangement, and segregation. Some authors have found positive social consequences of gating particularly in regards to reducing the scale of segregation and promoting social interdependency as a form of social integration as well as encouraging neighbourhood cohesion and maintaining

social capital. The following is a review of positive consequences of gating followed by a review of negative consequences.

3.2.1 Social Capital

The concept of social capital has been the focus of policy and research interest since the early 1990s. Social capital is becoming a key word on the policy agenda of urban regeneration projects due to its appeal on two particular fronts: the first is a policy response to increasing social polarization as the gap between rich and poor is ever more widening; the second is a policy strategy towards sustainable community development. For urban planners, a better understanding of social capital resides in linking social capital to space. Part of the difficulty in pinpointing and defining social capital are ‘circular’ arguments that obfuscate its meaning (Smart, 2008). Moreover, social capital has an ephemeral quality (Middleton et al., 2005) and is considered an unintended consequence of social networks (Saegert, 2006).

Social capital can be simply conceived as a cumulative by-product of social interaction and as a quality of social networks. As a cumulative by-product of social interaction, it lends itself to the larger notions of social cohesion and social sustainability through the establishment of trust¹⁰, common norms, support and reciprocity. For Dale (2005), social capital is not only a cumulative by-product but also a necessary means of achieving reconciliation and sustainable community development.

The literature, in general, tends to portray social capital as a positive gain for communities in terms of the benefits achievable and facilitated through social capital such as social control,

¹⁰ Trust has been found to be controversial in the literature as the majority of authors, starting with Putnam, consider it to be constitutive of social capital while other authors, trying to stem fluid conceptions of social capital, see trust rather as an outcome of social capital - Dasgupta (2011).

economic growth, development of democracy, avoidance of violence as well as, recently, physical and mental health (Poortinga, 2012). Mohan & Mohan (2002) summarize the usefulness of social capital in three principal areas: explaining uneven development at various scales; understanding the comparative performance of governments; and accounting for spatial variations in health experience.

There may be a dark side to social capital. Smart & Hsu (2007) bring to light the sensitive balance between social capital and corruption, especially that both rely on networks of trust and obligation. They examine the concept of ‘guanxi’ in China, as a surrogate for social capital, and find that the sensitive balance between social capital and corruption is highly contingent on context and interpretation of others. Empirically, this dark side is manifested in the chaotic development of gated communities in Pilar, Buenos Aires which according to Libertun de Duren is the result of planning *à-la-carte* for developers’ needs in exchange for reciprocal favors to public authorities. The outcome is an impressive economic development that is realized at the expense of an increasingly dysfunctional municipality (Libertun de Duren, 2006: 322). The power of the elite in transforming social, cultural and symbolic capital into economic capital and political influence is expressed in Smart’s (2008) notion of ‘**economy of practices**’.

The contribution by Fernandez Kelly highlights the ‘toponomical’ character of social capital as contingent upon physical location and characteristics (Haynes & Hernandez, 2008) such that the debate on neighbourhood effects is reinstated¹¹. Linking social capital to place was

¹¹ Staber (2007) has highlighted the negligence of researchers to account for situational context as a factor affecting social capital. Although Staber focused on regional business clusters, parallels can be drawn for residential neighbourhoods. He points out five potential types of ‘context effects’ on social capital. These types are: restricted variability, curvilinear relationships, changing signs, changing causal direction, crossing level of analysis. Analogous types of context effects can be drawn for residential neighbourhoods. For example, Staber’s ‘restricted variability’ involves taking into consideration the temporal dimension of social capital. Thus, social capital should be

undertaken by Romig (2010). He argues that a higher sense of place is a pre-condition for forming a higher sense of community which is realized through the building of social capital, mostly bonding social capital. Interestingly, the sense of place alluded to by Romig refers more to the social environment rather than the physical landscape. The gated master-planned communities he studied were located in Phoenix where the landscape is generally plain. Residents have chosen to move into the gated communities looking more for a sense of community rather than prestige.

According to Sampson & Graif (2009: 1597), the link between social capital and place has been found to correlate with spatially proximal neighbourhoods. Thus, neighbourhoods that are structurally equivalent, from a social organization perspective, are found to be also geographically proximate. Nevertheless, the role of social capital in being a reason behind or consequence of, clustering phenomena is still vague (Staber, 2007).

GCs and private residential developments have been hypothesized to enhance the social capital of their residents. The enhancement to social capital is hypothesized to be achieved via cognitive and structural aspects of social capital (Grootaert & van Bastelaer, 2002: 343). This brings the concept of social capital close to that of cohesion. The cognitive aspect is concerned with intangible qualities such as common norms and values while the structural aspect is concerned with the physical presence of formal institutions and formal laws.

differentiated according to stages of its infancy and maturity. Also, 'curvilinear relationships' involve achieving a balanced 'mix' between the three dimensions of social capital: bonding, bridging and linking depending upon the size of the neighbourhood. Likewise, Staber's 'changing signs' considers each neighbourhood unique in determining which neighbourhood effect affects social capital the most in each case. Meanwhile, 'changing causal direction' involves avoiding symmetrical causation between neighbourhood effects and social capital; in other words, avoid assuming that a decrease in social capital should be associated with a decrease in the corresponding neighbourhood effect. Finally, 'crossing level of analysis' recognizes that it is easier to change the cognitive aspect rather than the structural aspect of social capital.

Williams & Pocock's (2010) research of two case studies in South Australia and Victoria show that gated master-planned residential estates (MPREs) contribute to building social capital through familiarity, availability and social bridging which affect residents' well-being and their capacity to participate in private and public life. Alvarez-Rivadulla's (2007) thesis is that GCs in Montevideo, Uruguay, similar to gentrification as defined by Butler & Robson, are an instrument of class reproduction, a way to cope with the uncertainty, and a way to maintain and improve cultural, economic and social capital. Alvarez-Rivadulla's thesis is also empirically more clearly evidenced in the GC of Kemer Country, Istanbul where prospective residents undergo a strict application process to be accepted as resident within the GC (Geniş, 2007: 784). This application process probes for, in addition to educational and occupational background, a level of cultural and social capital commensurate with the orientation and lifestyle of the GC residents in an attempt to preserve the quality of the place. Access to reside within the GC is facilitated by referrals from friends or co-workers living within the GC. As Geniş notes, this strategy became widely used in other upper-class GCs in Istanbul. The importance of Bourdieu's economic *and* cultural capital are being reinstated.

Interestingly, GCs have also been hypothesized to decrease one of social capital's main dimensions, namely, civic engagement. The decrease in civic engagement and responsibility is argued to result from the creation of alternative realities within the gates (Lemanski & Oldfield, 2009) in such a manner that gated residents experience "a weightless urban experience" (Atkinson & Blandy, 2005: 180). The 'weightlessness' is all the more appealing for residents of those GCs that are well-connected to city centres via freeways; thus, benefiting from services located within city centres while at the same time not carrying the weight of negative urban conditions (Irazábal, 2006). An equivalent term to 'alternative realities' used in the literature,

albeit with connotations of an element of the local, is '**spatial heteronomy**' (Monterescu, 2009). In other words, GCs achieve the difficult balance between being localized and being globalized; between sensitivity to local context and extensity of global and utopian symbolization.

In other words, by fortifying behind gates, gated residents are not only physically separating from the rest of the city but also civically separating in terms of partial fiscal autonomy of the gated affluent. This has led some researchers of the phenomena of GCs to refer to residents outside the gates as those who would qualify as 'real citizens'. This adds another layer to the shift from 'citizen' to 'consumer' alluded to by Nissen (2008) when discussing consequences of privatization of space.

Although the neighbourhoods studied by Sampson & Graif (2009) were not qualified as gated, their research establishes a link between neighbourhood social capital and the type of neighbourhood social organization. They propose a typology differentiating neighbourhoods according to four dimensions of social capital. If this typology is applied to the case of gated communities, the **Cosmopolitan Efficacy Cluster** would best categorize these communities. What is distinctive about communities in this cluster is their high collective efficacy, or strong shared expectations, but low local networks. The positional contacts by elites in these communities result in high level of linking social capital (i.e. vertical networks as defined by Forrest & Kearns, 2001).

3.2.2 Neighbourhood Cohesion

Buckner (1988) conceptualizes neighbourhood cohesion as a collective-level attribute, equivalent to 'sense of community', which has three dimensions: psychological sense of community PSOC, place-attachment, and social interaction / neighboring. Some authors, unlike Buckner, conceptualize neighbourhood cohesion and sense of community SOC as having

different meanings. According to Wilson-Doenges (2000), sense of community is simply defined as social interaction and networks which are not contingent upon the geographical place of a neighbourhood. In her research paper, she qualifies SOC as “sense of community within the gates”, a qualification which brings the term SOC closer to local social interaction rather than social networks non-contingent on geographical place.

On the other hand, Talen (2000: 174), like Buckner, conceptualizes sense of community as equivalent to neighbourhood cohesion and not merely restricted to social interaction. In conceptualizing sense of community, she reduces the three dimensions of neighbourhood cohesion to two: **affective** forms of community, encompassing PSOC and sense of place; and **interactive** forms of community, encompassing social interaction. Social interaction, for Talen, in turn, encompasses social networks and emotional support.

Callies et al. (2003: 183) observe that the term ‘sense of community’ is borrowed from the field of community psychology and is defined as: “the feeling an individual has about belonging to a group and involves the strength of the attachment people feel for their communities or neighbourhoods.” The use of the term ‘sense of community’ in this research will be used in the sense provided by Talen as well as Callies et al. and is assumed to be equivalent to neighbourhood cohesion; with the qualification that the two dimensions of sense of community are equivalent to the three dimensions of neighbourhood cohesion.

Sense of community seems to have evaded suburban neighbourhoods or, at least, is no longer a natural outcome of daily life but must be consciously produced and maintained (Callies et al., 2003). Gated communities are generally advertised to fill the gap of an increasingly absent sense of community and the term “gated *community*” has become widely used in the literature. The extent to which gated communities actually fulfil this need for sense of community is very

low as shown in empirical studies throughout the literature. Nevertheless, as Le Goix (2006) emphasizes, gating of a residential development defines a common territory imbued with shared values and identities as well as participates in the creation and ‘protection’ of a sense of community for the gated residents.

A pilot study by Blandy & Lister (2005: 293) show that expectations of neighborliness was high but only around half of the respondents moving into the GC were seeking a sense of community. The majority anticipated a low level of informal association with neighbors. The important role of leisure facilities was highlighted as a factor in contributing to a sense of community among residents. Another factor that is theoretically assumed to increase sense of community of residents is self-management and social control of the neighbourhood legalized by the role of the HOA. Such an assumption is based on residents’ participation as well as norms for standard behavior for ensuring uniformity of appearance and conformity of the residents. Regaining a sense of belonging, over and above the physical decay and pollution, within the urban environment is one of the reasons for residents seeking to live within GCs (Geniş, 2007: 784).

Given that this research examines the relation between gated-ness and neighbourhood cohesion, it may be fruitful to examine the concept of neighbourhood cohesion from the vantage point of commodification of community.

3.2.2.1 Commodification of Community

Since 1990s, people are being sold community as lifestyle, prestige and security, in the case of gated communities, as well as nostalgia, in the case of new urbanism (Grant, 2005: 46). The ‘social quality’ and ‘purchase power’ of those who buy into such communities are prime commercial targets in addition to their sensitivity to ‘aestheticization strategies’ (Raposo, 2006:

51). Gated communities seeks to create community through the homogeneity and commonality of their residents while New Urbanism seem to create community through architectural character and housing diversity (Grant, 2007: 493).

The premise underlying the construction of these types of communities is that of a physical determinism in shaping 'community' (Talen, 2000). The physical emphasis of lifestyle communities is on amenities such as golf courses and leisure amenities. The physical emphasis of prestige communities is aesthetics of the built environment and landscape. The physical emphasis of security communities are the walls and gates. Finally, the physical emphasis of neo-traditional neighbourhoods is architectural style and urban form.

Talen (2000: 178) argues against the stress of planners on physical determinism as a way to create and sustain community; planning such physically-contingent communities if ever successful will promote social homogeneity and exclusion. In addition, she argues, even if the physical environment enables and encourages social interaction, such effects do not necessarily extend deep to forming a sense of community, in the sense of long-term social networks.

What the types of gated communities and neo-traditional neighbourhoods succeeded in doing is commodifying and selling community as a 'product' not as a 'process' (Rosenblatt, 2005). What are the implications of commodification on neighbourhood cohesion within such neighbourhoods? Distilling product from process, to quote Rosenblatt (2005: 7), "engenders a particular 'commodified world view' which impacts on the way we interact with and consider others."

For example, other people might be 'objectified' within the sold 'packaged community'. Another example is that residents within such neighbourhoods may not participate in, and even withdraw from, a community-building process (Rosenblatt, 2005), especially that they consider

themselves buying into a ready-made community with no further obligations except financial ones. In short, ‘the social’ is purged. The paradox here is residents ‘buying into’ community, or rather ‘buying’ community, while at the same time not becoming, or wanting to become, part of that community.

This paradox is resolved by Bauman’s (2003: 11) explanation that seeking a **‘community of similarity’** not only signifies withdrawal from ‘the otherness outside’ but also from the ‘turbulent’ interaction inside. He refers to Richard Sennett to describe such double withdrawal as an avoidance mechanism against looking deeper into the other and the associated effort of negotiating and understanding the other. The paradox is also resolved in another way by Bauman’s (1998: 20) notion of **‘non-neighbourhood’ condition**, i.e. ‘immunity from local interference’. In other words, commodifying community renders community an object of observation not participation.

As a commodified object of observation, sense of community, particularly, neighbourly social interaction is reduced to an encounter between ‘surfaces’ (Bauman, 2001a: 147), i.e. an encounter not deep enough to create an interactive form of community. The nature of such a community is best captured by Benedict Anderson’s notion of **‘imagined communities’** where people may feel part of a community not contingent upon fact-to-face interaction (Rosenblatt, 2009: 131). Other dimensions of neighbourhood cohesion come to the fore like affective forms of attachment to place and sense of belonging. This should not, however, preclude the fact that some residents have enlarged their social capital by using “the commodified community form as a starting point for enlivened community participation” (Rosenblatt, 2005: 12).

The findings of a study by Rosenblatt et al. (2009) of a Master-planned Community in Australia confirm that affective dimensions of sense of community rather than interactive

dimensions are those that are fostered by such types of commodified communities. Thus, in one way (affective), commodification of community contributes to neighbourhood cohesion but, in another way (interactive), does not.

An important idea, though, that Rosenblatt brings forward, following Appadurai and the idea of ambivalence of the commodity form of community, is the tension generated between those two aspects of sense of community (affective and interactive) in terms of the impact of the commodification of community. Rosenblatt suggests that such 'affective-interactive' tension may impede the emergence of meaningful social interactions (Rosenblatt, 2005).

However, the reverse may also be suggested; that affective forms of community may eventually lead to interactive forms and vice versa. The literature corroborates such two-way linkages between the dimensions of sense of community as defined by Buckner. For example, Dekker & Bolt (2005) confirm the dialectic relation between attraction-to-neighbourhood and neighbourly social interaction. Factors positively affecting the former are: length of residence within the neighbourhood, age, and tenure / ownership (Lewicka, 2010); Hipp & Perrin (2006) add neighbourhood stability to the above factors. Rosenblatt, of course, is aware of such literature. What Rosenblatt wants to emphasize is a classification of residents into separate categories which do not eventually merge or lead to a larger sense of community that encompasses both groups.

Wilson-Doenges (2000) suggests that there is a difference between the sense of community in gated communities based on income level when compared with an equivalent non-gated community. Her findings indicate that low-income gated communities did not differ from non-gated low-income neighbourhoods whereas high-income gated communities had a lower sense of community than equivalent non-gated neighbourhoods.

Wilson-Doenges argues that a territorial bulwarking approach increased the sense of safety but decreased the sense of community for high-income gated residents because of the lack of social responsibility towards territorial functioning and natural surveillance by gated residents. Meanwhile, gating had no evident benefit for low-income communities whether in regards to sense of safety or sense of community. Her research highlights the importance of socio-economic context when studying the effects of gating.

3.2.3 Social injustice

Social justice is undermined by private ownership of space and the associated privileges of property rights that limit and constrain available physical public space within the city. Social justice here is undermined by the difficulty of reaching space or appropriating the use of space. Soja (2010: 44) describes the commodification of space into privately owned property as an “under-layer of a thick sedimentation of bounded spaces” that forms a “*web of spatial injustice*”.

Social injustice is not uniquely attributed to gated residential developments but has also characterized the suburban. Referring to Lefebvre, Walks (2013) observes that suburban physical form, devoid of centralized hierarchy, gives the appearance of democratic equality but is actually an instrument of socio-spatial injustice. Gated residential developments are observed to consolidate and reinforce socio-spatial injustice by means of a more explicit physical expression. Atkinson & Blandy (2005) imply that the residential choices of the affluent, through spatial segregation, impacts negatively and indirectly on prospects and personal development of the poor.

Most undermining to social justice, is the uneven ‘**time-space compression**’ (Harvey’s term) between those inside and those outside enclosed privatized spaces. For the privileged on the inside, opportunities, mobility and access have augmented to new heights while for the

impoverished, marginalized and unemployed on the outside, structural oppression, decreased mobility, and narrowness of life chances (Merrifield & Swyngedouw, 1997) creates for them what may be called a ‘time-space rarefaction’. Put differently, as Bauman (1998: 88) remarks, residents on the inside live in time, while residents on the outside live in space - a ‘confined’ space that Clemmer would include in his term of ‘*prisonization*’ (Bauman, 1998: 126).

It is “the right to individuality that is being increasingly polarized” (Bauman, 2001a: 96). What Bauman means is that there is a “growing gap between the conditions of individuals *de jure* and their chances to become individuals *de facto*” (2000: 39) – a gap that, by privatization of space, has emerged and widened between individuality as fate and individuality as a capacity for self-assertion; a gap that cannot be overcome by individual efforts alone.

A modern subjectivity incompatible with principles of social justice is doubly reflected in privatized residential spaces. In one way, a modern subjectivity through categorizing deviant others and reinforcing the identity of western man – i.e. a dualism between self and the other as opposed to a relational identity; in another way, a spatialization of inclusion and exclusion as binary opposites to demarcate who is ‘in-place’ and who is ‘out-of-place’ (Popke, 2003: 302).

Another way by which social injustice may be wrought by gated communities is through the gradual secession of the elite from society and from both their fiscal and social responsibility. It is argued that such a secession would affect the social welfare for the poor and disadvantaged both directly and indirectly. Directly, by a decrease in their tax contributions that go towards maintenance of disadvantaged neighbourhoods. Indirectly, by the gradual “**concentration and residualization**” of those outside the gates (Atkinson & Blandy, 2005: 180).

The following figure summarizes the social injustice effects of gating:

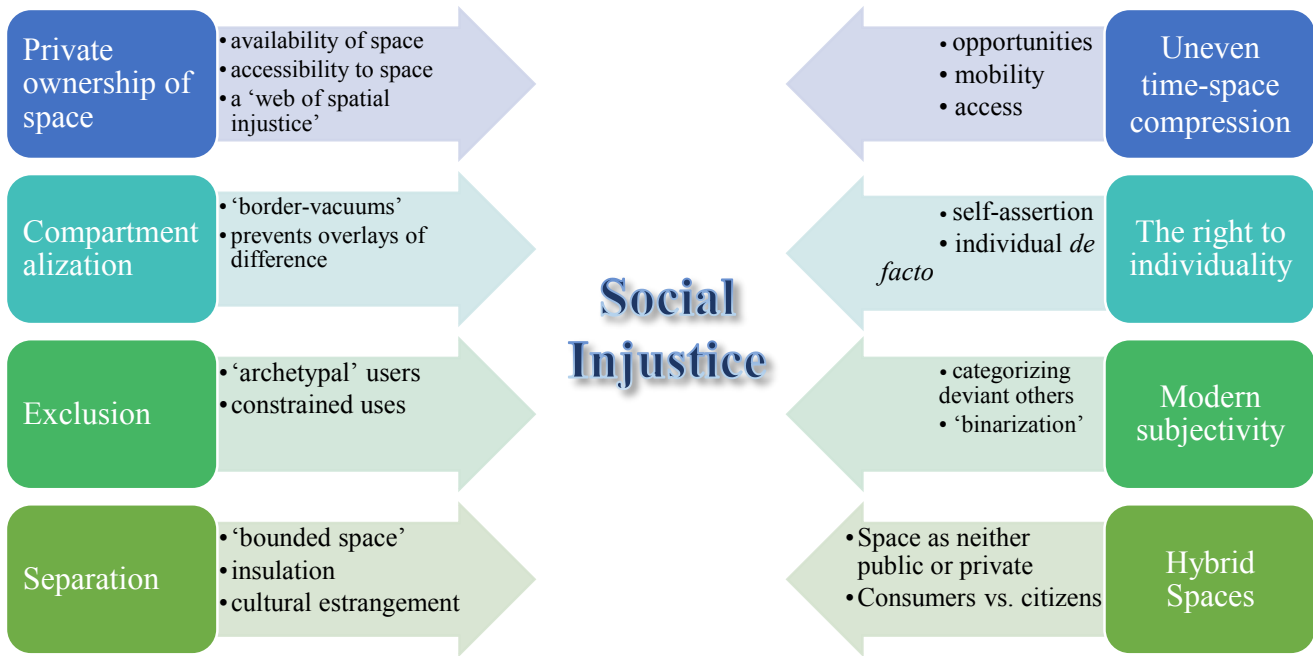


Figure 3.1. Social injustice effects of gating

3.2.4 Privatization of space

A general criticism of gated communities involves their creation of environments that are non-conducive to democracy (Caldeira, 1996: 325) and their de-intensification of urban space (Brook et al., 1999; McLaughlin & Muncie, 1999: 108) as well as contributing to social fragmentation and diminution of civic life (Putnam, 2000). The kernel of such general criticisms that have been readily accepted in the scientific community resides in the loss of public space that was idealized as a space of democracy, intensification, and civic life. The controversy over public/private is epitomized in the case of gated communities, or '**hated communities**' as some critics would call them (Kirby, 2008: 83).

Some authors have toned-down such criticisms by questioning the validity of the kernel; that is, questioning the extent to which public space had in fact been a space of democracy, intensification, and civic life. Some researchers argue that public space in the true sense of the word public never existed (Gaffikin et al., 2010: 498). For Irazábal (2006), the notion of public space is losing its value in an increasingly blurring relation to sustaining the ideal of universal rights and equality. As another instance, Kirby (2008) observes that the dichotomy between public and private is not simple but complex. Kirby argues that privatizing the city does not necessarily lead to diminishing social life and social relations.

In line with Kirby's observation on the complexity of the public-private dichotomy, gated private communities have been typified by Chiodelli & Moroni (2013), who expand the public-private dichotomy to a typology of six types of spaces where absolute public or absolute private only exist theoretically, as *complex private spaces* due to the contractual substructure binding the community members of such residential developments.

Moreover, the privatization of space, in a general sense, may lead to a conceptualization of space that is not easily subsumed as either public or private but conceptualized as a space of 'hybrid' character that changes the notion of residents from citizens to consumers as citizenship itself becomes increasingly privatized (Nissen, 2008).

3.2.4.1 'Ex-closure'

The concept of '**new enclosures**' introduced by Hodkinson (2012) captures two important effects of privatization of space that affect those on the other side of the privatized space: the first is an act of dispossession from material / immaterial possessions such as land, home, access to services and affordable housing, or knowledge. The second is an act of 'ex-closure' effected by a process of capitalist subjectification that submits people and space to the logic of

commodification and market competition of neoliberalism. The expected result of such ‘ex-closure’ is the differential quality of life experienced by residents within a metropolis depending on which urban fragment one has access to (Coy & Pöhler, 2002).

3.2.4.2 Power hierarchy and the creation of ‘colonized spaces’

For Marcuse (2010), walled residential enclosures reflect hierarchies of class power and divisions among people. Marcuse observes that local governments act as accomplices in furthering the goal of the upper-class private sector. This is achieved through what Marcuse calls *spatial coercion*, i.e. attaching a dimension of power to planning policies of restrictive zoning, suburbanization, gentrification, transportation and housing policy as well as environmental practices. In line with Marcuse’s observation, Caldeira (1996: 317) argues that gated enclaves have used and adapted modernist planning instruments in order to eradicate public space and the “universal rational city” created by modernism. Irazábal (2006: 80) expounds Caldeira’s argument in Curitiba to argue that this modernist subversion of the rational city, a rationalism that was criticized for perpetuating social alienation, has been paradoxically used to promote sense of community and sense of belonging by re-appropriating modern instruments and making them appealing to higher-income classes.

The outcome of such spatial coercion, according to Halperin, is the creation of a new form of power: a power that while appearing to retreat has, in effect, expanded and become diffuse (Kirby, 2008). It appears to retreat through deregulation of local government and has, in effect, expanded through self-regulation and micro-governance of private residential spaces by means of formal Home Owner Associations (HOAs). This shift follows what is expressed by Deleuze & Guattari as a shift from disciplinary societies to societies of control (Urry, 2002: 267), or, to

use Bauman's (2000: 11) term, representing a similar shift from a panopticon society to a post-panopticon one.

The result is the creation of a new type of residential space that may be expressed by what Foucault has termed '**colonized spaces**'. The social mix within such colonized spaces is determined by social class rather than by ethnicity (Kirby, 2008: 84 & 85). Thus, as Marcuse pointed out, hierarchies of class power are reinforced by means of residential enclosures. It should be stated that strategies of spatial coercion increasingly produced a complexly structured space that, in order to be effective as a coercive instrument, had to be mingled with social inequality. The cumulative outcome of spatial coercion is a type of social exclusion that Hilary Silver would categorize under the paradigm of a dominating exclusion (cf. Hargie et al., 2011: 875).

3.2.4.3 Insulation and Estrangement

As Bickford (2000: 361) posits, "gates ... actively construct the relations of separation", i.e. placing the Other out of sight; using Claude Lévi-Strauss' terminology, an 'emic' strategy of spatial separation and selective access / barring (Bauman, 2000: 101). Caldeira's (1996) work shows how GCs in Sao Paulo, Brazil symbolize status and are instruments of social separation that transformed Sao Paulo into a "a city of walls". It can be argued that this separation gradually leads with the passage of time to '*insulation*' within a 'bounded space' in such a way that the separated Other ceases to become a fellow citizen with equal rights. Equally important is the gradual cultural estrangement (Bauman, 1998 :106) of the Other in terms of developing different symbols and language, hindering future communication as each belongs to a different 'life world'. Bauman (2003: 113) expresses such a situation better: "Social homogeneity of space, emphasized and fortified by spatial segregation, lowers in its residents their tolerance to difference and so multiplies the occasions for mixophobic reactions, making city life look more

‘risk-prone’ and so more agonizing[...]. The cumulative outcome of such cultural estrangement is a type of social exclusion that Hilary Silver would categorize under the paradigm of a discriminating exclusion (cf. Hargie et al., 2011: 875).

The type of toleration to the different Other and whether the Other is included in the first place depends on the type of space, based on a typology of public-private ownership and management (Chiodelli & Moroni, 2013). Enclosing space with borders encourages compartmentalization (Alexander, 1965), prevents overlapping (cf. Jane Jacobs), and creates, using Weiher’s term, “*border vacuums*” which prevent “*overlays of difference*” (Bickford, 2000). An expected and logical outcome of insulation and estrangement of the other is, as Low (2001) points out, a fear of the other, propagated by a discourse of fear and a pathological fear of others. Setha Low links that discourse of fear to a sense of a loss of place and class separation.

The postmodern condition, or, to use Bauman’s term, the liquid modernity, of our times articulates such a sense of loss of place and identity as well as class separation that Low alludes to. A metaphor for such a condition is “**the labyrinth**” (Bauman, 2000: 138), an artificial complexity which stratifies people according to their degree of mobility. Those who know the laws of the labyrinth and master the art of labyrinthine living are at the top of the social pyramid while the majority are left to navigate the obscurity of the labyrinth. Thus, a filtering process articulates one’s ‘positionality’ (Harvey, 1992) along the social pyramid and leads to an increased divide vis-à-vis the otherness of the other.

Bauman’s use of the labyrinth metaphor may seem to be incongruent with the condition of ‘liquefaction’ he is advancing: that of constant precariousness and instability. Posing this otherwise, how is an individual’s freedom to choose and act embedded within a rigid complex structure of the labyrinth? Perhaps a more congruent metaphor would have been the metaphor of

“the reticulum” by Kavanough (2007) – impermanent constructions / assemblages of heterogeneous elements. Bauman (2000: 5) clearly emphasizes that complex societies have become very rigid as a result of intertwining the freedoms of the subsystems and agents through deregulation, flexibility and liberalization in such a way that, paradoxically, the system (overall order) and agents are disengaged and by-pass each other.

This by-passed system is captured in Swyngedouw’s (2009) notion of the ‘**post-political condition**’, a political condition that forecloses the political; a condition where neoliberal capitalism is accepted consensually as an inevitable economic system. Urban problems are not cast as problems of the ‘system’ or of uneven power relations but are dealt with in a managerial mode of governance. A post-political populism and a post-democratic condition emerges that uses a universal language (e.g. ‘the creative city’, the sustainable city’, ‘the green city’) rather than addressing particular claims of social groups or classes.

The following figure summarizes some effects of residential privatization.

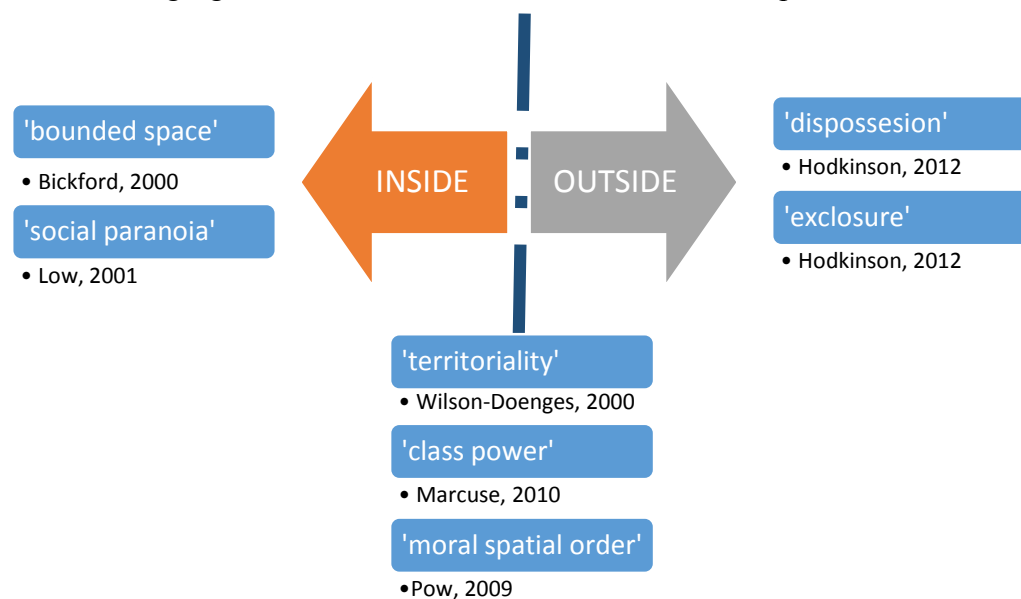


Figure 3.2. The effects of residential privatization

3.2.5 Social Segregation

CIDs, of which gated communities are one type, are a form of privatization that “promotes segregation different in kind and degree from that produced by simple suburbanization.” (McKenzie, 1994: 26) This view is corroborated by Blakely & Snyder (1997a) who view GCs as part of a deeper process of social transformation. Evan McKenzie (1994: 12) has framed CIDs as **privatopias**, a deformation of Ebenezer Howard’s garden city ideal due to American privatism. His argument is that American CIDs focus on the physical plan while dismissing social and economic aspects of community structure within those developments.

There is a controversy among researchers on whether or not GCs promote or reinforce patterns of social segregation. Segregation and gated communities have been linked in the literature and considered by many researchers to be synonymous. However, empirical evidence corroborating this link is scarce (Vesselinov, 2012). Moreover, the link between segregation and gated communities has been mainly investigated in terms of social segregation rather than residential segregation (Roitman & Phelps, 2011). Erkip (2010) who compares two high-income districts in Ankara, Turkey, one of which is gated, reveals residents’ desires to exclude and segregate others.

On the other hand, Sabatini et al. (2001) argue that existing research on social segregation and GCs tends to be biased by the hypothesis that globalization produces social inequalities which then take physical form through gating. They also argue that previous research has poorly conceptualized social segregation and equated it with urban inequality. They differentiate between ‘geographical segregation’ and ‘sociological segregation’ in order to point out that spatial segregation is weaker in the case of more clearly defined social identities. In their study of two poor neighbourhoods in each of three Chilean cities, they find that segregation is

exacerbated at a regional scale while, at the same time, the scale of segregation is reduced within poor neighbourhoods as they benefit from their proximity to affluent GCs.

Similar results were found by Roitman (2007) in studying a gated community called Palmares in Mendoza, Argentina. In proposing a framework for GCs with respect to the micro-scale of urban social group segregation, Roitman distinguishes between intended segregation and unintended segregation according to the viewpoints (perceptions) each group has of the other as well as to the interaction resulting from social practices which, for GCs, she identifies the following social practices: access to GC; use of services and infrastructure inside / outside a GC; working inside a GC; and institutional communication (which involves the role of residents' association). For the empirical case study of Palmares, she focused on the social practice of use of services and infrastructure and found that the services surrounding the gated community as well as the use of a shopping mall and shops built mainly for GC residents but located outside the GC were used by residents inside and outside the gates. The research suggests that the presence of the GC has raised the quality of services and infrastructure to the benefit of those outside the gates except for a surrounding slum area whose residents could not afford the use of services.

GCs are usually being perceived as the secession of the elite from public life. However, the recent research by Andreotti et al. (2012) shows that although the upper-middle class in the cities of Milan, Paris and Madrid have outset homophily in their residential preferences and frequent social relations, they also play a **'game of distance and proximity'** in their selective anchoring, local embedded-ness, and 'partial exit' strategies in relation to other social groups and in regards to their presence in the public sphere. Anfreotti et al.'s research suggests that rather than associating GCs with an extreme form of secession, the residents of such residential

developments should be located on a continuum ranging from total immersion in society to complete dissociation and isolation.

The selective immersion of gated residents is also corroborated by the research of Swearer (2008). Swearer argues that perceptions of private and public depend on the person and that such perceptions constitute elements of a personal balance between, what he terms, quietude and mobility. Gated residents should not be considered as isolationists but should be understood in the totality of their lived experiences.

This echoes with, and confirms, Brunn's (2006) pondering of possibilities for gated residents without gated lives or gated minds. In a way, Brunn would have read Swearer's thesis outside-in rather than inside-out. Brunn expands the discussion on gated communities to include residents outside gates who live gated lives or have **gated minds**. In other words, Brunn shifts the focus from a problematic of gated communities to the wider functioning of society that according to Brunn is replete with psychological, and lived, gated-ness not necessarily confined to, or attributed exclusively to, gated residents. It is suggested that this shift constitutes an indirect, albeit entrenching, way of dealing with physical gating as an epi-phenomenon. Similar observations are drawn by Roitman & Phelps (2009) who, referring to Webster, view GCs as one element among several other ways by which segregation and fragmentation are maintained, perhaps more effectively, such as through labor, housing and financial markets.

3.2.6 Income Segregation

Alaily-Mattar (2008) study suggests that GCs compress and package the segregated spatiality of affluence. Key authors specifically studying the link between GCs and residential segregation are Elena Vesselinov, Renaud Le Goix and Francisco Sabatini who have drawn on the five-dimensional segregation indices developed by Massey and Denton (1988). When

studying GC-residential segregation, GCs have been reduced to a phenomenon of gating without particular attention to housing characteristics (except for tenure) within the gates as compared to outside the gates. This is a gap in the literature that has been intentionally left uncovered by researchers as GCs are assumed, by Le Goix, Vesselinov and others, as not being internally different from a conventional residential development except by the added feature of being gated.

The research by Vesselinov (2012) is the first study to situate gated communities within the context of three theoretical models in the field of urban sociology: place stratification, spatial assimilation, and ethnic community model. In order to do that, Vesselinov had to conceptually frame GCs as a different category, and as a separate urban process, than private neighbourhoods by virtue of having a gated enclosure which denies access to the public. She specifically looks into the mechanism of selection by minorities, especially Latinos, to live within a GC. She sees an apparent correlation between the rise of Latino immigrants in the Southwest of the U.S. and the rise of GCs there. Her findings indicate that Latinos are not inhibited in accessing GCs (place stratification not applicable); spatial assimilation more readily occurs for Latino owners of higher socioeconomic status; and, Latinos are not more likely than Whites to gate but Latinos with higher education are more likely to gate, some in gated ethnic communities, than comparable Whites. She concludes that there is partial support for all three models (place stratification still being applicable in the case of Hispanics and Blacks). Vesselinov's research suggests that Latinos are increasingly living behind gates and that this indicates their spatial assimilation (Vesselinov, 2012: 446). Vesselinov argues, nevertheless, that this assimilation does not necessarily translate to decreased residential segregation due to the relative racial homogeneity of, and price premium for, gated communities compared to non-gated private neighbourhoods.

In a previous study, Vesselinov (2008) sees gating and segregation as sharing common mechanisms of: fear of crime, fear of heterogeneity, and pursuit of high property values. She thus infers that gating most likely reinforces segregation. Vesselinov conceptualizes gating and segregation as belonging to the process of urban inequality with gating offering the advantage of segregating without the need for residents to move to outer urban rings. The counter-evidence that she deals with is the fact that GCs are becoming more diversified in terms of tenure, race, and class (based on American Housing Survey 2001) as well as the fact that GCs are spreading in areas with low levels of segregation in the U.S. The case is not clearly made by Vesselinov as her argument oscillates between White gating due to fear of heterogeneity (Low's hypothesis) and Latino gating as being accustomed to this form of residence before immigrating to the U.S.

In contradiction to Vesselinov's argument concerning the racial segregation effect of GCs, Le Goix's (2005) research on the relation between GCs and residential segregation in southern California suggests, using the notion of discontinuity, that rather than being differentiated from their surrounding by race or ethnicity, GCs are income- and age-segregated. This segregation is at a local scope but, at a larger scope, gates contribute to the spatial integration of social territories. His hypothesis is that GCs locate in ethnic buffer zones, a location intentionally chosen by developers in order to avoid issues usually related to ethnic diversity such as crime (Le Goix, 2005: 337). He concludes that GCs do not increase segregation in themselves but belong to a larger process of urban space production, a 'gating' machine, by public-private partnerships; increasing property taxes reaped by governments and increasing profit for developers.

Assessing the link between GCs and residential segregation depends on how GCs are conceptualized. Joint research by Le Goix & Vesselinov (2012) poses the important question of

whether GCs are a new form of suburban community, with the intention of drawing parallels between GCs and the original suburban movement for White segregation. Their thesis is that GCs are driven by the same intention for segregation in the face of increasing diversification of suburbs and inclusion of Blacks. Suburbs are also evidencing many problems and pathologies of city centres (Blakely & Snyder, 1997b). Le Goix & Vesselinov's findings for Phoenix, Las Vegas, and Seattle, indicate that gated residents are older in age; consist of a higher proportion of married couples, a lower proportion of singles, and higher education levels; and are more affluent than non-gated residents for all three metropolitan areas. From a racial segregation point of view, all three areas show levels of segregation that resemble the traditional division between centre city and suburbs.

A type that Le Goix & Vesselinov find as rarely being the case is the location of GCs in low-priced homogeneous areas. This finding is contrary to the abundance of cases found in Latin American cities. GCs in Latin America, especially those at the periphery, are generally located within low-income areas. The explanation for locating within low-income areas is given by Libertun de Duren (2006). She argues that the decentralization of planning controls led to different responses between well-serviced and poor municipalities towards GCs. The former, well-serviced municipalities, perceived GCs as a threat and competition to their services while the latter poorer municipalities perceived GCs as an opportunity to enhance economic activity and the level of services within their municipality.

Sabatini, Cáceres, & Cerda's (2001) argument is that this location reduces the scale of residential segregation and encourages functional integration between rich and poor as well as impeding ghetto-formation within surrounding poor areas (Sabatini & Salcedo, 2007). Studying GCs in Santiago, Chile, Sabatini & Salcedo (2007) point to the dispersion of the rich from city

centres into residentially segregated enclaves as a reflection of economic globalization and increase in inequality that reinforces residential segregation – an argument Sabatini has labelled the “**mirror effect**”. They challenge arguments that see the dispersion of the elites as a sectoral geographic expansion by arguing that the expansion has leap-frogged and is discontinuous. In addition, other Latin American cities have dispersed residential enclaves of the elites which cannot be seen as sectoral growth. Another argument that they challenge is the hypothesis that the presence of elite enclaves within low-income areas will eventually lead to the relocation of the poor as land prices surrounding the GC increase – i.e. similar to a gentrification process. Sabatini & Salcedo do not see this happening in the near future due to title deeds that have been distributed to families in low-income areas.

3.3 How is Gating Changing?

Several theses have been advanced in the literature on how gating has changed.

3.3.1 Ethnic to Class Segregation to Heterogeneity

A first empirical study to assess the relative diversity of planned unit developments (PUDs), of which GCs are a special type, and their contribution to metropolitan area segregation is that by Gordon (2004). The findings of the study indicate that PUDs are ethnically more homogeneous and income-wise more diverse (with respect to middle and high income) than other neighbourhoods in the U.S. However, they do not contribute to metropolitan-wide segregation.

Private communities, in general, have manifested a shift from racial or ethnic segregation to more class-based segregation. This observation is corroborated by the research of Le Goix when studying the segregation effects of gated private residential developments. The explanation of this shift stems from correlating the emergence of private communities with the rise of an economically powerful segment of the middle-class (Kenna & Dunn, 2009).

However, class has given way to diversity and heterogeneity by the inclusion of renters. According to AHS 2001, renters are almost 2.5 times more likely to live in gated communities (Sanchez et al., 2005: 285). Empirical research shows that, in general, GCs are becoming more diverse in terms of tenure, race and class (cf. Vesselinov, 2008). This appears, though, to be true for middle-class GCs which are more likely to accommodate diversity. GCs that have exclusive location continue to have a high price premium to reside within them.

Empirical research on GCs in Rio de Janeiro evidence the shift, on one hand, to more heterogeneity that is paralleled by a trend of smaller apartment sizes and lower high rise apartment buildings, and on the other hand, to exclusive luxurious GCs for the richest of the rich (Coy & Pöhler, 2002: 361).

The research by Dowling et al. (2010) for 11 case studies in Sydney, Australia also corroborate the hypothesis of increased heterogeneity of residents in GCs when compared to their surrounding 'open' neighbourhoods. Their findings, moreover, contradict the implicit assumption that gated developments are associated with higher degrees of privatism and exclusivity than open developments. Gated MPREs were found to have the lowest income levels and highest perceived social diversity. Open developments ranked higher on privatism than gated or symbolically enclosed ones; meanwhile, symbolically enclosed MPREs evidenced higher levels of social interaction and use of facilities.

3.3.2 Crime and Sense of Fear Penetrates the Gates

The fear from crime temporarily fades away when moving into a gated community but then the fear settles in once again with increasing incidents of crime within the gates. Research findings indicate that perceived safety and actual crime rates do not differ significantly between gated and non-gated high-income neighbourhoods. Increased fortification has, in South Africa,

paradoxically increased the level of fear (Landman, 2005). Empirical data show that despite strict security measures in one of the oldest and largest GCs in Latin America, namely, Alphaville in São Paulo, crimes increased by 30% and are becoming a problem (Coy & Pöhler, 2002: 363; Irazábal, 2006: 89). In response to the increase in crime in peripheral GCs, Coy (2006) posits that a recent phenomenon of inner-city terraced gated housing, or '*condominios horizontais*', in São Paulo is taking place and contributes towards stemming the trend of an inner-city shrinking population.

Part of the reason for persistence of fear behind the gates is the uncontrolled accessibility of non-residents into the gated community, for example, maintenance workers, and service personnel (Low, 2001). The accessibility by non-residents generally produces feelings of insecurity but, in some cases, has added an indirect layer of security as mentioned further above through the informal networks established between gardeners (Chase, 2008). Meanwhile, gated residents in Kemer Country, Istanbul first thought that the excessive security measures and security guards was unwarranted but after moving into the GC, excessive spending to maintain such a high security level seemed more and more necessary (Geniş, 2007: 791).

3.3.3 Property Values Not Significantly Different

Property values are not very different from surrounding neighbourhoods except for the case of exclusive gated communities on the beachfront. Decrease in property values may also be envisioned in the future when issues of maintenance and repairs arise over the long term and affect the quality of the GCs (Goodman et al., 2010). Vesselinov and Le Goix (2013) pose the important question of whether the price premium of GCs affect house price patterns between gated and non-gated areas. On average, price trends are undifferentiated regardless of being gated or non-gated Common Interest Development (CID). However, in the most desirable areas such

as Orange County, Santa Barbara, or Thousand Oaks, GCs have contributed to measurable price growth. This is the case where GCs correlate with stronger price differentiation patterns (higher Price Distance Index), compared to adjacent non-gated CIDs. However, in clustered and denser developments, GCs show a strong equalization and homogenization in price pattern with their surroundings (e.g. Santa Ana). What Le Goix & Vesselinov are suggesting is that there are two types of GCs: one upper-class and located on the coastline and the other ordinary middle-class GCs contiguous to other similar GCs.

3.3.4 Fictional Expectations

The communal function of clubhouses remains symbolic and not everyone benefits from amenities such as golf courses. Many residents buying into gated communities were generally disappointed about expectations they had. The findings in the literature on GCs indicate that there are differences between motivational factors to reside in a GC and satisfaction levels after moving in a GC. Blandy et al. (n.d) point out that dissatisfaction of residents with GCs may result from implicit expectations for neighbourliness and community involvement in GCs. For example, Blandy et al. refer to the research by Burke & Sebaly in Brisbane, Australia who found that street vitality was more evident in the non-gated neighbourhood as children were not restricted to play in the street. Meanwhile, in the case of the GC, children were prohibited to play in the street. By following a different methodological approach than other similar studies, Townshend's (2002) study showed that high levels of satisfaction were found for both groups of residents residing within and outside a GC (i.e. a kind of synergy existed between the residents and their residential environment for both groups).

On a contrary note, Lara (2011) raises the issue of incompatibility between the lifestyle advertised and sold in gated communities and the actual implemented lifestyle. Particularly, Lara

highlights the separation of houses from lakes by means of fences as well as the non-completed development of commercial activities within the gated community of Alphaville. The relation to the physical environment is not the only aspect that disappointed gated residents. In the research of Glasze & Alkhayyal (2002: 331), gated residents were disappointed to find after moving in that their neighbors were not international citizens like Americans and French as advertised.

The term ‘fictional expectations’ coined by Beckert (2013), though suggested in the context of rational decision-making theory, is assumed to be applicable to all human action and best captures a general aspect of disappointment with GCs. ‘Fictionality’ as defined by Beckert (2013: 220) is: “the inhabitation in the mind of an imagined future state”; the creation of a world of its own, different from reality. Representations of such a future state is the basis of present human action, i.e. a type of situated rationality. Applying this to the case of residents’ decision to move to a GC, it can be argued that many residents based their decision on fictional expectations of the quality of neighborliness and sense of community or involvement they pictured themselves to enjoy based on advertisements of the community aspect of GCs.

3.3.5 Codes, Covenants and Restrictions (CC&Rs) Less Enforced

CC&Rs have been a source of tension for residents within GCs, especially in the U.S. where litigation is common in order to enforce the rules (McKenzie, 2006). McKenzie argues that residents are not fully aware of what they are signing into and even questions the logic by which residents voluntarily subscribe themselves to such rigid rules which, in many cases, may interfere with their personal freedom, their basic civil rights, or freedoms of expression. Maxwell (2003) highlights, referring to Winokur, that subscription is a voluntary, above and beyond the current restrictions and by-laws, to the process of rulemaking by the HOA and to new rules enacted after the initial consent.

One of the hypotheses in the literature concerning how gating is changing concerns the enforcement of CC&Rs as explained by Romig (2010). In a mature gated master-planned community in Phoenix, where current residents are not the original owners who had originally bought their property from the developer, Romig identifies a temporal process that changes the original hand-over of the neighbourhood from developer to HOA; a change from a normative community governed by laws and enforced by fines to a lived community, in the Lefebvrian sense, where everyone knows what to expect. Lax enforcement of CC&Rs should be interpreted, though, with the increasing heterogeneity within the gated community due to the influx of migrant Mexican families as well as interpreted while taking into consideration the cycle of natural physical decline and demographic change of a neighbourhood. Increasing heterogeneity did not diminish social capital. This observation is corroborated by Sampson & Graif (2009) and negates what Putnam's (2007) 'constrict theory' would predict.

Romig seems to depict such a normative-to-lived transformation as a path for the transformation of gated communities to 'successful' neighbourhoods with conventional dynamics of appropriation of place and sense of community. A probable dark side to this appropriation via the building of social capital is the creation of a situation of **“negotiated co-existence”**¹² where violations of CC&Rs are tolerated and overlooked vis-à-vis an increase, particularly at the stage of maturity of the development, in local social network exchange and social capital; in other words, a decrease in collective efficacy and social control. This inverse

¹² Browning (2009) used the term 'negotiated co-existence' to explain the paradoxical decrease in informal social control over crime within a neighbourhood despite high level of local social capital.

relationship between collective efficacy and local networks is corroborated by the research of Sampson & Graif (2009).

3.3.6 Gated Communities as Edge Cities

Although the emergence of an edge city as defined by Garreau has not been fully realized because of continued dependence of such new forms of development on city centres in terms of employment and services, a recent trend manifested in Brazil is the emergence of large-scale peripheral developments that combine Garreau's concept of edge city with the concept of gated communities such as Alphaville Graciosa (Irazábal, 2006: 86). It is a hybrid semi-gated development trend that combines commercial and retail services with residential development. The intention is towards a more self-sufficient subdivision by creating the necessary critical mass and scale for the viability of businesses and hence, the semi-accessibility to commercial zones of the development. Yet, the development is still not considered a full-fledged edge city. Similar trends of creating large-scale semi-gated developments and 'gated cities' such as Piedro Roja are found north of Santiago de Chile (Borsdorf & Hidalgo, 2008). These private cities are connected via private roads for the exclusive use of the affluent; thus, creating a larger network of exclusionary spaces.

Up to this point, the literature review has presented an overview of different approaches to the causes and social consequences of the phenomenon of gating. Given that this research focuses more on the socio-psychological aspects of gating, the following final two sections of the literature review will give more attention to the physical form of suburb developments and introduce the concept of monadic space as a preamble to presenting the conceptual framework especially that the concept of monadic space fills an important gap in conceptualizing the link between gated-ness and neighbourhood cohesion.

3.4 Suburban Street Pattern and Suburban Public Realm

Michael Southworth and Eran Ben-Joseph negatively criticize the North American suburban environment as uniform and unresponsive to suburban residents or larger geographic context. Southworth & Ben-Joseph (1995) attribute this to modern city planning zoning regulations for the functional partitioning of space into mono-functional zones (separate zones for residential, commercial, manufacturing, services, civic institutions, etc.) as well as the setting of rigid standards for street patterns that do not allow functional accessibility or livability. Such streets are described from such a vantage point as ‘under-developed’ and create a suburban public realm that Southworth & Parthasarathy (1996) refer to, borrowing Baumgartner’s term, as ‘**moral minimalism**’ (i.e. minimal socializing with acquaintances in public spaces). Noteworthy, they do not find the suburbanization of retail, office, and manufacturing as a compensation for the lack of mixed-use zoning. They seem to be longing for Lang et al.’s (2006) anticipation for a process of ‘**suburban gentrification**’ where more urban elements, than Garreau’s Edge Cities, would be incorporated and render suburbs more pedestrian-friendly with mixed uses.

As Southworth & Parthasarathy (1996) contend, the development of the suburban street pattern has reinforced the effect of single-use zoning and low density on the suburban public realm. They observe that the postwar suburban grid pattern ‘legacy’ of ‘street as passageway’ (rather than ‘street as place’) continued in subsequent developments of suburban street patterns. A legacy that has been, so to speak, ‘institutionalized’ by the American planning system. Major influences on the development of the postwar suburb have been the Regional Planning Association of America’s (RPAA) inspirations from Ebenezer Howard’s Garden City ideal to address the loss of sense of community in neighbourhoods, recommendations of the Federal

Housing Administration (FHA) that regretfully dropped the key concept of a shared green space, and the Institute of Transportation Engineers (ITE).

Southworth & Parthasarathy (1996: 260) argue that few access points to a neighbourhood and a hierarchical street pattern discourage, respectively, passing through the neighbourhood for vehicles and pedestrians. In addition, the retreat of a suburban house behind the garage and a front façade dominated by a garage-scape has competed against the porch-scape. Such an arrangement symbolizes the decline of the role of 'the street as place' resulting in a banal suburban public realm.

New Urbanism attempted to recover the suburban public realm by distilling design principles from traditional American small towns (Southworth & Parthasarathy, 1997). Among the principles adopted was a return to a grid pattern of streets in order to de-concentrate vehicular traffic and allow re-appropriation of the street by pedestrians in order to avoid defining the street as a mere passageway. A mix of uses (libraries, an elementary school, a day care, places of worship, office and retail uses) was to be included in such neo-traditional neighbourhoods to cater to the daily needs of residents, encourage walking, and promote social interaction. The monotony of the linear grid was to be mitigated by landmarks and civic buildings at strategic junctions in the grid. A full range of housing types were laid out with laneway rear access for garages, freeing the front façade for wider porches that transition seamlessly with the expected new suburban realm of 'street as place'. Houses were to have more transparency onto streets that were narrower as utilities now passed through rear laneways.

Of course, from an architectural point of view, the interior plan of the house had to be designed to allow for front and rear entrances. In addition, being used less frequently, the front entrance, usually framed by a porch, becomes not unlike a false façade and a nostalgia through

the use of classic architectural styles. At the same time, suburban space becomes polarized to a front and a rear; a front that may not be functioning as semi-public realm for 'porch' interactions and a rear that may not be aesthetically interesting as the front façade and becomes hidden from surveillance, a site for opportunistic crime, and other issues raised by CPTED.

Faced with a dilemma for satisfying both connectivity (i.e. the encounter model) and privacy (i.e. the enclosure model), Southworth & Ben-Joseph (2004: 31) pose a key question that remains unanswered by urban planners to date: "Might it be possible to satisfy both sets of criteria: privacy, safety, quiet, and lower construction costs, as well as connectedness, identity, and structure?". The solution appears to be intermediate between the two models: On one hand, starting by the encounter model, the gridded pattern may be curtailed in terms of number of intersections to minimize car accidents and allow for appropriation of enclosed spaces by residents.

On the other hand, starting by the enclosure model, the cul-de-sac and loop pattern may be impregnated with destinations that disaggregate the mass of low density residential use with the addition of pedestrian connections between cul-de-sacs as well as the provision of greenways to allow a connected bicycling experience. Cul-de-sacs could be designed as hammerheads or formal square configurations (after the example of Hampstead Garden Suburb in London) to avoid amorphous and bulbous forms, better define open space, and avoid pie-shaped lots. Evidence points to tilting the balance in favor of adopting the second approach; i.e. modifications in the cul-de-sac model towards pedestrian connectedness rather than starting from the first approach, the New Urbanism model. For example, Southworth & Prassarathy (1997: 32) point out that in the very first neo-traditional development in Seaside, Florida, residents made modifications that defeated the concept behind the design. Residents have grown shrubs and

erected privacy screens on the front porches that impacted on the intended transparency of the front façade and, in practical terms, turned away from the suburban public realm to which the porch intended to provide a complementary setting for *visible* social interaction. Moreover, a few residents requested the addition of rear porches to overlook the backyards; here, signs of duality between front and rear can be raised again. Importantly, Seaside residents implemented strategies to discourage passers-by from ‘trespassing’ on their residential domain or disrupting their sense of privacy and security. In other words, the open grid became practically transformed into territorial domains and defeats the grid concept of providing route options for pedestrians to walk freely and efficiently between destinations. In other words, New Urbanism does not seem to have restored the suburban public realm and left neo-traditional neighbourhoods navigate the problems of the grid both social (in terms of sense of appropriation of space, sense of space enclosure, sense of security, and safety for children to play) as well as physical (in terms of cost of roads, adaptability to topography and ecologically sensitive areas, as well as increased rate of accidents).

Reconciliation via an intermediate approach between the deficiencies of land use patterns of the cul-de-sac model and the spatial problems of the open grid pattern seem to converge towards Marshall’s (2006) suggestion for the use of the term ‘**semi-urban**’ instead of ‘suburban’ to describe suburban environments. Marshall wants to move away from a framing of suburban developments as *sub*-urban to an alternative view as autonomous entities in themselves. Vaughan et al. (2009) also advocate the same: suburban space as a distinctive emergent domain. Such a paradigm moves away from a centripetal-centrifugal paradigm for urban morphological development (and the binary debate between a compact city model versus a diffuse one) to one defined by locational preferences, tolerances and aversions to distance and density. In other

words, an urban form that has the full spectrum from a bounded neighbourhood unit to an open structure; i.e. suburban forms that are not mutually exclusive.

Noteworthy, the missing quality in Southworth and Ben-Joseph's unresponsive suburban neighbourhoods, that either take an amorphous suburban form or a grid pattern, is perhaps the quality of individuation or uniqueness; a quality that Lynch (1960: 5) referred to, at the scale of the city, as an “**environmental image**”, a “*structural understanding*”, which is the product of immediate perception as well as memory. Lynch links such a quality for physical settings (i.e. legibility) with social functions as well. For Lynch, it is not only a question of familiarity with a physical setting but, importantly, a question of *distinctiveness*. As Lynch explains, legibility is a function of three aspects of a physical setting: individuation (identity), structure, and meaning; the first two, as Lynch points out, are more contingent upon physical manipulation than the third one. This research argues that the number of access points to a neighbourhood and the permeability of its street pattern contribute towards increasing the quality of individuation of a neighbourhood.

The following section introduces the concept of individuation, being a central concept to this research, and further argues for establishing a link between individuation and the phenomenology of the body; a link philosophically established by Merleau-Ponty (1962) who views the body as a ‘body-subject’, possessing knowledge. However, in contrast to Merleau-Ponty's phenomenological approach of immediate perception and the role of *the body as a space of expression*, this research raises the importance of mediate cognition (Lynch's structural understanding) and the role of *the body as a space of impression*.

3.5 Monadic Space

The philosophical problem of individuation was articulated and developed since Plato's 'form-instances' of ideal forms, Sophists' non-accidental forms and Aristotle's doctrine of 'form-essences' or hylomorphism with principles of extrinsic unification (that which does not affect the essence, i.e. form) and intrinsic unification (that which affects the essence, i.e. matter). In the late medieval era, individuation developed to the conceptualization of unique forms (haecceitas) and in the Enlightenment philosophical era with Leibniz' concept of monads: hierarchically concatenated, unique individual substances incorporating the dimension of individual history as an individuating reality (Krois et al., 2007). This research borrows the term from Leibniz to conceptualize a type of space that may be called 'monadic', or enveloping, space without strict adherence to Leibniz' metaphysical philosophy of monadology.

A property of space, particularly its degree of enclosure, has been studied by Sitte (1945) and urban designers commending the quality of medieval squares while highlighting an important role of space enclosure in the process of place-making. It is argued that the sense of enclosure within a space impacts on the inscription of meaning and symbolic role of the place. Expressed differently, the process of place-making where time is embedded in space and, vice versa, space embedded in time is contingent upon the degree of enclosure of a space. Notably, such an embedding of symbolism and memory in the built environment impacts upon the psychological health of urban inhabitants (Haffner, 2013).

If the concept of space enclosure is extended beyond the perception of the immediate context to a wider sense of enclosure within a larger expanse of space, one may conceive of a property of space as enveloping. Parallel to the role of enclosing space in the process of place-

making, this research argues that enveloping space plays a similar role in the process of body-shaping.

In order to articulate the relation between enveloping space and body-shaping, concepts such as embodiment (or embodied space) need to be introduced while equally viewing the body as a location inextricable from place. 'Embodiment' simply means the instantiation or materialization of a process. It is argued that the body-shaping process affects one's orientation to, and position within, society (Shilling, 2005). Put differently, the body, as Merleau-Ponty observed, becomes a factor of individuation (Krois et al., 2007).

Enveloping space concerns the wider context which is larger than, and encompasses, the immediate context. A neighbourhood that has a single access is not in the immediate perception of residents except when entering or exiting the neighbourhood. However, a single access for a neighbourhood has a big impact. It adds to the dimension of enclosure a dimension of form-making. It is the forming of a domain (or field) which is signalled and identified by the single entry. Rather than just relegated to a background situation, or merely a physical transition, the *(en)veloptive* space informs and ex-forms residents towards the forming of an embodied space, a kind of structural coupling with the space, a coupling which is also imprinted at the psychological level if the application of theories of Jean Piaget are extended to include adult mental processes of development, i.e. a sort of embodied cognition.

The idea that the body is shaped, and shapes, its environment is not a new one. Urban geographers such as Grosz in 1992 have called for a research agenda that explores such a dialectic relation which consists of complex feedback loops between bodies that are psychically, socially,

sexually, and discursively produced by environments upon which such bodies, in turn, imprint and project themselves (Longhurst, 1997)¹³.

A recent thesis that has extended such an argument for a dialectic relation between one who inhabits a place and the place itself posits that the relation is even one of congruence and interchangeability. That is, place is a reflection of the person and the person becomes constituent of a place, each indistinguishable and inseparable from the other while having the characteristic of encompassment (Araujo, 2013: 143). Such a thesis is still in its early development phases, though. It is based on the New Psychoanalysis theory of the Self where the 'I' is not viewed through a paradigm of western individuality but is decentralized and fragmented through a paradigm of formations that consist of a 'pole' (having a focus and fringe, i.e. an unlimited extension of the 'I') placed in a homogeneous background. Knowledge, under this conceptualization of 'I as person', then becomes a transaction among formations, i.e. including oneself in the relation, rather than produced through the classical distinction between subject and object.

The present research may contribute to the development of the above thesis by emphasizing the role of the body (and its movement) as an intermediary link between place and person for enacting such transactions. The present research also grounds the above thesis empirically by positing that the imprint of place upon the body, in turn, recursively contributes to the definition of the place itself.

¹³ This is analogous to the concept of *structural coupling* which is well advanced in bio-morphological development studies of form. Qualifying the relation as 'structural' means that the relation is not one-to-one or deterministic. That is, there is a range of imprints from the environment on physical form and vice versa.

From an epistemological perspective, knowledge is formed through, using the terminology of Serge Robert (1993), a paradigm of interactive rationalism rather than paradigms of critical rationalism (Karl Popper and Rudolph Carnap) or applied rationalism (G. Bachelard). Interactive rationalism according to Serge Robert consists of an interminable process of progressive harmonization between psychological experience (internal) and physical experience (external). Hypothesizing a harmonic relation between the psychological and the physical is echoed in the work of Eric Neumann (on the development of the Self passing from an intermediate phase of embedded-ness to a centering of the personality) as well as Carl Jung (cf. his notion of synchronicity). The overall trend (or the asymptotic axis) of the interactive process is that the physical built environment becomes a reflection of the psychological and, vice versa, the psychological (including behavioral and social compoment) is shaped by the physical environment. Ledrut (1968: 184) summarizes the process at the scale of the city, which may be applied to the scale of the neighbourhood. Ledrut observes that each city (*or neighbourhood*) has a physical structure expressing its collective conscious which in turn, directly and indirectly affects the social life and personality of its residents¹⁴.

Having established a link between the psychological (the development of the Self) and the physical (in terms of experiences and physical structure of built environment), the main tenet that the body, as an active indispensable intermediary in such a process, is shaped (imprinted upon) correspondingly needs further elaboration.

¹⁴ Research examining the relation between physical structure and social interaction has been undertaken by Bill Hillier's space syntax analysis.

Reference to Tucker (2011) is instructive in this regard. Tucker observes that the body is more than a biological entity and space is more than a geographical entity; more importantly, referring to relational process philosophy, both the body and space are products of inter-connected processes. The spatial turn that cultural geographers called for twenty or thirty years ago where definition of a space (or place) is relative effectively follows a linguistic turn where the definition of a word in linguistics is relative depending on grammatical context but also on the changing relation between signifier and signified. Notably, the spatial turn, unlike the linguistic turn, is time dependent; a characteristic that ascribes uniqueness to a space which is contingent upon the relational constitution of events. Thus, psychological experiences are not merely internal but are also produced externally in a relational way. Such an inter-connectedness between the internal and the external was expressed by Gilles Deleuze in his use of the term 'individuation'. Stated differently, the fluid relational configuration of external forms become 'folded' as forms of individualization (Krois et al., 2007).

In order to link the body to relational psychological experiences, Tucker borrows Deleuze's concept of the process of 'territorialisation'- 'de-territorialization'- 're-territorialization' to posit that bodies can be both territorialized and territorializing; i.e. subject to forces that are internal and external. In other words, body and space are inter-connected in a relational and fluid way. Bodies, as space, become a 'place' of flows and shaped by such flows of information.

A final thread in the argument for the specificity of the physical configuration of a neighbourhood, particularly the number of access points to the neighbourhood and its degree of enveloping space, in its relation to body-shaping or imprinting upon the body is necessary.

The argument advanced by Tucker conceptualizes the relation between body and space under a paradigm of flows. It thus facilitates the conceptualization of a relation between flows; space is here conceptualized as an external relational flow that inter-connects with the body that is conceptualized as the locus of internal relational flow. The outcome of such relationality is a fluid definition for each of space and body as a nodal point for those flows. Importantly, however, there is a possibility that space becomes rarefied in an extreme way from its physical structure and configuration when all the weight, so to speak, is put on its fluid character through events taking place within the space. Definitely, events and social interaction within a space have a bearing on the qualitative experience of the space as a place. The present research, however, posits that the balance between ‘a space of flows’ and ‘a space of places’, to borrow Castells terms, should be maintained by not excluding altogether the physical structure of the space, in terms of both enclosure (immediate context) and ‘envelopure’ (larger physical context). Likewise, the physical structure and form of the body should not be altogether excluded from the equation either.

RESEARCH DESIGN AND METHODOLOGY

4.1 Theoretical Approach and Conceptual Framework

The conceptual framework is the link between the literature review and the empirical research strategy. A theoretical framework is a general framework that accounts for many explanations. Meanwhile, the conceptual framework is less general / more specific than the theoretical framework and presents how the researcher conceptualizes the dynamics between the concepts. Operationalization of the concepts then leads to how each concept is measured and forms part of the questionnaire design.

From the literature review section that presented the different approaches to understanding the reasons behind gating and social consequences of gating, a framework could be constructed by distilling a notion that summarizes each of the five main arguments (socio-psychological, morphological, moral, economic, and political) – see following figure.

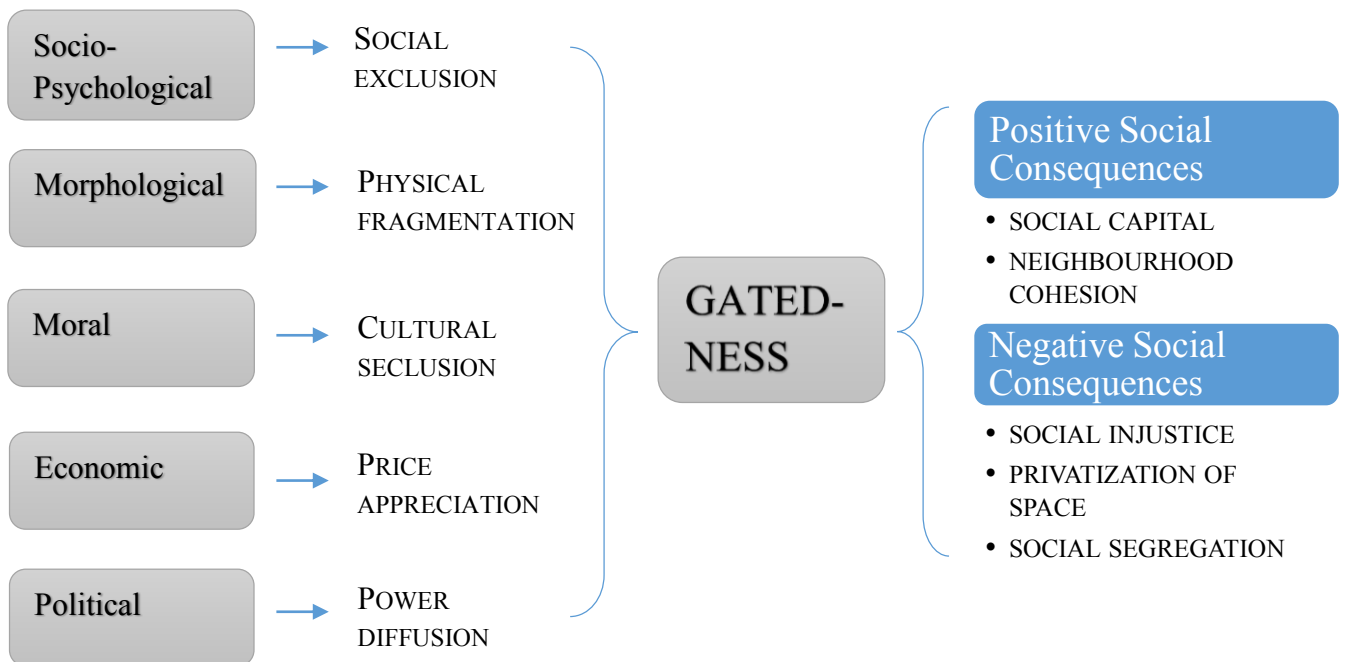


Figure 4.1. A framework for gated-ness

Referring to the above figure, gated-ness is expressed primarily as a statement of social exclusion, physical fragmentation, cultural seclusion, price appreciation, and power diffusion. As such, gated-ness is at once a symptom of the postmodern condition (cf. Diken, Bauman, Marcuse) as well as a ‘double’ solution (escape and control – cf. Xu & Yang, Wu) in the face of increasing suburban heterogeneity and decline (cf. Le Goix, Vesselinov). Most importantly, gated-ness becomes necessary to forge a sense of community in suburbs where such a sense seems to have been evaded (cf. Callies et al.) and the term ‘gated community’ attests to that function.

The dimensions or reasons behind gating need not necessarily be read at the same plane. Although the political, economic, and morphological reasons behind gating provide strong justification, and a bedrock layer, for the emergence of such a phenomenon especially within a neoliberal and capitalist regime, the socio-psychological (sense of safety, symbolization of prestige and lifestyle, self-actualization, and sense of interiority) and moral / cultural reasons (cf. Pow) form a second ‘superstructure’ layer of justification for gated-ness. The prominence of socio-psychological and socio-cultural reasons could be read in the seminal work of Blakely and Snyder (1997a), *Fortress America*, where sense of safety, prestige, and lifestyle were found to be the three main reasons behind gating while political, economic, and morphological reasons form the ‘infrastructure’ layer. Such a layering of dimensions stems from exigencies of theoretical analysis. A similar layering of the economic, political, social and cultural dimensions was done by Serge Robert (1978: 61) where the economic was the infrastructure layer, the political was the ‘inter-structure’ layer, and the cultural-ideological was the superstructure in his epistemological theories of knowledge.

Towards delineating a conceptual framework for the present research, a theoretical progression from the infrastructure layer (the physical, economic, and political) towards the

superstructure (social and the cultural) was hypothesized. If one is to apply such a progression to the phenomenon of gated-ness, it becomes comprehensible that economic and physical barriers would translate generally into social homogeneity and cultural bounded-ness, respectively. The first half of the following diagram (see fig. 4.2) delineates such a theorization under the rubrics of two processes¹⁵: EXCLUSION and SECLUSION.

There remains, however, a conceptual link to be theorized between gated-ness and neighbourhood cohesion in order to account for the readily accepted connection between ‘gated’ and ‘community’. The literature on gated communities has left this gap open on the assumption that the term is self-explanatory and scholarly research has mainly focused on social consequences of gating without a clear conceptualization of the quality of space produced in such residential developments. As shown in the following figure, such a quality of space was conceptualized here as an enveloping space.

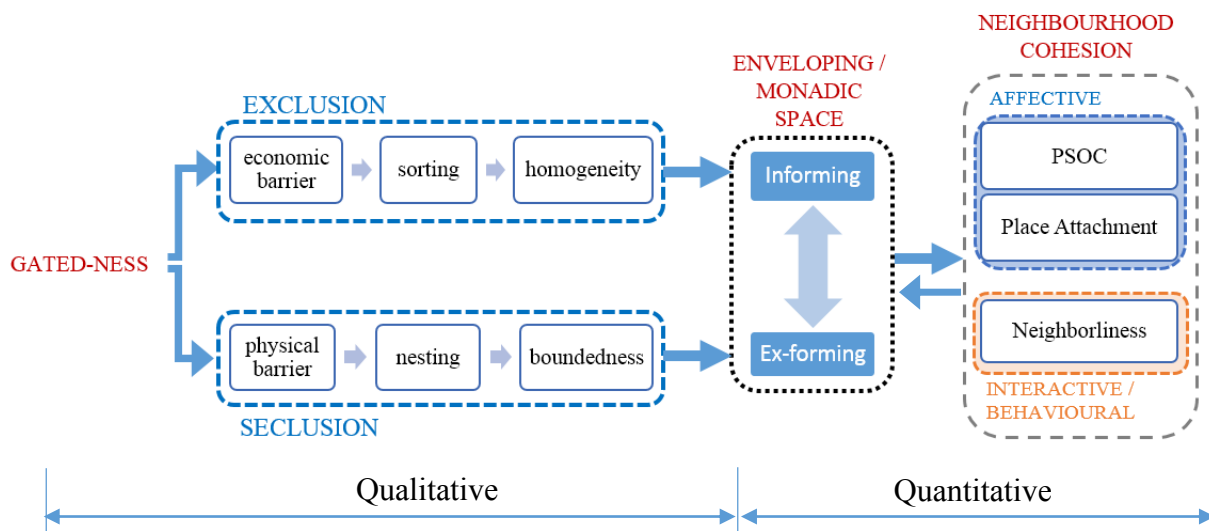


Figure 4.2. Conceptual Framework

¹⁵ Political barriers were not included as part of the diagram, but could have provided a third stream of processes for theorization of gated-ness.

The conceptual framework (see fig. 4.2) has guided this research when collecting data and formed a basis for providing an explanation that links the independent variable (the degree of gated-ness of a neighborhood) with the dependent variable (the level of neighborhood cohesion). As shown in the diagram, the degree of gated-ness simultaneously affects two parameters of space: the degree of exclusion (through ‘exclusive’ gating) and the degree of seclusion (through physical / ‘reclusive’ gating). ‘Exclusive’ gating tends to produce neighborhoods that are relatively homogeneous through a process of sorting residents according to their income level. This economic sorting is achieved through controlling minimum lot sizes and subdivision regulations, through controlling housing types and minimum house size as well as location, which factors into selling price of properties. The end result of such ‘exclusive’ gating is spatial exclusion.

Physical gating tends to produce neighborhoods that are relatively bounded (in the meaning of the term used by Bickford, 2000) through a process of nesting residents spatially according to ease of access to their dwellings. This nesting is achieved by preferring peripheral locations and by convoluting space in order to reach a particular neighborhood and residential dwellings within the neighborhood. The end result of such physical gating is spatial seclusion.

The initial explanation that this research hypothesized is that a particular type of space is formed as a result of neighborhood gated-ness. Such a type of space was called an ‘enveloping space’ or a ‘monadic space’; adopting the terminology of Leibniz in his paradigmatic view of space as being comprised of concatenated ‘monads’.

This new conception of space may contribute to the literature on neighborhood gating and add a further layer in explaining why a non-gated neighborhood differs from a semi-gated neighborhood in terms of neighborhood cohesion. Semi-gated neighborhood provides for its

residents a sense of enveloping space in such a way that space is more informing, and ex-forming (an analogous term to embodied space), for its residents than a non-gated neighborhood. The theoretical approach is mainly a phenomenological one. However, rather than linking immediate perception to phenomenology of the body (cf. Merleau-Ponty), the structural configuration of a neighbourhood (particularly, number of access points and permeability) provides a base for linking mediate cognition to phenomenology of the body.

Future research is needed in order to investigate whether such a conception of space as enveloping would account for other differences between gated neighborhoods and non-gated neighborhoods.

4.2 Operationalization of Concepts

According to the following figure (see fig. 4.3), the degree of gated-ness of a neighborhood can be operationalized by measuring gated-ness through two dimensions: economic and physical gating. Gated-ness can also be determined by a social dimension such as age-restricted residential developments. Such gated developments are termed in the literature retirement communities.

This research does not focus on retirement communities and thus age-restricted communities will not be part of the chosen case studies. While retirement communities are proliferating in Vancouver, this is not the case in Calgary. Comparing the metropolitan area of Calgary with that of Vancouver necessitates that the case studies be comparable in terms of demographic profile with respect to age spectrum.

Operationalizing neighborhood gated-ness was performed as follows:

- **Economic barrier:** average size of single-family homes, diversity of housing types, and mean household income. Such quantitative indicators were compared in relation to city average.
- **Physical barrier:** number of access points and degree of nesting.

The concept of neighborhood cohesion was operationalized by measuring it through three dimensions (after Buckner, 1988):

- Psychological sense of community
- Place attachment
- Neighborliness or social interaction

A neighborhood cohesion index (NCI) was calculated that accounts for these three dimensions. A questionnaire, as developed by Buckner (1988) and that uses a 5-point Likert scale, was the instrument for measuring neighborhood cohesion.

The questionnaire was extended to include a few more questions than that developed by Buckner in order to probe for sense of residents of an enveloping space and if the space is informing and ex-forming. Additional questions inquired for residents' observations and perceptions of their neighborhood in terms of whether their neighborhood has a different pace of activities or events, different social practices, a code of dressing, and chance social interactions as well as whether they perceive the landscape as appealing. The questionnaire was complemented with interviews with residents in order to get a more in-depth understanding of their responses.

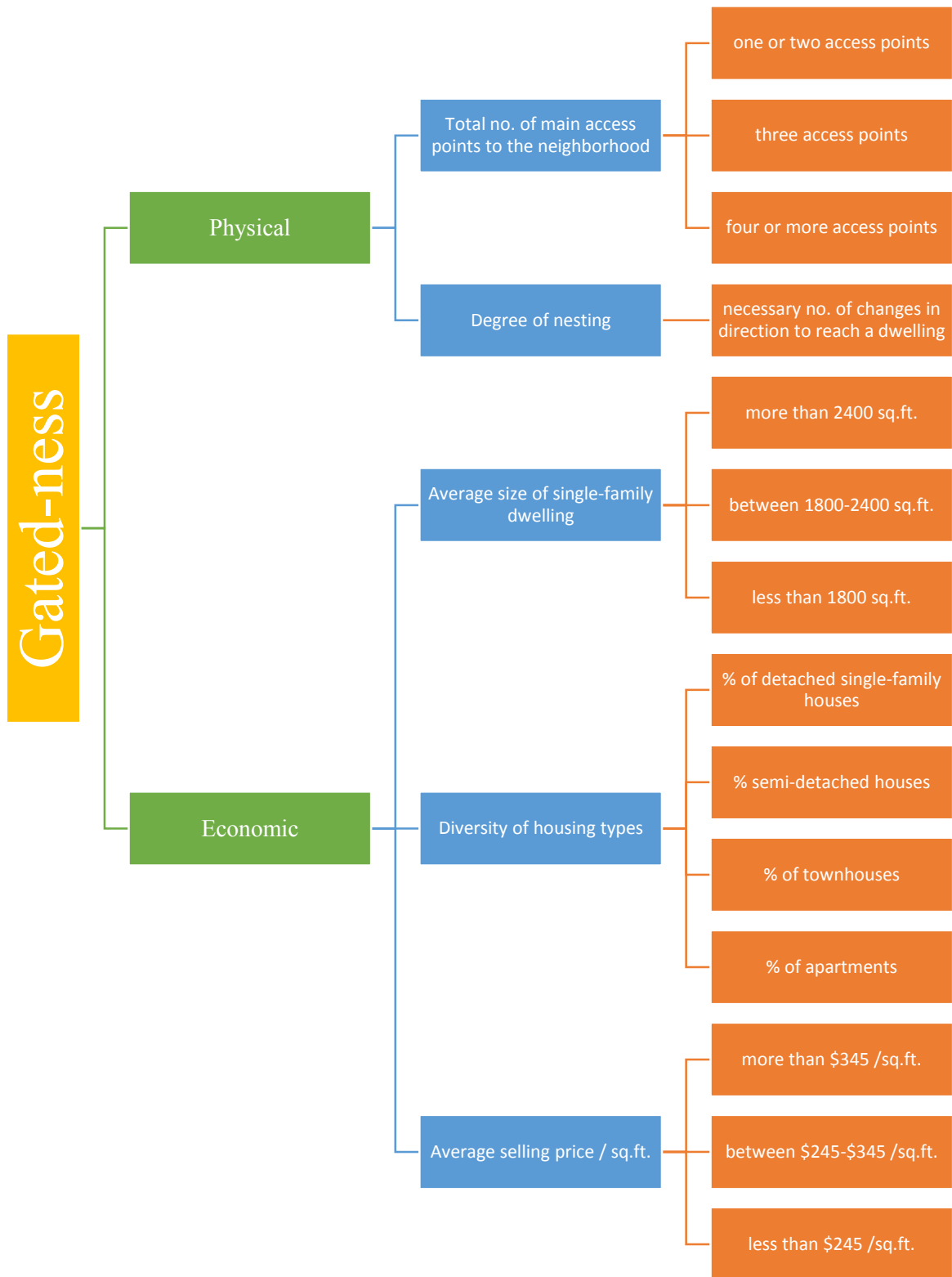


Figure 4.3. Operationalization of the concept of neighborhood gated-ness

Using the above operationalization of the concept of gated-ness, neighborhoods were divided into two main groups: a) Semi-gated and b) Non-gated.

Alternatively, if a neighborhood was categorized as fully gated (i.e. having a restricted entry with gates / guards where residents use physical card passes or digital code access), such a neighborhood was not included among the population of case studies to be sampled. The reason for not including such gated neighborhoods is that this research focuses on semi-gated-ness as the more prevalent form of neighborhood design in Canada, especially in Calgary. Also, given that Canadian cities are relatively safer than, for example, U.S. counterparts, the use of explicit physical gating is much less. The assumption that implicit 'economic' gating is more prevalent in relatively new neighborhoods becomes more credible.

A neighborhood was categorized as semi-gated if it has one or two access points without restricted entry protocols and has a high 'economic' gated-ness in terms of high average size of single-family dwelling (more than 2400 sq. ft.), low degree of diversity of housing types (more than 85% single-family and semi-detached houses), and high average selling price per square foot (more than \$345 /sq. ft.).

Equivalently, a neighborhood was categorized as semi-gated if it has at most three access points as well as a high degree of nesting, measured as having a total number of more than three changes in direction to reach the main entry of any one of the dwellings by the shortest or most direct route possible after entering the neighborhood in addition to the 'economic' gated-ness criteria described in the previous paragraph.

On the other hand, a neighborhood was categorized as non-gated if it has three or more access points and with a low degree of nesting (measured as having a total number of three or less changes in direction to reach the main entry of any of the dwellings by the shortest or most

direct route possible) as well as having low degree of ‘economic’ gating in terms of average single-family house size of less than 1800 sq. ft., relatively diverse housing types (less than 85% single-family and semi-detached housing), and an average selling price of less than \$245 / sq. ft.

A change in direction in this study means a change in the cardinal orientation by increments of 45° for curvilinear streets and increments of 90° for orthogonal streets. The total number of changes in direction is equal to the total number of increments of the specified angles taking into account the geometry of the streets.

The following 2x2 matrix shows the possible categorizations of neighborhoods as well as designates which ‘cells’ are considered in this study as semi-gated and which are considered non-gated. The cells designated as case B or case D in the matrix represent hybrid cases. That is, a neighborhood having physical gated-ness but relatively low ‘economic’ gating (case B); or a neighborhood having relatively high ‘economic’ gating and high physical accessibility (case D). It can be generally assumed that ‘hybrid’ gating types such as those categorized under cases B and D may be less common but actually do exist.

Table 4.1. Matrix for neighbourhoods by degree of gated-ness

	HIGH ‘ECONOMIC’ GATING	LOW ‘ECONOMIC’ GATING
1 OR 2 ACCESS POINTS	Case A: Semi-Gated (SG)	Case B: Hybrid-Gated (HG-B)
3 ACCESS POINTS		Case C: Non-Gated (NG)
4 OR 4+ ACCESS POINTS	Case D: Hybrid-Gated (HG-D)	

After having categorized relatively new neighborhoods into either a semi-gated, non-gated, or hybrid, the following step was the determination of the sampling frame and the sampling method for the cases and the target resident population.

4.3 Choice of Case Studies

The rationale for selection of case studies was based on the maturity of development of the neighborhood. The rationale was to choose suburban neighborhoods in each metropolitan area that:

- a) Have been developed at approximately the same time.
- b) Are spatially contiguous or located close to each other in such a way that contiguous neighborhoods to the chosen cases are contiguous. In general, the chosen neighborhoods would be within the same socioeconomic ecological sector in each metropolitan area. Satisfying this criterion assumes that planning norms and overall context influencing the physical form of the neighborhoods is controlled for.
- c) Have similar social attributes for their residents.

The above criteria controlled for spatial / locational differences, length of residence, and other social differences in such a way that comparison of the cases is valid.

4.3.1 Time and Status of Development

The population of neighbourhoods from which the case studies will be chosen are neighbourhoods whose time of development is the 2000s and whose construction status is completed and not still building out. This criterion is based on the time period of proliferation of gated communities since the 1990s according to international literature. A precedent for a private enclosed residential development, Lake Bonavista, is found in Calgary and was built in 1967. Since then, the experiment of restricting entry to a private neighbourhood has not gained traction within the City limits. The more common approach and preferred model has been the creation of 'semi-gated' neighbourhoods where implicit gating is achieved through physical and economic

barriers. For Vancouver, gated communities still prevail but predominantly in the form of retirement communities.

The criterion that the neighbourhood status be built out and not still building out is related to the dependent variable of the research, neighbourhood cohesion. Choosing a case study whose status is built out, the research aims at measuring a sense of neighbourhood cohesion for residents who have moved into the neighbourhood and resided for more than a year. Some researchers, however, have argued that the sense of neighbourhood cohesion is relatively prominent for residents who move into a new neighbourhood at the same time (Gruis et al., 2006: 82) based on the assumption that they would have similar needs and would be more open to social encounters with the purpose of being introduced to their neighbours and for access to information. In order to avoid results for only an ‘initial’ sense of neighbourhood cohesion upon moving into a neighbourhood, cases will be chosen for neighbourhoods that have been built out and mostly for residents who resided for at least a year.

Data at the neighbourhood level rather than individual census tracts has been found for Calgary from the open data catalog based on the 2011 Census data. The data shows that there have been 18 neighbourhoods in Calgary constructed in the 2000s, of which 5 are still building out¹⁶. However, similar data was not found for Vancouver metropolitan area after consulting open data catalogs for Metro Vancouver and separate municipalities such as Vancouver, the district of North Vancouver and Surrey.

¹⁶ This gives a population of 13 neighbourhoods: One neighbourhood in the East sector: Applewood Park; three neighbourhoods in the Northeast sector: Abbeydale, Coral Springs, and Monterey Park; two in the North sector: Country Hills Village and Coventry Hills; three in the Northwest sector: Hamptons, Royal Oak, and Tuscany; one in the south: Bridlewood; and three in the West sector: Crestmont, Discovery Ridge, and Valley Ridge.

Thus, in order for the method of choice of case studies be consistent for both Calgary and Vancouver, data at the census tract level rather than the neighbourhood level was used as a basis for the choice of neighbourhood case studies. Using a consistent method has the advantage of replicating the method in other studies focused on metropolitan areas.

Five queries were carried out using a GIS software called MapInfo Professional by the help of Dr. Townshend. A map was prepared with the objective of having a comprehensive view of both Calgary and Vancouver in the same map so that queries / criteria could be run simultaneously for both metropolitan areas. The preparation of the map necessitated that the census tract data be connected to the unique identification number: for Calgary, 825; and Vancouver, 933 so that all census tracts of both metropolitan areas are included in the map. In addition, another layer for the road maps was added in order to facilitate legibility of the map as well as help determine the location of chosen census tracts within each metropolitan area. To decrease file size, the road map was truncated to include only the roads for both Calgary and Vancouver metropolitan areas.

In order to determine the census tracts whose housing inventory has been built since 2001, the 2006 census data was used¹⁷. The percentage of housing [HSG] was calculated using MapInfo software by using the following calculation:

$$\% HSG = \frac{\text{No. of occupied private dwellings constructed in the period 2001 to 2006}}{\text{Total number of occupied private dwellings in 2006}} \times 100$$

¹⁷ Cumulative profiles for 2006 Census tract data was obtained from: <http://dc1.chass.utoronto.ca/census/>

A query was then run for identifying census tracts whose percentage of constructed housing after 2001 was greater than or equal to 50. The query resulted in a total of 20 census tracts: 7 in Vancouver and 13 in Calgary, one of which is in the municipality of Airdrie.

The following maps show the location of the identified census tracts after the first query:

Vancouver 2006 census data (1st query; n=7)

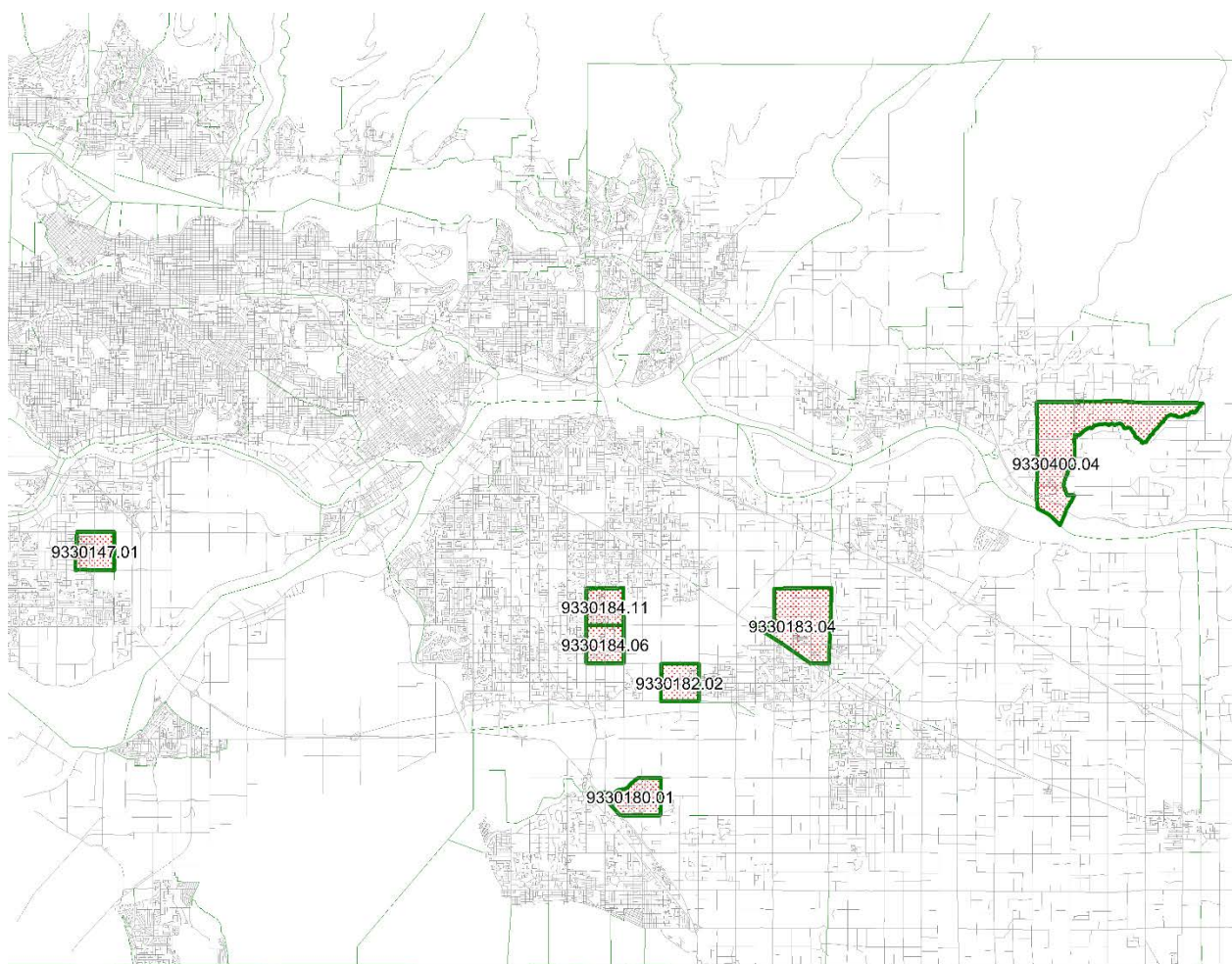


Figure 4.4. Set of census tracts in Vancouver metropolitan area after first query

Calgary 2006 census data (1st query; n=13)

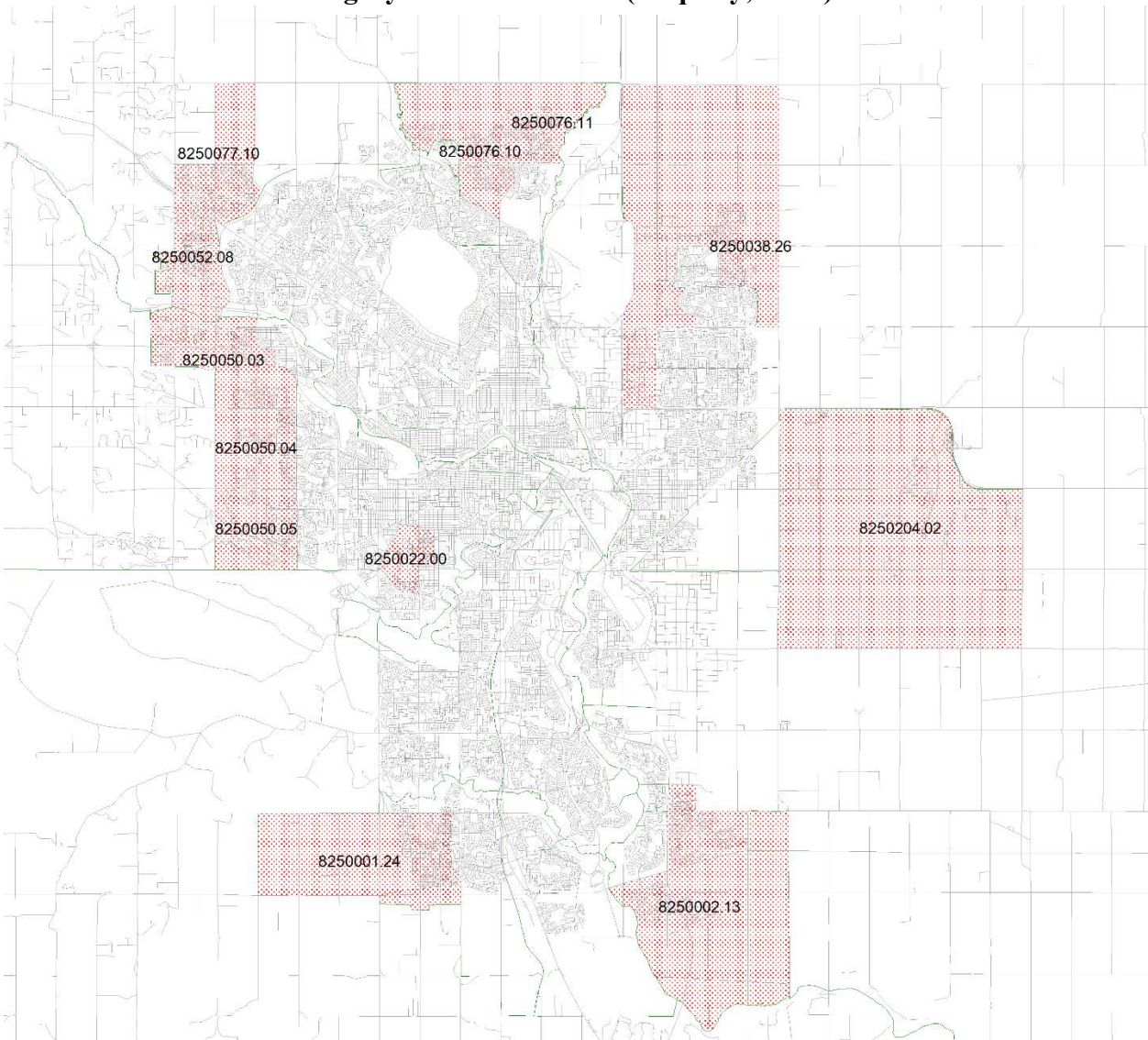


Figure 4.5. Set of census tracts in Calgary metropolitan area after first query

From the above maps for the first query, census tracts identified in Metro Vancouver are mostly located in the municipality of Surrey while almost all identified census tracts are located in Calgary with a predominant concentration in the Northwest and West sectors of the city.

4.3.2 Economic Exclusivity

As the research is mainly concerned with the phenomenon of exclusivity or elitism, successive queries were used to filter the possible case studies for the research. The second query was used to identify the CTs that have above average dwelling value [$AVDWEL \geq 1.0$]. As a preparatory step for this query the following calculation was performed using average dwelling value from the 2006 census data:

$$\text{Ratio of average dwelling value} = \frac{\text{Average dwelling value in Census Tract}}{\text{Census Metropolitan Area average}}$$

The 2nd query resulted in a total of 10 CTs: 3 in Vancouver, in the municipality of Surrey and 7 in Calgary as the following maps show:

Vancouver 2006 census data (2nd query; n=3)

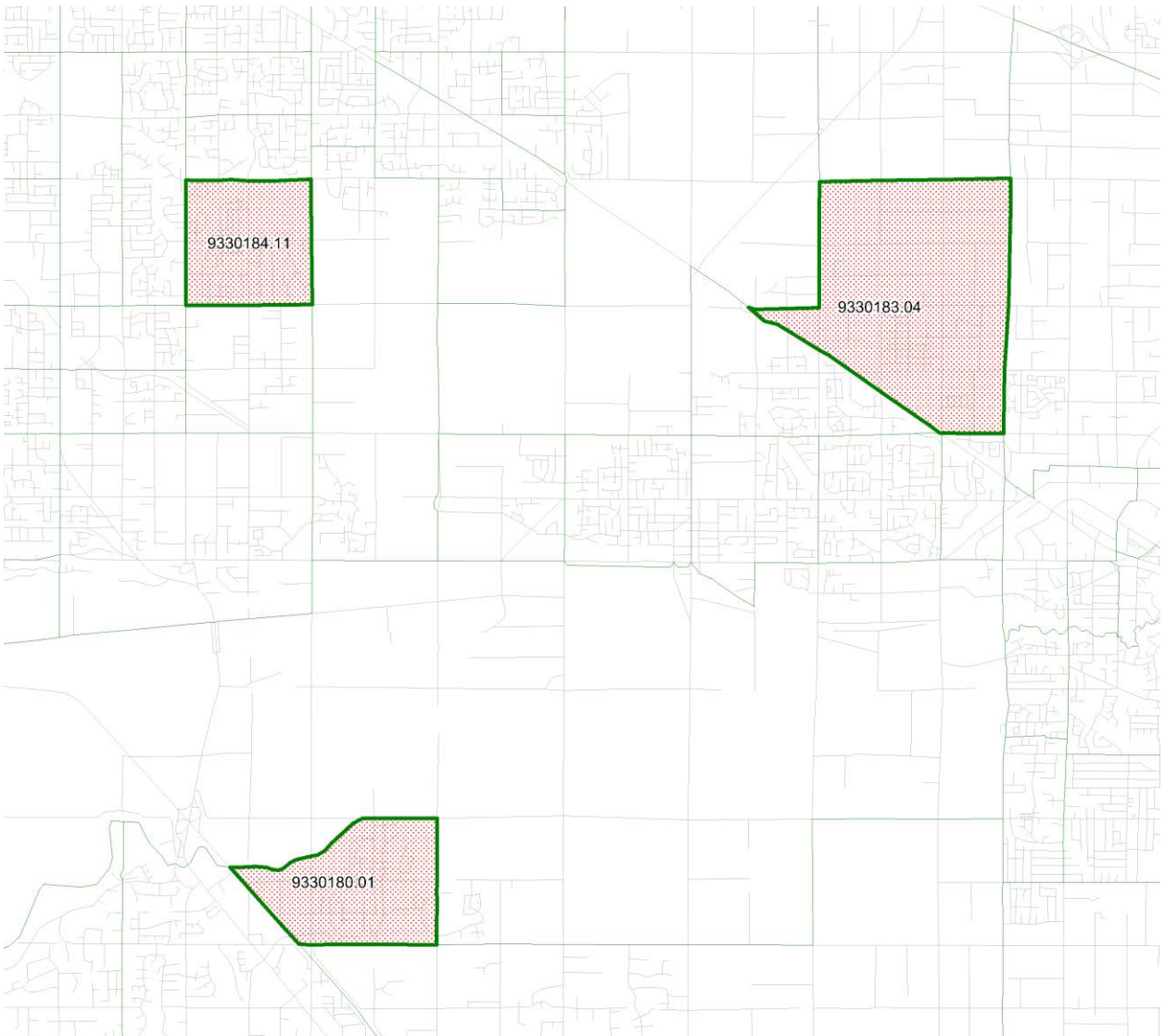


Figure 4.6. Set of census tracts in Vancouver metropolitan area after second query

Calgary 2006 census data (2nd query; n=7)

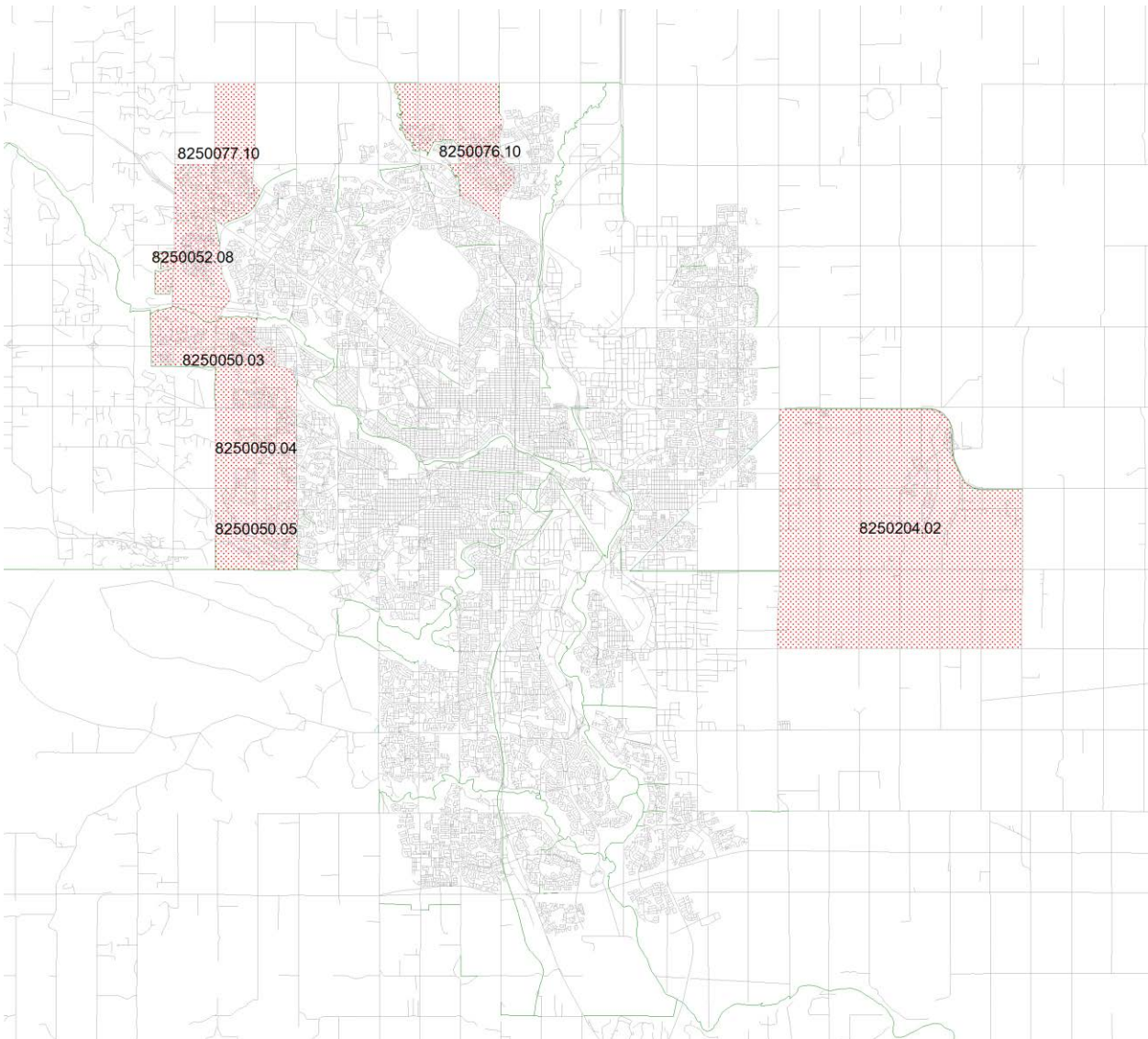


Figure 4.7. Set of census tracts in Calgary metropolitan area after second query

This second query has reinforced the preliminary results of the first query. For Vancouver, the three census tracts identified are all located within Surrey while in Calgary 5 out of 7 census tracts are located in the Northwest and West sectors of the city.

The third query was used to identify census tracts that had a ratio of average household income above the CMA average [AVHHINC \geq 1.0] calculated as follows:

$$\text{Ratio of average household income} = \frac{\text{Average household income in Census Tract}}{\text{CMA average household income}}$$

The results of this query identified nine CTs by the elimination of one of the census tracts in Calgary (that located in the North sector) and none for Vancouver where three CTs remained identified from the previous query.

4.3.3 Housing Diversity

A fourth query sought to filter census tracts according to diversity of housing by a simple calculation of an index of housing diversity¹⁸ [INHSGDIV] as follows:

$$\text{Index of Housing Diversity} = \frac{1 - \sum_{i=1}^n P_i^2}{1 - \frac{1}{n}}$$

; Where P_i = proportion in the i^{th} category of housing types¹⁹; n = no. of housing types;

In order to ensure comparability among case studies with similar housing diversity, a mid-range for the index of housing diversity was used to filter out cases that had a complete specialization in one type or a complete diversity. Accordingly, a range for the index of housing diversity was set between 0.3 and 0.7; that is, $0.3 \leq \text{INHSGDIV} < 0.7$.

The results of this 4th query did not filter out any of the census tracts for either Vancouver or Calgary. Thus, there remained a total of nine CTs: 3 in Surrey and 6 in Calgary.

¹⁸ This index has been derived from the index of ethnic diversity by Dr. Townshend.

¹⁹ An index of 0 = no diversity (complete specialization or 100% of one category of housing type. An index of 1 = complete diversity or even shares in all categories of housing types.

4.3.4 Diversity of Population

In line with choosing case studies that have some exclusivity, the fifth and final query sought to eliminate census tracts that had a visible minority 50% and over [i.e. $VISMIN < 50$]. The reason for eliminating census tracts having a majority of visible minority population is to avoid cases with a particular social structure that may impact upon levels of neighbourhood cohesion. Specifically, the 5th query calculated the percentage of total visible minority population as follows:

$$\% \text{ Visible Minority} = \frac{\text{Total visible minority population in Census Tract}}{\text{Total population in Census Tract}} \times 100$$

The results of this query identified a total of 8 census tracts with the elimination of one of the census tracts in Surrey.

Figures 4.8 and 4.9 show the final 8 CTs: 2 in Surrey and 6 in Calgary.

Vancouver 2006 census data (5th query; n=2)

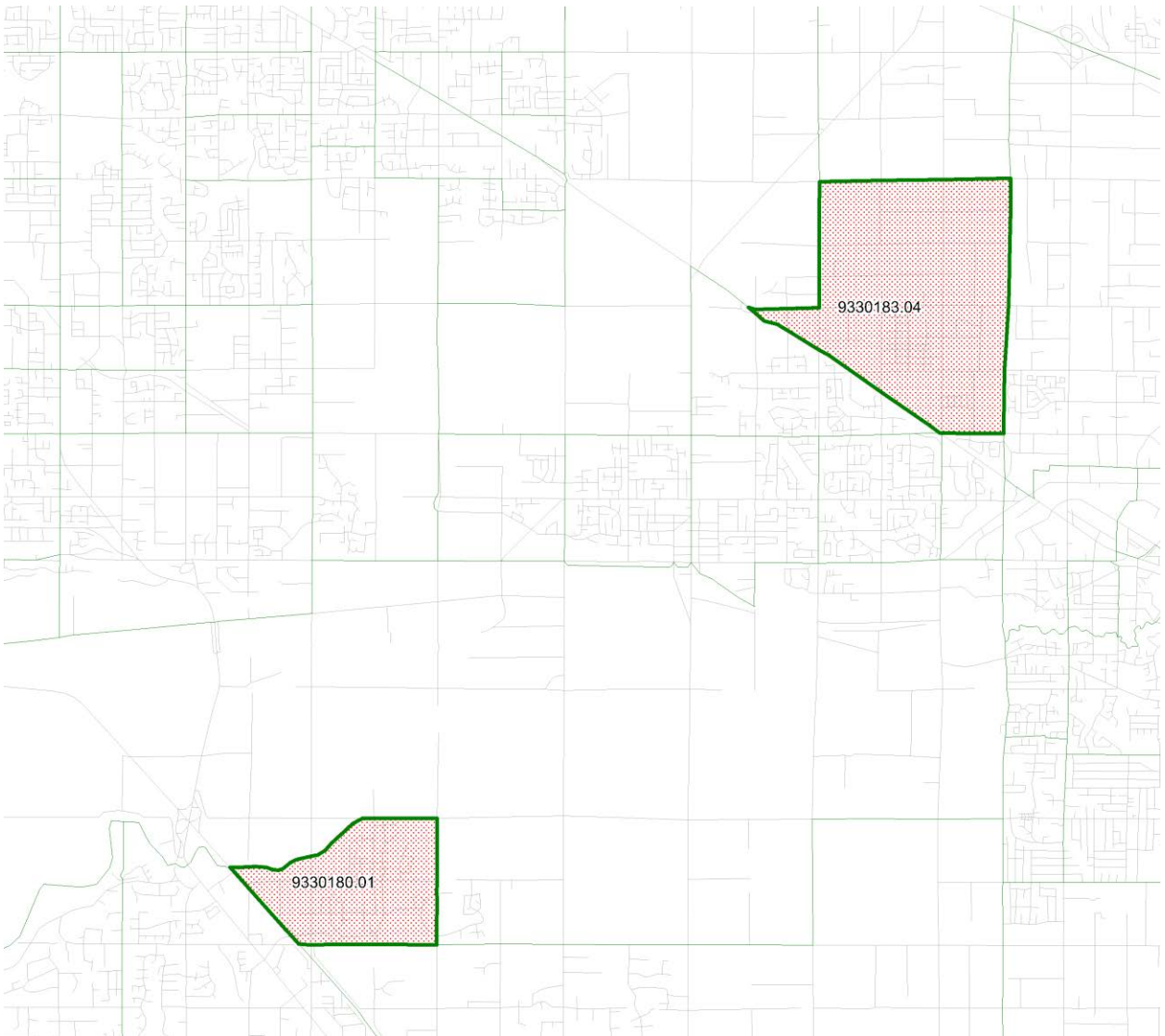


Figure 4.8. Two census tracts in Vancouver metropolitan area after fifth query

The road map underlay allowed the researcher to identify the two neighbourhoods in Surrey that correspond to the resulting two census tracts from the query by extracting information using MapInfo for the street names and then referring to Google Maps. The two neighbourhoods in Surrey are: **East Clayton** (CT 9330183.04) and **Rosemary Heights** (CT 9330180.01).

Calgary 2006 census data (5th query; n=6)

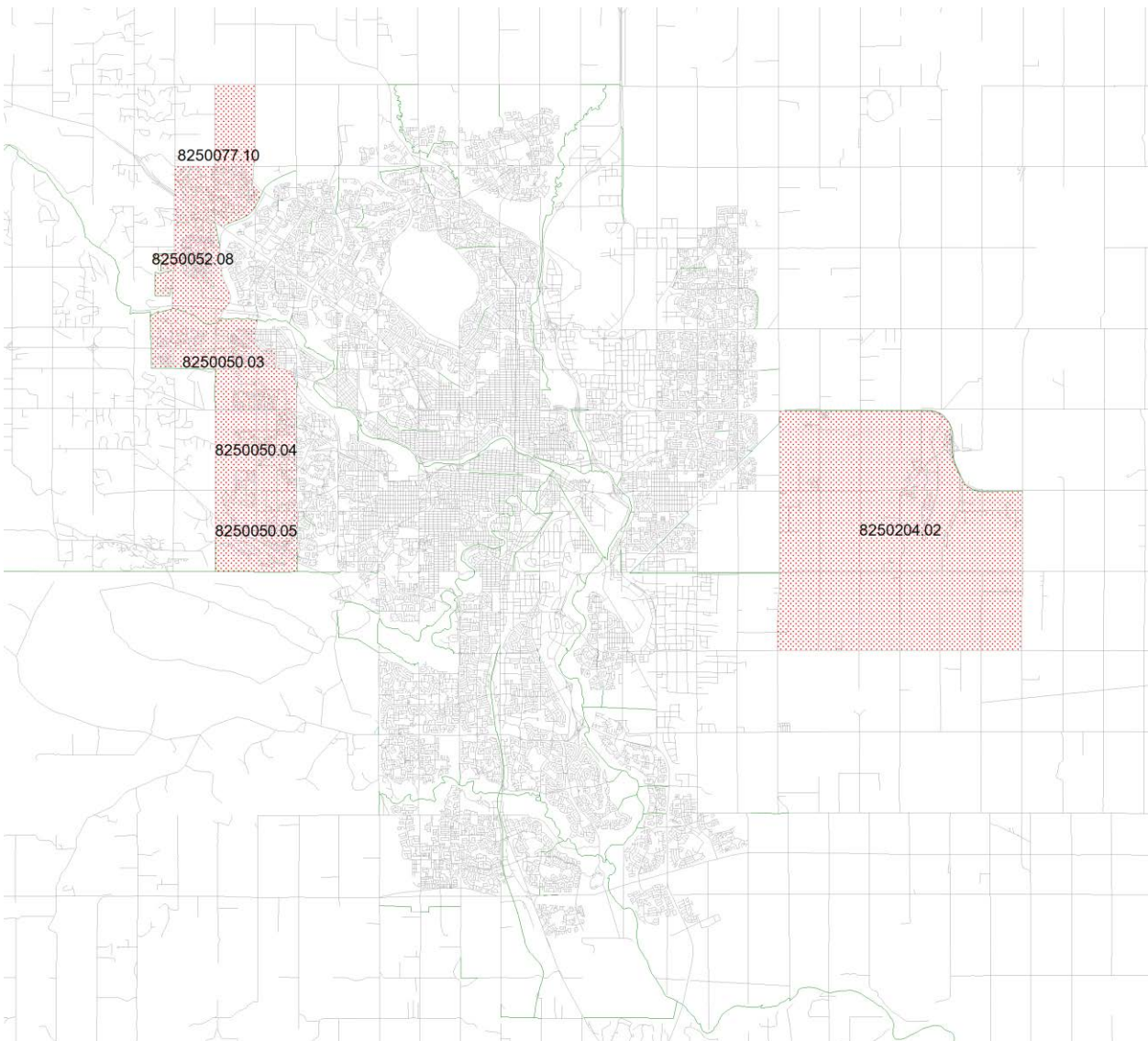


Figure 4.9. Six census tracts in Calgary metropolitan area after fifth query

The following step necessitated reference to the 2011 Census Tract Boundaries to identify if the 2006 census tracts resulting from the above query have been further subdivided. In the case of Surrey, the two census tracts were not subdivided. However, for Calgary, each of the census tracts in the Northwest sector was subdivided into four census tracts while each of the West sector census tracts was subdivided into three smaller census tracts. Thus, the total number of census tracts for both sectors of the city in 2011 amounts to 17 CTs corresponding to the neighbourhoods

of Royal Oak, Tuscany, Valley Ridge, Crestmont, Cougar Ridge, West Springs, Aspen Woods, Springbank, and Discovery Ridge.

Applying the criterion of build-out status to the neighbourhoods of Calgary eliminated Cougar Ridge, West Springs, and Aspen Woods. When a criterion of population size of neighbourhoods was added, the neighbourhood of Crestmont was eliminated as it has the least size compared to other neighbourhoods; a total population of only 1,430 in 2011 when compared to the usual average of 4,000. For practical reasons, the relatively large neighbourhoods in population size were also eliminated as it would not be feasible to cover by a single researcher in terms of resources. Accordingly, the neighbourhoods of Royal Oak, Tuscany, and Springbank were eliminated with population sizes of the order of 18,000. The two remaining neighbourhoods of Valley Ridge and Discovery Ridge are comparable and serve the purposes of the research in that both belong to the same West sector of Calgary, have a comparable population size (5,042 and 4,398 respectively according to 2011 census) and both have a visible minority of 15% or less (15.0% and 12.6% respectively).

The choice of the four case studies in Vancouver and Calgary are:

Vancouver (Surrey), B.C.

East Clayton

Rosemary Heights

Calgary (West Sector), AB

Valley Ridge

Discovery Ridge

4.4 Ethics Statement

The research protocol has been granted ethics approval for conducting the research. The Conjoint Faculties Research Ethics Board at the University of Calgary found the proposed research involving human participants to be in accordance with University of Calgary Guidelines and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.

4.5 Sampling Method

4.5.1 Sample Size

In order to determine a sample size that reflects the targeted population as precisely as needed, an online sample size calculator was used. The following is a link to an online sample size calculator: <http://www.surveysystem.com/sscalc.htm> that has been used to determine an estimate of the sample size needed for a neighborhood. An input for the confidence level and confidence interval are entered in the online calculator that outputs the sample size. For example, using a confidence level of 95% typical for most research and a confidence interval of 10, gives a required sample size of 94 (for a random sample) for a neighborhood of 5,000 residents

4.5.2 Face-to-face and Self-administered Surveys

Survey participants were recruited on site, door-to-door, during field visits to each of Valley Ridge and Discovery Ridge neighbourhoods. Care was taken to target participants from different areas within the neighbourhood so as to avoid bias of sampling while also targeting a suitable sample (ranging from 5 to 15 participants) from each sub-area within the neighbourhood depending on the size of the sub-area as well as willingness of residents to participate. Care was also taken to conduct interviews after every 8th survey (or so) with a participant or two from each sub-area. This was not the case for East Clayton and Rosemary Heights where interviews were conducted continuously during the field visit. Nevertheless, care was taken to choose participants from different areas of those neighbourhoods.

For most of the face-to-face surveys, the researcher read the questions to the participants and marked their responses. In several instances, participants would agree to participate and fill the survey in the presence of the researcher or, in other fewer instances, ask the researcher to stop by after a period of time to collect the survey.

4.5.3 Random Sampling of Addresses

ArcGIS 10.1 software, Geospatial Modeling Environment (GME) software random sampling tool, and digital mapping technology (DMTI) spatial CANMAP Postal Code Suite were used for creating a random sample of addresses in East Clayton and Rosemary Heights with the help of a GIS specialist at the University of Calgary. The following were the steps used for sampling:

- 1) The first step consisted of downloading the 2011 census tract boundary shape file from Statistics Canada website (<http://www12.statcan.gc.ca/census-recensement/2011/geo/bound-limit/bound-limit-2011-eng.cfm>) and selecting the census tracts for East Clayton (9330183.04) and Rosemary Heights (9330180.01).
- 2) The selected census tracts were then clipped using the address shape file (*cadAddressesSHP.shp*) contained in Surrey Property dataset downloaded from Surrey Open Data Catalogue (<http://www.surrey.ca/city-services/658.aspx>) to produce address shape files for East Clayton and Rosemary Heights.
- 3) Postal codes polygon shape files (*BCldu.shp* local delivery unit polygon file) were then spatially joined to the addresses in the corresponding shape files for East Clayton and Rosemary Heights.
- 4) In order to eliminate vacant lots, green space, and lots under construction, a 'select by location' tool was used to select lots from Surrey Property lots shape file (*cadLotsSHP.shp*) that intersected with the buildings shape file (*facBuildings.shp*) from Surrey Property dataset.
- 5) In order to eliminate addresses that referred to strata type lots (i.e. lots that had an address referring to more than one unit), a 'select by attribute' tool was used to select lots that had a plan type = subdivision.
- 6) The set of selected addresses after elimination of vacant and strata lots were then spatially joined to the zoning shape file (*IndZoningBoundaries.shp*) contained in Surrey Planning dataset in order to identify addresses that had a residential category.

- 7) Addresses with a residential category were then selected under the Zoning field in order to eliminate business addresses, schools, senior homes, etc.; (i.e. excluding general agricultural zones, neighbourhood commercial zones, one acre residential zones, and special care housing). In the case of East Clayton, ‘comprehensive development zones’ were also excluded to filter out commercial areas; this was not done with Rosemary Heights due to the smaller number of addresses and lack of large commercial zones within the neighbourhood.
- 8) A random sample of 730²⁰ addresses in each of East Clayton and Rosemary Heights was then generated using GME’s random sampling tool. This created a new RNDSAMP field in the address shape files with a value of 1 for those addresses in the sample and a value of 0 for the excluded addresses.
- 9) The selected addresses with RNDSAMP field =1 were then exported to .csv file and opened in Excel in order to construct the full mailing address by concatenating the fields for house number, road name, postal code, and the addition of ‘Surrey, B.C’. Each address was then printed on Avery white mailing labels 1 ½” x 4”.

4.5.4 Phone Sample

The low overall response rate by mail (4% to 5%) necessitated the use of a complementary sampling method for data collection. Either an online survey or a phone survey could be used in order to reach the required sample size. Having forward sortation area (FSA) and postal code information from mail address sampling could be used in either method to obtain email addresses and phone numbers of target sample population. For an online survey, email addresses of residents could be rented from a third party at a lower cost of time (with the help of a software for email blast) and money than a phone survey. However, the drawback of email list rentals is

²⁰ The number 730 was determined based on an expected response rate of 13%. Such a high response rate was based on the initial response rate of 75 hand-delivered packages in the case of Valley Ridge. The cost of resources (e.g. postage stamps, printing, and return envelopes) to sample a larger number of addresses was also a factor.

that the list is opt-in by consumers and may not satisfy random selection of the sample. Moreover, there is a limitation on querying the data by FSA rather than by postal code.

A phone survey was chosen as a complementary method for data collection. A list of 1,000 randomly selected names and phone numbers was purchased from InfoCanada for each of two FSAs, V4N (area for East Clayton) and V3S (area for Rosemary Heights) from a database of 9,512 and 15,469 entries respectively. Given that the FSA included other entries outside of East Clayton and Rosemary Heights, only 152 entries were found that belong to the target sample population. Calls were made by an experienced call center specialist to 152 persons from the initial list of 2,000 entries with a total of 30 responses retained.

Another more focused list of 600+ entries for each of the two neighbourhoods was then requested from InfoCanada. Calls were made by the same call center specialist to over half of the entries of each list in order to reach the required sample size in each neighbourhood. The phone survey commenced mid-April and finished late-May with a response rate of about 15% and an average of 2 participants per hour for a total of 44 hours taken to contact residents of each neighbourhood.

4.6 Survey Questionnaire²¹

A survey questionnaire was conducted using a mix of methods in order to achieve required sample size. The survey questionnaire was conducted either by phone, door-to-door, or self-administered by mail using Canada Post service. In a very few cases, an online survey questionnaire was filled by participants using Survey Monkey. The survey questionnaire was

²¹ Please see appendix E for survey questionnaire.

reviewed for grammatical accuracy and ease of comprehension for the general public by an academic development specialist from the Student Success Centre at the University of Calgary.

Mailing out the survey was done for the two cases in Surrey. A total of 1,460 packages were delivered to residential addresses in East Clayton and Rosemary Heights. For East Clayton, 360 packages were delivered at the doorstep of randomly selected addresses by the researcher during a field visit on March 5, 2014 with the help of a map of the neighbourhood that showed the selected addresses and an additional 370 packages were sent by post to the remaining randomly selected addresses on March 13, 2014 from Calgary. For Rosemary Heights, a total of 730 packages were all sent by post on March 18, 2014 from Calgary. The envelope size of the total package was 7 ½” x 10 ½” containing a cover letter, a consent form to be signed by the participant, the survey questionnaire, and a prepaid / business reply mail return envelope (size 5 ⅞” x 9 ⅝”, Quick Strip closure). The consent form explained the purpose of the research, any foreseeable risks and benefits of the research as well as what was required of voluntary participants and what type of personal information would be collected.

The following table summarizes the survey collection methods used by each case study.

Table 4.2. Survey Collection Methods

	Valley Ridge	Discovery Ridge	East Clayton	Rosemary Heights
Date	Jan./Feb. 2014	April 2014	Mar./Apr./May 2014	Mar./Apr./ May 2014
In-person (door-to-door) or self-administered	√	√	x	x
Online	x ¹	x ¹	x	x
By post	√	x	√	√
By phone	x	x	√	√

¹ Only one resident in the neighbourhood has used the online survey

Overall, the field survey (and interviews) took a period of four months from late January 2014 to late May 2014. Care was taken to include residents from different parts of each neighbourhood, i.e. residents along main boulevards as well as residents further within the neighbourhood and along cul-de-sacs.

4.7 Interview Questions²²

In addition to the survey questionnaire, semi-structured interviews were conducted with 12 residents from each case study in order to get more in-depth knowledge of responses of residents.

Participants included residents who serve on the board of the Homeowner Association or community association when applicable in order to obtain their perception of neighborhood cohesion in their community. Almost all of the 48 interviews were conducted face to face except for one which was conducted by phone and a few that were self-administered during field visits.

Interviews were also conducted with municipal planners of the City of Calgary and Surrey in order to obtain their responses on how they perceive the gated-ness of neighborhoods as a strategy in their planning decisions.

4.8 Data Analysis²³ – Level I

The data collected was reviewed and analyzed in three consecutive passes: 1) open coding; 2) axial coding; and 3) selective coding. This coding phase was performed by using a software application called nVivo 10 for qualitative data analysis. In the first pass, open coding involved assigning initial codes, tags, or labels to chunks of data (clauses, sentences and paragraphs) in order to condense the mass of data into categories. A list of themes / categories

²² Please see appendix E for interview questions for residents and municipal planners.

²³ Reference for Data Analysis section: Neuman, 1991.

was made at the end of the open coding and was subject, in the second pass of coding, to reorganizing, sorting, combining and discarding some categories in order to help in finding emergent themes.

The second pass, axial coding, shifted the focus from the mass of data to the codes and labels assigned in the open coding pass in order to identify the axis of key concepts and work towards organizing the themes. During this pass of axial coding, effort was made to relate the concepts / themes and group them into clusters in order to stimulate thinking about linkages between the concepts.

A third pass of data coding (selective coding) was performed after having identified the major themes emerging from the axial coding pass. This pass involved selectively looking at the collected data in order to find supporting or conflicting evidence for the major themes as well as re-organize and elaborate on these themes.

During the three passes of the data coding phase as well as subsequent to the field survey and field visits, analytic memos were written in order to make explicit thoughts and ideas that emerged during the coding process. Coding passes were interrupted in order to write the analytic memos. Such analytic memos formed the basis for interpreting the data in the final research report. To be effective, reference to data locations was included in each analytic memo to facilitate retrieval and cross-checking of data. Analytic memos were also dated and grouped by theme and combined when deemed necessary after periodic reading of memos.

4.9 Data Analysis – Level II

Data analysis generally means the search for patterns in data. The patterns are then interpreted in terms of social theory or the specific context where the pattern occurs. Two specific data analysis methods were used in order to complement the data coding phase and find patterns in the data: the illustrative method and the analytic comparison method.

4.9.1 The Illustrative Method

This method of data analysis uses empirical evidence to illustrate or support a theory. The underlying theory provides the categories or rubrics under which the data may be categorized. Data may either support or contradict the theory. Data from multiple cases provides parallel demonstrations of the theory and the applicability of a model in several cases.

This method was useful in organizing the collected data and providing a theoretical lens through which data may be analyzed for the search of patterns. It was also useful in bringing out any anomalies that one of the case studies may have exhibited when trying to explain it using a particular social theory.

4.9.2 The Analytic Comparison Method

The illustrative method was balanced by the use of the analytic comparison method. Unlike the illustrative method where an underlying theory or model provides a framework for organizing the data, the analytic method provides more flexibility by allowing for the development of ideas from regularities or patterned relations within the data of a particular context. In this research, the particular context is Western Canadian metropolitan areas. Focus was put on a few of the regularities in the case studies which were contrasted with alternative explanations while teasing out regularities that may not be limited to a particular context.

In order to apply the analytic comparison method, the “method of difference” was used rather than simply looking for what is common in the compared cases (cf. “method of agreement” - in terms of common causes and common outcomes). The method of difference is stronger and provides a ‘double application’ of the method of agreement. Cases were grouped into sets according to their similarities (positive cases) and differences (negative cases) with regard to causes and outcomes. Key causal features were then identified that would explain why cases may have some similarity to other cases but differ in outcome due to the lack of key / critical features; in other words, why similar cases exhibited different outcomes.

4.10 Quantitative Analysis

The survey questionnaire consisted of 23 questions to which residents responded on a 5-point Likert scale from strongly disagree to strongly agree. Responses were coded using an ordinal scale from 1 to 5 where 1 = strongly disagree and 5 = strongly agree except for two *questions* that underwent reverse coding: question no.5 (I would like to move out of this neighbourhood) and question no.15 (I rarely have neighbours over to my house to visit). Such coding and reverse coding of responses follows the analysis done by Buckner when comparing the Neighbourhood Cohesion Index (NCI) of three Maryland suburban neighbourhoods in Washington, DC.

The first step of analysis consisted of calculating an enveloping space construct as the mean value of four items of the questionnaire that were added to Buckner’s survey instrument. The following is a table that shows the questions for the four items included in the quantitative analysis for the index of enveloping space and the dimension of enveloping space it pertains to.

Table 4.3. Four Items for Calculating the Index of Enveloping Space

Item	Question	Dimension of Enveloping Space
19	People in my neighbourhood work together to keep children safe	Informing
20	I consider my neighbourhood to be unique	Informing
21	There are certain dress codes, social practices, or events that characterize my neighbourhood	Ex-forming
23	It is easy to distinguish residents from non-residents who are walking in the neighbourhood	Ex-forming

As shown in the above table, two items pertain to the informing dimension of Enveloping Space and two other items pertain to the ex-forming dimension of Enveloping Space. The informing dimension concerns cognitive evaluation by residents of the social and physical environment of the neighbourhood (items 19 and 20, respectively). Item 19 probes in a succinct way for a cognitive understanding of unity of purpose among residents for caring for children in a suburban environment. An assumption here is that caring for other children in a neighbourhood is an indicator of common values while at the same time providing an ‘enveloping’ sense for children in a social way. Item 20 probes in a succinct way for a cognitive understanding of the uniqueness of the neighbourhood. An assumption here is that the more the cognitive sense of the uniqueness of the neighbourhood, the more informative the environment is to residents.

The ex-forming dimension concerns perceptual evaluation by residents of external appearance of other residents. Item 21 probes in a succinct way for outward perceptual characteristics in terms of social practices and events as well as to what pertains to particular dress codes that may be followed by residents. An assumption here is that such outward and visible manifestations communicate a certain aura for the neighbourhood. Item 23 probes in a

succinct way and complements item 21 for manifested behaviours or visible cues that differentiate residents from non-residents walking in the neighbourhood. An assumption here is that there are certain perceivable cues that may not be as visibly prominent as social events.

A fifth item (Item 22) was initially subsumed under the construct of Enveloping Space and which probed for an evaluation of the aesthetic appeal of the landscape. However, for some residents, the question was not well defined and needed to be posed differently to clearly probe for an aesthetically informing environment. Moreover, four items rather than 5 items were used in order to increase the reliability of this construct. Cronbach's Alpha was found to be 0.592 using 4 items, which was larger than the reliability of 5 items. Nevertheless, the value of Cronbach's Alpha is less than the acceptable value of 0.7 which suggests that the additional items of the questionnaire need to be further developed in future research to fully account for the construct of enveloping space. Following Buckner's methodology, the Interclass Correlation Coefficient ICC was checked to be about 0.3, which suggests that enough homogeneity exists for emergence of a neighbourhood-level attribute and that enough within-neighbourhood variation exists to look for important sub-group differences.

The second step of analysis consisted of calculating a NCI for each case study as the mean value of responses to 18-item questionnaire. Three dimensions of the neighbourhood cohesion construct were also calculated for each case study by referring back to Buckner's grouping of items for the three components of neighbourhood cohesion. Following Buckner, psychological sense of community grouped all the even items; place attachment comprised items 1, 5, and 13; and neighbourliness comprised items 3, 7, 9, 11, 15, and 17. Thus, this research replicates the use of Buckner's survey instrument and subscale items for each of the three components of neighbourhood cohesion as has previously proven to be robust in the work of Wilkinson,

Townshend, and other researchers. In other words, principal component analysis PCA was not used as a statistical method to verify the dimensionality of the construct of neighbourhood cohesion.

The third step of analysis consisted of calculating the correlation bonds between the construct of enveloping space and the construct of neighbourhood cohesion and its subscales over the whole data set from the case studies. Then, correlation bonds were calculated for each neighbourhood in order to illustrate differences between neighbourhoods. A scatterplot and linear regression analysis were then conducted in order to see if enveloping space is a good predictor of the level of neighbourhood cohesion over the four neighbourhoods.

The fourth step of analysis consisted of examining associations between enveloping space and other factors in the literature that are assumed to have an impact upon the neighbourhood cohesion of residents; in particular, gender, length of residence, and household income. In the case of gender, an eta coefficient was calculated given that gender is a nominal variable. Meanwhile, for length of residence and household income, Spearman's coefficient was calculated based on a ranking of categories for each of length of residence and household income.

The fifth step of analysis consisted of examining associations between neighbourhood cohesion and the three factors identified in the literature as having an impact: gender, length of residence, and household income in order to corroborate (or invalidate) the literature on neighbourhood cohesion as well as bring out further differences across the neighbourhoods.

The final step of analysis consisted of examining interaction effects between enveloping space, gender, household income, and length of residence as predictors of cohesion. The statistical method used in this step was a generalized linear model, univariate analysis of variance ANOVA.

■ CALGARY METROPOLITAN AREA

Calgary Metropolitan Area includes: Calgary, Airdrie, Cochrane, Chestermere and a few villages. The introductory section presents a brief historical background for the city of Calgary given that the case studies chosen for Calgary CMA are located within the city of Calgary.

5.1 Historical Background²⁴

The morphogenesis of the city of Calgary stems from the favorable geographic location as a meeting place and trading post between 1867 and 1875 for the Siksika and other natives such as the Tsuu T'ina, the Nakoda, and the Pikuni, at the confluence of the Bow and the Elbow Rivers, even though the rivers were not usable for navigation. Calgary at that time was reached through major freight ways such as Edmonton Trail and Macleod Trail and was the site of whiskey trading due to its proximity to Fort Benton, Montana till the arrival of the NW Mounted Police (NWMP) in 1874 to secure the area.

The presence of the NWMP encouraged retail shops to locate at Calgary. These initial steps towards becoming a commercial hub were coupled with a change of activity from buffalo hunting to ranching and farming; buffalo hunting ceasing in 1879 with the near-extinction of the buffalo. In 1877, Treaty 7 assigned land reserves to the First Nations in Southern Alberta. Although ranching and farming have been risky industries in Calgary, they have formed the economic base of the city. The boom-bust periods for Calgary became linked to productivity cycles of the hinterland.

²⁴ Unless otherwise cited, references for the historical background of Calgary were obtained from Local and Alberta Histories Collection http://www.ourfutureourpast.ca/loc_hist/browse.aspx.

The advent of the railway and telegraph in 1883 boosted Calgary as a regional commercial center controlling surrounding ranching and farming industries. The orthogonal grid was imposed on the town to facilitate selling of lots. Wives were able to reunite with their husbands and the population grew between 1883 and 1885 from 100 to 1,000. Retail shops relocated from banks of the Bow and Elbow Rivers to Stephen Ave (8th Ave) and Atlantic Ave (9th Ave), forming the nucleus of a business district in proximity to the Canadian Pacific Railway CPR station. Shops were not only selling goods but were also a meeting place for residents as well as offering credit to customers. Wagons were still being used along Edmonton Trail till 1891 when railways connected Calgary to Edmonton. Less than a year after the arrival of the train station, Calgary's first depression occurred in 1884.

The second depression occurred a couple of years later after the severe winter of 1886. During that year, the Great Fire devoured most of the 70 wooden downtown buildings and a by-law issued on the following day mandated that all public buildings in the business district be constructed of brick or stone and roofs be covered with tin. Outside the main business district, all other buildings were entirely of wood. Local stone quarries provided the stone to re-build but were soon used up by 1914. The first sandstone building was the Knox Presbyterian Church built in 1887 (when Calgary had electricity) and two of the last buildings built with sandstone in 1914 were the Alberta Court of Appeal and Mewata Armouries. The period from the late 1880s to early 1890s was a prosperous time for two-storey office block construction as well as hotels but was followed with a mid-1890s depression and a cholera epidemic, exacerbated by drainage and waste disposal problems.

The early suburbanization of Calgary is traced back to the introduction of two streetcars in 1909, and reaching 70 streetcars in 1915 (Neill, 2011). During the boom years for Calgary

from 1910-1912, the population grew to 45,000 with 25% of the population working in the construction industry. In 1911, Calgary tripled in size from 12 sq. miles to 36 sq. miles including 11,350 houses.

The year 1912 was a prosperous year for Calgary especially with the discovery of oil at Turner Valley but was followed with a panic in 1913 and the onset of WWI. The streetcar was eventually replaced with trolley coaches and gasoline buses in 1950.

Slow growth after 1912 till end of WWII, accompanied by civic policy and formal policy in 1920 to restrict growth, prevented the clustering of businesses along streetcar lines; i.e. downtown dominance. The inter-war years were a hard time for Calgary and its prairie hinterland. Population growth was natural as migration balanced out with those that left Calgary in the 1930s.

In 1931, population reached 83,760 of whom 70,000 were of British descent; giving Calgary a dominant Anglo-Celtic character. The discovery of oil in Leduc in 1947 changed the synergetic dependency of Calgary and its hinterland as the prime 'crop' became oil. Headquarters of oil companies started re-locating to Calgary, putting it on the international scene by the mid-1960s; Calgary gained a new 'urban' status. Modern high-rise office towers gradually replaced residential land use in the downtown core. Calgary changed as population grew from 100,000 in 1946 to 315,700 in 1965 and correspondingly increased in size from about 40 sq. miles to approximately 156 sq. miles.

5.2 Overview of Residential Development after WWII

Foran (2009) attributes major responsibility for residential development after 1945 to CMHC's lending policies in terms of amortization periods, down payments and insurance; policies that encouraged the proliferation of single family houses and, by the 1950s, resulted in a lack of affordable housing by denying lower incomes to qualify for mortgages. Another major

factor in the outcome of residential development was the City's zoning policies; a tool used to protect property and land values. Large developers came to the residential scene in the early 1970s, replacing the local builder-developers. Looking for economies of scale, large developers demanded a minimum ongoing three-cycle land supply (land undergoing construction, land in the process of subdivision application, and a supply of raw land). They were able to convince the City to approve expansion at a time when only 60% of serviced land between 1946 and 1952 had been built up at a sparse density of 18 persons per hectare, i.e. 7.3 persons per acre (Foran, 2009: 28). Moreover, expansion was approved despite a detailed report in July 1953 by the Calgary District Planning Commission and the City of Calgary Planning Department as well as a plan in the fall of 1953 to restrain expansion. Particularly, two local developers – Kelwood Corporation, formed in 1953 and Spynhill Development, incorporated in 1953 – were the initiators in pushing forward the first subdivisions that epitomized a congruence of interests between local building-developers and city officials. Such a congruence of interests became the norm for developer-city agreements for future developments where the developer installed the utilities and the city promised annexations that proceeded shortly after the development. One such residential subdivision was Glendale, located west of 37th street SW, another was Thorncliffe Heights in the north, and yet another was Meadowlark, just outside the city's southern limits.

The outward expansion reinforced a mono-centric and uni-city and was realized by contiguous growth, annexations, and discouragement of fringe communities. Annexations, though carried out by the City, were sometimes initiated and promoted by developers in order to enable lower land acquisition costs. In this sense, developers were a primary factor in directing urban growth especially after the decision of the City in 1954 to delegate the development and construction of residential subdivisions to private enterprise, a decision based on the issue of cost,

time and installation of utilities. According to Foran (2009: 20), feasibility and cost for providing underground utilities were determining factors for the direction, timing, and nature of physical growth in post-war Calgary. For instance, the city annexed land to the west in 1956 extending beyond 45th Street to 53rd Street and 26th Ave. In 1957, 25 square miles were annexed to the south to Anderson Road, increasing the city's area to 74.4 sq. miles. According to Foran (2009: 49), the feasibility and cost-effectiveness of utilities installation dictated direction of development to the south more than to the west.

The next major annexation of over 70 sq. miles occurred in the early 1960s when the City's area reached 154 sq. miles with the annexations of Bowness and Montgomery in the northwest, Midnapore in the south, and Forest Lawn in the east. These annexations, however, were propelled by the City rather than initiated by developers. This is in contrast to the developer-influenced annexations in the late 1970s which added 25 sq. miles to Calgary's area. Such annexations maintained the uni-city status of Calgary and paved the way for relatively unrestrained suburban growth (at a density of 12 persons per acre in the 1963 plan and a density of 22 persons per acre in the 1970 plan to a 'flexible' density in the 1978 plan) albeit deficient in low cost housing and green space.

The post-war suburbs were repetitive and unimaginative in their designs, qualities which attested to maximization of the profitability of private developers. A General Plan was adopted in 1963 to provide directions for future growth but, in effect, maintained the 'business-as-usual' status quo rather than an instrument of change. Few developers offered some initiatives. For example, Ellis Keith of Kelwood Corp. in 1967 created two artificial lakes: one for his development in Lake Bonavista and another for the private development of Lake Bonaventure which raised the value of lots and, accordingly, the property taxes collected by the City especially

for the 150 lots fronting Lake Bonaventure that had exclusive private use of the lake. This strategy was emulated by other developers in different parts of the city as, according to the Planning Department in 1976, lakes provided a sense of community (Foran, 2009: 145). A second major amenity was the provision of golf courses by Kelwood and Carma in residential developments such as Willow Park, Maple Ridge, and Varsity Acres. In the case of Willow Park, the golf course amenity was an afterthought by the developer in order to boost sales which were lagging. Land for this type of amenity was in some cases donated by the developer to the City in return for waiving acreage assessment fees as well as including the 10% reserve requirement for the subdivision within the amenity space.

The 1934 Zoning Bylaw²⁵ promoted low density development designated as R2 (two family residences / semi-detached) which also allowed R1, or single family dwellings. A new zoning Bylaw adopted in 1958 did not change the R2 classification and added RR1 or restricted single family zoning that allowed greater lot size and lower density.

Foran (2009: 73) argues that the Neighbourhood Plan / Unit Model that was developed to consolidate community identity (by defining neighbourhood boundaries with arterial roads and natural features) gave the City a rationale for a 'layered' zoning approach for each neighbourhood. The typical zoning rationale or pattern was a transition from the periphery with commercial and R2 zones facing arterial roads to the center of a neighbourhood with R1 designated zones; with the condition that Row housing, accepted by the City in 1960, did not face R1. Notwithstanding, developers undermined the neighbourhood plan concept by an incremental

²⁵ The 1929 Town Planning Act legislated Alberta municipalities to enact comprehensive zoning bylaws. Since the adoption of the first planning act in 1913, Alberta has substantially rewritten its planning act in the years 1929, 1950, 1963, and 1977.

development of neighbourhoods that intersected major arteries as well as boundary conflicts between adjacent neighbourhoods.

General plans of 1963, 1970, 1973, and 1978 were adopted by the City for future growth. The 1963 plan set the stage for subsequent plans by implicit and explicit acceptance of the inevitability of outward low-density growth in all radial directions. Rather than being based on the neighbourhood concept, the 1963 plan called for ‘sector plans’, i.e. development of large geographical sectors of the city in order to act as a frame of reference for future developer subdivisions. After 1973, sector plans were replaced by ‘design briefs’ that were more prescriptive and offered more guidance to developers. Nevertheless, their effectiveness was always put into question as the sprawling pattern of Calgary’s growth was never really restrained and provision of low cost and affordable housing became more and more difficult as the cost of servicing land and construction costs escalated. As Foran states, housing prices had doubled and then quadrupled by the end of the 1970s. This may attest to the monopoly exercised by the three major developers: Carma, Daon, and Genstar. However, as Foran remarks, a monopoly in the mid-1950s and early 1960s by Kelwood and Carma hadn’t raised housing prices; it is rather the rising land values between 1968 and 1977 due to doubling of construction costs and quadrupling of land servicing costs as well as the escalating cost of land that had risen more than six-fold (from \$4,900 in 1968 to \$30,000 in 1977); in other words, monopoly did not lead to price collusion (Foran, 2009: 221).

Rising housing costs and land upheld for policy review had instigated developers to plead the City for more annexations with the rationale that more land supply would lower the rate of increase of house prices and the cost of serviced lots. Two cases in point that furthered annexations albeit with the purposes of compensation were developer lands in Fish Creek and

Nose Hill Parks. Developers aimed at capitalizing on the scenic views offered by those natural environments despite their knowledge that those areas were initially reserved for park purposes. One of the planning tools that would be utilized and initiated by developers in such a case was density transfer. The risk taken by developers such as Carma, Kelwood and Wesco Property Developments Ltd. paid off through different forms of compensation which included land purchases from developers by the City, land swaps, and additional annexations as well as, in the case of Carma, monopoly of land development in the north and northwest.

Despite changing City-developer relations in terms of more lengthy and complex agreements relative to the 1950s and the imposition of heavier financial burdens on developers, the form of residential development in the late 1970s did not differ especially with respect to zoning practices and the extent of provision of low cost housing. As Foran (2009: 190) argues, development control could have been used as an instrument to counteract the rigidity of zoning bylaws but the zoning mentality prevailed even when developers applied for developing apartment buildings in transitional areas²⁶. Of course, the City acted to the benefit of established communities and single family dwellings (R1 zoning) so as to avoid potential conflict raised by NIMBY-ism (Not In My Back Yard) and prevent devaluation of existing properties. In a sense, the gap that Hulchanski (1981: 40) mentioned between planners' view of zoning and real estate interests seemed to close. In closing the gap, zoning as a planning instrument was reduced to a regulative and negative role rather than a constructive and positive one that a broader understanding of zoning would have accomplished. For instance, developers tried to maximize

²⁶ The term 'land use bylaw' originated in the 1977 Planning Act to bring together the two concepts of zoning and development control in one hybrid regulatory system (Medeiros, 2011).

commercial zoning in their subdivisions in order to act as nodes that would allow adjacent higher density residential developments. However, the extent to which this was possible was limited by the density policy of 22 persons per acre (Foran, 2009: 194).

In order to provide low cost housing in the early 1970s, the City allowed reduced lot frontages to 40 ft. which led to the demise of the suburban bungalow housing type. As increased densities were generally perceived as leading to a diminished quality of life, the pattern persisted for low suburban densities with high concentrations, a pattern that led to a lack of community cohesiveness (Foran, 2009: 213).

By the late 1970s, affordable housing remained an issue especially since the City did not go into residential land banking. The City was also reluctant to integrate low cost housing in overall subdivision designs. More often than not, the City and developer maintained interest in social housing only when federal and provincial financing were available.

5.3 Overview of Policies Affecting Residential Suburban Development

Calgary has successfully avoided ‘leapfrog’ development since the 1950s by adopting a policy of contiguous and serviced development that was facilitated by the Unicity model of growth (Taylor et al. 2010). It can be argued that such a policy for contiguous development facilitated embarking of current policy on the sustainability wagon. In the mid-1990s, policy became more focused towards sustainable suburban development with The Sustainable Suburbs Plan (SSP). The SSP had been issued prior to the development of suburban neighbourhoods of Valley Ridge and Discovery Ridge. From a social perspective, communities were to be designed to be more socially diverse with higher densities and adaptable to changing lifestyles as well as foster a strong sense of belonging to a community. Daily services were to be met within the community so as to reduce dependence on private vehicles. From a fiscal perspective, costs of

development were to be minimized by a more compact urban form and the use of less infrastructure. From an environmental perspective, environmentally sensitive areas were to be protected and integrated into the regional open space system and air pollution would be minimized by reduced vehicle trips.

Many of the sustainable suburbs principles have been applied to the neighbourhoods of Valley Ridge and Discovery Ridge, particularly in regards to the environmental perspective such as integration with the regional pathway system as well as 'ecological' landscaping / xeriscaping. However, perhaps due to competing big box retail not a far distance away, daily services were not being met within the neighbourhood. The trend towards working from home and starting home businesses is gaining traction in those communities and may contribute to fewer vehicle trips. From a social perspective, both neighbourhoods lack the presence of a building to function as a community facility for gathering residents in events and special occasions, or in the unlikely event of a natural disaster. In terms of minimum densities as indicated in the SSP (7 units/acre, i.e. 17 units/hectare), Discovery Ridge comes closer in achieving the minimum density than Valley Ridge that has a density of 6 units/acre (14.8 units/hectare). An elementary school is not present within either of the neighbourhoods, though a joint-use site (JUS) has future provision for an elementary school in Discovery Ridge.

The innovative policy adopted by the SSP was the introduction of a Growth Area Management Plan as an intermediate level between the General Municipal Plan and the new Community Plan, a type of comprehensive, collaboratively developed, plan that replaces the Area Structure Plan (ASP) and eliminates the need, and time expended, for the developer's concept plan. Its intention is to deal with issues upfront rather than in a piecemeal fashion of the outline plan as well as provide a framework for the Community Plan / ASP. Being a little older than

Discovery Ridge which had a community plan, Valley Ridge had a concept plan submitted to the City by the developer (Barbican Developments Ltd.). The SSP clearly frames curvilinear street patterns as less sustainable from a transit-oriented perspective than a modified grid pattern. Emphasis of sustainability is placed on public transit rather than social aspects such as appropriation of space and sense of safety, for instance. The utility and pragmatic layout of the grid in terms of transit, services, and infrastructure supersedes the social (and cultural) aspect of the curvilinear street pattern in terms of the creation of ‘micro’-neighbourhood units that foster a sense of appropriation, sense of orientation, and safe environment for kids to play. If the degree of internal connectivity of the street pattern is calculated by the link-to-node-ratio, Discovery Ridge and Valley Ridge clearly represent a curvilinear cul-de-sac pattern with ratios of 1.15 and 1.20 respectively²⁷.

What the SSP succeeded in achieving is the development of outer-ring suburbs built at higher densities than inner-city suburbs. Less land has been consumed with new suburban developments, falling from 6.5 ha per 100 new residents in the last decade of the 20th century (1991-2000) to 2 ha per 100 residents in the first decade of the 21st century (2001-2011) (Taylor et al. 2014). In addition, Calgary avoided leapfrog development since 2005 by refusing extension of trunk water pipes to settlements outside Calgary’s corporate boundaries that are not contiguous or planned at urban densities. It also halted the proliferation of scattered country residential developments west of the city but not individual acreages, which might be problematic in the future.

²⁷ The link-to-node ratio was calculated by the researcher. For Discovery Ridge, there were 114 links and 99 nodes to give a ratio of 1.15:1. For Valley Ridge, 170 links and 142 nodes gave a ratio of 1.20:1.

The Municipal Development Plan (MDP) and the Calgary Transportation Plan (CTP) are the key policy documents that guide smart growth and mobility in Calgary since 2009. The 2009 MDP represents a profound shift in policy objectives towards intensification with 50% of population growth to be accommodated over the next 60 years within the then-current built-up area. Since 2009, area structure plans (ASPs) are required for new suburban areas with a target to surpass 60 people plus jobs per gross developable hectare. Those documents are the outcome of the process called PlanIt Calgary which was set by Council in 2007 in view of integrating land use planning and transportation planning. The PlanIt document planned for sustainably accommodating 1.3 M more people in the following 60 years. Attaining the objectives of PlanIt Calgary fulfil the goals of ImagineCalgary, a 100-year long-range vision for Calgary, approved by Council in 2006. The subsequent time planning scales are a 30-year, 10-year, 4-year, and yearly plan. The Route Ahead is Calgary's public transit 30-year plan. In 2011, The City of Calgary also developed the 2020 Sustainability Direction where targets were set to be met by 2020, i.e. in a span of 10 years. The 4-year Business Plan and Budget sets shorter term outcomes, strategies, and actions that align with the 10-year plan and provide direction for the steps needed to fulfill the longer term plan. The Business Plan is implemented, in turn, through the Annual Work Plan.

Urban containment policies such as PlanIt and ImagineCalgary may have caused house prices to soar, with the average Calgarian being marketed out of homeownership. From a pragmatic perspective, the growth management policy seeks to prioritize and sequence development according to accessibility to transit, capacity of existing infrastructure, cost for the city and readiness to proceed, proximity to employment opportunities, availability of community services and land supply, as well as contiguous growth. At the same time, however, it is about

maintaining a balanced supply of land in developed and developing areas that ensure competitive residential markets; in other words, a type of unbounded containment that encourages centripetal incentives for intensification (Taylor et al. 2010). Having a 15-year planned land supply and a 3-to-5-year of serviced land as targets of the MDP, the current capacity provides for 30,000 multi-family housing and more than 12,000 single family lots to be subdivided and built upon with 5,600 expected single family lots to be added in the spring of 2014²⁸. Nevertheless, the point of view of developers, as expressed in the public media, is that such figures detract from the fact that priorities are set in very specific sectors of the city, creating a land crunch, or a suburban freeze, with escalating house prices that raise the bar for homeownership.

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<http://www.calgaryherald.com/business/City+plan+calls+prioritizing+growth+Calgary+edges/9615921/story.html>

VALLEY RIDGE

6.1 Location and Background

The following map shows the location of the two case studies in the West sector of Calgary.

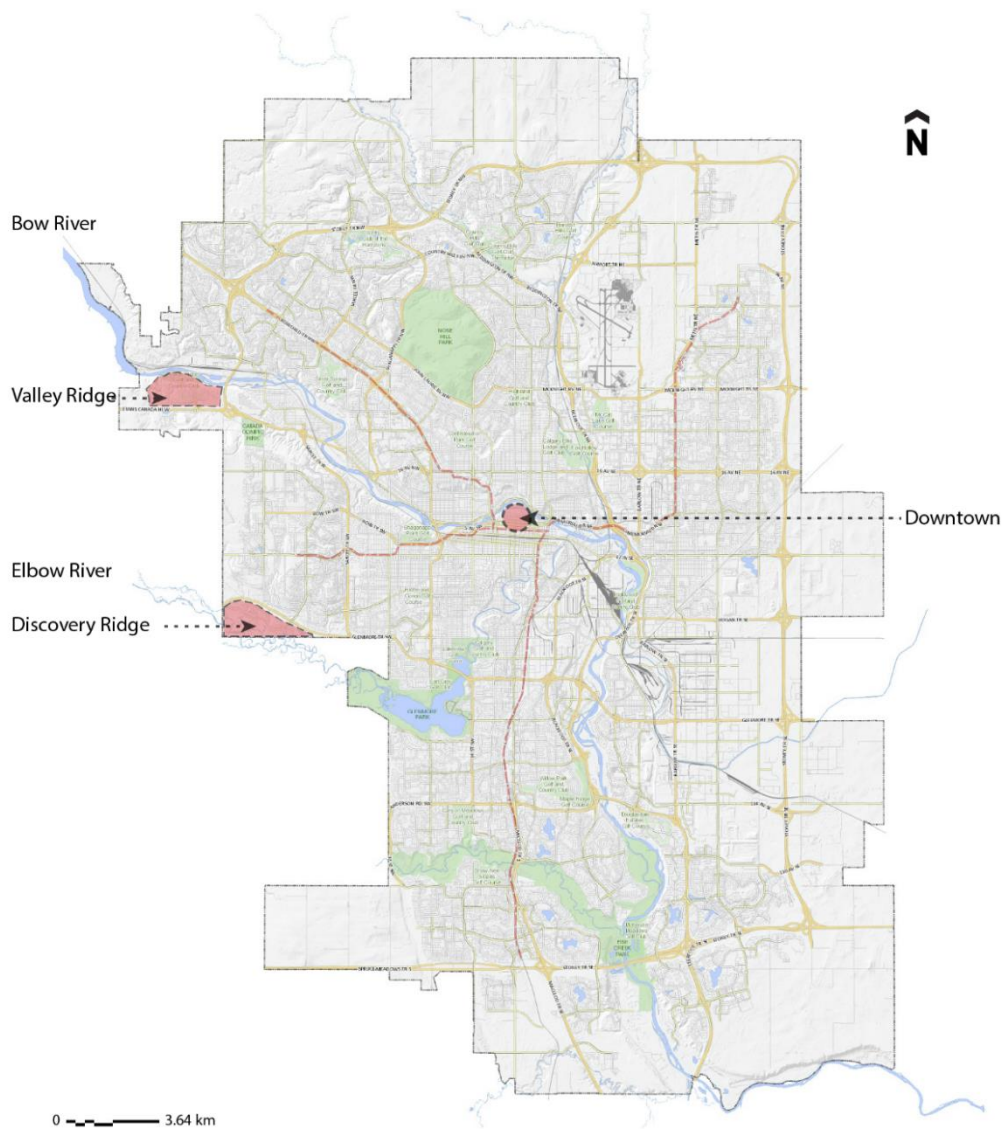


Figure 6.1. Location Map for Case Studies in Calgary

Source of base map: City of Calgary

Valley Ridge is a single-access neighbourhood located at the western gateway to the city of Calgary, about 17 km from downtown. Valley Ridge land area is approximately 268 ha (663 acres). The land was annexed to the city in 1981. It is bounded on the north by the Bow River that separates Valley Ridge from the neighbourhoods of Tuscany and Bearspaw (located in the Municipal District of Rocky View just outside the city of Calgary corporate limits) and on the south by the TransCanada Highway (a four lane, divided expressway). The western boundary is defined by the city of Calgary's corporate limit (bordering the Municipal District of Rocky View No. 44) and the eastern boundary is the Provincial Transportation and Utility Corridor (Stoney Trail ring road) that separates Valley Ridge from the neighbourhoods of Greenbriar and Bowness. Access to the neighbourhood is currently from a single access point via the TransCanada Highway interchange (see figure 6.2). A second access point from Bowfort Road via Greenbriar area (crossing Stoney Trail) is envisioned in the future to accommodate increased traffic capacity from additional stages of development within Valley Ridge.

The Valley Ridge area was formerly the site of Happy Valley Park and Campground as well as a small inactive gravel extraction site. Happy Valley Park was a privately operated, commercial recreation venture comprising a public golf course, swimming pool, ski hill and other recreation facilities. Of these facilities, only the 18-hole golf course in the river terrace remains. Tri-Media Studios Ltd. purchased Happy Valley Park in the late 1970s before the area was annexed to the city of Calgary on Jan. 1, 1981²⁹. Due to an economic downturn in 1982, a proposal by Tri-Studios Ltd. for a multi-use development centered around a movie/television/recording studio on the Valley Ridge lands was never implemented. The land was acquired by Barbican

²⁹ The lands immediately south of the TransCanada Highway were annexed July, 1989.

Developments Ltd.³⁰ in 1989, and a revised concept proposal was submitted to the City in June, 1990.

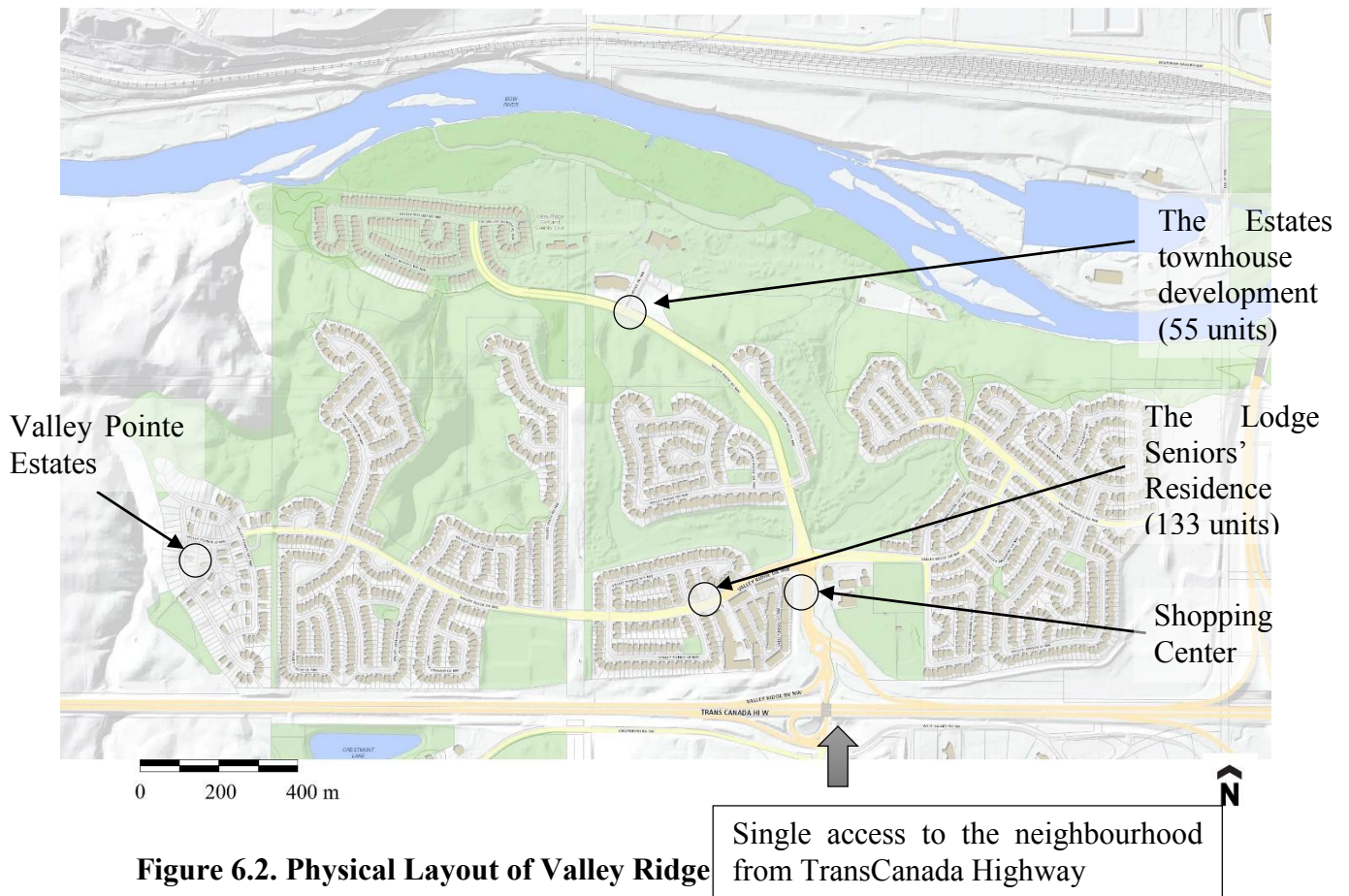


Figure 6.2. Physical Layout of Valley Ridge

Source of base map: City of Calgary

Valley Ridge is a residential community accommodating a population of 5,055 in 1,700 dwelling units (2011 Census) at a density of 1,542 persons / km² and a net residential density of 12.3 to 14.8 units per hectare (5 to 6 units per acre). The open space system is comprised of linear

³⁰ Barbican Developments Ltd. was incorporated on 26 July 1996 with a registered address in Delta, BC and is currently inactive and discontinued (Source: Corporations Canada, 21 May 2013) due to, according to interview data of one of the residents in Valley Ridge, bankruptcy. Barbican Developments Ltd. owned most of the land within Valley Ridge (259.8 ha).

and neighbourhood parks, tot-lots, a community recreational playfield site (area 4.0 ha, with two baseball diamond fields, a soccer pitch, and a child playground), and a privately owned 18-hole golf course (202 ha) which allows some public access. The golf course was extended with an addition of nine holes. There exists a local commercial seven-store strip mall (a convenience store / gas bar, drycleaner, pizza shop, restaurant bar and grill, a medical center, and a liquor store) near the entrance to the community.

A regional shopping center, Calgary West Retail Market, (with 650,000 ft² of retail, restaurant, entertainment, and amenities) on a total site area of 130 acres developed by Shape Properties Corp., Vancouver, BC, is planned for construction in the summer of 2014 just opposite Valley Ridge with a frontage of 1,400 ft. along the TransCanada Highway and adjacent to the neighbourhood of Crestmount.

Valley Ridge site area consists of two basic topographic units (the river valley bottom and an upper plateau area) comprised of six major landforms: a) a smooth uniform upland slope (10% average gradient), located in the southwest corner of the area; b) gently rolling uplands located in the central portion of the area with a complex network of depressions where slopes generally reach a maximum of 15%; c) a flat upland in the eastern part of the area; d) a steeply sloping Bow River valley escarpment, with slopes in excess of 22%; e) five ravines that perform important drainage functions; f) a two-level river terrace, the lower of which contains both the floodway and floodplain of the Bow River. The ravines and escarpment within Valley Ridge separate the river valley bottom from the upper plateau area and provide habitat that is suitable for numerous mammals: Mule and White-tailed Deer, Red Fox, American Badger, Canada Lynx, Long-tailed Weasel and Varying Hare (Barbican Developments Ltd., 1990).

The uneven topography of the site area, coupled with a single access point and two overhead electric power transmission lines (240kV and 138kV) that run through the western and southwestern portion of the site, has differentiated the neighbourhood into spatially polarized areas with a relatively homogeneous suburban type of development: single-detached housing and curvilinear street pattern dominated by loops and cul-de-sacs. The predominant form of housing is single-family (93.9%) but other housing types are also included such as townhouses (6%) and apartment units. Valley Ridge has a community association with voluntary membership for \$35 annual fee that allows resident members to participate in recreational, social, and educational programs. However, there is no physical building that would function as a community centre. Importantly, residents of Valley Ridge have not formed a Home Owners Association (HOA) that would otherwise mandate annual membership fees and enforce restrictive covenants associated with private properties in the neighbourhood. Development is occurring in three areas within the neighbourhood: the Highlands, the Valley Brook, and The Estates.

6.2 Neighbourhood Profile

With a total population of 5,055 in 2011 (5,276 in 2013 - civic census data) living in 1,771 dwellings, Valley Ridge has an average of 2.89 residents per dwelling (or 2.86 residents per single-family dwelling and 1.68 residents per townhouse unit) compared to 2.59 for Calgary. The following are some highlights of the demographic and housing profile of the neighbourhood. For time series data and more information, please see appendix A.

6.2.1 Demography

Population of the neighbourhood has grown by 12.83% in 5 years from 2006 to 2011. About 17% of Valley Ridge neighbourhood's population are above 60 years of age while more than 32% are less than 20 years of age and 56% are between the ages of 20 to 60. Time series

data shows a decrease in percentage for the age group of less than 4 years old (decreasing from 9.82% to 7.30%) and a more noticeable decrease for the age group of 20 to 39 years old (decreasing from 35% to 21%). Meanwhile, there was a noticeable increase in percentage for seniors in the age group 60 to 74 years (an increase from 8.15% in 2006 to 12.23% in 2011).

Such changes in age group structure were accompanied by other demographic and social changes.

- *Diversity*. Immigrant population increased by 2% to reach 21.4% in 2011. In 2006, recent immigrants residing in Valley Ridge were mainly from South Korea and Pakistan followed by the United Kingdom while in 2011, recent immigrants were mainly from the United Kingdom followed by the Philippines, Italy, and China.
- *Social isolation*. The percentage of persons living alone increased from 2.7% in 2006 to 3.5% in 2011, increasing the probability of social isolation.
- *Families*. Notably, the percentage of lone-parent families in Valley Ridge increased from 5.5% to 7.5%, signaling an increase of families with financial burden. This is paralleled with a prevalence of low income households after tax to 2.8% in 2011 compared to 1.5% in 2006.
- *Marital Status*. Meanwhile, there was a relative stabilization in marital status as a higher percentage of Valley Ridge neighbourhood's population is married (about two-thirds) when compared to the City as a whole (50%). In addition, the percentage of divorcees decreased by 1%.
- *Mobility*. There was also a lower turnover rate in the population. The percentage of movers in the five-year period between 2006 and 2011 decreased from one-half to one-

third of the residents. In other words, more and more people are choosing to remain in the neighbourhood.

- *Occupation.* The occupation structure remained approximately the same except for the percentage of residents having an occupation in education, law, and government services who have increased from 8% to 12% whereas residents having an occupation in trades, transport and equipment decreased from 8% to 5%.
- *Average Household Income.* In 2006, average household total income of Valley Ridge residents was about 73% higher than the average of household total income of Calgary. This ratio decreased in 2011 to around 53% higher (i.e. 1.5 times) than the average household total income in Calgary.

6.2.2 Housing

- *Tenure.* The overwhelming majority of dwellings in Valley Ridge are owned (98%) rather than rented (2%) with 42.12% of private dwellings constructed after the year 2001.
- *Dwelling Units.* The following two photos show images of single family houses that are predominant within the neighbourhood. In Valley Ridge, single family houses represented almost 96% of dwelling unit types in the census year 2011 and the remaining 4% are townhouses. New single family houses are being developed in Valley Pointe Estates at the far west end of the neighbourhood while The Estates townhouses are being developed in proximity to the golf course club close to the river.
- *Dwelling size.* Average number of rooms (or bedrooms) per dwelling in Valley Ridge is 8 (3.1) compared to 6.7 (2.8) for Calgary. Average size of houses is 2,342 sq. ft. The maximum size of recently built condos is 2,253 sq. ft (average size was not available).



Figure 6.3. Photo of single family houses in Valley Ridge (Photo by researcher)



Figure 6.4. Photo of single family houses in Valley Ridge (Photo by researcher)

- *House Price.* In 2013, there were 112 houses sold in Valley Ridge with an average sale price of \$581,812. Thirteen condos were sold in 2013 with an average sale price of \$391,821. Average price per sq. ft. for houses and condos is \$413 and \$333 respectively.
- *Value of dwelling and Affordability.* Average value of dwellings in 2011 was \$546,847. This is compared to an average value of \$460,202 in 2006. Median assessed value of single residential properties in Valley Ridge went up 60.45% from a value of \$311,000 in 2006 to \$499,000 in 2011 (Calgary Herald Data Centre). Number of owner and tenant households spending 30% or more of household total income on shelter costs was 205, representing 12% of households, according to 2011 census.
- *Natural Areas, Park space, and Walk score.* Valley Ridge has 108,607 m² of natural areas per 1,000 residents compared to an average of 62,641 m²/1,000 people for Calgary. However, Valley Ridge has just above average of park space for its population as compared to the average of Calgary neighbourhoods. Specifically, Valley Ridge has 35,500 m² / 1,000 people which is just above the average of 32,726 m² for Calgary. The Walk score for Valley Ridge is 13.75, which is far from the average of 43.09 for Calgary neighbourhoods. Paved pathways in Valley Ridge are 0.98 km /1,000 residents, which is above the average of 0.64 for Calgary (Calgary Herald Data Centre).

6.3 Summary Matrix for Valley Ridge

The following table presents a summary matrix for Valley Ridge while applying the operationalization of the concept of gated-ness (cf. figure 4.3).

Table 6.1. Summary Matrix – Valley Ridge

Valley Ridge		
Socio-demographic	Population in 2011	5,055
	Population density (persons / km ²)	1,542
	Residential density (units / acre)	6
	% of population aged 20 to 60 years old	56%
	% of persons living alone	3.5%
	% of lone-parent families	7.5%
	% of immigrant population	21.4%
	% of low income households	2.8%
	Turnover (% of non-movers over 5 years)	66.4%
	Average number of persons / household	2.9
	Average number of children at home	1.1
	Average household income	\$167,992
Physical	Land area	268 ha
	No. of access points to the neighbourhood	1
	Degree of nesting	9
Economic	% of owned dwellings	98%
	Average size of houses	2,342 sq. ft.
	% of single-family houses	96%
	% of semi-detached dwellings	0%
	% of townhouses	4%
	Average value of dwelling	\$546,847
	Average selling price / sq. ft.	\$413
	% of households spending more than 30% of total household income	12%

6.4 Data Collection and Sample Description

The following is an itinerary of data collection for Valley Ridge:

Table 6.2. Itinerary of data collection for Valley Ridge

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Date	Jan. 20, 2014	Jan. 21, 2014	Jan. 27, 2014	Jan. 28, 2014	Feb. 18, 2014	Feb. 20, 2014
Time	2:30- 6:00 pm	10:30 am - 4:00 pm	4:30- 7:00 pm	1:00- 4:00 pm and 6:30-8:00	4:20- 7:20 pm	4:30- 6:30 pm
Hours spent	3.5	5.5	2.5	4.5	3	2
Temp.	-8 °C	-2 °C but felt chilly	-11 °C	3 °C but felt moderately cold	-2 °C but felt very cold – felt like -7 °C	-2 °C but felt very cold – felt like -7 °C
Areas covered	Valley Woods Place, Valley Woods Way, Valley Woods Landing, Valley Ridge Green, and Valley Ridge Court	Valley Ridge Point, Valley Crest Gardens, Valley Crest Close, and Valley Crest Rise	Valley Stream Circle, Valley Stream Place and Valley Stream Manor	Valley Creek Crescent and Valley Stream Close Valley Creek Road and Valley Creek Place	Valley Ponds Way, Valley Ponds Crescent and Valley Springs Terrace	Valley Glen Heights and Valley Brook Circle
Car Stations (see map below)	No. 1 and 2	No. 3, 4 and 5	No. 6	No. 7 and 8	No. 9 and 10	No. 11
No. of surveys	13	25	13	15	11	7
Prepaid return envelopes (delivered hand-to-hand)	14	10	23	27	0	0
Responses returned by post	2	2	4	6	N/A	N/A
Mail Response Rate	14%	20%	17.4%	22.2%	N/A	N/A
Total no. of surveys	15	27	17	21	11	7

Two additional surveys were done with residents walking in the neighbourhood who live in Valley Pointe Way (new single family development at the west end of the neighbourhood). They had moved in the neighbourhood less than a year (around 11 months) ago. One additional

survey, later received by post, did not mention any specific address but was included in the analysis.

The total number of survey participants are $98 + 3 = 101$. For a population size of 5,042 in 2011, the sample size (for a confidence level of 95% and confidence interval of 10) was calculated to be 94 using an online sample size calculator.

Only two of the 101 participants (who returned the survey by post) did not provide name, a street name or address. Thirteen participants did not provide their name; of which four did not provide their household income bracket and two did not provide their gender.

Fourteen additional participants did not provide information for their household income bracket; giving a total of eighteen participants declining to provide their household income.

All 101 participants answered the 23 questions of the survey. Average pace of survey was 4 surveys per hour. Many houses had pets in them, predominantly dogs, and this was a characteristic of almost all of the areas surveyed. This may speak to the need for security or a way of socializing when taking daily walks.

Several potential participants declined to participate either due to being busy, on a business call, performing work at home, on their way out, on their way to pick up their children or husband from work, on their way to soccer training, or not interested in participating, or preparing for dinner. A few declined from behind the door, signalling “no thanks”. Some were not eligible to participate because they were either under 18 years of age, were staying as visitors to friends and family for a short period, or were not residents such as babysitters and house maids. A very few were sick and could not participate. All residents were polite in declining to participate.






-  Car station during survey of area
-  Number of surveys in area
-  Area surveyed

Figure 6.5. Number of survey participants by area of residence in the neighbourhood

6.4.1 Sample Characteristics

Characteristics of the survey sample of 101 residents are shown in the following table:

Table 6.3. Valley Ridge Survey Sample

VALLEY RIDGE SURVEY SAMPLE		Number	Percentage
Gender	Male	51	50.5%
	Female	48	47.5%
	Not given	2	2%
	Total	101	100%
Length of Residence	Less than 1 year	10	9.9%
	1 to 2 years	7	6.9%
	2 to 5 years	20	19.8%
	5 to 8 years	16	15.8%
	8 to 10 years	13	12.9%
	Over 10 years	35	34.7%
	Total	101	100%
Household Income*	Less than 24k	3	3.0%
	24k to 36k	1	1.0%
	36k to 48k	0	0.0%
	48k to 60k	1	1.0%
	60k to 75k	8	7.9%
	75k to 90k	7	6.9%
	90k to 115k	8	7.9%
	115k to 130k	16	15.8%
	Over 130k	38	37.6%
	Not given	19	19.4%
Total	101	100%	

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for survey sample characteristics, the ratio of male to female respondents is almost equal (ratio of 1.06:1). For length of residence in the neighbourhood, over one-third of the respondents resided for over 10 years while roughly from one-sixth to one-fifth of respondents resided for one of these three categories: less than two years, 2 to 5 years, 5 to 8 years; and one-eighth of respondents resided from 8 to 10 years. For household income bracket, over half (53.4%) of the sample had an income greater than 115k per year; 4% (retired seniors) had a household income less than 36k/year and about one-fifth of the sample did

not report their household income bracket. No respondents recorded an income between 36k and 48k/year and almost a quarter of respondents (23.7%) had an income between 48k and 115k per year.

Characteristics of the interview sample of 12 residents are shown in the following table:

Table 6.4. Valley Ridge Interview Sample

VALLEY RIDGE INTERVIEW SAMPLE		Number	Percentage
Gender	Male	6	50%
	Female	6	50%
	Not given	0	0%
	Total	12	100%
Length of Residence	Less than 1 year	1	8.3%
	1 to 2 years	2	16.7%
	2 to 5 years	2	16.7%
	5 to 8 years	2	16.7%
	8 to 10 years	3	25.0%
	Over 10 years	2	16.7%
	Total	12	100%
Household Income*	Less than 24k	0	0.0%
	24k to 36k	1	8.3%
	36k to 48k	1	8.3%
	48k to 60k	0	0.0%
	60k to 75k	0	0.0%
	75k to 90k	0	0.0%
	90k to 115k	2	16.7%
	115k to 130k	3	25.0%
	Over 130k	3	25.0%
	Not given	2	16.7%
	Total	12	100%

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for interview sample characteristics, the ratio of male to female respondents is exactly equal (ratio of 1:1). For length of residence in the neighbourhood, one-fourth of the respondents resided between 8 and 10 years while one-sixth of respondents resided for one of these four categories: 1 to 2 years, 2 to 5 years, 5 to 8 years, and over 10 years;

and one respondent resided for less than a year. For household income bracket, half (50%) of the sample had an income greater than 115k per year; 8.3% (retired senior) had a household income less than 36k/year, 8.3% had a household income of 36k to 48k /year, and one-sixth of the sample did not report their household income bracket. No respondents recorded an income less than 24k/year or between 48k and 90k/year; and one-sixth of interviewees had an income between 90k and 115k per year.

Qualitative data analysis of the 12 interviews and quantitative data analysis of the 101 survey participants were conducted with the help of NVivo v.10 software for qualitative analysis and IBM SPSS v.21 software for quantitative analysis.

6.5 Qualitative Analysis

The first question asked residents if they were planning to stay in the neighbourhood for more than five more years. Most of the interviewees planned to stay more than five years in the neighbourhood. This was common among those who have resided for only two or three years and for those who have resided for six or seven years, as well as those who have resided for ten or more years. Particular concerns for some interviewees were house size and retirement as factors that would affect their choice to move. House size was small for one of the interviewees (interview no. 4) who resided for four months. She had a very high sense of neighbourhood cohesion, typical for newcomers to a neighbourhood but was disappointed for lack of services and amenities within the neighbourhood. For another interviewee (interview no. 5) who resided for 9 years, she wanted to move to another house with a larger backyard. Retirement was a factor in regards to downsizing to a smaller abode. Nevertheless, those who wanted a larger house or backyard and those who were close to retirement, all wanted to stay within the neighbourhood except for one interviewee (interview no. 9) who was not an owner, was not attached to the

neighbourhood, and intended to buy a house in another neighbourhood. Another interviewee (interview no. 1) pointed to the issue of safety for kids especially for houses overlooking major roads in Valley Ridge such as Valley Ridge Drive and Valley Ridge Boulevard. Although the interviewee has only spent 2 years in the neighbourhood, he may be looking forward to move to another part of the neighbourhood for safety of his kids. Thus, the general impression is that the neighbourhood has a certain appeal to residents such that they intend to stay in the neighbourhood.

The top three reasons interviewees gave for choosing to live in their current neighbourhood:

1. **Location.** Location was important both with respect to ease of access to downtown and proximity to medical services (e.g. Foothills Hospital) as well as easy access to major highways (TransCanada Highway and Stoney Trail) and, accordingly, proximity to mountains to the west (close to Banff National Park) as well as connectedness to North Calgary and airport in the northeast.

2. **Green spaces.** Abundant green space provided within the neighbourhood was the second reason for choosing to live in Valley Ridge. Ample green space is due to the golf course amenity, parks and green banks of the Bow River. The age of developed trees and walking / bike paths that wove through the green spaces and that connected to walking trails at the scale of the city allowed residents to enjoy the green space.

3. **Wide streets,** quiet neighbourhood, demography of the neighbourhood and neighbourliness of residents, house design and house price were among the top reasons but, overall, fared less well than location or abundance of green space. Two interviewees (interview no. 2 & 5) added that the presence of family members within the neighbourhood was a major

reason for choosing to live in Valley Ridge. One of the twelve interviewees, who had previously lived in a gated community in the U.S. (Muirfield Village in Dublin, Ohio) added that the single access to the neighbourhood gave her a sense of safety for herself and her kids, similar to what she had experienced in the gated community. Rather than moving to another gated community with codes, covenants, and restrictions (CC&Rs) that would be burdensome, the semi-gated neighbourhood of Valley Ridge offered a compromise especially with the absence of a homeowner association enforcing the CC&Rs.

When asked what particular features Valley Ridge has that are not found in other neighbourhoods, interviewees gave an iteration of the above three top reasons. Interviewees mentioned ease of access to downtown and mountains; proximity to the Bow River and Bowness Park, with nice walkways; ‘good’ greenery and abundance of trees / green space and parks compared to other neighbourhoods; the golf course and panoramic views; the ice skating and hockey rink and proximity to Canada Olympic Park. One other interviewee remarked that the single access to the neighbourhood was a unique feature that ensured that only residents of the neighbourhood had reason to access the neighbourhood. This gave her a sense of safety and sense of familiarity with other residents. The single access feature was also mentioned by another interviewee who observed that the limited access prevented drive-through(s) and promoted his sense of safety. Two other interviewees remarked that the shortage of services within the neighbourhood was a characteristic feature in a negative sense.

Neighbourhoods that were perceived to be as appealing to live in as Valley Ridge are: Crestmount, Cougar Ridge, Discovery Ridge, Aspen Woods, and Springbank acreages, Tuscany, Bowness, Brentwood, University Heights, Parkdale and Wildwood. Reasons that interviewees gave for similar appeal to other neighbourhoods were: general location on the edge of the city,

and closeness to the countryside in the case of Tuscany and Discovery Ridge; the green space, trees and parks in the case of Wildwood, Bowness, Brentwood, University Heights and Parkdale; developed trees, house design, and neighbourliness of residents in the case of Cougar Ridge; mountain views and widely spaced houses in the case of Springbank.

Three interviewees (interview no. 3, 8 & 11), however, did not perceive any other neighbourhood in Calgary as appealing. Valley Ridge was a perfect choice for them. On the other hand, one interviewee (interview no. 9) perceived the neighbourhood to be similar to almost any other neighbourhood in Calgary except those that had services and amenities. Although this observation was made by an interviewee who is not an owner and who did not have a sense of place attachment to the neighbourhood, the view of the ordinariness of the neighbourhood was shared by many survey respondents who, surprisingly, did not find their neighbourhood to be unique in spite of its attractive characteristics. Here, an important point for interpretation is raised from such an apparent paradox between the general appeal of the neighbourhood and the acceptance of its ordinariness.

Neighbourhoods that were mentioned to be superior to Valley Ridge were newer communities such as Aspen Woods, Tuscany, Discovery Ridge, and Crestmount due to the higher price of houses, higher income bracket of residents, and perception that houses in those communities were larger. Bearspaw and Springbank stood out as the most mentioned and perceived to be superior due to larger yards and large estate houses that were widely spaced. Nevertheless, five out of twelve interviewees found that Valley Ridge was second to none. They couldn't mention any neighbourhood to be superior to Valley Ridge. This speaks to the presence of some sort of resonance between the neighbourhood and its residents; a resonance at the socio-psychological and cultural level. Similar values and lifestyle choices (moral aspect) as well as,

perhaps, convergent social and developmental paths among residents seem to attract such residents to the same neighbourhood; other neighbourhoods (that may have larger yards and houses) for such residents do not resonate with them at the internal or external psychological level or experience.

All interviewees, except one (interview no. 10) who is retired and with relatively low income, observed that the neighbourhood is not affordable to low income residents. Reasons given for exclusion of low income residents were the relatively high house prices that increased over time; the predominance of single family houses on account of multi-family housing / townhouses; and limited public transit options and less frequent bus service on weekends makes it difficult for low income families to reside in the neighbourhood. One interviewee (interview no. 11) mentioned that some renters, who had rented a house at the end of the road from where she lived, could not get along due to transport issues as they did not have a car. Concerning accessibility for lower middle income, interviewees mentioned that as new townhouses and condos are being added, the range of options is enlarged. For example, The Lodge at Valley Ridge senior retirement community, with 133 one-bedroom and two-bedroom suites, may be affordable for lower middle income seniors. Interviewees remarked that the condos sell for not less than \$350k.

When explicitly asked about the effect of a single access to the neighbourhood with respect to their sense of safety, five out of twelve interviewees affirmed that their sense of safety increased with the addition of two interviewees (interview no. 2 & 6) who also affirmed their increased sense of safety due to a single access but pointed out the drawbacks in terms of evacuating the neighbourhood in an emergency or traffic blockage due to accidents on the highway. Four interviewees explicitly negated an effect of a single access on their sense of safety

and one interviewee (interview no. 1) was ambivalent: “I haven’t felt unsafe because of it”. However, when interviewees were asked if a single access affected their willingness to stop and talk with residents in the neighbourhood, only one (interview no. 2) out of twelve interviewees felt that she was more willing to stop and talk, arguing that the single access limits the presence of outsiders and increases the probability of meeting with people who are residents of the neighbourhood. This speaks to the effect of the single access more on the affective dimension rather than the interactive dimension of neighbourhood cohesion. Nevertheless, eleven other interviewees negated any effect of a single access on their willingness to stop and talk, arguing that the neighbourhood is inherently friendly or that it was natural for them to be confident to talk to any person in the community regardless of the single entry.

Six questions were then posed to interviewees who responded on a five-point Likert scale from strongly disagree to strongly agree. The questions probed for observations of residents in regards to the four components of neighbourhood cohesion: one question concerned each of PSOC and neighbourliness; and two questions concerned each of place attachment and enveloping space. The interviewees strongly agreed or agreed in regards to their observations for five of the six questions with a couple of interviewees being ambivalent in regards to place attachment and neighbourliness. The appeal of the landscape and sense of safety scored very high without any ambivalence or disagreement among the twelve interviewees; those two aspects were followed by PSOC which was almost unanimous among the interviewees except for one interviewee (interview no. 1) who was ambivalent concerning his perception of similarity with other residents and agreement on values or what is important in life. Thus, there is an overall sense of similarity among residents, particularly from a cultural and moral aspect.

The only question that had large controversy was the last question that probed for the effect of an enveloping space by asking if residents observed a particular lifestyle, events or activities that encouraged them to stop and talk with other residents. Five out of twelve interviewees either strongly disagreed (n=1), disagreed (n=2), or remained ambivalent (n=2). Seven interviewees, on the other hand, either agreed (n=4) or strongly agreed (n=3). The neighbourhood seems to have few events or activities that may be observed by residents yet many agree that the neighbourhood is characterized by a particular lifestyle (especially by virtue of its location / situation and the large golf course expanse).

When asked to elaborate on aspects of the neighbourhood that contributed to their sense of community or aspects that positively impacted the quality of their life, interviewees recalled seasonal activities such as Halloween, Christmas, winter activities like sled rides, and the presence of an ice rink, children soccer events, a yearly common garage sale, the small parks for children, and the golf course amenity. One senior interviewee pointed out socializing monthly via dinner parties.

The size of Valley Ridge was mentioned by two interviewees (interview no. 1 & 2) as a factor for community 'feel'. One interviewee, comparing Valley Ridge to Tuscany, commented that she wouldn't want to live in Tuscany due to its sheer size. The other interviewee, comparing Valley Ridge to Discovery Ridge, observed that Discovery Ridge has a more community feel because of its smaller size relative to Valley Ridge. The interviewee also remarked that the site topography of Valley Ridge also had an effect on sense of divisiveness within Valley Ridge ('those down the hill' versus 'those up the hill') but remarked that Discovery Ridge's site topography is also divisive because of the hill. The literature on neighbourhood cohesion

confirms the effect of size of the neighbourhood on the cohesion of residents (cf. Townshend as well as Buckner).

Other interviewees highlighted the neighbourliness aspect: ‘good neighbours’, the community newsletter, planned events, and communal interest to make neighbourhood families feel welcome when moving into the community. This observation was complemented by an interviewee who finds that the number of families with children in her immediate neighbourhood that share the small children’s park to be an important aspect of socializing with other neighbours. The perception of the presence of children within the neighbourhoods seems to be unevenly distributed in different areas of the neighbourhood as some perceived the neighbourhood to be a retirement community while others congregated in areas where families with children chose to reside due to the presence of a small park.

Three interviewees referred back to location with respect to access to highways (translated into well plowed streets in winter), access to big shopping malls, and proximity to nature, the river, and pathway system while at the same time having easy access to downtown as an important contributor to their quality of life. One of the interviewees (interview no. 11) who has been a resident for 10 years and has children commented plainly that: “I consider it as any other neighbourhood” while at the same time expressing that she liked the area.

The psychological sense of community was expressed by one of the interviewees (interview no. 4) as an aspect that affected her quality of life. She argued that the expensive house prices for an average person excluded low income households while aggregating higher income households through establishing commonalities. She was implicitly referring to the ‘housing ladder’ when commenting that the commonalities did not solely emanate from the expensive house prices but more importantly from: “what people went through to get here”.

Valley Ridge does not have a Homeowner Association (HOA) nor restrictive covenants. Membership is voluntary for the community association (\$35/year). Dealing with the community association is informal via emails. People are informed of events through the community newsletter. One senior interviewee (interview no. 8) who had resided for more than 10 years commented that the community association has a weak / 'amateur' administration evidenced by the landscaping of the neighbourhood which is not well managed.

6.6 Interpretation

The general impression is that the neighbourhood has a certain appeal to residents such that they intend to stay in the neighbourhood. Valley Ridge is appraised by its residents as the best community in Calgary especially in terms of low residential density and generous expanse of green space due to the golf course that intersperses the residential units. The locational advantages are also a characteristic of the neighbourhood. There seems to be a trend of transformation of the neighbourhood into a retirement community though some residents already perceive it as such. The lack of young children in some parts of the neighbourhood definitely reinforced such a perception. The transformation is evidenced by an increasing percentage of persons over 60 years old. In addition, the newly built construction work involves erection of manor houses for seniors. In other words, efforts are being made to help seniors age in place. The aging demographic may be a factor of appeal to seniors. In addition, as commented by one of residents, medical services easily accessible from Valley Ridge due to proximity to Foothills Hospital may be an important factor for many seniors choosing to stay in Valley Ridge.

The presence of ethnic diversity was felt in the area of Valley Crest Close and the design of the houses was markedly different from other areas of Valley Ridge that had larger and more aesthetically pleasing designs and whose entrances had more grandeur such as Valley Ridge

Point. Though the general impression was that the residents had a strong place attachment to the neighbourhood, there was a sense of hidden malaise either from the ordinariness of the neighbourhood in their perspective or from the increasing ethnic mix in the neighbourhood. Perhaps, the feeling of malaise was also felt by residents who perceived the neighbourhood to be governed by a few. Such perceptions were noticed especially when residents were answering survey question no.6: If people in my neighbourhood were planning something, I'd think of it as something 'we' were doing rather than something 'they' were doing. Some residents expressed their disapproval for the new shopping mall that would be constructed beside Olympic Park. They perceive the proximity of such a large scale commercial development as disrupting the peace of the neighbourhood. Lastly, the physical isolation of the neighbourhood may also be a contributing factor to the general malaise. Further research is needed to verify if such general malaise is felt more by young single adults than by seniors within the manor houses.

There were a few sub-neighbourhoods within the neighbourhood of Valley Ridge. This was felt from observations during the field survey and perceptions by one of the survey participants who considered Valley Ridge to be composed of different sub-neighbourhoods or parts reinforced by the topography of the neighbourhood. The physical structure of the neighbourhood also contributed to the compartmentalization of the neighbourhood by a street layout that was not only nested but also branched into three separate parts.

Residents on the main spine or boulevard expressed the importance of the single access to the neighbourhood more often than residents who were living at the end of a cul-de-sac street. The latter residents felt they had control over their immediate environment and this sense of control evaded any establishment of a link of their sense of safety with a single access to the neighbourhood. In contrast, however, residents along the main boulevard felt that the single

access was important in adding to their overall sense of safety and willingness to interact with other people in the neighbourhood. Given that most of the neighbourhood is designed with a cul-de-sac and loop pattern of streets, preliminary analysis showed that there were no differences in regards to any of the components of neighbourhood cohesion construct by area of residence in the neighbourhood. Thus, it was not clear if there were differences between those residing on cul-de-sacs and those on the main boulevard. However, the assumption in the literature is that those residing on main boulevards are more extrovert and engage in social interaction than those nested further deep in the neighbourhood. Further research is needed to test this assumption.

The effect of the single access was somewhat jeopardized by access to the neighbourhood from Bowness Park from residents of other neighbourhoods. This may have decreased the overall feeling of containment. Moreover, the single access is starting to be problematic especially that new construction and extension of the neighbourhood are almost complete. The single access may be providing a sense of safety but a second access point is needed from a logistic perspective.

As qualitative analysis showed, some malaise also came from the social 'misfit' that a resident had with the prevalent social status in the neighbourhood. In other words, single middle-aged persons living alone had a low sense of neighbourhood cohesion when compared to seniors (who perceived the neighbourhood as a retirement community) and even a much lower sense of neighbourhood cohesion when compared to families with children especially that activities in the neighbourhood mainly revolved around children (soccer tournaments and Halloween) and the aggregation of families was particularly influenced by the presence of parks.

The external situation of the neighbourhood is reflected in the presence of particular services within the neighbourhood, particularly, the presence of a gasoline station in the

commercial center of the neighbourhood which lends the neighbourhood an appellation of a 'highway suburb'.

A final point needs to be made concerning the physical structure of the neighbourhood. Valley Ridge presents itself as a neighbourhood with a clear boundary (bounded by highways and the Bow River) with a single access point, yet lacking a clear focus for the entire neighbourhood. The two possible centers: the shopping center and the golf course, have not succeeded in acting as a clear focal point. The reason is that the golf course covers a large expanse of the neighbourhood and is very diffuse to act as a focal point while the shopping center (with an adjacent large playground) is not centrally located within the neighbourhood but, due to economic reasons, is located close to the single access point. The shopping center contains a gasoline station and thus necessitates a location accessible and close to TransCanada Highway. As we shall see, this is in contrast with the case of Discovery Ridge where the shopping center and playground are centrally located and far from the single access point; a location which can be expected to be economically less performing at the wider city scale than a peripheral location vis-à-vis the neighbourhood.

6.7 Conclusion

This chapter investigated the sense of neighbourhood cohesion of the Calgary neighbourhood of Valley Ridge. Neighbourhood cohesion was found to be high especially in regards to place attachment (see chapter 11 for comparison of case studies). Three factors stand out as contributing to the high sense of place attachment: a physical dimension: the design of the neighbourhood (particularly the abundance of green open space); a structural dimension: the locational advantage of the neighbourhood vis-à-vis the city and the mountains; and a demographic dimension: the type (professionals) and age (seniors) of residents.

Nonetheless, the three factors were somewhat jeopardized. The physical dimension was somewhat jeopardized in several areas of the neighbourhood due to the uniformity and relatively bland architectural style of the houses; a factor which may have contributed to a feeling of lack of uniqueness of the neighbourhood in terms of physical characteristics³¹. The social dimension was jeopardized due to the increasing ethnic diversity within the neighbourhood as well as the increasing perception of the neighbourhood in the later stages of its development as a retirement community. Finally, the structural dimension is being somewhat jeopardized due to future plans for development both within (to absorb new families while also encouraging aging-in-place) and in proximity to the neighbourhood (the project for the regional shopping center) which aroused concern of some residents for increased traffic, disruption of the overall environment of peace, and the need of another access point for logistic reasons.

The absence of a homeowners' association impacted upon the upkeep of the landscape and effective snow removal in winter. The maintenance and upkeep of the landscape is mainly through municipal efforts, budget and timetable. A community association with voluntary membership and low membership fees was not able to fill the gap in the absence of a formal homeowners' association. Thus, the standards of quality for the overall landscape were at city standards rather than being set at higher standards that would be maintained by a larger budget through mandatory membership in a homeowners' association enforced by covenants attached to property titles.

³¹ Less than half of survey respondents (49.5%) considered Valley Ridge to be unique, including only 9% who strongly agreed that the neighbourhood was unique.

There was a diminished sense of containment in Valley Ridge due to accessibility of the neighbourhood from Bowness Park and due to the use of a common exit from TransCanada Highway with the neighbouring community of Crestmont. The diminished sense of enveloping space was also due to the increasing presence of ethnic diversity in the neighbourhood as well as due to relative blandness in the architectural style of houses.

DISCOVERY RIDGE

7.1 Location and Background

Discovery Ridge is a single-access neighbourhood located at the western limit of the city of Calgary, about 17 km from downtown. Discovery Ridge land area is approximately 360 ha (890 acres), or 278 ha (688 acres) net of the Elbow River. The land was annexed to the city in 1995. The neighbourhood was once planned to be called New Discovery and was to be a gated community when the development of the neighbourhood first began³². However, it was never gated and the community can be accessed by the public. It is bounded on the north by the Provincial Transportation and Utility Corridor (Highway 8 / Glenmore Trail) that separates Discovery Ridge from the neighbourhood of Springbank Hill and Signal Hill and on the south by the Tsuu T'ina Sarcee Nation Reserve. The western boundary is defined by the city of Calgary's corporate limit (bordering the Municipal District of Rocky View No. 44) that separates Discovery Ridge from Elbow Springs Golf Club and Elbow Valley exclusive estate homes neighbourhood. The eastern boundary is the Elbow Valley Constructed Wetland³³ that separates Discovery Ridge from the northeast corner of the Tsuu T'ina reserve that was once used as a military base and training ground during WWI, the interwar years, and WWII³⁴. Access to the neighbourhood is

³² There exists a residential enclave in the neighbourhood that is gated where access is restricted for residents by use of an entry code. This type of nesting of a gated enclave within a larger common interest development is typified by Townshend (2006) as "two-tier privatization".

³³ Construction of earthworks and structures was completed in late 1995 and the wetlands were planted in the spring of 1996. The layout of the Elbow Valley Constructed Wetland is based on the pond-marsh-pond design for wetland stormwater management and waste water treatment (City of Calgary Constructed Wetland Task Force, June 2004: 8. Constructed Wetlands for Water Quality Improvement: A design primer for the development industry)

³⁴ The First World War was a strong catalyst in the decision to lease the northeast corner of the nation reserve land to the military after years of negotiation (Lackenbauer, P.W. 2011: 63. Battle Grounds: The Canadian Military and Aboriginal Lands).

currently from a single access point via at the intersection of Glenmore Trail and 69th Street. A second access point was recently proposed by a developer in order to develop more housing in the neighbourhood. However, the plans of the developer for a second access were denied by the community with support from the alderman (for location map, see figure 6.1; for physical layout, see figure 7.1).

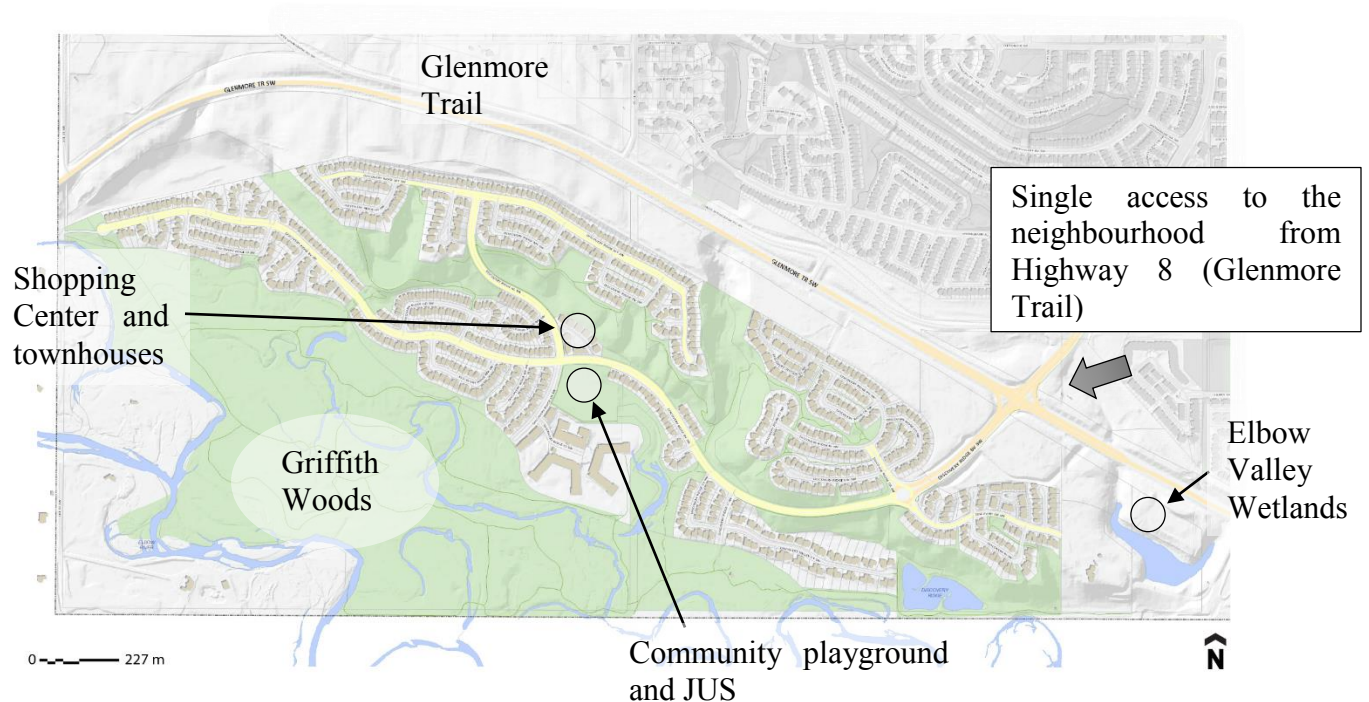


Figure 7.1. Physical Layout of Discovery Ridge

Source of base map: City of Calgary

The Discovery Ridge area was formerly the site of what was known as Jackson's Valley³⁵ with dense conifer trees, White Spruce, Balsam Poplar, Trembling Aspen, and wildlife. The area was used for agricultural and ranching purposes³⁶. Horses and cattle extensively grazed portions

³⁵ Email communication with author of Glamorgan and its Neighbourhood School (2008), written in commemoration of the 50th anniversary of the opening of Glamorgan Elementary School.

³⁶ The major landowner of Discovery Ridge was Power Farms with land totaling 242 hectares in addition to three other private landowners in the area.

of the area. A large part of Discovery Ridge is now a natural environment reserve called Griffith Woods Regional Park (area: 93 ha) which supports a habitat for a wide variety of wildlife: white-tailed and mule deer, coyotes, weasels, hares, beavers, porcupine and muskrat as well as occasional visits by moose, elk, black bear, lynx, skunk, fox, cougar and over 70 species of birds. Griffith Woods is one of Calgary's three 'special protection' natural environment parks along with Inglewood Bird Sanctuary and Weaselhead Natural Area at the western end of Glenmore Reservoir³⁷.

The natural and environmentally significant areas are designated as open space and managed in accordance with The City of Calgary Natural Area Management Plan, the Calgary Urban Park Master Plan, and the Calgary River Valleys Plan. Meanwhile, the Discovery Ridge development was affected by the following policies and studies: The East Springbank Area Structure Plan; the City of Calgary / M.D. of Rocky View Inter-municipal Development Plan; Calgary Transportation Plan; Sustainable Suburbs Study; Transit Friendly Design Guide; The City of Calgary Environmental Policy, Principles and Goals; Calgary Restricted Development Area and Transportation / Utility Corridor; Calgary General Municipal Plan; Floodway / Floodplain Studies.

Discovery Ridge is a residential community accommodating a population of 4,398 in 1,653 dwelling units (2011 Census) at a density of 1,200 persons / km² and a net residential density ranging from 9.9 to 14.8 units per hectare (4 to 6 units per acre) on the plateau to 25 units per hectare (10 units per acre) in the core area.

³⁷ Because of the connection of Griffith Woods to Weaselhead Natural Area, it has direct connection to wildlife habitat outside the city.

A community commercial and retail core is located centrally within the community. It contains local retail and office (1,858 – 3,716 m²), recreational and community uses, high density multi-family housing, open space, and a transit stop. The core connects with the river valley lands via the road network and regional pathway and trail system. The road network has been designed to accommodate public transit along the ‘spine’ road through the community core. The open space system is comprised of linear and neighbourhood parks (2 acres), tot-lots (0.5 acres), a community recreational playfield or joint-use site JUS (area 4.0 ha, with a soccer pitch, a child playground, and recently constructed ice hockey rink and two tennis courts).

Discovery Ridge site area consists of two basic topographic units: 1) the river valley with a major east-west escarpment that extends the entire southern end of the area and a north-south ravine that bisects the area and functions as the major natural drainage course for lands in East Springbank to the north; and 2) an upper plateau area. Much of Discovery Ridge is characterized by the Elbow River floodway, representing approximately half of the plan area.

The uneven topography of the site area, coupled with a single access point and an overhead electric power transmission line (138kV) that run through the southern portion of the site, has differentiated the neighbourhood into spatially polarized areas with a relatively homogeneous suburban type of development: single-detached and duplex housing with a curvilinear street pattern dominated by loops and cul-de-sacs. The major form of housing is single-family (55.3%) but other housing types are also included such as duplexes (6.4%), townhouses (3.8%) and apartment units (34.5%). The diversity of housing types accommodates a broad spectrum of population groups and lifestyles. Discovery Ridge has a community association (DRCA) with voluntary membership for \$25 annual fee that allows resident members to participate in recreational, social, and educational programs. However, there is no physical

building that would function as a community centre. Residents of Discovery Ridge, unlike Valley Ridge, have a Home Owners Association called New Discovery Homeowner Association (NDHA) that mandates annual membership fees of \$300 and enforces restrictive covenants associated with private properties in the neighbourhood.

7.2 Neighbourhood Profile

With a total population of 4,395 in 2011 (4,332 in 2013 - civic census data) living in 1,605 dwellings, Discovery Ridge has an average of 2.74 residents per dwelling (or 3.43 residents per single-family dwelling, 2.29 residents per duplex, 1.95 residents per townhouse unit, and 1.46 per apartment unit) compared to 2.59 for Calgary. The following are some highlights of the demographic profile of the neighbourhood. For time series data and more information, please see appendix B.

7.2.1 Demography

Population of the neighbourhood has grown by 32.27% in 5 years from 2006 to 2011. About 10% of Discovery Ridge neighbourhood's population are above 60 years of age while more than 31% are less than 20 years of age and 59% are between the ages of 20 to 60. Time series data shows a decrease in percentage for the age group of less than 4 years old (decreasing from 10% to 8%) and a more noticeable decrease for the age group of 20 to 39 years old (decreasing from 29% to 23%). Meanwhile, there was a noticeable increase in percentage for seniors in the age group 60 to 74 years (an increase from 6.3% in 2006 to 8% in 2011).

Such changes in age group structure were accompanied by other demographic and social changes.

- *Diversity.* Immigrant population increased by 6.7% to reach 23% in 2011. In 2006, recent immigrants residing in Discovery Ridge were mainly from South Korea followed by the

U.S. while in 2011, recent immigrants were mainly from the United Kingdom followed by Venezuela. In 2011, the aboriginal population and visible minority have almost doubled their percentage compared to 2006 census.

- *Social Isolation.* The percentage of persons living alone increased from 5.6% in 2006 to 8.6% in 2011, increasing the probability of social isolation.
- *Families.* Notably, the percentage of lone-parent families in Discovery Ridge decreased from 8.5% to 6.3%, signaling an decrease of families with financial burden. This is paralleled with a decrease in the percentage of low income households after tax to 2.8% in 2011 compared to 3.6% in 2006.
- *Marital Status.* Meanwhile, there was a relative stabilization in marital status as a higher percentage of Discovery Ridge neighbourhood's population is married (about two-thirds) when compared to the City as a whole (50%). In addition, the percentage of divorcees decreased by 1.3%.
- *Mobility.* There was also a lower turnover rate in the population. The percentage of movers in the five-year period between 2006 and 2011 decreased from 90% to 50% of the residents. In other words, more and more people are choosing to remain in the neighbourhood.
- *Occupation.* The occupation structure remained relatively the same except for the percentage of residents having an occupation in education, law, and government services who have increased from about 10% to 14% whereas residents having an occupation in business, finance and administration decreased from about 20% to 17.5%.

- *Average Household Income.* In 2006, average household total income of Discovery Ridge residents was double the average of household total income of Calgary. This ratio decreased in 2011 to around 75% higher than the average household total income of Calgary.

7.2.2 Housing

- *Tenure.* The overwhelming majority of households in Discovery Ridge are owned (83.5%) rather than rented (16.5%) with 92.72% of private dwellings constructed after the year 2001.
- *Dwelling Units.* The following two photos show images of single family houses that are predominant within the neighbourhood. In Discovery Ridge, single family houses represented only 56% of housing types in the census year 2011. This percentage represents a decrease of almost 15% from the census year 2006 due to the addition of 5-storey apartment buildings in a complex named The Wedgewood's.



Figure 7.2. Photo of single family houses in Discovery Ridge (Photo by researcher)



Figure 7.3. Photo of single family houses in Discovery Ridge (Photo by researcher)

- *Dwelling size and average number of rooms per dwelling.* Average number of rooms (or bedrooms) per dwelling in Discovery Ridge is 8 (3.1) compared to 6.7 (2.8) for Calgary. Average size of houses and condos is 2,518 sq. ft. and 1,011 sq. ft. respectively.
- *House Price.* In 2013, there were 45 houses sold in Discovery Ridge with an average sale price of \$824,653. The average sale price may have temporarily decreased due to the June 2013 flood. Forty three condos were sold in 2013 with an average sale price of \$414,418. Condos prices seem to have been impacted more than houses due to the flood. Average price per sq. ft. for houses and condos was \$396 and \$344 respectively.
- *Value of dwelling and Affordability.* Average value of dwellings in 2011 was \$712,974. This is compared to an average value of \$671,302 in 2006. Median assessed value of single residential properties in Discovery Ridge went up 80.07% from a value of \$431,500 in 2006 to \$777,000 in 2011. Number of owner and tenant households spending 30% or more of household total income on shelter costs was 310, representing 19% of households, according to 2011 census.
- *Natural Areas, Park space, and Walk score.* Discovery Ridge has 298,228 m²/1,000 residents compared to an average of 62,641 m²/1,000 people for Calgary. However, Discovery Ridge has less park space for its population than the average of Calgary neighbourhoods. Specifically, Discovery Ridge has 19,200 m² / 1,000 people which is less than the average of 32,726 m² for Calgary. The Walk score for Discovery Ridge is 9.75, which is far from the average of 43.09 for Calgary neighbourhoods. Paved pathways in Discovery Ridge are 1.18 km /1,000 residents, which is above the average of 0.64 for Calgary (Calgary Herald Data Centre).

7.3 Summary Matrix for Discovery Ridge

The following table presents a summary matrix for Discovery Ridge while applying the operationalization of the concept of gated-ness (cf. figure 4.3).

Table 7.1. Summary Matrix – Discovery Ridge

Discovery Ridge		
Socio-demographic	Population in 2011	4,395
	Population density (persons / km ²)	1,200
	Residential density (units / acre)	6 (10 in core area)
	% of population aged 20 to 60 years old	58.9%
	% of persons living alone	8.6%
	% of lone-parent families	6.3%
	% of immigrant population	23.1%
	% of low income households	2.8%
	Turnover (% of non-movers over 5 years)	50.1%
	Average number of persons / household	2.74
	Average number of children at home	1.3
	Average household income	\$193,091
Physical	Land area	278 ha
	No. of access points to the neighbourhood	1
	Degree of nesting	9
Economic	% of owned dwellings	83%
	Average size of houses	2,518 sq. ft.
	% of single-family houses	56%
	% of semi-detached dwellings	6.5%
	% of townhouses	3%
	Average value of dwelling	\$712,974
	Average selling price / sq. ft.	\$396
% of households spending more than 30% of total household income	19%	

7.4 Data Collection and Sample Description

The following is an itinerary of data collection for Discovery Ridge:

Table 7.2. Itinerary of Data Collection for Discovery Ridge

	Day 1	Day 2	Day 3	Day 4
Date	Apr. 7, 2014	Apr. 8, 2014	Apr. 10, 2014	Apr. 14, 2014
Time	11:00- 1:15 pm and 3:15- 6:30 pm	2:00-4:00 pm and 4:30-7:15 pm	4:00-8:30 pm	3:30-4:15 pm
Hours spent	5.5	4.75	4.5	0.75
Temp.	17 °C	20 °C	15 °C	16 °C
Areas covered	Discovery Ridge Blvd, Discovery Ridge Terrace, Discovery Ridge Cir Discovery Ridge Blvd, Discovery Ridge Gardens, Discovery Ridge Manor	Discovery Ridge Way, Discovery Ridge Park, Discovery Ridge Mt, Discovery Vista Point, Discovery Ridge Heights	Discovery Dr., Discovery Pl, Discovery Heights Discovery Ridge Rd, Discovery Ridge Ct, Discovery Ridge Crescent	Discovery Ridge Rise
Car Stations (see map below)	No. 1, 2, and 3	No. 4 and 5	No. 6	No. 7
Total no. of surveys	32	32	26	4

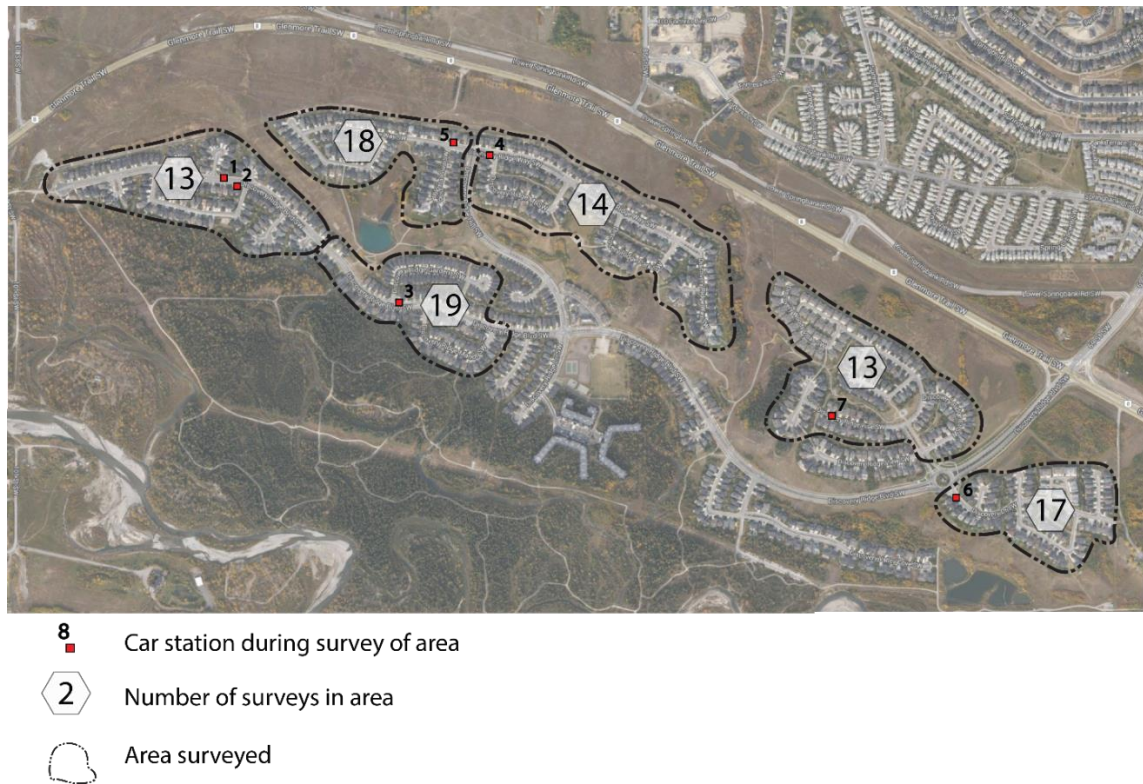


Figure 7.4. Number of survey participants by area of residence in the neighbourhood

The total number of survey participants are 94, of which 93 filled the questionnaire on site. One of the 94 participants who is president of the Discovery Ridge Community Association filled a survey online. None of the surveys was delivered by post. In general, participants were more comfortable providing their first name only or declining to give any name as well as providing a postal code instead of an exact address. Forty-nine participants did not provide their name; of which twelve did not provide their household income bracket and one did not provide the gender. Seven additional participants did not provide information for their household income bracket; giving a total of nineteen participants declining to provide their household income.

Of the 94 participants, 93 answered each of the 23 questions of the survey while one participant (no. 46) answered 22 questions and left one without a response (question no. 4: asking

about meaningfulness of the friendships and associations in the neighbourhood). Average pace of survey was 6 surveys/hour. Several potential participants declined to participate either due to being busy, on a business call, performing work at home, on their way out (e.g. board member to attend the Community Association meeting), on their way to pick up their children, or not interested to participate, or preparing for dinner. Some were not eligible to participate because they were either under 18 years of age. All residents were polite in declining to participate.

7.4.1 Sample Characteristics

Characteristics of the survey sample of 94 residents are shown in the following table.

Table 7.3. Discovery Ridge Survey Sample

DISCOVERY RIDGE SURVEY SAMPLE		Number	Percentage
Gender	Male	42	45%
	Female	51	54%
	Not given	1	1%
	Total	94	100%
Length of Residence	Less than 1 year	3	3.2%
	1 to 2 years	12	12.8%
	2 to 5 years	22	23.4%
	5 to 8 years	20	21.3%
	8 to 10 years	15	16.0%
	Over 10 years	22	23.4%
	Total	94	100%
Household Income*	Less than 24k	0	0.0%
	24k to 36k	0	0.0%
	36k to 48k	1	1.1%
	48k to 60k	0	0.0%
	60k to 75k	3	3.2%
	75k to 90k	1	1.1%
	90k to 115k	7	7.4%
	115k to 130k	6	6.4%
	Over 130k	57	60.6%
	Not given	19	20.2%
Total	94	100%	

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table, the ratio of male to female respondents is comparable. For length of residence, about a quarter of the respondents resided for over 10 years or between 2 to 5 years while roughly one-sixth to one-fifth of respondents resided for one of these two categories: 5 to 8 years and 8 to 10 years. For household income, the majority (67%) of the sample had an income greater than 115k/year; none had a household income less than 36k/year and one-fifth of the sample did not report their household income bracket.

Characteristics of the interview sample of 12 residents are shown in the following table:

Table 7.4. Discovery Ridge Interview Sample

DISCOVERY RIDGE INTERVIEW SAMPLE		Number	Percentage
Gender	Male	7	58%
	Female	5	42%
	Not given	0	0%
	Total	12	100%
Length of Residence	Less than 1 year	0	0.0%
	1 to 2 years	0	0.0%
	2 to 5 years	7	58.3%
	5 to 8 years	2	16.7%
	8 to 10 years	2	16.7%
	Over 10 years	1	8.3%
	Total	12	100%
Household Income*	Less than 24k	0	0%
	24k to 36k	0	0%
	36k to 48k	0	0%
	48k to 60k	0	0%
	60k to 75k	0	0%
	75k to 90k	0	0%
	90k to 115k	0	0%
	115k to 130k	0	0%
	Over 130k	9	75%
	Not given	3	25%
Total	12	100%	

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for interview sample characteristics, the ratio of male to female respondents is comparable (ratio of 1:1.4). For length of residence in the neighbourhood, the majority (58.3%) of the respondents resided between 2 and 5 years while one-sixth of respondents resided for one of these two categories: 5 to 8 years, and 8 to 10 years. One respondent resided for more than 10 years while none had resided for less than 2 years. For household income bracket, three-quarters (75%) of the sample had an income greater than 130k per and a quarter of the sample did not report their household income bracket. No respondents recorded an income less than 130k/year.

Qualitative data analysis of the 12 interviews and quantitative data analysis of the 94 survey participants were conducted with the help of NVivo v.10 software for qualitative analysis and IBM SPSS v.21 software for quantitative analysis.

7.5 Qualitative Analysis

The first question asked residents if they were planning to stay in the neighbourhood for more than five more years. All of the interviewees, independent of their length of residence in the neighbourhood, planned to stay more than five years in the neighbourhood except for one interviewee who might be forced to move due to family circumstances rather than for reasons pertaining to the neighbourhood. Particular reasons to stay for some interviewees were suitable house size, location of the neighbourhood, kids attending nearby schools, natural amenities (forest and river), and sense of community between residents as well as good quality of life. Overall, there was a general appeal to remain within the neighbourhood.

The top three reasons interviewees gave for choosing to live in their current neighbourhood:

1. **Location.** Location was important for half of the interviewees both with respect to ease of access to downtown (i.e. proximity to work) and access to major highways (Glenmore Trail and, in the near future, Stoney Trail) as well as proximity to nature / outdoors (Griffith Woods Park and trail system pathways). Though location was also an important factor for the case of Valley Ridge, Discovery Ridge differs in that the neighbourhood is more secluded than Valley Ridge given that it is not as easily accessible by residents from surrounding communities by reason of natural and artificial boundaries such as the Elbow River, golf course, Griffith Woods Park, Tsuu T'ina Indian Reserve, and Elbow Valley Wetlands.

2. **Single entry point.** A single access to the neighbourhood was the second major reason for a quarter of the interviewees and was stated explicitly by residents of Discovery Ridge. The single entry point, which led to the identification of the majority of people in the neighbourhood as residents of the neighbourhood, contributed to a higher sense of safety and a sense of neighbourliness. Connecting the single entry aspect with a higher sense of safety and sense of neighbourliness was explicitly articulated by the interviewees. The two major reasons are expressed succinctly by one interviewee (interview no. 4) as: "I like the forest. I like my neighbours. It's safe." Though the public have access to Griffith Woods Regional Park, the single access to the neighbourhood gave residents a sense of appropriation of, and identification with, the park as well as a sense of stewardship. The effect of a single access was expressed more commonly by residents of Discovery Ridge compared to residents of Valley Ridge.

3. **Clean and non-transient,** demography of the neighbourhood, house design and house price were among the top reasons but, overall, fared less than location or sense of safety and neighbourliness. Two interviewees (interview no. 6 & 10) added that the presence of family members and prior knowledge of people within the neighbourhood or adjacent area was a major

reason for choosing to live in Discovery Ridge. As expressed in the literature on neighbourhood cohesions, a non-transient neighbourhood population characterized by a low turnover rate positively contributes to a higher sense of cohesion among residents. Residents develop a sense of stability which is augmented by the presence of family and acquaintances in the neighbourhood and surrounding areas.

When asked what particular features Discovery Ridge has that are not found in other neighbourhoods, interviewees gave an iteration of the above three top reasons with an addition by one interviewee (interview no. 12) of a less social mix compared to other neighbourhoods and by another interviewee (interview no. 9) of the presence of a strong designated school. Although the percentage of immigrants in Discovery Ridge (23%) is slightly higher than that of Valley Ridge (21%), the perception of ethnic mix by residents in Discovery Ridge is lower than Valley Ridge. This might be due to the concentration of ethnic enclaves in particular areas in Valley Ridge compared to a more diffuse distribution in Discovery Ridge.

Interviewees mentioned ease of access to downtown and mountains; proximity to the Elbow River and nice walkways; and the pristine natural reserve of Griffith Woods. Three interviewees (interview no. 5, 9, & 10) remarked that the single access to the neighbourhood was a unique feature that ensured that only residents of the neighbourhood had reason to access the neighbourhood. This contributed to their sense of safety and sense of familiarity with other residents. The single access feature also limited access, prevented drive-through(s) and reduced the level of traffic in the neighbourhood. Other interviewees noted the general cleanliness of the neighbourhood and particular design features such as the presence of architectural controls (e.g. black chain fences), the presence of walkways that separated the backyards of houses from being

contiguous while eliminating the presence of lanes, as well as the enjoyment of mountain views from some vantage points.

Neighbourhoods that were perceived to be as appealing to live in as Discovery Ridge are: Aspen Woods, Aspen Landing, Elbow Valley, Wildwood and Glamorgan. Reasons that interviewees gave for similar appeal to other neighbourhoods were: similar look of houses, mature trees / landscaping of the neighbourhood, as well as being safe and established neighbourhoods in the case of Wildwood and Glamorgan that also give a sense of community.

Half of the interviewees, however, did not perceive any other neighbourhood in Calgary as appealing. Discovery Ridge was a perfect choice for them with the distinction for one of the interviewees (interview no.4) that his neighbours were respectful. Interestingly, one interviewee (interview no. 9) who was a resident of the neighbourhood for six years extolled the neighbourhood layout indirectly by stating that neighbourhoods that lack definite boundaries (in the sense of an open grid layout with many access points) also generally lack a sense of community. This remark clearly relates the physical boundary condition of neighbourhoods to positive social effects such as sense of community.

Neighbourhoods that were mentioned to be superior to Discovery Ridge were established 'historical' communities and close to downtown such as Mount Royal, Britannia, Scarborough, Kensington, and Wildwood. Other superior neighbourhoods mentioned had higher prices and houses with larger lots such as Elbow Springs, Elbow Valley, Stone Pine, and Aspen Landing. Nevertheless, five out of twelve interviewees found that Discovery Ridge was second to none. They couldn't mention any neighbourhood as superior to Discovery Ridge. Even when such interviewees acknowledged superior location or better quality houses of other neighbourhoods,

Discovery Ridge remained incomparable in terms of park and mountain access as well as the presence of sense of community and suitability for retirement for some residents.

Three quarters of interviewees observed that the neighbourhood is not affordable to low income and lower middle income residents. Reasons given for exclusion of low income residents were the relatively high house prices that increased over time; being in the average range of \$600k and up. Interviewees who acknowledged the presence of a full range of housing options such as semi-detached houses, condos and townhouses still considered the neighbourhood mostly exclusive but not highly exclusive; expressed succinctly by one of the residents as: “inclusive as can be” given the high density of apartments with no room to expand due to constraints of the environmental reserve.

When explicitly asked about the effect of a single access to the neighbourhood with respect to their sense of safety, eight out of twelve interviewees affirmed that their sense of safety increased; expressed by one interviewee (interview no. 9) as: “one entry point has a big impact.”. The single entry was perceived as decreasing opportunistic crime. Interestingly, two interviewees (interview no. 10 & 11) looked at the single entry from another perspective. They saw it in terms of difficulty of evacuating the neighbourhood in an emergency or traffic blockage due to accidents on the highway. Their worry was appeased either by presence of nearby services such as a fire station and good bus service or by choosing to live as close as possible to the single entry to facilitate egress. Two other interviewees (interview no. 4 & 6) explicitly negated an effect of a single access on their sense of safety.

However, when interviewees were asked if a single access affected their willingness to stop and talk with residents in the neighbourhood, only three (interview no. 1, 5, & 9) out of twelve interviewees felt that they were more willing to stop and talk, arguing that the single access

limits the presence of outsiders and increases the probability of meeting with people who are residents of the neighbourhood. Nevertheless, nine other interviewees negated any effect of a single access on their willingness to stop and talk, arguing that the neighbourhood is inherently friendly or that it was natural for them to be confident to talk to any person in the community regardless of the single entry or their knowing most of their neighbours.

Six questions were then posed to interviewees who responded on a five-point Likert scale from strongly disagree to strongly agree. The questions probed for observations of residents in regards to the four components of neighbourhood cohesion: one question concerned each of PSOC and neighbourliness; and two questions concerned each of place attachment and enveloping space. The interviewees strongly agreed or agreed in regards to their observations for all of the six questions with a couple of interviewees being ambivalent in regards to PSOC.

The appeal of the landscape and sense of safety scored very high without any ambivalence or disagreement among the twelve interviewees; those two aspects were followed by an aspect of sense of enveloping space which was almost unanimous among the interviewees except for one interviewee (interview no. 12) who was ambivalent. Only two residents disagreed about lifestyle, events or activities that encourage them to stop and talk with residents. The only component that had some controversy was PSOC. Concerning similarity with other residents and agreement on values or what is important in life, three interviewees were ambivalent and only one disagreed while the remaining three quarters mostly agreed (only one strongly agreed). Concerning the contribution of friendly residents to their sense of belonging, only two disagreed and the remaining ten either agreed (n=6) or strongly agreed (n=4). A possible interpretation for ambiguity in the PSOC and sense of similarity with other residents is the differential influx of residents to the neighbourhood that is contingent upon phase of development. Residents

mentioned that they were able to buy into the neighbourhood when house prices were relatively low. However, with the development of the neighbourhood and the spiking of house prices, a new, so to speak, category of residents with different values, occupation and economic status started to populate the neighbourhood. Such a differential influx has caused a few interviewed residents to feel a sense of dissimilarity with the new others and described them consistently as “snobby”.

When asked to elaborate on aspects of the neighbourhood that contributed to their sense of community or aspects that positively impacted the quality of their life, interviewees recalled seasonal activities such as polar bear dip in winter, spring cleanup and garage sale, pancake Stampede breakfast, and the yearly barbecue. Two interviewees (interview no. 1 & 6) pointed out socializing via the neighbourhood coffee shop / pub. Some projects such as starting a community garden are also bringing residents of similar interests together. One interviewee (interview no. 12) referred to the recent flood of June 2013 as a contributing factor to more people caring for the neighbourhood and thinking about other neighbours who are not just personal friends. Thus, working towards a common goal, accommodating sustainable practices, or facing the effects of natural disasters have all generated activities, opportunities for participation, and venues of communication for developing shared understanding among residents and sensitizing them about issues of their neighbourhood while at the same time developing sense of neighbourhood cohesion.

The good bus service was mentioned by three interviewees (interview no. 2, 6, & 10) as improving the quality of their life by improving access to the rest of the city. The bus service was especially important for their children to learn how to use it and who could also go to a recreational facility nearby. The newly constructed extension of the C-train transit line to the west

end of Calgary with a terminus at the intersection of 69 St and 17th Ave SW has further contributed to the ease of connection of the neighbourhood with the rest of the city especially for teenagers whose mobility, and accordingly quality of life, may have been limited by lack of transit options. Suburbs have definitely been stigmatized by lack of mobility options and infrequent transit service. Nevertheless, the stigma is gradually reduced with provision of light rail transit and may impact on higher hedonic house prices.

Other interviewees highlighted the cleanliness and quality of landscaping in public spaces as well as the relatively secluded aspect of the neighbourhood; as one interviewee (interview no. 1) expressed this: “slightly away from the ‘hustle and bustle’”. Again, the forest park as a natural amenity and the wildlife that is commonly seen in the neighbourhood were mentioned as positively contributing to the quality of life and tranquil environment sought by residents of the neighbourhood. It should be noted that the standards of cleanliness and quality of landscaping are higher than municipal standards given that the homeowner association complements efforts of the City of Calgary for landscaping (installation and maintenance of benches along walking trails, maintenance of trees, plantation of shrubs, irrigation, etc.) and snow removal. Other interviewees highlighted the neighbourliness aspect: strong community and good community association board that established a good relationship with the alderman’s office.

The non-transience of residents was a contributing factor to a feeling of cohesiveness when one interviewee (interview no. 11) compared Discovery Ridge to her previous neighbourhood of residence where they were original owners and couldn’t develop a feeling of cohesiveness because of high turnover of residents moving in and out. It may be argued that the non-transience contributes to a sense of stability for the neighbourhood and, with time, to a sense of familiarity with other residents.

Contrary to Valley Ridge, Discovery Ridge does have a Homeowner Association (HOA) and restrictive covenants. Membership in the Homeowner Association is mandatory where a large part of annual membership fees goes towards landscaping, snow removal, and garbage collection in order to complement the services offered by the city. Presently, there are experiments with xeriscaping medians along Discovery Ridge Boulevard. It is found to be less costly than converting the green medians to hard landscaping. The City contributes around \$20,000 to the neighbourhood, collected from property taxes. This represents a ratio of approximately 1:25 of revenue from membership. Legal action can be taken against owners who do not pay given that ownership titles have encumbrances tied to the titles for payment of the fee³⁸.

Issues that the board is currently dealing with are mitigation against future floods and replacement of work not well carried out by the original developer. For example, fences and walls were intentionally located on private property so that responsibility to maintain retaining walls does not fall onto the City. In addition, the homeowner association is currently collaborating with the Parks Dept. of the City of Calgary for planting trees in Griffith Park and around water ponds within the neighbourhood for beautification.

Some residents find that the homeowner association is very formal with organized meetings while others observe a mix of formal and informal methods of dealing with issues and yet others observe that both the homeowner and community association deal with all issues formally. In general, a notice is sent before formal action is taken against non-compliant residents. Concerning neighbourhood governance, it is usually difficult to reach a quorum when voting. For example, from 1,635 residents, 10% are required to attend in person or by proxy (i.e. 164 owners:

³⁸ It should be noted that 15 villa units and 24 townhouse units are not legally encumbered.

one unit = one vote). If the quorum is not reached, the meeting is adjourned for the following week where the quorum requirement is reduced to 5%, largely fulfilled by proxy of the president. An interview with the Chairman of the board of directors of the homeowner association highlighted the issue of more power allocated to condo owners as they represent about 30% of homeowners in Discovery Ridge. In general, residents are not actively involved in the homeowner association. Likewise, a very small number of residents are members of the community association. However, membership is rising over the years as efforts to educate residents about the mission of each association are made.

Membership for the community association is voluntary. According to one of the board members of the community association, residents become reluctant to pay the voluntary membership in the community association after having paid for the mandatory homeowner association fee. In addition, some residents are still confused on the purpose of having two separate associations. People are informed of events through the community newsletter. However, one interviewee (interview no. 8) who had resided for nine years commented that the community association sometimes makes decisions without providing proper communication.

7.6 Interpretation

Discovery Ridge has many features that contributed to a higher sense of neighbourhood cohesion than the case of Valley Ridge. Unlike Valley Ridge, the single access to the neighbourhood was referred to by residents of Discovery Ridge and a link was established between the single access and a sense of safety that affected accordingly their social interaction level and their overall sense of neighbourhood cohesion.

The site topography that divided Discovery Ridge into three parts paralleled the division of the neighbourhood into three or four *neighbourhoods*. The area closest to the single entry and

on either side of the roundabout was an area that was built earlier than the rest of Discovery Ridge and residents were able to secure homeownership before house prices rose subsequently. This area sloped downward towards the second area of Discovery Ridge that has the commercial core and the concentration of townhouses and apartment buildings. This second area constitutes the active area of the community where a lot of activities take place in the community playfield. It acts like a hub from which access is possible to the hill atop which represents the third area of Discovery Ridge or access to Griffith Woods that represents an anchor and natural identity-marker for the community. Observations during the field survey as well as responses of interviewees revealed the hill area as the place of residence of several committee and board members of the Community Association and Homeowner Association. Such members have lived a long time in the neighbourhood and have witnessed the transfer of neighbourhood management from the developer to the homeowner association. The stability of key residents atop the hill was definitely a factor of continuity for a growing sense of neighbourhood cohesion over time as residents become familiar to each other and children grow up together. This should not mask the fact that a discrepancy in age between a graduate student who was at some earlier time older than other younger kids as a teenager engendered in him feelings of no sense of belonging. Such feelings were not overcome with the passage of time. In Discovery Ridge, a lesser social discrepancy (teenage vs. children) was a disintegrating factor. Similarly, in the case of Valley Ridge, social status was also a disintegrating factor. For example, as mentioned before, there was a single person without kids who felt no sense of place attachment or belonging to the community where activities centered around families with children. It can be inferred that similarity of stage in life affects the sense of belonging as well as sense of place attachment to a neighbourhood especially suburban neighbourhoods designed for a particular social category with expected and

conformed cultural attitudes. This drive towards similarity in life-cycle stage and commonality of needs as well aspirations for self-realization, may be one of the reasons of proliferation of age-segregated retirement communities. Perceptions of cultural discrepancies were also noted by an interviewee who perceived that residents of condos (townhouses and apartment blocks) would generally have different behavioural standards that is physically symbolized by the unsightly integration of such types of housing with surrounding single family residences.

Additional aspects of the neighbourhood contributed to a high sense of neighbourhood cohesion despite social and cultural discrepancies among residents. The role of the homeowner association cannot be understated in its efforts to maintain a strong image for the neighbourhood by raising quality standards of maintenance. A clean and well-maintained landscape at higher-than-city standards definitely played a role in the symbolization and conveyance of an exclusive image for the neighbourhood. It also indirectly conveys an image to visitors for the cohesiveness, shared values, and mutual understanding between community members reflected in an orderly and aesthetic environment. Definitely, this argument may go further to maintain that an aesthetic environment has an impact on the quality of social interactions as well as behavior and attitude of residents. The orderly aesthetic environment in the case of Discovery Ridge is counteracted by the disorderly and pristine forest of Griffith Woods. This contrast between order and disorder adds an important dimension to the neighbourhood. It renders the neighbourhood a resort. The neighbourhood is secluded by virtue of its single access and is disconnected from other neighbourhoods by virtue of its boundary conditions and also has a natural focus, the pristine forest. The internal pattern of streets follows principles of enclave urbanism rather than through-traffic routes of the modified grid pattern. Thus, the neighbourhood provides for its residents a suburban experience that is truly an escape from an urbanized environment, i.e. approaching the

qualities of a resort; quoting one of the interviewed residents: “a destination neighbourhood”. This is definitely different from a suburban experience devoid of a natural amenity that would otherwise act as a focus and a relief.

7.7 Conclusion

This chapter investigated the sense of neighbourhood cohesion of the Calgary neighbourhood of Discovery Ridge. Neighbourhood cohesion was found to be very high especially for place attachment and PSOC (see chapter 11). The role of Griffith Woods as a natural amenity for the community and as a resort from the (sub)urban experience contributed to the uniqueness of the neighbourhood. The single access to the neighbourhood and locational advantages are also unique characteristics. However, the single access to, and non-permeability of, neighbourhoods with populations in the vicinity of 5,000 residents are not justified from a logistic perspective and caused some residents to choose dwellings close to the entry point. Provincial regulations for limiting access from provincial highways to one point supersede municipal egress requirements from the neighbourhood and, coupled with the boundary conditions of each of the neighbourhoods, necessitated such a single access configuration. Meanwhile, from a social perspective, residents explicitly related the single access to contributing to a higher sense of cohesion in the case of Discovery Ridge more than Valley Ridge. This may in part be due to the more secluded location of Discovery Ridge compared to Valley Ridge and the more central location vis-à-vis the neighbourhood of the core community activity and commercial center. Moreover, the quality of the landscape was better maintained in Discovery Ridge due to a formal homeowners’ association.

METRO VANCOUVER

Vancouver Metropolitan area is the third largest population center after Toronto and Montreal. Metro Vancouver comprises 21 municipalities, one electoral area and one treaty First Nation (Tsawwassen) with its major urban center being the city of Vancouver with over 600,000 inhabitants.

Of the 21 municipalities, 12 are towns and cities and include: Vancouver, Richmond, Burnaby, New Westminster, Port Moody, Port Coquitlam, Coquitlam, Delta, Surrey, White Rock, Bowen Island, West Vancouver and Vancouver's North Shore. Thirteen of the 21 municipalities include land in the Agricultural Land Reserve (ALR) with five municipalities: Delta, Langley, Pitt Meadows, Richmond, and Surrey encompassing 90% of the ALR within Metro Vancouver.

8.1 Historical Background³⁹

Before being incorporated as a city in 1886 and changing its name from Granville to Vancouver, there were disparate areas that were already claimed by Natives, the Hudson Bay Company, and individuals who settled in the area between Burrard Inlet and the Fraser Valley. By 1800, the area still had little strategic value to outsiders. It was not before the Fraser River gold rush of 1858 that the Vancouver area became dramatically reshaped and the new crown colony of British Columbia was created.

Land for military and government reserves as well as land for townsites was set aside. The first Vancouver Military Reserve is today's Stanley Park. Today's West End was the district

³⁹ Unless otherwise cited, the source for the reference for the historical background section was: <http://www.vancouver-historical-society.ca/blog/>

of the “Bricklayers’ Claim”, a 160-acre of land claimed by three individuals in 1862. Also in 1862, the two McCleery brothers each took 160 acres of land in what was to become South Vancouver. Royal Engineers surveyed a few townsites such as the Hastings and the Granville townsites. Although Hastings had the city’s first hotel, wharf, post office, museum, and subdivision, the commercial focus of activity was further west at Gastown (named after a bar owner); an area located within the Granville townsite that was laid out from Coal Harbour to False Creek in 1870. Hastings townsite was later amalgamated in 1911, extending Vancouver’s east boundary to Boundary Road.

The catalyst for development of the city of Vancouver was the decision of the Canadian Pacific Railway CPR to establish a future railway terminus station and port in Vancouver. A total of 6,280 acres of land was granted for the railway as a result of secret negotiations between the provincial government and CPR in 1884. In 1886, shortly after incorporation of the city⁴⁰, and in the same year of Calgary’s Great Fire, Vancouver’s Great Fire consumed the wooden settlement of Granville and Gastown. The difference between the similar catastrophic events for the two cities, though, is that the Great Fire of Calgary happened after the advent of the railway station whereas, for Vancouver, the Great Fire occurred before the arrival of the first train in 1887. The CPR facilitated the influx of Anglo-Scots from Ontario and the British Isles who soon outnumbered the existing diverse population.

Vancouver’s economy was driven by outside capital and big companies. British and American capital supported the establishment of nine sawmill companies along the city’s

⁴⁰ Vancouver’s first boundaries were Stanley Park to the west, Nanaimo Street to the east, and 16th Ave to the south between Trafalgar and Ontario Streets. CPR land holdings carried on south of 16th Ave into unincorporated farming area to 57th Ave and abutted various districts lots claimed by individuals.

waterfront. The CPR, which is Montreal-based, influenced the naming of streets and neighbourhoods in Vancouver. For instance, Marpole and Cambie were named after CPR executives and senior employees.

Coal Harbour became an industrial neighbourhood with a diverse labour force while the Bricklayers' Claim (West End) retained a residential character. Grand homes of the upper class were part of the mix of housing in the West End before WWI when the affluent began abandoning the area in 1907 for the newly developed neighbourhood of Shaughnessy Heights, south of Vancouver's 1886 boundary of 16th Ave. The street layout of Shaughnessy was curvilinear and marked a social and physical differentiation from the homogeneous grid pattern of Vancouver streets. In 1929, Shaughnessy became a Vancouver neighbourhood with the amalgamation of the municipality of South Vancouver.

Vancouver's electric streetcar began in 1890 and defined business and social activity along both sides of its lines until the 1950s when the streetcar was overtaken by cars and buses. Buses, the elevated skytrain of 1986 and the subterranean Canada Line of 2010 have contributed to the rise in residential density of downtown Vancouver.

8.2 Overview of Residential Development after WWII

After WWII, large numbers of Western and Eastern Europeans immigrated to Vancouver, gradually replacing the prevalent Anglo-centered society. By 1961, Greater Vancouver's population had reached more than 800,000, double that of 20 years earlier with the majority of the population residing in the suburbs. In the 1960s, Asians began arriving in a more welcoming Vancouver. By 1981, two-thirds of Greater Vancouver's population lived outside the central city.

Viewing maps of historical residential growth patterns from the year 1961 onwards, an overall expansion of the pattern was seen to occur in Richmond in the 1980s and Surrey in the

1990s as well as Port Coquitlam, Delta, and Langley, well through the 2000s; the growth rate of Port Coquitlam and Surrey was around 15% annually. The second largest city in Metro Vancouver to accommodate about one-fifth of immigrants to Vancouver is Surrey. South Surrey, in turn, is accommodating the out-migration of population from Vancouver and Richmond seeking less dense developments and less concentrations of particular ethnic groups from East Asia.

Although the outward expansion of the residential pattern is mainly characterized by low-density North American suburban development, a study in 2007 by Metro Vancouver staff estimated that 78% of new housing development over a decade occurred within the 1991 urban base (i.e. intensification) while only 22% occurred in new urban areas. In addition, a study done in 2008 by Seattle based Sightline Institute concluded that Metro Vancouver had a more compact residential urban growth pattern with 62% of residents living in compact communities (averaging 50 residents per hectare) compared to Seattle or Portland with 24% and 28%, respectively.

Annual average population growth in Metro Vancouver has been about 36,000 per year with the bulk of regional growth (75%) resulting from absorption of about 13% of total immigrants to Canada (Metro Vancouver, 2009). The largest share of Metro Vancouver's growth (40%) is projected to be accommodated in Surrey, White Rock, and Langley. The dominant form of housing being built is single-detached housing, typical of North American suburban development, but ground-oriented housing is in demand due to the aging of the baby boomer generation and the cost of housing.

The overall suburban landscape in Metro Vancouver is generally characterized by relatively compact town centers originally developed along streetcar lines and modern nodes along rapid transit routes and hubs (with high walkability levels) as well as low-density

residential development characteristic of the automobile and highway era. This nodal pattern of metropolitan development was adopted by long range planning of the Lower Mainland regional planning board (LMRPB) and continued by the Greater Vancouver Regional District (GVRD) / Metro Vancouver with the development of the SkyTrain rapid transit system. Five of the nine regional cities, including downtown Vancouver and Surrey Metro Centre, are on SkyTrain lines.

In addition to the nodal strategy, Metro Vancouver has adopted a corridor residential intensification strategy (Filion and Kramer, 2012). The outmigration of the population from the city of Vancouver to the suburbs, coupled with a polycentric nodal metropolitan structure, has been paralleled with a shift in job growth towards regional centres.

8.3 Overview of Policies Affecting Residential Suburban Development

Hans Blumenfeld, when commenting on the first plan for the Greater Vancouver Regional District (recently renamed in 2007 to Metro Vancouver) in 1973, warned that the excessive allocation of an agricultural land reserve would make housing unaffordable and any efforts to reduce vehicle driving would be futile (O'Toole, 2007). His review proved to be accurate with the highest housing prices and high traffic congestion that is characteristic of Vancouver today. Perhaps, a central planning process was not successful in dealing with the problems of the region. A central planning process was made possible by the Municipal Act, passed in 1965 which divided the province of British Columbia into regional districts of which one of the four Lower Mainland regions was The Greater Vancouver Regional District (GVRD, formed in 1967 and interrupted between 1983 and 1995). The ideas for a *Livable Region* were formulated in a policy statement in 1975 and included in the 1980 Official Regional Plan (ORP) which was a revision of the earlier 1966 ORP plan (a plan that had restricted the amount of land available for

development). It viewed the region as polycentric as opposed to the mono-centric region of the 1966 plan.

In 1990, a new vision for Vancouver's future was created by the GVRD publication of *Creating Our Future: Steps towards a More Livable Region* and comprehensively revised in 2011. Vancouver has put sustainability and liveability on the agenda way before Calgary, about 15 years in advance (Taylor et al., 2014: 35). The situation in Vancouver was less favorable given that British Columbia's Lower Mainland was politically fragmented into individual municipalities that necessitated regional institutions to coordinate municipal action.

Subsequent to the legislation of the Growth Strategies Act in 1995, The *Livable Region Strategic Plan* (LRSP) was published in 1996 and was meant to be a comprehensive growth-management plan. It established a Green Zone of about 210,000 ha (about 72% of the region of which 53,700 is the agricultural land reserve) for non-urban land use designations. It called for a compact metropolitan area and building complete communities by balancing jobs and housing as well as diversity of housing types (townhouses and apartments) and increasing transportation choices (transit, cycling, walking) for each of the 21 municipalities in the region.

Results of recent research confirmed higher suburban densities with the construction of attached low-rise / ground-oriented housing accounting for half of all construction in expansion areas. This is compared to 24% in Calgary. Urban containment policies have definitely impacted upon skyrocketing house prices, but the impact of global speculation in Vancouver's housing market is also a considerable factor.

The adoption of the 'complete communities' policy by Vancouver and Calgary is transforming suburbs into denser developments with diverse housing types and mixed land uses that encourage walking, cycling, and the use of public transit. There remains a difference between

the two metropolitan areas: the fragmented patchwork and piecemeal urban development paradigm in Vancouver versus the large master-planned developments in Calgary; a difference that is a direct reflection of urban containment policies in Vancouver, especially the constraint of the agricultural land reserve established in 1973 and further reinforced by the Green Zone in 1996, the positioning of Vancouver as the western gateway of immigrants to Canada, as well as the trend of accommodating a higher percentage of ground-oriented development in new suburban communities. While Vancouver has a longer tradition of inter-municipal cooperation and regional regulatory institutions, Calgary is a *de facto* regional government as it absorbs the majority of the metropolitan population.

8.4 Historical Background of Surrey

Surrey was incorporated as a municipality in 1879 and became a city in 1993⁴¹. One-third of Surrey is protected as park land, agricultural land, and green space which gave it the name “the city of parks”. The eastern boundary of Surrey was the current 192 St. A half mile strip was added to reach a total area of 371.4 sq. km that extended to 196 St, separating it from Langley, making Surrey more than double the size of the City of Vancouver (115 sq. km).

Growth before the 20th century was slow and was not stimulated until the completion of the New Westminster Southern Railway in 1891 as well as the opening of Hall’s Prairie Road, Coast Meridian Road and Crescent Road in the 1880s. By 1901, the population of Surrey had grown to 4,802.

During the 1920s, Surrey was parceled into 2 ½, 5, and 10 acre parcels in a grid pattern (Laven, 2008). The population tripled by 1941 as farmers moved out from the prairies in the mid-

⁴¹ <http://www.surreyhistory.ca/development.html>

1930s and took up land which was smaller than the initial parceling and affordable. By the 1950s, Surrey saw rapid growth of population (1st wave of population growth) in the north end with the removal of tolls from the Pattullo Bridge in 1952. However, employment opportunities within the municipality were not available for 75% of the population. The 1960s and 1970s saw continued growth in population based on transportation improvements and widening of King George Highway as well as the employment attraction of the Newton Industrial area. The population of Surrey in 1981 reached 147,138.

The second wave of population growth in Surrey was in the 1990s as population doubled that of 1981 with the development of more industrial parks and town centers that offered employment opportunities to 80% of the working population. As the population count increased, so has the ethnic mix of the population become more diverse. Of the 347,825 people in 2001, 66% were born in Canada, 33% were foreign born (two-fifths of whom immigrated between 1991 and 2001). From 1998 to 2008, Surrey's population had grown by over 100,000 residents with 10,000 newcomers each year. In response to pressure of rapid population growth, capital investment programs such as Build Surrey have invested \$470 M since 2010 to help Surrey's six communities develop into higher-density transit-oriented communities.

Planning in Surrey is directed by the objectives of the municipality's Official Community Plan (OCP) which is followed through by means of individual neighbourhood concept plans (NCPs). To initiate an NCP, agreement needs to be obtained from 51% of owners of 70% of the affected land and an extensive public consultation process is a mandatory component of the NCP. A typical NCP area is about 100 hectares and is usually designed by private consultants hired by the City.

EAST CLAYTON

9.1 Location and Background

East Clayton, formerly called Serpentine Flats or Serpentine Valley, is located in the northeastern edge of Cloverdale district on the Surrey/Langley border. It is bordered on the west by 188 St, on the north by 72 Ave (formerly, Jericho Road), on the east by 196 St (formerly, Kells Road), and on the south by Fraser Highway (formerly, Old Yale Wagon Road) and 64 Ave (formerly, Bose Road) – see location map fig. 9.1.



Figure 9.1. Location Map of Case Studies in Surrey, B.C.
Source of base map: City of Surrey

The area was named Clayton in 1889 by postmaster John George, after his native Clayton, Ohio. The original subdivision in the city of Surrey consisted mainly of single-family homes and

one acre real estate properties generally conforming to the historical agricultural grid. East Clayton was originally known as Clayton Heights and also referred to as Clayton Hill as it was located on high ground above the flats of the Serpentine River where dairy farming and feed crops was the main industry. Poultry farming was practised on the high ground as it required less capital investment and smaller land parcels that were purchased by returning soldiers from World War I.

The neighbourhood concept plan NCP for East Clayton was approved by City Council in March 2003 and amended in 2008 following petitions from developers, based on market demand, to change a portion of land uses to single family dwellings with front car access (see fig. 9.2). In July 2004, City Council approved the final NCP for an extension of East Clayton to the North (known as East Clayton North) and, in April 2005, approved the final NCP for a secondary extension to the west (known as East Clayton West). Current NCP plans are in process for a larger extension up north as far as 76 Ave (known as West Clayton)⁴².

⁴² The NCP for West Clayton was approved by Council on Feb. 28, 2011 and approved for an extension area on June 25, 2012.



Legend

- Half Acre Residential
- 6-10 u.p.a. (Low Density)
- 10-15 u.p.a. (Medium Density)
- 10-15 u.p.a. Special Residential
- 15-25 u.p.a. (Medium-High Density)
- 22-45 u.p.a. (High Density)
- 30-70 u.p.a. (High Density)
- Business Park
- Neighbourhood Commercial
- Commercial/Residential
- Specialty Community-Oriented Commercial
- Institutional
- Storm Water Ponds (100 year flood event)
- Storm Water Pond 5 Year Flood Event
- Storm Water Ponds
- School && Park
- Riparian Protection Area
- Public Open Space/Park
- Open Space/Park in Private Property
- Special Setback and Landscaping, Buffers
- Urban Landmark/Reference Point
- Road Median
- Utility R.O.W.

0 200 400 m



Figure 9.2. East Clayton Neighbourhood Plan

Source: City of Surrey

The East Clayton NCP plan was championed as the first ‘green infrastructure’ sustainable community in Surrey and British Columbia that is based upon sustainable principles. It would provide a blueprint for the development of other sustainable communities in North America⁴³. The NCP plan was developed as the first phase of the Headwaters Project by the City of Surrey Department of Planning and Development in partnership with Patrick Condon holder of the James Taylor Chair in Landscape and Livable Environments at the University of British Columbia, the Pacific Resources Centre, and a multi-constituent advisory committee involving various levels of government. The design process involved a four day design charette in the spring of 1999 representing many stakeholders with a wide range of interests and individuals with sufficient authority to negotiate new standards dynamically, or delegated to represent larger constituencies such as local landowners.

East Clayton comprises an area of 250 ha and forms the developed part of the census tract 9330183.04 of total area 720 ha. East Clayton is a residential community accommodating a population of 14,034 in 5,192 dwelling units (2011 Census) at a density of 1,950 persons / km² and a net residential density of 40 units per hectare (16 units per acre). The open space system is comprised of linear and neighbourhood parks. The major business areas are located in a plaza at the intersection of Fraser Highway and 188 St which includes a large array of amenities including restaurants, medical clinics, major banks, cafes and pet stores. Many schools are found in the neighbourhood such as the newly built Hazelgrove Elementary, Katzie Elementary School as well as Clayton Heights Secondary School just west of the study area.

⁴³ East Clayton Community Development Plan was awarded the 1999 BC Energy Award for Green Infrastructure, the Union of British Columbia Municipalities Excellence Award in 2003 for Planning Innovation, and the Federation of Canadian Municipalities Sustainable Community Award for Residential Development in 2006.

The topography of East Clayton site area consists of a gently sloping upland region. The area is defined primarily by two distinct ridgelines: 1) the first runs approximately parallel to 192 Street and drains the site towards McLellan Creek and Nicomekl River on the southeast; and, 2) the second diagonally crosses the northern portion of the site and drains the site in a westerly direction to the Serpentine River. The site did not present difficult construction challenges as slopes in the site range from 6 to 9%.

Regardless of the relatively even topography of the site area, the neighbourhood is differentiated, flanking 192 St, into spatially polarized areas with a relatively mixed suburban type of development: single-detached housing, lane houses, coach and carriage homes, and townhouses as well as 300 acreage properties. The predominant forms of housing are single-family (46%) and townhouses (38%) but other housing types are also included such as apartment units less than 5 storeys and duplexes. A 'special residential' category also allowed a mix of small-scale businesses with residential units. In addition, access to rented secondary units in the rear was made possible as 60% of lots have rear-lane access.

9.2 Neighbourhood Profile

With a total population of 14,034 in 2011 living in 5,195 dwellings, East Clayton has an average of 2.70 residents per dwelling compared to 3.06 for Surrey. The following are some highlights of the demographic and housing profile of the neighbourhood. For time series data and more information, please see appendix C.

9.2.1 Demography

Population of the neighbourhood has grown by 239.64% in 5 years from 2006 to 2011. About 7% of East Clayton neighbourhood's population are above 60 years of age while more than 32% are less than 20 years of age and 56% are between the ages of 20 to 60. Time series

data shows a decrease in percentage for the age group between 15 and 19 years old and a more noticeable decrease for the age group of 40 to 59 years old in favor of an appreciable increase in the age group of 20 to 39 years old from 25% in 2006 to 35% in 2011. This is an indication of the increase in young couple families choosing to live in the neighbourhood.

Such changes in age group structure were accompanied by other demographic and social changes.

- *Diversity.* In 2006, recent immigrants residing in East Clayton were mainly from East Asia and Southeast Asia while in 2011, recent immigrants were mainly from India followed by South Korea. In 2011, the aboriginal population percentage has decreased slightly to 3.5% while the visible minorities have reached 22.6% compared to 2006 census (4.23% and 17.7%, respectively).
- *Social Isolation.* In 2011, around 8% of the population and around 12% of seniors were living alone. This represents an increase of about 3% and 2% respectively, indicating that there is a probability of isolation for increasing numbers of the population. In addition, those who neither speak English or French are more than 1% of the population.
- *Families.* Notably, the percentage of lone-parent families in East Clayton increased from 11.5% to 13.9%, signaling an increase of families with financial burden. This is paralleled with a prevalence of low income households after tax to 10.3% in 2011 compared to 3.8% in 2006.
- *Marital Status.* Meanwhile, there was a relative stabilization in marital status as a higher percentage of East Clayton neighbourhood's population is married (63%) which reflects

the percentage of the City as a whole (60%); however, couples in common law relationships in East Clayton are double the percentage of that of the city of Surrey.

- *Mobility.* The neighbourhood has been absorbing a high influx of population. In 2011, just above three quarters of the residents of East Clayton lived at a different address than they did in 2006. The neighbourhood is appealing to entry level families, especially couples with children.
- *Occupation.* The occupation structure remained relatively the same except for the percentage of residents having an occupation in education, law, and government services who have increased from 7.7% to 12% and residents having an occupation in management who increased from 11.3% to 15.6%, whereas residents having an occupation in trades, transport and equipment decreased from 18.8% to 16% as well as those who have an occupation in sales and services (a decrease from 21.4% to 17.8%).
- *Average Household Income.* In 2006, average household total income of East Clayton residents was just above 18% higher than the average of household total income of Surrey. This ratio decreased in 2011 to just above 8% higher than the average household total income of Surrey.

9.2.2 Housing

- *Tenure.* The overwhelming majority of households in East Clayton are owned (80.5%) rather than rented (19.5%) with 90.45% of private dwellings constructed after the year 2001.
- *Dwelling Units.* The following two photos show images of single family houses that are predominant within the neighbourhood. In East Clayton, single family houses represented

46% of housing types in the census year 2011. This percentage represents a decrease of 21% from the census year 2006 due to the addition of townhouses that almost doubled in percentage from 2006 to 2011.

- *Dwelling size and average number of rooms per dwelling.* Average number of rooms (bedrooms) per dwelling in East Clayton in 2011 was 7.8 (3.3) – ranked 82 out of 410 neighbourhoods in 2006 – compared to 6.5 (2.8) for Surrey. Average size of houses is 2,266 sq. ft. The average size of condos is 1,200 sq. ft. and apartment units, 800 sq. ft.



Figure 9.3. Photo of single family houses in East Clayton (Photo by researcher)



Figure 9.4. Photo of single family houses in East Clayton (Photo by researcher)

- *House Price.* House prices in Cloverdale area increased in 2014 by 49% from prices in 2005. The average price for detached houses in April 2014 was \$615,741, and for townhouses, \$355,305.
- *Value of dwelling and Affordability* Average value of dwellings in 2011 was \$469,005 (median \$450,478). This is compared to an average value of \$539,521 in 2006 (ranked 153 out of 407 neighbourhoods in Metro Vancouver) and \$544,819 for Surrey (median \$500,746). Number of owner and tenant households spending 30% or more of household total income on shelter costs was 1,785, representing 34.43% of residents, according to 2011 census, compared to 30% of residents for the city of Surrey.

9.3 Summary Matrix for East Clayton

East Clayton		
Socio-demographic	Population in 2011	14,034
	Population density (persons / km ²)	1,950
	Residential density (units / acre)	16
	% of population aged 20 to 60 years old	66.3%
	% of persons living alone	8.3%
	% of lone-parent families	13.9%
	% of immigrant population	19.1%
	% of low income households	10.3%
	Turnover (% of non-movers over 5 years)	23.9%
	Average number of persons / household	2.7
	Average number of children at home	1.1
	Average household income	\$89,776
Physical	Land area	250 ha
	No. of access points to the neighbourhood	More than 4
	Degree of nesting	3
Economic	% of owned dwellings	80.5%
	Average size of houses	2,266 sq. ft.
	% of single-family houses	46%
	% of semi-detached dwellings	1%
	% of townhouses	38%
	Average value of dwelling	\$469,005
	Average selling price / sq. ft.	\$207
	% of households spending more than 30% of total household income	34%

9.4 Data Collection and Sample Description

Twenty five survey responses were returned by mail from a total of 730 packages delivered to residential addresses in East Clayton. This represents a response rate of about 3.5% which is typical of mail surveys.

In order to reach the required sample size, the mail out survey was complemented with a telephone survey. The pace of collecting surveys by phone was on average 1.5 to 2 survey responses per hour. Eleven survey responses were collected from an initial list of 1,000 residents with V4N postal code who reside in East Clayton. A total of 379 calls were made to residents from a more focused list of 600 records in East Clayton. Sixty three responses were collected. This represents a response rate of 16.6% which falls within the range of typical response rates of phone surveys. Three survey responses were not retained for analysis because participants did not complete the survey.

The total number of survey participants were $25+11+60 = 96$. For a population size of 14,034 in 2011, the required sample size (for a confidence level of 95% and confidence interval of 10) was calculated to be 95 using an online sample size calculator.

9.4.1 Sample Characteristics

Characteristics of the survey sample of 96 residents are shown in the following table.

Table 9.1. East Clayton Survey Sample

EAST CLAYTON SURVEY SAMPLE		Number	Percentage
Gender	Male	46	47.9
	Female	49	51.0
	Not given	1	1.0
	Total	96	100%
Length of Residence	Less than 1 year	6	6.3
	1 to 2 years	17	17.7
	2 to 5 years	38	39.6
	5 to 8 years	18	18.8
	8 to 10 years	14	14.6
	Over 10 years	3	3.1
	Total	96	100%
Household Income*	Less than 24k	10	10.4
	24k to 36k	3	3.1
	36k to 48k	4	4.2
	48k to 60k	2	2.1
	60k to 75k	2	2.1
	75k to 90k	2	2.1
	90k to 115k	8	8.3
	115k to 130k	1	1.0
	Over 130k	7	7.3
	Not given	57	59.4
	Total	96	100%

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for survey sample characteristics, the ratio of male to female respondents is almost equal (ratio of 1:1.07). For length of residence in the neighbourhood, 3% of the respondents resided for over 10 years and 6% resided less than a year. Also, roughly two-fifth resided from 1 to 2 years or from 5 to 8 years and another two-fifths resided between 2 to 5 years and one-seventh resided between 8 to 10 years. For household income bracket, over half (59%) of the sample did not report their household income. This has been a drawback of undertaking a phone survey as participants were more reluctant to give out

this information when compared to face-to-face surveys. Meanwhile, 8% had an income greater than 115k per year; 10% had a household income less than 24k/year and 7% reported a household income between 24k and 48k. In addition, 2% reported a household income in each of these three categories: 48k to 60k, 60k to 75k, and 75k to 90k.

Characteristics of the interview sample of 12 residents are shown in the following table:

Table 9.2. East Clayton Interview Sample

EAST CLAYTON INTERVIEW SAMPLE		Number	Percentage
Gender	Male	2	83.3
	Female	10	16.7
	Not given	0	0.0
	Total	12	100%
Length of Residence	Less than 1 year	2	16.7
	1 to 2 years	1	8.3
	2 to 5 years	3	25.0
	5 to 8 years	3	25.0
	8 to 10 years	2	16.7
	Over 10 years	1	8.3
	Total	12	100%
Household Income*	Less than 24k	1	8.3
	24k to 36k	1	8.3
	36k to 48k	1	8.3
	48k to 60k	0	0.0
	60k to 75k	0	0.0
	75k to 90k	2	16.7
	90k to 115k	3	25.0
	115k to 130k	0	0.0
	Over 130k	4	33.3
	Not given	0	0.0
	Total	12	100%

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for interview sample characteristics, the ratio of male to female respondents is uneven (ratio of 1:5). For length of residence in the neighbourhood, half of the respondents resided between 2 and 8 years while one-sixth of respondents resided for either

less than a year or from 8 to 10 years; and one respondent resided from 1 to 2 years or for over 10 years. For household income bracket, one-third (33.3%) of the sample had an income greater than 130k per year; a quarter had an income between 90k and 115k. 8.3% had a household income in one of these three categories: less than 24k/year, 24k to 36k, and 36k to 48k and one-sixth of the sample reported a household income between 75k and 90k. No respondents recorded an income between 48k and 75k/year or between 115k and 130k.

Qualitative data analysis of the 12 interviews and quantitative data analysis of the 96 survey participants were conducted with the help of NVivo v.10 software for qualitative analysis and IBM SPSS v.21 software for quantitative analysis.

9.5 Qualitative Analysis

The first question asked residents if they were planning to stay in the neighbourhood for more than five more years. Most of the interviewees planned to stay more than five years in the neighbourhood. This was common among those who have resided for only two or three years and for those who have resided for six or eight years. The community 'feel', being family-oriented, the design of the neighbourhood and the proximity of schools and amenities were reasons given by interviewees for planning to stay especially for those that have kids attending school. One interviewee (interview no.6) liked the house design and another (interview no.1) deemed the neighbourhood beautiful and safe.

However, one of the interviewees (interview no.2) gave a double negative response: "not want to not live here" and another interviewee (interview no.10) was not sure stating that the neighbourhood is rapidly losing its appeal with too many people and too many houses while at the same time not offering enough things for children to do. From these initial responses, one can detect some ambivalence among residents in regards to its appeal and functionality. Despite the

presence of many parks in the neighbourhood, these areas remain passive playing areas that may not provide enough stimulation for kids.

The top three reasons interviewees gave for choosing to live in their current neighbourhood:

1. **Housing cost, newness and design of the neighbourhood.** The affordability of owning a house in the neighbourhood, expressed by a third of interviewees, coupled with the cleanliness of a new neighbourhood with brand new houses and new neighbours (translated to ‘better people’), was a major reason for moving to the neighbourhood. The style of houses and townhouses was also appealing and the neighbourhood was considered a walkable and safe area for kids.

2. **Location.** With East Clayton centrally-located, residents have the advantage of being close to Langley and close to Surrey. This translates to ease of commute to work and proximity to services and amenities such as schools, banks, shopping and parks.

3. **Close to family.** Close to parents and family was the third top reason for choosing to live in the neighbourhood.

When asked what particular features East Clayton has that are not found in other neighbourhoods, interviewees repeated the above three top reasons. Interviewees mentioned the design of the neighbourhood where young families were in mind, an abundance of parks, and safer and cleaner streets than other neighbourhoods as well as the nice walkable areas. A characteristic of the neighbourhood was expressed by one of the interviewees (interview no.4) as: “close to everything yet removed”. This is a noteworthy remark that speaks to a residential quality of a neighbourhood for being ‘removed’, i.e. distanced from the hustle and bustle of

traffic, noise, and free-riders. Yet, at the same time, it speaks to the importance of location and ease of access to services and amenities.

Five out of twelve interviewees deemed the neighbourhood like most other neighbourhoods with no particular features. On a negative note, two other interviewees remarked that the tight spacing of houses (tightly spaced to the extent that they resembled townhouses as expressed by one interviewee – interview no.2) with no yards meant less privacy and also set easy targets for crimes such as car theft. The latter interviewee (interview no.10) added that high crime rates resulted from the mix of housing types: low income rentals (or coach houses) with expensive houses. The extracted formula is: low income rentals + expensive houses = high crime rate.

Moreover, the shortage of parking and schools within the neighbourhood was a characteristic feature in a negative sense. The issue of parking also extended complaints to the inconvenience of two-way circulation on some streets that provided for parking: a car entering the street had to wait for the other opposing car to pass.

Neighbourhoods that were perceived to be as appealing to live in were other neighbourhoods in Langley, South Surrey or White Rock area which are safe and family-oriented. Cloverdale beside Cloverdale Athletic Park and Walnut Grove in Langley were perceived to have the same style of housing and a close-knit community and neighbourhood 'feel'. Tsawwassen was perceived as the only area in the lower mainland that was close to amenities and family friendly that made it as appealing. Markedly, residents' perception of equally appealing neighbourhoods was based on another quality that was important for the entry level families: the family-oriented aspect of such neighbourhoods. However, the pervading perception was that all 'non-spread-out' / compact developments in Surrey were similar with cookie-cutter homes tightly

spaced to maximize profit and with the qualification that those more traditional homes, at least, had yards. The presence of a backyard for kids to play in is an important aspect for families seeking their first house purchase. Designers of East Clayton decided to substitute backyards of laneway houses and amalgamate the yards into parks in view of increasing outdoor green spaces available for residents (thus enhancing the overall image and functionality of the neighbourhood) and also increasing settings for social interaction rather than providing private backyards. Such a configuration may appeal to some residents who would not want to maintain a backyard (mowing the lawn, planting, etc.)

Four interviewees, however, did not perceive any other neighbourhood as appealing. East Clayton was a top choice for them. On the other hand, one interviewee (interview no.10) who had resided in the neighbourhood for nine years perceived the neighbourhood to be transforming rapidly into a low class area. The reasons behind such an accelerated downward transformation are the wide range of incomes able to access dwellings in the area; in particular, the introduction of coach houses and secondary basement suites to house lower income residents as well as the high population density that ‘overcrowds’ access to services, availability of parking spaces, and servicing capacity of schools.

Neighbourhoods that were mentioned to be superior to East Clayton were those in the Burnaby area which provided a mixture of both quiet suburban and busy urban as well as those in North or West Vancouver, UBC, and White Rock which were more expensive with larger lots, or had an ocean view, or areas with acreages; i.e. areas that were not so packed / jammed with no space or natural scenes such as that of a forest. Here, it becomes apparent that residents acknowledge that East Clayton provides a ‘mixture’ of suburban and urban features albeit without the grandeur of owning a large house and lot. Though, from an economic standpoint, such

residents would maintain that East Clayton resonates better than the superior neighbourhoods with respect to their current needs and values in life.

From a price point of view, East Clayton was the top choice, though not unanimously as one interviewee (interview no.5) also stated: “As a whole on what it offers, not top choice”. One interviewee (interview no.10) compared the East Clayton neighbourhood to those in Holland which were “way more superior” in terms of overall atmosphere, stores within walking distance, biking lanes, coffee shops, outdoor markets and buildings that are sustainable. Such a comment speaks to the shortcomings in the design of East Clayton, particularly in regards to social and physical sustainable design. In other words, zoning for a mix of uses in East Clayton for residential, commercial, recreational, entertainment and retail functions did not result ipso facto in a vibrant ‘atmosphere’ nor did it result in what is conceptualized as ‘complete streets’.

However, the neighbourhood is affordable for diverse income groups. Seven interviewees observed that the neighbourhood is affordable to low income residents especially when compared to Vancouver standards. One of the seven (interview no.10) expressed affordability of the neighbourhood ironically: “affordable to too many people”. What makes East Clayton affordable is the presence of different housing options such as coach houses and basement suites which helps finance the mortgage. Five interviewees, however, perceive the neighbourhood as not affordable to low income people as houses are in the range of \$600k but, at the same time, they say it is not an exclusive neighbourhood.

When explicitly asked about the number of access points to the neighbourhood and its effect on their sense of safety, three out of twelve interviewees affirmed that there were really only one or two functional access points to the neighbourhood despite being planned out as a grid with many access points. Eight others observed that there were many access points to the

neighbourhood, of which five found that it did not bear on their sense of safety. However, when interviewees were asked if the number of access points affected their willingness to stop and talk with residents in the neighbourhood, only two (interview no.2 & 8, of those who saw only two functional access points) out of twelve interviewees felt that they were more willing to stop and talk, but it was only clear for one of them (interview no.2) for establishing a link with limited access points. For the other, the link was unclear when arguing that most neighbours go out for a walk around the neighbourhood and visit each other. Nevertheless, ten other interviewees negated any effect of number of access points on their willingness to stop and talk.

Six questions were then posed to interviewees who responded on a five-point Likert scale from strongly disagree to strongly agree. The questions probed for observations of residents in regards to the four components of neighbourhood cohesion: one question concerned each of PSOC and neighbourliness; and two questions concerned each of place attachment and enveloping space. There was at least one disagreement for each of the questions and one strong disagreement for place attachment and one strong disagreement for events and activities that encouraged one to stop and talk with other residents. The sense of safety had the highest score with three strongly agreeing opposed to two disagreeing due to increased perception of crime rates. An appealing landscape came second with two strongly agreeing opposed to one disagreeing and two not sure followed by PSOC / sense of similarity with others. Following suit, sense of place attachment and friendliness of neighbours fared equally, with the bar tilting more towards friendliness than sense of place attachment. Finally, the least scored was the question for lifestyle, events, and activities.

When asked to elaborate on aspects of the neighbourhood that contributed to their sense of community or aspects that positively impacted the quality of their life, interviewees recalled

the role of schools in terms of quality of schools, teachers and sports coaches, the parks and walkable places in the neighbourhoods as well as mutual respect of neighbours, the family lifestyle and presence of lots of kids. One interviewee (interview no.2) remarked that the neighbourhood is not dominated by one particular ethnic group as is the case in Richmond, B.C. that is dominated by southeast Asians and Indo-Canadians. That is, although immigrant and visible minority presence may be perceived as increasing, this was more tolerable than the case of dominance by one particular ethnic group.

Another (interview no.5) highlighted the shared view of neighbours especially in regards to taking care of their homes on the outside so as to not worry about neighbours ‘striking up the boundary’. This was facilitated by the fact there was not much yard space. The house design was also a factor that contributed to residents’ quality of life, but it was only “a small part of the big picture” of being placed in a neighbourhood where the quality of people is paramount. One interviewee (interview no.8) specifically mentioned the sense of community and community / sporting events. These views were opposed by two interviewees who found nothing contributing to their quality of life in the neighbourhood. On an ironic note, a third interviewee (interview no.9), who had resided for more than 10 years, mentioned overcrowding contributing in a negative sense towards her quality of life.

East Clayton does not have a Homeowner Association (HOA) nor a community association. Dealing with resident issues is informal via emails through efforts of one person who is known to the residents. There is no newsletter to inform people of events nor is there a block watch set up as in other neighbourhoods that have many kids. As mentioned by one interviewee (interview no.2), order is partially maintained by some ‘loose’ directions from the city of Surrey

on how to maintain trees and partially from parking control persons. For those belonging to a strata council, meetings when issues are discussed are mainly formal.

9.6 Interpretation

East Clayton surfaces as belonging to a distinct category of neighbourhoods from the other three neighbourhoods studied in this research. The design of the neighbourhood is experimental in nature and set out to apply sustainability principles (such as accommodating higher residential densities than other suburban neighbourhood, diversity of housing types – laneway houses and coach houses, narrow streets, and implantation of swales for storm water management).

However, one of the negative outcomes of physical analysis of such a design is the high percentage of hard surfaces in the neighbourhood that was found to be equivalent to other ‘non-sustainable’ neighbourhoods. Designers, planners, and analysts recognized that the grid pattern is not necessarily efficient as it may seem to be. On the contrary, the percentage of streets in a grid pattern is higher than an enclave urbanism pattern of cul-de-sacs and loops. A higher yield in terms of unit density and opportunities for terminating vistas were definitely possible had urban planners recognized that the grid is not the most efficient solution; neither from a solely economic perspective nor from a visual or social perspective (in terms of defensible space and appropriation of space).

Moreover, the use of a grid pattern combined with laneway housing types configures the space of the neighbourhood into ‘front’ and ‘back’ *facades*; back facades that are aesthetically uninteresting, lanes that are prone to be unsightly when transformed to a dumping or storage area, and known for more incidences of crime or infractions due to reduced surveillance by pedestrians or police. Noteworthy during field visits were cars parked outside of the garages and encroaching

on the lane causing bottlenecks along the lane. The reason some chose to park outside the garage may be due to the fact that the minimum sizes of garages does not allow large cars to park without keeping the garage door open, making a house prone to ‘opportunity crime’ from the rear side. In addition, parking spaces were not calculated for an increased need for parking spaces resulting from the use of *both* coach houses and secondary suites; owner residents should have chosen to use one housing type, not both.

The inclusion of new types of housing such as coach houses was prohibited after such experimenting within Metro Vancouver. As much as the coach houses and secondary suites contributed to higher density as well as a higher income mix of residents, as much was the effect of density especially in scarcity of parking spaces and the effect of mixing residents of disparate income correlated with higher crime rates in the area especially theft of (and from) vehicles. As one interviewee commented (interview no.2), the common threat brought the residents together.

One of the survey participants went above and beyond the survey questionnaire and included within the return envelope a newspaper article by Amy Reid from The Now Newspaper dated Tuesday, March 18, 2014 with the title: “Where the streets have no space”. The lack of parking spaces prevented socializing as guests did not have a place to park. Moreover, one of the residents who had moved to East Clayton in 2006 complained about the close proximity to her neighbours which was inconvenient for her; she wished the houses were farther apart. She commented that: “East Clayton may have been a good idea on paper for the person who designed it, and for the developers that made money, but it is really a high-density, congested mess”.

The City has increased the minimum lot size in the future plan of West Clayton to two-and-a-half feet wider and deepened the lots to allow for a larger garage and parking stall behind the garage. There are also plans to extend transit service to the area along Fraser Highway in

order to reduce reliance on private vehicles for commute. The density has also had repercussion on the capacity of schools in East Clayton to accommodate the increase in the number of students.

The problems are not solely from over-capacity but also from the aspect of design of the neighbourhood itself. During the field visit, it was observed that the neighbourhood was divided along 192 St with a lot of through traffic. That is, spanning a neighbourhood, as an entity, over a grid of streets including major ones for traffic basically divides the neighbourhood physically (by not allowing easy traversing by pedestrians) and socially (by different housing types and demography). In addition, the traffic along 192 St decreased the sense of safety for children walking back from school and, coupled with a train whistle that resounded very frequently, caused a lot of ambient noise in the neighbourhood.

The neighbourhood was also divided by housing types. As will be discussed in the case of Rosemary Heights (next chapter), there was a large area of acreages in East Clayton which were hedged and separated from the rest of the community by tall trees and shrubs. The provision of a diversity of housing types, though fulfilling calls for social justice, caters to particular income groups and a social demographic so much so that the neighbourhood as an entity is in effect internally divided in such a way that socialization patterns as well as physical patterns of appropriation and familiarization with the neighbourhood (through walking, jogging, or enjoying outdoor spaces, for example) are affected accordingly.

The question remains if such a model for neighbourhood design should be emulated in terms of physical, social, communal and environmental aspects.

9.7 Conclusion

This chapter investigated the sense of neighbourhood cohesion of the Surrey neighbourhood of East Clayton. The neighbourhood was designed to be a blueprint for

sustainable neighbourhood development especially in regards to green infrastructure principles, diversity of income groups, housing types, and mix of uses. The physical design of the neighbourhood as well as its location, intermediate between Surrey and Langley, appealed to residents who sought advantages of a mix of suburban and urban qualities in their residential environment. The physical ‘cohesiveness’ of the compact housing layout, the presence of abundant parks and two elementary schools was reflected in a neighbourhood cohesion index which was found to be moderately high especially in regards to place attachment and neighbourliness. East Clayton is a functional neighbourhood for young families with many parks for children to play in and friendly neighbors. The neighbourhood has been flipped inside-out so to speak by reducing the front and backyards and transferring the extra space to allow for more recreational parks. Issues of crime perceived to be associated with high density and lack of parking spaces as well as under provision for amenities such as schools are currently taking a toll upon the residents.

ROSEMARY HEIGHTS

10.1 Location and Background

Rosemary Heights is an affluent suburban neighbourhood in the district of South Surrey located about 15 km from downtown Surrey and about 14 km from the Pacific Highway Port of Entry to the U.S.A. Rosemary Heights has a land area of approximately 303 ha (749 acres). It is bounded on the north by 40 Ave and the Nicomekl River that separates Rosemary Heights from the agricultural land reserve, and bounded on the south by 32 Ave that separates it from Rosemary Heights Business Park. The western boundary is defined by Highway 99 (Vancouver Blaine Hwy); the eastern boundary is the 160 St and Morgan Creek Golf Course that separates Rosemary Heights from the more affluent neighbourhood of Morgan Creek. Access to the neighbourhood is usually from 152 St (that divides Rosemary Heights into Central and West areas) or from 32 Ave via Vancouver Blaine Hwy and King George Boulevard. Two major gateways were incorporated in the design of the neighbourhood, one at the intersection of 152 St and 34 Ave and the other at the intersection of 32 Ave and 156A St (for location map, see figure 9.1). The following figure shows the plan of the neighbourhood.



Figure 10.1. Rosemary Heights Neighbourhood Plan

Source: City of Surrey

The NCP planning process for Rosemary Heights began in 1995. It produced the first of five master planned neighbourhoods for the area known as Grandview Heights adjacent to the exclusive retirement community of Morgan Creek (Laven, 2007). Traditionally the area south of 40th Ave was rural, but with development pressure increasing in the early 1990s, the area was seen as a potential for development and future growth. Areas adjacent to a high profile neighbourhood, Morgan Creek⁴⁴, were opened up for development.

The NCP plan was developed in two stages based on the planning principles established by Council in July, 1994 for the Rosemary Heights Local Area Plan following two years of detailed planning and public consultation. The first stage concerned the physical plan (land uses

⁴⁴ The neighbourhood included the Morgan Creek Golf Course, luxurious residences, signature residential enclaves and two gated communities (Laven, 2007).

and densities) of the neighbourhood with a proposed hierarchical road system, land for school, parks and open space as well as broad servicing concepts. The plan was designated as a mixed use urban village, typical of current trends in Surrey and was approved by Council in April, 1996. Land areas were designated as either urban (URB), suburban (SUBURB, for existing one acre and half-acre lots), or multiple residential (RM). Large areas of land (19 ha out of 101 ha for residential growth) were allocated to townhouse development to increase residential density along with 3-storey garden apartments fronting 152 St. The second stage concerned more detailed servicing concepts, the proposed phasing for the development, and design guidelines as well as a financial strategy for the provision of services and amenities within the neighbourhood.

Rosemary Heights is a residential community accommodating a population of 6,910 in 2,275 dwelling units (2011 Census) at a density of 2,289 persons / km² and a net residential density of 14 units per hectare (6 units per acre). The open space system is comprised of a linear park (width 30 m and area 5.8 ha) and two neighbourhood parks (each with an area of 2.2 to 2.4 ha) adjacent to the two elementary schools within the neighbourhood. A local commercial centre is near the entrance to the community on 34 Ave.

The topography of Rosemary Heights' site area consists of two basic topographic units: 1) a deep ravine system (Barbara Creek) bisecting the Rosemary Heights West neighbourhood and the Nicomekl floodplain comprising a significant riparian forest (11.5 ha) of high environmental sensitivity adjacent to the banks of the river, and 2) an upland area with stands of mixed upland forest contiguous to the riparian forest. The ravines and riparian areas within Rosemary Heights provide habitat that is suitable for migratory waterfowl, upland game birds, raptors, and a diverse population of passerines. .

The uneven topography of the site area has differentiated the neighbourhood into spatially polarized areas with a relatively homogeneous suburban type of development: single-detached housing and a curvilinear loop collector road system with cul-de-sacs. The majority of housing is single-family and semi-detached dwellings (68.8%) but other housing types are also included such as townhouses (27%), duplexes and apartment units. There is no physical building that would function as a community centre. Residents of Rosemary Heights have not formed a Home Owners Association (HOA) that would otherwise mandate annual membership fees and enforce restrictive covenants associated with private properties in the neighbourhood. There are a few strata developments that are gated residential enclaves within the neighbourhood such as Carrington and The Wedgewood.

Development is occurring in Rosemary Heights West area with projects such as The Edgewater from Barber Creek Development Ltd., a cluster of five buildings with 201 apartments units, mostly one- and two-bedrooms.

10.2 Neighbourhood Profile

With a total population of 6,910 in 2011 living in 2,275 dwellings, Rosemary Heights has an average of 2.90 residents per dwelling compared to 3.06 for Surrey. The following are some highlights of the demographic and housing profile of the neighbourhood. For time series data and more information, please see appendix D.

10.2.1 Demography

Population of the neighbourhood has grown by 17.5% in 5 years from 2006 to 2011 to a count of 6,910. About 20% of Rosemary Heights' population are above 60 years of age while more than 27% are less than 20 years of age and above 50% are between the ages of 20 to 60. Time series data shows a decrease in percentage for the age group between 0 and 4 years old and

a more noticeable decrease (about 7%) for the age group of 20 to 39 years old in favor of an appreciable increase in the age group above 60 years old from about 15% in 2006 to 20% in 2011. This is an indication of the increase in seniors choosing to live in the neighbourhood. Such changes in age group structure were accompanied by other demographic and social changes.

- *Diversity.* In 2006, recent immigrants residing in Rosemary Heights were mainly from Eastern Asia while in 2011, recent immigrants were mainly from Taiwan followed by South Korea. In 2011, the aboriginal population percentage has decreased slightly to 1.7% while the visible minority have reached 24.8% compared to 2006 census (2.1% and 21.8%, respectively).
- *Social Isolation.* In 2011, about 4% of the population and about 10% of seniors were living alone. Those who neither speak English or French are about 2.5% of the population.
- *Families.* Notably, the percentage of lone-parent families in Rosemary Heights increased from 8.9% to 10.5%, signaling an increase of families with financial burden. This is paralleled with a prevalence of low income households after tax to 8.4% in 2011 compared to 27.8% of households in the top decile.
- *Marital Status.* Meanwhile, there was a relative stabilization in marital status as a higher percentage of Rosemary Heights neighbourhood's population is married (70%) which is greater than that for the percentage of the City as a whole (60%); however, the percentage of couples in common law relationships in Rosemary Heights reflect the percentage of that of the city of Surrey.
- *Mobility.* The turnover in population is decreasing as more and more residents decide to stay in the neighbourhood, especially those that see the neighbourhood as a place for

retirement. Just above two fifths of the residents of Rosemary Heights in 2011 lived at a different address than they did in 2006 and this almost reflects the percentage of movers for the city of Surrey.

- *Occupation.* The occupation structure remained relatively the same except for the percentage of residents having an occupation in education, law and government services who increased from 6.8% to 11% whereas residents having an occupation in management decreased from 26% to 21%.
- *Average Household Income.* In 2006, average household total income of Rosemary Heights' residents was more than twice as higher than the average of household total income of Surrey. This ratio decreased in 2011 to more than one and one-half higher than the average household total income of Surrey.

10.2.2 Housing

- *Tenure.* The overwhelming majority of households in Rosemary Heights are owned (94.5%) rather than rented (5.0%) with 83.70% of private dwellings constructed after the year 2001.
- *Dwelling Units.* The following two photos show images of single family houses that are predominant within the neighbourhood. In Rosemary Heights, single family houses represented 56.7% of housing types in the census year 2011. This percentage represents a decrease of 3.8% from the census year 2006 due to the addition of townhouses that increased in percentage from 23% in 2006 to 26.6% in 2011.



Figure 10.2. Photo of single family houses in Rosemary Heights (Photo by researcher)



Figure 10.3. Photo of single family houses in Rosemary Heights (Photo by researcher)

- *Dwelling size and average number of rooms per dwelling.* Average number of rooms (or bedrooms) per dwelling in Rosemary Heights in 2011 is 8.6 (3.4) – ranked 17 out of 410 neighbourhoods in 2006 – compared to 6.5 (2.8) for Surrey. Average size of houses is 2,391 sq. ft. for single family houses and 2,195 sq. ft. for compact single family houses while townhouses range in size from 1,783 to 2,139 sq. ft.
- *House Price.* House prices in South Surrey increased in 2014 by 70% from prices in 2005. The average price for detached houses in April 2014 was \$974,456, and for townhouses, \$452,297.
- *Value of dwelling and Affordability.* Average value of dwellings in 2011 was \$797,380 (median \$751,688). This is compared to an average value of \$670,367 in 2006 (ranked 61 out of 407 neighbourhoods in Metro Vancouver) and \$544,819 for Surrey (median \$500,746). Number of owner and tenant households spending 30% or more of household total income on shelter costs was 510, representing 22.47% of residents, according to 2011 census, compared to 30% of residents for the city of Surrey.

10.3 Summary Matrix for Rosemary Heights

Rosemary Heights		
Socio-demographic	Population in 2011	6,190
	Population density (persons / km ²)	2,289
	Residential density (units / acre)	6
	% of population aged 20 to 60 years old	52.2%
	% of persons living alone	3.6%
	% of lone-parent families	10.5%
	% of immigrant population	26.4%
	% of low income households	8.4%
	Turnover (% of non-movers over 5 years)	57.7%
	Average number of persons / household	2.9
	Average number of children at home	1.1
	Average household income	\$137,406
Physical	Land area	303 ha
	No. of access points to the neighbourhood	4
	Degree of nesting	5
Economic	% of owned dwellings	94.5%
	Average size of houses	2,391 sq. ft.
	% of single-family houses	56.7%
	% of semi-detached dwellings	12%
	% of townhouses	26.6%
	Average value of dwelling	\$797,380
	Average selling price / sq. ft.	\$333
	% of households spending more than 30% of total household income	22.4%

10.4 Data Collection and Sample Description

Forty two survey responses were returned by mail from a total of 730 packages delivered to residential addresses in Rosemary Heights. This represents a response rate of 5.75% which is

a little higher than typical of mail surveys. One of the mail survey responses was incomplete with 8 questions left unanswered, so it was not retained for analysis. Moreover, four completed mail surveys were received but with no indication of address or postal code. It was not evident if those four surveys belonged to East Clayton or Rosemary Heights, so they were not retained for analysis.

In order to reach the required sample size, the mail out survey was complemented with a telephone survey. The pace of collecting surveys by phone was on average 1.5 to 2 survey responses per hour. Nineteen survey responses were collected from an initial list of 1,000 residents within V3S postal code who reside in Rosemary Heights. One of the 19 survey responses was not retained due to being incomplete. A total of 291 calls were made to residents from a more focused list of 600 records in Rosemary Heights. Forty responses were collected, of which one was not retained for being incomplete. This represents a response rate of 13.7% which is typical for response rates of phone surveys.

The total number of survey participants were $41+18+39 = 98$. For a population size of 6,910 on 2011, the required sample size (for a confidence level of 95% and a confidence interval of 10) was calculated to be 95 using an online sample size calculator.

10.4.1 Sample Characteristics

Characteristics of the survey sample of 98 residents are shown in the following table:

Table 10.1. Rosemary Heights Survey Sample

ROSEMARY HEIGHTS SURVEY SAMPLE		Number	Percentage
Gender	Male	64	65.3%
	Female	33	33.7%
	Not given	1	1.0%
	Total	98	100%
Length of Residence	Less than 1 year	4	4.1%
	1 to 2 years	13	13.3%
	2 to 5 years	34	34.7%
	5 to 8 years	13	13.3%
	8 to 10 years	13	13.3%
	Over 10 years	21	21.4%
	Total	98	100%
Household Income*	Less than 24k	4	4.1%
	24k to 36k	4	4.1%
	36k to 48k	5	5.1%
	48k to 60k	2	2.0%
	60k to 75k	1	1.0%
	75k to 90k	4	4.1%
	90k to 115k	3	3.1%
	115k to 130k	2	2.0%
	Over 130k	25	25.5%
	Not given	48	49.0%
	Total	98	100%

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for survey sample characteristics, the ratio of male to female respondents is unequal (ratio of 1.94:1). For length of residence in the neighbourhood, about one-fifth of the respondents resided for over 10 years while roughly from one-seventh to one-eighth of respondents resided for one of these three categories: 1 to 2 years, 5 to 8 years, and 8 to 10 years; and over one-third of respondents resided from 2 to 5 years. For household income bracket, about half (49%) of the sample did not report their household income. This has been a drawback of undertaking a phone survey as participants were more reluctant to give out this information when compared to face-to-face surveys. Meanwhile, about a quarter (25.5%) had an

income greater than 130k per year; 8% had a household income less than 36k/year and 8% reported a household income between 36k and 75k. In addition, 9% reported a household income between 75k and 130k.

Characteristics of the interview sample of 12 residents are shown in the following table:

Table 10.2. Rosemary Heights Interview Sample

ROSEMARY HEIGHTS INTERVIEW SAMPLE		Number	Percentage
Gender	Male	5	41.7%
	Female	7	58.3%
	Not given	0	0%
	Total	12	100%
Length of Residence	Less than 1 year	0	0.0%
	1 to 2 years	0	0.0%
	2 to 5 years	2	16.7%
	5 to 8 years	4	33.3%
	8 to 10 years	2	16.7%
	Over 10 years	4	33.3%
	Total	12	100%
Household Income*	Less than 24k	0	0.0%
	24k to 36k	1	8.3%
	36k to 48k	1	8.3%
	48k to 60k	0	0.0%
	60k to 75k	0	0.0%
	75k to 90k	0	0.0%
	90k to 115k	0	0.0%
	115k to 130k	4	33.3%
	Over 130k	5	41.7%
	Not given	3	25.0%
Total	12	100%	

*Upper limits in the questionnaire were actually \$1 less (e.g. \$35,999 for an upper limit of \$36k) in order to avoid indecisiveness on the part of participants for which income bracket they belong. In the table the upper limits have been simplified to facilitate legibility.

As can be seen from the above table for interview sample characteristics, the ratio of male to female respondents is almost equal (ratio of 1:1.4). For length of residence in the neighbourhood, one-third of the respondents resided between 5 and 8 years or over 10 years while one-sixth of respondents resided for 2 to 5 years or 8 to 10 years. None of the respondent resided

for less than two years. For household income bracket, a quarter did not provide this information. Two-fifths reported an income over 130k and one-third reported an income of 115k to 130k. No respondents reported an income less than 115k/year.

Qualitative data analysis of the 12 interviews and quantitative data analysis of the 98 survey participants were conducted with the help of NVivo v.10 software for qualitative analysis and IBM SPSS v.21 software for quantitative analysis.

10.5 Qualitative Analysis

The first question asked residents if they were planning to stay in the neighbourhood for more than five more years. Most of the interviewees planned to stay more than five years in the neighbourhood. This was common among those who have resided for only two or three years and for those who have resided for six or seven years, as well as those who have resided for ten or fifteen years. That is, the neighbourhood has a general appeal for residents, independent of the length of stay within the neighbourhood. Particular concerns for some interviewees were affordability and retirement as factors that would affect their choice to move. Affordability was an issue for an interviewee (interview no.6) who had resided for more than ten years. Retirement was a factor (interview no.12) in regards to downsizing to a smaller abode. Nevertheless, those who were close to retirement, all wanted to stay within the neighbourhood even if they downsized. The predominant reason given by interviewees who planned to stay was having kids in school in the neighbourhood or young adults going to the local university. The presence of a school within the neighbourhood, like the case of East Clayton, was an important aspect for residents of a particular social category (families having children) whose children could walk or bike to school. A few mentioned that they planned to stay because they liked the neighbourhood and the neighbours.

The top three reasons interviewees gave for choosing to live in their current neighbourhood:

1. **The local school.** The presence of a good school in the neighbourhood was a major factor for residents choosing to live in Rosemary Heights. The school was complemented with other amenities such as a good church and parks. Contrary to other cases, where location was of paramount importance. A high quality school located within the neighbourhood played an important part in the daily life of residents with children. Residents contributed towards building the school and had a sense of ownership of the facility. The school also became a focal point for community gatherings and events.

2. **Family close by.** The second reason for choosing to live the neighbourhood was the presence of family either within the neighbourhood or in close by neighbourhoods such as White Rock. Also, the fact that residents were used to the area and had lived in the neighbourhood beforehand was a factor. This second factor also fared more than location in choosing to live in the neighbourhood. This speaks to a familiarity with the area both from a physical aspect (living close by) and from a social aspect (having family, friends or acquaintances) in the neighbourhood. Indeed, this social aspect had a bearing upon the establishment of a ‘tightly-knit’ community as described by two of the residents (interview no.1 & 4).

3. **Location,** quiet / safe neighbourhood, and design / ‘format’ of the neighbourhood (spacing of houses and abundance of green space), sense of community, and community ‘essence’ were among the top reasons but, overall, fared less than the presence of the school or family ties. The proximity to highways facilitated commute to work and to shopping / farmers’ market as well as travel to the U.S. (particularly Seattle) and to nearby recreation areas (e.g. ocean).

When asked what particular features Rosemary Heights has that are not found in other neighbourhoods, interviewees repeated the above three top reasons. Interviewees mentioned the elementary school that was attracting people; less crime and abundance of greenery, parks and the golf course; and a close-knit and friendly community.

One other interviewee (interview no.6) who had resided for more than ten years remarked that the neighbourhood was not so secluded for him as the neighbourhood was close to the highway and bus stop, but in a convenient way as the roads are not so busy. Again, the quiet aspect of a neighbourhood is balanced by a good connection to the city via a highway and transit service. Such a balance definitely resonated with residents' temperament and feel for what a neighbourhood should be. Two other interviewees (interview no.9 & 11) remarked that there was nothing special about the neighbourhood except being a little more 'rural' than other neighbourhoods.

Neighbourhoods that were perceived to be as appealing to live in as Rosemary Heights are: White Rock, Morgan Creek, Crescent Beach and Sunshine Hills in Delta. Reasons that interviewees gave for similar appeal to other neighbourhoods were: general location on the edge of the city or South Surrey area (where there is more sunshine and it rains less) – Morgan Creek being the most proximal and comparably safe; the value of real estate for neighbourhoods fronting the beach such as Crescent Beach; the common age group (+45 yrs.) and society level for White Rock despite having smaller but more expensive houses; and the much older and more financially established neighbourhoods such as Sunshine Hills.

Four interviewees, however, did not perceive any other neighbourhood to be as appealing although one of the four (interview no.6) expressed concerns that the neighbourhood used to be quiet and is recently getting loud. Having a good connection with the city, with the growth of the

city over time, tilts the 'quiet-busy' balance towards the busy side and may impact upon what original residents consider tolerable for them.

Seven of the twelve interviewees did not perceive or mention any neighbourhoods to be superior to Rosemary Heights. The neighbourhood that were perceived to be superior was the nearby neighbourhood of Morgan Creek and neighbourhoods close to the beach or in Northern and West Vancouver which had larger and more expensive houses. It was clear to residents that neighbourhoods that were more exclusive and having higher real estate value did not necessarily translate into a superior neighbourhood when other factors are weighed in such as the functionality of, and sense of community within, the neighbourhood.

Eight of the twelve interviewees observed that the neighbourhood is not affordable to low and lower middle income residents. Reasons given for exclusion of low income residents were the relatively high house prices (estimated by one of the residents to be in the range of \$900k) that increased over time; multi-family housing / townhouses that were still out of reach for low incomes; and non-central location makes it difficult for low income families to reside in the neighbourhood. Concerning accessibility for lower middle income, four interviewees mentioned that rentals and the presence of townhouses / condos enlarged the range of options.

Residents were divided when explicitly asked about the number of access points to the neighbourhood and the effect with respect to their sense of safety. Three confirmed that there were one or two access points to the neighbourhood while nine confirmed that there were more than two (one affirmed there were four points). The reason for the division was given by one of the interviewees who mentioned that most of the access points are blocked off because of the nearby high-end neighbourhood of Morgan Creek with its exclusive golf course. Four out of twelve interviewees affirmed that their sense of safety increased; two from those who said there

were a few access points (while remarking the drawbacks in terms of an emergency) and two from those who said there were one or two access points.

When interviewees were asked whether the number of access points affected their willingness to stop and talk with residents in the neighbourhood, only two (interview no.4 & 12) out of twelve interviewees felt that they were more willing to stop and talk, arguing that multiple access points allowed / (represented) access by different types of people (young and old) and by different ethnic backgrounds. Put differently, the more access points meant more diverse experiences with a wider spectrum of people. Nevertheless, ten other interviewees negated any effect of access points on their willingness to stop and talk, arguing that there was no bearing at all.

Six questions were then posed to interviewees who responded on a five-point Likert scale from strongly disagree to strongly agree. The questions probed for observations of residents in regards to the four components of neighbourhood cohesion: one question concerned each of PSOC and neighbourliness; and two questions concerned each of place attachment and enveloping space.

The interviewees strongly agreed or agreed in regards to their observations for five of the six questions with a couple of interviewees being ambivalent in regards to PSOC. The appeal of the landscape and friendliness of neighbours scored very high without any ambivalence or disagreement among the twelve interviewees; those two aspects were followed by place attachment which was almost unanimous among the interviewees except for one interviewee (interview no.3) who was ambivalent and one (interview no.6) in disagreement who was transiting from the neighbourhood. Sense of safety and enveloping space also scored high except for one (interview no.3) being not sure for sense of safety and disagreeing concerning the lifestyle

and events that encourage her to stop and talk with residents. The least score was PSOC concerning the perception of similarity with other residents and agreement on values or what is important in life; three were ambivalent and one (interview no.6) disagreeing.

When asked to elaborate on aspects of the neighbourhood that contributed to their sense of community or aspects that positively impacted the quality of their life, several interviewees highlighted several aspects for the role of the school in the neighbourhood. One interviewee (interview no.7) stated that the school is usually where most relationships are formed. The proximity of the school allows children to walk to school. Children also go to the local church and this forges friendships inside and outside of classrooms. The school contributed to the sense of cohesion of the close-knit community and the feeling of being 'all together'. As one interviewee (interview no.1) phrased it: "We all know each other very well through school and fund raising". The playfields of the school and new playgrounds provide opportunities to meet with other people who may be walking their dogs.

The school was important so much so that an interviewee (interview no.2) pondered that the picture may be different for the sense of community on the other side of the neighbourhood far from the school. The sense of community was strong, expressed by one of the interviewees (interview no.4) as: "it felt like a community when you came into it". Residents are usually exercising and running and socialize via house parties where new residents are greeted. During the site visit, a cohort of upper-middle aged residents were seen running in an orderly fashion with lights attached to their caps. This reflected a sense of safety and neighbourliness of the community.

Other interviewees highlighted the neighbourliness aspect where everyone watches over others' houses and children especially for the cul-de-sac enclaves and there is communal interest to make neighbourhood families feel welcome when moving into the community.

Aspects of the neighbourhood were also highlighted. For example, the peacefulness and quietude of the neighbourhood contributed to having more tolerance for the other as stated by one interviewee (interview no.6). In addition, the proximity of a fire station gave some sense of safety. As another example, the big yards of half-acreages and one acre lots were great for kids. One resident who previously lived in Richmond, B.C (interview no.4). said the relative homogeneity of residents compared to high concentration of Asians in Richmond, B.C. impacted upon her sense of belonging in Rosemary Heights.

In spite of the positive aspects, a few interviewees commented that there were no common areas, townhouses were constantly being built with negative environmental and social effects as trees were being cut to make way for the new townhouses, and the increased density is impacting on the overall quietude of the neighbourhood. Residents expressed a need for a high school.

Rosemary Heights does not have a Homeowner Association (HOA) nor a community association. Only strata developments have an annual general meeting for residents of the complex. Residents in Rosemary Heights are informed of events informally as there is no community newsletter. Issues are dealt with through residents' efforts. There is a neighbourhood block watch that gives residents information on crimes around the area.

10.6 Interpretation

Rosemary Heights is a neighbourhood with a high sense of neighbourliness. The high sense of neighbourliness is promoted by the role the elementary school plays in uniting the community through community events and regular communication.

Three or four different neighbourhoods existed in Rosemary Heights. The first, a family-oriented school-focused community that contributed to the building of the school and looks forward to building a high school. The school contributed to the community by maintaining a sense of community among residents and newcomers. A second, a non-school-focused community maintained a sense of community through a common exercising routine and walking in the neighbourhood such that the sense of appropriation of the neighbourhood was maintained. The third, gated residential enclaves of townhouse developments within Rosemary Heights where access is controlled and exclusive to residents of townhouses. The fourth, residents of large lots flanking 156 St who did not feel a sense of belonging and who sensed a precariousness of an unstable future redevelopment.

It is necessary to highlight some comments of one survey participant who went above and beyond the questionnaire by sending a written letter lamenting the development of the neighbourhood over time. He resides in the Morgan Creek Golf Course community that is part of Rosemary Heights' census tract and states that the turnover point for the neighbourhood started about 2 years ago.

Prior to that, the neighbourhood had houses that were all built over a short period and had rules relating to house colour and landscaping requirements / upkeep. The residents who moved in, though ethnically diverse, had similar values and were proudly committed to maintaining the original concept of the neighbourhood with the establishment of a real sense of community. As people moved out and newcomers moved in, they were welcomed to the neighbourhood and effort was made to make them feel welcome and get to know the new neighbours.

About two years ago, houses were being sold to offshore buyers, mainly from Mainland China who paid top dollar for the houses but have not become part of the community. They do

not communicate with other residents and yard maintenance is neglected to the point that complaints have been sent to the City. Moreover, houses have remained vacant for long periods of time (3 or 4 months) such that routine maintenance is not done. There is a high turnover for such houses (with absentee owners) where different people show up and stay in them and leave (akin to a timeshare) without communicating with other residents either out of ignorance of the language or no desire to speak. Property values are affected due to lack of maintenance resulting in more houses being put up for sale.

An interviewee (interview no.10) who is another resident that resides in the same area pointed out on a map that the area they are living in seems to be detached from both Rosemary Heights and Morgan Creek. The interviewee pointed out that the acreage and half acreage houses along 156 St are not integrated with the rest of Rosemary Heights while at the same time not considered part of Morgan Creek. This resulted in a sense of not belonging to either neighbourhood. He foresaw the acreage houses east of 156 St being sold with larger residential developments taking their place.

The issue of an unclear boundary defining each of the two neighbourhoods compounded with a different house type (acreages and half acreages) prevented the residents from establishing a sense of belonging to either neighbourhood. Moreover, the acreage houses were of poorer quality than the facing half acreages which sent a signal of dilapidation of that strip of houses along 156 St that is part of Rosemary Heights as well as a signal of instability as to what type of development would replace such acreages.

10.7 Conclusion

This chapter investigated the sense of neighbourhood cohesion of the Surrey neighbourhood of Rosemary Heights. Neighbourhood cohesion was relatively high especially in regards to the dimensions of place attachment and neighbourliness (see chapter 11 for comparison of case studies). Rosemary Heights is, perhaps, the highest among the compared neighbourhoods in terms of establishing a high sense of neighbourliness for its residents. However, a trend that has started a couple of years ago raises signals of transformation of part of the area into a timeshare with absentee owners not keen on becoming part of the community. Other malaises expressed by residents are the constant development of townhouses that encroaches upon the natural environment. A recent university graduate residing in the neighbourhood also raised issues of loss of tranquility due to increased density have also been raised.

COMPARISON OF CASE STUDIES

11.1 Summary Matrix for Case Studies

Case Study		Valley Ridge	Discovery Ridge	East Clayton	Rosemary Heights
Socio-demographic	Population in 2011	5,055	4,395	14,034	6,190
	Population density (persons / km ²)	1,542	1,200	1,950	2,289
	Residential density (upa)	6	6 (10, core)	16	6
	% of population aged 20 to 60 yrs.	56%	58.9%	66.3%	52.2%
	% of persons living alone	3.5%	8.6%	8.3%	3.6%
	% of lone-parent families	7.5%	6.3%	13.9%	10.5%
	% of immigrant population	21.4%	23.1%	19.1%	26.4%
	% of low income households	2.8%	2.8%	10.3%	8.4%
	Turnover (% of non-movers over 5 years)	66.4%	50.1%	23.9%	57.7%
	Avg. number of persons / household	2.9	2.7	2.7	2.9
	Avg. no. of children at home	1.1	1.3	1.1	1.1
	Average household income	\$167,992	\$193,091	\$89,776	\$137,406
Physical	Land area (ha)	268	278	250	303
	No. of access points to the neighbourhood	1	1	More than 4	4
	Degree of nesting	9	9	3	5
	Connectivity Index (link-to-node ratio)	1.20	1.15	1.48 (Laven,2007)	1.19 (Laven,2007)
Economic	% of owned dwellings	98%	83%	80.5%	94.5%
	Avg. size of houses (sq. ft.)	2,342	2,518	2,266	2,391
	% of single-family houses	96%	56%	46%	56.7%
	% of semi-detached dwellings	0%	6.5%	1%	12%
	% of townhouses	4%	3%	38%	26.6%
	Average value of dwelling	\$546,847	\$712,974	\$469,005	\$797,380
	Average selling price/sq. ft.	\$413	\$396	\$207	\$333
	% of households spending more than 30% of total household income	12%	19%	34%	22.4%

From the above summary matrix as well as from qualitative data and observations, the four neighbourhoods could be ranked along two dimensions of gated-ness (EXCLUSION and SECLUSION) as conceptualized in the conceptual model (refer to fig. 4.2).

In terms of exclusion, a rough indicator may be the diversity of housing types within a neighbourhood on the assumption that the less the diversity of housing types, the more exclusive the neighbourhood. Within a particular metropolis or city, single family houses in general have the highest market value when compared to other housing types. Thus, in the case of Surrey neighbourhoods, Rosemary Heights may be ranked higher than East Clayton in terms of degree of exclusion due to a predominance of single family houses in the former versus the latter. Such a ranking is also confirmed when comparing the average value of dwellings or the average cost per square foot which are higher in Rosemary Heights than East Clayton.

The case of Calgary neighbourhoods is not as simple to rank. Valley Ridge has a higher percentage of single family houses than Discovery Ridge but, at the same time, the average value of dwellings in Discovery Ridge is much higher than Valley Ridge. Nevertheless, Discovery Ridge may be ranked higher than Valley Ridge in terms of degree of exclusion given that the average value of dwellings is a better indicator than simply taking into consideration the percentage of single family houses. Moreover, interview responses of Valley Ridge residents suggested that Discovery Ridge was considered to be more exclusive than Valley Ridge.

If one is to rank all four neighbourhoods in terms of degree of exclusion, the average value of dwellings cannot be taken as an absolute value but has to be compared as a ratio to the average value of dwellings within the respective metropolitan area or city. The following table shows the ranking of neighbourhoods in terms of ratio of average dwelling value with respect to the metropolitan average as an indicator of degree of exclusion.

Table 11.1. Ranking of Neighbourhoods by Degree of Exclusion

Neighbourhood	Average Value of Dwelling	Ratio of Average Dwelling Value (with respect to the City Average)	Ratio of Average Dwelling Value (with respect to the Metropolitan Average)
Discovery Ridge	\$712,974	1.56	1.53
Valley Ridge	\$546,847	1.20	1.17
Rosemary Heights	\$797,380	1.46	1.15
East Clayton	\$469,005	0.86	0.68

Note: Ratios were calculated from average dwelling value data of 2011 Census Data (Statistics Canada)

In terms of seclusion, the ranking of neighbourhoods may be performed according to the number of access points, the degree of nesting and the locational context of the neighbourhood. As such, the four neighbourhoods may be ranked from highest to lowest degree of seclusion as: Discovery Ridge (DR), Valley Ridge (VR), Rosemary Heights (RH), and East Clayton (EC). DR and VR are both single access neighbourhoods and have higher degree of nesting than the neighbourhoods of RH and EC. DR can be considered more secluded given its locational context (Griffith Woods forest and Indian Reserve) and its low degree of connectivity vis-à-vis other contiguous neighbourhoods than the case of VR.

Thus, in terms of both degree of exclusion and degree of seclusion, the ranking of the four neighbourhoods remains consistently as: DR, VR, RH, and EC. However, if ranking is performed by degree of exclusion relative to the City average, the ranking becomes: DR, RH, VR, and EC. Referring back to table 4.1., the neighbourhoods could be categorized by their degree of gatedness by taking into consideration the number of access points to the neighbourhood as well as whether there is high or low economic gating. DR and VR would be categorized as semi-gated. RH as hybrid-gated (HG-D) and EC as non-gated.

11.2 Qualitative Analysis

11.2.1 Analysis of Interview Data

A total of 48 interviews were conducted with residents of the four neighbourhoods; i.e. twelve interviews for each neighbourhood. Interview responses were coded into four main categories: locational characteristics, neighbourhood characteristics, housing characteristics, and other. Each of the main categories included a number of rubrics that were identified from common responses of individual interviewees. For the main categories of locational and housing characteristics, each included four rubrics while nine rubrics were included for each of the other two main categories (see appendix F).

11.2.1.1 Reasons for choosing the neighbourhood

A larger percentage (about 92%) of interviewed residents of Discovery Ridge planned to stay in the neighbourhood for more than five years compared to the other three neighbourhoods (75%). The first reason given by interviewees for planning to stay more than five years was neighbourhood characteristics for East Clayton and Valley Ridge whereas, for Discovery Ridge and Rosemary Heights, the first reason for planning to stay was location.

The first reason in order of importance for choosing to live in the neighbourhood was somewhat different for Discovery Ridge and East Clayton than the reason for planning to stay. The first reason for choosing to live in the neighbourhood is summarized in the following figure:

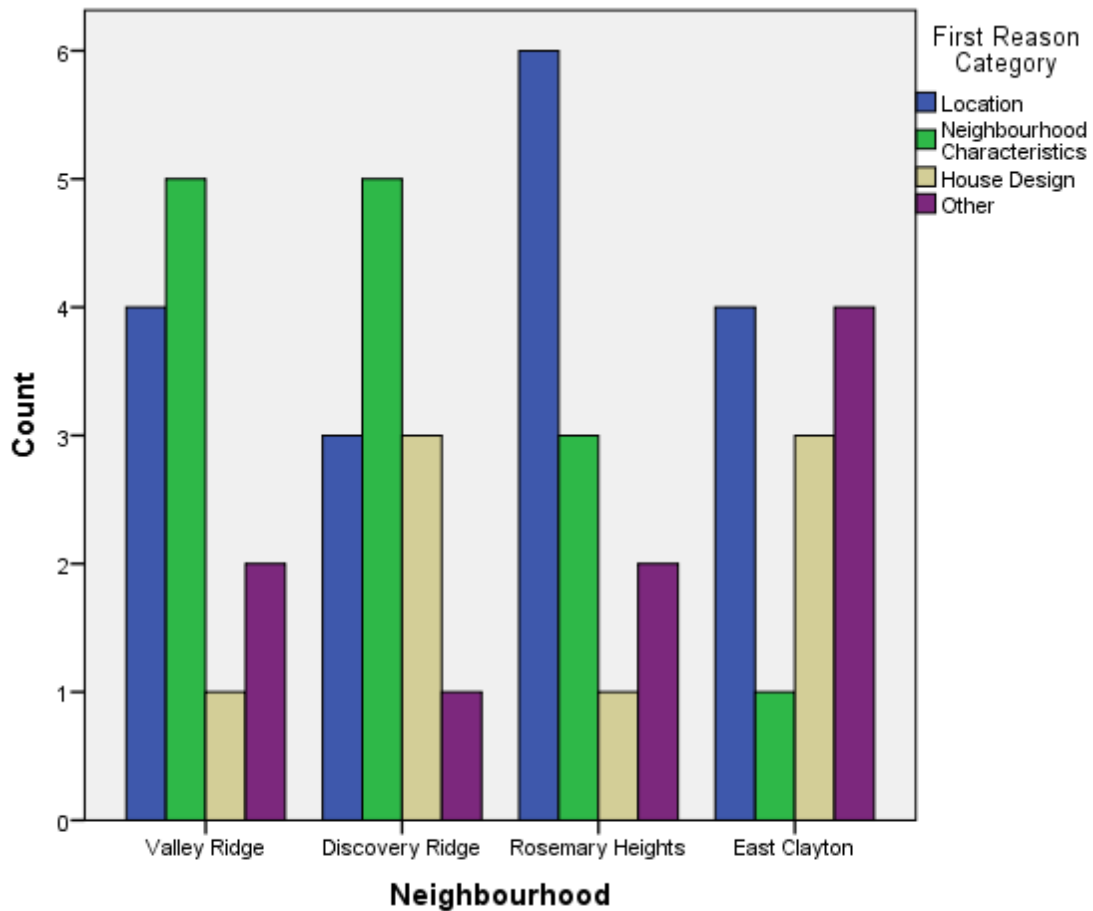


Figure 11.1. First Reason for choosing to live in current neighbourhood of residence

From the above figure, it can be deduced that neighbourhood characteristics remained the primary reason for choosing to live and stay in the neighbourhood for residents of Valley Ridge and location remained the primary reason for choosing to live and stay in the neighbourhood for residents of Rosemary Heights. For Discovery Ridge, neighbourhood characteristics were the primary reason to choose to live in the neighbourhood while location was the primary reason to stay. For East Clayton, location and other factors were the primary reason to choose to live in the neighbourhood while neighbourhood characteristics were the primary reason to choose to stay.

The second reason in order of importance for choosing to live in the neighbourhood is summarized in the following figure.

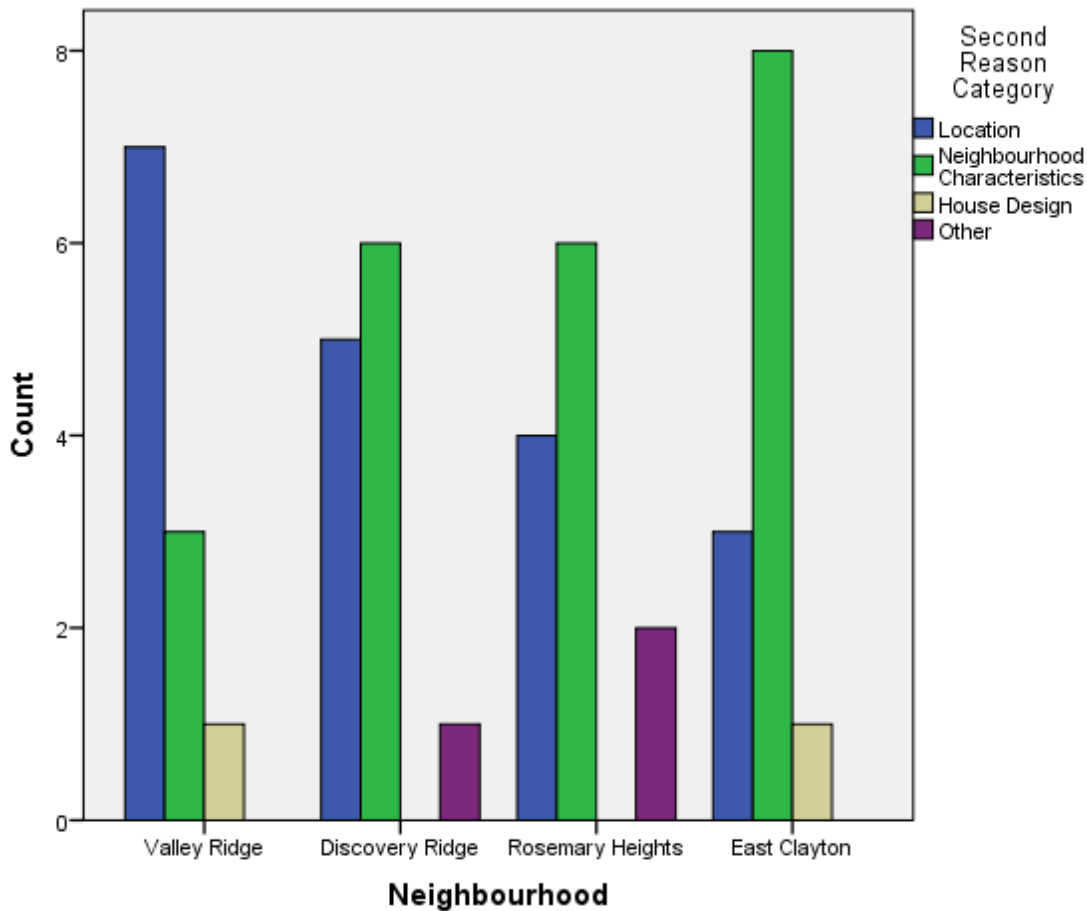


Figure 11.2. Second Reason for choosing to live in current neighbourhood of residence

As seen, neighbourhood characteristics is very prominent for residents of East Clayton where two thirds stated neighbourhood characteristics to be the second primary reason to choose to live in the neighbourhood. Location is very prominent for residents of Valley Ridge for over half of the interviewed residents. For Discovery Ridge, neighbourhood characteristics remained the first and second primary reasons for choosing to live in the neighbourhood. For Rosemary Heights, neighbourhood characteristics was the second primary reason followed by location.

The third reason in order of importance for choosing to live in their respective neighbourhoods is summarized in the following figure.

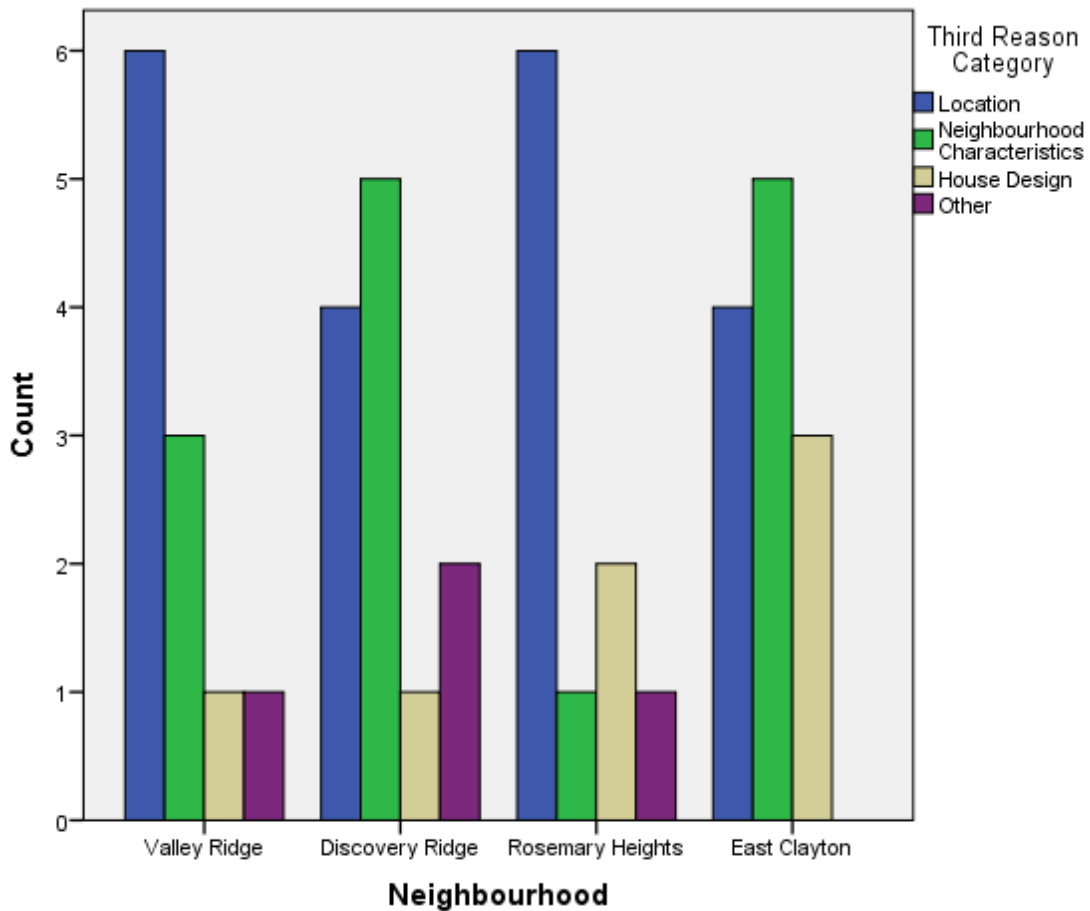


Figure 11.3. Third Reason for choosing to live in current neighbourhood of residence

As seen, half of the interviewed residents in Rosemary Heights and Valley Ridge declared location as the third primary reason. Thus, location remains the second and third primary reason for choosing to live in Valley Ridge. Neighbourhood characteristics remains the second and third primary reason for interviewees of East Clayton. For Discovery Ridge, neighbourhood characteristics remains the top three reasons for choosing to live in the neighbourhood.

11.2.1.2 Particular Features

Concerning perception of particular features that are unique to the neighbourhood, examination of the cell frequencies showed that two thirds (66.7%) of residents in East Clayton did not perceive any particular features unique to the neighbourhood while the percentage of

residents who did not perceive particular features in all the other neighbourhoods was less than 17%. The difference between East Clayton and the other neighbourhoods was significant at $p < .01$ ($p = .006$)⁴⁵. In other words, an association was found between type of neighbourhood and perception of residents of unique features in their neighbourhood.

The following figure shows that when asking for perception of particular features not found in other neighbourhoods, locational characteristics still fared highly for Discovery Ridge and Valley Ridge, almost on par with neighbourhood characteristics. The neighbourhood that stood out from other neighbourhoods under study in terms of first feature of neighbourhood characteristics was Rosemary Heights, cross-referencing to location for Rosemary Heights that was found as the first and third primary reason of choosing the neighbourhood. Category no.23 (age and demography of the neighbourhood, neighbourliness, and integrity of people) was the most prominently mentioned (5 out of 12) of neighbourhood characteristics for Rosemary Heights. For Valley Ridge and Discovery Ridge, on the other hand, it was amenities within the neighbourhood (category no.24) followed by a single entry (category no.21) that were most prominently mentioned of neighbourhood characteristics.

⁴⁵ Significance was calculated using Fisher Exact Test for small sample size (software R, version 3.1.0). A chi square test was not used as frequencies of expected counts in 50% of cells in the contingency table were less than 5.

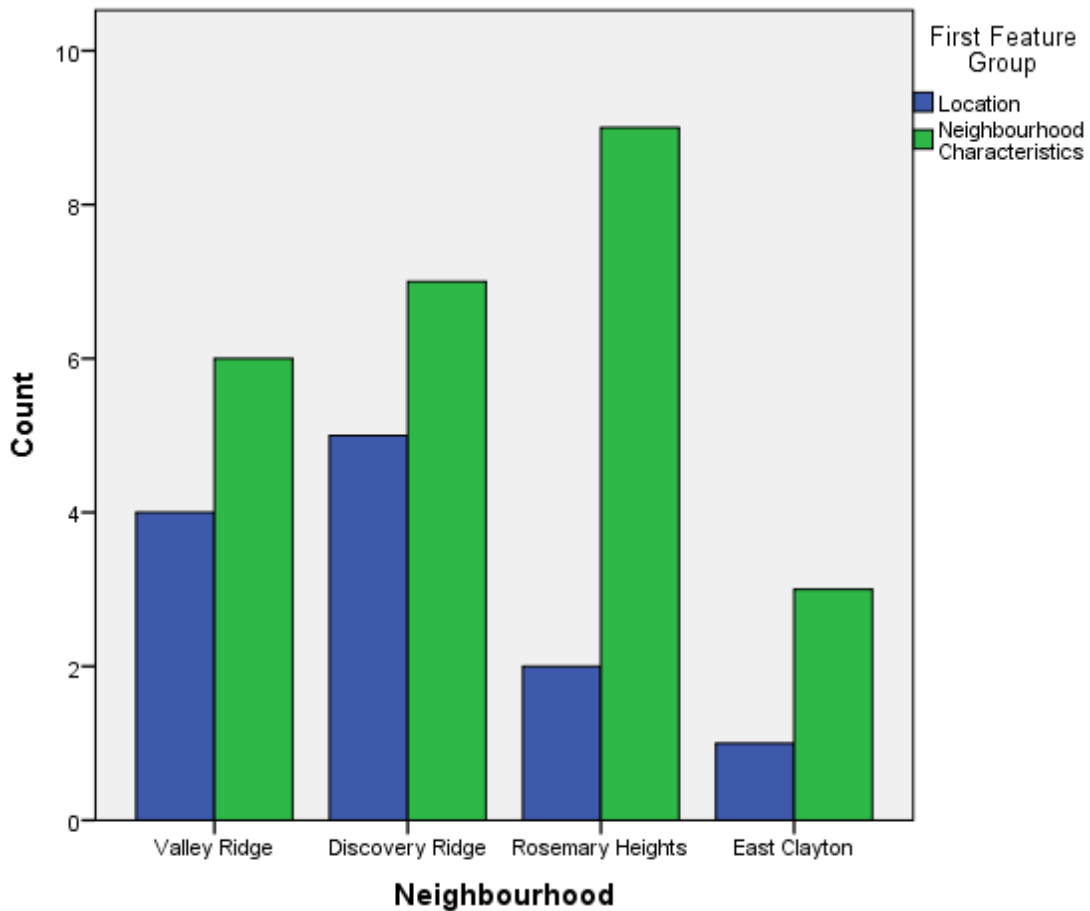


Figure 11.4. First Feature mentioned as a particular feature of the neighbourhood

Concerning mention of a second feature that characterized their neighbourhood, the following figure shows the results obtained. Discovery Ridge stands out from the other neighbourhoods in terms of second feature of neighbourhood characteristics followed by Valley Ridge. For Rosemary Heights, location and neighbourhood characteristics were equally important.

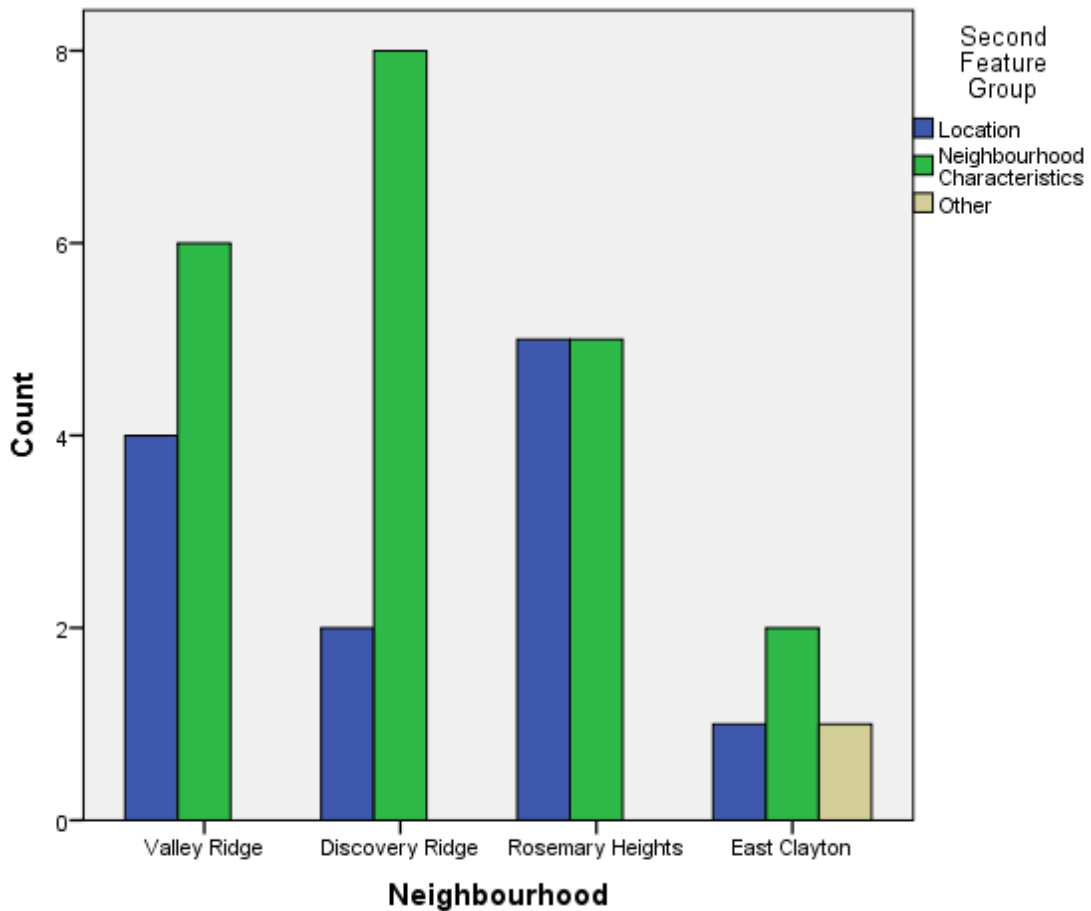


Figure 11.5. Second Feature mentioned as a particular feature of the neighbourhood

Concerning perception of residents of the existence of superior neighbourhoods than their current neighbourhood of residence, roughly half of interviewees in the three neighbourhoods of Valley Ridge, Discovery Ridge, and Rosemary Heights were affirmative in that there existed superior neighbourhoods especially in terms of house value but not when considering the whole package of what their neighbourhoods offer. For East Clayton, 10 out of 12 interviews acknowledged the existence of superior neighbourhoods that have larger properties, less density, natural amenities, and scenic views. However, in terms of cost of owning a house, East Clayton was the top choice.

Concerning perception of residents of affordability of their respective neighbourhoods, the order of neighbourhoods from most affordable to least affordable was: East Clayton, Discovery Ridge, Rosemary Heights, and Valley Ridge. Two thirds of interviewed residents in East Clayton perceived their neighbourhood to be affordable compared to one third in Discovery Ridge, one fourth in Rosemary Heights, and one twelfth in Valley Ridge. An association between type of neighbourhood and perception of affordability was found to be statistically significant at $p < .1$ ($p = .075$)⁴⁶.

11.2.1.3 Effect of number of access points

Concerning the perception of residents of the effect of the number of entry points to the neighbourhood and their sense of safety, roughly over two fifths of the residents in Rosemary Heights and East Clayton, 58% of residents in Valley Ridge, and two thirds of residents in Discovery Ridge affirmed that the number of entry points affected their sense of safety. Although some residents, however, in East Clayton, did not make a clear connection between the number of entry points and perception of safety, one resident clearly affirmed that there were practically only two entry points to the neighbourhood and that it definitely impacted on her perception of safety within the neighbourhood. The following figure summarizes the results of residents' perception of the effect of the number of entry points on their sense of safety.

⁴⁶ Significance was calculated using Fisher Exact Test for small sample size (software R, version 3.1.0). A chi square test was not used as frequencies of expected counts in 50% of cells in the contingency table were less than 5.

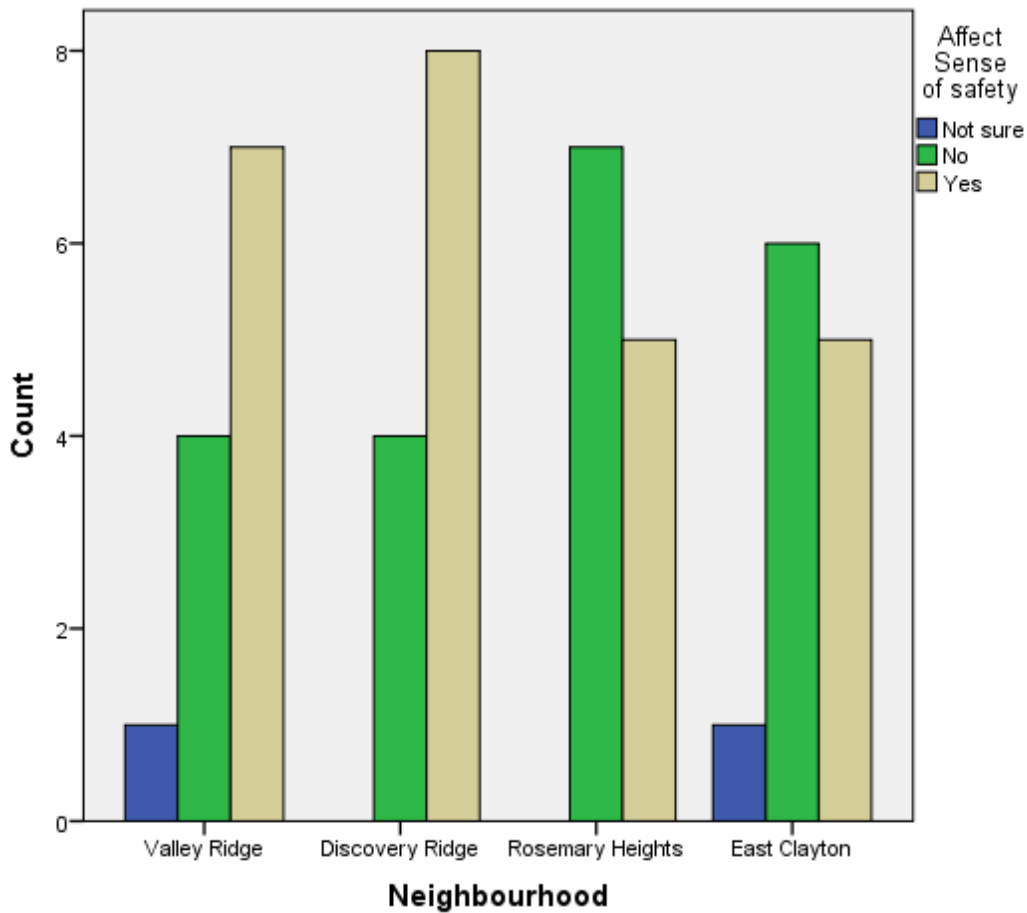


Figure 11.6. Perception of the effect of access points on sense of safety

Concerning the perception of residents of the effect of the number of entry points on their willingness to stop and talk to other people in the neighbourhood, from two thirds to above 90% of interviewed residents negated an effect. Only one-twelfth in Valley Ridge, one-sixth in Rosemary Heights and East Clayton, and one-fourth in Discovery Ridge affirmed an effect.

When residents were asked to rate on a 5-point Likert scale whether the landscape was appealing and contributed to their sense of community, a statistically significant association at p

$< .05$ ($p = .034$)⁴⁷ was found between type of neighbourhood and perception of an appealing landscape. Examination of cell frequencies showed that 83.3% of interviewed residents in Discovery Ridge strongly agreed that the landscape was appealing and contributed to their sense of community while the percentage who strongly agreed in all other neighbourhoods was less than 50% (in the case of East Clayton, the percentage was less than 20% with a quarter who were not sure or disagreed).

All of the interviewed residents felt safe in their neighbourhoods except for two in East Clayton who did not feel safe.

Most of the interviewed residents felt attached to their neighbourhood with none being unsure or disagreeing for Discovery Ridge compared to four in East Clayton. Rosemary Heights' residents had the highest percentage of strong agreement (50%); however, it also had two who were unsure or disagreed in their sense of attachment – see following figure.

⁴⁷ Significance was calculated using Fisher Exact Test for small sample size (software R, version 3.1.0). A chi square test was not used as frequencies of expected counts in 50% of cells in the contingency table were less than 5.

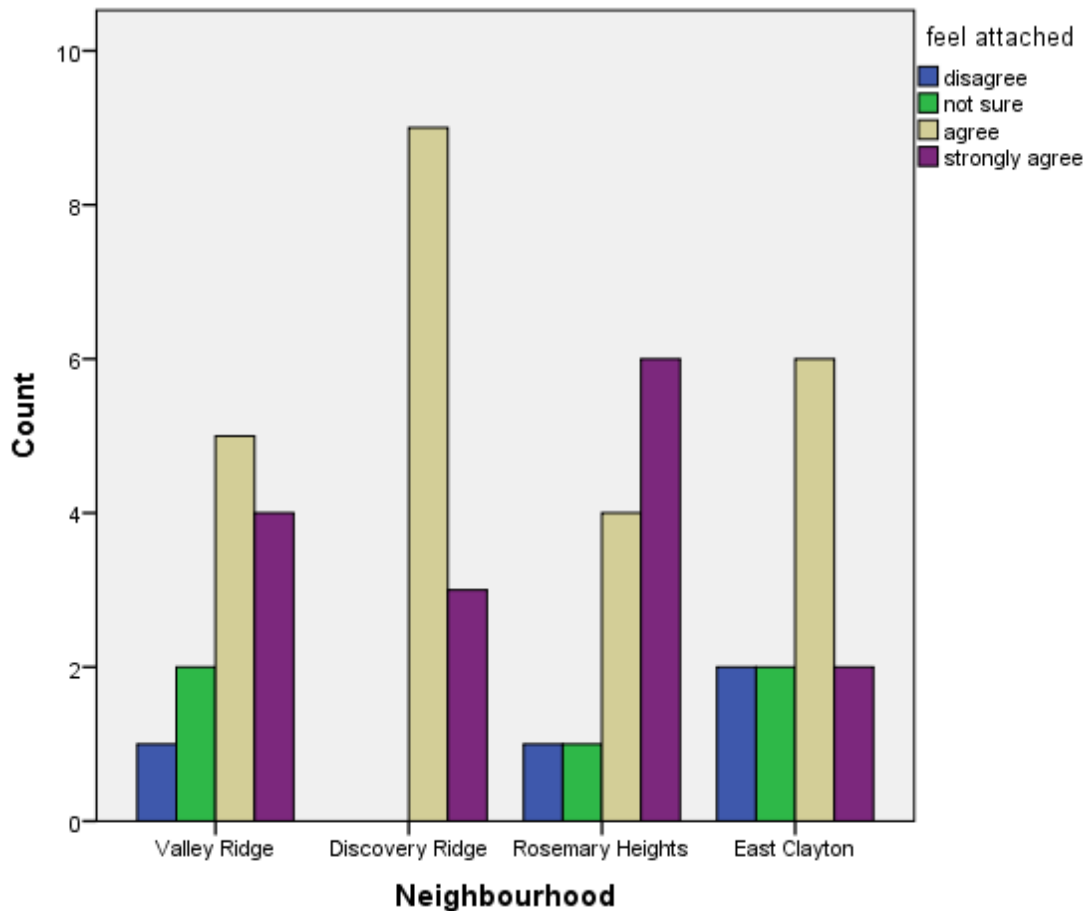


Figure 11.7. Perception of sense of attachment to the neighbourhood

Sense of neighbourliness and friendliness of residents was strongest for the neighbourhood of Rosemary Heights (100%) followed by Valley Ridge (83.3%) who either agreed or strongly agreed.

Sense of similarity with other residents in the neighbourhood was strongest for the neighbourhood of Valley Ridge (over 90%) followed by East Clayton (66.7%) who either agreed or strongly agreed.

The perception of residents of lifestyles, events, and activities that characterize their neighbourhood was strongest for Rosemary Heights (over 90%) followed by Discovery Ridge

(75%) who either agreed or strongly agreed. No disagreement was recorded for those two neighbourhoods.

The following table summarizes what aspect positively impacted the quality of life of interviewed residents in their neighbourhood (table cells show number of respondents mentioning that aspect).

Table 11.2. Positive aspects impacting quality of life

Neighbourhood	Positive impact on quality of life			
	Location	Neighbourhood Characteristics	House Design	Other
Valley Ridge	4	5	1	1
Discovery Ridge	2	6	0	4
Rosemary Heights	3	6	1	0
East Clayton	1	3	2	2

As seen, neighbourhood characteristics were mentioned by half of the interviewed residents as positively improving their quality of life for the neighbourhoods of Discovery Ridge and Rosemary Heights. For Discovery Ridge, characteristics mentioned were urban design features such as quality of landscape, architectural controls, and bus service. For Rosemary Heights, it was the age and demography of the neighbourhood and neighbourliness of residents. Location was a second principal factor for positively improving the quality of life of residents in Valley Ridge and Rosemary Heights. House Design was mentioned as positively impacting the quality of life mostly for residents of East Clayton.

11.2.2 Analysis of Interviews with Municipal Planners

Calgary

An interview was conducted with three municipal planners (manager of new community planning, coordinator, and approving officer) at the City of Calgary. Municipal planners had a

clear vision of promoting more connectivity and walkability in new suburban neighbourhoods. During the interview they presented the example of the new community of Rangeview in the southeast where more access points are encouraged as well as a modified grid pattern with the double goal of increasing alternative traffic routes and walkability as well as future ease of redevelopment and increased densification. The aim of promoting connectivity definitely necessitated discouraging the erection of walls around neighbourhoods or controlling access to neighbourhoods. The reason for the emergence of single access neighbourhoods such as Discovery Ridge and Valley Ridge is determined by provincial control on access points to neighbourhoods directly accessed from highways such as Hwy 8 and TransCanada Hwy. The neighbourhood of Shawnessy Slopes was mentioned as having a similar single access configuration although the termination of the main spine connects to the adjoining neighbourhood of Evergreen. Issues of single access involved congestion and higher speeds along larger roads as opposed to dispersing the traffic throughout the neighbourhood as well as small-scale retail to meet the daily needs of residents. For example, in the case of Discovery Ridge, residents have difficulty exiting the neighbourhood due to high traffic on Hwy 8.

The manager of new community planning and subdivision pointed that the issue is broader than a reduction to a single access. The curvilinear network discourages walkability and does not meet the daily needs of residents. That is, a direct link was established between a single access to a neighbourhood and a curvilinear or cul-de-sac pattern. The major argument is the dichotomy between, to use Cozens and Love's terminology, the encounter model and the enclosure model. When asked if semi-gated neighbourhoods are more effective at crime prevention than open grid neighbourhoods with through traffic, the municipal planners argued that there was no evidence of such effectiveness and crime statistics needed to confirm such effectiveness. The reasoning

was that, following Jane Jacobs, the more ‘eyes on the street’ and the more active the area, the more crime would be deterred than in a quiet area without such natural surveillance. As we shall see, such a view was shared univocally by municipal planners in Surrey.

Crime statistics were consulted by the researcher. The following table shows crime statistics over two years 2012-2013 for the neighbourhoods of Valley Ridge and Discovery Ridge compared to Mckenzie Towne which is an example of applying new urbanism principles.

Table 11.3. Comparison of reported crime statistics for each neighbourhood (2012-2013)

Crime Type	Valley Ridge	Discovery Ridge	Mckenzie Towne	Tuscany
Residential Break and Enter	12	18	41	47
Theft from Vehicle	36	35	97	110
Theft of Vehicle	5	2	39	30
Social disorder	192	243	1236	612
Physical disorder	22	35	139	89
Assault	1	1	35	3
Violence	4	1	16	9

Source: adapted from <http://www.calgary.ca/cps/Pages/Statistics/Calgary-Police-statistical-reports.aspx>

If the proportional difference in population is taken into account in a rough proportion of 1:3 between Valley Ridge and Mckenzie Towne, then the number of break and enter crimes or theft from vehicle in Valley Ridge become equal to Mckenzie Towne. In other words, the enclave model did not differ from the encounter model for these two types of crimes. However, in the case of assault, the encounter model was a much riskier neighbourhood than the enclosure model; about 18 times riskier. Other types of crime such as physical and social disorder were in the ratio of 1:6 between Valley Ridge and Mckenzie Towne. In other words, if the population difference is taken into account, the encounter model had twice the crime rate for these types of crime than the enclosure model. Theft of vehicle was in the ratio of about 1:8, i.e. around two and a half

times more likely in the encounter model than in the enclosure model. If Mckenzie Towne is to be compared to Tuscany which has a comparable population number, crime statistics are almost the same except for clear differences in terms of assault and violent crime (see above table) as well as social and physical disorder which was higher in Mckenzie by 2 and 1.5 times respectively when compared to Tuscany.

It should be noted that such an argument remains to be corroborated by thorough research for the difference between the encounter model and the enclosure model in terms of crime. Nevertheless, two points could be highlighted. First, preliminary data did not provide evidence that the encounter model performed better than the enclosure model from the point of view of eyes on the street especially in terms of the types of crime that were prevalent. On the contrary, the evidence suggests that the encounter model had higher crime rates than an enclosure-model neighbourhood with a similar population count or a semi-gated neighbourhood when proportional difference is taken into account. Second, the encounter model uses more percentage of streets when compared to the enclosure model. This translates into more surveillance, more street cleaning, and according to CPTED, more probability for opportunistic crime in the laneways. The idea of a linear park in the enclosure model replacing the laneway of the encounter model as a separation between the backyards of houses is functionally and aesthetically more successful and, importantly, provides safer pathways for pedestrian and cycling movement. Such a linear park also performs on the environmental front by providing continuous pathways for various fauna. Most importantly, the linear park offers a different experience to the neighbourhood that is neither a frontal or dorsal one but an interspersed and interweaving one which opens up a new dimension for appropriation of space by residents who like to walk and bike while enjoying the natural environment away from the 'straight-jacket' of the grid.

The municipal planners maintained that the integration of land uses to create a pleasant streetscape and to provide ease of access especially for transportation and transit impels the renunciation of isolated pods that do not promote social cohesion. Moreover, isolated pods raise issues of movement of people and goods as well as fire safety. In short, planners see no positive benefits for gated developments.

The conception of the municipal planners was focused on the city scale more than the scale of individual neighbourhoods. For transit bus service to circumnavigate the labyrinth of curvilinear patterns from neighbourhood to neighbourhood is a challenge, for operators as well as commuters when time for circumnavigation becomes a pressing factor. One could argue that snow removal would also be more challenging in a curvilinear pattern than a gridiron one. Yet, such practical issues need to be balanced against social considerations such as appropriation of space by residents, safety (especially for children), and, most importantly, promoting neighbourhood cohesion through such a sense of safety and sense of appropriation that is definitely higher in the enclosure model. Orientation within the neighbourhood becomes more difficult in a diffused grid pattern compared to a hierarchical clustered one. Moreover, vistas and perspectives of the linear grid are monotonous compared to the possibility of axial views in a curvilinear pattern. More frequent street intersections is translated into higher probability for accidents.

The understanding of municipal planners is that a grid configuration would impel vehicles to slow down and be more cautious rather than speeding through the main spine of the neighbourhood. The argument is unresolved and remains open on the merits of practical considerations versus social and symbolic considerations; planning at the scale of the city or the scale of the neighbourhood.

Surrey

Two interviews were conducted with managers of community and area planning at the City of Surrey. Both municipal planners agreed on the overall objective of promoting connectivity. While both maintained that gating may be beneficial in terms of sense of neighborliness for gated residents, one of the planners perceived effects to be negative on the long term in heightening the sense of fear (Setha Low's thesis). Nonetheless, both agreed that gated developments are not beneficial to society at the larger scale; one planner viewed the negative effect from a practical viewpoint of maintenance and redevelopment while the other planner viewed the effect from a social perspective particularly for residents of small scale developments.

The manager of area planning commented that gating at a small scale of a townhouse development (i.e. an enclave) may increase the sense of familiarity but also gives a false sense of security. Moreover, the small enclave excludes itself from the outside and increases paranoia of gated residents. The general perception is that such gated residents appeal to a certain social segment, predominantly seniors, who may be, perhaps unintentionally, self-serving and not attend to neighbourhood-wide issues. In general, seniors are more concerned about safety while young families with children are generally more open to neighborly interaction. The planners thought that gated developments are age-related and an outward expression of fear for those to whom such developments have an appeal.

A townhouse (or strata) development has the right to erect a gate without needing to apply for a permit unless there is an issue with a public pathway / right-of-way. The response by municipal planners is to mandate the units of the townhouses to front the street rather than having the back of units on the street. In the case of single-family houses, double-fronting lots are not

allowed unless the situation is unresolvable. The reason is that a double-fronting lot translates into the back of the house fronting one of the streets. Stated differently, environmental design is used to mitigate the effect of small scale gating as well as mitigate the concerns of CPTED for open grid street pattern.

While there are no municipal guidelines that promote gating, gating is controlled indirectly through fire codes and regulations. For example, one cannot build an 8 ft. fence as a general regulation; such a regulation discourages 'offensive' gating. In addition, development permit guidelines discourage gating. For example, front doors have to face the street and property lines are demarcated by fences 4 ft. high while not being walled off but permeable. Informal practices for encouraging a gridded subdivision pattern are generally adopted. The manager of area planning maintained that defensible space is achieved by design and by approaching the issue in a positive way by means of a design panel review that consists of an architect, an urban designer, one reviewer for handicap access, and one RCMP for security and CPTED issues.

The manager of community planning pointed out that gating in Surrey happens at a small scale due to the fragmentary nature of development that is in contradistinction to master-planned communities in Phoenix, for example. Moreover, such gated developments are townhouses, not single-detached units. The manager maintained that, after Kevin Lynch, some degree of neighbourhood insularity at a small grain would not be detrimental and may promote a sense of safety, privacy, a sense of 'containment', and a sense of neighborliness but, at the community scale, political issues become significant. Particularly, a real problem of maintenance may arise as such developments advance in their life-cycle. This is particularly the case for poorly-built developments from the 1970s. Another problem is obtaining unanimous approval of all owners

for re-development. In other words, large scale gated developments are not beneficial at the societal level.

There are current development proposals such as Grandview Heights where Chinese investors are proposing bare-land strata developments with two gates to cater to a certain demographic (seniors and affluent residents); the demand for such developments is there. The general strategy adopted by municipal planners is to limit townhouse block size to 200 m x 150 m in order to mitigate the effect of gating on the wider neighbourhood in terms of circulation. In cases where block sizes are larger, a public road or right-of-way is inserted so as to discourage the gating off of a larger block.

11.3 Quantitative Analysis of Survey Data

A total of 389 survey responses were collected from all four neighbourhoods: 195 surveys from residents of the two neighbourhoods in Calgary and 194 surveys from residents of the two neighbourhoods in Surrey.

All of the 389 participants responded to all 23 questions except for nine participants each of whom did not respond to one question. Four did not respond to question 4 concerning the friendships and associations with others in the neighbourhood. Two did not respond to question 20 concerning the uniqueness of the neighbourhood. Three did not respond to questions 6, 14, and 18 concerning respectively sense of collaboration with others, sense of similarity to others, and sense of community.

11.3.1 The Concept of Enveloping Space

The first step of quantitative analysis consisted of investigating the concept of enveloping space. The following is a table of results for descriptive statistics over pooled data of all cases.

Table 11.4. Descriptive Statistics for Enveloping Space (across all cases)

	N	Minimum	Maximum	Mean	Std. Deviation
Total Cases	387	1.25	5.00	3.28	.57

As shown in the above table, the total number of cases was 387 given that two cases were excluded from the initial data set because a response was not provided by two surveyed residents for one of the four items of the questionnaire used to calculate the mean value of enveloping space. The minimum value was 1.25 and the maximum value was 5.00 indicating that there was a wide range of responses. The mean value was 3.28 and the standard deviation was .57, indicating that there was a moderate to a relatively high sense of enveloping space (ranging from a mean value of 2.71 to 3.85) among 68% of respondents.

The next investigation determined whether enveloping space differed between neighbourhoods in intensity. The following table shows that neighbourhoods differed in sense of enveloping space.

Table 11.5. Descriptive Statistics for Enveloping Space by Neighbourhood

Enveloping Space (mean of 4 items)					
Neighbourhood	N	Minimum	Maximum	Mean	Std. Deviation
Valley Ridge	101	2.00	4.25	3.1312	.55294
Discovery Ridge	94	2.00	5.00	3.5186	.57763
East Clayton	95	1.25	4.50	3.1868	.55898
Rosemary Heights	97	2.00	4.50	3.3119	.53404
Total	387	1.25	5.00	3.2842	.57328

The above table shows that Discovery Ridge (DR) was highest among the four neighbourhoods in intensity with a mean value of 3.52 and was followed by Rosemary Heights (RH), East Clayton (EC), and Valley Ridge (VR) with mean values of 3.31, 3.19, and 3.13

respectively. In addition, of the four neighbourhoods, DR had the highest standard deviation, indicating that it is a neighbourhood where variance is higher among residents in their sense of enveloping space than the other four neighbourhoods, particularly when compared with RH which had a lower standard deviation and variance. The above table also shows that EC had the lowest minimum value of 1.25 compared to the other three neighbourhoods that had a minimum value of 2.00.

Given that there were differences among the four neighbourhoods, it remained to be determined whether such differences in mean values across neighbourhoods were statistically significant. A one-way ANOVA test was conducted to examine the effect of neighbourhood on enveloping space in terms of differences in degree of gated-ness. Results of the test showed that there was a significant effect of neighbourhood on enveloping space at the $p < .001$ level for the different degrees of gated-ness [$F(3,383) = 9.17, p < .001$]. A Tukey post-hoc test was then conducted in order to determine which neighbourhoods had significant differences in their mean values. Post-hoc comparisons using the Tukey HSD test indicated that the neighbourhood of DR ($M = 3.52, SD = .58$) significantly differed from the neighbourhoods of VR ($M = 3.13, SD = .55$) and EC ($M = 3.19, SD = .56$) and marginally differed from the neighbourhood of RH ($M = 3.31, SD = .53$). Homogeneous subsets showed DR in a separate subset from the other three neighbourhoods that were included in a second subset. No other significant differences were found between the other three neighbourhoods in the mean value of enveloping space.

These results suggest that a high level of gated-ness of a neighbourhood does have an effect on the sense of enveloping space of residents. Specifically, the results suggest that when a neighbourhood has a high ranking in terms of degree of gated-ness for both aspects of exclusion

and seclusion (refer to section 11.1), which is the case of DR, residents of the neighbourhood have a higher sense of enveloping space.

Meanwhile, the neighbourhood of VR did not have a significant difference in the mean value of enveloping space compared to RH because the degrees of exclusion of VR and RH are almost similar if the ratio of average dwelling value with respect to the respective metropolitan area is taken as an indicator of the degree of exclusion (values of 1.17 and 1.15, respectively). Nevertheless, the mean value of enveloping space for RH was higher than VR although the latter has a higher degree of seclusion than the former. This discrepancy may be explained by referring to the degree of exclusion at the municipal level where the ratio of the average dwelling value with respect to the city average in RH (1.46) is much higher than VR (1.20). Such a result suggests that the degree of exclusion (at the municipal rather than the metropolitan level), as one aspect of gated-ness, has a higher impact than degree of seclusion, as the other aspect of gated-ness, in affecting residents' sense of enveloping space.

11.3.2 The Concept of Cohesion

The second step of quantitative analysis consisted of investigating the concept of cohesion and its three subscales: PSOC, Place Attachment, and Neighbourliness. Buckner's NCI was calculated as the mean value of the 18-item questionnaire and the subscales were calculated according to Buckner's categorization of items of the questionnaire that belonged to the respective subscale (see Methodology, Chapter 4). It should be noted that none of the 389 cases were excluded for the subscales of Place Attachment and Neighbourliness. However, 7 cases were excluded (one from DR and 6 from EC) from a total of 389 cases for the subscale of PSOC, due to missing data. The following is a table of results for descriptive statistics over pooled data of all cases.

Table 11.6. Descriptive Statistics for Cohesion and Three Subscales (across all cases)

	Buckner's NCI	Buckner's PSOC scale (9 items)	Buckner's Place Attachment (3 items)	Buckner's Neighborliness (6 items)
Minimum	1.72	1.56	1.33	1.33
Maximum	5.00	5.00	5.00	5.00
Mean	3.75	3.75	4.02	3.63
Std.	.57	.57	.70	.73

As seen in the above table, the NCI over all cases had a value of 3.75 and ranged from a minimum value of 1.72 to a maximum value of 5.00. The NCI value is considered relatively high on a 5-point scale and suggests that, on average, residents of all four neighbourhoods had a moderately high sense of neighbourhood cohesion. The standard deviation in the NCI indicates that there was a moderate to moderately high variance among residents in their sense of cohesion where about 68% had an NCI value between 3.18 and 4.32.

Concerning the three subscales, each had a maximum value of 5.00 and minimum values of 1.56, 1.33, and 1.33 respectively for PSOC, Place Attachment, and Neighborliness. Also, the results show that, of the three subscales, Place Attachment had the highest mean value compared to PSOC and Neighborliness. Such a result suggests that residents of the four neighbourhoods, on average, had a relatively strong sense of place attachment. The largest variance among respondents was found in the subscale of Neighborliness and the least variance was found in the subscale of PSOC.

The next investigation determined whether there were differences in the expression / manifestation of cohesion and the three subscales for the four neighbourhoods. The following table shows descriptive statistics for each of the neighbourhoods.

Table 11.7. Descriptive Statistics for Cohesion and Three Subscales by Neighbourhood

Neighbourhood		Buckner Cohesion (18 items)	Buckner PSOC Scale (9 items)	Buckner Place Attachment (3 items)	Buckner Neighborliness (6 items)
Valley Ridge	N	101	101	101	101
	Minimum	2.28	2.44	1.67	1.33
	Maximum	4.78	4.89	5.00	4.83
	Mean	3.7420	3.7349	4.1617	3.5429
	Std. Deviation	.53803	.52210	.72359	.76727
Discovery Ridge	N	93	93	94	94
	Minimum	1.89	1.89	2.67	1.50
	Maximum	4.94	4.89	5.00	5.00
	Mean	3.9415	3.9164	4.3652	3.7535
	Std. Deviation	.57876	.59648	.55319	.79527
East Clayton	N	90	90	96	96
	Minimum	1.72	1.56	1.33	1.50
	Maximum	5.00	5.00	5.00	5.00
	Mean	3.5889	3.5951	3.6632	3.5747
	Std. Deviation	.60823	.59900	.63889	.68521
Rosemary Heights	N	98	98	98	98
	Minimum	1.94	2.00	1.33	1.33
	Maximum	5.00	5.00	5.00	5.00
	Mean	3.7341	3.7347	3.9082	3.6463
	Std. Deviation	.52519	.53576	.67143	.66117
Total	N	382	382	389	389
	Minimum	1.72	1.56	1.33	1.33
	Maximum	5.00	5.00	5.00	5.00
	Mean	3.7525	3.7461	4.0240	3.6277
	Std. Deviation	.57329	.57174	.69978	.73079

The NCI for DR was found to be the highest of the other three neighbourhoods. VR and RH followed DR and had NCI's that were almost equal with values of 3.74 and 3.73 respectively. Finally, EC had the lowest NCI of the four neighbourhoods and the largest variance among residents in their overall sense of cohesion. RH had the least variance among its residents in their sense of cohesion.

Among the three subscales, PSOC for these case studies turned out to be a better indicator for the overall index of cohesion than the other two subscales. This result is confirmed for all four neighbourhoods where a higher mean value of Place Attachment was countered by a lower mean value of Neighborliness. This points to the importance of neighbours and neighborly interaction for the overall sense of cohesion of a neighbourhood to be raised.

DR consistently had the highest mean value for each of the three subscales compared to the other three neighbourhoods. Diametrically opposed to DR was EC which had the lowest mean value for each of the three subscales compared to the other three neighbourhoods. Alternatively, VR and RH had a closely equal mean value for the subscale of PSOC and where VR superseded RH in Place Attachment, RH superseded VR in Neighborliness.

Such results at the overall NCI and three subscales suggest that the four neighbourhoods could be ranked in descending order as follows: DR, VR, RH, EC. Although VR and RH are almost equivalent, the differences in the subscales of Place Attachment and Neighborliness between the two neighbourhoods, if taken at face value, render VR to be at a slightly higher rank than RH. Nevertheless, it should be mentioned that the variance among residents is higher in the case of VR than RH for both subscales which may suggest putting RH ahead of VR in the ranking on the premise that there is more consistency among residents in RH than VR in their sense of cohesion. Given that there were differences among the four neighbourhoods, it remained to be determined whether such differences in mean values across neighbourhoods were statistically significant. A one-way ANOVA test was conducted to examine the effect of neighbourhood on cohesion and the three subscales of cohesion in terms of differences in gated-ness. Results of the test showed that there was a significant effect of neighbourhood on overall cohesion at the $p < .001$ level for the different degrees of gated-ness [$F(3,378) = 6.09, p < .001$] as well as a

significant effect of neighbourhood on two of its three subscales; namely, PSOC [$F(3,378) = 5.02, p = .002$] and Place Attachment [$F(3,385) = 20.96, p < .001$] at the $p < .01$ level for the different degrees of gated-ness. There was no significant effect of neighbourhood on the third subscale: neighborliness.

For overall Cohesion, post-hoc comparisons using the Tukey HSD test indicated that only two neighbourhoods significantly differed from each other: DR ($M = 3.94, SD = .58$) and EC ($M = 3.59, SD = .61$). There were no significant differences in overall cohesion between any of the other neighbourhoods. This result suggests that residents of DR which ranks higher in terms of gated-ness had a significantly higher sense of cohesion than residents of EC which is relatively lower in its degree of gated-ness. . However, it should be noted that differences in the degree of gated-ness between neighbourhoods must be high in order to see an effect on overall cohesion level. This explains why no significant differences were found between either VR or RH and EC.

For PSOC, post-hoc comparisons using the Tukey HSD test indicated that only two neighbourhoods significantly differed from each other: DR ($M = 3.92, SD = .60$) and EC ($M = 3.60, SD = .60$). There were no significant differences in overall cohesion between any of the other neighbourhoods. Again, this result suggests that residents of DR which ranks higher in terms of gated-ness had a significantly higher psychological sense of community than residents of EC which is relatively lower in its degree of gated-ness. However, it should be noted that differences in the degree of gated-ness between neighbourhoods must be high in order to see an effect on the average level of PSOC in a neighbourhood. This explains why no significant differences were found between either VR or RH and EC.

For Place Attachment, post-hoc comparisons using the Tukey HSD test indicated that EC ($M = 3.66, SD = .64$) significantly differed from each of the three other neighbourhoods: DR (M

= 4.37, $SD = .55$), VR ($M = 4.16$, $SD = .72$), and RH ($M = 3.91$, $SD = .67$). Post-hoc comparisons also indicated that RH ($M = 3.91$, $SD = .67$) significantly differed from each of the Calgary neighbourhoods: DR ($M = 4.37$, $SD = .55$) and VR ($M = 4.16$, $SD = .72$).

These results suggest that high levels of gated-ness really do have an effect on Place Attachment. Specifically, the results suggest that when neighbourhoods have a high level of exclusion and seclusion, residents have a higher level of Place Attachment. It should be noted that differences in the degree of gated-ness of a neighbourhood need not necessarily be high in order to see an effect on residents' sense of place attachment.

11.3.3 Enveloping Space and Cohesion

Given that there were differences between neighbourhoods in terms of cohesion, its subscales, and sense of enveloping space, the third step of quantitative analysis consisted of investigating whether there was a correlation between enveloping space and cohesion.

A Pearson's correlation coefficient was calculated for assessing bivariate correlations between Enveloping Space and overall Cohesion as well as between Enveloping Space and each of the three subscales of Cohesion. The following is a table of the results obtained.

Table 11.8. Bivariate Correlations between Enveloping Space and Cohesion Subscales

		Enveloping Space
Buckner Cohesion (from 18 items)	Pearson Correlation	.421**
	Sig. (2-tailed)	.000
	N	380
Buckner PSOC Scale (from 9 items)	Pearson Correlation	.448**
	Sig. (2-tailed)	.000
	N	380
Buckner Place Attach Scale (from 3 items)	Pearson Correlation	.234**
	Sig. (2-tailed)	.000
	N	387
Buckner Neighborliness (from 6 items)	Pearson Correlation	.353**
	Sig. (2-tailed)	.000
	N	387

** . Correlation is significant at the 0.01 level (2-tailed).

The results of the above table show that Enveloping Space was significantly and positively correlated with overall Cohesion ($r = .421$, $p < .01$) as well as significantly and positively correlated with each of the three subscales at the $p < .01$ level. The highest bivariate correlation was between Enveloping Space and PSOC ($r = .448$) and the lowest bivariate correlation was between Enveloping Space and Place Attachment ($r = .234$). Overall, the results indicate that there was a moderately strong and positive correlation between Enveloping Space and Cohesion. Increases in Enveloping Space were correlated with increases in Cohesion and its three subscales, though less so for the subscale of Place Attachment.

The correlation results necessitated checking for a linear regression of Cohesion with Enveloping Space. A scatterplot confirmed the existence of a linear relation as shown in the following figure.

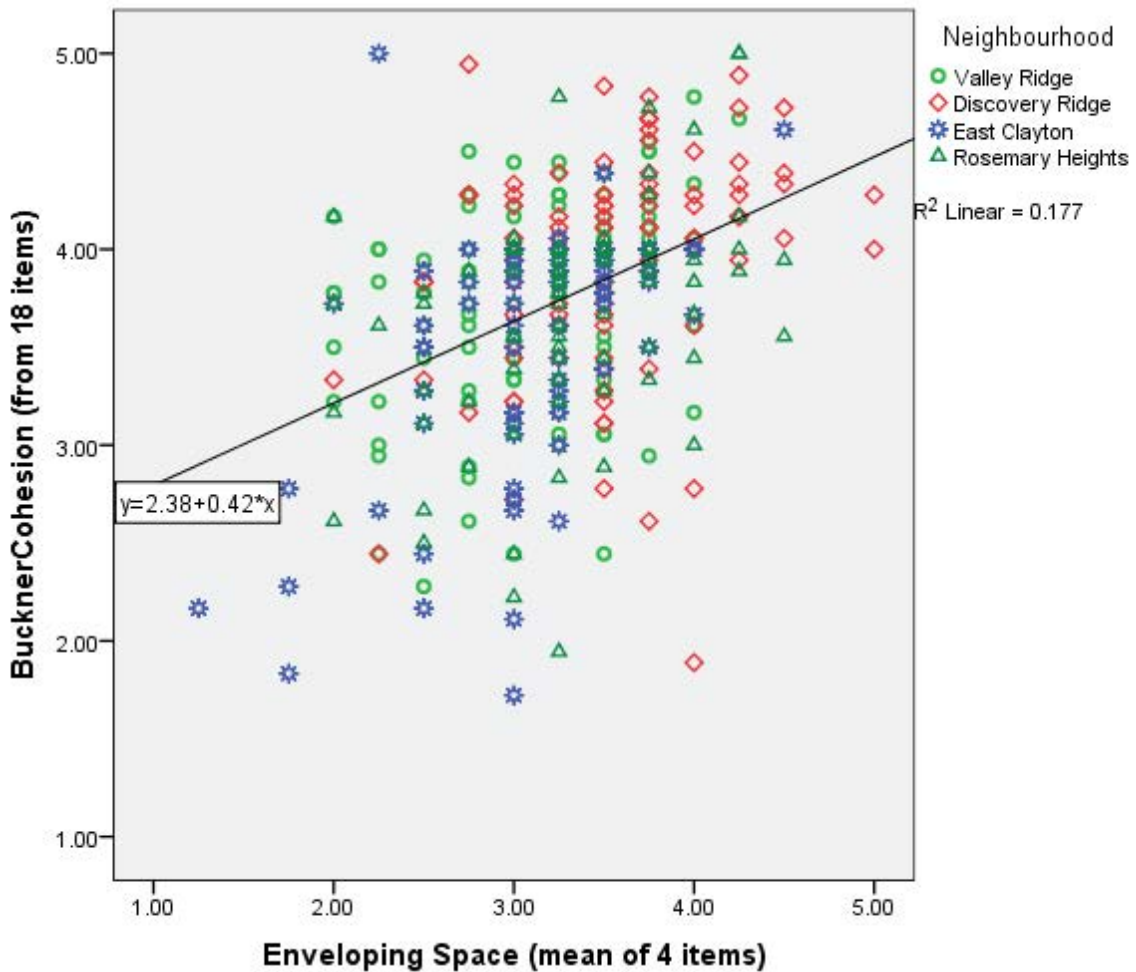


Figure 11.8. Scatterplot for the relation between Cohesion and Enveloping Space

Simple linear regression analysis was used to test if enveloping space significantly predicted neighbourhood cohesion index. The results of the regression indicated that enveloping space significantly predicted neighbourhood cohesion index scores [$\beta = .421$, $t(381) = 9.03$, $p < .001$] and also explained a significant proportion (17.7%) of the variance in cohesion index scores [$R^2 = .177$, $F(1,378) = 81.543$, $p < .001$]. The linear relation is generally expressed by a line of slope 23°. The next step after investigating correlation bonds across all the cases was determination of the correlation bonds (or strengths of different pathways) for each of the four neighbourhoods.

Valley Ridge. For VR, the following is a table of results obtained.

Table 11.9. Valley Ridge Bivariate Correlations, Enveloping Space and Cohesion

		Enveloping Space (mean of 4 items)
Buckner PSOC Scale (from 9 items)	Pearson Correlation	.370**
	Sig. (2-tailed)	.000
	N	101
Buckner Place Attachment Scale (from 3 items)	Pearson Correlation	.213*
	Sig. (2-tailed)	.032
	N	101
Buckner Neighborliness Scale (from 6 items)	Pearson Correlation	.186
	Sig. (2-tailed)	.063
	N	101
Buckner Cohesion (from 18 items)	Pearson Correlation	.316**
	Sig. (2-tailed)	.001
	N	101

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

As seen in the above table, in the case of VR, Enveloping Space was significantly and positively correlated to overall Cohesion ($r = .316, p = .001$) as well as significantly and positively correlated to two subscales: PSOC ($r = .370, p < .001$) and Place Attachment ($r = .213, p < .05$). However, no significant correlation was found with the subscale of Neighborliness. It seems that in the case of VR the quality of gated-ness differed from that of other neighbourhoods particularly in regards to neighborliness. Though the quality of gated-ness in VR helped in creating a sense of enveloping space for residents that seemed to correlate with overall neighbourhood cohesion, psychological sense of community and place attachment, the sense of enveloping space did not correlate with a sense of neighborliness in the neighbourhood, a sense which was the lowest in comparison with the other three neighbourhoods. There may be many reasons for the low sense of neighborliness in VR. One of the reasons this research points to is the quality of gated-ness of VR, particularly in terms of degree of exclusion, which jeopardized establishing a clear

correlation between a sense of enveloping space and neighborliness. Other reasons that may have compromised the degree of neighborliness in VR are the absence of a school or community center within the neighbourhood and the peripheral location of the shopping center that would otherwise have functioned as a focal point for social interaction. In other words, the neighbourhood seems to be deficient in an important aspect of neighbourhoods: the establishment of a high sense of neighborliness among residents. The neighbourhood is then reduced in such a case to a mere geographic entity where the physical ‘packing’ of houses and physical characteristics of the neighbourhood overshadow social dimensions such as that of neighborliness.

Discovery Ridge. For DR, the following is a table of results obtained.

Table 11.10. Discovery Ridge Bivariate Correlations, Enveloping Space and Cohesion

		Enveloping Space (mean of 4 items)
Buckner PSOC Scale (from 9 items)	Pearson Correlation	.368**
	Sig. (2-tailed)	.000
	N	93
Buckner Place Attachment Scale (from 3 items)	Pearson Correlation	.065
	Sig. (2-tailed)	.531
	N	94
Buckner Neighborliness Scale (from 6 items)	Pearson Correlation	.267**
	Sig. (2-tailed)	.009
	N	94
Buckner Cohesion (from 18 items)	Pearson Correlation	.314**
	Sig. (2-tailed)	.002
	N	93

**Correlation is significant at the 0.01 level (2-tailed).

As seen in the above table, in the case of DR, Enveloping Space was significantly and positively correlated to overall Cohesion ($r = .314$, $p < .01$) as well as significantly and positively

correlated to two subscales: PSOC ($r = .368, p < .001$) and Neighborliness ($r = .267, p < .01$). However, no significant correlation was found with the subscale of Place Attachment.

It seems that in the case of DR the quality of gated-ness differed from that of other neighbourhoods particularly in regards to place attachment. Though the quality of gated-ness in DR helped in creating a sense of enveloping space for residents that seemed to correlate with overall neighbourhood cohesion, psychological sense of community and neighborliness, the sense of enveloping space did not correlate with a sense of place attachment in the neighbourhood, a sense which was the highest in comparison with the other three neighbourhoods.

There may be many reasons for the high sense of place attachment in DR. In DR, there are many symbolic and natural features that renders the neighbourhood not unlike a resort. Residents of the neighbourhood enjoy a secluded location with views of the Rocky Mountains as well as enjoy exploratory promenades in Griffith Woods natural forest. Thus, it may be stated that in the case of DR, the sense of enveloping space need not correlate with a sense of place attachment that would have been high regardless of the relatively high degree of gated-ness of the neighbourhood. This points to the importance of combining the natural and the symbolic with the suburban in peripheral neighbourhoods in order to augment residents' sense of place attachment.

East Clayton. For EC, the following is a table of results obtained.

Table 11.11. East Clayton Bivariate Correlations, Enveloping Space and Cohesion

		Enveloping Space (mean of 4 items)
Buckner PSOC Scale (from 9 items)	Pearson Correlation	.554**
	Sig. (2-tailed)	.000
	N	89
Buckner Place Attachment Scale (from 3 items)	Pearson Correlation	.491**
	Sig. (2-tailed)	.000
	N	95
Buckner Neighborliness Scale (from 6 items)	Pearson Correlation	.532**
	Sig. (2-tailed)	.000
	N	95
Buckner Cohesion (from 18 items)	Pearson Correlation	.564**
	Sig. (2-tailed)	.000
	N	89

**Correlation is significant at the 0.01 level (2-tailed).

As seen in the above table, in the case of EC, Enveloping Space was significantly and positively correlated to overall Cohesion ($r = .564, p < .001$) as well as significantly and positively correlated to all three subscales: PSOC ($r = .554, p < .001$), Place Attachment ($r = .491, p < .001$), and Neighborliness ($r = .532, p < .001$).

It should be noted that the correlation strengths in EC are the highest among the four neighbourhoods under study. In addition, the correlation bonds between Enveloping Space and each of the three subscales of Cohesion in EC are nearly equal in strength. Unlike VR where neighborliness had a non-significant correlation and unlike DR where place attachment had a non-significant correlation, all the three subscales in EC had significant correlations with enveloping space. This suggests that in EC the sense of enveloping space may play a more important role than the case of the other three neighbourhoods. Although EC may have an abundance of parks dispersed in the neighbourhood, a mix of uses, and a shopping center as settings for social interaction, it seems that they are not playing a large enough role such that

neighborliness remains strongly correlated with enveloping space. Alternatively, EC does not have the symbolic and natural features that are characteristic of DR and, thus, place attachment in EC remains correlated with the establishment of a sense of enveloping space. Concerning the third subscale PSOC, it becomes more and more apparent as one is delving into individual neighbourhoods that PSOC remained correlated with enveloping space in all three neighbourhoods thus far. In other words, the preponderance of other factors in the neighbourhoods that may have diversely affected PSOC have not overshadowed the positive and significant correlation between PSOC and enveloping space.

Rosemary Heights. For RH, the following is a table of results obtained.

Table 11.12. Rosemary Heights Bivariate Correlations, Enveloping Space and Cohesion

		Enveloping Space (mean of 4 items)
Buckner PSOC Scale (from 9 items)	Pearson Correlation	.419**
	Sig. (2-tailed)	.000
	N	97
Buckner Place Attachment Scale (from 3 items)	Pearson Correlation	.026
	Sig. (2-tailed)	.802
	N	97
Buckner Neighborliness (from 6 items)	Pearson Correlation	.413**
	Sig. (2-tailed)	.000
	N	97
Buckner Cohesion (from 18 items)	Pearson Correlation	.393**
	Sig. (2-tailed)	.000
	N	97

**Correlation is significant at the 0.01 level (2-tailed).

As seen in the above table, in the case of RH, Enveloping Space was significantly and positively correlated to overall Cohesion ($r = .393, p < .001$) as well as significantly and positively

correlated to two subscales: PSOC ($r = .419, p < .001$) and Neighborliness ($r = .413, p < .001$). However, no significant correlation was found with the subscale of Place Attachment.

It seems that in the case of RH the quality of gated-ness differed from that of other neighbourhoods particularly in regards to place attachment. Though the quality of gated-ness in RH helped in creating a sense of enveloping space for residents that seemed to correlate with overall neighbourhood cohesion, psychological sense of community and neighborliness, the sense of enveloping space did not correlate with a sense of place attachment in the neighbourhood, a sense which was ranked third over the four case studies.

Unlike DR that had natural and symbolic features that contributed to residents' high sense of place attachment, RH does not have similar characteristic features. Emphasis in RH is more on the social dimension of neighborliness among residents, the functionality of the neighbourhood, landscaping and the architectural design of houses rather than emphasizing symbolic features such as close proximity to the ocean. Moreover, a considerable part of the neighbourhood contains one acre residential lots with houses that are old and often vacant and not integrated with the rest of the neighbourhood. The same situation exists in EC where one acre lots form a 'blind area' in the neighbourhood. Also, new townhouse developments were replacing pristine environments in RH causing loss of tranquility in the neighbourhood. Residents in RH may have the second highest average sense of enveloping space among the four neighbourhoods but the sense of place attachment did not correlate with increasing sense of enveloping space for residents.

11.3.4 Enveloping Space and Other Variable Links

The fourth step of quantitative analysis investigated whether there were associations between enveloping space and each of three variables: gender, household income, and length of residence within a neighbourhood.

Gender

Over all the 389 cases, there was a weak association between gender and enveloping space ($\eta^2 = .020$). That is, gender was not found to be a good predictor of enveloping space. However, is there a neighbourhood effect on enveloping space by gender? In order to answer that question, an ANOVA test was conducted across the four neighbourhoods separately for males and females. For males, the results of the test showed that there was a significant neighbourhood effect on enveloping space at the $p < .05$ level [$F(3,199) = 3.241, p = .023$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for males in DR ($M = 3.47$) significantly differed from the mean value of males in VR ($M = 3.13$). However, no significant differences were found between the other neighbourhoods.

For females, the results of the test showed that there was a significant neighbourhood effect on enveloping space at the $p < .01$ level [$F(3,175) = 4.879, p = .003$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for females in each of VR ($M = 3.17$) and EC ($M = 3.16$) significantly differed from the mean value of females in DR ($M = 3.54$). However, no significant differences were found between the other neighbourhoods.

The above results by gender suggest two things. The first is that males and females in DR significantly differed from their counterparts in VR. That is, the quality of gated-ness in DR was different than VR in terms of the effect on the sense of enveloping space for *both* genders. Again, such a quality could be attributed to the higher degree of exclusion and seclusion in DR

versus VR. The second is that it was only females who differed significantly in their sense of enveloping space between DR and EC. Meanwhile, differences in the quality of gated-ness of the two neighbourhoods did not result in significant differences among males. That is, it was the sense of enveloping space for females, rather than males, in EC which was more affected by the quality of gated-ness of the neighbourhood. This may suggest differences between males and females in acquiring and developing a sense of enveloping space. However, further research is needed in order to verify this claim.

Household Income

Over all the cases, there was a weak association between household income and enveloping space (Spearman's rho: $r_s = -.038$, not significant, $p > .05$). That is, household income was not found to be a good predictor of enveloping space. However, is there a neighbourhood effect on enveloping space by household income? In order to answer that question, an ANOVA test was conducted across the four neighbourhoods separately for each of three household income groups (less than 60k, 60k-130k, and more than 130k). For the less-than-60k group, the test was not applicable as there were too few cases. For the 60k-130k group, the results of the test showed that there was a significant neighbourhood effect on enveloping space at the $p < .001$ level [$F(3, 75) = 6.643$, $p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for the 60k-130k group in DR ($M = 3.69$) significantly differed from the mean value for the 60k-130k group in EC ($M = 2.73$). There were also significant differences for the same income group between VR and EC as well as between VR and DR but the differences were marginally significant in both cases ($p = .043$ and $.047$, respectively).

Finally, for the more-than-130k income group, the results showed that there was a significant neighbourhood effect at the $p < .001$ level [$F(3, 123) = 10.448$, $p < .001$]. Post-hoc

comparisons using the Tukey HSD test indicated that the mean value for the more-than-130k income group in DR ($M = 3.56$) significantly differed from their counterparts in each of the other three neighbourhoods, VR ($M = 3.06$), EC ($M = 2.61$), and RH ($M = 3.04$).

From the above results, both the 60k-130k and the more-than-130k income group in DR significantly differed from their counterparts in EC, which further confirms that those two neighbourhoods are very different in their quality of gated-ness especially in as much as concerns the effect on the sense of enveloping space of household income groups whether for moderate or high income categories. The results also suggest that DR is significantly different from the other three neighbourhoods in terms of the quality of gated-ness for the more-than-130k group in their sense of enveloping space. Taken together, it becomes apparent from the results that residents in DR had a higher sense of enveloping space regardless of their household income level, which speaks to residents' sense of being cognitively contained in a particular realm that is reflected in a sense of uniqueness of the neighbourhood, particular social practices and events, as well as the ability to recognize residents from non-residents in the neighbourhood.

Length of Residence

Over all the cases there was a weak association between length of residence and enveloping space (Spearman's rho: $r_s = -.024$, not significant, $p > .05$). That is, length of residence was not found to be a good predictor of enveloping space. However, is there a neighbourhood effect on enveloping space by length of residence? In order to answer that question, an ANOVA test was conducted across the four neighbourhoods separately for each of five groups of length of residence (less than 2 yrs., 2-5 yrs., 5-8 yrs., 8-10 yrs., and over 10 yrs.). For the first four groups of length of residence, the results did not show any significant neighbourhood effect. Meanwhile, for the over-10-yrs. group, the results showed that there was a significant

neighbourhood effect on enveloping space at the $p < .01$ level [$F(3, 77) = 6.530, p = .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for the over-10-yrs. group in DR ($M = 3.64$) significantly differed from their counterparts in each of VR ($M = 2.95$) and EC ($M = 2.58$).

The above results suggest that those residing more than 10 years in DR had a higher sense of enveloping space than residents in either VR or EC who also resided for more than 10 years in those neighbourhoods. It may be assumed that as one resides longer in a neighbourhood, the sense of enveloping fades away as one gets used to the qualities of the enveloping space within the neighbourhood. Such an assumption seems valid in the case of VR and EC but was not the case for residents in DR who still had a sense of enveloping after residing in the neighbourhood for more than 10 years. Accordingly, this may suggest that the quality of enveloping space has, so to speak, a renewable aspect which should be maintained over time. It may be argued here that the presence of a formal homeowners' association in DR has contributed to maintaining an aesthetically pleasing landscape. In addition, there were recent installations of tennis courts, a hockey rink and future plans for a skating rink, all coordinated by efforts of the homeowners' association. Where other neighbourhoods are showing signs of a natural life-cycle of neighbourhood decline, consistent effort is being put in DR to counteract such a cycle.

11.3.5 Cohesion and Other Variable Links

The fifth step of analysis investigated whether there were associations between overall cohesion and each of three variables: gender, household income, and length of residence within a neighbourhood.

Gender

Over all the 389 cases, there was a weak association between gender and cohesion ($\eta = .104$). That is, gender was not found to be a good predictor of cohesion. However, is there a neighbourhood effect on cohesion by gender? In order to answer that question, an ANOVA test was conducted across the four neighbourhoods separately for males and females.

For males, the results of the test showed that there was a significant neighbourhood effect on cohesion at the $p < .05$ level [$F(3,196) = 3.202, p = .024$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for males in DR ($M = 3.93$) significantly differed from the mean value of males in EC ($M = 3.59$). However, no significant differences were found between the other neighbourhoods.

For females, the results of the test showed that there was a significant neighbourhood effect on cohesion at the $p < .05$ level [$F(3,173) = 2.814, p = .041$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for females in DR ($M = 3.94$) significantly differed from the mean value of females in EC ($M = 3.63$). However, no significant differences were found between the other neighbourhoods.

Once again, the neighbourhoods of DR and EC react differently in regards to the effect on cohesion. Males and females in DR had a higher sense of cohesion than males and females in EC. In other words, the enclosure model represented by DR resulted in higher overall cohesion for residents than the encounter model represented by EC. This result remained valid independent of whether residents were male or female.

Meanwhile, none of the gender groups for the remaining two neighbourhoods differed significantly from their counterparts in EC. This may be explained in light of the aspect of seclusion that is a characteristic quality of DR when compared with VR or RH. In other words,

differences in the aspect of exclusion between EC and the neighbourhoods of VR and RH were not as important as differences in seclusion between EC and DR when pertaining to overall sense of cohesion by gender.

Household Income

Over all the cases, there was a weak association between household income and cohesion (Spearman's rho: $r_s = .101$, not significant, $p > .05$). That is, household income was not found to be a good predictor of cohesion. However, is there a neighbourhood effect on cohesion by household income? In order to answer that question, an ANOVA test was conducted across the four neighbourhoods separately for each of three household income groups (less than 60k, 60k-130k, and more than 130k). For the less-than-60k group, the test was not applicable as there were too few cases; meanwhile, there were no significant results for the 60k-130k group. As for the more-than-130k group, the results showed that there was a significant neighbourhood effect at the $p < .001$ level [$F(3, 123) = 6.407, p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for the more-than-130k income group in DR ($M = 3.99$) significantly differed from their counterparts in each of the other three neighbourhoods, VR ($M = 3.61$), EC ($M = 3.24$), and RH ($M = 3.59$).

Again, the results suggest that DR is significantly different from the other three neighbourhoods in terms of the quality of gated-ness for the more-than-130k group in their sense of overall cohesion. Here, it may be argued that the quality of seclusion of the neighbourhood takes precedence over the quality of exclusion in terms of effect upon sense of cohesion. Definitely, DR was ranked as having more exclusion and more seclusion than the other three neighbourhoods. However, an exclusion effect of the neighbourhoods did not 'trickle down' from one neighbourhood to another; that is, neither did VR nor RH differ significantly from EC,

considered as having the least exclusion. One may assume that exclusion differences between DR and EC were appreciable enough to warrant a significant difference between the two neighbourhoods or one may assume that the aspect of seclusion is an important aspect for the more-than-130k group in developing a sense of neighbourhood cohesion. The latter assumption is more probable given that, although DR may exhibit exclusion, the neighbourhood is inclusive in terms of diversity of housing types with the presence of a considerable percentage of apartment units in its housing stock. Thus, the more differentiating factor may be the higher degree of seclusion resulting from the locational and situational characteristics of the neighbourhood as well as the internal street layout of the neighbourhood; physical characteristics that are argued in this research to lead to a moral and cultural bounded-ness conducive to cohesion.

Length of Residence

Over all the cases there was a weak association between length of residence and cohesion (Spearman's rho: $r_s = .077$, not significant, $p > .05$). That is, length of residence was not found to be a good predictor of cohesion. However, is there a neighbourhood effect on cohesion by length of residence? In order to answer that question, an ANOVA test was conducted across the four neighbourhoods separately for each of five groups of length of residence (less than 2 yrs., 2-5 yrs., 5-8 yrs., 8-10 yrs., and over 10 yrs.).

For the first four groups of length of residence, the results did not show any significant neighbourhood effect except for marginal significance for the less-than-2 yrs. group [$F(3, 66) = 2.815$, $p = .046$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for the less-than-2 yrs. group in EC ($M = 3.47$) significantly differed from their counterparts in DR ($M = 4.01$).

Meanwhile, for the over-10-yrs. group, the results showed that there was a highly significant neighbourhood effect on cohesion at the $p < .001$ level [$F(3, 77) = 10.188, p < .001$]. Post-hoc comparisons using the Tukey HSD test indicated that the mean value for the over-10-yrs. group in EC ($M = 2.24$) significantly differed from their counterparts in each of DR ($M = 3.90$), VR ($M = 3.82$), and RH ($M = 3.59$).

Here, not only do the results for the over-10-yrs. group confirm differences between the neighbourhoods of EC and DR but also point to other differences between EC and each of VR and RH. Residents residing in EC for over 10 years had the lowest sense of cohesion than their counterparts in all the other three neighbourhoods. It should be kept in mind that these are residents who have lived in the neighbourhood during the gradual development of the neighbourhood and witnessed changes that the neighbourhood may have undergone over time. Perhaps, one of the signs of a successfully aging neighbourhood is a high sense of cohesion among residents residing for more than 10 years in the neighbourhood. Put differently, if the sense of cohesion among residents gradually decreases rather than increases over time, one may assume that the neighbourhood is developing in a way that is not socially favorable for existing residents. In the case of EC, residents expressed the gradual densification of the neighbourhood over time and sense of overall crowded-ness due to the development of new townhouses, the inclusion of a new housing type (coach houses) to allow for more densification and social diversity, as well as the mixed use zoning of residential with commercial uses, allowing secondary suites, the tight packing of houses, and insufficient street parking spaces coupled with difficult maneuvering along narrow streets for two-way traffic. Such problems surely aggravate over time and residents residing over 10 years within the neighbourhood have definitely noticed rapid changes for the unfolding of the neighbourhood's intended design plans.

The case is somewhat different for long-time residents in the other three neighbourhoods where experimentation in implementing sustainable design principles was not an essential part of their initial design as that of EC. Nevertheless, the neighbourhoods of RH and VR are now densifying by the development of new townhouses and the quality of neighbourhoods is changing both internally as well as externally. For instance, in the case of VR, a regional shopping center is planned for construction in proximity to VR and will definitely impact upon demand for housing and vehicular traffic in VR. DR is not totally immune as the west leg of the Stoney Trail ring road has been recently approved leading to more connectivity for DR at the city scale. Nevertheless, the situational seclusion of DR would help to mitigate such external changes.

11.3.6 Interaction Effects

The sixth step of analysis investigated for whether there were interaction effects for the set of independent variables: Enveloping Space, Gender, Household Income, and Length of Residence as predictors of overall Cohesion. Towards that end, a generalized linear model GLM Univariate ANOVA test was used where Cohesion was the dependent variable and the fixed factors were: Enveloping Space, Gender, Household Income, and Length of Residence. The following is a table of results obtained.

The names of variables in the table are indicated as follows:

ENVSPACE4 = Enveloping space calculated from 4 items of the questionnaire

HHINCORDINAL = Household Income ranked as an ordinal variable in 9 categories.

NEWLOR = Length of Residence ranked as an ordinal variable in 5 categories.

Table 11.13. Interaction Effects for the Set of Independent Variables on Cohesion

Tests of Between-Subjects Effects

Dependent Variable: Buckner Cohesion (from 18 items)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	64.581 ^a	164	.394	1.456	.034
Intercept	1068.357	1	1068.357	3949.165	.000
ENVSPACE4	13.697	13	1.054	3.895	.000
Gender	.188	1	.188	.694	.407
HHINCORDINAL	1.173	8	.147	.542	.821
NEWLOR	.653	4	.163	.603	.662
ENVSPACE4 * Gender	1.424	7	.203	.752	.629
ENVSPACE4 * HHINCORDINAL	5.837	25	.233	.863	.651
ENVSPACE4 * NEWLOR	8.677	27	.321	1.188	.275
Gender * HHINCORDINAL	.938	5	.188	.693	.630
Gender * NEWLOR	.477	4	.119	.441	.779
HHINCORDINAL * NEWLOR	1.501	12	.125	.462	.930
ENVSPACE4 * Gender * HHINCORDINAL	1.532	3	.511	1.887	.139
ENVSPACE4 * Gender * NEWLOR	3.944	8	.493	1.822	.086
ENVSPACE4 * HHINCORDINAL * NEWLOR	.142	1	.142	.526	.470
Gender * HHINCORDINAL * NEWLOR	.144	1	.144	.532	.468
ENVSPACE4 * Gender * HHINCORDINAL * NEWLOR	.000	0	.	.	.
Error	20.290	75	.271		
Total	3459.454	240			
Corrected Total	84.870	239			

a. R Squared = .761 (Adjusted R Squared = .238)

The results show that the overall model is significant at the $p < .05$ level. The following are key findings from the results of the univariate test:

- 1) Enveloping Space was the only independent variable that had a significant effect on cohesion at $p < .001$.
- 2) Each of the variables of Gender, Household Income, and Length of Residence did not have a significant effect individually on cohesion.
- 3) Moreover, there was no significant interaction effect on cohesion for different combinations of the four variables: Enveloping Space, Gender, Household Income, and Length of Residence.

The above key findings reinforce the conceptual model of this research (see fig. 4.2) where enveloping space is conceptualized as a better predictor for overall sense of cohesion than other variables that were generally considered in the literature on cohesion to have an effect such as length of residence, household income, and gender. The following is a diagram that illustrates the correlation strengths and associations between the variables under study.

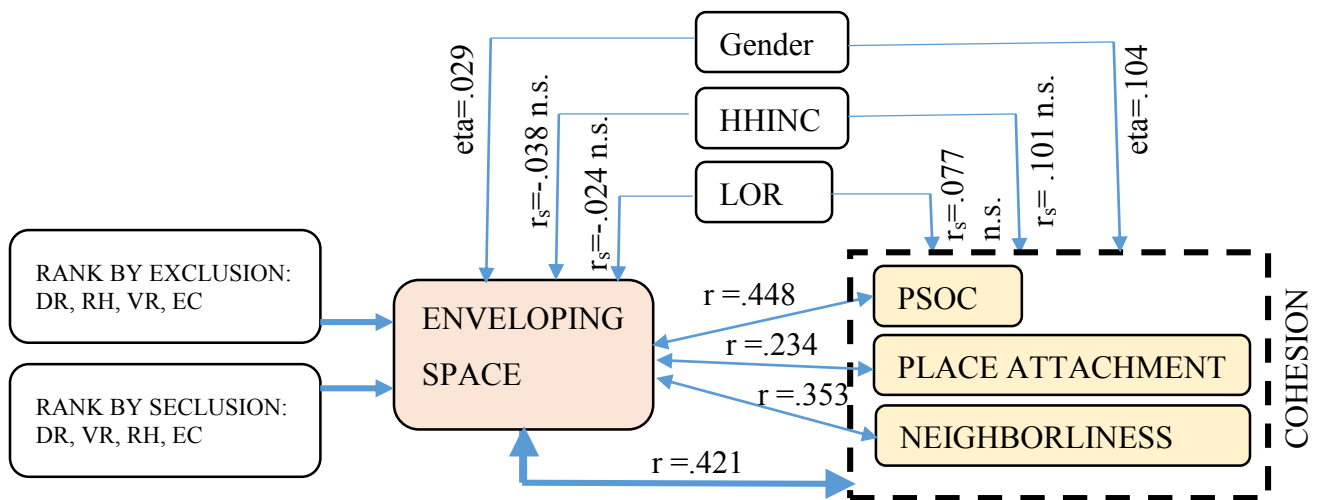


Figure 11.9. Correlations and Associations between the Variables

INTERPRETATION

12.1 Symbolic and Functional Aspect

Comparing the four neighbourhoods qualitatively and quantitatively, it can be clearly inferred that two neighbourhoods stand out diametrically opposed to each other: Discovery Ridge on one hand and East Clayton on the other. Discovery Ridge scored highly on all four components meanwhile East Clayton takes the fourth position in the index of neighbourhood cohesion. If one is to typify these neighbourhoods, one neighbourhood would be categorized among the symbolic neighbourhoods and the other would be categorized among the functional neighbourhoods. Neighbourhood characteristics were important second and third reasons for residents' choice of living in East Clayton. This seems to be in contrast with the absence of unique features in the neighbourhood of East Clayton. Such a paradox can be interpreted by an understanding of their choice and perception of the neighbourhood in terms of functional characteristics. Stated differently, the functional characteristics of the neighbourhood make the neighbourhood desirable but without any unique features that would otherwise contribute to symbolic characteristics of the neighbourhood. In the case of Discovery Ridge, the natural forest of Griffith Woods contributes to the uniqueness of the neighbourhood and, coupled with low-key presence of commercial functions within the neighbourhood, rendered the neighbourhood more symbolic.

Put differently, there is a cultural chasm differentiating the two neighbourhoods. One neighbourhood advocates symbolic importance and the other neighbourhood advocates pragmatic importance. Between these two poles: symbolic and functional, the neighbourhoods of Valley Ridge and Rosemary Heights can be relatively categorized. The order of the four neighbourhoods along this axis would be: Discovery Ridge, Valley Ridge, Rosemary Heights, and East Clayton. The symbolism of Discovery Ridge and Valley Ridge stand out from that of

Rosemary Heights and East Clayton due to a stronger visual connection to the mountains in the case of Calgary neighbourhoods than in Surrey neighbourhoods; the latter have access to natural features such as the ocean but not directly visible from within the neighbourhoods. The symbolism is also established in Calgary neighbourhoods through the site topography of the neighbourhoods by the presence of a hill and river escarpments which are less pronounced features in Surrey neighbourhoods. The functionalism of Surrey neighbourhoods stands out more than Calgary neighbourhoods in terms of the presence of schools within the neighbourhoods as well as more developed commercial experience than the relatively secluded neighbourhoods of Calgary.

The differentiation along the symbolic-functional axis is also expressed by the prominence of two aspects of sense of community. The interactive aspect of sense of community becomes more prominent in the case of Surrey neighbourhoods whereas the affective aspect of sense of community becomes more prominent in the case of Calgary neighbourhoods. We find Rosemary Heights scoring the highest among the four neighbourhoods in terms of neighbourliness and Calgary neighbourhoods scoring higher in terms of place attachment than Surrey neighbourhoods.

The presence of an elementary school in Rosemary Heights was a catalyst in uniting the community together through communal events and use of the school playfield by the community as well as a catalyst in promoting a sense of liveliness in the neighbourhood as children walk to school. In East Clayton, the elementary school also contributed towards the functionalism of the neighbourhood albeit in a different way than Rosemary Heights. The school in East Clayton acted as a catalyst through the quality of teaching and teachers of the school that attracted many to the community. In other words, it can be inferred that for Rosemary Heights the school was an

outcome of community that, in turn, reinforced, the sense of community while for East Clayton, the community was an outcome of the school.

Age of the neighbourhood might be a factor differentiating the single access neighbourhoods in Calgary given that Valley Ridge is an older neighbourhood than Discovery Ridge. Also, isolation seems to be greater in Discovery Ridge than Valley Ridge. As seen in the primary reasons for choosing to live in the neighbourhood, residents of Discovery Ridge have emphasized the single access to the neighbourhood while residents of Valley Ridge emphasized location. This translates again to a difference between extroversion and introversion or a greater isolation for residents in Discovery Ridge. This reading appears to be in contrast to the housing types within the neighbourhoods where Valley Ridge has a higher percentage of single family dwellings (read as introversion) than Discovery Ridge.

12.2 The Importance of Location

Quantitative analysis of qualitative data, on one hand, shows that neighbourhood characteristics rather than location takes precedence for the two neighbourhoods of Valley Ridge and Discovery Ridge. This is in contrast with qualitative analysis where location showed precedence for Valley Ridge. An explanation is that most residents of the two neighbourhoods do not evaluate their neighbourhood as particularly unique, though less so for residents of Discovery Ridge than Valley Ridge. Thus, location rather than neighbourhood characteristics becomes the decisive factor. If one gauges the preponderance of first and second reasons for the two neighbourhoods, one will find that location becomes the more prominent reason. For the residents of the neighbourhoods of Rosemary Heights and East Clayton, their evaluation of uniqueness of the neighbourhood is even less when compared to the case studies of Calgary.

Thus, it can be deduced that location is even more prominent a factor in the choice of residents to reside in a particular neighbourhood.

However, it can be argued that location, through the relation of the neighbourhood to the city and surroundings, has a bearing upon the creation of a place identity for each neighbourhood; a place identity that attracts particular residents to each of the respective neighbourhoods. Indeed, each of the neighbourhoods was fulfilling a function for its residents other than housing. To the extent that this was the case through external individuation (cf. Schopenhauer; Pufe, 2009), residents were able to relate to the neighbourhood through the process of place identity. What was common among the four neighbourhoods was the image / ideal concept behind the design. This image is not just from the internal design of the neighbourhood (e.g. widely-spaced single family housing) but also has much to do with the relation of the neighbourhood to the urban part of the city; it is essentially a relation of 'suburbanity'. What the neighbourhoods have in common is that all are suburban and family-oriented (although tending to be transformed to retirement communities, except for East Clayton). Residents who fit best within such a profile were the most to enjoy a better outcome in experiencing neighbourhood cohesion.

In the case of East Clayton, the suburban ideal was overlapped with the urban ideal. The result was a suburb that sought an 'urban' feel, i.e. a '**suburban-urban**' neighbourhood (e.g. the mix of commercial boutiques and residential as well as medium density). The location of East Clayton is intermediate between Surrey and Langley such as to maximize upon the overlap with the urban. The foreseeable demise of East Clayton emanates from the invasion of the urban city (translated into problems of crowding and crime) into the neighbourhood rather than mere overlapping, with accompanying feelings of a 'Durkheimien' anomie characteristic of urbanity, especially felt by residents along 192 St. The other three neighbourhoods, contrastingly, had a

more tangential relation to the city, an aspect which was a major reason for why the residents chose to live in these neighbourhoods.

In the case of Rosemary Heights, the tangential relation meant more connection with nature, represented by farms and the rural landscape, but also having a tangential relation meant connecting outwards to the U.S border and the ocean nearby. Such a neighbourhood may be called **“the border suburb”**.

Valley Ridge has a better connection with surrounding neighbourhoods than Discovery Ridge, but at the same time Valley Ridge may be called a **“highway suburb”** (e.g. gasoline station in the commercial centre of the neighbourhood and location along Calgary-Banff travel road). Exiting the neighbourhood doesn't mean transitioning into other districts of the city but traveling on a high-speed road. This reinforces the tangential connection to the city and avoids contact with the city to reach other places via the ring road. Such a neighbourhood may also be called a **“ring road suburb”**.

Discovery Ridge is also connected to a highway but is not a highway suburb like Valley Ridge but is being transitioned into a ring road suburb with approved plans for the west leg extension of the ring road. Discovery Ridge poses as a **‘destination neighbourhood’**⁴⁸ more than Valley Ridge though both have only a single access to their neighbourhood. The difference is that Discovery Ridge has a focal point that is stronger than Valley Ridge, namely, the Griffith Woods natural reserve park compared to the artificial golf course in Valley Ridge. The stronger focal point and more relative seclusion of Discovery Ridge compared to Valley Ridge require it to be named **“the one-dimensional satellite suburb”**. The one-dimensionality is also by reason of

⁴⁸ The term was used by one of the interviewee residents in Discovery Ridge.

the internal street layout of the neighbourhood where addresses are mainly referred to by four major spines within the neighbourhood without much lateral extension beyond those four major spines. This aspect may have contributed to reinforcing the neighbourhood cohesion for residents along a common spine. Usually, a spine is a dividing element for houses flanking the spine, but in the case of Discovery Ridge, traffic is relatively calmed as one advances more along the spine especially that the neighbourhood is non-permeable, i.e. without through traffic that may be otherwise caused by a grid pattern or a large circular loop pattern. In this sense, the neighbourhood has a layout of a tree (cf. Alexander, 1965 'The city is not a tree').

Although Valley Ridge also has a tree pattern of streets, the spines in Valley Ridge are divisive because of deeper lateral extension beyond the one-dimensionality of the spine. In both neighbourhoods, correlating with the branching of the spines into four major ones, there are at least four different neighbourhoods within each neighbourhood. However, this did not translate into four different indices of neighbourhood cohesion. The survey data for Valley Ridge was initially coded by street name and zone within the neighbourhood and analysis of differences in neighbourhood cohesion construct by street or by zone did not reveal significant differences between different parts of the neighbourhood. Such was the case as each of the four areas represented different units that appealed to the same kinds of residents who were able to get along together. Although residents expressed the divisive aspect of the site topography (those on top of the hill and those down by the river), all residents had a similar overall sense of neighbourhood cohesion. Such a result suggests that the sense of enveloping space is expressed at the larger neighbourhood level and not at an enclave level (cul-de-sac / loop) where the sense would be more of enclosing space rather than enveloping space.

If the four neighbourhoods are plotted roughly relative to two axes: the symbolic-functional and the enveloping-exveloping, the ranking of the neighbourhoods becomes: Discovery Ridge, Rosemary Heights, Valley Ridge and East Clayton.

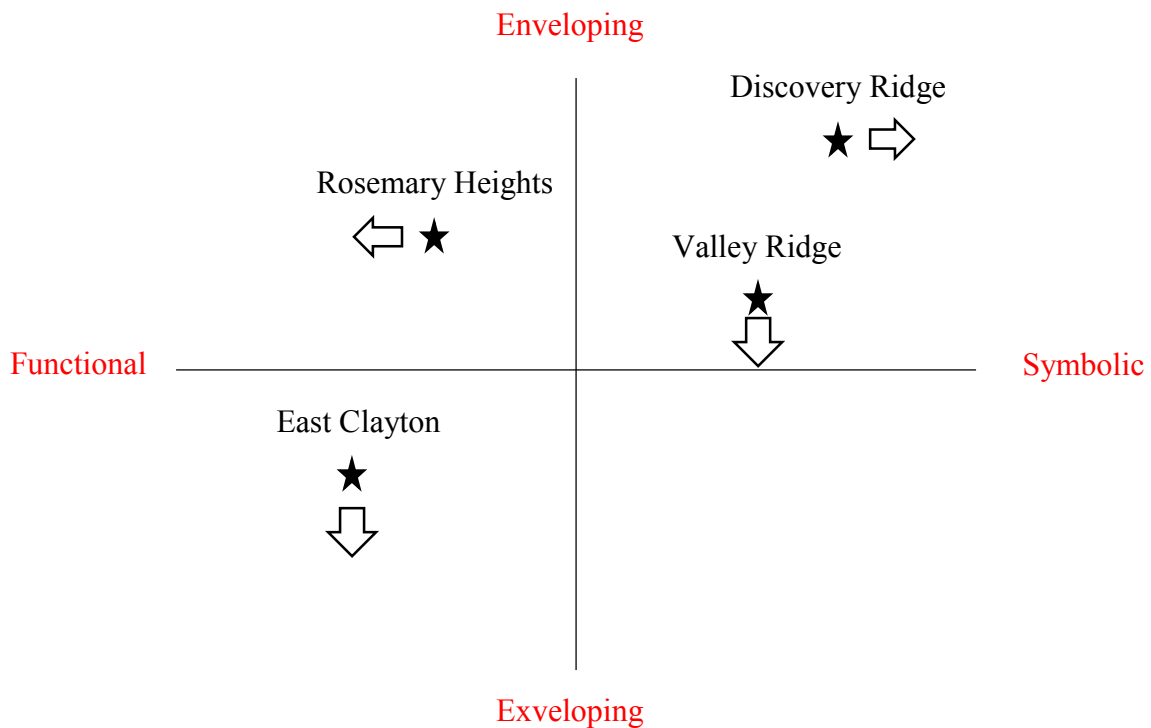


Figure 12.1. Plotting the neighbourhoods along two perpendicular axes

Ex-veloping refers to the decrease in the sense of exclusion and seclusion of a neighbourhood. The arrows in the above plot refer to the tendency of each neighbourhood to transform according to present dynamics. Discovery Ridge is tending towards reinforcing the symbolic dimension and outward appearance of the neighbourhood (e.g. experiments with xeriscaping medians). Functional aspects have already been added recently such as an ice rink and tennis courts in the joint use playfield area. Nevertheless, such functional elements also serve towards communicating a certain symbolism to the neighbourhood. Rosemary Heights, on the other hand, is tending towards functional transformation (e.g. addition of a high school for the

neighborhood and more townhouse developments). East Clayton is tending, unwillingly, toward exveloping by the invasion of urbanity 'problems' into the neighbourhood. Valley Ridge is also tending toward exveloping through adding a second access point albeit out of necessity in order to accommodate density from new construction. It may be foreseen that the tendencies to exveloping may be accompanied by a gating of areas within the neighbourhoods in order to gain more control over their residential environment in terms of traffic and crime.

12.3 Persona-Anima

An apparent paradox was present between neighbourhoods that are, on one hand, attractive for residents while at the same time seen as ordinary or not unique by the same residents. In other words, each neighbourhood, like a human being, had two aspects: the outward aspect, or persona, and the inward aspect, or anima (using the terminology of Carl Jung). From the persona level, the neighbourhoods all offered strategic locations and offered strong reasons for residents to choose to live and remain in the neighbourhood to benefit from advantages of location. As argued above, this locational aspect also resonated with the establishment of a place identity for residents.

From the anima level, each of the neighbourhoods was reduced to the suburban barebones of houses packed decently together. The persona is promoted by developers to market the attractiveness of the neighbourhood but the anima is experienced after moving into the neighbourhood. Evan McKenzie alluded to this paradox from a different perspective. He pointed out the aberration of the suburban neighbourhoods from the garden suburb ideal by emphasizing the physical on account of the social or communal. Each of the neighbourhoods claimed to be a community but only promoted a sense of community. Perhaps, Rosemary Heights stood out among the neighbourhoods in promoting a community rather than just a sense of community.

Extending McKenzie's argument, one can argue that the social has an emancipatory role for the physical. Each of the four neighbourhoods conveyed an imaginary or an ideal form for residential development albeit imperfect; imperfections surface and become more pronounced with time in terms of long-term effects (e.g. sociability of residents). The factor that could restore the physical to a stronger connection with the ideal is the social. The importance of having good neighbours is emphasized and makes a difference for both the affective and interactive aspects of neighbourhood cohesion as well as for outcomes for the relation of the individual to society as a whole. Echoing Shilling's (2005) perspective on the body, the neighbourhood is similar in that it is a source for the creation of social life, a location for the structural properties of society, and a vital means through which individuals are positioned and oriented towards society. Stated differently, the social aspect of the neighbourhood emancipates the physical from a Platonic reference of an ideal to an Aristotelian reference of a relative; and even further to a Levinasian (Levinas, 1998: 51) 'being as social experience' perspective or even a Deleuze-and-Guattarian 'being as fragmentation' and relational reference.

As mentioned above, there may be four or five areas in the neighbourhood or animas experienced differently within the same outward persona depending upon location within the neighbourhood as well as social status (e.g. single persons without families and young adults moving out from the neighbourhood) and immediate neighbours. Such a differentiation could be replicated ad infinitum to a theorization of space as constituted of monads or socio-cultural units.

For some residents of the four neighbourhoods, no superior neighbourhoods were referenced and for such residents their neighbourhoods are second to none. Choosing to reside in a neighbourhood is not just a rational choice or economics of location but is also contingent upon a psychological layer for the resonance of the neighbourhood with the future residents in terms

of their own temperament in such a way that residents accept the asymmetry of market information when looking to buy a house. For example, one of the interviewees in Rosemary Heights mentioned among the positive features that the neighbourhood is not so secluded for him. In other words, the degree of seclusion of the neighbourhood resonated with the personality of the person. Such a resonance is also a factor of the overall ambience or 'atmosphere' of the neighbourhood which may be argued to be dependent on the degree of seclusion of the neighbourhood. Indeed, there is what may be called a '**resortification**' of residential neighbourhoods by the provision of resort features such as a golf course or lake, etc. while at the same time controlling the degree of seclusion of neighbourhoods. This trend is more apparent in the cases of Calgary than in Surrey. The advent of services in the neighbourhood would probably be the next step toward this process of 'resortification' which includes services for seniors but also services for enhanced communication (e.g. wireless connection).

The process of 'resortification' could be seen opposite to a process of '**urbanification**' promoted by city officials for less secluded residential neighbourhoods, more connectedness and permeability to allow through traffic (and thus free-riders). The urbanification-resortification forms one axis against which the degree of permeability [enclavism (cul-de-sac pattern) or open grid structure] forms a perpendicular axis along which neighbourhoods could be plotted. Thus, four main types of neighbourhoods result:

- a) **The resorted neighbourhood:** with a boundary and focal point / center, a natural or artificial amenity and, usually an enclave street pattern.
- b) **The functioned neighbourhood:** having no boundary and no focal point or quasi-focal points like a retail or commercial center or park; and, usually, a grid pattern.
- c) **The simulated neighbourhood:** having only a boundary and no focal point while having an enclave pattern.

- d) **The blended neighbourhood:** having only a focal point and no clear boundary or quasi-boundary while usually having a grid pattern.

In the above typology, Discovery Ridge would come close to a resorted neighbourhood; East Clayton and Rosemary Heights, functioned neighbourhoods; Valley Ridge, a simulated neighbourhood (the golf course is diffuse and does not function as a focal point; the shopping center is peripheral with respect to the rest of the neighbourhood). Overall, if a boundary and focal point speak to anything, they speak to the contingency of their presence in a true neighbourhood. The absence of both negates any identification of a neighbourhood except by means of analytic boundaries such as census tracts. The idea of a grid connecting neighbourhoods from all sides with other neighbourhoods may lead to confusion for residents about which neighbourhood they belong to. This case was explicitly expressed by a resident whose house was situated between Rosemary Heights and Morgan Creek. He expressed the view that he doesn't feel like he belonged to either. He thought that he had bought into the neighbourhood of Rosemary Heights as his house is within the census tract for the neighbourhood. However, after moving in, he started to realize that he was within an intermediate position belonging to neither Rosemary Heights nor Morgan Creek. In other words, he felt left out from both communities. This remark by the resident raises a flag to municipal planners to not pursue connectivity blindly as a panacea for suburban ills.

Also, the model of a grid pattern has been used in postwar suburbs and has been found to unduly increase the number of intersections, the efficiency of land use (as a higher percentage goes towards streets that may not function at their intended capacity or be safe for children to appropriate and play in). In addition, appropriation and stewardship of the spaces becomes more difficult for residents who find residential streets as being more public and allowing free-riders.

CONCLUSION AND RECOMMENDATIONS

13.1 Introduction

Today's mindset for "the new planning culture" (cf. Chilla & Schulz, forthcoming) is definitely entrenched in increased connectivity, resilience, and sustainability. Translated to physical structure, the modified open grid of New Urbanism is elevated while the loop and cul-de-sac pattern of Enclave Urbanism is dismissed. Such broad and rough depiction of a deterministic relation between physical structure and ideal planning principles needs a whole research agenda to substantiate. The present research does not claim to settle the dispute but to shed light on the importance of striking the correct balance between the two approaches. Discarding enclave urbanism would definitely impact upon the psychological health and needs of residents for sense of space appropriation, sense of safety, and sense of neighbourhood cohesion. Tilting the balance excessively towards either approach is a form of 'symbolic violence' or cultural imperialism (Young, 1990) – "a monopoly situation of determining the 'good and the beautiful' in respect of housing" (Røe, 2014: 499). Through the introduction of the concept of monadic space or enveloping space, a link may be established between enclave urbanism and neighbourhood cohesion in such a way that enclave urbanism is not discarded from the banner of sustainability but altogether constitutive of social sustainability while at the same time striking a balance from a blind pursuit for ultimate connectivity.

13.2 Summary of Key Findings

The present research has examined the relationship between degree of gated-ness at the scale of a neighbourhood and the level of neighbourhood cohesion among residents. The relationship was examined through a comparative analysis of four neighbourhoods in two

Western Canadian metropolises: Calgary and Vancouver. The chosen neighbourhoods were all peripheral suburban neighbourhoods and relatively new residential developments with comparable land area (ranging from 270 ha to 300 ha). The two cases in Calgary were single access neighbourhoods, located at the west sector of the city and equidistant from the downtown core while the two cases in Surrey had at least four access points and relatively equidistant from the downtown core as well with one of the cases (Rosemary Heights) in the affluent district of South Surrey and the other (East Clayton) in the less affluent district of Cloverdale. In terms of residential density, the case of East Clayton was set apart at a medium density of 16 units/acre from the other three cases that had a sparse density of 6 units/acre. East Clayton was intentionally designed to be a blueprint for sustainable residential development with the introduction of new housing types to allow for a social mix by income and social status as well as an internal grid pattern of streets with laneway housing. The other three cases, on the other hand, were designed with an enclave pattern of streets (loops and cul-de-sacs). Meanwhile, the topography of the cases in Calgary differed markedly from that of the cases in Surrey due to the presence of a hill and ravines in the former cases in contrast to a relatively even slope in the latter cases.

Both cases in Surrey had, in addition to single-family housing, acreage houses as well as townhouses. East Clayton had the largest percentage of townhouses (38%) of the four case studies; Rosemary Heights had the largest percentage of semi-detached houses (12%); Valley Ridge had the largest percentage of single-family dwellings (96%); and Discovery Ridge had the largest percentage of apartment units (33%). The disparity in the mix of housing types between the four case studies was not reflected and did not correspond to the level of neighbourhood cohesion among residents. Thus, a ranking of neighbourhoods by housing mix and level of neighbourhood cohesion was not evident.

The following is a summary of key findings of the research:

1) Neighbourhoods differed in physical structure and access configuration.

The four neighbourhoods were typified differently according to the presence or absence of a focal point and boundary. The presence of a focal point alone would not be sufficient for establishing a sense of enveloping space at the neighbourhood level but has to be accompanied by a defining boundary for the neighbourhood as well as an enclave pattern of streets so that a sense of enveloping space is clearly established. Neighbourhoods that satisfy these three structural aspects may well be typified as resorted neighbourhoods especially when the focal point is a natural amenity. Though also having a focal point, a blended neighbourhood falls short of being a destination neighbourhood given that the two other structural aspects are absent. A similar argument could be made for the difference between a simulated and a functioned neighbourhood where in the former a focal point is missing, in the latter a clear boundary is missing.

2) Similar yet different suburban neighbourhoods.

As mentioned, the four cases are similar in that they are all peripheral suburban residential developments that were relatively recently developed. Yet each was typified in this research in a different category. Valley Ridge was typified as a highway and ring road suburb; Discovery Ridge, a destination suburb; East Clayton, a suburban-urban suburb; and Rosemary Heights, a border suburb. Importantly, other than differing in locational situation as well as housing mix, they differed in an important aspect that this research advances, namely, the aspect of enveloping space that is contingent upon the degree of gated-ness (exclusion and seclusion) of their respective residential developments. For degree of exclusion, the ranking of the neighbourhoods, based on average dwelling value with respect to the city, is: Discovery Ridge, Rosemary Heights,

Valley Ridge, and East Clayton. For degree of seclusion, the ranking of neighbourhoods, based on number of access points, degree of nesting, and geographic situation, is: Discovery Ridge, Valley Ridge, Rosemary Heights, and East Clayton. Taking both rankings into consideration as well as neighbourhood characteristics such as type and location of amenities within the neighbourhood, the overall ranking should be: Discovery Ridge, Valley Ridge, Rosemary Heights, and East Clayton. Such a ranking was corroborated when calculating NCI with Valley Ridge and Rosemary Heights almost on par. When considering individual components of NCI, Rosemary Heights fared better than Valley Ridge in terms of neighbourliness (without statistical significance) while Valley Ridge scored higher than Rosemary Heights in terms of place attachment (with statistical significance). If the sense of enveloping space is solely considered, the ranking of neighbourhoods becomes: Discovery Ridge, Rosemary Heights, Valley Ridge, and East Clayton.

3) Demographic change of neighbourhoods was rapid.

In the cases of Valley Ridge and Rosemary Heights, demographic change was mainly in age structure. Those two cases showed signs of an aging population and were readily perceived by residents as transforming into retirement communities. Senior residents opted to stay within their respective neighbourhood even when downsizing to a smaller abode. In the case of East Clayton, demographic change was mainly in increased population density as secondary suites became rented out, rapidly leading to crowding in elementary schools within the neighbourhood and limited availability of parking spaces.

4) Physical change of neighbourhoods was rapid and imminent.

Relatively intensive townhouse development was a cause of malaise for residents of Rosemary Heights, gradually diminishing the original sense of tranquility within the

neighbourhood. It was perceived by residents to encroach upon pristine environments. Townhouse developments in Rosemary Heights usually took the form of gated enclaves. In the case of East Clayton, the percentage of townhouses were almost on par with single-family dwellings which, as one interviewee remarked, were packed so closely to each other that they were almost equivalent to a townhouse development. Meanwhile, new townhouse developments in Valley Ridge were targeted for a senior population (e.g. The Estates Manor).

The presence of acreage houses within Rosemary Heights and East Clayton was perceived by residents as potential sites for future development into medium density developments. The acreage houses did not fit within the overall residential scheme of either neighbourhood and presented a source of nuisance in terms of aesthetic compatibility as houses were old and in some cases not inhabited but shut off with wooden boards.

5) Structural and situational change of neighbourhoods were imminent.

In the case of Valley Ridge, a new regional shopping centre will be built facing the neighbourhood across TransCanada Hwy and a second entry point to the neighbourhood became logistically necessary with expansion of the neighbourhood further to the west. Such changes aroused concern of residents for impact upon tranquility of the residential environment. In the case of Discovery Ridge, the west leg extension of the ring road would increase connectivity of a neighbourhood that is the most secluded of the four cases. In the case of East Clayton, extensions to the north and west are already planned.

6) Calgary cases symbolically differed from Vancouver cases.

Although the four cases were situated in Western Canadian metropolises, the cases in Calgary differed from the cases in Vancouver in at least two significant ways. First, as argued earlier, the cases in Calgary exhibited a stronger symbolism than those in Surrey (Vancouver)

due to differences in topography, particularly, the presence of a hill and ravines which clearly divided the neighbourhoods in Calgary physically and symbolically (those living atop the hill or along the river versus those on the plateau) as well as due to distant views of mountains from vantage points within both neighbourhoods.. Meanwhile, the cases in Surrey were divided either by through traffic streets such as 192 St (in the case of East Clayton) or by proximity to the elementary school (in the case of Rosemary Heights) – those in proximity considered themselves to be a tightly knit community versus those ‘on the other side’ of the neighbourhood.

7) Calgary cases differed from Vancouver cases in terms of neighbourhood cohesion.

Calgary cases had a higher sense of place attachment while Vancouver cases had a higher sense of neighbourliness. Put differently, Calgary cases exhibited an affective dimension of cohesion while Vancouver cases exhibited an interactive dimension of cohesion.

8) Enclosure model outperformed the Encounter model in terms of social sustainability.

The case of East Clayton, as representative of the Encounter model and a model of New Urbanism, fell short on almost all components of neighbourhood cohesion examined in this research when compared with the other three cases which are representative of the Enclosure model. East Clayton residents, compared to residents of the other three cases, had the lowest sense of place attachment, the lowest psychological sense of community, and fared the third in sense of neighbourliness and sense of enveloping space, only preceding Valley Ridge for those latter components.

Moreover, issues of crowding in schools within the neighbourhood, lack of on-street parking spaces, lack of adequate maneuvering room or circulation on two-way streets, and lack of sufficient residential privacy due to physical ‘cohesiveness’ of houses, as well as issues of crime were strongly voiced by residents of East Clayton in popular media, during interviews, as

well as discussions initiated with RCMP. The situation in East Clayton was summarized by one of the residents as being ‘a good idea on paper’ but in reality ‘a congested mess’.

Preliminary analysis of crime statistics for neighbourhoods in Calgary that were also modelled after New Urbanism principles such as McKenzie Towne with respect to equally sized neighbourhoods such as Tuscany or with respect to Valley Ridge, after taking into consideration proportional differences in population, showed that particular types of crime were more prominent in the Encounter model in the order of one and one-half to 18 times that in the Enclosure model. Such preliminary analysis corroborates conclusive results of CPTED research for the social non-sustainability of the grid and difficulty / cost of surveillance for laneways as well as higher rate of accidents.

9) Impact of globalization on neighbourhood cohesion in Rosemary Heights.

Neighbourhood cohesion is diminishing in Rosemary Heights due to the impact of globalization. Referring to a typed letter attached to a received survey by mail from one of the residents, the issue of loss of sense of community was strongly voiced. The issue raised was the phenomenon of absentee owners from mainland China who invested in buying real estate in the exclusive neighbourhood of Rosemary Heights and then rented the house to temporary residents. Renters did not communicate with original residents of the neighbourhood, did not maintain the outward appearance of the house (cutting the lawn), and stayed for a few months before the house was left vacant waiting for other renters. The resident pointed out that the issue was not social or racial diversity especially that original neighbourhood residents made sure to welcome newcomers to the neighbourhood irrespective of their diverse background. The issue was the high turnover and the presence of ‘unknown’ people in the neighbourhood who cared less for the overall physical look of the neighbourhood.

10) The social as an emancipation of the physical.

The neighbourhood, as a socio-physical entity, acts as – echoing Shilling’s (2005) perspective on the body – a source for the creation of social life, a location for the structural properties of society, and a vital means through which individuals are positioned and oriented towards society. Each of the four neighbourhoods conveyed an imaginary or an ideal form for residential development that relates the physical to the social. However, as Evan McKenzie argued, the North American suburb, in general, has fallen short of the garden suburb ideal by emphasizing the physical over and above the social or communal. Such a deviation between the physical and the social was, however, less pronounced in the case of Rosemary Heights where residents expressed themselves as a closely knit community. This research suggests that an important quality of space that needs to be fostered when designing a neighbourhood is the sense of enveloping space, a link that relates physical and economic gated-ness to affective and interactive dimensions of neighbourhood cohesion. Accordingly, such a quality of space is reflected in, and reinforced by, the psychological similarity among residents that affects the establishment of a sense of belonging as well as a sense of place attachment to a neighbourhood especially suburban neighbourhoods designed for a particular social category with expected and conformed cultural attitudes.

13.3 Revisiting the Research Questions

The answer to the main question for whether implicit gating in Western Canadian metropolitan areas contributed to a higher sense of neighbourhood cohesion among residents was confirmed by the research results and findings for the case studies in two Western Canadian metropolises. In general, the more the degree of implicit gating, the more residents enjoyed and exhibited a higher sense of neighbourhood cohesion. Physical, structural, and demographic

changes, however, bear upon such a formula and have affected the overall sense of neighbourhood cohesion in the case of Valley Ridge compared to Discovery Ridge or Rosemary Heights. As mentioned in the research limitations, generalization of the results is not possible for other Western Canadian metropolises given that Calgary and Vancouver are not typical metropolises.

The case studies showed that in as much as the degree of implicit gating led to the creation of a sense of enveloping space, in as much as the level of neighbourhood cohesion was raised among residents. Quantitatively, there was a moderate correlation that was statistically significant (at $p < .001$) between sense of enveloping space and neighbourhood cohesion as well as a statistically significant (at $p < .001$) correlation between enveloping space and each of the three subscales of cohesion. A scatterplot confirmed the existence of a linear relation and a simple linear regression indicated that enveloping space significantly predicted neighbourhood cohesion index scores and explained a significant proportion (17.7%) of the variance in neighbourhood cohesion scores. The linear relation is generally expressed by a line with a slope of 23°.

It is important to point that even though the concept of Enveloping Space is significantly correlated with Cohesion, the degree of explanation remains small (about 18%). Other variables or factors need to be taken into consideration to account for the majority (82%) of variation in Cohesion (at least in this study). Some of the variation could be attributed to hours actually spent in the neighbourhood depending on the daily schedule of residents. Other factors could be the degree of ethnic diversity of residents, the extent of family ties and friendships within the neighbourhood, the layout and frequency of nodes for social interaction and leisure activities, the services provided within the neighbourhood, the rate of crime, a common threat (e.g. natural disasters), the level of environmental pollution (ambient noise, air quality, cleanliness of storm

water ponds, etc.), driving behavior within the neighbourhood, and finally, physical characteristics of the neighbourhood such as overall area and population size, as well as overall integrity of the design of the built environment.

Thus, it should thus be acknowledged that Enveloping Space, though shown in this research to be important as a neighbourhood-level attribute, has nevertheless a *partial* relationship to Cohesion in such a way that urbanists need to consider other social, environmental, and physical factors that bear upon the sense of cohesion of residents.

13.3.1 Gender Differences

Neighbourhood effects on enveloping space by gender showed statistically significant differences between males and females in Discovery Ridge and, respectively, males and females in Valley Ridge. In addition, females in Discovery Ridge differed significantly from females in East Clayton in their sense of enveloping space.

Neighbourhood effects on cohesion by gender showed statistically significant differences between males and females in Discovery Ridge and, respectively, males and females in East Clayton.

13.3.2 Household Income Differences

Neighbourhood effects on enveloping space by household income showed statistically significant differences for the 60k-130k group between Discovery Ridge and East Clayton as well as marginally significant differences for the same group between Valley Ridge and each of Discovery Ridge and East Clayton.

Likewise, for the more-than-130k income group, statistically significant differences were found between Discovery Ridge and each of the other three neighbourhoods: Valley Ridge, East Clayton, and Rosemary Heights.

Neighbourhood effects on cohesion by household income showed statistically significant differences only for the more-than-130k income group between Discovery Ridge and each of the other three neighbourhoods: Valley Ridge, East Clayton, and Rosemary Heights.

13.3.3 Length of Residence Differences

Neighbourhood effects on enveloping space by length of residence showed statistically significant differences only for the over-10-yrs. group between Discovery Ridge and each of Valley Ridge and East Clayton.

Neighbourhood effects on cohesion by length of residence showed statistically highly significant differences for the over-10-yrs. group between East Clayton and each of the other three neighbourhoods: Valley Ridge, Discovery Ridge, and Rosemary Heights as well as marginal significance for the less-than-2 yrs. group between East Clayton and Discovery Ridge.

13.4 Affective and Interactive Dimensions of Neighbourhood Cohesion

Placing the dimension of monadic space vis-à-vis the construct of neighbourhood cohesion adds to both of its analytic dimensions: the interactive and affective. The interactive becomes part of the environment that surrounds the individual, by performing the interaction or activities visibly. Stated differently, social interaction is one way of imprint (or mimesis) towards forming norms and social culture. Likewise, the affective is also part of the environment as one appropriates the environment by a process of internalizing. That is, another way of imprint is the affective dimension and may be attained or increased by appropriation of space (e.g. by activities of walking in the neighbourhood). Walking is usually thought of in terms of physical and health benefits. The concepts of monadic and embodied space extend the meaning of walking to an appropriation of space, thus effectuating an imprint through the affective dimension of neighbourhood cohesion. Importantly, an alteration occurs at the exterior level (i.e. the process

of ex-forming or transformation) and also at the interior level (i.e. the process of in-forming or morphism⁴⁹). Arguably, the alteration is a result of processes of cognitive assimilation that may be qualified, after Jean Piaget, as longitudinal (diachronic), transversal (synchronic), and stratified (superposition). Importantly, the assimilation involves social and cultural adaptation; both of which are arguably a function of the inhabitation of space (cf. G. Bachelard's notion of inhabitation). Accordingly, there is a factor of time for the enveloping space to be embodied. There is thus a difference between monadic space and embodied space. The transfer and establishment of world views are an outcome of this process of ex-forming and informing. In other words, the neighbourhood and its physical characteristics shape the world view of its residents.

A dimension of space that qualifies such an environment can be called (en)veloptive (or simply veloptive) and is argued in this research to be contingent upon the number of access points to a neighbourhood. The quality of enveloping the environment essentially acts as a 'surrounding' but also contributes to the process of form-making that consists of recursive cycles of ex-forming and in-forming; recursive cycles analogous to the notion of 'causative formation' in studies of bio-morphogenesis. It may be instructive to understand the ex-forming and in-forming cycles through the 'embodied cognition' model where it is hypothesized that knowledge is rendered particular to a particular knower's embodiment, i.e. the very structure of reason is contingent upon one's embodiment (Krois et al., 2007).

⁴⁹ The notion of morphism is borrowed from the mathematical theory of Categories by Henriques and Ascher (1990). The distinction between morphism and transformation is that the former involves change of content while the latter involves change of form.

The physical structure of a space is important in so far as it affects ways of accessing a space (contingent upon degree of enveloping) and, in turn, ways of experiencing a space (contingent upon degree of enclosing). Such an understanding connects the perceptual realm of immediate perception with the cognitive realm of mediate cognition. The work of Kevin Lynch is a precursor in establishing that connection between the perceptual and the cognitive by explaining that the legibility of a city depends on the perceptual identification of five elements: nodes, districts, edges, paths, and landmarks. It can be similarly argued that the legibility of a neighbourhood depends on the presence, to a greater or lesser extent, of nodes, districts (meant here as identifiable areas within the neighbourhood), edges (a clear boundary for the neighbourhood), paths, and landmarks. Applying the basic elements of Lynch for a legible neighbourhood definitely impacts on ease of orientation within the neighbourhood as well as upon making the physical structure and form of the neighbourhood memorable to its inhabitants / residents. The important role of memory (cf. Henri Bergson) cannot be overstated in terms of influencing the creativity of residents in the neighbourhood. There is nonetheless a lack of empirical research relating memory to creativity with respect to the physical structure and form of a neighbourhood or city.

Such connections between the perceptual and the conceptual as well as between memory and creativity fade away when urban planners advocate, almost in a symbolically violent way, a non-hierarchical open grid street pattern to increase connectivity and flexibility (or resilience) for future redevelopment at the expense of ease of orientation, social aspects such as appropriation of space, as well as cultural and cognitive aspects that impact upon the creative function of inhabitants. Cultural geographers and social psychologists have long been calling for such important connections to be made.

13.5 Political and Economic Nuances

From an urban planner's perspective, this research raises several political and economic nuances associated with the design of neighbourhoods particularly in regards to the aspect of neighbourhood cohesion of residents. The first concerns the physical size of a neighbourhood and amenities or services to be included in the neighbourhood. It is generally acknowledged that the larger the size of a neighbourhood, the less neighbourhood cohesion among residents. However, from an economic point of view, there are population thresholds for including amenities such as an elementary school within a neighbourhood. The neighbourhood unit concept included an elementary school as the center of a neighbourhood and accessible for children walking to school. The demographics of neighbourhoods, however, change rapidly and the natural life cycle of an aging demographic threatens the viability for continued operation of an elementary school.

Case studies of this research such as Valley Ridge and Rosemary Heights already show signs of transformation into a full-fledged retirement community, rendering an elementary school gradually obsolete. It may be argued that a larger neighbourhood such as East Clayton is in a better position than other neighbourhoods to sustain capacity for elementary schools. The situation is compounded when residents of exclusive neighbourhoods opt for private schools, denomination-specific schools, or pursue other educational settings for their children. In the case of Discovery Ridge, the presence of a panoply of school options has also affected the neighbourhood cohesion of residents (as remarked by one interviewee) as children residing in the same neighbourhood attend different schools and parents within the neighbourhood attend different school events and meetings. In other words, the proximity of many schools was a divisive factor for the community.

Similarly, there is the issue of economics of provision of a local shopping center in the neighbourhood. With the dominance of big box retail, shopping malls, and gourmet restaurants, the local shopping center in a neighbourhood loses its viability as prices of daily items tend to be higher and choices tend to be limited. Even if particular services are available in the shopping center such as a barber shop, convenience store, or dry cleaning facility, such services may not necessarily be used by residents of the neighbourhood due to their daily routine of going to their workplace or weekly routines of shopping.

In addition, the location of services was pointed out as a differentiating factor between the single access neighbourhoods of Calgary. Locating services in the core of the community allows equal access by residents and may encourage walking to such services. This is the case in Discovery Ridge. However, in Valley Ridge, the peripheral location of services may impact upon the frequency of use of such services as well as impacting upon the effective functioning of the shopping center as a setting for social interaction. At the same time, locating services at the periphery speaks of the economics of catering to a wider demographic from other neighbourhoods. This is a negative aspect for the central location of services at the core of Discovery Ridge, especially in the case of being a single access neighbourhood, as it impacts on the profitability of store and office owners given that customers and clientele are in most cases limited to residents of the neighbourhood.

The second political and economic nuance concerns the quality of the neighbourhood and maintenance of that quality. Of the four cases studies, Discovery Ridge was the only neighbourhood that formed a homeowners' association (HOA). The HOA took over responsibility from the developer for the neighbourhood after a period of five years. The HOA raised the quality standards acceptable by the City particularly with respect to landscaping,

garbage collection, and snow removal. It is also an organized way of communicating with the City. From a political perspective, the HOA (having good relations with the alderman) was able to detract proposals from a developer to add a second entry point to the neighbourhood. By contrast, residents of Valley Ridge complained about the amateur role of their community association with respect to upkeep of the landscape and effective snow removal. Maintaining an aesthetic and safe environment definitely impacts upon property and real estate value of homes in the neighbourhood.

The third nuance concerns a physical aspect at the scale of the city. Semi-gated neighbourhoods definitely raise concerns of traffic that funnels to one artery or spine. Designing neighbourhoods as a tree structure lends itself to such a concern. Municipal planners argue that it is difficult to control speeding cars on such local arteries or spines which detract from an overall calm residential environment and also impacts on volume of traffic on highways. The solution of planners, from a theoretical standpoint, was to afford alternative routes out from the neighbourhood such that traffic does not funnel (or bottleneck) causing backlogs in other places with no options for steering away from the backlog. Concerns of municipal planners are from the vantage point of engineering and traffic concerns at the scale of the city. However, as this research has shown, providing many connections and through traffic in the neighbourhood impacts upon the social dimension of neighbourhood cohesion and sense of safety for children as well as appropriation of space within the neighbourhood. This research does not advocate a ‘one solution fits all’ approach but advocates planners to strike the correct balance between the grid pattern (encounter model) and the cul-de-sac (enclosure model) taking into consideration physical, social, cultural, economic, and political dimensions of neighbourhood design.

The fourth nuance concerns densification of neighbourhoods. Current trends in Vancouver and Surrey (and catching up in Calgary) are towards ground-oriented townhouse development rather than single family residences. This definitely makes more sense for developers in terms of economies of quantity and modularity in construction. As seen in the case studies, the development of townhouses in neighbourhoods such as Rosemary Heights has raised NIMBY-ism (Not In My Back Yard) especially that such development is happening at the expense of pristine natural environments. Moreover, issues of overcrowding of services were well voiced out by residents whether concerning the capacity of schools to enroll students or the availability of parking spaces in the case of East Clayton; not to mention issues of mixing different social categories and income groups such as different patterns of social activities, different physical and spatial needs, as well as different values, behaviours and cultural norms (apartment and townhouse residents different from single family ones).

The fifth nuance concerns the design of houses within the neighbourhood. A characteristic that differentiates the case of Discovery Ridge than Valley Ridge is in the variety of expression in the design of single family houses and their internal plans. The architectural design of houses and their variety, while at the same time maintaining a unity in the design of the residential environment, are argued to be important for establishing a memorable image of the neighbourhood, an aesthetic appreciation of the environment, and an in-forming process in terms of psychological experience as well as long term impacts upon the creativity of residents and their self-realization.

13.6 Recommendations

In light of the research results and key findings, several recommendations should be made. The first recommendation concerns the legibility of a neighbourhood. It is paramount for urban

planners to not only be cognizant of legibility of the city as advocated by Kevin Lynch but also apply his five elements (edges, nodes, paths, landmarks, and districts) at the scale of the neighbourhood. In a postmodern era where the spatial structure of cities is becoming more and more a mosaic (or a keno capitalism model), the contribution of Kevin Lynch (in his 1960 seminal work, *The Image of the City*) in relating the perceptual and conceptual experiences of inhabitants in a legible gestalt becomes all the more invaluable. This research suggested the importance, from a social perspective, of a legible neighbourhood especially in regards to a well-defined edge for a neighbourhood as well as clear and 'legible' entry points to the neighbourhood whether for single access neighbourhoods (such as cases in Calgary) or multiple access neighbourhoods (such as cases in Surrey). This research has also suggested the importance of having a focal point (that acts like a node) within a central location in the neighbourhood rather than along the periphery as would be dictated by sheer economics. In the cases of Calgary neighbourhoods, their edges were defined by natural boundaries such as a river or forest and there were clear entry points that signal a transition into a particular domain. The case of Discovery Ridge exhibited a higher sense of neighbourhood cohesion due in part to the central location of the shopping center than the case of Valley Ridge where the shopping center is peripheral.

The second recommendation concerns the size of the neighbourhood. It is accepted in the literature that the larger the size of a neighbourhood, the less the sense of cohesion among residents. Thus, from a social perspective, neighbourhoods should be planned for accommodating around 5,000 residents (which is what was suggested in the neighbourhood unit by Clarence Perry and Clarence Stein) rather than accommodating residents in the order of 14,000 where establishing a sense of cohesion becomes difficult.

The third recommendation concerns the internal pattern of streets and permeability of a neighbourhood. This research has suggested that the more a neighbourhood is permeable with through traffic routes and easy access by outsiders and free-riders, the more a neighbourhood is prone with more incidents of crime (e.g. assault and car theft), less sense of safety for children to play along busy streets, and less appropriation of public space by residents. Municipal and urban planners who are pursuing ideals and principles for a resilient, sustainable and connected residential environment should acknowledge that the grid, or modified grid, is not a “one solution fits all”. Current policy and trends among municipal planners in many Western countries has condemned the curvilinear pattern and enthroned the grid as a ‘naturally’ resilient structure for reasons of ease of land subdivision and future densification as well as physical extension of developments. Although this makes perfect sense from a developer or economic point of view, it disregards other important dimensions such as the perceptual (closed vistas, orientation, and visual memory), the social (neighbourhood cohesion and social control), the psychological (self-realization as well as creativity), and the cultural (common moral values), i.e. in short the reasons behind the morphological development of suburbs.

The fourth recommendation concerns the scale at which gated developments would be allowable. Current trends of development and urban policy in Surrey is to allow 200 m by 150 m parcels of land to be gated if desired by residents, usually for a strata development of townhouses, so as not have a physical impact on traffic flow. This research suggests that the sense of enveloping space is established more at the scale of the neighbourhood than a mere sense of enclosure at smaller scales which may not raise the sense of neighbourhood cohesion among residents.

The fifth recommendation concerns the mix of housing types. This research suggests that mixing housing types in a diverse way (such as the case of East Clayton in Surrey) had a negative outcome and the experiment of coach houses was discontinued. In addition, for future development in West Clayton, lot frontages were to be increased by two and a half feet. Packing houses of different types together may seem to make perfect economic sense as well as satisfy calls for social justice. However, in practice, different housing types accommodate socially and culturally different people. Residents with disparate needs, disparate values and disparate social comportment may have a reduced sense of tolerance especially when not comprehending the challenges of, for example, raising a family with young children.

The sixth recommendation concerns the synergy between a residential environment and residents of a neighbourhood. As Townshend (2002) showed, high levels of satisfaction were found for both groups of residents residing within and outside a GC. This research suggests in a similar way that neighbourhoods resonated with people's expectations, personalities and temperaments such that asymmetry in information on the housing market was not important as long as a neighbourhood resonated internally and externally with residents. The higher the resonance with the neighbourhood, the higher the satisfaction and sense of neighbourhood cohesion. Thus, neighbourhoods could be situated theoretically along a wide spectrum from a totally secluded one to a totally connected one. The more secluded ones would resonate with more introverted and 'suburban' personalities and the more connected ones would resonate with more extroverted and 'urban' personalities. Forcing one half of the spectrum on the other is argued here to be a form of symbolic violence. The synergy is not solely contingent upon the structural configuration of the neighbourhood but also on the physical, locational and situational configurations as the following recommendations allude to.

The seventh recommendation concerns the physical design and architectural style of the built environment within neighbourhoods. The aesthetics of the built environment has a bearing on informing residents and shaping their world views as well as their orientation in society. Again, this does not mean that the landscape needs to follow a French-style ‘manicured’ layout rather than an English-style ‘organic’ layout. Rather, a whole spectrum of landscape styles may be adopted with a variety commensurate with, and aesthetically satisfactory for, the type of residents within a neighbourhood. Prescriptive planning by-laws for a tree to be planted every so many metres does not contribute to an overall aesthetic statement for a neighbourhood nor does it necessarily imbue a neighbourhood with an identity. For instance, the abundance of parks within East Clayton definitely was an advantage to residents and, arguably, encouraged walking throughout the neighbourhood. However, the experience would have been more appreciated if, in addition to their functional role, the parks were also aesthetically stimulating and active rather than passive green areas.

A similar statement could be made for architectural styles of houses, townhouses, and apartment units. The importance of a designed environment with architectural elements that have sufficient variety (and unity) definitely impacts upon the perceptual, orientation, and aesthetic experience, which is suggested here to have long-term impacts on memory functions and creativity of residents.

The eighth recommendation concerns the importance of the locational situation of neighbourhoods. Not only does the structural configuration and internal structure of the neighbourhood matter, but also their relation at a wider scale to other neighbourhoods and other parts of the city or metropolitan area. Despite the relative seclusion of Discovery Ridge and Valley Ridge, the proximity of the downtown core was important to residents. At the same time,

it was important for residents that the location of their respective neighbourhoods maximized ease of commute to other parts of the city (for commute to work or travel by plane) as well as to recreational facilities and getaways such as mountain resorts. Connectivity as an ideal principle for sustainable development is encouraged. However, this need not necessarily translate into an internal grid structure at the scale of a neighbourhood. Rather, it is the subtle balance between creating a residential environment catering to basic social and psychological needs of residents while at the same time catering to logistic and physical needs at the wider scale of the city. This latter point raises the following recommendation.

The ninth recommendation concerns the change in the external situation as well as demographics of a neighbourhood. There is a natural life cycle of physical decline and an increasingly aging demographic that are already manifesting in some of the studied cases. Projects at the city scale such as ring roads, regional shopping centres, and extension of transit services definitely impact upon the continued vitality and social sustainability of a neighbourhood. In the case of Calgary, the extension of the west leg of the LRT (and the future west section of the ring road) has reduced the relative seclusion of Discovery Ridge vis-à-vis the city and may provide relief for the social isolation of suburban teenagers that may be otherwise 'locked' in the suburbs. Such projects would also have an impact on house prices by increasing demand due to ease of commute. A similar remark could be made for the future regional shopping centre close to Valley Ridge. Neighbourhood redevelopment is not a readily undertaken task. Notwithstanding, the re-engineering of the external situation of a neighbourhood may introduce a new vitality for, and re-definition of, the neighbourhood. Of course, some residents expressed drawbacks of such projects. Nevertheless, in the long term, from a neighbourhood redevelopment perspective, such projects may provide part of the solution to counteract decline.

Finally, the tenth recommendation concerns, to use Temkin and Rohe's (1998) term in their social capital model of neighbourhood development, the importance of the creation of a 'socio-cultural milieu' in order to stem the decline of neighbourhoods. This research suggests that an increase in the affective and interactive aspects of residents' sense of neighbourhood cohesion would gradually lead to fostering connections with a wider range of residents and establishing social connections and a social network that would function as a social safety net from financial downturns (e.g. economic recessions) or natural disasters (e.g. recent floods in Calgary) as well as maintain an active participation in social events, social committees, and, as the case may be, homeowners' association board, general assembly meeting, and committees.

13.7 Suggestions for Future Research

Future research is needed to balance the relentless pursuit of the new planning culture for implementing a grid pattern (encounter model) for neighbourhoods by acknowledging the advantages of the loop and cul-de-sac pattern (enclosure model) in terms of other economic, social and cultural perspectives. The widening of perspectives and enlarging of planning practitioners' understanding that the relation between the physical structure of suburban neighbourhoods and the social consequences of that form is not a simple one-to-one correspondence. The open grid does not necessarily imply, in a practical sense, choice of travel routes (especially when taking into consideration, for example, territorial behaviour) nor is the pattern necessarily an efficient way to move from point A to point B. The problems of the cul-de-sac model on the other hand seem to be related more to land use patterns and the physical design of the cul-de-sac itself. The way forward seems to create a hybrid model to make use of the social, cultural, and environmental advantages of the enclosure model as well as the physical and economic advantages of the encounter model. It has been suggested in this research that

commencing from the enclosure model may provide more gains than trying to adapt a neo-traditional model. Such a hybrid model should not be viewed as a new ‘cookie-cutter’ pattern for suburbs; rather, it should help in defining suburban neighbourhoods as ‘semi-urban’ autonomous entities that are unique, not by serendipity, but by design.

Future research is needed to understand how to undertake the difficult task of neighbourhood design and neighbourhood redevelopment, not solely from a physical design exercise but also from a social and cultural standpoint. Although a hybrid ‘enclosure-encounter’ model sheds some light on the way forward, the task of neighbourhood design and redevelopment needs to be framed from the beginning as a task for social sustainability in mind, parallel to environmental, governance, and economic sustainability. Neighbourhoods undergo a life cycle of physical decline and aging. Research is needed to evaluate the resilient capacity of different neighbourhood designs to undergo redevelopment and how to gradually transform them, if the case may be, into retirement communities. In other words, how to facilitate aging in place.

Also, future research is also needed to investigate the difficult link between the perceptual and the conceptual especially in regards to impacts of the physical environment and structural configuration on memory and creativity. This is the least link to be investigated by researchers except for some implications for research on long-term neighbourhood effects. However, a separate research agenda should, using longitudinal and diachronic studies, examine the effect of perceptual images of the neighbourhood (in terms of architecture quality, aesthetics of urban design strategies used, as well as degree and sequence of spatial enclosures within a neighbourhood) and the effect of physical structure (in terms of access configuration, nesting depth, vistas, and pathways) on the creative capacity of residents.

Lastly, and importantly, future research is needed to verify the application of the concept of enveloping space at various geographic scales, starting with the scale of city and its physical structure (e.g. entry points) to the scale of quadrants, sectors, communities, and neighbourhoods as well as the scale of different sub-areas, settings within a neighbourhood, and residential enclaves. In this research preliminary analysis for the case of Valley Ridge has not confirmed differences between sub-areas or residential enclaves in terms of cohesion or sense of enveloping space. There may be several reasons why that was the case. Although the concept of a monadic space theoretically assumes applicability *ad infinitum* whether at minute or large scales, there may be many factors that affect, on one hand, a consolidated sense of enveloping space or, on the other hand, a diffuse sense of enveloping space. Future research should definitely identify those factors as well as the significance of designing neighbourhoods to accelerate the process of body-shaping, social acceptance, shared norms, and even cultural adaptation.

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APPENDIX A: VALLEY RIDGE NEIGHBOURHOOD PROFILE TABLES

Data Source for Tables:

Statistics Canada. 2012. GeoSearch. 2011 Census. Statistics Canada Catalogue no. 92-142-XWE. Ottawa, Ontario.

Statistics Canada. 2013. National Household Survey (NHS) Profile. 2011 National Household Survey. Statistics Canada Catalogue no. 99-004-XWE. Ottawa. Released September 11, 2013.

A.1. POPULATION GROWTH

Census Year	2001	2006	2011	Percentage increase (2006 to 2011)
Valley Ridge	3,105	4,480	5,055	12.83%

A.2. POPULATION BY AGE GROUP AND GENDER

Age	Year	Valley Ridge				City of Calgary	
		Male	Female	Number	Percentage (%)	Number	Percentage (%)
0-4	2001	145	160	305	9.82	53,455	6.14
	2006	235	195	430	9.60	59,685	6.09
	2011	185	185	370	7.30	80,860	6.66
5-14	2001	220	190	410	13.20	115,940	13.31
	2006	280	275	555	12.39	118,540	12.10
	2011	345	350	695	13.71	141,715	11.67
15-19	2001	105	65	170	5.48	59,005	6.77
	2006	115	115	230	5.13	65,710	6.71
	2011	170	125	295	5.82	75,200	6.19
20-39	2001	535	555	1,090	35.10	292,140	33.54
	2006	550	690	1,240	27.68	319,710	32.33
	2011	485	580	1,065	21.01	379,340	31.23
40-59	2001	550	510	1,060	34.14	246,705	28.32
	2006	765	690	1,455	32.48	292,740	29.89
	2011	885	895	1,780	35.11	361,560	29.76
60-74	2001	70	85	155	4.99	74,175	8.51
	2006	180	185	365	8.15	85,680	8.75
	2011	315	305	620	12.23	121,720	10.02
75+	2001	15	0	15	0.48	29,715	3.41
	2006	90	130	220	4.91	40,415	4.13
	2011	95	150	245	4.83	54,435	4.48

A.3. MARITAL STATUS

Population	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Population 15+	2001	2,385	100	701,740	100
	2006	3,490	100	801,270	100
	2011	4,000	100	992,270	100
Never Legally Married	2001	445	18.66	188,000	26.79
	2006	705	20.20	219,360	27.38
	2011	755	18.88	286,320	28.86
Common Law Relationship	2001	135	5.66	56,140	8.00
	2006	195	5.59	66,265	8.27
	2011	215	5.38	82,915	8.36
Legally Married	2001	1,620	67.92	353,370	50.36
	2006	2,230	63.90	398,250	49.70
	2011	2,665	66.63	499,685	50.36
Separated	2001	40	1.68	20,940	2.98
	2006	45	1.29	22,325	2.79
	2011	60	1.50	23,405	2.36
Divorced	2001	120	5.03	56,205	8.01
	2006	160	4.58	63,725	7.95
	2011	145	3.63	61,865	6.23
Widowed	2001	25	1.05	27,085	3.86
	2006	155	4.44	31,345	3.91
	2011	160	4.00	38,075	3.84

A.4. MOBILITY OF POPULATION

Population	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Movers 5+ yr.	2001	2,205	78.61	446,405	54.60
	2006	2,275	56.17	480,650	52.27
	2011	1,515	33.55	471,025	46.64
Non-movers 5+ yr.	2001	600	21.39	371,150	45.40
	2006	1,775	43.83	438,950	47.73
	2011	3,000	66.45	538,875	53.36

A.5. FAMILIES

Population	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Total Census Families	2001	1,005	100	238,705	100
	2006	1,370	100	268,845	100
	2011	1,525	100	296,425	100
Married Couples	2001	880	87.56	174,540	73.12
	2006	1,195	87.23	195,960	72.89
	2011	1,300	85.25	215,755	72.79
Common Law Relationship	2001	70	6.97	28,035	11.74
	2006	100	7.30	33,115	12.32
	2011	110	7.21	37,600	12.68
Single Parent	2001	55	5.47	36,135	15.14
	2006	75	5.47	39,770	14.79
	2011	115	7.54	43,070	14.53

A.6. SOCIAL ISOLATION

Population	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Total Persons Living Alone	2001	80	2.57	79,165	9.10
	2006	115	2.66	99,415	10.17
	2011	170	3.46	110,000	10.16
Seniors Living Alone	2001	0	0.00	19,855	26.26
	2006	30	12.50	23,145	26.10
	2011	45	10.59	24,760	24.80
Persons Who Speak Neither English or French	2001	10	0.32	15,890	1.82
	2006	25	0.56	20,590	2.10
	2011	30	0.59	25,425	2.34

A.7. DIVERSITY

Population	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Aboriginal Population	2001	20	0.64	19,760	2.27
	2006	155	3.46	24,420	2.49
	2011	175	3.56	28,905	2.67
Immigrant Population	2001	435	14.01	190,140	21.83
	2006	850	18.97	242,750	24.78
	2011	860	21.42	298,820	27.61
Visible Minority Population	2001	240	7.73	162,905	18.70
	2006	670	14.96	232,460	23.73
	2011	715	14.53	325,390	30.07

A.8. EDUCATION

Population (aged 25-64)	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
No Certificate, Diploma or Degree	2001	205	9.32	99,945	15.55
	2006	80	2.99	63,960	11.25
	2011	50	1.80	58,165	9.04
High School Diploma	2001	210	9.55	68,195	10.61
	2006	400	14.95	125,865	22.13
	2011	410	14.75	135,325	21.03
Trade Certificate	2001	255	11.59	75,300	11.72
	2006	165	6.17	51,130	8.99
	2011	180	6.47	54,205	8.42
College Diploma	2001	555	25.23	160,380	24.95
	2006	610	22.80	117,110	20.59
	2011	755	27.16	127,630	19.83
Below Bachelor's Degree	2001	175	7.95	59,010	9.18
	2006	150	5.61	32,365	5.69
	2011	155	5.58	37,545	5.83
Bachelor's Degree	2001	800*	36.36*	150,710*	23.45*
	2006	800	29.91	123,335	21.69
	2011	800	28.78	157,275	24.44
Above Bachelor Degree	2001	*	*	*	*
	2006	470	17.57	54,955	9.66
	2011	430	15.47	73,385	11.40

*In 2001 Census, bachelor degree and above are counted together

A.9. OCCUPATION

Occupation	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Management	2001	365	18.91	61,895	11.77
	2006	450	17.34	64,820	10.73
	2011	450	16.67	72,585	11.23
Business, Finance, and administration	2001	480	24.87	106,005	20.16
	2006	510	19.65	121,920	20.18
	2011	580	21.48	122,555	18.96
Natural and Applied Sciences	2001	265	13.73	55,355	10.53
	2006	400	15.41	67,885	11.24
	2011	375	13.89	77,990	12.06
Health Occupations	2001	120	6.22	24,035	4.57
	2006	235	9.06	30,635	5.07
	2011	220	8.15	36,665	5.67
Occupations in education, law and government	2001	165	8.55	36,735	6.99
	2006	205	7.90	44,520	7.37
	2011	340	12.59	63,930	9.89
Occupation in art, culture, recreation, sport	2001	60	3.12	14,610	2.78
	2006	70	2.70	18,005	2.98
	2011	85	3.15	16,400	2.54
Sales and Service Occupations	2001	315	16.32	122,960	23.38
	2006	450	17.34	137,410	22.74
	2011	445	16.48	143,640	22.22
Trades, Transport, and Equipment	2001	115	5.96	72,355	13.76
	2006	215	8.29	86,065	14.24
	2011	135	5.00	88,890	13.75
Natural resources, and agriculture	2001	25	1.30	8,085	1.54
	2006	40	1.54	9,810	1.62
	2011	50	1.85	8,720	1.35
Manufacturing and utilities	2001	20	1.04	19,640	3.73
	2006	20	0.77	18,370	3.04
	2011	20	0.74	15,090	2.33

A.10. AVERAGE AND MEDIAN HOUSEHOLD INCOME

	Year	Valley Ridge	City of Calgary	Percentage higher
Average Household Total Income	2001	117,782	72,663	62.09
	2006	165,249	95,620	72.82
	2011	167,992	109,698	53.14
Median Household Total Income	2001	104,947	57,879	81.32
	2006	123,903	67,238	84.28
	2011	144,800	81,256	78.20

A.11. TENURE

Population	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Owned	2001	1,045	98.58	230,820	69.32
	2006	1,455	97.98	280,085	72.80
	2011	1,665	97.94	306,740	72.44
Rented	2001	15	1.42	102,135	30.68
	2006	30	2.02	104,660	27.20
	2011	35	2.06	116,675	27.56

A.12. DWELLING UNITS

Type	Year	Valley Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Single Detached	2001	1,010	95.73	198,395	59.59
	2006	1,415	95.29	222,430	57.81
	2011	1,625	95.59	248,755	58.75
Semi-Detached	2001	35	3.32	20,705	6.22
	2006	0	0.00	22,130	5.75
	2011	0	0.00	25,495	6.02
Townhouse	2001	0	0.00	30,945	9.29
	2006	70	4.71	34,835	9.05
	2011	75	4.41	37,400	8.83
Duplex	2001	0	0.00	11,315	3.40
	2006	0	0.00	16,300	4.24
	2011	5	0.29	16,655	3.93
Apt > 5 storeys	2001	0	0.00	24,045	7.22
	2006	0	0.00	26,075	6.78
	2011	0	0.00	29,485	6.96
Apt < 5 storeys	2001	10	0.95	45,805	13.76
	2006	0	0.00	60,850	15.82

	2011	0	0.00	63,535	15.01
Other single-attached	2001	0	0.00	205	0.06
	2006	0	0.00	125	0.03
	2011	0	0.00	155	0.04
Movable dwelling	2001	0	0.00	1,545	0.46
	2006	0	0.00	2,000	0.52
	2011	0	0.00	1,935	0.46
Total	2001	1,055	100	332,960	100
	2006	1,485	100	384,745	100
	2011	1,700	100	423,415	100

A.13. PERIOD OF CONSTRUCTION

Period of Construction	Valley Ridge		
	Number	Percentage (%)	Cumulative Percentage
Before 1960	0	0.00	0.00
1961 to 1980	10	0.56	0.56
1981 to 1990	10	0.56	1.13
1991 to 2000	1,005	56.75	57.88
2001 to 2005	455	25.69	83.57
2006 to 2011	291	16.43	100
Total number of occupied private dwellings	1,771	100	

APPENDIX B: DISCOVERY RIDGE NEIGHBOURHOOD PROFILE TABLES

B.1. POPULATION GROWTH

Census Year	2001	2006	2011	Percentage increase (2006 to 2011)
Discovery Ridge	325	3,325	4,398	32.27%

B.2. POPULATION BY AGE GROUP

Age	Year	Discovery Ridge				City of Calgary	
		Male	Female	Number	Percentage (%)	Number	Percentage (%)
0-4	2001	20	10	30	9.23	53,455	6.14
	2006	195	140	335	10.08	59,685	6.09
	2011	185	170	360	8.17	80,860	6.66
5-14	2001	25	10	35	10.77	115,940	13.31
	2006	280	255	535	16.09	118,540	12.10
	2011	410	355	750	17.03	141,715	11.67
15-19	2001	0	15	15	4.62	59,005	6.77
	2006	95	90	185	5.56	65,710	6.71
	2011	165	105	270	6.13	75,200	6.19
20-39	2001	50	50	100	30.77	292,140	33.54
	2006	420	540	960	28.87	319,710	32.33
	2011	465	555	1,025	23.27	379,340	31.23
40-59	2001	65	50	115	35.38	246,705	28.32
	2006	565	515	1,080	32.48	292,740	29.89
	2011	790	780	1,570	35.64	361,560	29.76
60-74	2001	10	20	30	9.23	74,175	8.51
	2006	120	90	210	6.32	85,680	8.75
	2011	150	185	350	7.95	121,720	10.02
75+	2001	0	0	0	0.00	29,715	3.41
	2006	10	10	20	0.60	40,415	4.13
	2011	45	45	80	1.82	54,435	4.48

B.3. MARITAL STATUS

Population	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Population 15+	2001	265	100	701,740	100
	2006	2,460	100	801,270	100
	2011	3,285	100	992,270	100
Never Legally Married	2001	55	20.75	188,000	26.79
	2006	505	20.53	219,360	27.38
	2011	735	22.37	286,320	28.86
Common Law Relationship	2001	0	0.00	56,140	8.00
	2006	130	5.28	66,265	8.27
	2011	200	6.09	82,915	8.36
Legally Married	2001	200	75.47	353,370	50.36
	2006	1,575	64.02	398,250	49.70
	2011	2,070	63.01	499,685	50.36
Separated	2001	0	0.00	20,940	2.98
	2006	55	2.24	22,325	2.79
	2011	55	1.67	23,405	2.36
Divorced	2001	10	3.77	56,205	8.01
	2006	150	6.10	63,725	7.95
	2011	160	4.87	61,865	6.23
Widowed	2001	0	0.00	27,085	3.86
	2006	45	1.83	31,345	3.91
	2011	65	1.98	38,075	3.84

B.4. MOBILITY OF POPULATION

Population	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Movers 5+ yr.	2001	305	100	446,405	54.60
	2006	2,680	89.63	480,650	52.27
	2011	2,015	49.88	471,025	46.64
Non-movers 5+ yr.	2001	0	0	371,150	45.40
	2006	305	10.20	438,950	47.73
	2011	2,025	50.12	538,875	53.36

B.5. FAMILIES

Population	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Total Census Families	2001	110	100	238,705	100
	2006	995	100	268,845	100
	2011	1,190	100	296,425	100
Married Couples	2001	100	90.91	174,540	73.12
	2006	845	84.92	195,960	72.89
	2011	1,020	85.71	215,755	72.79
Common Law Relationship	2001	10	9.09	28,035	11.74
	2006	65	6.53	33,115	12.32
	2011	95	7.98	37,600	12.68
Single Parent	2001	0	0.00	36,135	15.14
	2006	85	8.54	39,770	14.79
	2011	75	6.30	43,070	14.53

B.6. SOCIAL ISOLATION

Population	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Total Persons Living Alone	2001	10	3.08	79,165	9.10
	2006	185	5.56	99,415	10.17
	2011	380	8.65	110,000	10.16
Seniors Living Alone	2001	0	0.00	19,855	26.26
	2006	15	10.71	23,145	26.10
	2011	40	15.69	24,760	24.80
Persons Who Speak Neither English or French	2001	0	0.00	15,890	1.82
	2006	35	1.05	20,590	2.10
	2011	35	0.80	25,425	2.34

B.7. DIVERSITY

Population	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Aboriginal Population	2001	0	0.00	19,760	2.27
	2006	20	0.60	24,420	2.49
	2011	50	1.12	28,905	2.67
Immigrant Population	2001	105	32.31	190,140	21.83
	2006	545	16.39	242,750	24.78
	2011	1,030	23.12	298,820	27.61
Visible Minority Population	2001	35	10.77	162,905	18.70
	2006	420	12.63	232,460	23.73
	2011	1,020	22.87	325,390	30.07

B.8. EDUCATION

Population (aged 25-64)	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
No Certificate, Diploma or Degree	2001	0	0.00	99,945	15.55
	2006	65	3.21	63,960	11.25
	2011	40	1.54	58,165	9.04
High School Diploma	2001	15	6.12	68,195	10.61
	2006	185	9.14	125,865	22.13
	2011	320	12.31	135,325	21.03
Trade Certificate	2001	10	4.08	75,300	11.72
	2006	85	4.20	51,130	8.99
	2011	165	6.35	54,205	8.42
College Diploma	2001	60	24.49	160,380	24.95
	2006	345	17.04	117,110	20.59
	2011	425	16.35	127,630	19.83
Below Bachelor's Degree	2001	30	12.24	59,010	9.18
	2006	105	5.19	32,365	5.69
	2011	120	4.62	37,545	5.83
Bachelor's Degree	2001	130*	53.06*	150,710*	23.45*
	2006	760	37.53	123,335	21.69
	2011	985	37.88	157,275	24.44
Above Bachelor Degree	2001	*	*	*	*
	2006	480	23.70	54,955	9.66
	2011	545	20.96	73,385	11.40

*In 2001 Census, bachelor degree and above are counted together (total = 130)

B.9. OCCUPATION

Occupation	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Management	2001	40	18.18	61,895	11.77
	2006	420	21.76	64,820	10.73
	2011	510	22.32	72,585	11.23
Business, Finance, and administration	2001	40	18.18	106,005	20.16
	2006	380	19.69	121,920	20.18
	2011	400	17.51	122,555	18.96
Natural and Applied Sciences	2001	30	13.64	55,355	10.53
	2006	310	16.06	67,885	11.24
	2011	435	19.04	77,990	12.06
Health Occupations	2001	15	6.82	24,035	4.57
	2006	215	11.14	30,635	5.07
	2011	140	6.13	36,665	5.67
Occupations in education, law and government	2001	25	11.36	36,735	6.99
	2006	190	9.84	44,520	7.37
	2011	320	14.00	63,930	9.89
Occupation in art, culture, recreation, sport	2001	20	9.09	14,610	2.78
	2006	110	5.70	18,005	2.98
	2011	85	3.72	16,400	2.54
Sales and Service Occupations	2001	35	15.91	122,960	23.38
	2006	215	11.14	137,410	22.74
	2011	300	13.13	143,640	22.22
Trades, Transport, and Equipment	2001	20	9.09	72,355	13.76
	2006	50	2.59	86,065	14.24
	2011	95	4.16	88,890	13.75
Natural resources, and agriculture	2001	0	0.00	8,085	1.54
	2006	30	1.55	9,810	1.62
	2011	0	0.00	8,720	1.35
Manufacturing and utilities	2001	0	0.00	19,640	3.73
	2006	10	0.52	18,370	3.04
	2011	0	0.00	15,090	2.33

B.10. AVERAGE HOUSEHOLD INCOME

	Year	Discovery Ridge	City of Calgary	Percentage higher
Average Household Total Income	2001	141,285	72,663	94.44
	2006	194,226	95,620	103.12
	2011	193,091	109,698	76.02
Median Household Total Income	2001	128,844	57,879	122.61
	2006	143,441	67,238	113.33
	2011	134,226	81,256	65.19

B.11. TENURE

Population	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Owned	2001	115	100	230,820	69.32
	2006	1,135	96.19	280,085	72.80
	2011	1340	83.49	306,740	72.44
Rented	2001	0	0.00	102,135	30.68
	2006	45	3.81	104,660	27.20
	2011	265	16.51	116,675	27.56

B.12. DWELLING UNITS

Type	Year	Discovery Ridge		City of Calgary	
		Number	Percentage (%)	Number	Percentage (%)
Single Detached	2001	115	100	198,395	59.59
	2006	810	68.35	222,430	57.81
	2011	905	56.21	248,755	58.75
Semi-Detached	2001	0	0.00	20,705	6.22
	2006	120	10.13	22,130	5.75
	2011	105	6.52	25,495	6.02
Townhouse	2001	0	0.00	30,945	9.29
	2006	35	2.95	34,835	9.05
	2011	35	2.17	37,400	8.83
Duplex	2001	0	0.00	11,315	3.40
	2006	0	0.00	16,300	4.24
	2011	5	0.31	16,655	3.93
Apt > 5 storeys	2001	0	0.00	24,045	7.22

	2006	175	14.77	26,075	6.78
	2011	535	33.23	29,485	6.96
Apt < 5 storeys	2001	0	0.00	45,805	13.76
	2006	45	3.83	60,850	15.82
	2011	25	1.55	63,535	15.01
Other single-attached	2001	0	0.00	205	0.06
	2006	0	0.00	125	0.03
	2011	0	0.00	155	0.04
Movable dwelling	2001	0	0.00	1,545	0.46
	2006	0	0.00	2,000	0.52
	2011	0	0.00	1,935	0.46
Total	2001	115	100	332,960	100
	2006	1185	100	384,745	100
	2011	1610	100	423,415	100

B.13. PERIOD OF CONSTRUCTION

Period of Construction	Discovery Ridge		
	Number	Percentage (%)	Cumulative Percentage
Before 1960	0	0.00	0.00
1961 to 1980	0	0.00	0.00
1981 to 1990	0	0.00	0.00
1991 to 2000	115	7.28	7.28
2001 to 2005	1000	63.29	70.57
2006 to 2011	465	29.43	100
Total number of occupied private dwellings	1580	100	

APPENDIX C: EAST CLAYTON NEIGHBOURHOOD PROFILE TABLES

C.1. POPULATION GROWTH

Census Year	2001	2006	2011	Percentage increase (2006 to 2011)
East Clayton	1,776	4,132	14,034	239.64%

C.2. POPULATION BY AGE GROUP AND GENDER

Age	Year	East Clayton				City of Surrey	
		Male	Female	Number	Percentage (%)	Number	Percentage (%)
0-4	2001	35	35	70	3.95	23,475	6.75
	2006	185	175	360	8.69	24,550	6.22
	2011	780	715	1,495	10.64	29,160	6.23
5-14	2001	130	100	230	12.99	51,625	14.84
	2006	300	245	545	13.15	54,975	13.92
	2011	795	820	1,615	11.50	59,585	12.72
15-19	2001	80	70	150	8.47	24,745	7.11
	2006	135	145	280	6.76	28,250	7.15
	2011	330	320	650	4.63	33,130	7.08
20-39	2001	245	210	455	25.71	99,985	28.75
	2006	735	740	1,475	35.59	106,860	27.05
	2011	2,915	3,185	6,100	43.43	128,410	27.42
40-59	2001	275	285	560	31.64	96,930	27.87
	2006	550	535	1,085	26.18	116,745	29.56
	2011	1,605	1,610	3,215	22.89	135,725	28.99
60-74	2001	135	110	245	13.84	34,435	9.90
	2006	160	150	310	7.48	42,875	10.85
	2011	375	425	800	5.70	57,785	12.34
75+	2001	30	30	60	3.39	16,635	4.78
	2006	50	40	90	2.17	20,725	5.25
	2011	85	85	170	1.21	24,455	5.22

C.3. MARITAL STATUS

Population	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Population 15+	2001	1,470	100	272,725	100
	2006	3,240	100	315,450	100
	2011	10,925	100	379,500	100
Never Legally Married	2001	495	33.67	76,930	28.21
	2006	1,005	31.02	90,190	28.59
	2011	2,850	26.09	100,530	26.49
Common Law Relationship	2001	110	7.48	14,360	5.27
	2006	310	9.57	16,890	5.35
	2011	1,310	11.99	20,825	5.49
Legally Married	2001	660	44.90	139,730	51.23
	2006	1,580	48.77	161,445	51.18
	2011	5,650	51.72	210,295	55.41
Separated	2001	40	2.72	8,905	3.27
	2006	80	2.47	9,565	3.03
	2011	360	3.30	9,690	2.55
Divorced	2001	105	7.14	18,160	6.66
	2006	180	5.56	20,445	6.48
	2011	560	5.13	19,430	5.12
Widowed	2001	60	4.08	14,640	5.37
	2006	85	2.62	16,915	5.36
	2011	195	1.78	18,730	4.94

C.4. MOBILITY OF POPULATION

Population	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Movers 5+ yr.	2001	340	19.88	157,405	48.86
	2006	2,905	77.06	67,255	17.35
	2011	9,450	76.12	193,390	44.56
Non-movers 5+ yr.	2001	1,370	80.12	164,715	51.13
	2006	865	22.94	320,320	82.65
	2011	2,965	23.88	240,615	55.44

C.5. FAMILIES

Population	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Total Census Families	2001	505	100	97,875	100
	2006	1,220	100	111,760	100
	2011	3,990	100	131,065	100
Married Couples	2001	380	75.25	75,230	76.86
	2006	930	76.23	86,860	77.72
	2011	2,780	69.67	101,160	77.18
Common Law Relationship	2001	35	6.93	7,435	7.60
	2006	150	12.30	8,640	7.73
	2011	655	16.42	10,380	7.92
Single Parent	2001	90	17.82	15,210	15.54
	2006	140	11.47	16,260	14.55
	2011	555	13.91	19,525	14.90

C.6. SOCIAL ISOLATION

Population	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Total Persons Living Alone	2001	110	6.20	21,665	6.27
	2006	225	5.44	25,595	6.53
	2011	1,160	8.27	30,145	6.51
Seniors Living Alone	2001	35	14.29	8,050	22.18
	2006	25	10.64	8,995	20.71
	2011	70	12.61	9,680	18.09
Persons Who Speak Neither English or French	2001	10	0.56	15,110	4.37
	2006	25	0.60	21,485	5.47
	2011	200	1.42	26,650	6.38

C.7. DIVERSITY

Population	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Aboriginal Population	2001	115	6.48	6,900	2.00
	2006	175	4.23	7,630	1.94
	2011	495	3.53	13,305	2.87
Immigrant Population	2001	365	20.56	114,725	33.18
	2006	775	18.74	150,230	38.28
	2011	2,680	19.09	187,845	40.54
Visible Minority Population	2001	120	6.74	127,015	36.73
	2006	730	17.65	181,005	46.12
	2011	3,165	22.55	243,760	52.61

C.8. EDUCATION

Population (aged 25-64)	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
No Certificate, Diploma or Degree	2001	285	23.55	47,320	20.95
	2006	210	8.79	31,955	14.87
	2011	530	6.09	32,700	12.73
High School Diploma	2001	160	13.22	33,600	14.87
	2006	590	24.69	61,985	28.85
	2011	2,400	27.57	73,755	28.71
Trade Certificate	2001	230	19.01	31,270	13.84
	2006	345	14.44	24,015	11.18
	2011	960	11.03	23,630	9.20
College Diploma	2001	310	25.62	59,005	26.12
	2006	625	26.15	39,880	18.56
	2011	2,015	23.15	46,145	17.96
Below Bachelor's Degree	2001	85	7.02	21,030	9.31
	2006	145	6.07	14,825	6.90
	2011	880	10.11	19,720	7.68
Bachelor's Degree	2001	140*	11.57	33,685*	14.91
	2006	345	14.44	26,720	12.44
	2011	1,290	14.82	38,375	14.94
Above Bachelor Degree	2001	*	*	*	*
	2006	130	5.44	15,480	7.20
	2011	630	7.24	22,605	8.80

*In 2001 Census, bachelor degree and above are counted together

C.9. OCCUPATION

Occupation	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Management	2001	50	5.13	18,090	10.21
	2006	280	11.31	19,755	9.52
	2011	1,380	15.60	25,055	10.46
Business, Finance, and administration	2001	140	14.36	33,630	18.98
	2006	525	21.21	37,960	18.29
	2011	1,675	18.94	38,430	16.05
Natural and Applied Sciences	2001	35	3.59	8,795	4.96
	2006	95	3.84	10,460	5.04
	2011	490	5.54	12,560	5.24
Health Occupations	2001	20	2.05	8,560	4.83
	2006	135	5.45	11,060	5.33
	2011	500	5.65	14,390	6.01
Occupations in education, law and government	2001	50	5.13	10,125	5.72
	2006	190	7.68	11,640	5.61
	2011	1,125	12.72	22,500	9.40
Occupation in art, culture, recreation, sport	2001	15	1.54	3,925	2.22
	2006	95	3.84	4,205	2.03
	2011	420	4.75	5,145	2.15
Sales and Service Occupations	2001	260	26.67	44,680	25.22
	2006	530	21.41	53,100	25.58
	2011	1,575	17.81	59,595	24.89
Trades, Transport, and Equipment Operators	2001	220	22.56	31,515	17.79
	2006	465	18.79	39,600	19.08
	2011	1,430	16.17	44,130	18.43
Natural resources, and agriculture	2001	115	11.79	5,435	3.07
	2006	90	3.64	6,580	3.17
	2011	100	1.13	5,610	2.34
Manufacturing and utilities	2001	70	7.18	12,385	6.99
	2006	70	2.83	13,210	6.36
	2011	150	1.70	12,060	5.04

C.10. AVERAGE AND MEDIAN HOUSEHOLD INCOME

	Year	East Clayton	City of Surrey	Percentage higher
Average Household Total Income	2001	60,780	63,197	-3.82
	2006	86,961	73,552	18.23
	2011	89,776	82,789	8.44
Median Household Total Income	2001	57,307	53,957	6.21
	2006	76,093	60,168	26.47
	2011	81,749	67,702	20.75

C.11. TENURE

Population	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Owned	2001	450	76.92	82,695	71.46
	2006	1,245	87.99	98,655	75.23
	2011	4,180	80.46	111,660	73.05
Rented	2001	135	23.08	33,020	28.54
	2006	170	12.01	32,485	24.77
	2011	1,015	19.54	41,185	26.95

C.12. DWELLING UNITS

Type	Year	East Clayton		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Single Detached	2001	575	98.29	64,060	55.36
	2006	950	67.14	56,790	43.30
	2011	2,390	46.01	64,515	42.21
Semi-Detached	2001	5	0.85	3,175	2.74
	2006	0	0.00	3,505	2.67
	2011	50	0.96	3,345	2.19
Townhouse	2001	0	0.00	10,820	9.35
	2006	285	20.14	15,000	11.44
	2011	1,995	38.40	20,900	13.67
Duplex	2001	5	0.85	13,385	11.57
	2006	95	6.71	23,320	17.78
	2011	275	5.29	27,410	17.93
Apt > 5 storeys	2001	0	0.00	2,665	2.30
	2006	0	0.00	2,610	1.99

	2011	60	1.15	3,800	2.49
Apt < 5 storeys	2001	0	0.00	19,770	17.09
	2006	85	6.01	28,050	21.39
	2011	410	7.89	31,345	20.51
Other single-attached	2001	0	0.00	170	0.15
	2006	0	0.00	160	0.12
	2011	10	0.19	100	0.07
Movable dwelling	2001	0	0.00	1,665	1.44
	2006	0	0.00	1,705	1.30
	2011	5	0.10	1,440	0.94
Total	2001	585	100	115,710	100
	2006	1,415	100	131,140	100
	2011	5,195	100	152,855	100

C.13. PERIOD OF CONSTRUCTION

Period of Construction	East Clayton		
	Number	Percentage (%)	Cumulative Percentage
Before 1960	130	2.51	2.51
1961 to 1980	245	4.73	7.23
1981 to 1990	70	1.35	8.58
1991 to 2000	50	0.96	9.55
2001 to 2005	1,060	20.44	29.99
2006 to 2011	3,630	70.01	100
Total number of occupied private dwellings	5,185	100	

APPENDIX D: ROSEMARY HEIGHTS NEIGHBOURHOOD PROFILE TABLES

D.1. POPULATION GROWTH

Census Year	2001	2006	2011	Percentage increase (2006 to 2011)
Rosemary Heights	1,589	5,881	6,910	17.50%

D.2. POPULATION BY AGE GROUP AND GENDER

Age	Year	Rosemary Heights				City of Surrey	
		Male	Female	Number	Percentage (%)	Number	Percentage (%)
0-4	2006	250	225	475	8.11	24,550	6.22
	2011	240	250	490	7.09	29,160	6.23
5-14	2006	380	405	745	12.71	54,975	13.92
	2011	525	465	990	14.32	59,585	12.72
15-19	2006	175	170	345	5.89	28,250	7.15
	2011	200	230	430	6.22	33,130	7.08
20-39	2006	740	865	1,605	27.39	106,860	27.05
	2011	675	780	1,445	20.90	128,410	27.42
40-59	2006	870	945	1,815	30.97	116,745	29.56
	2011	1,020	1,140	2,165	31.31	135,725	28.99
60-74	2006	325	305	630	10.75	42,875	10.85
	2011	455	480	940	13.60	57,785	12.34
75+	2006	90	155	245	4.18	20,725	5.25
	2011	170	285	455	6.58	24,455	5.22

D.3. MARITAL STATUS

Population	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Population 15+	2006	4,635	100	315,450	100
	2011	5,430	100	379,500	100
Never Legally Married	2006	1,020	22.01	90,190	28.59
	2011	1,025	18.88	100,530	26.49
Common Law Relationship	2006	260	5.61	16,890	5.35
	2011	290	5.34	20,825	5.49
Legally Married	2006	2,850	61.49	161,445	51.18
	2011	3,510	64.64	210,295	55.41
Separated	2006	80	1.73	9,565	3.03
	2011	105	1.93	9,690	2.55
Divorced	2006	220	4.75	20,445	6.48
	2011	215	3.96	19,430	5.12
Widowed	2006	205	4.42	16,915	5.36
	2011	285	5.25	18,730	4.94

D.4. MOBILITY OF POPULATION

Population	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Movers 5+ yrs.	2006	4,480	85.01	67255	17.35
	2011	2,600	42.28	193,390	44.56
Non-movers 5+ yrs.	2006	790	14.99	320,320	82.65
	2011	3,550	57.72	240,615	55.44

D.5. FAMILIES

Population	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Total Census Families	2006	1,800	100	111,760	100
	2011	2,045	100	131,065	100
Married Couples	2006	1,510	83.89	86,860	77.72
	2011	1,685	82.4	101,160	77.18
Common Law Relationship	2006	130	7.22	8,640	7.73
	2011	145	7.09	10,380	7.92
Single Parent	2006	160	8.89	16,260	14.55
	2011	215	10.51	19,525	14.9

D.6. SOCIAL ISOLATION

Population	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Total Persons Living Alone	2006	185	3.23	25,595	6.53
	2011	240	3.62	30,145	6.51
Seniors Living Alone	2006	35	8.05	8,995	20.71
	2011	70	9.86	9,680	18.09
Persons Who Speak Neither English or French	2006	110	1.92	21,485	5.47
	2011	165	2.49	26,650	6.38

D.7. DIVERSITY

Population	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Aboriginal Population	2006	120	2.09	7,630	1.94
	2011	115	1.73	13,305	2.87
Immigrant Population	2006	1,555	27.11	150,230	38.28
	2011	1,750	26.38	187,845	40.54
Visible Minority	2006	1,250	21.80	181,005	46.12
	2011	1,645	24.79	243,760	52.61

D.8. EDUCATION

Population (aged 25-64)	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
No Certificate, Diploma or Degree	2006	130	3.80	31,955	14.87
	2011	50	1.34	32,700	12.73
High School Diploma	2006	740	21.64	61,985	28.85
	2011	775	20.75	73,755	28.71
Trade Certificate	2006	230	6.73	24,015	11.18
	2011	215	5.76	23,630	9.2
College Diploma	2006	660	19.3	39,880	18.56
	2011	870	23.29	46,145	17.96
Below Bachelor's Degree	2006	325	9.50	14,825	6.9
	2011	415	11.11	19,720	7.68
Bachelor's Degree	2006	945	27.63	26,720	12.44
	2011	900	24.1	38,375	14.94
Above Bachelor Degree	2006	390	11.4	15,480	7.2
	2011	510	13.65	22,605	8.8

D.9. OCCUPATION

Occupation	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Management	2006	820	25.95	19,755	9.52
	2011	710	20.85	25,055	10.46
Business, Finance, and administration	2006	620	19.62	37,960	18.29
	2011	745	21.88	38,430	16.05
Natural and Applied Sciences	2006	270	8.54	10,460	5.04
	2011	255	7.49	12,560	5.24
Health Occupations	2006	215	6.80	11,060	5.33
	2011	225	6.61	14,390	6.01
Occupations in education, law and government	2006	215	6.80	11,640	5.61
	2011	375	11.01	22,500	9.4
Occupation in art, culture, recreation, sport	2006	75	2.37	4,205	2.03
	2011	110	3.23	5,145	2.15
Sales and Service Occupations	2006	655	20.73	53,100	25.58
	2011	670	19.68	59,595	24.89
Trades, Transport, and Equipment Operators	2006	205	6.49	39,600	19.08
	2011	195	5.73	44,130	18.43
Natural resources, and agriculture	2006	30	0.95	6,580	3.17
	2011	30	0.88	5,610	2.34
Manufacturing and utilities	2006	55	1.74	13,210	6.36
	2011	90	2.64	12,060	5.04

D.10. AVERAGE AND MEDIAN HOUSEHOLD INCOME

	Year	Rosemary Heights	City of Surrey	Percentage higher
Average Household Total Income	2006	152,180	73,552	106.90
	2011	137,406	82,789	65.97
Median Household Total Income	2006	120,254	60,168	99.86
	2011	108,669	67,702	60.51

D.11. TENURE

Population	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Owned	2006	1,905	96.95	98,655	75.23
	2011	2,150	94.51	111,660	73.05
Rented	2006	60	3.05	32,485	24.77
	2011	125	5.49	41,185	26.95

D.12. DWELLING UNITS

Type	Year	Rosemary Heights		City of Surrey	
		Number	Percentage (%)	Number	Percentage (%)
Single Detached	2006	1,190	60.56	56,790	43.30
	2011	1,290	56.70	64,515	42.21
Semi-Detached	2006	305	15.52	3,505	2.67
	2011	275	12.09	3,345	2.19
Townhouse	2006	450	22.90	15,000	11.44
	2011	605	26.59	20,900	13.67
Duplex	2006	15	0.76	23,320	17.78
	2011	65	2.86	27,410	17.93
Apt > 5 storeys	2006	0	0.00	2,610	1.99
	2011	0	0.00	3,800	2.49
Apt < 5 storeys	2006	0	0.00	28,050	21.39
	2011	40	1.76	31,345	20.51
	2006	0	0.00	160	0.12

Other single-	2011	0	0.00	100	0.07
Movable dwelling	2006	5	0.25	1,705	1.30
	2011	0	0.00	1,440	0.94
Total	2006	1,965	100	131,140	100
	2011	2,275	100	152,855	100

D.13. PERIOD OF CONSTRUCTION

Period of Construction	Rosemary Heights		
	Number	Percentage (%)	Cumulative Percentage
Before 1960	0	0.00	0.00
1961 to 1980	0	0.00	0.00
1981 to 1990	25	1.10	1.10
1991 to 2000	345	15.20	16.30
2001 to 2005	1,510	66.52	82.82
2006 to 2011	390	17.18	100
Total number of occupied private dwellings	2,270	100	

APPENDIX E: SURVEY AND INTERVIEW QUESTIONNAIRE

Assigned Participant Number:

Participant information:

Name:

Address:

Length of Residence in Current Neighbourhood:

less than 1 year 1 to 2 years 2 to 5 years
 5 to 8 years 8 to 10 years more than 10 years

Gender: male female

Household income bracket (\$/year):

Less than \$24,000 \$24,000-\$35,999 \$36,000-\$47,999
 \$48,000-\$59,999 \$60,000-\$74,999 \$75,000-\$89,999
 \$90,000-\$114,999 \$115,000-\$129,999 over \$130,000

E.1. SURVEY QUESTIONNAIRE

1. *Overall, I am very happy to be living in this neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

2. *I feel like I belong in this neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

3. *I visit my neighbours in their homes.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

4. *The friendships and associations I have with other people in my neighbourhood mean a lot to me.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

5. *I would like to move out of this neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

6. *If the people in my neighbourhood were planning something, I'd think of it as something "we" were doing rather than something "they" were doing.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

7. *If I needed advice about something I could go to someone in my neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

8. *I think I agree with most people in my neighbourhood about what is important in life.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

9. *I believe my neighbours would help me in an emergency.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

10. *I feel loyal to the people in my neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

11. *I borrow things and exchange favours with my neighbors.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

12. *I would be willing to work together with others on something to improve my neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

13. *I plan to remain a resident of this neighbourhood for a number of years.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

14. *I like to think of myself as similar to the people who live in this neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

15. *I rarely have neighbours over to my house to visit.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

16. *I have a strong feeling of fellowship for the people who live in this neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

17. *I regularly stop and talk with people in my neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

18. *Living in this neighbourhood gives me a sense of community.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

19. *People in my neighbourhood work together to keep children safe.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

20. *I consider my neighbourhood to be unique.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

21. *There are certain dress codes, social practices, or events that characterize my neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

22. *Having a well-maintained landscape is important to me.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

23. *It is easy to distinguish residents from non-residents who are walking in the neighbourhood.*

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

24. *I live in the neighbourhood of:*

E.2. INTERVIEW QUESTIONS FOR RESIDENTS

Assigned Participant Number:

Participant information:

Name:

Address:

Length of Residence in Current Neighbourhood:

less than 1 year 1 to 2 years 2 to 5 years
 5 to 8 years 8 to 10 years more than 10 years

Gender: male female

Household income bracket (\$/year):

Less than \$24,000 \$24,000-\$35,999 \$36,000-\$47,999
 \$48,000-\$59,999 \$60,000-\$74,999 \$75,000-\$89,999
 \$90,000-\$114,999 \$115,000-\$129,999 over \$130,000

- 1) How long have you been living in your current neighbourhood? Do you plan to remain as a resident of this neighbourhood for more than five years? Why or Why not?
- 2) Why did you choose to live in your current neighbourhood? Could you give three reasons in order of importance?
- 3) Do you think your neighbourhood has particular features that are not found in other neighbourhoods? If yes, could you state some of those features?
- 4) Are there any neighbourhoods that you perceive to be as appealing to live in as the neighbourhood you are currently living in? In what ways are the neighbourhoods equal?
- 5) Are there any neighbourhoods that you perceive to be superior to the neighbourhood you are currently living in? In what ways is the superior neighbourhood different?
- 6) Do you consider your neighbourhood affordable to people of different income categories (e.g. low income and middle income) or do you consider it an exclusive neighbourhood? Why?
- 7) As far as access to your neighbourhood is concerned, are there many entry points to your neighbourhood or only one or two?
 - a. Does this affect your sense of safety in the neighbourhood?
 - b. Does this affect your willingness to stop and talk with residents in the neighbourhood?

8) Would you say that your neighbourhood gives you a sense of community? If so, in which of the following ways:

a. The physical landscape is appealing.

Strongly disagree,	Disagree,	Not sure,	Agree,	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b. You feel safe.

Strongly disagree,	Disagree,	Not sure,	Agree,	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c. You feel attached to the neighbourhood.

Strongly disagree,	Disagree,	Not sure,	Agree,	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d. The residents are friendly and this contributes towards your sense of belonging.

Strongly disagree,	Disagree,	Not sure,	Agree,	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

e. You perceive other residents to be similar to you and you would agree with many residents on what is important in life.

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

f. The lifestyle, events, and activities in the neighbourhood encourage you to stop and talk with other residents in your neighbourhood.

Strongly disagree, Disagree, Not sure, Agree, Strongly agree

g. Other. Please elaborate.

.....

9) In your opinion, is your neighbourhood community or homeowner association dealing with residents' issues in an informal way?

10) Are there any other aspects of your neighbourhood that, in your opinion, positively impact the quality of your life here?

E.3. INTERVIEW QUESTIONS FOR RESIDENTS SERVING ON THE BOARD

Same as questions 1-8 above, plus:

9) Could you name a few of the issues that the Board is currently dealing with?

10) In your opinion, do you feel residents are supporting the decisions of the Board or have there been conflicts? How are these conflicts usually resolved?

11) Would you say that residents are actively involved in neighbourhood issues? What encourages or discourages their involvement?

E.4. INTERVIEW QUESTIONS FOR MUNICIPAL PLANNERS

Key informant:

Name and Position:

Gated neighbourhoods are defined as: residential neighbourhoods to which accessibility is reduced by means natural or physical barriers such as walls. Access to the neighbourhood is restricted by means of gates that require an identification code or entry pass to open the gates.

Semi-gated neighbourhoods are defined as: residential neighbourhoods to which accessibility is reduced by means of natural or physical barriers. However, access to the neighbourhood is not restricted; no identification code or entry pass is needed. Gates may be present to identify the neighbourhood.

Non-gated neighbourhoods are defined as: residential neighbourhoods that are easily accessible due to the presence of many access points to the neighbourhood.

- 1) Please identify some of the neighbourhoods in your municipality that are either gated or semi-gated?
- 2) In your opinion, does your municipality encourage or discourage the erection of walls and gates around neighbourhoods? Why?
- 3) Is there a rising trend for the proliferation of gated neighbourhoods in your municipality?
- 4) In your opinion, how successful have gated or semi-gated neighbourhoods been? What are some of the issues (e.g. physical access, social, political) that have arisen because of the gating of a neighbourhood?
- 5) Are there any municipal guidelines for planning gated neighbourhoods?
If not, how have some developments become gated if there were no explicit provisions for allowing or preventing such developments?
- 6) Are dwelling types for low-income residents mandated? Are there any plans to mandate a percentage of dwellings for low-income residents in upscale communities?
- 7) Do you think gated and semi-gated neighbourhoods are more effective at crime prevention than open neighbourhoods that have several access points and several roads with through traffic?
- 8) Are residents of gated or semi-gated neighbourhoods more proactive in approaching your municipality and cooperating with you on resolving neighbourhood issues such as landscaping and snow removal? Could you give an example?
- 9) Are property assessment values by your municipality estimated at a higher price for neighbourhoods that are gated or semi-gated?
- 10) In your opinion, are there any advantages (social or economic) of gating a neighbourhood?
- 11) In your opinion, are there any disadvantages (social or economic) of gating neighbourhoods?
- 12) Are there any comments you would like to add or issues you would like to highlight that were not mentioned in the interview?

APPENDIX F: CODE FOR INTERVIEW RESPONSES

- 0 = No features; as any other neighbourhood; a zero was added to the code if the response referred to an aspect in a negative sense
- 10 = Location
- 11 = easy access to downtown / proximity to work / easy access to major highways
 - 12 = proximity to mountains (or ocean) / 'not in the city' (close to city limits / national border)
 - 13 = close to river, river parks, walking and bike trails
 - 14 = close to services
 - Medical (hospital)
 - Recreational (COP)
 - Schools
 - Shopping Malls
 - Church
 - Fire station
 - Financial (Bank)
- 20 = Neighbourhood Characteristics
- 21 = single access / one entry point / no drive through
 - 22 = quiet neighbourhood / secluded
 - 23 = age and demography of the neighbourhood / neighbourliness / integrity of people
 - 24 = amenities within the neighbourhood
 - Walking paths
 - Parks / green spaces
 - Golf course
 - Natural amenity (forest)
 - Ice rink / hockey rink / tennis courts
 - Shops / dining within neighbourhood
- 25 = urban design
- Views / vistas
 - Quality of landscape (clean) and developed trees
 - Site topography
 - Wide streets / wide spacing of houses
 - Size of the neighbourhood
 - Architectural controls
 - Bus service
 - Walkable / sidewalks
 - Parking spaces (250 = not enough)
- 26 = low crime / sense of safety
- 27 = traffic on major road or boulevard within the neighbourhood
- 28 = similarity to previous neighbourhood of residence (280 = dissimilarity)
- 29 = uniqueness

30= House design and price

31 = Interior: open floor plan

32 = Purchase Price

33 = House size

34 = Exterior: architectural style

40 = Other

41 = close to family / friends (either within neighbourhood or surrounding neighbourhoods)

42 = house available

43 = planned events / community newsletter / strong community association

44 = retirement / empty nesters

45 = family circumstances

46 = natural catastrophe (e.g. flood)

47 = low turnover of residents and cohesion

48 = can't afford to stay

49 = used to live in the neighbourhood before

Particular Features

0 = not sure / no particular features

1 = No

2 = Yes

Affordable

0 = not sure

1 = Not affordable

10 = not for low income but affordable for middle income

2 = Yes

20 = not affordable for middle income but not exclusive

Affect sense of safety

1 = No

10 = No, but there is a counter aspect (live close to the single entry / fire services are close)

2 = Yes

20 = Yes, but there is a negative aspect (e.g. 'bottleneck' / egress)