

Alternatives to Sprawl: Promoting infill development and brownfield redevelopment in
Nanaimo, British Columbia

by

Steven Beasley
Bachelor of Arts, Vancouver Island University, 2009

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

MASTER OF ARTS

in the department of Geography

© Steven Beasley 2015
University of Victoria

All rights reserved. This thesis may not be reproduced in whole or in part, by photocopy
or other means, without the permission of the author.

Supervisory Committee

Alternatives to Sprawl: Promoting infill development and brownfield redevelopment in
Nanaimo

by

Steven Beasley
Bachelor of Arts, Vancouver Island University, 2009

Supervisory Committee

Dr. Lawrence McCann (Department of Geography)
Supervisor

Dr. Pamela Shaw (Department of Geography)
Departmental Member

Abstract

Supervisory Committee

Dr. Pamela Shaw, Department of Geography

Co-Supervisor

Dr. Lawrence McCann, Department of Geography

Co-Supervisor

Much has been written about both brownfield redevelopment and infill development as methods of improving the urban landscape. Barriers to these forms of urban and suburban development are all too often just superficially noted, and seldom subjected to critical analysis. Large metropolitan centres receive most mention; in fact, small, former industrial cities are rarely contemplated in the existing literature. To address shortcomings of critical analysis and the lack of attention on smaller cities, this study focuses on Nanaimo, British Columbia, a former coal mining and lumber processing community turned regional distribution and educational centre. The research is contextualized by a comprehensive review of the existing literature. Then, applying a qualitative research strategy, it was found through both a review of planning policies and in-depth interviews that Nanaimo was impacted differently than large metropolitan centres, and specifically in terms of the barriers that affect infill and brownfield redevelopment. As a result, Nanaimo suffers from additional economic challenges that render commonly-accepted strategies for encouraging infill and brownfield redevelopment less effective. Further, an examination of British Columbia's program that was designed to support increased levels of brownfield redevelopment revealed that the program is essentially ineffective. Provincial funding models designed to induce redevelopment passively prioritized sites with little or no contamination, offering little financial aid to remediate seriously contaminated brownfield sites.

Table of Contents

Supervisory Committee	ii
Abstract	iii
Table of Contents	iv
List of Figures	vi
Acknowledgments	vii
Prologue: History of Nanaimo’s Development	1
Chapter 1: Introduction	11
1.0 Challenging the Culture of Low Density Development in Nanaimo	11
2.0 Urban Reform and the Limits of Urban Containment	12
3.0 Purpose and Organization of this Thesis	14
4.0 Research Strategy	15
Chapter 2: Literature Review I – Infill Development	16
1.0 Introduction	16
2.0 Benefits of Infill Development	18
3.0 Barriers to Successful Infill Development	25
4.0 Summary and Analysis	28
Chapter 3: Literature Review II – Brownfield Redevelopment	30
1.0 Introduction	30
2.0 Context and Scholarship	31
3.0 Benefits and Barriers to Brownfield Redevelopment	37
4.0 Brownfield Public Policy and Incentive Programs	45
5.0 Neoliberalism and Brownfield Development	49
6.0 Summary and Analysis	52
Chapter 4: Provincial Context – Brownfield Redevelopment in British Columbia	54
1.0 Introduction	54
2.0 Origin of the BC Brownfields Renewal Strategy	54
3.0 Political Context and Purpose of the B.C. Brownfield Renewal Strategy	63
4.0 Brownfield Renewal Strategy Profile	68
5.0 Analysis and Discussion	77
Chapter 5: Examining the Study Area	83
1.0 Introduction	83
2.0 Local Government Structures in British Columbia	83
3.0 The Study Area and Context	86
4.0 Summary	95
Chapter 6: Infill Development and Brownfield Redevelopment in Nanaimo	98
1.0 Methodology	98
2.0 Results	100
3.0 Summary and Analysis	138
Chapter 7: Conclusion	149
1.0 Infill Development	149
2.0 Brownfield Redevelopment	153
3.0 Practical Suggestions for Moving Forward	156

4.0 Further Research	164
References	166
Appendix I - List of Interview Questions	178
Appendix II - List of Respondents	179

List of Figures

Figure 0.1: 1891 Map of Nanaimo and Area	5
Figure 0.2: Remains of the Morden Mine.....	7
Figure 0.3: No. 1 Esplanade Mine	7
Figure 2.1: Arial view of the Presidio, San Francisco, California, USA	19
Figure 2.2: Single Family Home with Suite	19
Figure 2.3: Suite Conversion	20
Figure 2.4: Townhouses.....	20
Figure 2.5: Mixed-use development	21
Figure 2.6: Large-scale multi-family	21
Figure 3.1: Typical abandoned gas station site	33
Figure 3.2: Typical abandoned industrial site.....	33
Figure 4.1: False Creek in 1969	57
Figure 4.2: Present-day False Creek	57
Figure 5.1: Map of the Regional District of Nanaimo	87
Figure 5.2: Chart of Regional Growth Strategy Relation to Legislation and Planning	95
Figure 6.1: Terminal Trench/Former Commercial Inlet	106
Figure 6.2: Canadian Pacific Lands	106
Figure 6.3: Size and extent of informally assessed Nanaimo brownfields	108
Figure 7.1: Turner Road Community Garden, Nanaimo	159
Figure 7.2: Former Gas Station Site, Oak and 23 rd , Vancouver	159
Figure 7.3: Interim use example, 2 nd and Yukon, Vancouver	160
Figure 7.4: Future brownfield example 1, Nanaimo	162
Figure 7.5: Future brownfield example 2, Nanaimo	162
Figure 7.6: Decommissioned mine site, Nanaimo River Road.....	163
Figure 7.7: Active mine site, Nanaimo River Road.....	163

Acknowledgments

I would like to thank Dr. Larry McCann for guiding me during the initial stages of my Masters program and for his insightful comments as my thesis research progressed. Special thanks go to Dr. Pamela Shaw for her mentorship and exemplary guidance in developing the research topic and for critically reviewing initial drafts, but especially for her consistent, unwavering encouragement and supportive friendship. I am indebted to those who took the time to participate in research interviews for sharing their knowledge, experience, and opinions. Finally, I would like to thank my family, friends, and employers for their flexibility, understanding, and support.

Prologue: History of Nanaimo's Development

This prologue details key events in the development of Nanaimo to enable the reader's understanding of the form and character of the city's current urban fabric.

In 1849 the Hudson's Bay Company (HBC) was granted jurisdiction over Vancouver Islandⁱ and at the time, little interest was taken in Nanaimo until the presence of coal deposits were brought to the attention of HBC officials by a local First Nations member (Gidley, 1978, Peterson, 2002). The growing demand for coal in the nineteenth century meant that HBC officials were eager to both find a source to satisfy local needs and for export to external markets (Peterson, 2002). A coal mining venture had previously been founded on Vancouver Islandⁱⁱ with little success, and colonial leaders were excited for another opportunity.

In just over two years mining began in the Nanaimo area without infrastructure or significant settlement. Early mining consisted mainly of local First Nations members identifying exposed coal seams to Company officials, and then harvesting the coal themselves to trade for HBC goods (Peterson, 2002). It was not until 1854 that large-scale mining began in earnest, with several sizable sites opening up in the following decade.ⁱⁱⁱ 1854 was also the year in which a treaty was signed with the local First Nation, the Snuneymuxw, in which rights to the area's coal were ceded in exchange for Snuneymuxw use of all unoccupied lands (Peterson, 2002).^{iv} By 1857 Nanaimo's population surpassed 530, with 132 settlers plus an indigenous population of

ⁱ The Company's agreement with the Crown was on the basis that it could retain 10% of funds earned from the sale of land and resources, provided the other 90% was reinvested in the development of local infrastructure (Peterson, 2002).

ⁱⁱ The first coal-mining venture on Vancouver Island was located near present-day Port MacNeil. It opened operations in 1846 but failed within the first decade due to labour conflict between management representatives and workers and settlers recruited to the operation (Peterson, 2002).

ⁱⁱⁱ One such mine was operated by Robert Dunsmuir who had secured a license from the Hudson's Bay Company to mine independently.

^{iv} The 1854 treaty with the Snuneymuxw is part of a small number of treaties negotiated by Hudson's Bay Company official James Douglas. The impetus for the treaty with Snuneymuxw was the need to secure rights to the coal deposits in and around Nanaimo, and settlement of the area by Europeans was not a chief concern to Douglas, who agreed to land grants for each Snuneymuxw family as part of the 1854 agreement (Peterson, 2002).

approximately 400 (Peterson, 2002). By 1860, less than ten years since the first mining began, the settlement had developed into a “small company town,” complete with sawmill, company farm, company store and company housing (Peterson, 2002, p. 71).

The Hudson’s Bay Company sold its Nanaimo operation to the Vancouver Coal Mining and Land Company, a corporation based in London, England, in 1861. The sale included 6,193 acres of land in the Nanaimo area, which consisted of lands adjacent to the ocean between Departure Bay and Chase River, as well as Newcastle, Protection and Cameron Islands^v (Peterson, 2002). Early development occurred around the original townsite, which was a rocky peninsula hardly recognizable today due to the amount of land infill that occurred in and around the old city area (Peterson, 2002). Even at this early stage of Nanaimo’s social and physical development, there was an economic divide in residential development with worker housing located in the southern neighbourhood, management and trades people living in the upper portion of downtown, and the higher class housing overlooking the town on Nob Hill and to the north in the Newcastle neighbourhood (Peterson, 2002).

The Vancouver Coal Mining and Land Company enjoyed a virtual monopoly during its early existence, but in the early 1870s two other mining operations were developed just beyond the Company’s Nanaimo lands. The Harewood Coal Company had acquired 8,962 acres of land directly west of Nanaimo near Chase River in the 1860s, though was not able to effectively mine the site until 1874 when an aerial tramway was constructed to move mined coal to the Nanaimo harbour (Peterson, 2002). The tramway proved difficult to maintain and the operation and lands were sold to the Vancouver Coal and Land Company in 1884 (Peterson, 2002). Former HBC employee Robert Dunsmuir founded the other competing operation approximately eight kilometers to the north of Nanaimo in 1873 (Gidley, 1978). Dunsmuir opened this new site, called Wellington, with capital raised from several navel officers stationed in Victoria, and the operation performed so well that Dunsmuir was able to buy out his partners within only ten years of its founding. This second operation and associated townsite resulted in the creation of a regular travel route between Nanaimo and Wellington.

^v The sale price for the Nanaimo operation was \$40,000 (Gidley, 1978).

“By 1874, Nanaimo was the chief coal producing region on the Pacific coast and the town grew rapidly as the coal was exploited on an ever-increasing scale” (Gidley, 1978, 20). The town’s population had increased to approximately 1,000 settlers of which 429 were directly employed in mining (Gidley, 1978). In addition to new coal developments, this era of Nanaimo’s development saw agricultural and logging expansion. Farming operations were founded in Cedar to the south of Nanaimo, in the Harewood area to the west, in the Wellington area to the North, and even on Gabriola Island to the east (Peterson, 2003). Logging operations occurred in and around the vast Nanaimo area during the summer months, aided by horses or oxen (Peterson, 2003). By the close of the decade Nanaimo was an incorporated municipality of 1500 residents supported by the coal mining, surrounded by agricultural operations, and with a fledgling logging industry (Peterson, 2002). Coal mining was the dominant industry in the region with three mine sites in Nanaimo, two in Chase River to the south, and two sites operated by Dunsmuir at Wellington and East Wellington (Peterson, 2002).

The 1880s and 1890s saw continued and substantial expansion in Nanaimo and the surrounding region. The Vancouver Coal and Land Company contracted an architect in London to lay out a street design based on the unique bowl-shaped topography of the hillside overlooking the Nanaimo harbour (Peterson, 2002) (Figure 0.1). Streets were designed to radiate from the downtown core up the hillside, with connecting cross streets to create a cobweb design. At the same time as Nanaimo was expanding, coal mining continued to extend beyond Nanaimo to new areas in the region. Protection Island, South Wellington, Cranberry, and Divers Lake all experienced new mining operations opening in the last 20 years of the century (Gidley, 1978; Peterson, 2003).

The Dunsmuir operation at Wellington had grown into a small town of 3,000 by the mid-1880s just as Nanaimo’s economy began to diversify (Gidley, 1978). The completion of the Esquimalt-Nanaimo Railway in 1886 opened up new opportunities, and by 1891 Nanaimo boasted a full-scale lumber mill, shipyard, brewery and tannery (Perry and Seager, 1997), as well as two large black powder plants (Peterson, 2003). With economic expansion came population growth; the Nanaimo area contained nearly 10,000

people by 1881, increasing to 18,229 in 1891, and 27,198 by 1901^{vi} (Belshaw, 1994). Gender imbalance was a common feature of rapidly growing industrial towns, and Nanaimo was no different (Belshaw, 1994), with a 2:1 ratio of men to women in 1891 (Perry and Seager, 1997).^{vii}

Despite the growth of the previous two decades, by the close of the 1890s the coal industry in Nanaimo was showing signs of weakness. Coal was no longer being mined for local use, with 80 percent of area coal going to buyers in the United States (Perry and Seager, 1997). Increasingly Nanaimo colliers faced competition from other coalfields closer to markets in Vancouver and California, and from the emergence of fuel oils as a replacement energy source (Gidley, 1978). To make matters worse, the cost, complexity and uncertainty of coal mining in Nanaimo was beginning to increase as the most accessible coal had already been harvested, and remaining seams were badly faulted (Peterson, 2003). The Vancouver Coal and Land Company ended the century by closing the majority of its mines, and turning its attention to land development (Peterson, 2003). The Company had begun to clear vast areas of the Harewood estate and sub-divide the property into five acre parcels for miners and their families (Peterson, 2003). Land totalling nearly 7,000 acres was offered for lease or purchase in an attempt to offset the impact of fluctuations in the coal market (Gidley, 1978) (Figure 0.1).

By 1900 the once thriving Dunsmuir operation at Wellington ran out of accessible coal and Dunsmuir was forced to move his operation south to the area now known as Extension, some twenty kilometers from its Wellington operation (Gidley, 1978). Just two years later the struggling Vancouver Coal and Land Company sold out its holdings to the Western Fuel Company, which by that point included quarry operations on Newcastle Island, Gabriola Island, and at Jack Point near Cedar (Peterson, 2003). Despite these setbacks to Nanaimo's primary industry, development continued to expand with new construction focused along Nanaimo's waterfront between 1900 and 1920 (Peterson, 2003). This development pattern was due, at least in part, to the thriving fishing industry

^{vi} Demographic statistics might be inaccurate due to "cavalier attitudes towards quantitative methods" (Belshaw, 1994:47).

^{vii} The gender imbalance in Nanaimo was skewed due to the extreme imbalance among Asian settlers, who were predominantly male (Belshaw, 1994).

Figure 0.1: 1891 Map of Nanaimo and Area



The map shows both Nanaimo and the Five Acres development that would become the Harewood neighbourhood. This map illustrates the extent of the commercial inlet, a tidal area that would be filled with coal slag and other infill. Image source: viHistory website, 2014.

that had arisen at the turn of the century: “In the early part of December 1909, 43 companies were in operation, employing 1,500. Wooden canneries crowded the waterways all along the shoreline of Departure Bay, Newcastle Island, and along Newcastle Passage” (Peterson, 2003, p. 170).^{viii}

Though new mines were opened in the areas surrounding Nanaimo in the 1920s and 1930s^{ix} (Gidley, 1978), the industry was in sharp decline. By 1941 only 6.2 percent of Nanaimo’s workers were involved in coal mining, down from 25.2 percent in 1921 and more than 40 percent prior to 1900 (Gidley, 1978). Though most mines closed down in the 1930s and 1940s (Stonebanks, 2000) (Figure 0.2), smaller-scale operations in outlying areas such as Extension, Cassidy, Lantzville and Nanoose remained in operation through the 1940s and 1950s (Peterson, 2006). The last of the large mines closed in 1953, and by 1961 mining accounted for less than 1 percent of the workforce. The outward shift of mining activities throughout the region during the industry’s decline resulted in a decentralization of the area’s population with a roughly equal division between the City of Nanaimo and surrounding mining communities (Gidley, 1978).

Coal mining activity had a profound impact on the development of Nanaimo’s downtown. As part of the mining process, millions of tons of rock debris, coal slag, and earth were used to fill the downtown harbour and surrounding intertidal zones (Stonebanks, 2000) (Figure 0.3). With the decline of the industry, and the creation of new land, Nanaimo’s downtown land base was open for new development that would repurpose the area. The first such project of note was the construction of the Malaspina Hotel on what had been a waterfront industrial site. The 86-room, seven-story hotel opened in 1927 and featured a banquet hall, palm room, and business lobby (Peterson, 2006). The hotel’s construction was funded in large part by direct citizen investment promoted by the promise of a modern facility for concerts and banquets, and an attraction to draw a “better class” of visitor (Peterson, 2006, p. 52). A second major waterfront

^{viii} Nanaimo’s fishing industry at the turn of the century included a small whaling station in the Hammond Bay area, which closed after only a short time in operation. The land was eventually sold to a land speculator (Peterson, 2003).

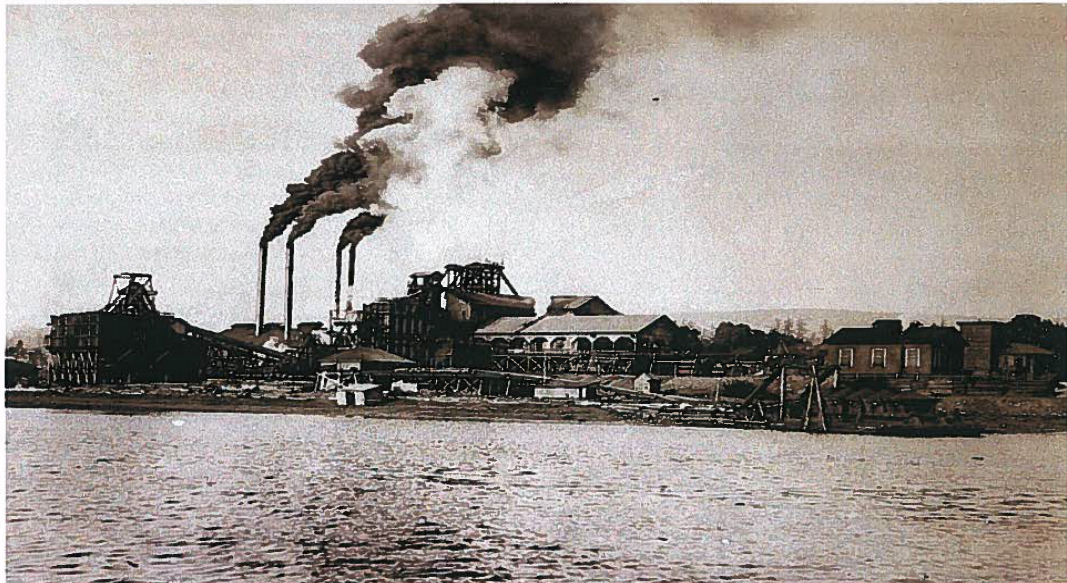
^{ix} As the major mines began to close in the 1930s, smaller operations were opened by private individuals. “Between 1930 and 1939, there were 19 small mines opened by private individuals....Another 12 operated between 1940 and 1950, and 10 between 1951 and 1957” (Peterson, 2006:87).

Figure 0.2: Remains of the Morden Mine



Like many other mines in the Nanaimo area, Morden Mine closed down in the 1930s. However, what makes Morden Mine unique is that the original mine structures remain to this day. Photo by author, 2015.

Figure 0.3: Esplanade No. 1 Mine



Esplanade No. 1 Mine

No. 1 mine was located right in the heart of the present day Old City neighbourhood of Nanaimo. Before its closure in 1938, this single site produced 18,000,000 tones of coal, and many more tons of rock fragments and slag, which were used to fill the commercial inlet and harbour (Lenyard, 1982). Photo source: Laynard, 1982.

industrial conversion occurred in 1938 when the Civic Arena was built on a “nine acre derelict waterfront lot covered in rusting machinery parts and old automobiles” (Peterson, 2006, p. 105).

Entering the 1950s, all of Nanaimo’s major commercial development was located in the downtown area (Peterson, 2006); however, this was about to change with the emergence of land speculation, mall development and, eventually, suburbanization. As entrepreneurs purchased farmland, forested areas and unoccupied lands between the City of Nanaimo and smaller, outlying former coal-mining villages, residential development and malls were constructed, and commercial development began to pull away from the original downtown. New developments of this era included Terminal Park Plaza, constructed in 1957, the Harewood Mall built in 1958, and Northbrook Mall, completed in 1965 (Peterson, 2006). The one and only mall development constructed within the City of Nanaimo during this era was Harbour Park Mall (Peterson, 2006).^x

Following on the heels of these commercial developments was a wave of higher value, suburban-style residential construction that was also intentionally distant from Nanaimo’s industrial downtown. One such example is the Cilaire development, constructed a short distance from the then newly-built Northbrook Mall, and “designed as an upper-class area, complete with elementary school, access to the beach, and lots of green space” (Peterson, 2006). With residential development infilling the areas around the new commercial developments, commercial developers pressed even further north in coming years with a second wave of mall developments coming some fifteen years after the Northbrook and Cilaire developments (Peterson, 2006).

By the 1970s Nanaimo’s once coal-dependent economy was focused on forestry and public sector employment.

“A 1973 study found that the forest products sector accounted for 23 percent of all employment in Nanaimo. An exactly equal proportion was employed in public administration; by governments, their agencies and other public services such as schools and hospitals” (Gidley, 1978:34).

^x To facilitate this development, the City needed to provide adequate parking for the newly auto-dependent population (Peterson, 2006), and filled in a portion of the downtown waterfront to provide the space required.

With a new economic direction and an increasing suburban population outside the City's boundaries, Nanaimo initiated a series of amalgamations in the early 1970s. By 1975 Nanaimo's "suburbs" included both the former Vancouver Coal and Land Company Five Acres development and the Dunsmuir-founded Wellington area. This move increased the physical size of the City to thirty-three square kilometers, and left the expanded municipality with scattered low-density development, widespread pockets of vacant lands, and a diverse and eccentric road network—all legacies of the coal mining settlements and associated early development patterns (Gidley, 1978).

Nanaimo's history as a mining town was key in shaping its development, and is the source of issues faced in the present day.

“Over a period of more than 70 years [mining companies] created several hundred acres of new land on former tidal flats, manufacturing valuable real estate for themselves, disposing of useless mine wastes and performing “public service” at one and the same time. It was a major undertaking; what is now Terminal Avenue, the main highway through [downtown] Nanaimo, used to be an inlet of the sea....The lumber assembly wharf, the CPR rail and passenger ferry slips, and the bus depot, the major downtown shopping center were all built upon coal mine fill” (Gidley, 1978:41-42).

These vast areas of contaminated and potentially contaminated lands at the core of Nanaimo's old city added complication and expense to redevelopment efforts. As government and industry moved towards a post-industrial future for Nanaimo's downtown and waterfront, the industrial heritage created a range of barriers and hurdles that needed to be overcome before any development and redevelopment could occur.

At the time of amalgamation in 1975, approximately half of the new City of Nanaimo lay vacant (Gidley, 1978). Developed areas centered around malls and along the traditional transportation route between the old city area of Nanaimo and Wellington area. Following amalgamation, the introduction of city infrastructure into previously unserved areas and the amount of available, vacant land ushered in a period of infill between the former coal villages and the original footprint of the Nanaimo (Gidley, 1978). The new development commonly took the form of suburban-style, single family

subdivisions, leaving Nanaimo with vast tracts of low density suburban sprawl, and all of the social, economic and environmental challenges that this form of land use presents.^{xi}

^{xi} Though the City of Nanaimo does not provide a map to show the areas coming together as part of the amalgamation process, the letters patent for the City as amalgamated, along with the Orders in Council dissolving the other districts, are available at <http://www.nanaimo.ca/EN/main/municipal/city-council/letters-patent-and-orders-in-council.html>.

Chapter 1: Introduction

1.0 Challenging the Culture of Low Density Development in Nanaimo

On October 4, 2007 the City of Nanaimo held a public hearing on a bylaw change that would expand Nanaimo's urban containment boundary and alter existing zoning to make way for a large-scale residential, industrial and commercial development south of Nanaimo's downtown. The gallery was full, with citizens spilling out into the adjacent hall, and audience opinion ranged from enthusiastic support to hostile opposition. The hearing began with a presentation from the developer, a partnership of IBI Group and Cushman & Wakefield LePage Inc., and the owners of the subject properties.^{xii} The presentation outlined the benefits to the City and surrounding landowners, and put forward the claim that the development would feature a range of sustainability features. After the presentation and questions from Council, the floor was opened for citizen feedback. A parade of audience members made their way forward. Some spoke passionately in favour of the development and the positive impacts to local land values and economic development. Others, equally ardent, spoke of the need to maintain the urban containment boundary and to support more development inside the current extent of the City's borders. Among the speakers were the usual suspects: community activists whose objections could have easily applied to any type of development of the proposed size and scale, and business leaders whose support was based almost entirely on the jobs to be created by the construction process. Chief among the opponents were members of a community group called the Friends of Plan Nanaimo who tabled a brief, noting that the City's own research as contained within the City's Official Community Plan (titled Plan Nanaimo) proved population growth through to 2031 could be housed within the City's existing boundaries, and that the proposed development would have a density of "less than 7 people per acre..." (Friends of Plan Nanaimo, 2007). Another affiliated presenter noted "there are many lots to infill within the urban containment, enough to provide room

^{xii} Much of the property slated for development was owned by the Snuneymux'w First Nation, who held the subject properties as freehold title.

and work for another 40,000 people, which would bring Nanaimo to its growth objective” (Catley, 2007).

Members of Council aggressively rebuffed citizen criticism of the proposed bylaw change. One council member challenged opponents by claiming that the City had only two choices: either the urban containment boundary would be expanded in a way that could be deemed as sprawl; or densification would be forced on citizens against their will. He challenged the opponents to choose between forcing densification on citizens or supporting urban sprawl. Eventually the final vote of Council proved that they favoured more of the same density over new growth formats, and the boundary was altered to enable the zoning change and development to proceed, greatly expanding the urban containment boundary in the face of ample room to accommodate growth through infill development.

2.0 Urban Reform and the Limits of Urban Containment

The conflict over the boundaries of urban spaces has become increasingly familiar in local government chambers across the continent. This dialogue, often triggered by increasing public discourse on climate change and environmental degradation, has led to a major examination of the common patterns of urban and suburban development in our towns, cities and metropolitan regions. In general, greenfield development, defined as development on “a clean agricultural or open land site located in the periphery” (de Souza, 2000), in many urban centres replicates a pattern of single unit, large lot residential development that has changed little in the last sixty years. However, there are several movements aimed at breaking this pattern and making urban environments more sustainable from social, economic and environmental perspectives. Urban reform movements from approximately 1980 forward seek to challenge existing patterns of suburban development by proposing new alternatives that correspond to an informed understanding of how human actions and settlement patterns effect the environment and community.

One significant urban reform movement is Smart Growth, a series of planning and urban design techniques that originated with Maryland Governor Parris Glendening and the US Environmental Protection Agency (Duany, Lydon, and Speck, 2010). Smart Growth principles and techniques do not seek to eliminate growth, but rather apply

design tools that shape urban growth into more sustainable forms (Grant 2004; Danielson, Lang, and Fulton, 1999). Examples of Smart Growth principles that have become commonplace are urban containment boundaries, mixed-use zoning and reconfigured rights of way to reduce paved surfaces and encourage safe travel for pedestrians and cyclists. Despite the success of Smart Growth advocates in promoting many of their ideas, not all Smart Growth techniques have been enthusiastically embraced or proven to be practical in the redesign of urban environments. Some elements of Smart Growth have proven ineffective when implemented as a single public policy and isolated from the necessary complimentary policies to ensure their success. One such example is urban containment boundaries.

As the opening example illustrates, urban containment boundaries are not, in and of themselves, a policy that can successfully curb patterns of urban sprawl when implemented as a stand-alone policy. Not only is it all too easy for local governments to expand the boundary when they see fit, but the existence of the boundary does not regulate the form and type of development that exists within its borders. Speaking about Portland's urban containment boundary at a Vancouver public lecture in 2008, architect and planner Andes Duany reported that:

“Most of the growth that had happened in the first twenty years of the urban boundary was suburban sprawl....So between the 1920s and 30s neighbourhoods, which in fact are the glory of Portland and the growth of the twenty years, sprawl of the worst kind had happened. ...I realized what had happened was that the environmentalists, the well-intentioned people, were so pleased with the security of the urban boundary, that they were literally out here on guard, guarding the edge, and not scrutinizing and contesting what was happening inside.” (Duany, 2008: 3.47-4.43)

If patterns of urban development are to change, research and advocacy must be completed on both the form of development that ought to be eliminated and that which is to be promoted. Urban containment boundaries are designed to limit the outward expansion of cities but cannot successfully do this without corresponding efforts to refocus development towards existing areas inside the existing urban footprint. Though

this may sound simple, there is a range of barriers limiting the effectiveness of such development, which in a passive manner, actually promotes typical suburban sprawl.

3.0 Purpose and Organization of this Thesis

The purpose of this thesis is to study infill development and related concepts to better understand the public policies that aid in focusing development within existing urban areas, thereby relieving pressure to expand urban boundaries. Under the broad heading of infill development, the research will focus on a sub-field consisting of the redevelopment of former industrial sites and contaminated lands termed *brownfield redevelopment*. Specifically, this research will examine the application of public policies and programs in Nanaimo, British Columbia, and will investigate whether or not brownfield infill development has been successfully achieved in the City. As the literature analysis will reveal, there is little academic work in densification and infill that applies to small urban communities like Nanaimo. Thus, this research will address a gap in the literature. Additionally, by researching these topics in the context of a community such as Nanaimo, whose smaller, semi-rural and Canadian context is in stark contrast to the types of communities commonly featured by those researching infill development and brownfield redevelopment, there is an opportunity to create knowledge and understanding on these issues that could be transferred to other, similar small to mid-sized urban centres.

To provide a foundation, Chapter 2 will begin the investigation with an examination of infill development broadly, and will consider the benefits and barriers of this development type. Common forms of infill will be examined and identified, and available literature reviewed. The challenges and benefits of brownfield redevelopment as a form of infill will be explored in Chapter 3, and the base ideologies that underscore public policies and program on brownfield redevelopment will be considered. In Chapter 4 the examination begins to take on the local context as brownfield redevelopment in British Columbia is investigated as the first of two case studies, which form the primary research components of this thesis. Chapter 5 examines the current planning context of Nanaimo and identifies the practices that are currently in place to encourage infill development and brownfield redevelopment. Chapter 6 assembles new knowledge through a series of semi-structured interviews with a wide cross-section of the planning and development community to gather input on what public policies and programs would best encourage

infill development and brownfield redevelopment in Nanaimo. Chapter 7 draws the research to a conclusion with recommendations that can be implemented by local governments to encourage densification and the redevelopment of urban lands.

4.0 Research Strategy

The research strategy has two components: a literature review and two case studies, one of the latter includes semi-structured interviews with key informants. The purpose of the literature review is the identification and analysis of the benefits and barriers to both infill development and brownfield redevelopment, and the examination of public policies and programs designed to overcome the identified barriers to these forms of development. The case studies will then test the explanations and policies identified in the literature review against both a provincial and local context in British Columbia.

Case study analysis is well suited to the overall research goals because it has a long history in the social sciences, is commonly used to better understand and directly resolve concrete problems, and lends itself well to investigations that seek to compare real life examples to accepted, generalized theory (Baxter, 2010). This form of case study would be considered idiographic research, as it is depth-oriented and attempts to understand a particular phenomenon in more detail (Baxter, 2010).^{xiii} This research strategy is designed to include all the necessary elements to ensure rigour: the literature review, case studies and interviews will include multiple sources and the results will be compared and triangulated, resulting in a mixed-method approach that ensures greater certainty in the research findings.

^{xiii} Idiographic research is in contrast to nomothetic research, which looks in less detail at a number of cases or units simultaneously (Baxter, 2010).

Chapter 2: Literature Review I – Infill Development

1.0 Introduction

Broadly defined, infill development refers to new development in existing urban areas. While filling in the gaps in an urban landscape may seem a simple prospect and obvious choice to maximize the use of existing infrastructure, the realities of infill development are complex. Economic, environmental, cultural, and political barriers all conspire to limit the implementation of infill projects (Farris, 2001); and significant questions exist about the interrelations between the social, economic and environmental outcomes of infill developments (Steinacker, 2003). While considerable material exists on the subject of infill development, much of the literature is drawn from government and non-governmental organizations' publications. Further, there is little academic discussion of infill within a Canadian context as the focus in much of the published literature on the topic is on larger American urban centres. This chapter examines available scholarship on the benefits and challenges of infill development and identifies clear gaps in the research. This thesis attempts to address this issue by adding to the body of knowledge through an investigation of infill development in a small Canadian city.

Several definitions can be applied to describe infill development. The simplest and previously cited definition is that infill is new development within existing urban areas. This straightforward definition establishes infill as the opposite of outward expansion of urban boundaries; however this definition lacks detail and precision. McConnell and Wiley (2010) add the concept of densification to the definition in a discussion paper produced for the think-tank *Resources for the Future*. The authors identify that the majority of scholarship on the topic of infill focuses on inner city development, despite that fact that all development occurring within urban boundaries could be considered as infill.

The *Infill and Redevelopment Code Handbook* produced by the Oregon State Transportation and Growth Management Program (1999) defines infill as “the development of vacant or remnant lands passed over by previous development in urban areas.” The document separates the concept of redevelopment from infill development,

with redevelopment defined as “the renovation of a blighted area,” including the “replacement, remodelling or reuse of exiting structures to accommodate new development” (Transportation and Growth Management Program [TGMP], 1999). The State of Maryland’s Department of Planning improves on this definition in a document published in 2001 that defines infill development as being “the development of vacant, abandoned, passed over or underutilized land within built-up areas of existing communities, where infrastructure is already in place.” Adding further specification, in a joint publication of the Congress for the New Urbanism and the Northeast-Midwest Institute (2001), infill was described as “new development of vacant lots within urbanized areas, redevelopment of underused buildings and sites, and the rehabilitation of historic buildings for new uses” (Felt, 2007). Finally, in Thadani (2010) the concept of infill development is summarized as “the use of vacant or underutilized sites within a previously developed area.”

From these descriptions of infill development a new, more encompassing definition can be established. That is, infill refers to the development or redevelopment of vacant, abandoned, underused or remnant sites within existing urban areas, including both central cities and inner suburbs, with the goal of increasing densities and preventing the outward expansion of cities and towns into undeveloped areas. It is important to note, as McConnell and Wiley (2010) point out in their discussion paper, that there is no accepted distinction between infill development and redevelopment due to the inherently subjective nature of assessing whether a particular site is “underused.” This grey area has a real effect on how communities assess densification potential and limits the ability to measure success or failure at achieving infill capacity.

The above definition of infill does not speak to the size and scope of infill projects because there are a variety of scales on which infill can be implemented. From single lot subdivisions to small greenfield sites to giant brownfield redevelopments, initiatives can range in size, scope and form. Porter, Blakely and Kalamaros (2003) describe four large-scale projects occurring in Los Angeles, Denver, San Francisco and New York City respectively. These projects focus on sustainable development through the revitalization of vast tracts of unused industrial land and abandoned military installations into densely populated urban neighbourhoods (Figure 2.1). More common, however, are small-scale

developments that focus on a collection of 1 to 20 units interspersed with existing housing stock (Felt, 2007) (Figures 2.2 through 2.6). These small-scale developments may include single-family and multifamily residential or mixed-use options.

2.0 Benefits of Infill Development

A review of the literature on infill development reveals some commonly cited benefits that apply to the many forms of development. First, infill negates the need to expand urban areas and thus preserves the natural environment. Second, infill developments can be a form of urban renewal that addresses urban social issues if the development provides alternative housing or remedies a civic problem. Third, infill development may create new forms of affordable housing or increase the range of housing options available to a population. Fourth, infill projects are thought to be economically efficient as they accommodate growth and expand the tax base without the need for further infrastructure expansion. Each of these is examined in detail, below.

2.1 Environmental Benefits

Infill development has many presumed environmental benefits;^{xiv} most obvious among them is that accommodation of additional development within the existing urban footprint reduces the need for further expansion of cities and towns into undeveloped or sparsely developed areas. That is, infill development helps to protect natural landscapes and habitat from development. It is also assumed that infill development aids in the reduction of greenhouse gas emissions through reduced transportation demands by limiting the development of sprawling edge communities, reducing commuter times, and therefore reducing vehicle emissions. Land that is attractive for agriculture (flat, deep soils, bright sunlight) is the same landscape that is attractive to development. Suburban sprawl often consumes farmland and a reduction in sprawl may aid in the maintenance of localized food production. Infill is often cited as a means of densifying neighbourhoods, leading to consequential benefits such as greater public transit efficiencies and better alternate transportation options, enabling a further reduction of automobile transportation.

^{xiv} These are deemed theoretical environmental benefits because the literature expresses them as such, and there is no available research that conclusively proves the relationship between, for example, increased infill development and corresponding reductions in carbon emissions.

Figure 2.1: Aerial view of the Presidio, San Francisco, California, USA



This former military base dates back to 1776 and was decommissioned in 1994 by the US military. It has since become a venue for infill development with more than 1,200 residential units and commercial space for over 200 organizations collectively employing more than 3,000 people (Presidio Trust, 2015). Photo source: Presidio Trust, 2015.

Figure 2.2: Single-Family Home with Suite



This older Vancouver house features a basement suite accessed by the side door. One simple way to facilitate infill and densification is to add suites to existing single family homes. Photo by author, 2015.

Figure 2.3: Suite Conversion



This large Vancouver house has been redeveloped into a number of smaller one and two bedroom suites. Photo by author, 2015.

Figure 2.4: Townhouses



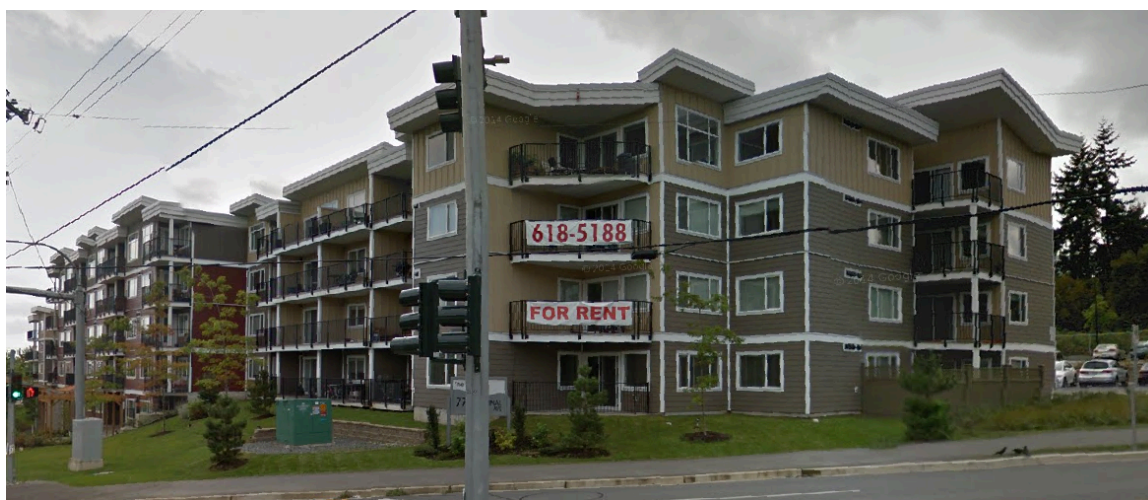
Townhouses such as these can be constructed in single-family neighbourhoods to provide increased density while respecting the form and character of the area. Photo by author, 2015.

Figure 2.5: Mixed-use Development



Common in larger cities, mixed-use developments such as this feature commercial units on the ground floor and residential above. Photo by author, 2015.

Figure 2.6: Large-scale Multi-family



Large-scale multi-family developments such as apartment blocks and condos use a relatively small footprint and add vertical density. Photo source: Google Maps, Terminal Avenue and Cypress Street, Nanaimo, BC, 2015.

2.2 Social Benefits

A key social goal of infill development is the revitalization of vacant or derelict properties (Hodge and Gordon, 2008). The National Vacant Properties Campaign is a US organization that seeks to “help communities prevent abandonment and reclaim abandoned and vacant properties” (National Vacant Properties Campaign [NVPC], 2005). It defines such properties as those for which owners have failed to uphold basic standards of care, often evidenced by failures to pay taxes, inability to upkeep property and mortgage defaults. These sites promote crime, decreased property values, undermine the tax base and constitute both a health and fire risk (NVPC, 2005). Shifting development from the urban fringe to vacant and abandoned sites in the city then becomes a strategy of revitalization and urban repair.

The topic of urban revitalization through infill is further explored by Damaris Rose (2004) in research on social mixing and neighbourhood gentrification. Rose identifies increasing tax revenue, the promotion of inclusive neighbourhoods and a desire to “eliminate social-spatial inequities in access to urban amenities, services and jobs” as key drivers of the promotion of infill developments (Rose, 2004). Rose cautions, however, that areas of poorly maintained property and vacant lands targeted for infill as a means of neighbourhood renewal constitute a model of gentrification that has a negative effect on existing residents. Rose’s research on infill developments in Montreal concluded that the social mixing and diversity of gentrified, infill neighbourhoods resulted in residents being more tolerant of social housing projects, especially ones whose character conformed to existing neighbourhood aesthetics.^{xv}

As a tool of neighbourhood revitalization and densification, infill development also has positive quality of life and human health benefits. The *Charter for the New Urbanism* (Congress for the New Urbanism [CNU], 2010) promotes several key neighbourhood design features that require higher levels of density, which can be applied to both infill and greenfield developments. These key design features include encouraging walkability through the use of trails, connections, and sidewalks that link community features, increasing the availability of local amenities and commercial services, reducing auto

^{xv} The research notes that these conclusions may not apply in an inverse situation where those from a lower socio-economic status move into a higher-class neighbourhood due to infill projects.

dependency through the mixing of land uses, and providing for a variety of housing options for different socio-economic groups (CNU, 2010). According to the New Urbanists, living, working, and recreating in the same place leads to a greater sense of community and improved “quality of life” for urban residents (Duany, Plater-Zyberk and Speck, 2000).

2.3 Infill Development and Affordable Housing

The connection between infill housing and the socio-economic status of urban residents leads to a debatable purported benefit of infill development – that infill development results in affordable housing (Carter, 1997). Several municipalities in Canada have adopted infill strategies as a means of promoting affordable housing: Carter (1997) profiles St. John’s, Regina, Quebec City and Vancouver, which have employed a variety of infill promotion strategies including the expansion of zoning codes to permit secondary suites, the provision of subsidies to those wishing to convert non-residential buildings into residential units, and the extension of tax exemptions to developers building infill housing. The conversion of the derelict Woodward’s store in Vancouver to a mix of market and socially affordable housing is an example of one such local strategy that gained national attention (Hodge and Gordon, 2008). Felt (2007) identifies a natural congruency with infill development and the construction of socially affordable housing; however, her analysis fails to make the distinction between infill as affordable housing versus improved housing affordability as the result of infill. Using infill development as a means for the construction of affordable housing does not necessarily translate into infill housing that, in and of itself, creates more affordable housing options.

McConnell and Wiley (2010) summarize a series of studies on the effects of infill projects and housing values. They concluded that, overall, housing values in a neighbourhood are either unaffected or increased by new development in the form of infill. Though some infill projects resulted in slight decreases in housing values due to the nature of the project and traffic flow from certain types of commercial and mixed used developments, these value declines occurred in a minority of cases and only affected those properties within close proximity of the new development (McConnell and Wiley, 2010).

In a study on the effects of infill development on housing affordability in the US between 1996 and 2000, Steinacker (2003) outlines housing affordability as a competing goal with other net benefits of infill development. She suggests that the goals of reduced suburban sprawl, diminished commuting times and urban revitalization could only be realized at the expense of housing affordability given the nature and costs of infill projects. To support her hypothesis, Steinacker (2003) examined America's 50 largest metropolitan areas and concluded that those areas that were most successful in attracting infill development were also those with the highest new housing prices compared to their respective suburbs. This conclusion is congruent with other scholarship on the market limitations and barriers to infill development, discussed below.

2.4 Economic Benefits of Infill Development

In 1974 the Real Estate Research Corporation published a report on the economic effects of sprawling suburbs entitled *The Costs of Sprawl* (Burchell, Downs, McCann and Mukherji, 2005). The report has been both highly cited and highly criticized, but the central theme continues to have merit: suburban sprawl is not cost efficient. Continued outward expansion of urban development requires the expansion of roadways, transit options, community services and utility infrastructures, and all to serve low-density populations (Duany, Speck and Lydon, 2010). Similarly, low-density sprawl developments necessitate the construction of additional civic resources like schools, recreation centers and health care facilities to provide reasonable proximity access to a relatively small number of citizens (TGMP, 1999). New neighbourhoods also expect the same level of police, fire, recreation, and planning services as existing neighbourhoods, increasing costs for staffing for local governments. The costs of new infrastructure, facilities, and staffing is not economically sustainable as tax revenues from new residential development generally fail to cover the costs of providing the range of public services residents expect from local governments.

Infill development, however, can provide some measure of relief to the cost burdens of sprawling residential development by utilizing existing amenities and systems. Infill projects locate growth within existing infrastructure (water, sewer, data and utilities), even though capacities may need to expand to handle additional population demands (Thadani, 2010). This is often the reason cited in support of infill development: infill is

economically superior to sprawl because it does not require an extension of services into new areas (Kackar and Preuss, 2003). Further, increased urban densities capitalize on economies of scale for civic amenities, transit systems and social services (Maryland Department of Planning [MDP], 2001). Health care services provide but one example: higher density communities mean tax dollars are concentrated on centrally located facilities that can be better equipped because funds are not being used to replicate the same services in outlying, low-density neighbourhoods. Due to the fiscal reality of these economies, infill development does constitute a strategic means to increase tax revenues without burdening public budgets with associated costs.

3.0 Barriers to Successful Infill Development

A range of authors and agencies identify common barriers to successful infill development. Within the scholarship on obstacles to infill developments, Farris' 2001 article in the journal *Housing Policy Debate* is a seminal work. Farris groups infill barriers into three main categories: land assembly and site preparation barriers; development barriers; and political barriers. While other authors vary in their categorization, there exists a general consensus on naming these as the most frequent challenges facing infill projects. Therefore, the barriers identified below are grouped into three categories: site acquisition and preparation challenges; political obstacles; and economic limitations.

3.1 Site Acquisition and Preparation Challenges

In order for any infill project to proceed, appropriate sites need to be available and acquired at a reasonable price. Farris (2001) argues that the minimum parcel size necessary for successful infill development varies greatly, but should be such that the development can create its own environment and identity. The costs of assembling the necessary land can be significantly higher than similar developments on the urban fringe due to acquisition, relocation, demolition, site preparation and environmental rehabilitation factors (Farris, 2001). These costs are not affordable for developers and may necessitate government assistance, although it is noted that such grants and funding programs are no longer as prevalent as they have been in the past, and meeting funding criteria can be difficult. Further, the complexity of acquiring multiple properties can

necessitate legal and political intervention to deal with hold out property owners or those in need of relocation (Farris, 2001). In some cases, the timelines involved in land assembly can undermine the success of the entire projects (Farris, 2001).

Once land is acquired, additional challenges may be faced in site preparation and the retention of qualified development companies. Sites used previously for other purposes, especially those used for industrial processes (brownfield sites), run the risk of contamination and lead to increased financial and legal exposure for developers. In some cases additional risk is assumed due to costs of remediation of aging or low capacity infrastructure not capable of handling higher volumes (McConnell and Wiley, 2010). Farris (2001) identifies the small number of design and construction firms with the required specialist knowledge as a factor limiting infill development. He notes that infill developers need to be familiar with the development process, financing, and regulatory barriers of infill development, and have the necessary capital and political connects to overcome those challenges (Farris, 2001).

3.2 Political Obstacles

A defining characteristic of infill development is its placement within the context of a pre-existing neighbourhood and an already established community context (Felt 2007). The obvious barrier to this type of development is the need for acceptance by existing residents based on their feeling that the development “fits” with the community. Public bias against infill housing can stem from a variety of preconceptions such as the belief that increased local population will cause traffic congestion (MDP, 2001), a concern that infill development brings increased ethnic diversity and low-income residents (Cole, Bragado, Corbett and Sprowls, 1996), fears that densification will cause overuse of civic buildings and parks (TGMP, 1999) and a belief that infill development will ruin the aesthetic appeal and character of the neighbourhood (Vallance, Perkins and Moore, 2005). For undeveloped lots, residents in the area may have initiated a level of entrenched public use of the site, such as pathways or even the development of amenities such as jump routes for BMX bikes or even garden sites, as evidenced by recent actions on the Arbutus Line in Vancouver. Such local opposition to an infill development can, through public pressure and political lobbying, cause a project to fail (Wheeler, 2001).

In a report published in December 2000, the Canada Mortgage and Housing Corporation highlighted many of the regulatory barriers to infill development projects, including rigid zoning codes designed to support low-density and auto-based development projects; inflexible planning standards for such features as minimum set backs, minimum lot/dwelling size and parking; and a lack of knowledge about sustainable development benefits among decision-makers (Canada Mortgage and Housing Corporation [CMHC], 2004). Wheeler (2001) notes that permit acquisition processes and variance application procedures constitute an additional regulatory barrier to infill development when they provide excessive voice to political opponents, require expensive studies and redesigns, or add expense through construction delays. Other regulatory barriers include inflexible building codes (Wheeler, 2001), zoning which precludes mixed uses (GMP, 1999), complex historical preservation and design standards (Farris 2001), and inconsistent application of standards and poor communication between municipal planning staff (Giltz, 2007). Overcoming these regulatory obstacles requires political interventions by local elected leaders, which is often difficult to acquire (Giltz, 2007). Lack of political support may derive from an aversion to associate ones political self with densification initiatives (Wheeler, 2001), or a lack of knowledge on the benefits and complications of such projects (CMHC, 2000).

3.3 Economic Limitations

The economic viability of infill development projects relies heavily on the existing market (Wheeler, 2001). Due to the nature and costs of infill projects, the market for infill housing is generally limited to such high-income groups as empty nest families, and young, childless professional couples (Steinacker, 2003). According to the Canada Mortgage and Housing Corporation (2000), the market for infill housing is limited by several factors including lack of consumer understanding of the benefits of sustainable developments, consumer aversion to investment in non-traditional housing options due to risk mitigation strategies, and few government resources and incentives to support and grow the market for sustainable development. Additionally, market fluctuations, often caused by the ebb and flow of the economic cycle can adversely affect infill development in two ways: first, high costs of construction and inflated land values can strain the economics of infill projects during positive economic times, a situation which places

higher financial pressures on brownfield remediation and affordable housing projects (Wheeler 2001; Felt 2007); and second, during tough economic times, financing is more difficult to secure because the market for higher cost housing is limited (Felt 2007). Overcoming these barriers is a significant challenge to infill development advocates (Sargent, 1994).

Economic barriers to infill development include the high cost of infill construction and challenges in securing project financing (Canada Mortgage and Housing Corporation 2004). The construction model for greenfield development limits developers' financial exposure and upfront investment as compared to infill projects, which may require a range of expenses relating to site remediation, public consultation, and design that must be paid in full before any profits are realized from the development (Sargent, 1994).^{xvi} Additional costs are compounded due to the small size of most firms working on infill projects and the challenges faced by small developers that have less working capital (Farris, 2001) and greater difficulties in securing financing at affordable rates (Giltz, 2007).^{xvii} Finally, other barriers to infill development, such as land acquisition, site preparation, public opposition, zoning variance processes and financing challenges all add time delays to the completion of infill projects, a further cost item that limits economic viability (Farris 2001; TGMP, 1999; MDP, 2001; Sargent 1994).

4.0 Summary and Analysis

As a Smart Growth principle and as a practical approach to urban development in the future, infill development provides a useful mechanism for allowing and controlling growth. Infill prevents the continued outward expansion of urban areas by “recycling

^{xvi} A common construction model for greenfield development is to build model homes that are used to sell units that are yet to be constructed. This enables the developer to sell units prior to construction and then build in phases based on sales. Such a model limits up-front investment by earning revenue prior to construction and eliminating the need for full build-out up-front. The model also lowers costs, as the phased model of constructions requires fewer overheads.

^{xvii} Securing necessary funding for infill development is a noted barrier for several reasons. First, lack of lender experience with infill projects and associated risks means that banks take longer to evaluate projects, and in some cases reject financing applications due to an inability to assess risks (Giltz, 2007; Danielson, Lang and Fulton, 1999). Second, the secondary markets for financing, firms who insure loans based on assessed risk, have similar difficulties to primary lenders in determining risk and often shy away from infill projects, particularly mixed-use developments (McConnell and Wiley, 2010). Third, Gyourko and Rybczynski (2000) identify specific obstacles that relate to securing funding for mixed-use developments due to lending policies, which mandate separate risk calculations for commercial and residential development.

developed land rather than consuming greenfield property” (Thadani, 2010). Infill development has positive economic, social and environmental benefits including the preserving of green space; providing a venue for affordable housing; creating more livable, transit-friendly neighbourhoods and increasing municipal resources through expansion of the tax base without increased infrastructure costs. Despite the positive benefits of infill development, barriers such as neighbourhood opposition, limited financing options, regulatory inflexibility and insufficient political support limit the number and size of infill projects. Despite these barriers, infill development remains an effective tool for improved sustainability of urban and suburban spaces.

Though research on infill development includes a range of academic literature, a large proportion of the information is drawn from government, public interest groups and other non-academic sources. Non-academic sources on infill development generally support the format as a means of promoting sustainable development and new urbanist design philosophies and practices without fully exploring all issues relating to infill, while the academic works on infill tend to fall into one of two research areas: qualitative studies examining the support for infill projects among existing residents; or quantitative analyses of the capacities for infill in existing urban areas. A small portion of academic research consists of qualitative analyses of the benefits and barriers to infill development through surveys and interviews of citizens, politicians and developers. These studies often consolidate results in the form of best practices and recommendations for the easing of common obstacles to successful development.

There are several gaps in existing scholarship on infill development. By definition, infill development can occur anywhere within an urban area, yet research on the topic tends to focus on central city spaces with little attention paid to suburban infill. Additionally, existing literature on urban infill focuses on large metropolitan centers in the United States, with few good examples of infill in smaller cities and towns, and limited data on infill in a Canadian context. Conceptually, infill development should be closely associated with the use of urban containment boundaries, as those urban areas with strong urban containment would need to develop methods of urban infill to accommodate continued population growth; however, little research exists to analyze the interrelations of these two sustainable development practices.

Chapter 3: Literature Review II – Brownfield Redevelopment

1.0 Introduction

An emerging form of infill focuses on the redevelopment of brownfield sites, which are loosely defined as abandoned parcels of land that once hosted an industrial use and are, or are perceived to be, contaminated sites (Government of British Columbia, 2011a).

Brownfield sites can be considered a blight on the urban landscape: derelict gas stations, neglected warehouses, and deserted factories all fall into this category. Provincial and local governments have identified the remediation of these sites as a social and environmental goal. Though brownfield infill would overcome many of the traditional challenges to infill development, turning former industrial sites into a venue for commercial or residential development is not without its challenges. Brownfields often feature hydrocarbon or chemical contamination that must be removed, and the property owner can be saddled with a legal liability for whatever contamination is not removed or goes undetected (Pawlukiewicz, 2000). The cost and risk involved with brownfield remediation undermines the economics of converting brownfields into usable development lands. Municipal and provincial governments have identified this economic barrier and have implemented a series of programs to incentivize brownfield remediation (Government of British Columbia, 2011a).

Arguably, scholarship on brownfield redevelopment is closely associated with the broader category of infill development, which exists within the wider context of land use planning and redevelopment research as a sub-discipline of human geography. Literature on land use and development is drawn from a wide variety of disciplines and government sources, with the role of geographers being one of critical review, comparison, and evaluation. The nature of land use and development scholarship tends towards “objectivist and logical empiricist thought” (Essoka, 2010:303) and prioritizes the relationships between physical space and quality of life, market and commodity values of land and the urban economy, and ecological values and environmental reform. An important element of this analysis is the understanding that in the context of land use

scholarship empiricism is based on market principles (Essoka, 2010) such that the success or failure of public policy is measured by market responses.

This chapter will examine the benefits and challenges to brownfield development, including the costs, legal liability and market considerations. Common public policies, incentive programs and regulatory methods to encourage brownfield redevelopment from a variety of jurisdictions and perspectives will be compiled. Analysis on these existing brownfield remediation strategies and incentives will be conducted to assess their effectiveness, and their relationship to broader trends in the political economy of urban development. Such a review will not only provide the necessary backdrop for research on brownfield redevelopment in Nanaimo, but also contribute to a growing discourse within the land use and development sub-fields of Canadian human geography by examining the broader economic and political contexts of brownfield redevelopment public policy.

2.0 Context and Scholarship

2.1 Brownfields Defined

Though “brownfield” is a fairly well understood and accepted term, there are some variations in definitions and interesting alternatives in meaning. Under United States federal law, brownfields are defined as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence, or potential presence, of hazardous substance, pollutant, or contaminant” (Sommers, 2008:262). This is an update of the previous working definition in America, first provided by the US Environmental Protection Agency, which stated that brownfields were “abandoned, idled, or under-used industrial or commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination” (Thornton, et al., 2005:350). In the United Kingdom, brownfields are defined as “any land or premises which has previously been used or developed and is not currently fully in use, although it may be partially occupied or utilized” (Alker et al., 2000 in Thornton et al., 2005:350).

The Government of Canada’s Contaminated Sites website presents a variation of the EPA definition and states that brownfields are “abandoned, idle or underutilized commercial or industrial properties where past actions have caused environmental contamination, but which still have potential for redevelopment or other economic opportunities” (Government of Canada, 2008). De Souza (2006:393) notes that, despite

the formal definitions, brownfield is used in a vernacular sense to refer to “*contaminated lands, potentially contaminated sites and derelict lands*,” and that the term’s usage employs it as an antonym to the notion of greenfield^{xviii} in discussing development venues. Adams et al.’s (2010) history of brownfields agrees; ‘brownfield’ as a term was created as a convenient juxtaposition to ‘greenfield’ and as a means to obfuscate the negative connotations associated with such labels as ‘contaminated’ or ‘derelict’ (Adams et al., 2010).

These definitions and analyses reveal interesting embedded concepts. Essentially, brownfields are sites on which the land is not available for use without an intervention of some kind (Thornton et al., 2005). Brownfield sites are commonly associated with urban blight and crime, and often located in distressed urban areas (Sommers, 2008), yet these and other socio-cultural elements of brownfield descriptions are not represented in the recognized government definitions. From an environmental perspective, existing definitions do not provide useful classification because they fail to differentiate between real and perceived site contamination (Greenberg et al., 2001). Adams et al. (2010:78) summarize this trend by noting “Policy-makers...[are]...less concerned with the presence of contamination and more with the presence of development potential.” Accordingly, brownfields are primarily sites of poor economic performance, where improved performance is limited by the real contamination of the site, or perceived impressions of the site based on past use.

2.2 Size, Extent and Origins of Brownfields

Brownfield sites range in size from small, single parcels used for gas stations or industrial-commercial uses (Figure 3.1), to large acreages that once housed factories or other substantial industrial enterprises (Figure 3.2). In the US, research has shown that brownfields range in size from 0.10 to 400 hectares (one quarter of an acre to over 1,000 acres); however, no such data exists for Canada (De Souza, 2006). Estimates for the

^{xviii} Delores Hayden (2004) describes greenfields as “project[s] constructed on raw land, usually agricultural land...” She reports that the American Farmland Trust estimates that between 1992 and 1997, 1.2 million acres of farmland were lost to development each year. Greenfield development is more affordable for developers but more costly for local governments due to the required expansion of public infrastructure (Hayden, 2004).

Figure 3.1: Typical Abandoned Gas Station Site



This site is located at a major intersection in Nanaimo and contains many of the common features of a former gas station site: PVC pipes for venting soil, deteriorating pavement, old oil drums, industrial-style fencing, and miscellaneous refuse. Photo by the author, 2015.

Figure 3.2: Typical Abandoned Industrial Site



Located in the Duke Point industrial area of Nanaimo, this multi-acre site features a range of derelict buildings, rusting equipment and refuse. Photo by the author, 2015

number of brownfields in Canada range from 2,900 (De Souza, 2006) to 100,000 (Sommers, 2008). This compares to between 450,000 and 1,000,000 such sites in the United States (Thornton et al., 2005; Mueller, 2005; Grossman and Sundar, 2003), and between 300,000 and 1.5 million in Europe (Thornton et al., 2005).^{xix} There is no data that places a value on these properties in Canada; however, Mueller (2005) estimates that the brownfield redevelopment market in America to be worth approximately \$2 trillion dollars US.^{xx}

The above data is not necessarily helpful in quantifying and analyzing the extent of brownfields as an environmental and social problem, or an economic opportunity. Without context, the number of sites is a relative measurement and does not provide useful insight. Quoting a paper by Benazon from 1995, De Souza (2006) states that the contaminated sites in Canada account for as much as 25 percent of the urban landscape, but even this figure only accounts for those sites considered to be within the urban realm. Similar to the literature on infill development, most scholarship on brownfields focuses heavily on urban areas, particularly the larger cities and metropolitan areas. Based on current research, the size and extent of non-urban brownfields in Canada is impossible to identify.

2.3 Brownfield Classifications

Greenberg et al. (2008) describe the manner in which brownfield sites are classified based on development potential. Top tier sites are those best suited for redevelopment because they have low acquisition cost, have minimal or no contamination, are fully serviced and are located in high value neighbourhoods (Greenberg et al., 2008). A second tier brownfield site would be similar to a top tier site but less economically feasible due to a combination of factors, including any or all of higher contamination, higher acquisition cost, remediation complexities, infrastructure inadequacies and location in a lower value area (Greenberg et al., 2008). Third tier sites are those with significant

^{xix} Of the possibly 1.5 million contaminated sites in Europe, more than 240,000 are in Germany and as many as 100,000 are in the United Kingdom (Thornton et al., 2005).

^{xx} Mueller (2005) estimates the value of the brownfield development market to be \$2 trillion dollars and this compares to a total US institutional real estate investment market valued at \$7.5 trillion US, meaning that brownfields could account for more than one quarter of the institutional real estate investment market in America.

contamination or clean-up complexity that are not economically viable without a sizable subsidy. For third tier sites, the remediation costs outweigh the market value of the redeveloped use (Greenberg et al., 2008). These rankings focus on the economic elements of brownfield redevelopment only. Common ranking systems do not take social or environmental factors into account and therefore, using these categories to prioritize investments to capture what Greenberg et al. (2008) describe as the “low hanging fruit”, critically ignores the wider social and environmental needs and impacts of brownfield remediation. Adams et al. (2010) support a tiered approach to understanding brownfield sites and argue that applying a tiered system is a fundamental element of the evolution of brownfield redevelopment. They note that as redevelopment expertise and public policy is expanded, a gradual shift from a restricted focus solely on economic criteria and the determination of the most advantageous sites will shift to an expanded consideration of redevelopment, allowing the redevelopment of more challenging and contaminated sites (Adams et al., 2010).

2.4 Brownfield Scholarship in Canada

De Souza et al. (2009) provide a useful review of brownfield redevelopment literature. They conclude that the majority of scholarship has focused on national policy making (US); best practices for economic development; the identification of redevelopment barriers and methods to overcome those barriers; and examinations of the relationships between brownfields, Smart Growth and urban sustainability (De Souza et al., 2009). Other works on brownfield redevelopment have included considerations of possible alternate land uses and methods to assess redevelopment outcomes (De Souza et al., 2009). Considering Canadian scholarship on brownfield redevelopment, De Souza (2006) argues that governments and, to an increasing extent the development community, have shown increasing interest; however, this trend is not mirrored in the academic community. What literature does exist, he observes, originates primarily in the United States and Europe, or focuses on the scientific and technical aspects of site assessment and remediation. He adds that there is a critical lack of scholarship on the extent of brownfields in Canada, the main barriers to their redevelopment, and the policy instruments being employed to overcome those barriers. (De Souza, 2006). While De Souza is correct to point out the limited work on brownfields, especially within

geography and with reference to a Canadian context, there is a likely explanation for the lack of a strong national discourse on brownfield redevelopment.

In Canada, the federal government has virtually no role in land use planning and regulation. Under the Canadian Constitution, the management of lands, municipal institutions and property rights fall to provincial governments (Government of Canada, 2011). It is reasonable to conclude that the lack of significant academic work on brownfield development within a national context is owing, at least in part, to the absence of a federal role in brownfield identification, classification, redevelopment, regulation and funding. According to Sommers (2008), beyond being responsible for brownfields on federal crown land, the role of the Canadian federal government in brownfield redevelopment is restricted to one of support and advice exercised through a handful of national agencies, such as the Canada Mortgage and Housing Corporation and Council of Ministers of the Environment.^{xxi} In comparing the strong national discourse on brownfields in the United States to the lack thereof in Canada, it is also important to reference the large industrial waste issues (for example, Love Canal) that gained national prominence in America. There have been no such comparable examples in Canada^{xxii}. It may also be true that the levels of industrialization and abandonment in Canada are of less relative significance than would be found in a US context. Further research on this is required as data or comparative scholarly works are not readily available.

In terms of a broader review of scholarship, Kirkwood (2001) notes that expertise on brownfield development is drawn from economics, real estate, financial, geo-technical, environmental remediation, planning, and legal fields. He argues that scholarship on the subject has evolved through several phases from a science and environmental focus prior to 1980, to a focus on economic development that viewed brownfields as a means to build the economic base of communities (Kirkwood, 2001). The final phase would look upon brownfield redevelopment as a component of integrated planning theory such that

^{xxi} In the 1990s the federal government attempted to create a pan-Canadian protocol for the development of brownfield inventories but this failed due to lack of agreement among provinces governments (Adams et al., 2010).

^{xxii} Canadian industrial waste incidents include such examples as the Mount Polley tailings pond breach (Baker et al., 2014) and the Sydney Tar Ponds (Canadian Broadcasting Corporation, 2010). Though catastrophic and of a scope that attracted media attention, these examples lacked the same level of national and international discourse as their American counterparts.

competing values of economic development and environmental restoration can be balanced in regional context and informed by social values (Kirkwood, 2001). He notes that the third conceptual framework phase is one in which practice has not caught up to theory (Kirkwood, 2001). De Souza et al. (2009) support Kirkwood's analysis and note several gaps in scholarship, including inadequate understanding of the societal benefits to brownfield redevelopment beyond those jobs created by the redevelopment activity, and increases to the tax base.

2.5 Summary

Brownfields exist as a negative externality of economic activity, the costs of which were not born by the beneficiary of the source activity (Siikamäki and Wernstedt, 2008), but passed on to society and secondary landowners through the existence of sites that cannot be re-tasked without intervention. Examinations of the definition of brownfield and trends in scholarship reveal an embedded focus on economic development over other positive social and environmental benefits. Adams et al. (2010) provide an excellent interpretation of Kirkwood's work and claim that public policy and development action cycles have created a dialectic in which policy informs action, and action informs policy evolution, with the outcome of greater effectiveness in promoting and supporting the economic benefits of brownfield redevelopment. Existing data on brownfield sites focus almost exclusively on urban areas in which the property market acts as its own incentive for redevelopment. Available academic scholarship on brownfields in Canada is limited, especially with respect to the extent of brownfields in non-urban areas, and the policy instruments used to encourage redevelopment.

3.0 Benefits and Barriers to Brownfield Redevelopment

3.1 Benefits to Brownfield Redevelopment

Before examining the public policy mechanism and programs employed to encourage brownfield development, an understanding of the context is needed. De Souza et al. (2009) argue that government interests in brownfield redevelopment must necessarily include an assessment of the economic, environmental and social benefits of this form of infill. Equally important to understanding these benefits, however, is an examination of the primary barriers preventing brownfield redevelopment and necessitating government

intervention. Though much of the literature of the barriers preventing the redevelopment of brownfields relates strictly to market and economic limitations, three categories of investigation are considered here: cost and uncertainty; risk and liability; and public participation and objection.

3.1.1 Environmental benefits

As with any form of infill development, brownfield redevelopment is thought to hold environmental benefits. That is, any new development within the existing urban footprint limits the need for outward expansion of development into natural areas. Scholarship on brownfield redevelopment regularly highlights the preservation of greenfield lands as a cornerstone motivator behind public policy agendas (Dorsey, 2003; Greenberg et al., 2008; De Souza, 2006). In fact, brownfield development as infill is a key strategy in supporting other anti-sprawl public policies that seek to contain urban boundaries (Dorsey, 2003). Focusing development inside existing urban areas results in greater densification and Paull (2008) notes that increased urban densities due to brownfield redevelopment have led to greater energy efficiencies on a local scale due to savings in infrastructure expansion and reductions in commuting distances. Additionally, improved urban densities create greater efficiencies for public transportation and further improve the sustainability of cities and towns by reducing automobile dependency.

The environmental benefits of redeveloping brownfield sites are not limited to reducing urban sprawl. Unlike other forms of infill, brownfield redevelopment can make a tangible improvement in the environmental health of sites and their surrounding regions. On those sites with actual contamination, not just perceived contamination, brownfield redevelopment involves environmental remediation and the clean-up of hazardous materials, and the restoration of nature (De Souza, 2006). From an environmental standpoint, brownfield redevelopment is a higher order of infill; not only does it preserve natural areas and increase urban densities, brownfield development directly restores environmental health by cleaning up contaminated sites (Adams et al., 2010). For this reason, public policy initiatives supporting brownfield redevelopment have been viewed as victories for both environment and economy (Dorsey 2003; Thornton et al., 2005). There is, however, an important caveat to this claim. Since brownfields include those

sites with both real and perceived contamination, the benefit of environmental restoration only applies to those sites with actual contamination.

3.1.2 Social benefits

As with environmental benefits, many of the social gains of brownfield redevelopment apply equally to other forms of infill development. De Souza (2006) claims that brownfield redevelopment creates opportunities for new housing development, infrastructure upgrades, reduces crime, and limits illegal dumping. Thornton et al. (2005) argue that brownfield revitalization opens new prospects for affordable housing and other social initiatives. Greenberg et al. (2008) state that brownfield redevelopment has the positive effect of reversing movement of residents out of inner cities, and actually helps attract populations back to inner city neighbourhoods, contributing to population stability that supports the maintenance of health and social services. While these claims may be true of brownfield redevelopment, they are equally true of other forms of infill. Key goals of infill development overall are the revitalization of vacant or derelict properties (Hodge and Gordon, 2008), providing a venue for affordable housing (Felt, 2007) and generating sufficient economies of scale to support public services (Maryland Department of Planning, 2001). However, as noted previously, these social benefits should not be ascribed as unique attributes of brownfield development.

Brownfield development does have some unique social benefits that surpass those of other forms of infill development due to site characteristics and location. First and foremost, brownfields are often health hazards due to the contamination present (Essoka, 2010; Greenberg et al., 2008). Brownfield restoration leads to improvements in public health because it involves the removal and revitalization of contaminated materials that would otherwise be spread through neighbourhoods by wind or illegal trespass (De Souza, 2006; Greenberg et al., 2001). Secondly, brownfields are disproportionately located in poor neighbourhoods with high minority populations; thus brownfield revitalization is perceived as a means to environmental justice (Essoka, 2010; Greenberg et al., 2008).^{xxiii} Dorsey (2003) supports this claim and notes that those most exposed to urban industrial

^{xxiii} Essoka (2010:301) defines environmental justice by claiming “no population should be forced to bear a disproportionate share of negative environmental externalities, regardless of how or why they evolved”. He notes that scholarship on environmental justice has included examinations of transportation, urban sprawl, health, economics, procedural equity, racism, classism, democracy and power.

pollution are from low- and middle-income, minority backgrounds. As with those unique environmental benefits of brownfield redevelopment, these social benefits only attach to revitalization of sites with actual contamination, not sites perceived to be contaminated. Further, some scholars have questioned whether brownfield remediation as a form of redevelopment exacerbates, rather than improves, environmental inequity.

In a study published in the *Western Journal of Black Studies* regarding brownfield redevelopment in urban America, Jonathan Essoka questions the social benefits of brownfield redevelopment and claims that it is merely a system of gentrification.^{xxiv} A driving force of redevelopment is the potential increased market value of properties (De Souza et al., 2010), which Greenberg et al. (2008) deem as reducing the gap between impoverished inner city areas and more affluent suburbs. The difficulty with this outcome is that higher post-redevelopment property values price existing residents out of the market and induce in-migration of individuals of higher socio-economic groups (Essoka, 2010; Greenberg et al., 2001). This is the opposite of environmental justice as a more affluent, less diverse group reaps the rewards of revitalization after replacing the existing community, who have long suffered the effects of site contamination. Based on this perspective, Essoka concludes that “urban brownfields constitute another impediment to disenfranchised populations achieving environmental justice” (2010:301) and that brownfield redevelopment is a regressive form of development that reinforces social injustice and perpetuates systemic racism and classism (Essoka, 2010).

3.1.3 Economic benefits

Beyond other forms of infill, brownfield redevelopment provides positive economic benefits to both government and the surrounding community. The presence of site contamination can limit development and thus the removal of the contamination or perceived contamination, can act as a catalyst for further development of brownfield neighbourhoods, and could stimulate economic development in the surrounding lands (Government of Canada, 2008). Due to their nature, size and location, brownfield sites provide unique opportunities for economic development through commercial or

^{xxiv} Gentrification is defined as “the renovation and renewal of run-down inner-city environments through an influx of more affluent persons such as middle-class professions” and leads to the “...displacement of poorer citizens” (Knox and Pinch, 2010:326).

institutional reuse and are therefore seen as a source of job creation (Dorsey, 2003; Sommers, 2008; Thornton et al., 2005). Additionally, for similar reasons, brownfields provide a site location option for major infrastructure, social service and recreation facilities and can accommodate arenas, jails, transportation hubs (airports/bus stations) and education facilities (Greenberg et al., 2008).

De Souza et al. (2009) report that a major economic benefit of brownfield revitalization is property value increase, which affects both the subject property and surrounding properties.^{xxv} With respect to property value increases they note that simply remediating a site can generate significant benefit and that in some cases redevelopment is not required to achieve a desired economic benefit (De Souza et al., 2009). For government the primary benefits are two-fold. First, brownfield redevelopment is shown to make substantial contributions to the tax base compared to pre-redevelopment uses (Dorsey, 2003; Government of BC, 2011a; Greenberg, 2001; Sommers, 2008; Thornton et al., 2005). Second, the private investment in revitalization of contaminated sites constitutes private investment in environmental restoration, which may otherwise fall to government as a public health issue (Adams et al., 2010).

3.2 Barriers to Brownfield Redevelopment

3.2.1 Cost and uncertainty

Though brownfields are said to be sites of great development potential (Thornton et al., 2005), this potential is difficult to quantify due to a range of risks and uncertainties that conspire together to produce an unquantifiable return on investment (Adams et al., 2010; Greenberg et al., 2001). The chief factor in this uncertainty is investment cost, as a private investor must conduct site assessments, remediate in accordance with local and provincial laws, and pay for insurance to protect themselves from present and future liability (De Souza, 2006). Due to inconsistencies between jurisdictions, and a lack of strong provincial and federal standards, local legal counsel is often required by developers to navigate local legislative and regulatory regimes (Sommers, 2008). The cost of remediation can spiral out of control and add both time and expense. Time delays

^{xxv} De Souza et al. (2009) report that the presence of a brownfield site can depress surrounding property values by as much as ten percent, meaning that brownfield remediation and redevelopment is a potentially lucrative for neighbouring property owners.

due to unknown contamination require investment capital to be tied up longer than other forms of development. The cost of time includes both the borrowing costs and the lost opportunity of alternate investments that could be made with the same capital.

Development capital seeks out projects that provide a speedy and certain return on investment (Greenberg et al., 2001), and brownfield redevelopments generally do not meet that standard.

Beyond affording the high up-front investment and managing the unknown hidden costs, brownfield investors face uncertainty about marketability (Mueller, 2005). Property value decline from simple forms of contamination (such as leaking storage tanks) can be as high as forty percent and more complex and damaging forms of contamination can drive the cost of remediation beyond the value of property (De Souza, 2006; Mueller, 2005; Sommers, 2008). When assessing market value, the stigma attached to a property must be considered: even if a property is fully remediated, the nature and form of contamination can remain attached in the eyes of the public and potential purchasers such that market value remains depressed (Greenberg et al., 2008; Kirkwood, 2001; Mueller, 2005; De Souza et al., 2009). This is particularly true of brownfields located in weaker real estate markets or in existing neighbourhoods of depressed value (Thornton et al., 2005).

3.2.2 Liability and risk

In Canada, liability for site pollution is seated both with those who caused the contamination and those who derive benefit from the clean-up of a contaminated site. In some jurisdictions, liability can also fall to property owners by virtue of their ownership, even when contamination has migrated to their property from a third party site; this “status liability” most commonly applies to owners of property contaminated by adjacent land uses. In British Columbia, these liabilities are expressed in the Environmental Management Act, which provides that any responsible party is “absolutely, retroactively and jointly and separately liable to any person or government body for reasonably incurred costs of remediation of the contaminated site, whether incurred on or off the contaminated site” (Government of BC, 2011b).

“Absolute liability” holds liable any party that “was ever an owner or operator of a now-contaminated site, even if the party was not negligent, did not breach any warranties,

complied with all the laws of the time, and had nothing to do with the acts of contamination” (Sommers, 2008:281). The legislation also provides that in cases where there are multiple parties found responsible, and several of the parties are deemed insolvent, those with a strong financial position can be held disproportionately liable based on their resources, rather than any proven wrongdoing. Further, courts may hold liable anyone connected with the land, including lenders and other owner agents. Accordingly, liability and risk pose a significant barrier to development because all parties associated with a site must accept responsibility for the cost of clean-up, and liability for damage to surrounding property, the environment and human health (De Souza, 2001; Dorsey, 2003).

Such a severe liability regime places the onus on all parties related to a development to engage in due diligence to ensure that site contamination is quantified and remediated to the full extent of the law. Assessing contamination and remediation is complex and challenging without strong records of past land uses, but can be aided by review of historical maps; identification of past title holders; and analysis of insurance records, zoning histories and site inspections (Greenberg et al., 2008). Where standard documentation does not exist, developers and investors rely on interviews, surveys and oral histories to provide an understanding of past land uses and possible sources of contamination (Greenberg et al., 2008). The costs and risks of liability are significant compared to the common alternative of leaving sites vacant and abandoned, which, so long as the contamination is contained, are a financial benefit to property owners (De Souza, 2006).^{xxvi}

3.2.3 Public involvement and objection

Public opposition to infill development has been widely documented: objections stem chiefly from forced neighbourhood change and concerns about the effects of increased densities (Cole et al., 1996; Felt, 2007; Greenberg et al., 2001; Maryland Department of Planning, 2001; Transportation and Growth Management Program, 1999; Vallance et al.,

^{xxvi} Mueller (2005) identifies the lack of incentive for continuous owners to sell or remediate property as dominant barrier to brownfield redevelopment. A used industrial site is commonly fully depreciated and remains on a company's books as an asset. So long as contamination is contained, Mueller questions what would motivate a holder of a brownfield site to redevelop that site or make it available for sale when those actions would force the holder to declare a loss on the site or to expend funds for site remediation.

2005; Wheeler, 2001). Brownfield scholars argue that many of these objections do not apply to brownfield redevelopment due to the offsetting economic, social and environmental benefits to site remediation (Greenberg et al., 2001). Greenberg et al. (2001) go on to note that public support for brownfield redevelopment can be highly use-dependent, suggesting that reuse for further industrial purposes receives less public support than re-tasking a site with the goal of neighbourhood change.

A key barrier to generating public support for brownfield redevelopment identified by scholars is the lack of public participation in land use decisions and redevelopment planning. According to Greenberg et al. (2008), engaging the public in brownfield redevelopment planning is both a challenge and an opportunity, limited by lack of proactive interest on the part of the general public and consultation systems that are generally formulated around key stakeholders, and exclude residents (Dorsey, 2003; Thornton et al., 2005). A stakeholder approach is consistent with the nature of brownfields as corporately owned properties; however, a lack of resident involvement with citizens who see themselves as directly impacted by the development can enflame local opposition and limit redevelopment success by falling prey to common infill objections. Further, because brownfield infill involves reuse of real or perceived contaminated sites, public participation is an important tool in creating a renewed perception brownfield sites as clean and ready for redevelopment (Greenberg et al., 2001; Kirkwood, 2001)

3.3 Summary

Though a great deal may be written on the environmental, social and economic benefits of brownfield redevelopment, many of these positive outcomes apply equally to any form of infill development. Revitalization of brownfields has clear environmental and social benefits provided that the sites being restored have true contamination that is genuinely being remediated, and that proper measures are taken to ensure that existing residents benefit from neighbourhood improvements. Though the economic benefits to successful brownfield development are clear, significant barriers to realizing these benefits exist in the form of high development costs, enormous liability risk and the potential of political objection. Brownfield redevelopment relies on private investments, which search for opportunities that minimize risk, maximize returns, and have limited up-front costs

(Adams et al., 2010; Siikamäki and Wernstedt, 2008). For governments to realize the benefits of brownfield redevelopment a simple market approach will not be sufficient. Accordingly, public policy and funding models have been developed that present brownfields as a venue for private enterprise profit-generation, rather than a social or environmental problem (Adams et al., 2010).

4.0 Brownfield Public Policy and Incentive Programs

4.1 Overview

Dorsey (2003) notes that the purpose of brownfield initiatives is to clean-up abandoned and contaminated sites, generate profitable business ventures, and revitalize community economic development. As these are benefits accrued by the wider public and not limited only to the developer, incentives and public policy programs have been designed to encourage brownfield redevelopment that provides the “right development product, at the right location, and at the right time” (Adams et al., 2010:96). With government intervention, a development problem can be seen as an opportunity by investors whose funds are needed to achieve the public policy objective. However, through examination of the stated benefits and barriers to redevelopment of brownfield sites, questions arise about whether the social and environmental benefits are truly achievable. The major public policy initiatives and incentive programs should not only create the right environment for investment, but should also achieve the social and environmental goals of redevelopment. The following review examines the five major types of public policy programs aimed at encouraging brownfield redevelopment.

4.2 Common Public Policy Mechanisms

4.2.1 Direct funding and loan programs

Direct funding programs are a straightforward subsidy to the redevelopment process and provide resources to offset the required private investment in site remediation and clean-up, or to counteract the lower than average market value to contaminated land (Thornton et al., 2005). Such programs can include grants, technical assistance, in-kind donations and direct land grants (Dorsey, 2003). Some programs are specifically targeted to funding site assessments with the goal of enabling development of sites incorrectly suspected of contamination, or those with low-levels of contamination (Thornton et al.,

2005; Government of BC, 2011a). A debate exists among policy makers on how best direct funding should be allocated. Some argue that funds should be used to enable development on as many marketable sites with low-level contamination as possible to achieve the best return on investment; others argue that funds should be directed to those sites that have the highest levels of contamination and are least marketable, so government funds enable development on those sites least marketable (Thornton et al., 2005). Regardless of the philosophical approach, Thornton et al. (2005) argue that direct funding programs tend to be too bureaucratic, political, and unstable, with ever-changing criteria. De Souza (2006) notes that there are few funding programs in Canada directly providing resources from the federal or provincial governments, unlike the United States that offers a range of programs and funds to assist landowners, especially those deemed not historically responsible for site contamination, with assessments, remediation and redevelopment process.^{xxvii}

4.2.2 Taxation policies and relief programs

Tax incentives are compelling tools where governments seek to induce economic activity because they provide direct financial benefit without direct cost to government, and the loss of revenue from the relief provided tends to be proportional to the economic benefit created. Goldstein (2003) observes that common local government tax incentives for brownfield development are delivered as tax credits in proportion to the amount spent on site remediation, and that in some jurisdictions around the world, these credits are matched by higher order governments. In some instances, governments link tax relief with job creation; in the United States a variety of funds provide direct tax refunds based on the number of jobs created by the end use activity. Such schemes provide greater incentive to industrial and commercial redevelopment and thereby act as a disincentive to redevelop brownfields for residential or other uses (Goldstein, 2003). Some countries have experimented with tax systems designed to penalize holders of underdeveloped brownfield properties: Belgium applies a tax on vacant and neglected factories with

^{xxvii} Dorsey (2003) reports that during the Clinton Presidency, in excess of five hundred grants were made to communities across the United States totalling more than \$140 million; this funding resulted in the creation of approximately 7,000 jobs and leveraged more than \$2.3 billion in private investments.

revenues channelled towards the purchase and redevelopment of such sites (Thornton et al., 2005).

4.2.3 Regulatory relief

Regulatory relief measures seek to either reduce the standards of site remediation or limit the liability to site owners and developers. Reduction of remediation standards is best described by the term *risk-based corrective action* that applies a scaled approach to site clean-up based on the intended reuse (Goldstein, 2003). Under this strategy, the level of site remediation is reduced based on contamination risk and the future use of the site, and thus reduces the costs of remediation for certain properties (Mueller, 2005). Such an approach ensures that site remediation costs are limited without compromising the safety of the site (Greenberg et al., 2001). In the United States, state-based voluntary clean-up programs have been developed to provide liability relief, predictable and clearly articulated clean-up standards, protection for lenders, public participation standards, and protection from third party lawsuits (Adams et al., 2010; Kirkwood, 2001). Some states have gone beyond voluntary clean-up programs and offered limited liability agreements with direct legal and financial protection for developers provided that standards are maintained as per a site rehabilitation agreement signed between the site owner and the State (Goldstein, 2003). Regulatory relief programs have met with great success in the United States, but they raise important questions about the environmental and social benefits of brownfield redevelopment. Regulatory relief reduces economic barriers to redevelopment by reducing the laws that protect citizens and the standards that protect the environment. Under such an approach, site remediation takes a back seat to redevelopment, which becomes the goal rather than the means.

4.3.4 Land use restrictions

A variety of public policy instruments can be used to make greenfield development more difficult and costly and thus encourage infill and brownfield redevelopment. Urban containment boundaries are a common Smart Growth strategy and apply an outward limit on development to urban areas, focusing new development within the boundaries of existing urban zones (Duany et al., 2010). Short of applying a direct limit on outward expansion, greenfield development can be discouraged through policies that limit

expansion of municipal services, applying tiered development fees and limiting transit service (Greenberg et al., 2001). These strategies do not speak to brownfield redevelopment directly and are unpopular with industry and media (Greenberg et al., 2001). Further, De Souza (2006) cautions that limits to greenfield development sometimes result in investment moving to other jurisdictions, and Adams et al. (2010) report that greenfield development limits alone are not a successful brownfield development incentive. Though the analysis of greenfield development restrictions are correct, they are an important to achieving the environmental benefits of brownfield redevelopment.

4.2.5 Direct government intervention

Government has the power to directly intervene in brownfield development in a variety of ways. Government can directly purchase land and redevelop land for resale or for public use, and government can purchase environmentally sensitive lands for remediation and restrict redevelopment, thus inflating the housing market and making private sector redevelopment more viable (Greenberg et al., 2001). All levels of government can use compulsory purchase powers to assemble brownfield land for development, thus forcing the hand of owners of contaminated sites into action (Adams et al., 2010). Such direct government involvement can prove controversial, costly and does not always produce the desired return on investment within a time-frame germane to the political cycles (Adams et al., 2010). The result is that many governments lack the political will for direct intervention and settle for applying public resources to private development (Adams et al., 2010).

4.3 Summary

The market-based approach to land development coupled with a lack of political will on the part of governments to become directly involved in brownfield redevelopment means that the achievement of public policy goals for brownfield remediation relies on the facilitation of private sector profit (Adams et al., 2010). Such a system naturally favours sites and areas within strong real estate markets and sites with little or no contamination (De Souza, 2006; De Souza et al., 2009). Thornton et al. (2005:362) summarize the shortcomings of existing public policy as follows:

“...on the whole, the available financial and legal incentives fail to adequately encourage spatial development on brownfield sites. Low restrictions on readily available greenfield sites and financial incentives for greenfield projects, being competitors to brownfield regeneration, contribute to a lack of brownfield regeneration. Moreover, existing incentives and initiatives may often provide the ‘starting point’, but actual redevelopment depends on attracting (additional) private investment on brownfield sites.”

5.0 Neoliberalism and Brownfield Development

5.1 Introduction

An analysis of brownfield redevelopment scholarship reveals that public policy has failed to consider broader economic and political themes. Though researchers identify that economic considerations drive redevelopment programs and that social and environmental considerations take a back seat, much of the literature fails to take the necessary additional steps to identify the driving forces behind these trends. The market-driven nature of brownfield redevelopment benefits, barriers and strategies reveals a need to consider economic paradigms in which brownfields are both created and redeveloped. Specifically, research on brownfield redevelopment should be informed by an examination of city entrepreneurialism and the broader context of neoliberal economics that drives inter-jurisdictional competition.

5.2 Roll-Back Neoliberalism and the Creation of Brownfield Sites

Jessop (2002) states that neoliberalism focuses on the promotion of private property and private ownership of the means of production. This includes the notion that property owners have the universal autonomy to use and dispose of their property as they see fit (Jessop, 2002). Most importantly, Jessop (2002) argues that the neoliberal regime deems the marketplace as the venue for the free choice of civil society and, accordingly, the imposition of regulations by the state are limitations to the freedom of citizens. This summary is consistent with the description of *roll-out* neoliberalism identified by Jamie Peck and Adam Tickell (2002). This first phase of neoliberalism, which arose out of the Western, capitalist economic crisis of the 1970s, sought to destroy and discredit the welfare state; marketize and deregulate economies; reduce the size and economic

capacity of government; and enable offshoring of manufacturing industries (trade liberalization) (Peck and Tickell, 2002; Harvey, 2010).

Essoka (2010) and De Souza (2006), among others, claim that brownfields are the outcome of deindustrialization and the movement of manufacturing industries to less developed countries; and a shift from an industrial-based economy to one focused on the service sector. Though true in many respects, this analysis overlooks two central elements of neoliberal *roll-back* that contribute to the current supply of brownfield sites: deregulation and the autonomy of private property ownership. Whether a former factory site or a retired gas station, the contamination found on a brownfield site is the remnant of a past economic activity that produced financial benefit for the owner without properly accounting for the costs of remediating the contamination produced. An absence of environmental regulation and enforcement under a diminished role of government enables private landowners to create and hold contaminated lands at the expense of the surrounding property owners and the environment. The existence of vast tracts of contaminated lands, deemed undevelopable without public investment, is not a natural outcome of economic activity, but rather the result of the proliferation of neoliberal policies.

5.3 Roll-Out Neoliberalism and Jurisdictional Entrepreneurialism

Peck and Tickell (2002) identify a second phase of neoliberalism that arose in the early 1990s in response to the constraining nature of *roll-back* neoliberal policies and the resulting limits to government support for economic development. Having torn down Keynesian government structures, *roll-out* neoliberalism sought to recreate government capacity in a manner that supported and subsidized free market expansion by managing interest rates, controlling inflation and reshaping government spending to support business interests (Peck and Tickell, 2002). Whereas a Keynesian model provides individual welfare, *roll-out* neoliberalism provides corporate welfare and mobilizes the finances of the state to support the maintenance of economic growth (Peck and Tickell, 2002). Embedded in this philosophy is the view that government exists as a stable partner for business that, through such mechanisms as public-private partnerships, can not only provide subsidies to encourage economic development (Jessop, 2002), but also serve an important role in mitigating the inherent risk of business ventures (Harvey, 1989).

Governments, in turn, are said to benefit from these partnerships through increased tax revenue and job creation (Jessop, 2002).

Geographer David Harvey considers the effects of deindustrialization and neoliberalisation on local governments and concludes that these paradigms have conspired to create a system of jurisdictional entrepreneurialism in which local and regional governments compete against each other to attract investment (Harvey, 1989). Tactics employed to induce investment have included reduced-rate access to infrastructure, tax incentives, free loans, relaxed regulations, direct grants, and business risk mitigation programs (Harvey, 1989). These strategies constitute elaborate and invasive forms of public-private partnership that both use public funds to underwrite private profit, and result in a public policy focus on economic development over social and political goals (Harvey, 1989). This system of inter-jurisdictional competition has arisen because the neoliberal policies enabling capital mobility have created 'buyers markets' in which governments have little choice but to use public funds to leverage and attract private investment and job creation to offset lost industry, and to backfill lost tax revenue.

5.4 Summary

Brownfield redevelopment has many similarities to the above description of jurisdictional entrepreneurialism. The proliferation of neoliberal policies has created a system of idle, abandoned and underutilized sites that have direct, negative social and environmental implications. Rather than addressing these sites through direct purchase or regulatory measures forcing remediation, governments are looking toward *roll-out* neoliberal policy instruments to induce remediation through rebranding these sites as development opportunities and as a venue for private profit generation. Similar to tactics used to recruit investment under a system of jurisdictional entrepreneurialism, strategies used to induce investment in brownfields include direct grants, tax incentives and regulatory relief, all of which result in the prioritization of economic benefits over the social, environmental or other political objectives of redevelopment. Brownfield redevelopment programs and public policies constitute a taxpayer subsidy to private profit, which in turn relies on the land market to achieve the economic benefits on which the entire system of brownfield redevelopment is based.

Several brownfield researchers agree that the current market-based system falls short of important stated goals. First, the reliance on the commodity value of land means that only those sites with a high projected post-redevelopment value are ever redeveloped, leaving sites in lower value neighbourhoods without the necessary investment to enable remediation (Adams et al., 2010; De Souza, 2006; De Souza et al., 2009). This is problematic because most brownfields are located in areas of low market value (Adams et al., 2010). Second, the market-based approach is designed to prioritize immediate economic returns over longer-term neighbourhood improvements or quality of life improvements (Essoka, 2010; Siikamäki and Wernstedt, 2008). This means that existing public policy programs fall short of considering the longer-term and broader economic benefits of redevelopment in favour of relatively quick returns on investment for private interests. Third, the ability to generate profit from the redevelopment process is inversely related to the amount of contamination that must be remediated. The costs, risks, uncertainty and time delays of the remediation process naturally steer private investment to sites of low contamination (Adams et al., 2010). This both severely undermines the stated environmental benefits of redevelopment and limits the return on investment for government and taxpayers.

6.0 Summary and Analysis

Existing literature on brownfield redevelopment, drawn from a range of disciplines but heavily influenced by government and industry, identifies clear environmental, social and economic benefits to redevelopment and reports that these benefits can be achieved for the good of citizens and governments if certain barriers can be overcome. The legal liability risks and clean-up costs, as well as uncertain returns on investment and a lack of public involvement, are identified barriers to private sector investment in brownfield remediation and redevelopment. Public policy goals aimed at achieving the identified benefits of redevelopment have used direct public funding, tax incentives, and regulatory relief as the principle strategies to recruit investment, which has resulted in the promotion of the economic benefits of redevelopment as the primary outcome of the process.

Existing literature fails to properly consider the broader political and economic trends of neoliberalism that have intensified brownfield site creation, and that limit the means by which governments enact public policy. An economic and political paradigm shift dating

back to the 1970s permits industry to move activities offshore, or to alternate jurisdictions offering a better business climate, without taking responsibility for remediating and restoring the health of abandoned sites. Though brownfield sites have existed for hundreds of years, this political and economic paradigm shift has resulted in a profound expansion of the number of brownfield sites. Public policy tools used to counteract this trend have been similarly affected by neoliberal doctrine and have been limited to a variety of public-private partnership models to induce private investment in brownfields sites with public dollars. This strategy places emphasis on the economic gains of brownfield redevelopment as the profit-generation potential of redevelopment is the necessary element to attract private funding. Thus, this system permits industry to generate profit through a production process that renders the production site unusable without remediation, and then subsequently subsidizes further profit-generation through publicly funded redevelopment incentives.

As stated in the Chapter 2, infill development is limited by a variety of factors including the cost of land acquisition, political objection, financing challenges, and a limited market for infill housing. These barriers have made infill development uneconomical compared to greenfield development options. Brownfield redevelopment has been proposed as a form of infill development that can overcome the traditional infill barriers by providing greater social and environmental benefits to outweigh public opposition, and by accessing existing, unused sites that are considered to be a source of neighbourhood blight. Based on the research and analysis in this chapter, these assumptions must be questioned in terms of the real social and environmental benefits provided, and the nature of the sites being redeveloped. Without the associated social and environmental benefits, and without the use of low-value, contaminated sites, brownfield redevelopment is simply infill development by another name. That is, publicly subsidized brownfield redevelopment is little more than taxpayer-funded form of infill development that delivers the same social, environmental and economic benefits as other forms of infill.

Chapter 4: Provincial Context – Brownfield Redevelopment in British Columbia

1.0 Introduction

Having reviewed available scholarship on infill development and brownfield redevelopment in Chapters 2 and 3, this chapter will shift focus to comment on the British Columbia situation. However, before examining the study area directly, an understanding of a broader context is required. In British Columbia infill development falls under the jurisdiction of local government through land use approval mechanisms; there is little to no provincial role in direct regulation of infill development. Conversely, brownfield redevelopment (lands deemed to be contaminated) is profoundly influenced by provincial legislation, regulation and policy. Accordingly, any consideration of local initiatives to support or induce brownfield redevelopment must consider the provincial context in which those programs and policies exist.

This chapter will examine brownfield redevelopment in British Columbia as well as the BC government's strategy to induce the redevelopment of idle sites holding real or perceived contamination. Research will be conducted on the origins, goals and guidelines of BC's brownfield redevelopment programs, as well as the specific programs and services themselves. The government's brownfield redevelopment strategy will be analyzed against the stated goals of government, as well as the conclusions drawn from the existing literature on the subject in Chapter 3. The goal herein is twofold: first, the examination will determine whether the conclusions of the previous chapter can be applied to context in which the study area is located; second, such an examination lends itself to testing the validity of previous chapter's conclusions.

2.0 Origin of the BC Brownfields Renewal Strategy

2.1 Redevelopment of Vancouver's False Creek

The first brownfield redevelopment initiatives in British Columbia were those connected to the remediation and redevelopment of sites around Vancouver's False Creek. False Creek became the province's first large-scale industrial area following the completion of the Canadian Pacific Railway in 1886, and had subsequently become rife

with contamination in the years following. By the 1920s, the area had hosted sawmills, coal gasification plants, machine shops, metal works, wood treatment facilities, plus a range of warehouses and factory operations (Kelman, 2006). “Swift industrial growth was accompanied by equally ambitious landfilling, in which more than two-thirds of the inlet’s area was filled using a mixture of soil, debris from construction sites, general refuse, as well as wastes generated on-site” (Kelman, 2006:10). The first wave of redevelopments began in 1928 after residents in surrounding neighbourhoods began to experience air pollution from False Creek’s industrial activities. These projects, funded by the City of Vancouver, addressed a selection of critical issues, but did not propose wholesale clean-up or redevelopment of the industrial lands.

Industrial activities continued in the False Creek area until a sharp decline after 1950 (Kelman, 2006). Economic and transportation changes meant that False Creek was no longer of strategic advantage for industrial and warehousing activities, and this prompted a long, slow decline for the area (Kelman, 2006).^{xxviii} Though there were pitched political battles between local government, academics and community leaders through the 1960’s and 1970’s, it was finally accepted that the areas around False Creek should have a post-industrial future, and agreed that issues of pollution and land ownership/tenure were the main barriers to redevelopment (Kelman, 2006). In the late 1960s, land swaps between the area’s majority land owner, Canadian Pacific Railway, the City of Vancouver and the Province provided clarity to issues of land ownership, which opened the door to redevelopment lead by the City of Vancouver along False Creek’s south shore (Kelman, 2006).^{xxix}

The third phase of redevelopment around False Creek began in 1980; by this time the former industrial lands on the north shore were mostly vacant and derelict (Kelman, 2006). The province launched a ‘mega-project’ in connection with its hosting of the 1986 international exposition (Expo 86), and this would see the construction of a stadium,

^{xxviii} Changes in shipping meant that larger volume vessels were becoming commonplace, and those large vessels could not navigate False Creek’s small and shallow passage (Kelman, 2006). Larger, mass production sawmills were emerging along the Fraser River that were both more efficient than the small, family owned mills in and around False Creek, and were also part of large vertically-integrated corporations with better access to timber (Kelman, 2006).

^{xxix} This development included the construction of market and non-market housing, and the creation of Granville Island in its current orientation, including the opening of the Granville Public Market in 1979 (Kelman, 2006).

residential housing and office space on the north and east shores. The project, begun without the support of the City of Vancouver, was a provincial initiative and was executed by crown corporations granted vast authority to plan land use and development within the City's jurisdiction. Cost of the redevelopment was to be offset by realizing a profit on the sale of the residential and office developments connected to the project.

In 1987, following Expo 86, direct redevelopment work by the province ceased due to a change in government philosophy, and a move by the province toward a more neo-liberal public policy regime (Kelman, 2006).^{xxx} To better induce private investment, the province continued to fund site assessments in areas of the north shore that had not yet been redeveloped, and it was able to identify areas of contamination. The province sought mechanisms to deal with the contamination and provide a liability limit to private investors; however, this proved difficult as there were no established risk thresholds nor public safety standards for contamination levels for the materials found among the False Creek sites (Kelman, 2006). The north shore site was sold by the province to Concord Pacific Developments Limited in 1988 with a guarantee that the province would clean up the site to standards appropriate for the intended use once redeveloped, and that the province would retain "full liability for any losses, damages, lawsuits, expenses, and penalties arising directly or indirectly as a result of the contaminants present on the site (Kelman, 2006:154).

This description of provincial redevelopment chronicles the founding of some of the most expensive real estate in Canada. The full extent of the conversion from brownfields to high-end residential is illustrated in figures 4.1 and 4.2. Direct redevelopment by the provincial government, along with the provision of a liability waiver and government remediation, enabled private development to move forward in positive market conditions. This example illustrates that government intervention has the power to overcome the several key barriers to brownfield redevelopment identified in Chapter 3. Despite the success of the False Creek redevelopments, the provincial government declined to use the project as a model for a broader brownfield redevelopments.

^{xxx} Kelman (2006) does not directly use the term 'neo-liberal' in describing the provincial government's public policy shift; however, his description of the government's philosophy is consistent with the present-day understanding of that term (Harvey, 2005).

Figure 4.1: False Creek in 1969



Taken in 1969, this photo shows False Creek from the south, looking north, and shows the area before any major redevelopment work took place. Photo from the Vancouver Archives, accessed May 17, 2015 from <http://searcharchives.vancouver.ca/northwest-facing-cityscape-view-of-mount-pleasant-and-downtown>.

Figure 4.2: Present Day False Creek



This stylized photo of present-day False Creek illustrates both the great change in the area since the decline of its industrial history, and the way in which False Creek has become an iconic image used to represent the City of Vancouver. Photo from Destination BC website accessed May 17, 2015 from <http://www.hellobc.com/vancouver.aspx>.

2.2 2002 Auditor General Report

Consolidated, present-day provincial-scale work on contaminated sites by the Province of British Columbia can be traced back to a 2002 report of the BC Auditor General titled: *Managing Contaminated Sites on Provincial Lands*. In his report, Auditor General Wayne Strelieff comments that much of British Columbia's economic development has focused on the extraction and processing of resources from Crown land. Whether a public or private activity, these functions have left a legacy of contaminated sites due to the under-regulation of past activities (Strelieff, 2002). Government is directly responsible for these sites when the activities causing the contamination were at the behest of government; and also for those cases in which the private, responsible party cannot be found or is financially incapable of taking responsibility. Strelieff estimates that there are more than 2,000 known or potentially contaminated sites in British Columbia, many of which are on Crown land, and he notes that Crown land accounts for 92 percent of the province's land base (Strelieff, 2002).^{xxxii}

The audit of BC's handling of Crown contaminated sites was designed to assess whether government was adequately managing, recording, and accounting for the remediation process (Strelieff, 2002). The results found that the government failed to meet their own standards and there were "significant gaps in the information ministries and agencies needed to develop management plans and to make resource allocation decisions" (Strelieff, 2002: 4). This lack of information, arising from incomplete site inventories and incomplete site assessments^{xxxii} meant that government was unable to appropriately prioritize sites or allocate public funds accordingly. The issue was summarized by the Auditor General's Office in a press release published on December 17, 2002: "Better information about the extent of the problem and seriousness of the risks is needed if government is to ensure that the public's scarce resources are focused on the highest priority sites" (Office of the Auditor General of British Columbia, 2002:1).

^{xxxii} It is noted that in this section, "government" refers to the provincial government as this is the level of government responsible for contaminated sites legislation and brownfield redevelopment regulations.

^{xxxii} The Auditor General's Office found that "assessment of sites to determine the degree of contamination and level of risk (to the environment and to public health) has been carried out on only a portion of the existing inventory" (Strelieff, 2002:5).

In his summary, the Auditor General concluded that the Province did not have “an adequate program in place for managing its contaminated sites and [was] not adequately accounting for its performance (Stelioff, 202:4). To address these concerns he put forward three main recommendations to government. First, government should “identify a lead agency with the appropriate authority to oversee the development and implementation of a comprehensive and coordinated government-wide policy framework for the management of its contaminated sites” (Stelioff, 2002:7). Second, Stelioff recommended that management plans be developed based on complete information and that funding decisions be based on a province-wide prioritization of sites in which resources are allocated strategically to result in the greatest reductions in risk. This recommendation also included the development of performance targets and a system to measure success against those targets. Third, the Auditor General recommended that government develop a system to disclose financial liabilities for provincially-owned contaminated sites, expenditures related to remediation, and information about achievements made in remediating sites.

2.3 BC Crown Contaminated Sites Program

In 2003 the BC government established the Crown Land Restoration Branch (CLRB) as a sub-unit of the Land Administration Division of the Ministry of Agriculture to implement the Crown Contaminated Sites Program (Government of British Columbia, 2008). This department was charged with administering the Province’s response to the report of the Auditor General, specifically the oversight of programs dealing with contaminated sites for which the province was responsible, including establishing standards for the recording of liabilities, managing the prioritization of sites for remediation and tracking remediation progress. It is important to note that the role of this department was intentionally kept separate from the Ministry of the Environment, which acts as the regulatory arm of government dealing with contaminated sites. The CLRB acts on behalf of government in exercising its fiduciary and legal obligations as a site owner and steward of provincial lands whereas the Ministry of the Environment acts as the arm of government enforcing environmental standards and regulations. In 2012 the responsibility for Crown land administration and restoration was moved to the Ministry

of Forests, Lands and Natural Resource Operations and with that change the CLRB was transferred to the new ministry (Government of British Columbia, 2012).

To guide the work of the CLRB, the BC government created a policy framework to define the principles and process of the Branch in executing its functions. The Management of Provincial Contaminated Sites Policy was adopted in 2004, with a revision in 2008; this legislation applies only to Crown sites and specifically excludes private lands, Crown corporations and brownfields from its provisions (Government of British Columbia, 2008). The Policy was developed by a committee of representatives from a select group of provincial government ministries dealing with the environment, natural resources, lands, industry and finance. It encapsulates a series of principles including: the creation of provincial standards for what the policy calls a “Risk-Based Approach”; the assignment of responsibility for remediation to the polluting parties; a focus on fairness, consistency and cooperation among all parties; the use of innovative, science-based approaches; and the responsibility to carry out the policy in a way that is accountable and transparent (Government of British Columbia, 2008). The stated objectives of the Policy are to limit the impact of contaminated sites on human health and the environment; to accurately record the financial liabilities of contaminated sites; to ensure management of contaminated sites is coordinated and consistent; to increase public awareness and understanding of the Province’s management of its contaminated sites; and to “ensure that management and remediation activities reflect the need to effectively use limited public resources by prioritizing government activities related to contaminated sites” (Government of British Columbia, 2008:8).^{xxxiii}

An understanding of the site prioritization process and philosophy is useful in assessing the government’s principles regarding public spending on contaminated sites. Under the

^{xxxiii} The “key elements of the policy...” section includes the following introduction and key goals: “The Ministry of Agriculture and Lands is the lead ministry of the development and implementation of the Crown Contaminated Sites Program; a consistent risk-based approach will be used to identify and prioritize Crown Contaminated Sites; contaminated sites information shall be stored in a consistent manner; candidate sites shall be prioritized using a risk-based assessment approach; ministries shall account for financial liabilities in relation to Contaminated Sites in accordance with approved government financial policies for recording liabilities; the Crown Contaminated Sites Program will promote innovative strategies for site remediation; the Provincial Contaminated Sites Committee will provide a forum to identify issues, develop strategies, and best practices for the management of Contaminated Sites; a consistent process will be followed in determining ministry responsibility for Contaminated Sites; and a cross-government reporting framework will guide reporting related to the management of Contaminated Sites” (Government of British Columbia, 2008:2).

Crown Contaminated Sites Program structure, candidate sites are brought forward for evaluation and ranking based on potential harm to human health and the environment as determined by site research conducted (Government of British Columbia, 2008). The governing policy directs that following an evaluation, each site is designated in one of three ways: as a priority for remediation; as a site for risk management and monitoring; or a site for which no action is required. Once a site is designated as a priority for remediation, it undergoes further ranking because “funding restrictions prevent government from addressing all the sites at once...[and it is] necessary to rank sites in order of their priority in terms of risk to human health and the environment...” (Government of British Columbia, 2008: 8). Under this model, public funds are directed to sites with the most contamination or most in need of remediation based on damage or potential damage to public health and the environment. By this framework, there is a passage that states support for public-private partnerships as “innovative strategies for site remediation” but is careful to note that the availability of private funds should not be a factor in site prioritization (Government of British Columbia, 2008:11).^{xxxiv}

2.4 Emergence of the Brownfield Renewal Strategy

The Crown Contaminated Site Program and the Management of Provincial Crown Contaminated Sites Policy do not apply to private lands. Prior to 2008, there was no evidence to suggest that the CLRB dealt in any way with private lands; in all respects, the agency was devoted to administering a program of public funds devoted to remediating public lands. In 2008 the BC government announced a new provincial-scale strategy to tackle privately-held lands with contamination, and that initiative was to be administered by the CLRB. The program, titled *B.C. Brownfield Renewal Strategy*, is described on the

^{xxxiv} Though less relevant to origins of the BC Brownfield Renewal Strategy, an important element of the Program is the booking of accurate liabilities to reflect the costs of remediation where the Province is obligated to act. It is equally important to note that the booked costs, where they exist, are simply estimates. The reason some costs are not recorded is that the Policy differentiates direct financial liability from contingent liabilities, the latter being defined as “existing conditions or situations from which a loss may arise” (Government of British Columbia, 2008:11). In this case, contingent liabilities include scenarios in which the amount of liability cannot be estimated; and those liabilities that may be contingent on a future event, the probability of which cannot be estimated. Contingent liabilities are not allocated a financial liability value and only recorded in the notes of the Province’s financial statements. Similar to private sector scenarios, this liability recording regime provides a disincentive to conduct the necessary research to allocate a value and bring the liability onto the public account balance sheet as it would negatively effect the Province’s equity position.

Crown Land Administration Division website as “aimed at igniting green development by putting back into productive use abandoned, derelict and underutilized properties” (Crown Land Administrative Division, 2012a: para 4). The program is designed to respond to government’s concerns that brownfield redevelopment faces a number of barriers, including tax regimes, regulatory requirements and funding challenges, that collectively result in making the redevelopment of some sites economically unfeasible (Crown Land Administrative Division, 2012b).

The Brownfield Renewal Strategy is “a cross-government initiative...implemented in partnership with the ministries of Agriculture and Lands, Advanced Education, Community Services, Environment and Finance” (Crown Land Administration Division, 2012c: para 1). The program was announced on February 25, 2008 and the associated government media release described the purpose as “an innovative solution to revitalize abandoned and underutilized lands known as brownfields so that British Columbians can get the most value out of the land in their communities” (Ministry of Agriculture and Lands, 2008: para 1). The announcement committed that the strategy would immediately:

“Fast-track green developments waiting for provincial environmental approvals, as outlined in the throne speech; implement a \$10-million fund built up over five years that will match provincial and private sector investment in the early stages of investigations on sites where market forces have not achieved redevelopment and where it is possible to achieve triple-bottom-line outcomes that have social, economic and environmental benefits; and broaden brownfield tools for local governments, linking brownfield renewal with government’s proposed Green Communities Initiative to ensure brownfield opportunities can be a part of community revitalization. This will include allowing communities to vary development costs for projects that demonstrate triple-bottom-line benefits” (Ministry of Agriculture and Lands, 2008: para 4).

Through the Strategy’s announcement, the Province committed to: developing tax incentives and disincentives; providing municipalities expert advice on a “project-by-project basis”; developing liability regulations to incentivize the sale or redevelopment of private, idle properties; providing general information and guidance to municipal governments; creating a certificate program within the college and university system to

provide brownfield entrepreneurship education; and facilitating the “return of Crown owned brownfield sites to productive use.” (Ministry of Agriculture and Lands, 2008: para 5). The media release noted that the benefits of brownfield redevelopment included the prevention of greenfield development, improvements to the environment and human health, and increases to property values. The CLRB website summarizes these benefits by stating “Brownfield sites can generate significant economic, social and environmental benefits, protect green space and reduce provincial liabilities.” (Crown Land Administration Division, 2012c). The only clue as to the political origin of the program is a reference within the program description web page that states that the program is a response to the 2007 and 2008 British Columbia Speeches from the Throne.

3.0 Political Context and Purpose of the B.C. Brownfield Renewal Strategy

3.1 Introduction

The province of British Columbia uses a Westminster Parliament system of government with the Lieutenant Governors acting as the Head of State and the leader of the party with the most seats in the legislative assembly serving as the head of government. A two-party system exists in British Columbia with the BC Liberal Party broadly representing a neo-liberal, business-friendly perspective and the BC New Democratic Party representing a social democratic alternative. In 2001 the BC Liberal Party was elected with a sweeping majority to replace a New Democrat government that had been in office since 1991. Dyck (2008) reports that the BC Liberals under leader Gordon Campbell won 77 of 79 legislative seats with 58 percent of the popular vote; the new government then set about making significant changes. Dyck reported that key policy shifts of the Campbell government’s first few months in office were the reduction of personal income taxes by twenty-five percent; the reduction of corporate taxes, the reduction in funding for environmental protection, welfare and child protection; and the implemented fixed election dates. During their first term in office under Campbell, the BC Liberals cut one-third of civil service positions; froze civil service salaries; repudiated contracts with labour unions representing civil servants; deregulated university and college tuition fees; closed several rural hospitals; contracted out government functions to private enterprise; and reduced regulations protecting employees and unions (Dyck, 2008). This agenda was similar to the types of public policies described by Peck and

Tickle (Peck and Tickle, 2002) as *roll-back* neo-liberalism discussed in the previous chapter.

The BC Liberals faced re-election in 2005 and in the lead up to the election began to transform their messaging and policy direction. Following the evolutionary path described by Peck and Tickle (2002), the BC Liberals moved their policy towards a model of *roll-out* neoliberalism, using the mechanism and funds of government to invest in projects and services that met market economic goals and objects. Investments in public infrastructure, expansion of the university system, re-organization of the healthcare system, tax incentive schemes, and investments in job creation and economic development were all prominent features of the 2005 BC Liberal platform, titled *Real Leadership, Real Progress for British Columbia; a proven plan for a golden decade* (2005). Re-elected with a much-reduced majority, the BC Liberals went about enacting these and other policy directives, including the B.C. Brownfield Renewal Strategy.

3.2 Political Origin of the B.C. Brownfield Renewal Strategy

As previously discussed, the B.C. Brownfield Renewal Strategy was born of ambitions announced in the 2007 and 2008 BC Speeches from the Throne. Under the British Columbia's system of government, the Speech from the Throne is the government's annual address, delivered by the Lieutenant Governor at the opening of the parliamentary session: the speech identifies the goals and direction of the Province for the coming year.^{xxxv} To understand the mandate of the Strategy, an examination of the noted speeches from the throne should reveal both the program mandate and the political context within which the government intends to operate.

The 2007 Speech from the Throne was delivered on February 13 of that year. It is forty-one pages long and contains approximately 7,000 words but does not directly reference brownfield redevelopment (Campagnolo, 2007). As the CLRB of government claims on their website, the 2007 Throne Speech does reference the government's desire to reduce urban sprawl on page seven, but the exact wording of the passage refers to "unplanned urban sprawl" (Campagnolo, 2007:7). Page ten of the speech references the

^{xxxv} Once delivered, Members of the Legislative Assembly have only six sitting days to debate the speech and content before voting to either support or defeat the Throne Speech. Should the speech be defeated, the government would be deemed to have lost the support, or confidence, of the Legislature and would be required to resign (Legislative Assembly of British Columbia, 2010).

past work by government to identify and restore Crown contaminated sites: the only such reference in the document. There are no references to the redevelopment of privately held contaminated sites.

One section of the 2007 Throne Speech, titled “Housing is the Cornerstone of Strong Social Policy”, identifies concerns about homelessness, especially in relation to those suffering from mental health issues and addictions (Campagnolo, 2007:26). The government calls on municipalities of greater than 25,000 residents to “identify and zone appropriate sites for supportive housing and treatment facilities for persons with mental illnesses and addictions in official community plans” and goes on to hint at possible funding allocations for such developments (Campagnolo, 2007:26). The Throne Speech calls on local governments to encourage “small-unit, supportive housing projects” by exempting them from development cost charges and other development fees.

Government commits to its own fee and tax reform to support such development and states that the goals of its policy are to add housing stock, reduce housing costs and reduce the “environmental footprint of sprawling communities” (Campagnolo, 2007:27). To justify these initiatives and proposals, the Throne Speech states that urban sprawl increases municipal servicing costs, creates transit inefficiencies, creates pressure on land availability and generally leads to house price inflation. These references are consistent with the stated benefits of infill development, and though they are also consistent with brownfield redevelopment benefits, they are not unique benefits to brownfield redevelopment as a form of infill development.

On page fourteen of the 2008 British Columbia Throne Speech the government announces the new LiveSmart BC initiative as a mechanism to “contain urban sprawl and reward development that creates more affordable housing, new green spaces and more people-friendly neighbourhoods (Point, 2008).^{xxxvi} Following from this, the Speech identifies a ‘Brownfields to Greenfields’ redevelopment strategy to “target dirty sites for the creation of well-treed, green, livable communities” (Point, 2008:15). The government also stated that higher densities, combined with transit investment, would create

^{xxxvi} An analysis of the LiveSmart BC website reveals that the program is little more than a social marketing initiative to promote environmentally-friendly personal choices by citizens; a clearing house of best practices in sustainability for organizations, government bodies and business; and a platform for marketing sustainability programs, initiatives and announcements of the BC government (LiveSmart BC, 2012).

affordable housing (Point, 2008). This passage introduced a section of the Speech dealing with climate change and other than the above reference the 2008 Throne Speech was silent on the topic of brownfield redevelopment.^{xxxvii}

Several relevant observations can be drawn from the examination of these two documents. First, that the B.C. Brownfield Renewal Strategy has its political origins in the 2008 Speech from the Throne and the stated goals of the program at the time were to turn contaminated sites into “well-treed, green, liveable communities” (Point, 2008: 15).^{xxxviii} Second, these documents barely reference brownfield redevelopment or contaminated site remediation, and do not reference the B.C. Brownfield Renewal Strategy at all. Additionally, the two quoted throne speeches do not provide any direction or description regarding the possible mission, vision or objectives for government-sponsored brownfield redevelopment. Finally, the parts of each Speech that deal with community planning and redevelopment are focused broadly on infill development aimed at increasing densities, reducing urban sprawl and providing a venue for affordable housing: all laudable goals that fit current trends and mandates in urban planning.

The CLRB uses references to these throne speeches to provide context to the B.C. Brownfield Renewal Strategy, to demonstrate how the Strategy relates to the broader goals of government, and to imply that the mandate can be traced to an agenda-setting document of government. The CLRB website states the B.C. Brownfield Renewal Strategy “supports commitments in the 2007 and 2008 Speeches from the Throne related to: climate change, reducing urban sprawl and increases in affordable housing” (Crown Land Administration Division, 2012b). An examination of these documents reveals that they make no connection between these stated goals and brownfield redevelopment. Though the two throne speeches do commit to creating affordable housing, taking on

^{xxxvii} Similar to 2007, the 2008 Throne Speech did have a section devoted to housing and social policy and this was titled “Living Smart Means Safe, Supportive Communities” (Point, 2008: 32). References to house prices, small-unit housing and environmental footprint were removed entirely and replaced by a discussion of new facilities for the mentally ill and claims that the government had already “helped thousands of people find more affordable and appropriate housing” (Point, 2008: 33). A significant portion of the section is devoted to issues of dealing with police, crime and punishment; references to urban sprawl from the previous year were absent (Point, 2008).

^{xxxviii} The brownfield redevelopment initiative quoted in the 2008 Throne Speech, that being the “Brownfield to Greenfield” program, was never created. Available BC government websites and documentation quoting brownfield redevelopment direct users to B.C. Brownfield Renewal Strategy or the Crown Land Restoration Branch and there are no references to anything titled “Brownfield to Greenfield.”

climate change and reducing “unplanned urban sprawl”, brownfield redevelopment does not, necessarily, address these issues. Neither the referenced speeches nor the CLRB website provide any information about why brownfield redevelopment, specifically, is the government’s chosen tactic to address these issues.^{xxxix}

3.3 Purpose of the Program

The B.C. Brownfield Renewal Strategy page of the CLRB website identifies several goals of the Strategy. According to the site, the Strategy will amend public policy to improve the remediation approval process, prevent the development of future brownfields, use taxation measures to promote brownfield investment, and relax liability regimes to encourage owners of idle sites to redevelop or sell their property (Crown Land Administration Division, 2012b). The Strategy will also use public resources to directly fund private redevelopment investigations in cases where the “market forces will not achieve redevelopment...”, and provide information to “build capacity and awareness of redevelopment tools and opportunities” (Crown Land Administration Division, 2012b: para 5). Finally, the CLRB commits that the Strategy will directly redevelop key Crown owned sites as a means of leading by example (Crown Land Administration Division, 2012b). This language is not the same as that used in the original press release announcing the Strategy’s existence in 2008, and it differs from the stated goals listed on the B.C. Brownfield Renewal Strategy website. Accordingly, this examination illustrates that government continues to fine-tune the Strategy’s goals and objectives through its various websites.

^{xxxix} An excellent source of data to determine the political background of a major government initiative, besides the annual Speech from the Throne, is the election platform of the governing party. The election preceding the creation of the B.C. Brownfield Renewal Strategy was held in May of 2005 and in that election the governing BC Liberal Party tabled a platform of more than forty pages with more than 200 specific commitments (BC Liberal Party, 2005). The 51 page 2009 BC Liberal Party platform was no less impressive (BC Liberal Party, 2009). Neither document referenced the Brownfield Renewal Strategy, or brownfield redevelopment in general, as either a goal or a notable achievement of government. References were made to the government’s desire to increase access to affordable housing, improve the economic growth, reduce regulation restricting business development and opportunities, and reduce greenhouse gas emissions (BC Liberal Party, 2005; BC Liberal Party 2009). These issues relate closely to the content of the 2007 and 2008 Speeches from the Throne but just as in the speeches, the election platforms do not connect these issues to brownfield redevelopment.

3.4 Summary

The B.C. Brownfield Renewal Strategy was created in 2008 by the BC government without a clear direction, mandate or objective within the agenda-setting documents of government. At the time of its creation, government was working under a political paradigm of roll-out neo-liberalism evident in the governing party's platform and policy initiatives. Though there are stated goals for the Strategy published on government websites and in media releases, these goals are very broad and are published in various incarnations in different promotional materials. Given that this review of the political context and purpose of the Strategy only provides very broad and imprecise data for analysis, a close examination of the Strategy is needed to develop a profile of its purpose based on its services, programs and publications.

4.0 Brownfield Renewal Strategy Profile

4.1 Introduction

The B.C. Brownfield Renewal Strategy has three basic areas of operation: it provides financial incentives to induce the redevelopment of brownfields; it provides data and resources to assist governments and private entities facilitate redevelopment; and it directly funds redevelopment of Crown brownfield sites. This section will examine the program in detail. The information will then be compared against what is already known about government programs to support brownfield redevelopment – that is, to evaluate how well the stated goals have been achieved and to draw conclusions about the motivations and likely effectiveness of the BC program.^{x1}

4.2 Overview and Philosophy

The B.C. Brownfield Renewal Strategy provides a broad overview of the benefits and barriers of brownfield redevelopment from the perspective of the agency's management. Quoting a standard form definition of brownfields from the National Roundtable on the Environment and Economy, B.C. Brownfield Renewal estimates that there are between 4,000 and 6,000 brownfield sites in BC (B.C. Brownfield Renewal, 2012a). Common BC brownfields are identified as “closed service stations; former drycleaners; abandoned

^{x1} It should be noted, for clarity of understanding, that although various offices across government continue to refer to the B.C. Brownfield Renewal Strategy, the agency has dropped the word Strategy from its name and is simply called B.C. Brownfield Renewal.

mines; old industrial waterfronts and manufacturing plants; [and] former rail yards” (B.C. Brownfield Renewal, 2012a). The agency reports that brownfield redevelopment is important because “land development in British Columbia is physically restrained by geography, resulting in only about six percent of the province being available for land development” (B.C. Brownfield Renewal, 2012a: para 6).^{xii} Rising population pressures and high real estate values are also quoted as driving forces behind the need to reuse both former industrial sites and former commercial sites (B.C. Brownfield Renewal, 2012a).

The B.C. Brownfield Renewal lists economic, social and environmental benefits of brownfield redevelopment, in part from a sustainability perspective. Environmental benefits include reducing greenhouse gas emissions, reducing use of greenfield and agricultural lands for development, preserving natural habitats, improving groundwater and soil quality and converting contaminated or unused land to green space (B.C. Brownfield Renewal, 2012a and B.C. Brownfield Renewal, 2012b). Noted social benefits include the creation of affordable housing, neighbourhood revitalization, increased public safety, job creation and repopulation of city cores (B.C. Brownfield Renewal, 2012b). Increased tax revenue, higher land values, job creation, improved economic growth and facilitation of new industries are among economic benefits listed in the agency’s documentation (B.C. Brownfield Renewal, 2012b). Challenges to brownfield redevelopment are summarized as uncertainty regarding liability and lack of liability protection; inflated development costs and limited funding sources; increased development timelines; limited capacity and knowledge within the development industry; and market conditions and limitations (B.C. Brownfield Renewal, 2012a and Government of British Columbia, 2012b).

The “Our Strategy” section of the B.C. Brownfield Renewal website states that its goals are to “strengthen public policy for environmental liability and risk management; apply strategic public investments to encourage redevelopment of idle sites; build capacity and awareness of redevelopment tools and opportunities to enhance and inform

^{xii} The claim that only six percent of British Columbia is developable land appears as an underestimation. Other available and relevant statistics show that only sixty percent of British Columbia is forested (Ministry of Forest, Mines and Lands, 2010), and according to the BC Auditor General’s office “less than 5% of the province’s land is suitable agricultural land...” (Doyle, 2010:1). Neither of these statistics prove the Brownfield Renewal Strategy claim false; however, they motivate further speculation that the six percent estimate is low.

about brownfields; [and] lead by example through the redevelopment of key Crown brownfield sites” (B.C. Brownfield Renewal, 2012c). This passage is a simple summary of the points listed on the CLRB website (Crown Land Administration Division, 2012b) and supports the earlier conclusion regarding the evolving goals of B.C. Brownfield Renewal. Other versions of the agency’s goals and objectives contain more detail and, as previously discussed, there is no single, unifying mandate. Rather, what exists is a wide range of phrasing used to express some common goals. The goals listed on the B.C. Brownfield Renewal website, the main source of information, are consistent with the other versions but represent only one incarnation of the types of goals listed for the strategy of the agency.

4.3 Financial Incentive Programs

Two programs of government are promoted as financial incentives offered by B.C. Brownfield Renewal: BC Brownfield Renewal Funding Program, and the Revitalization Tax Exemption. The latter program is not, strictly speaking, a program of the Strategy, but rather a local government tax measure that is enabled through section 226 of the *BC Community Charter*, a piece of legislation that governs the operations of local governments in the province. Both of these programs are described in detail below.

The BC Brownfield Renewal Funding Program “is designed to revitalize inactive or unused lands across British Columbia by reducing the risk and uncertainty normally associated with these types of sites” (B.C. Brownfield Renewal, 2012d). The Program aims to achieve that goal by providing direct funds to land owners and developers to facilitate “environmental investigations and related activities on brownfield sites where market forces have not achieved redevelopment and where it is possible to achieve triple-bottom-line benefits” (B.C. Brownfield Renewal, 2012d). This program is open to local governments; non-profit organizations; First Nations; and private corporations and citizens who own a subject property (Crown Land Restoration Branch, 2012).^{xliii}

^{xliii} Though First Nations are eligible to receive funding from the Brownfield Renewal Funding Program their eligibility only extends to lands owned fee simple by the respective Band. Further, Local governments, including First Nations, regional districts and municipalities, may apply on behalf of a private owner for remediation to a privately owned property so long as authorized in writing. (Crown Land Restoration Branch, 2012).

The BC Brownfield Renewal Funding Program focuses on funding site evaluation processes and provides reimbursement for up to 85 percent of cost of a Preliminary Site Investigations and up to 70 percent of the costs of a Detailed Site Investigation as defined by Chapter 53, Section 41 of BC *Environmental Management Act* (Crown Land Restoration Branch, 2012). Maximums established for these grants are \$10,000 for Stage 1 Preliminary Site Investigations, \$70,000 for Stage 2 Preliminary Site Investigations and \$125,000 for a Detail Site Investigation (Crown Land Restoration Branch, 2012). Additional funds are available for both “Other Environmental Investigations” such as remediation planning or alternate remediation evaluation; and such “Other Related Environmental Activities” as on-site waste classification, removal of above ground and underground petroleum tanks and verification sampling and monitoring (Crown Land Restoration Branch, 2012: 10). These activities are funded at 50 percent to a maximum of \$125,000 each (Crown Land Restoration Branch, 2012). As of March 30, 2011, a total \$4.2 million was allocated to the Program for award (Ministry of Forests, Lands and Natural Resource Operations, 2011).

To qualify for funding, applicants must file a formal written submission with supporting documents outlining all associated work, which is to be conducted by a certified professional approved by the Province. Successful applicants must sign a fourteen-page standard form contract with the BC government specifying the work to be done, indemnifying the government from liability for any work conducted, certifying that the applicant has appropriate insurance, outlining the remedies to default, plus other associated terms and conditions (Ministry of Forests, Lands and Natural Resource Operations, 2012). Among the available data on the Strategy and this program, there is no reference to how the Strategy assesses the presence of triple-bottom-line benefits, or evaluates the sustainability of a proposal.^{xliii}

As alluded above, the second financial incentive program of the B.C. Brownfield Renewal is neither a funding program nor a service of the BC government. Under Section 226 of the *BC Community Charter* (2003), and Section 396E of the *Vancouver Charter* (1953), a municipal council may define a revitalization program with specific objectives

^{xliii} For information, triple bottom line accounting refers to a process where the environmental and social implications are considered along with economic implications.

and parameters, and subsequently enter into agreements with property owners to fulfill the terms of the program. Once property owners have fulfilled their obligations, a local government may provide a tax exemption on municipal property value taxes only (listed in Section 197 (1)(a) of the *BC Community Charter*) for a period of up to ten years.

Revitalization programs and associated tax exemptions may have a wide range of social, economic or environmental goals including, but not limited to: promoting green building practices; encouraging investment and employment related activities; inducing the construction of affordable housing; providing financial incentives for heritage preservation and promoting varying forms of sustainable development (Ministry of Community Services, 2008). Encouraging brownfield redevelopment is among the many possible rationales for extending a revitalization tax exemption under Section 226 of the *Community Charter*, but this provision is certainly not designed as a measure specific to brownfield redevelopment. It is also important to note that the funding provided to the program, in the form of lost tax revenues, is drawn from the municipal budget and is not funded by the provincial government. There is no mechanism specified for how municipal governments might recover this lost revenue from the provincial government.

4.4 Assistance to Local Government and Developers

Among the promoted services of B.C. Brownfield Renewal is service to local governments in the form of information and resources. This comes in a range of formats. The agency staffs a service titled the “Local Government Brownfield Hotline” that provides information on site development, planning, environmental regulations and processes and financial incentives (B.C. Brownfield Renewal, 2012e). Local governments can use the hotline to request a “presentation, workshop or training session on brownfield redevelopment in British Columbia” (B.C. Brownfield Renewal, 2012e). These presentations are listed by the B.C. Brownfield Renewal as an additional service provided to local government. More general information is made available in the form of resources and research, which will be reviewed in the section below. It should be noted that the “For Local Government” section of the Strategy website also lists the Revitalization Tax Exemption, which is cross-listed in the “Financial Incentives” section and discussed above.

Assistance provided to developers is in two forms. First, developers are extended the same invitation as local government to call the agency office to request a “presentation, workshop or training session on brownfield renewal” (B.C. Brownfield Renewal, 2012f). It should be noted that the number that developers are invited to call for a presentation is the same number listed as the “Local Government Brownfield Hotline,” calling into question whether the Hotline is simply the office number marketed as a specific service. The second service for developers is the agency’s array of resources, which are the same resources it advertises as a service for local government.

4.5 Site Remediation Information

B.C. Brownfield Renewal promotes itself as a source for information on site remediation and its website hosts a page with that title. However, upon review, the ‘Remediation’ page of the website simply directs readers to the BC Ministry of Environment website dealing with land remediation. The agency reports that the Contaminated Sites Regulation of the BC *Environmental Management Act* (EMA) provides a process to identify, investigate, and remediate contaminated sites (B.C. Brownfield Renewal, 2012g), summarizes the EMA’s process for the creation of site profiles, and describes the threshold for the awarding of remediation certification. Remediation materials note that these mechanism of the EMA work together to “ensure that sites are environmentally suitable for redevelopment” (B.C. Brownfield Renewal, 2012g). The agency’s online materials assert that “one of the principal attributes of British Columbia’s contaminated site legislation is providing increased environmental and business certainty for persons wishing to remediate and redevelop brownfields in the province” (B.C. Brownfield Renewal, 2012g; para 7) and go on to summarize the environmental quality standards, site profile system, Ministry (of Environment) remediation certification processes, as well as the liability regime outlined in the EMA. Though some of this information is valuable, it is simply ‘cut and paste’ of material already easily accessible on the Ministry of Environment website (Ministry of the Environment, 2012) and appears to be surface level promotion of the existing Ministry of Environment regulatory systems. Certainly this information is not specialized data designed specifically for those involved in brownfield redevelopment.

4.6 Information on Brownfield Redevelopment

B.C. Brownfield Renewal acts as a clearinghouse of information related to brownfield redevelopment and the Resources section of the agency website contains links and downloadable documents covering a variety of topics within the field. The majority of the content consists of links to other organizations working on brownfield redevelopment including the Canadian Urban Institute, aboutREMEDATION.com, the Government of Ontario, the Canadian Brownfields Network, the Canadian Mortgage and Housing Corporation and the Union of BC Municipalities. When tested, several of the links were no longer functional. The site also contains cross-referenced information on the Revitalization Tax Exemption; land remediation regulations; and the method to request a presentation, workshop or training session from agency staff. Of greater use than broken or obvious links to external organizations is the data generated by B.C. Brownfield Renewal research and published in both hard copy and electronic formats. Key publications of the agency are reviewed below:

4.7 The Basics of Brownfield Development: a guide for local governments in BC

B.C. Brownfield Renewal has compiled a fifteen page published document to serve as a “general source of information on brownfield renewal and redevelopment” but with a specific focus on informing local government staff (B.C. Brownfield Renewal, 2011: 2). The introductory content reviews the definition of brownfields, the benefits of remediation, the challenges to brownfield redevelopment and lists the potentially negative effects of brownfield sites that are not redeveloped. The document notes challenges to rural brownfield redevelopment due to low land values, accessibility to rural greenfield lands, and reduced technical and financial capacity on the part of rural local governments (B.C. Brownfield Renewal, 2011). The advice provided to local governments includes a recommendation to develop local brownfield renewal strategies for their own jurisdiction as part of existing planning structures, which should include a focus on public-private partnerships through remediation, marketing, coordination and planning processes (B.C. Brownfield Renewal, 2011). According to the Guide, local government should collect and provide information on brownfield redevelopment; establish a local government team within the municipal staffing structure; create a brownfield stakeholder advisory group of “brownfield owners, developers, support

professionals and community organizations”; and compile an inventory of brownfield sites (B.C. Brownfield Renewal, 2011: 8). Additionally, the Guide encourages local governments to improve planning and approval processes for brownfield redevelopment; provide financial incentives with streamlined application and approval processes; market redevelopment incentives and opportunities to developers and land owners; and create a system of monitoring to track performance of each strategy component (B.C. Brownfield Renewal, 2011).

4.8 A Community Resource Guide for Brownfield Redevelopment: Case Studies

The introduction to this 23-page document contains a summary of many of the recommendations of the aforementioned guide for local governments. The case study document outlines seven redevelopment projects from various locations in British Columbia and provides information on site conditions; redevelopment concepts and visions; challenges faced in redevelopment; implementation planning completed; and financial information about each project. Based on the cases presented, the document proposes some best practices for developers and local governments, including: creating a clear vision for redevelopment; ensuring the community is kept informed; conducting both short- and long-term planning; seeking partnerships; pursuing multiple funding sources for projects; promoting interim uses for sites; considering non-monetary incentives for redevelopment and providing information on risks and liabilities (B.C. Brownfield Renewal, 2012h: 8-9).

4.9 A Community Resource Guide for Brownfield Redevelopment: Project Funding

The 40-page funding resource guide lists available funding for brownfield redevelopment projects. Information is provided on the source and amount of funding, as well as on the criteria and application processes. The funding listed is not specific to brownfield redevelopment and includes a wide and diverse range of available grants from such sources as the federal government, the Canada Mortgage and Housing Corporation, the Federation of Canadian Municipalities, BC Hydro, the Home Depot Foundation of Canada, Mountain Equipment Co-op, and Shell Canada (B.C. Brownfield Renewal, 2012i). In many cases, the funding sources listed are standard community sponsorship

programs with very restrictive criteria (i.e. limited to not-for-profit agencies) and a very broad focus to enable the funding provider to spread resources across several sectors.

4.10 BC Toolkit for Former Service Stations (<http://www.brownfieldsbc.com>)

In 2012 B.C Brownfield Renewal created an online resource to assist local governments and site owners deal with a common type of brownfield site, former service stations. The website contains four main pages: a “Resource” page with much the same information as the main agency website; a “Question and Answer” page with frequently asked questions about funding, remediation, and sources of assistance; a “News” page that refers users back to the main agency website; and an “About” page with a summary of the purpose of the site (B.C. Brownfield Renewal, 2012j). While there is some specific information dealing with service station sites, the website functions as a clearinghouse of already available material with a focus on information items best suited to service station redevelopment.

4.11 Direct Redevelopment of Crown-owned Brownfields

A key goal of the government’s Brownfield Renewal Strategy was the direct redevelopment of brownfield sites and three such sites are promoted as pilot projects. Millstream Meadows, located 10 kilometers north-northwest of Victoria, was a former waste dump and the first site identified under the new Strategy. The BC government and Capital Regional District announced the redevelopment project in a press release issued on April 1, 2008, barely one month following the announcement of B.C. Brownfields Renewal’s creation (Ministry of Agriculture and Lands and Capital Regional District, 2008). The remediation of the Ladysmith Harbour (88 kilometers north of Victoria) was the second listed pilot project of B.C. Brownfield Renewal; however this initiative began in 2005, more than two years before the agency was created (Crown Land Administration Division, 2012d). The third listed pilot project was the Gas Works site in New Westminster, however work on this site dates back to 2006 (Crown Land Administration Division, 2012e). Given the timelines on these projects, it is disingenuous to promote these as elements of the B.C. Brownfield Renewal, especially as there are no other projects listed from the time the agency has been in operation.

4.12 Summary

Based on this research, B.C. Brownfield Renewal has only two services: it provides information and resources to local governments, landowners and the general public on brownfield redevelopment; and it operates a funding program for site investigation and remediation planning. Of the four stated objectives of the government's strategy, (that is, the strengthening of public policy, strategic use of public funds to induce redevelopment, dissemination of information and promotion of redevelopment tools, and the redevelopment of example brownfield sites) the agency's existing services only address two. The reiteration of the broad goals for the agency, the complexity and amount of content on the website, and the agency's several publications create a sense that the initiative is a robust operation with a multitude of services and functions. However, a detailed review reveals that B.C. Brownfield Renewal is lacking in substance, and relies on external links, cross-referenced information, and the promotion of existing, external funding sources to appear more substantial than it is in reality.

5.0 Analysis and Discussion

5.1 Summary of Findings

The development of the B.C. Brownfield Renewal Strategy can be traced back to a 2002 report of the BC Auditor General calling on government to develop a comprehensive policy and plan to manage and account for contaminated sites on Crown lands. In response, government created the Crown Contaminated Sites Program and the *Management of Provincial Contaminated Sites Policy*, both of which were overseen by the newly established Crown Land Restoration Branch. The Program invested public funds in remediation based on the principle outlined in the Policy. One of the key principles of the Program was that limited, public resources be focused on sites with the greatest contamination such that taxpayer dollars were used to address sites with the greatest risk to human health and the environment. The Program and Policy did not deal with privately owned sites or brownfield redevelopment.

In 2008, Government created B.C. Brownfield Renewal, which was meant to use a diversity of tactics to promote and assist the redevelopment of idle, privately owned or local government sites with real or perceived contamination. Unlike the Crown Contaminated Sites Program, the B.C. Brownfield Renewal agency has no governing

policy or entrenched principles; nor can the origin, mandate or vision of its strategy be traced to any agenda-setting documents as the Crown Contaminated Sites Program can to the 2002 Auditor General report. The broad objectives of BC Brownfield Renewal are not rooted in any official document of government and various versions exist in press releases, publications, websites and other documentation. The lack of codified objectives and principles for the agency makes evaluation difficult as there is nothing to against which to compare its programs and services. Notwithstanding this lack of information, it is clear that the agency falls short of achieving the goals and objectives that are stated on its website. In addition to this, the analysis presented below illustrates that B.C. Brownfield Renewal represents a major reversal of policy direction for the BC government.

5.2 BC Brownfield Redevelopment Funding: a reversal of public policy

B.C. Brownfield Renewal's objective relating to the provision of public funding calls for the application of "strategic public investments to encourage the redevelopment of idle sites" (B.C. Brownfield Renewal Strategy, 2012c; Crown Land Administration Division, 2012b; Crown Land Restoration Branch, 2012). This passage makes no mention of brownfields or contaminated sites, nor does it provide any insight into what is deemed strategic. According to this stated objective, a site need only be idle to qualify for a publicly-funded redevelopment subsidy. The financial incentive program of B.C. Brownfield Renewal provides funding for site evaluation on a matching basis, meaning that eligible sites are those that attract private or local government investment. Accordingly, the program is predisposed to attract private landowners and local governments holding properties with perceived contamination seeking to confirm that no actual contamination is present.

While it may be true that landowners with known contamination can access the same funds for necessary steps in the remediation process, the funding provided by B.C. Brownfield Renewal is not as significant an incentive for those facing the much larger costs and delays associated with remediation of contamination. For a landowner holding a site with perceived contamination only, the costs to bring the property to market, or prepare the property for redevelopment, are the costs of proving that contamination is not present. Alternately, for the owner of a site with known contamination, the process of

assessing and identifying the contamination is only a first step in the very costly processes of site remediation and certification. In consideration of the remediation costs against the value of the available funding, the greater and more complex the contamination a site contains, the less proportionately lucrative the agency's funding program becomes. Accordingly, it is reasonable to conclude that this program is focused more on redevelopment than it is on the remediation of contamination.

The principle entrenched in the Management of Provincial Contaminated Sites Policy calls for the use of public funds to have the greatest impact on human health and the environment, and the associated Crown Contaminated Sites Program prioritizes sites for funding based on these factors. Conversely, B.C. Brownfield Renewal funding is naturally weighted to provide public funding for the redevelopment of sites with the least amount of contamination. In regards to private funds and public-private partnerships, the Management of Provincial Contaminated Sites Policy calls for "innovative strategies for site remediation" (Government of British Columbia, 2008: 11), including public-private partnerships; however, the Policy is clear that the availability of these funds does not alter site prioritization. In contrast, B.C. Brownfield Renewal sets the availability of private funds as the primary condition for provincial government funding. This represents a major reversal in public policy by the BC government.

5.3 Policies of Jurisdictional Entrepreneurialism and Roll-Out Neoliberalism

Jurisdictional entrepreneurialism, an invasive form of public-private partnerships that mobilizes public funding to support private profit through such tactics as tax incentives, business risk mitigation, relaxed regulations, and reduced-rate access to infrastructure (Harvey, 1989), was discussed in Chapter Two. Many of the tactics associated with jurisdiction entrepreneurialism are offered to local governments in B.C. Brownfield Renewal materials. A prime example of this is the Revitalization Tax Exemption, which enables municipalities to relieve landowners from the responsibility of paying municipal taxes in exchange for development that meets stated revitalization goals. Other evidence includes B.C. Brownfield Renewal suggestions that public funds be used by local government to create financial incentives, marketing strategies and expedited development approval processes for brownfield projects, all of which can be found in agency publications for local governments. In promoting these tactics, the BC

government is not providing any support or funding, and is using the potential economic, social and environmental benefits of brownfield redevelopment to promote a certain political philosophy to local governments.

The redevelopment inducement tactics above, those practiced and promoted by B.C. Brownfield Renewal, closely align with the public policy instruments described by Jamie Peck and Adam Tickle (2002) as features of roll-out neo-liberalism.^{xliv} As discussed in Chapter Two, this political and economic philosophy mobilizes public resources in service of economic development and growth through direct government investment, public-private partnerships, government regulation of the economy (managing interest rates and inflation), and programs designed to limit business risk. The B.C. Brownfield Renewal funding program is an excellent example of a *roll-out* neoliberal policy instrument as it uses public funds to induce a profit-making economic venture with the goal of achieving a government policy objective, that being the remediation of contaminated sites. Similarly, the Revitalization Tax Exemption, along with the other measures promoted by B.C. Brownfield Renewal to local governments, are all mechanism common to roll-out neoliberal policy regimes.

These policy instruments prioritize the promotion of economic growth and focus investment towards ensuring a positive return on investment for private enterprise, thereby relying on the assumption that the government's policy objectives will be achieved as an associated outcome of the induced economic activity. The major flaw of such a system is that business investment gravitates towards the best return on investment and does not prioritize government's policy objectives. This failure is evident in the above review of the B.C. Brownfield Renewal Funding Program, which focuses public funding toward sites with the greatest redevelopment potential rather than sites with the greatest need for remediation.

^{xliv} As discussed in Chapter Two, *roll-out* neoliberalism is the second phase of the political and economic shift across the western world and engineered the mobilization of public resources for the benefit of private business, and in the name of economic development. The preceding phase was titled roll-back neoliberalism and was the policy response to the Western, capitalist economic crisis of the 1970's featuring deregulation of economic activity, a reduction in the size and capacity of government, and increased trade liberalization (Peck and Tickle, 2002).

5.4 Analysis

Several conclusions were reached in Chapter Two from a review of existing literature on the nature of brownfield redevelopment and on government programs designed to induce brownfield redevelopment and this analysis of B.C. Brownfield Renewal reinforces these conclusions. First, the BC government relies on the commodity value of land to induce redevelopment because redevelopment funding is only provided in the form of matching grants and tax relief. BC government programs do nothing to enforce redevelopment and remediation of idle, contaminated sites, and the form of funding provided requires significant private or local government investment. Second, the BC government's programs focus solely on the redevelopment process and though several references are made towards the goal of achieving triple-bottom-line benefits from redevelopment, there is no evidence such social or environmental benefits as the provision of affordable housing or creation of urban green space are prioritized in funding allocations. Third, research on the nature of brownfield redevelopment revealed that the ability to generate profit from a site is inversely related to the level of contamination present, which naturally orients private investment towards sites with the least contamination. The BC government facilitates this pattern by providing redevelopment funding for site investigation and planning, rather than remediation, and allows site owners with little or no real contamination to receive public funding for sites that may have no contamination at all.

Without the remediation of contamination, brownfield redevelopment is simply infill development under a different title. Though B.C. Brownfield Renewal agency is born of the Crown Land Restoration Branch of government and follows on the heels of a government program designed to remediate Crown contaminated sites, it differs from that program in several important ways. The goals of the B.C. Brownfield Renewal are not clear and there is no governing document directing its work as an agency of government. Many of the references in government documents quoting the purpose and origin of the agency refer broadly to such infill development goals as the redevelopment of idle sites, expansion of the tax base, realization of infrastructure efficiencies and the provision of affordable housing. The one tangible B.C. Brownfield Renewal service is a funding program that directs government subsidies to sites with little or no actual contamination.

Consequently, based on available information, it is fair to conclude that B.C. Brownfield Renewal facilitates and promotes infill development as much, if not more, than it induces the remediation and redevelopment of sites with real contamination.

This analysis of B.C. Brownfield Renewal supports the outcomes of research presented in Chapter Two. The agency's programs, research and recommendations to local government illustrate the nature of government sponsored brownfield redevelopment schemes as a policy instrument of *roll-out* neoliberalism focused on economic development. The focus on broad infill development goals, including the orientation of the funding program towards subsidizing redevelopment of sites with little or no contamination, supports the conclusion that in many cases public programs supporting brownfield redevelopment are nothing more than taxpayer-funded infill as little, if any remediation actually occurs. Accordingly, of all the possible economic, environmental and social benefits that brownfield redevelopment promises, current systems of brownfield redevelopment focus almost exclusively on realizing the short-term economic and political benefits derived from redevelopment.

Chapter 5: Examining the Study Area

1.0 Introduction

Having examined the context of infill development and brownfield redevelopment through a literature review and an analysis of the British Columbia government's role in devising strategies to manage brownfield sites, the focus of the research now shifts to a specific study area: the City of Nanaimo. Prior to delving into the research and results, some context is required. Nanaimo operates as an incorporated municipality within the province of British Columbia, and understanding the legislative and constitutional context of Nanaimo's authority as a jurisdiction is necessary to appreciate its opportunities and limitations in terms of both infill development, and brownfield redevelopment, as well as the planning context in which it operates.

This chapter will provide a review of local government structures in British Columbia and place the study area in context in terms of current demographics and jurisdictional positioning. An analysis of local planning documents from both the Nanaimo Regional District and City of Nanaimo will provide additional contextual depth, especially with respect to the current state of infill development and brownfield redevelopment across the region. The methodology used to collect and analyze study data is presented in Chapter 6.

2.0 Local Government Structures in British Columbia

2.1 Introduction

Local government in British Columbia exists in three forms: regional districts, improvement districts and municipalities. Regional districts are large areas that collectively extend across BC and provide local government services and planning functions to their service area, including both incorporated municipal areas and the surrounding rural electoral areas (Local Government Department, 2012a). Municipalities are incorporated cities and towns, and provide land use planning and regulation, along with local government infrastructure and services to a defined area of residents (Local Government Department, 2012b). Improvement districts are localized authorities that provide local government services and range in size and function. They are most

commonly found in rural areas and are often the precursor to the incorporation of a formalized municipality (Local Government Department, 2013). To understand the jurisdictional context of City of Nanaimo, the role of municipalities and regional districts must be clearly understood, especially in relation to responsibilities for land use planning.

2.2 Regional Districts

Regional districts are, in essence, federations of the municipalities and electoral areas within their borders. They exist to provide infrastructure, planning and local government services within their jurisdiction, with a focus on those rural areas of a regional district not represented by an incorporated municipality (Local Government Department, 2012c). There are twenty-seven regional districts in British Columbia, each governed by a regional board with representation from each electoral area and municipality within the region (Regional District of Nanaimo, 2011 and Local Government Department, 2012c). The regional district structure is unique to British Columbia and dates back to the 1960s (Local Government Department, 2012c).

Regional districts have two central land use planning functions. First, they oversee planning functions in the electoral districts under their jurisdiction, and are able to adopting zoning codes and official community plans for those areas (Local Government Department, 2012c).^{xlv} Second, each regional district is responsible for creating and implementing a region-wide growth strategy to outline how an expanded population will be accommodated within the jurisdiction (Local Government Department, 2012c). In addition to planning services, regional districts provide community services, utilities, transportation services, and other services deemed necessary by the regional district board of directors (Local Government Department, 2012d and Local Government Department 2012e).

2.3 Municipalities

Beyond those municipalities in the Greater Victoria area on Vancouver Island and those in and around Metro Vancouver, BC's 160 municipalities are scattered across the province. They range in size and population from small 60 hectare villages of a few

^{xlv} Regional districts are not required to create zoning codes or official community plans for electoral areas under their jurisdiction, but rather these planning mechanisms are optional.

hundred people, to large cities of 600,000 residents covering more than 155 hectares (Local Government Department, 2012b). With a median population size of 4,800 citizens, 87 percent of British Columbians live in municipalities that occupy 1 percent of all land in BC collectively (Local Government Department, 2012b).^{xlvi} Elected councils ranging from 5 to 9 members, depending on population, govern municipalities. Each council is represented on its respective regional district board, which governs the affairs of the regional district in which the municipality is located. Municipalities are classed into four categories based on population size: villages, towns, districts and cities (Local Government Department, 2012b).

On a legislative level, municipalities operate under the Community Charter that recognizes them as an order of government and enables each to provide a variety of services including transportation infrastructure (streets and roads); fire and police protection; water treatment and supply, refuse collection and treatment; recreation and culture; parks; land use planning and regulation; economic development; and general regulation and governance (Local Government Department, 2012f). Many of these services must be provided by a municipal government as part of their mandate, but can be shared or offered in cooperation with regional services provided by the respective regional district (Local Government Department, 2012f). A central element of municipal responsibility is land use and community planning.

Municipal planning includes “land use, social and community services, housing, cultural and heritage resources, economic development, finance, environment, transportation and infrastructure” (Local Government Department, 2012g, para 1). Planning and land use decisions are made by the elected council and include area designations; neighbourhood density regulations; lot and parcel standards; service levels and distributions, environmental protection rules; form and character standards, among other topics (Local Government Department, 2012g). Each municipality may adopt an official community plan (OCP). An OCP is a “statement of objectives and policies to guide decisions on planning and land use management respecting the purposes of the municipality” (Local Government Department, 2012g, Para 4). Once completed, OCPs

^{xlvi} Though the claim that only 1% of BC’s land is covered by a municipality is drawn from a BC government source, it appears to be an underestimation.

act as a guide to the elected council by laying out planning and land use policy statements with suggested methods of achieving or implementing the stated policies. Councils use a variety of tools to implement OCP policies, including neighbourhood plans, development cost charges, zoning, variance permits, heritage preservation regulations and programs, and environmental designations.

2.4 Summary

To understand the planning context for the City of Nanaimo, the associated regional district's regional growth strategy must be examined. Though a regional district is not responsible for the community planning of municipalities within its jurisdiction, a regional district can establish planning principles, service levels and growth standards that effect the plans each municipality can make, and establishes standards to which each municipality must adhere (noting, again, that the municipality has at least one representative on the regional district board and therefore has a role in the adoption of the regional growth strategy). The central planning document for each municipality is the official community plan, which sets out goals, policies and implementation plans for land use and community development. Accordingly, to understand the planning context in Nanaimo, both the official community plan and the associated regional growth strategy must be examined, along with the characteristics of both the regional district and municipality.

3.0 The Study Area and Context

The prologue to this thesis outlined the history of Nanaimo's development, and explained how the area grew from a small mining operation into a medium-sized city. Nanaimo's current low-density and dispersed form of development is a direct result of its evolution from a collection of small coal mining towns, centered on the original Nanaimo townsite. The following sections will continue the story, outlining the current demographic context, as well as reviewing the existing planning goals and strategies applied to the study area.

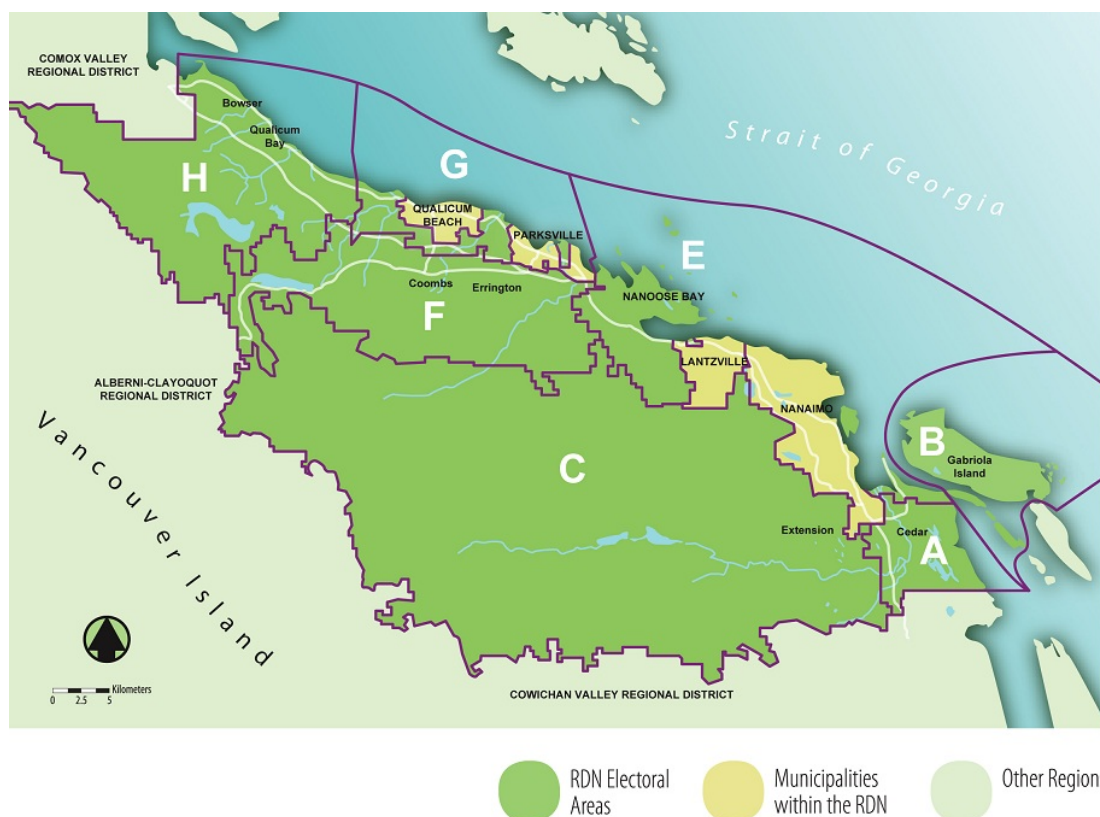
Figure 5.1: Map of Nanaimo Regional District

Image Source: Regional District of Nanaimo Website, 2015.

3.1 Regional District of Nanaimo and the Regional Growth Strategy

Nanaimo is located in the Regional District of Nanaimo (RDN), which spans more than 200,000 hectares on the central coast of Vancouver Island and is part of the larger bioregion connected by the Georgia Strait and Puget Sound (RDN, 2011:6) (Figure 5.1).^{xlvi} The population of the Region has experienced significant increase in the past 25 years, growing from 84,819 in 1986 to 144,317 in 2006, and is projected to increase another 60 percent to exceed 230,000 residents by 2036 (RDN, 2011). These sharp increases in population coincide with a marked change in the economic complexion of the area, moving from a resource-based economy driven by such industries as forestry, mining and fisheries, to one dependent on services and retail operations (RDN, 2011).

^{xlvi} According to the RDN's definition, this region includes the east coast of Vancouver Island north to Campbell River, the Sunshine Coast, Lower mainland, plus all of the area surrounding the Puget Sound south to Olympia, Washington. (Regional District of Nanaimo: 2011)

Within its boundaries, the RDN contains the municipalities of Nanaimo, Parksville and Qualicum Beach, as well as the District of Lantzville; these urban areas contain the bulk of the Region’s population and drive the local area economy.^{xlviii}

As is the responsibility of all BC’s regional districts, the RDN has formally adopted a Regional Growth Strategy. The first such document dates back to 1997, and was updated in 2003 (RDN, 2011). The current version was adopted in 2011. The RGS is one of two guiding documents for the Regional District, the other being the three-year strategic plan adopted by the RDN’s Board. Working in collaboration, these plans “ensure that regional and local service delivery remains consistent with regional objectives, manage the impacts of growth, and create liveable communities” (RDN, 2011:8). The RGS includes principles already present in many member OCPs on containing growth in designated areas, creating efficient relationships between development and service planning, creating compact communities, and protecting undeveloped areas from development.

Because the content of a Regional Growth Strategy can overlap with that of official community plans adopted at the municipal level, the Local Government Act of BC defines the relationship between these documents.^{xlix} In accordance with the Act, each official community plan adopted within a region shall include a Regional Context Statement that “identifies the relationship between the OCP and the matters addressed in the RGS....and how the OCP is to be made consistent with the RGS over time” (RDN, 2011:1).¹ This establishes the RGS as the higher-order document because municipalities are required to align their planning with that of their respective region.

The Regional District of Nanaimo’s growth strategy focuses on sustainability principles, and seeks to preserve and protect habitat; enhance biodiversity; and maintain high standards for air and water quality (RDN, 2011). The document lays out the

^{xlviii} More than 35% of the Regional District is part of the Mount Arrowsmith Biosphere Reserve, designated in 2000 by the United Nations Education, Science and Cultural Organization’s (UNESCO) Man and Biosphere Program (Regional District of Nanaimo, 2011). The designated area includes those parts of the Regional District that are comprised of watersheds where the source water flows from Mount Arrowsmith.

^{xlix} Part 25 of the *Local Government Act* legislates the existence of regional growth strategies, and Division 2 in Part 25 spells out the process by which local governments within a regional district must be consulted on the development of the regional growth strategy, and ratify the final document at council (Local Government Act, 1996)

¹ This provision is located in Part 25, Division 3, Article 866 of the Local Government Act (1996).

Regional District's desire that urban development be contained; have a distinct form and character from rural development; and feature complete, compact communities with diverse housing options, accessible amenities that are close sources of employment (RDN, 2011). The main strategy identified to achieve this goal is the creation of growth containment boundaries (GCB)^{li} to limit the expansion of development into rural and undeveloped lands. The Strategy also aims to reduce auto dependency through the improved coordination of land use patterns and mobility networks (RDN, 2011).

Approximately 70 percent of the current population of the Regional District lives within an existing growth containment boundary and the central goal of the Plan is to increase that proportion. The Strategy mandates that each member municipality will adopt a growth containment boundary, and that growth in unincorporated areas will be limited to rural village centers (RDN, 2011). To enforce this, the Regional District will not extend municipal services to development beyond these boundaries, and will not permit density increases in unincorporated areas without community water and sewer services in place (RDN, 2011). To mitigate the absolutist nature of these provisions, the Strategy provides for density transfers, establishes a criteria for expansion of growth containment boundaries, and provides for a mandated review of boundaries every five years. (RDN, 2011)

3.2 City of Nanaimo

Nanaimo is the second largest urban center on Vancouver Island and is located 23 kilometers from Vancouver, and 113 kilometers north of Victoria. The City covers 88.19 square kilometers, which is 4.3 percent of the Regional District of Nanaimo's land area (City of Nanaimo, 2010). In 2011, the population of the city was estimated at 87,464^{liii} approximately 57.5 percent of the total population of the Regional District of Nanaimo (City of Nanaimo, 2010). The average annual growth rate in population is between 1.56

^{li} A growth containment boundary (GCB) is a boundary that restricts development to an intended area with the goal of limiting urban sprawl, and creating complete and compact communities. The intention of creating a GCB is to ensure all human necessities can be accommodated within the area encompassed by the boundary such that land outside the GCB is saved for rural uses, with limited infrastructure.

^{liii} Nanaimo's population in 2011 was estimated at 87,464, up from 78,692 in 2006 (City of Nanaimo, 2010).

percent and 1.7 percent, based on population growth between 2001 and 2011 (City of Nanaimo, 2010).^{liii}

The population growth Nanaimo has experienced in recent years has not been due to a natural increase. Between 2002 and 2006, for example, Nanaimo's natural increase was -36 persons based on births and deaths (City of Nanaimo, 2010). Though the City notes that "growth is affected by factors such as migration levels, housing costs, work opportunities and the economy in other parts of the country", the Community Profile concludes that "the major driving force for growth in Nanaimo will be migration" (City of Nanaimo, 2010:5). Data suggests that this positive migration has traditionally been drawn from other provinces and elsewhere in British Columbia, with less than 23 percent of net positive migration coming from international immigration between 2003 and 2009 (City of Nanaimo, 2010).

As of 2006 there were 35,042 private dwellings in the City of Nanaimo, an increase of 14 percent since 2001 (City of Nanaimo, 2010). Due to the relatively recent population growth, most housing was constructed since 1981. The majority of dwelling units, 57 percent, are comprised of single-family detached homes, with an average price of \$351,286 in 2009 (City of Nanaimo, 2010). The Community Profile noted that homes in the City's north end had a higher average selling price due to the prevalence of recent construction in that part of the City. Approximately 76 percent of Nanaimo residents are homeowners, with only 24 percent renting their dwelling unit (City of Nanaimo, 2010).

The median income in Nanaimo was \$29,274 in 2008, slightly lower than both the BC and national medians (City of Nanaimo, 2010). 67 percent of Nanaimo's population earns less than \$50,000 per year, and the average household income was \$56,744 as of 2006 (City of Nanaimo, 2010). This average household income is significantly less than both the BC average and Canadian average from 2006, which were \$67,675 and \$69,548 respectively (City of Nanaimo, 2010). Only 64 percent of income earned by Nanaimo

^{liii} Between 2001 and 2006, the growth rate in Nanaimo's population was 1.56%. Between 2006 and 2011, the growth rate is estimated at 1.7%, a rate based on the estimated 2011 population (City of Nanaimo, 2010)

residents was from employment, with a higher than average amount of income earned from pensions (City of Nanaimo, 2010).^{liv}

3.3 Nanaimo's Official Community Plan

Nanaimo's most recent Official Community Plan was adopted in 2008. It foresees sufficient vacant or underutilized lands within the existing urban containment boundary to accommodate projected housing demand to the year 2031, which it estimates will house an additional 50 percent of today's population of approximately 86,000 residents (Sheltair Group, 2007).^{lv} Underutilized land currently represents 45 percent of Nanaimo's total land capacity, meaning that redevelopment must be a core element of accommodating new growth without expanding development beyond current boundaries (City of Nanaimo, 2008). The OCP (2008) predicts a shortfall of commercial and light industrial space in the coming years, and notes that there is likely insufficient capacity to accommodate the demand for single-family units.

The OCP identifies six core goals: to manage and contain growth; increase density; promote social enrichment; grow and diversify the local economy; protect the environment; and improve mobility and diversify transportation options (City of Nanaimo, 2008:14-15). These goals are congruent with those identified in the Regional District's Regional Growth Strategy, mainly due to the overlapping focus on strong urban containment, increased densities, and protection of environmentally sensitive areas. The OCP states that Nanaimo has actively worked to contain urban expansion since the 1980's because

“containing growth leads to the more efficient use of roads, sewer, water, storm services; ...provides tax savings as new development can use existing infrastructure; ...generate[s] a development pattern and population density allowing for better public transit; and ...help[s] protect environmentally

^{liv} 15.21% of income earned in Nanaimo is drawn from pensions, compared to an average of 9.18% for BC and 8.89% for Canada (City of Nanaimo, 2010).

^{lv} Population growth estimates for the City of Nanaimo predict a growth rate of 30% by 2016 and 50% by 2031, with total populations on those dates of 101,400 and 118,000 respectively. The ability for the City to accommodate this growth and the connected demand for housing through to 2031 is dependent on development that makes use of the maximum capacity permitted under current zoning (Sheltair Group, 2007).

sensitive areas in their natural state and rural lands from the intrusion of urban uses.” (City of Nanaimo, 2008:24).

The central strategy to contain growth put forward by the OCP is the establishment of a system of corridors, nodes and neighbourhoods with different development regulations and guidelines for each type of development zone. Nodes will be designed to attract a mix of uses and activities to provide service to local community members, as well as those from across the region. The Plan states that nodes will host commercial and high-density residential forms of development, and will be centres of employment. Corridors will connect nodes together and provide a venue for higher density, mixed use development, with a focus on ground level commercial activity, and residential above (City of Nanaimo, 2008). This model of corridors and nodes is meant to accommodate high density, mixed use, and commercial development such that neighbourhood areas are maintained at a lower density, and are free from commercial infiltration. The Plan also envisions that this structure will provide for greater transit efficiency, and facilitate increased pedestrian traffic.

There are five designated nodes outlined in the OCP (2008): Downtown, Woodgrove, South Nanaimo, Hospital, and University. Though each of these nodes has a different focus,^{lvi} there are common elements to each of the nodes: targeted densities of more than 150 units per acre, a range of public services for residents in surrounding neighbourhoods, the protection of environmentally sensitive areas, a mix of uses and residential developments to service and accommodate a diverse mix of income levels, and transit hubs to facilitate easy use of alternative transportation options (City of Nanaimo, 2008). Along corridors, the OCP (2008) calls for the aforementioned mixed

^{lvi} The Downtown node is to serve as the primary node for the City with a variety of housing and commercial developments, government offices, tourism focus, public gathering places, and an arts and culture identity (City of Nanaimo, 2008). The Woodgrove node is to provide a regional centre for commercial and personal care services, and feature big box retail developments (50,000 sq ft or greater) with ample parking facilities (City of Nanaimo, 2008). South Nanaimo is to have a series of integrated commercial, industrial and residential land uses centered around a yet to be developed town centre that features big box retail (City of Nanaimo, 2008). Predictably, the Hospital area will focus on health, community and social services, as well as seniors housing, and will host a future transit hub to provide for improved alternate transportation to medical offices and clinics (City of Nanaimo, 2008). Lastly, the University node will focus on education, institutional and recreation facilities with student oriented services, and the future goal of developing research and development industries connected to Vancouver Island University (City of Nanaimo, 2008)

use development, but also public amenities, medium to high-density residential developments (50 to 150 units per hectare) and, like nodes, the protection of environmentally sensitive areas.

The final component of the 2008 OCP's vision for the organization of development in Nanaimo are neighbourhood areas, which are to feature a mix of housing types, but will not include high rises. Noting that "most of the developable land for the future growth in the City lies within existing neighbourhoods, corridors, or urban nodes," (City of Nanaimo, 2008:45) the Plan mandates that neighbourhood areas will not be free from growth and densification. Without high-rise developments, the housing choice in neighbourhoods will include "detached, semi-detached, secondary suites, special needs housing, mobile homes, duplexes, triplexes, quadplexes and townhouses" (City of Nanaimo, 2008:47). These lower density parts of the City will be almost exclusively residential with some local-scale commercial development in neighbourhood community centers. The OCP (2008) notes that development in neighbourhood areas must consider the context of the area in terms of style, form and density. This means that larger, high-density developments, for example, should be on main roads or major intersections and built with a form and character consistent with the surrounding area.

The OCP establishes the provision of affordable housing as a central element of the City's social enrichment goal. The Plan defines affordable housing as "housing that costs less than 30 percent of after tax income per annum" and notes that such housing could be in the form of "affordable home ownership, affordable rental accommodation, or affordable housing with supports that go beyond a financial subsidy." (City of Nanaimo, 2008:67). Strategies identified to promote affordable housing include leasing City-owned residential properties to not-for-profit housing organizations; providing non-financial supports to not-for-profit housing organizations that are redeveloping poor quality housing; using financial incentives to encourage private sector construction of affordable housing; increasing opportunities for secondary suites; and encouraging development of affordable housing through rezoning, density bonusing and public/private partnerships (City of Nanaimo, 2008). The section of the OCP dealing with affordable housing does not actively plan locations or areas of the City targeted for affordable housing development.

A major goal of the OCP is to “improve mobility and servicing” and a key to this is overcoming the challenges posed by Nanaimo’s overall layout (City of Nanaimo, 2008:99). “The serviced area of the city is an approximately 20km long by 2km wide strip of development that runs parallel to the coastline while intersecting several watersheds.” (City of Nanaimo, 2008:99) Nanaimo has overall densities of about “three to five housing units per hectare in most neighbourhoods” and densities of as much as 10 units per hectare in the neighbourhoods with higher proportions of multi-unit development. In terms of transit service, these low densities compare poorly to the 37 units per hectare needed to facilitate frequent bus service (City of Nanaimo, 2008).^{lvii} The OCP estimates that the creation of corridors and urban nodes will assist in improving mobility by creating concentrations of population and services such that alternate modes of transportation to the automobile are viable. Similarly, this strategy of densification and infill is expected to translate into greater service efficiency as well as more liveable communities, conclusions that are consistent with the accepted theories of infill expressed in the literature reviewed in Chapter 2.

The OCP also contains a range of implementation tools. Central to these strategies are neighbourhood and area planning, which includes creating plans for each node and neighbourhood, as well as corridor areas. These plans are to be compiled with resident input to ensure that the needs of local residents are met while still achieving the goals of the community as a whole. Other key implementation tools relating to infill goals are the creation of development permit areas to specifically regulate development in designated zones; the encouragement of development amenity packages as a component of development and rezoning applications to provide community services and facilities; and the designation of heritage conservation areas to preserve the form and character of existing, historical areas of the City (City of Nanaimo, 2008).

Notably absent from the Official Community Plan is any mention of brownfield sites and their redevelopment. There is, however, one half-page devoted to consideration of contaminated sites on page 98. The section states that the City will assist the province in

^{lvii} Densities of 10 units per hectare translate approximately into hourly transit frequencies (City of Nanaimo, 2008). Comparatively, the ideal density of 37 units per hectare would produce much more accessible frequencies of 5 to 10 minutes. Accordingly Nanaimo’s overall density average of 3 to 5 units per hectare provide a real challenge in providing accessible transit service.

Figure 5.2: Chart of Regional Growth Strategy Relation to Legislation and Planning



Image Source: Regional District of Nanaimo, Regional Growth Strategy, 2011.

regulating the use of contaminated sites, and ensuring that there are no public health risks from such sites, including increasing public awareness, and assisting “the Ministry of the Environment in administering the Contaminated Sites Regulation (1997) as part of its development approval process” (City of Nanaimo, 2008:97). The absence of content on brownfield sites may be because they are covered by existing land use designations (and in some cases, development permit area regulations) in the Official Community Plan, and within existing designated zones in the Zoning Bylaw. Accordingly, the OCP need not identify policy or zoning changes required to address brownfield redevelopment in the City.

4.0 Summary

A review of the jurisdiction interrelations makes clear that although the authority and regulation related to land use is clearly under the authority of the municipal government, other levels of government have a role to play. Nanaimo’s planning is directly affected by the Regional Growth Strategy and indirectly affected by provincial government decisions regarding transportation, community development, social services, agricultural land use, and resource development. Figure 5.1, taken from the Regional District of Nanaimo’s Regional Growth Strategy, illustrates how legislative authority at the provincial level is implemented in the form of plans and strategies at the local level. Understanding this context is vital to comprehending the City of Nanaimo’s abilities and limitations in promoting policy objectives. Though the Local Government Act and Community Charter

do establish municipalities as an order of government, its authority is at the discretion of the provincial government, and seated within the authority of the regional district in which it is located. The policy mechanisms open to the City of Nanaimo to address land use planning issues, therefore, are limited to its narrow scope of authority, and must themselves conform to a higher order of planning document and the regulations of superseding levels of government. Similarly, if infill development and brownfield redevelopment are local government goals, the tools to address those goals must be provided by the higher order government.

Several key, defining demographic themes emerged from the analysis of Nanaimo's Community Profile. First, the relationship between median income and house pricing, along with the high demand for single-family homes, will surely continue to inflate housing costs in the city beyond the ability of new homebuyers to enter the market. Second, a larger than average number of citizens in Nanaimo is of retirement age and living on pension income, and this will both disproportionately increase demand on city services, and have a profound affect on the City's design and planning requirements. Finally, Nanaimo's continued growth depends on in-migration, meaning that growth may not be steady and predictable on a year-over-year basis. Taken together, these trends lead to the conclusion that Nanaimo needs to increase its affordable housing options, and better prepare for increased demand for housing designed to serve an aging population. Simultaneously, Nanaimo must also continue to improve the quality of life it provides to maintain a steady inflow of immigrants from other provinces and elsewhere in British Columbia. Based on the literature in Chapters 2 and 3, both infill development and brownfield redevelopment make demonstrable contributions to addressing each of these priorities for Nanaimo.

Both the Official Community Plan for Nanaimo and the Regional Growth Strategy for the Regional District of Nanaimo, embrace urban containment as a key strategy to limit sprawl development. Despite the conceptual perfection of growth containment, the value of the actual boundary relies very much on where it is placed. In the case of Nanaimo, the urban containment boundary was drawn so widely that more than 20 years of growth could be accommodated within its borders, and that was before the boundary was expanded in 2007 to facilitate new development. The result of such a widely drawn

boundary means new development is not sufficiently focused to create the types of densities required to achieve much of the stated benefits of infill development. The more successful element of Nanaimo's strategy is perhaps the Official Community Plan's articulation of a node/corridor/neighbourhood planning framework, with well-developed concepts and planning for each component. This framework is one in which infill is a central element, and key to achieving the Plan's overall objectives.

Neither the City of Nanaimo nor the Regional District of Nanaimo have much to offer on the topic of brownfield redevelopment. Though the planning documents of both governments speak broadly about environmental goals, and feature policies that highlight infill development in various forms, neither combines those ideas to directly address, or propose action on, brownfield redevelopment in the region. The City's Official Community Plan and the Regional District's Regional Growth Strategy do not appear to separate brownfield development from greenfield development, but instead focus more on the fit of development activities with identified designations and contexts in their respective planning documents. Despite this lack of focus, action on brownfield redevelopment is occurring in Nanaimo and will be reported on in Chapter 6.

Chapter 6: Infill Development and Brownfield Redevelopment in Nanaimo

1.0 Methodology

1.1 In-Depth Interviews

Primary research was executed in the form of in-depth interviews, which have long been used as a successful tool in geographic study (Dunn, 2010), specifically for accessing information about events, opinions and experiences. In this context, the interview process can “collect a diversity of meanings, opinions, and experiences” and “investigate complex behaviours and motivations” (Dunn, 2010:102) on infill development and brownfield redevelopment barriers and benefits in Nanaimo. In contrast to other methods, such as surveying, interviews provide an opportunity to draw feedback from a diversity of respondents who can express their opinions and beliefs in their own words and in detail.

Interviews were designed to follow a semi-structured format, with each respondent asked the same thirteen questions (Appendix I), in the same order, presented in a similar manner. As part of each scripted question, respondents were asked follow-up questions based on their comments to each primary question, and encouraged to expand on ideas through reflections of personal experiences and local examples. A semi-structured interview format was chosen to blend the benefits of a structured list of questions that required respondents to directly address topics chosen by the researcher with the ability of participants to freely express themselves and exercise an appropriate level of power in the interviewing process.

1.2 Participant Selection

A total of ten respondents (Appendix II) were drawn from a cross-section of groups considered key stakeholders in city development. The ten respondents were selected from a list of individuals identified for their known involvement in the development community. The final ten respondents were selected from the initial long-list by prioritizing those having the greatest experience with development issues in Nanaimo specifically, and those who had participated in community discourse on development

issues on behalf of their sector or group. None of the short-listed individuals declined to serve as a respondent.

Of the ten respondents, two were recruited from citizen and neighbourhood organizations to represent existing residents, one of whom was a member of the Snuneymux'w First Nation Band Council. One provincial and one local elected official were recruited to represent the opinions of those who are both elected by local area residents, yet also responsible for the good of the community as a whole. Planning professionals have depth of knowledge on planning concepts that seek to curb the negative effects of sprawl, and have direct experience working with such models, so two such individuals were recruited as participants. Senior local government bureaucrats must balance the political goals of local government with the effective management of city processes and programs, and two were recruited. Finally, because developer behaviour and choices has great influence on the form, character, structure and location of new development, two members of the development community were also recruited to round out the ten participants. Of the two participants representing the development community, one had extensive experience developing property in Nanaimo, and the other was experienced in sustainable development and the redevelopment of brownfield sites, including work on the redevelopment of Vancouver's False Creek.

Participants were recruited by phone, which included a detailed description of the interview process and research outcomes. Interviews were conducted between January 2013 and May 2013, commonly in the work place of the respondent or some other location of their choosing, and at a time convenient to each respondent. Before each interview, respondents were provided with a hard copy of interview materials that included a full list of the interview questions and an informed consent statement in hard copy. Before commencing the interview, each participant was asked to affirm their participation and acknowledge their consent by signing the informed consent document. Interviews were scheduled for one hour but commonly took between 1.5 and two hours.

Interviews were recorded by detailed note-taking on a computerized platform. Audio recording of the interviews was not conducted as the presence of a recorder can sometimes inhibit a respondent's participation (Dunn, 2010) due to concerns of accidental comments or misstatements. Accordingly, taking accurate and detailed notes

via a computerized word processing program was deemed preferable as it provided a less formalized environment in which respondents could feel more comfortable.

Computerized note-taking enabled respondents to have their comments read back to them, and adjust comments for clarity and accuracy during the course of the interview. As part of the informed consent process, each respondent was given the opportunity to participate anonymously and none of the ten respondents chose that option.

2.0 Results

2.1 Participant Experience

The first interview question asked respondents to describe their experience with the study topics, and express their familiarity with those topics in the context of the study area. A wide range of responses was provided that highlighted respondents' collective depth and breadth of knowledge on the subject matter. Generally, three categories emerged: those with direct experience, those with indirect experience, and those with both direct and indirect experience. Those with direct experience had worked on a brownfield or infill development project; those with indirect experience had generally only worked on infill and brownfield redevelopment issues at a policy development or planning level, and the third category placed themselves as having both types of experiences.

All but the two developer respondents and the provincial elected official classified themselves as having primarily indirect experience with brownfield redevelopment and infill development, but this indirect experience was highly relevant to the broader research focus of planning, public policy and the development of relevant programs and projects. Those with both direct and indirect experience had transitioned roles at some point in their career; the provincial elected official had worked in real estate and development prior to being elected municipally, then provincially, and one of the two developer respondents began his career in municipal planning working on issues of urban sustainability, density and the redevelopment of the False Creek area of Vancouver. Only one respondent, the other developer respondent, had solely direct experience because his career centered on his creation of a development and construction firm.

Emerging from respondent discussion of their experience was a list of ongoing projects in the Nanaimo area in which participants had served in an advisory, monitoring

or assistant capacity as part of their respective roles. One such project of note is a large-scale contamination assessment of properties in an area of downtown Nanaimo known as the Terminal Trench, which was used at one time by the mining industry to dump coal slag. Prior to any mining in Nanaimo, this area was a tidal zone and now hosts a variety of light industrial and commercial activity such as mechanics, appliance repair and auto sales. Another relevant project identified by a participant is an ongoing inventory of contaminated sites by the Regional District of Nanaimo. Both these and other projects will be discussed further in this chapter.

2.2 Is Brownfield redevelopment or infill development good for Nanaimo?

The second question asked respondents to consider whether brownfield redevelopment and infill development were positive forms of development for Nanaimo. While the vast majority of the literature reviewed in chapters 2 and 3 concluded that these forms of development were positive, their positive application should not be taken for granted in all communities. Further, this question sought to extract the supporting explanation from each respondent to reveal the driving factors that would specifically support both infill development and brownfield redevelopment in Nanaimo specifically.

The respondents universally asserted that both brownfield redevelopment and infill development were a good fit for Nanaimo. Most expressed enthusiastic support, with comments such as:

“Absolutely they are positive for Nanaimo. Nanaimo has a history of having large tracts of land zoned for residential development at low density since the 1970’s. As a result we have very low density residential development.” - civil servant one

“Absolutely; one of the most important things that Nanaimo can do for its future is to take that brownfield waterfront development and go hell bent on it”- developer two

Respondents also noted the many opportunities to engage in these forms of development in Nanaimo with one respondent from the development community noting “the opportunities for infill development and brownfield redevelopment are staggering in Nanaimo, especially in the older areas” (developer one).

A key-motivating factor in support for both infill development and brownfield redevelopment was a broad desire among respondents to curb the effects of urban sprawl. Respondents drawn from government, both elected officials and civil servants, were quick to point to the improved economic efficiencies of more compact communities. Respondents reported that, generally, infill and brownfield sites were already serviced, and that frequently no major upgrades were needed to service utilities in order to accommodate new growth within existing city boundaries.

“Infill is about increasing density, not just filling gaps in the map with the same low density forms of development...Infill is more effective from the perspective of providing servicing, supporting commercial activity, getting people out of their cars, and supporting more diverse housing types” - civil servant one

“Both forms of development make more efficient use of land [than greenfield development], which is more expensive when you look at the broader costs to communities and society” - regional district planner

Additionally, the locally elected official respondent commented that sprawl development increased the costs of infrastructure to the City because development cost charges assessed on new development only recovered “approximately 70 percent of the funds spent on expanded infrastructure to support sprawl-style development,” and that the City of Nanaimo commonly “loses thirty percent of all funds invested in these types of developments.”

Connected to the positive effects of limited urban sprawl, the creation of transit efficiency was also a quoted factor motivating support of infill and brownfield development among respondents. Those with government and planning backgrounds spoke about the need to create dense communities in order to have a more functional transit system. The provincial elected official respondent specifically referenced the need for more efficient and effective transit in light of the region’s aging population and the need to prepare communities for growing numbers of citizens unable to drive. Though the creation of transit efficiency is a cited benefit of infill development (Maryland Department of Planning, 2001), its connection to an aging demographic was not identified in the literature review.

As reflected in Chapters 2 and 3, a range of social benefits are often cited in connection with infill development and brownfield redevelopment, and several of these were referenced in respondent answers to this question. Respondents claimed that filling in vacant lands improved peoples' experiences in cities in terms of quality of life, and that infilling creates complete communities by filling out streetscapes. It was noted that infill creates pedestrian-friendly areas for people to interact, which leads to "... a better civic life..." in which "...people will know each other better" (locally elected official). It was also noted that infill development provided a venue for affordable housing, and that brownfield redevelopment was seen by residents as a way to "bring the neighbourhood back to life" (neighbourhood association respondent).

Only three of the ten respondents made specific, meaningful reference to brownfield redevelopment. Most comments were directed towards infill development or both infill and brownfield redevelopment broadly. One of two civil servant respondents noted that Nanaimo had "a legacy of mines and mills on the waterfront, which is typical of coastal BC...because we started as an industrial city", and that Nanaimo needed to start asking how to make better use of these former industrial sites (civil servant one). Another respondent commented, "Brownfield redevelopment is a positive form of development and helps us deal with contamination, and create development that is community driven, and relevant to local neighbourhoods" (First Nation council member). The regional district planner reported "there are a number of brownfield sites in Nanaimo, especially the old gas station sites. These are important pieces to filling in the gaps in our urban fabric." Without directly expressing it, these quotes point to the clear connection between infill development and brownfield redevelopment because the goals expressed herein all deal with using unused, underutilized or vacant properties to create development that fills in sites with relevant development congruent to the character of the surrounding neighbourhood.

Particular enthusiasm for infill development and brownfield redevelopment was expressed by one of the two respondents drawn from the development community. He noted that in recent decades, Nanaimo had shifted its development focus to the north end of the city to pursue large format retail and had abandoned the older part of the City, commonly known as the "downtown." He claimed that the term "downtown" was

misused in reference to Nanaimo because a downtown would require a high concentration of white collar jobs and major commercial outlets, and that area of Nanaimo has neither. This respondent went on to say that the misuse of the term obfuscates the development potential of the area, which would be better recognized as an old city district.

“The old city is not capable of supporting a large format retail development but it is the place that people like to shop romantically. Old city retail will have smaller stores with high prices and low selection; these are boutiques with the low value and high margin necessary to cover the higher operating costs associated with the location. The only way to make [boutique retail] work is to have hundreds or thousands of people on the street every day. The large format model requires that [consumers] drive to a retail destination, and old city retail model requires walking traffic; therefore, what Nanaimo must do is infill.”
- developer two

Accordingly, this respondent identified a vast potential for infill in Nanaimo’s old city district, much of which consisted of brownfield sites given the area’s industrial past.

“[The] only future for the south end of the City is to develop the old city [district] and waterfront with the highest density residential, along with boutique retail and office commercial units.” - developer two

Despite the overwhelming support among respondents, not all positive comments were without qualification. One respondent cautioned that market demand could be a factor in promoting infill development: “currently there are lots of vacant commercial spaces and condos that cannot be sold, so there needs to be good planning to ensure that we are building to the market place” (First Nation council member). His support of infill development was based on the premise that the form of development be designed to fit with the needs of the surrounding neighbourhood, and that infill processes be focused on the production of a tangible end product. The respondent indicated that local municipalities should not permit developers or speculators to purchase properties for the sole purpose of having them rezoned and sold off at a higher price. The locally elected official respondent expressed concern for certain forms of high-density development, specifically high-rise buildings, and especially those built on the waterfront. The motivation for this concern was two-fold: first, that high-rises built on the waterfront

obstructed the view of other residents; and second, that high-rises promoted a certain style of life not congruent with the culture of Nanaimo.

2.3 Infill development and brownfield redevelopment potential in Nanaimo

Each respondent expressed belief that infill development and brownfield redevelopment could increase in Nanaimo. A majority of respondents identified this potential in the form of observable opportunities. Vacant lands, deserted structures, and underused sites were noted as both well known and easy to see by all passers by.

“We have all known for along time about brownfields in Nanaimo; there are 12 or 14 very ugly sites and that’s just on Highway 19A. We need a handle on the number of sites and what we need to do about them.” - local elected official

“The [South End] cries out for development, and there are quite a lot of potentially available lands in the area for development.” - neighbourhood association member

“There is certainly potential and there are some identified brownfields sites.” - developer two

A civil servant for the City of Nanaimo spoke about two very specific brownfield sites referred to in local planning and development circles as the Terminal Trench (Figure 6.1) and Canadian Pacific Lands (Figure 6.2). Both of these areas are well known as sites of Nanaimo’s industrial past and referenced throughout the interviews by multiple respondents.

For quantification of potential, several respondents pointed to the City of Nanaimo’s public planning documents and mapping capabilities as a means to identify potential for both forms of development. Commenting that “...there is definitely a way to quantify it – we have one of the best GIS systems in BC and we have the land use planning skills”, civil servant two noted that the official community plan identified the population demands given the existing boundary in a manner that made infill and brownfield development potential easy to quantify. Other similar responses referenced the use of carriage homes, the legalization of secondary suites, the designation of higher density corridors, and the creation of smaller minimum lot sizes as a means of identifying development potential on the basis, presumably, that anywhere such measures could be implemented would constitute a potential site for infill development or brownfield

Figure 6.1: Terminal Trench/Former Commercial Inlet



This image shows the northern end of the Terminal Trench. Between the two rocky bluffs is an area filled in over time by rock debris, coal slagg and earth from Nanaimo's past mining operations. This earth infill is similar to that which occurred in and around False Creek during its industrial past. Photo by the author, 2015.

Figure 6.2: Canadian Pacific Lands



This south end of the Canadian Pacific Lands, like the Terminal Trench, is built of fill from coal mining activities. These lands have long been industrial and are among Nanaimo's major brownfield sites. Photo by the author, 2015.

redevelopment. Approaching the same argument from the opposite perspective, the regional district planner referenced the low overall density of Nanaimo as a means to assess the potential for infill, along with the overall lack of mixed-use development.

On brownfield redevelopment specifically, two respondents revealed that an inventory was created by the City of Nanaimo in 2012. With data from the British Columbia government on known contaminated sites in Nanaimo, the City's Planning Department created a list of sites that would qualify as brownfields. The initial list provided by the province identified more than one hundred contaminated sites, but the province's data lacked the accuracy necessary to assert that each of the quoted sites contained real contamination, without conducting additional research. Both planner respondents specifically noted that the province's list over-inflated the number of contaminated sites, commenting that a site may have been deemed contaminated because a superficial site investigation had been conducted, or because there had been an oil-based furnace on the site. Accordingly, the City conducted a review of each of the one hundred quoted sites and, after site-specific examination, developed a list of thirty-one brownfield sites.

This list of brownfield sites takes zoning, site characteristics and other qualifiers into account to ensure that redevelopment potential is considered in a site's qualification for brownfield status along with its contamination history. The thirty-one sites include a variety of properties that vary in size from single lots to large industrial parcels, including sites with multiple lots and multiple owners. To date, the detailed list has never been published, and the City of Nanaimo continues to keep the identity of the parcels confidential at the request of property owners. As a result, knowledge of this brownfield inventory remains restricted; the existence of this list was only referenced by two of the ten respondents and was shared by one respondent on the basis that it be used for research purposes only, and that the sites themselves remain anonymous. Accordingly, figure 6.3 lists the 31 sites under anonymous names.

2.4 Barriers to Infill Development and Brownfield Redevelopment in Nanaimo

Respondents were asked to cite the major barriers to both infill development and brownfield redevelopment in Nanaimo. Of all the questions posed, this one produced the most content as respondents went into detail about the barriers they have experienced directly, barriers experienced by their colleagues, and barriers they and their colleagues

Figure 6.3: Chart of the Size and Status of Informally Assessed Nanaimo Brownfields

INFORMALLY ASSESSED BROWNFIELD SITES IN NANAIMO			
SITE ID	ZONING TYPE	SIZE (in acres)	STATUS
Site 30	Marine (Mixed Use)	240.000	Active - under remediation
Site 24	Industrial (Heavy)	54.360	Active - under assessment
Site 11	Transportation	17.900	Active - remediation complete
Site 23	Industrial	4.818	Active - under remediation
Site 27	Marine (Mixed Use)	4.769	Active - under assessment
Site 6	Industrial (Service)	3.420	Active - under assessment
Site 18	Commercial	2.750	Active - under remediation
Site 8	Residential (SF & Duplex)	2.000	Inactive - remediation complete
Site 16	Industrial	2.000	Inactive - no further action
Site 4	Residential (SF)	1.997	Inactive - no further action
Site 31	Transportation	1.900	Inactive - no further action
Site 20	Residential (MF)	1.867	Active - under remediation
Site 1	Residential (MF)	1.760	Inactive - remediation complete
Site 29	Commercial	1.505	Inactive - no further action
Site 13	Industrial (Heavy)	1.480	Soil Received?
Site 21	Residential (MF)	1.445	Active - under remediation
Site 22	Industrial (Light)	1.000	Active - under remediation
Site 19	Residential (MF)	0.901	Inactive - remediation complete
Site 3	Industrial (Light)	0.890	Inactive - remediation complete
Site 7	Commercial (Mixed Use/Highway)	0.600	Active - under assessment
Site 14	Commercial	0.586	Active - under remediation
Site 12	Commercial (Highway)	0.568	Active - under remediation
Site 2	Commercial	0.490	inactive - no further action
Site 17	Commercial (Highway)	0.469	Active - under remediation
Site 15	Commercial	0.427	Active - remediation complete
Site 9	Commercial	0.406	Active - under remediation
Site 26	Commercial	0.289	Active - under assessment
Site 25	Commercial	0.234	Active - remediation complete
Site 10	Marine/Residential	0.229	Active - under remediation
Site 28	Commercial	0.184	Active - under remediation
Site 5	Marine (Tourism)	0.136	Inactive - remediation complete

TOTAL	351.38 acres
AVERAGE	11.33 acres
MEDIAN	1.45 acres

This chart was compiled from data provided by the City of Nanaimo. The data was provided on the basis that the location and ownership of the sites remain anonymous.

perceive to exist in Nanaimo. Responses have been organized into two sections to reflect those barriers that apply to most or all types of infill development, and those additional barriers that only affect brownfield redevelopment.

2.4.1 Barriers to Infill Development

The two most commonly cited barriers to infill development were citizen opposition and economic challenges, the latter being referenced by eight of ten respondents and the former by all ten respondents. The two developer respondents had the majority of comments on the poor economics of infill development, and quoted two primary factors: lack of market demand, and the cost and availability of land in Nanaimo. On the first factor, it was noted “Nanaimo has no urgency for density and it is not wanted. Nobody wants to live in three and four story developments because they don’t have to” (developer one). This same respondent commented that single-family housing was highly sought after as buyers desired a suburban life: “The reality is that unless you are retired, no one wants to live in the condo world here, unless it is temporary.” These comments were supported by one of the City of Nanaimo civil servant respondents who noted that market absorption was an issue for the larger, multi-family projects, which traditionally took a long time to sell as a result of high demand for single-family units.

A second major factor cited as negatively affecting the economics of infill development was the availability of inexpensive land.

“[The] difficulty in Nanaimo is that the land value is too low here for it to work universally. It requires the need for a certain ratio of structure value to land value. In many cases the price of land and built square footage is not valuable enough to create the necessary return on investment in knocking down older, single-unit structures to build new, multi-unit structures.” - developer two

Two other respondents, a civil servant and the regional district planner, made similar comments. They reported that greenfield land was too available and its cost too low to create the required pressure on existing areas to infill, and the existence of inexpensive rural lands around Nanaimo created cheaper options that were more appealing to the existing marketplace.

The comments of one respondent in particular highlighted how the economic barriers of infill development could vary based on the form, character, history and stigma of a neighbourhood. The respondent, drawn from a neighbourhood association, commented that “the South End is Nanaimo’s oldest neighbourhood, and it is the poorest. [These are] factors often used to question the liveability of the area” (neighbourhood association member). He said that the community believed that market values for the neighbourhood were suppressed due to the neighbourhood’s characteristics and “...the stigma associated with neighbourhood.” He said that the area had ample land for development or redevelopment, but that the suppression of land values made the neighbourhood seem undesirable to developers or investors. He noted that the industrial history of the area was a contributing factor: “market conditions are also related to the industrial history of the neighbourhood, and the nature of the abandoned industrial sites, which are run down, gritty and often contain garbage” (Neighbourhood Association Member). This respondent’s comments are supported by the literature presented in Chapter 3 (Greenberg et al., 2008; Kirkwook, 2001; Mueller, 2005; and De Souza et al., 2009).

Two interesting points were raised about the nature of Nanaimo’s housing market in connection to the broader comments on the economics of infill development in the City. First, one of the City of Nanaimo civil servants commented “no one will ever accept spending money on sustainability mechanisms until there is a dollar value on the impact of unsustainable behaviour” (civil servant two). He also spoke about the need to be able to quantify the real cost of items and unsustainable actions, which would include conventional housing and greenfield development. The implication here is that the existence of a systemic subsidy built into certain types of developments changes the economics of those developments, consequently making other forms of development seem uneconomical. Though this respondent’s observation was surely not intended to be specific to Nanaimo, it is clear he believed this phenomenon constituted a barrier to infill development in the City. This point relates to the known disparity between the cost of new development versus redevelopment, which in Nanaimo is “out of whack” according to one of the two developer respondents (developer two).

The second point about the nature of Nanaimo’s housing market, raised by one of the two developers, relates to the nature of Nanaimo itself.

“A problem Nanaimo faces is its brand reputation. It is known as the white trash city of Vancouver Island, the working-class poor cousin of Victoria.... That reputation is fine if you already live here, because it keeps prices down and limits in migration.” - developer two

This respondent claimed that the psychology of Nanaimo was a barrier to infill development as existing residents did not view Nanaimo as having great potential for development, and thus do not make decisions that position the City as attractive to an external market. He suggested that successful infill development required the attraction of new residents, which in turn, required the adoption of a new type of urban culture.

“Most cities have an intelligencia class of between 5 and 10 percent of the population and these are intellectuals, artists and such. In Nanaimo, there should be two sub-groups of these people: one, a retired, post-management class that goes to dinners and buys art; and two, an alternative class that creates art and lives a more alternative lifestyle. In Nanaimo the post-management class has all moved to Parkville, Qualicum Beach and Ladysmith; and the alternative class lives on Gabriola and Protection Islands.”
- developer two

These comments provide some context to those market challenges and identify a potential explanation for the lack of marketability of traditional infill-style units, which was identified by other respondents as a barrier to infill development in Nanaimo.

As noted above, eight respondents cited objection by citizens as a barrier limiting infill development. Chief among motivating factors behind citizen opposition were a resistance to, and fear of, change, and the presence of general ‘not in my backyard’ or ‘NIMBY’ attitudes.

“...People are opposed to neighbourhood change – people will try every trick in the book to try to stop new development... Hardly a Council meeting passes without someone coming to object to a new development, a new suite, a granny suite, or complaining that someone has an illegal suite” - local elected official

“Infill brings change into neighbourhoods and there is sometimes strong neighbourhood opposition, especially where you have a large lot and subdivide into two lots and build a second structure” - civil servant one

“One of the biggest barriers is neighbourhood attitudes; people object to development, fear development, [are] nervous about the land use, particularly commercial...general NIMBY issues” - provincial elected official

“Our largest barrier is the presence of a not-in-my-backyard mentality.” - civil servant two

Fear of increased traffic and changes to the form and character of neighbourhoods were noted by two respondents as commonly reported concerns of citizens objecting to infill development, along with fear of changing real estate values. A civil servant respondent noted that in many cases, citizen objection originated with a few individuals who successfully generated wider-spread opposition. He also noted that citizen objections had a real effect on the ability of the City to implement community plans and related policies due to the propensity of City Council to react to populist appeals.

Another factor respondents reported as motivating citizen opposition was an objection to increased density, and a desire by citizens to have existing vacant sites remain unoccupied. One respondent went so far as to assert that “densification is a dirty word” (civil servant two) in Nanaimo. Another respondent, an elected official, commented that “people get used to vacant space as buffers and they see that land like a park or green space” (provincial elected official). These motivations might relate to another issue, raised by the regional district planner: land speculation. She reported that existing landowners were also a barrier to infill development because many were waiting for market conditions to improve before selling their property. This comment was on the assumption that increased density and reduced green space might adversely affect property values through changes to the form and character of a neighbourhood.

Notwithstanding the above noted citizen objections, some support for infill development was expressed by the two respondents drawn from citizens’ groups; however, the support was highly conditional. One respondent noted strong support for infill that focused on commercial, residential and light industrial development. This support, however, was specific to his neighbourhood. The other respondent said:

“There is potential to increase both forms [infill and brownfield] development, but it needs to be designed to enhance the community and be driven by citizens. It cannot

be a form of development driven by return on investment.”
 - First Nation council member

Each of the two City civil servants highlighted the challenge of creating infill that met the needs of existing citizens, one noting that coordinating people to work collectively was a barrier to overcoming citizen opposition, and the other commenting on the technical challenges of physically infilling neighbourhoods while protecting existing view corridors and maintaining existing architectural styles.

Four respondents noted land title and jurisdictional issues as barriers to both infill development and brownfield redevelopment, especially for large pieces of property. One such issue was the land claims process and the local Snuneymux'w First Nation's work to execute historic agreements signed in 1854 between themselves and British Governor James Douglas. One citizen respondent, a member of the Snuneymux'w Council, reported that the Nation was working to exercise its legal rights under the Douglas Treaty, which could then extend their claims to all “unoccupied lands” rather than simply Crown land, as in other ongoing treaty processes. He noted that developers were increasingly seeking to work proactively with the Nation at the outset of their projects as a means of avoiding delays or uncertainty about the claims processes. Though other jurisdictional issues identified by respondents, like rights of way for rail lines, conflicting federal and provincial jurisdiction over coastal sites, and the complexity of coordinating cooperation between all three levels of government, were representative of factors identified in the literature review (as in Farris, 2001 and Sommers, 2008), the added complexity of First Nations' land claims is a relatively unexplored infill and brownfield redevelopment barrier.

Three respondents identified community planning and the implementation of plans as barriers to infill development. One of two developers indicated that the planning process, as well as the specificity of neighbourhood plans, were barriers to development because “...local plans can create fiefdoms that prevent development; they are good ideas, they are well intentioned but they can become self-serving” (developer one). Connected to that idea, the same respondent reported that the existence of multiple neighbourhood plans with different goals was a barrier, and suggested that these plans serve to restrict, rather than enable, change and development. Other respondents identified the lack of

implementation, rather than existence, of community plans as the source of infill barriers: “The City has done a good job in developing policy for densification and infill, but we are doing a very poor job of implementing the policy” (civil servant two). It was also noted by one respondent, a City of Nanaimo planner, that the official community plan promoted and encouraged developers to focus on infill development, but that there were no incentives programs to direct development towards that goal, or to encourage development in high priority areas of the City.

Other issues related to planning closely reflected challenges identified in the reviewed literature included the flexibility of zoning, bylaw enforcement, and development and variance approval processes (CMHC, 2000 and 2004; Farris, 2001; and Wheeler, 2001). The latter topic was raised by one of the developers who reported that the pace and process used by the City in dealing with applications related to development was a barrier. “Time is money, and there is sometimes a lack of urgency [on the part of government], which has real cost implications” (developer one). One of the elected officials noted that zoning and usage flexibility were barriers to development as were specific lot access, size and configuration rules, an observation supported by one of the two citizens’ group members who reported technical issues related to zoning as a barrier. A related issue, raised by the locally elected official respondent, was the growing demand and high cost for secondary suites. He reported that since the legalization of secondary suites by City Council in 2005, 1,400 such suites have been recognized across Nanaimo. This respondent estimated that an additional 4,000 illegal suites exist in the City, and speculated that owners were reluctant to legalize their suites due to the costs of bringing them up to appropriate City standards. Accordingly, this respondent was suggesting that the existing rules for secondary suites, and their enforcement, may be a barrier to infill development in terms of secondary suite growth.

2.4.2 Barriers to Brownfield Redevelopment Development

Consistent with the literature reviewed in section 3.2.1 of Chapter 3, five of the ten respondents indicated economic issues were a barrier to brownfield redevelopment. Respondents claimed that the costs of development and remediation were such that a brownfield project in Nanaimo would not be financially viable as developers were either unable or unwilling to pay the associated costs when other parcels of land were available

and cheaper to develop. Further, as an additional respondent pointed out, even assessing the financial viability of a potential brownfield redevelopment is itself a barrier given the uncertainty about extent of contamination and associated remediation required.

Two respondents noted specific challenges in Nanaimo due to the historic nature of many sites, and the absence of culpable parties with whom to pursue costs. Lack of available funds from government, along with the complexities of accessing funding if programs were in place were also noted as part of the financial challenges of bringing a brownfield site to market successfully: “To get the funding required to remediate [a major brownfield site] Nanaimo would need to do a project that hits multiple political priorities of senior government” (developer two). Added to this challenge was the abundance of readily available industrial land without any contamination or need for remediation, as identified by the regional district planner. These factors, when considered collectively with the known economic uncertainty of brownfield redevelopment (Adams et al., 2010; De Souza, 2006; and Greenberg et al., 2001) and the known economic barriers to infill development (CMHC, 2004; Steinacker, 2003; Wheeler, 2001) paint a full picture of how unattractive brownfield development would appear to a potential investor or developer.

Though most, if not all, barriers to brownfield redevelopment identified by respondents have financial implications, some barriers were identified as less relevant. One such barrier was risk and liability, although this factor was noted by both planners, one City civil servant and one of the two citizens’ group respondents. As discussed by the respondents, risk and liability were thought to act as a disincentive to redevelopment as owners of contaminated or previously contaminated sites did not have the means to protect against the risk of residual contamination or associated liability that may arise after the development was completed. It was noted by one respondent that other jurisdictions were moving to limit liability for site owners and developers, and he suggested that the Province of British Columbia investigate implementing similar measures: “If we could put a bullet in the liability question, I personally think that would lead to more active redevelopment and remove a big barrier” (City of Nanaimo planner). The issue of risk and liability was seen as closely connected to issues surrounding uncertainty over the extent or form of contamination on a site. Additionally, as noted by

the regional district planner, financiers have traditionally been unwilling to lend against brownfield projects due to the risks associated such that a solution to the liability question would address other barriers.

Former gas station sites were referenced specifically by three respondents as particularly affected by issues of risk and liability. “They [petroleum companies and gas station owners] don’t want to be pursued legally years later by someone living in a residential unit built on a gas station site” (City of Nanaimo planner). Gas stations also suffer from two other barriers identified by respondents: limited site potential and site notoriety. The regional district planner identified site stigma as a barrier to redevelopment for sites well-known for their former activity, such as a gas station, where the stigma associated with a previous activity could not be overcome by the redevelopment process. Limited site potential was raised as a barrier by one of the civil servants who noted that smaller, stand-alone sites like former gas stations had fewer options for redevelopment.

Two respondents listed site remediation itself as a barrier to the redevelopment of contaminated sites in Nanaimo. A city civil servant noted the limited effectiveness of site-by-site remediation when adjacent sites were contaminated. He noted that the sub-surface movement could re-contaminate a cleaned site, and that sites on or near sea level, as well as those on slopes, suffered from such a pattern of transient contamination. The regional district planner identified the disposal of contaminated material as an obstacle to brownfield redevelopment specific to Vancouver Island as all such material had to be transported off the Island for processing to meet government standards. On a connected note, over-regulation of the remediation process was also referred to as a barrier to brownfield redevelopment generally. Speaking about a particular parcel of land, developer one described how a large-scale development was delayed one and one half years over suspected contamination that, upon full site investigation, was no more than residual trash from the site’s former use. He specifically noted the challenges of existing environmental regulations under which a site may be deemed contaminated based on limited evidence, and the arduous measures required to prove that a site is clear of contamination. Supporting these observations, the regional district planner commented that existing regulatory requirements are an obstacle to brownfield redevelopment

because they are very firm and unbending, and prescribe a level of clean-up that is not affordable.

2.5 Current Programs and Policies to Assist, Encourage and Enable Infill Development and Brownfield Redevelopment in Nanaimo

Respondents were asked to describe all programs and services offered by the BC government, the Regional District of Nanaimo and the City of Nanaimo to assist, enable, or otherwise promote infill and brownfield development. Three respondents were unable to name any program or service, and a fourth answered that he was aware that some services existed then cited tax-credit programs as an example. Four of the respondents named the BC Brownfield Renewal Strategy, and five respondents cited general planning mechanisms of the City of Nanaimo in response to the question. Three respondents spoke about a specific City of Nanaimo brownfield project. No program or service of the Regional District was cited though one respondent, the City of Nanaimo Planner, expressed that “Something [was] afoot in the Region but there [was] no information about it”. No reference was made to any program or service offered by the Province of British Columbia on infill development by any of the ten respondents.

Those respondents who referenced the provincial government’s work on brownfield redevelopment were not complimentary.

“There are brownfield programs offered by the BC government, but these are mysterious, hard to find information on, [and] hard to apply for. It is difficult to get funding, though they have provided funding for projects in [this] area.”- provincial elected official

“BC government is not helpful. What they provide does not help real people with their actual problems” - developer one

One respondent reported on a planning charette held in Nanaimo by the BC Brownfield Renewal Strategy that brought together representatives from industry and government to discuss the redevelopment of known sites. It was reported that the charette dealt mostly with former gas stations and that the session was used to collect data for a provincial tool-kit.

Four respondents made general, positive comments about the City of Nanaimo's support for infill development, noting that the City was actively working to remove barriers to development. Similarly, respondents noted that the goals of increasing infill and brownfield redevelopment were evident in the Official Community Plan, and connected neighbourhood plans through new provisions for increased density. One of the citizen's group respondents spoke about the local area plan for his neighbourhood, commenting that the plan articulated the type of infill development citizens would support such that developers and investors had a clear picture of what opportunities were available. Recent infill projects such as the Pacifica, VIVO and Studio NA, each multi-story, multifamily condominium infill projects, were referenced by one of the two civil servants as evidence that planning mechanisms in the Official Community Plan, and associated Downtown Plan, were successful.

Four respondents referenced a range of zoning related planning mechanisms used by the City of Nanaimo to encourage increased density and implement the provisions of the Official Community Plan. These included 'upzoning' vacant or underused properties to make them more attractive to developers and investors; providing density bonuses to improve returns on investments; lowering the minimum lot size to allow for more infill opportunities; legalizing secondary suites and lane houses; and enabling greater density on corner lots through standing approval of duplexes or two structures on such sites. These mechanisms focused mostly on small-scale infill and, according to one of the developer respondents, did not work in Nanaimo because there was no tangible value in adding density. Two respondents reported on the existence of an interim use project whereby a local community group, the Young Professionals of Nanaimo, had taken two brownfield sites and installed raised beds to support a community garden; however, it was noted by one of the two respondents, the elected City official, that government was not involved with the project.

In terms of financial support, there were two programs that potentially applied to infill development offered by the City of Nanaimo. The first focused on waiving development cost charges for new development or redevelopment in the downtown neighbourhood. According to the City of Nanaimo planner respondent, the program had existed for ten years and was initiated to promote investment and revitalization in the Old City

downtown area. He noted that there was a certain logic to waiving development cost charges for infill or redevelopment as the fees assessed on development were used to cover public infrastructure costs associated with that development. The cost to the City of infill or redevelopment was much lower as these forms of development made use of existing infrastructure and the respondent noted the value of passing these savings on, to reduce costs to the developer. The second program referenced by a City of Nanaimo civil servant provided grants to revitalize and restore heritage buildings, and such programs could sometimes work to encourage infill development. The same respondent noted that the City had the ability to offer a revitalization tax credit, but had yet to develop a program to use that mechanism of the Community Charter.

Three respondents spoke about the City of Nanaimo's work on brownfield redevelopment, which has taken the form of specific projects rather than a standing program or set of policies. According to one respondent, the City's single largest brownfield redevelopment project was the Vancouver Island Conference Centre, built with \$72 million of public funds (civil servant one). Constructed in the downtown area, the Conference Centre occupies a piece of land that was previously underwater, but was filled in during the 1960s with a mix of garbage fill and mine tailings. Following the success of the Conference Centre, the City undertook another large-scale brownfield project in cooperation with the Downtown Nanaimo Business Improvement Association. The new project was a coordinated site investigation of properties in an area of the downtown neighbourhood known as the Terminal Trench. A former intertidal area, the Terminal Trench was filled for years with mine tailings and other fill similar to the land under the Conference Centre. According to one of the City bureaucrat respondents, the City and local landowners have been paralyzed for years dealing with the suspected or perceived contamination and aside from the contamination issue the area "should be prime for development and redevelopment" (civil servant two).

The first phase of the Terminal Trench project was a preliminary site investigation that was partially funded by the Province. Following receipt of the preliminary investigation, the next step of the project included more intensive studies of properties, funded by landowners, to define the extent of contamination. The final stages of the project involved the creation of a landscape plan for the area and a possible revitalization

tax exemption to support redevelopment. The primary respondent providing this data, a senior civil servant, spoke about the important role of local government in facilitating projects such as this, and said that government needed to take such a role in order to move larger projects forward. It should be noted, however, that the City's role in the project was not universally embraced, with some landowners objecting to local government participation. In some cases, this was simply because "some owners just want to remain ignorant" (locally elected official) of the contamination on their sites, and in other cases landowners perceived some greater, negative motive on the part of the City.

When asked about the quality of the programs and services that assist, encourage or enable infill development and brownfield redevelopment, the general response was negative. Two respondents provided no response at all, with one stating "No comment." (developer one). A citizens' group respondent stated:

"I have lots of access to people and information, but there seems to be no real access, and poor effectiveness of these types of programs. People don't know what is out there and what programs exist... There is nothing user friendly on these topics" – First Nations council member

Similarly, an elected official respondent noted that information on programs and services was not made available to developers and landowners, and consequently, they did not know how to gain access existing programs and services. He noted that this was especially the case for small-scale developers (provincial elected official).

One of the developer respondent's comments indicated that existing programs and services were pointless in a market such as Nanaimo because the viability of development relied on return on investment, which was dependent on site value.

"In the development of the city, government guides the edges and sets aspirations – all the blood, sweat and hell is done by developers. For most developers, all of their family's wealth is invested in the business and its development work, so why would people put that all into a less advantageous site...."The success and failure of these programs is about the money invested, and if there is not much redevelopment of brownfield sites happening then the programs are not successful....These tend to be aspirational policies and programs: they are well meaning,

but there is not enough money there to take a site from the costs of a brownfield development to the costs of a greenfield program.” - developer two

Four respondents made comments specifically referencing the BC Brownfield Renewal Strategy. A civil servant respondent reported that the Province invested in studies but applied no resources to implement the results of those studies, and that no real funds were spent remediating contaminated sites. The Regional District planner commented that the BC government’s programs were not well promoted and that the provincial government was “certainly not reaching out to local government”. A local elected official respondent noted that the work of the BC Brownfield Strategy was not effective enough, and described the current work of the body as “baby steps” towards more significant work. He also expressed concern that remediation work that did result from the program was simply moving contaminated substances to a different location, and lacked the proper processing of contaminated material. Not all comments were wholly negative: the City of Nanaimo planner noted that the existence of the BC Brownfield Renewal Strategy was positive and that the body was actively working to encourage the redevelopment of brownfields in the province. The Regional District planner noted that the BC government provided project specific grants for large-scale brownfield renewal projects.

Generally positive comments were made about the City of Nanaimo’s work to increase density through the variety of planning mechanisms addressed in the previous section. Two respondents, both planners, reported that the program of waiving development cost charges for development and redevelopment in the downtown area had been successful. It was noted that assessment values had increased since the program began, and this was identified as proof that the fee waiver program was working. A civil servant respondent commented that the new Official Community Plan had only been adopted in 2008 but that change was already visible:

“The policy of [Official Community Plan] is taking effect and people are beginning to understand what the City is saying when promoting compact communities.... The reduction in minimum lot size has been successful and the City is beginning to see lots of applications to take advantage of this as the development community is now seeing opportunity in this provision” - civil servant one

An elected City official agreed with the assessment above and commented that the City was on the right to track to increased densification. He reported that the recent changes to the City's zoning bylaws were a positive measure to make infill development and brownfield redevelopment easier. "It is a slow process, and none of these things happen overnight" (Locally Elected Official) he said. This comment is itself evidence of the submission by another respondent who noted that Nanaimo's City Council was very supportive of the City's work on densification and infill. The creation of a Development Process Review Committee tasked with eliminating "red tape" was cited as a further example of Council's implementation of the Official Community Plan and the infill and densification principles therein.

2.6 Overcoming the Barriers to Infill Development in Nanaimo

Respondents were asked to suggest means by which levels of infill development could be increased in Nanaimo. Responses included a range of very specific recommendations to general comments on overcoming barriers. One such barrier was the condition of the market for development and real estate in Nanaimo, more specifically the poor condition of the market at the time interviews were conducted.

"We can create the policy to support infill, and we can create the zoning to allow it; however, the third component is the market and what the market will sustain...No matter how many programs you have, there has to be a market for the product to produce the economic return for the product." - civil servant one

"This development is very market driven so until the market is demanding it, there is not much to be done"
- developer one

One of the developer respondents commented that the fundamentals of the market for infill development in Nanaimo needed to be overcome because buyers will continue to seek conventional single-family, suburban housing until they are priced out the market. He noted that those who have not been able to afford the conventional suburban home in Nanaimo have moved to peripheral locations beyond the City to access this type property within their price range. Notwithstanding this challenge, he along with other respondents suggested that a system of incentives could overcome the structural market challenges.

“Market rules on some level, and the City should be challenged to be as creative as possible to target development” - developer one

“Incentives are the key, and personally, the biggest bang for the buck is with incentives because they offset the challenges of the market. These types of programs grease the wheel, they add that little extra encouragement to make development possible” - City of Nanaimo planner

Two financial instruments were referenced by respondents as means of providing direct incentives to support infill development: development cost charge waivers and tax credits. Development cost charge waivers have been used successfully by the City of Nanaimo as a means to focus development and redevelopment and, as one elected official respondent commented, this form of incentive could be expanded. The same respondent, along with the City of Nanaimo planner, suggested expanding use of the City’s authority to extend revitalization tax credits to induce development in locations selected by the City. It was noted that these measures result in lost revenue while adding burden to the City’s infrastructure; however, the point was also made that much of the existing infrastructure used by infill development was in need of replacement and upgrading irrespective of any new development.

Other, demand side, market measures were referenced by several respondents. Both civil servant respondents spoke about the need to recruit increased in-migration to Nanaimo to provide the necessary market demand.

“Our growth is fuelled through in-migration and not through natural increase. So we can only achieve infill at the rate of growth of the City.” - civil servant one

It was further noted that the in-migration being recruited needed to consist of people seeking an urban lifestyle. Along similar lines, the Regional District planner suggested a broad approach to market infill to all buyers by working with the real estate agents and providing education to the marketplace.

Suggestions related to marketing lead to a second major area of recommendations by respondents: public education and facilitation. The role of government in bringing stakeholders together, referenced by one of the citizens’ group respondents as well as a civil servant, was identified as a necessary measure to create the relationships required to

facilitate change. Such measures create a community dialogue and lead government and industry to work collaboratively with citizens to overcome the challenges of infill development. The Regional District planner suggested that such collaboration could also include key private sector stakeholders like major lenders, who may be more accepting of the risks of infill projects should they be included in the broader societal discussions.

Hand-in-hand with stakeholder communication, public education would teach citizens about the benefits of a more urban lifestyle. Messages like “the downsides of higher traffic or noisier locations are...offset by the convenience of being closer to amenities and employment centers” (provincial elected official) help promote the benefits of density. One civil servant referred to this tactic as enlightening the community and said:

“When you talk about densification it has to be an ongoing dialogue that never ends. We need to get over the fact that we cannot continue to be a community of suburbanization.”
- civil servant two

He also noted the need for City Council to be a leader in driving public opinion towards greater support for infill development. The challenges of this suggestion were not overlooked by several of the respondents who referenced the need for broader public education. It was noted that such processes take both time and money, and that it was often difficult to connect with citizens through conventional means like open houses or information sessions.

Six respondents identified measures related to planning and zoning as strategies to increase levels of infill development in Nanaimo. One elected official respondent called for more flexibility for developers through smaller allowable lot sizes, increased density, more freedom to develop odd shaped lots, and allowance for panhandle lots. The other elected official respondent suggested further amendments to the Official Community Plan to improve infill provisions and policies. The Regional District planner suggested implementing incentives for green building and increased use of density bonuses. A developer respondent suggested that the City should relax design rules and related regulations in favour of a guidebook that would direct how development could match each area of the city. He argued that such a change would move away from strict rules on parameters like density or height restrictions, and towards a system more concerned with neighbourhood fit.

Both citizens' group respondents were amongst those making suggestions broadly related to planning and zoning. One respondent suggested that City planning and variance permit mechanisms be improved to create more user-friendly processes that save both time and money for developers. Specifically, he suggested that the re-zoning processes needed to be easier and more user-friendly. "Making local government approval and variance processes less bureaucratic will facilitate conversations and accommodations that help achieve broader goals" (First Nations council member). Amongst the suggestions of the other citizens' group respondent was an expansion of local area planning to both address the specific challenges of each neighbourhood area, and to "nudge" development to identified areas (neighbourhood association respondent).^{lviii} This latter suggestion was congruent with the opinion of one elected official respondent who commented that neighbourhood planning processes established a venue for residents to provide input at the outset of any development:

"Neighbourhoods are the building blocks of the municipality. If you can get the infill and densification into the neighbourhood plan, it avoids backlash and conflict. We need to involve the people who are going to be effected in advance."- locally elected official

Focusing development to selected areas was the suggestion of another respondent as well, though transit corridors, rather than neighbourhood areas, were the focus of the suggestion. Noting the growing importance of public transit, one of the developer respondents suggested that the City offer incentives to support high-density dwelling units along the best transit lines. This recommendation would combine a financial incentive with a planning tactic, and thus would channel public funds to directly support the goals of the Official Community Plan. The respondent noted that so long as the City was providing the correct densities, the transit system would "take care of itself" (developer two)

^{lviii} The respondent may be referring to nudging as termed by authors Richard Thaler and Cass Sustein in their book *Nudge: Improving decisions about Health, Wealth and Happiness*, wherein they outline a systematic means by which human behaviour can be influenced by engineering how choices are presented (Thaler and Sustein, 2008).

2.7 Overcoming the Barriers to Brownfield Redevelopment in Nanaimo

In addressing means to overcome the barriers to infill and brownfield development, six respondents endorsed the creation of direct financial incentives to offset the cost of site remediation, as well as the additional costs associated with bringing a brownfield site to market. Specifically, development cost charge waivers, tax breaks, direct remediation funding and project grants were referenced as possible options. These tactics were seen as necessary to bring the economics of brownfield redevelopment into a sustainable range for site owners and developers, but also viewed by at least one respondent as a positive social and environmental investment. One of the developer respondents addressed the impediment to locally sponsored financial incentive schemes, noting “things like tax incentives are great but they are hard to support in a small town” (developer one).

Several suggestions were made to address the lack of funding to support brownfield remediation. Greater investment and involvement from the provincial government was suggested by two respondents, one of which, the local elected official, suggested that the provincial government had a responsibility to provide increased support. One of the developer respondents suggested that the lack of local funding for brownfield development could be offset by the recruitment of larger-scale developers with deeper pockets, who would be able to take on the size and scope of larger Nanaimo sites as a legacy project. The provincial elected official suggested that remediation funding could be raised directly from site owners through a community trust fund dedicated to brownfield remediation. The respondent’s proposal envisioned a mandatory contribution to the fund by those developing or operating enterprise that might result in the creation of a brownfield, and such payments into the fund would be similar to a deposit system. Under this scheme, the fund would provide a refund of a landowner’s contribution if no contamination was present upon the sale of the site, or change in site use. Such a system, the respondent noted, would better associate taxation with remediation funding.

Beyond the direct provision of funds to support remediation and redevelopment, three respondents identified the role of government as a coordinator of the remediation and redevelopment process.

“Local government should take leadership in coordinating the remediation process and shovel the [expletive] so that

the smaller players in Nanaimo can have access to clean sites”- developer two

According to the Regional District planner, local government should bring together all the necessary stakeholders and professionals needed to create an integrated planning process, and, as noted by another respondent, such a process should source out funding to bridge the gap between the economics of brownfield development and that of greenfield development. The existing planning and site assessment process aimed at addressing contamination in the Terminal Trench area was held up as a positive example of government facilitation and it was noted by one respondent that similar plans were underway for other brownfield sites in Nanaimo.

In addition to coordination, a series of low or no-cost programs or policies were suggested as possible options for government to aid in promoting brownfield redevelopment. The City of Nanaimo planner respondent suggested that provincial legislation should be introduced to lessen risk exposure and overcome the barriers associated with liability aversion. Along similar lines, one of the developer respondents suggested that regulations related to contamination remediation and clean-up were too broad, and that the certification process could be improved to reduce development costs.

“Contamination is defined so broadly that many sites are considered contaminated with simple garbage matter, and that then triggers a huge process that is not necessary in many cases” - developer one

Another means to address remediation challenges was suggested by the Regional District planner, who proposed that more research be conducted to develop enhanced processes and new technology to reduce site clean-up costs. She suggested that existing universities and research bodies could conduct this work, and that in some cases the technology existed within other industry and simply needed to be adapted to this new purpose.

Two respondents referenced planning and zoning changes that, similar to measures identified to overcome infill development barriers, could be implemented by local government. Another suggestion, the creation of public education campaigns, was also very similar to responses provided on infill development:

“People need to be better educated about contaminated sites because some people think that so long as the

contamination is not exposed, then there is no issue” - civil servant two

“The priority is education, education and education”
- locally elected official

Along with this education role, respondents also identified the need to compile site histories. One of the two elected officials commented that more information was needed about the history of sites such that there is greater awareness about both potential contamination on some sites, and the lack of contamination on other sites. Another respondent made similar comments, noting that some sites have hidden issues and cited an example of a recent situation in which a developer found buried gas tanks on a site that were not disclosed at the time of purchase.

2.8 Better defining the Provincial Role in supporting Infill Development

Respondents were asked to comment on what role the British Columbia government should be playing in promoting, assisting with, or enabling infill development across the province. Some respondents saw no role for the provincial government on infill development with two respondents specifically noting that infill development was under the jurisdiction of local government only. The provincial elected representative noted that the role of the BC government on planning issues had been reduced in recent years as the province had lost the ability to impose zoning on un-incorporated areas.

Other respondents were less concerned about jurisdictional issues and welcomed an expanded provincial role.

“Why couldn’t the BC government be a leader on this? It would help the local governments if BC took a leadership position on this topic.” - City of Nanaimo planner

Such a leadership role could include the provision of funding to direct development in a manner that improved government efficiency and saved public funds in the long run. Without interfering in local jurisdiction, the provincial government could promote infill through direct investments in social housing, provincial government offices and other government facilities according to one respondent. One civil servant and the Regional District planner suggested that the BC government could use its funding ability to support only those projects that upgrade, or expand capacity of existing infrastructure. Such a

measure, the respondents argued, would end passive subsidies to sprawl development, and support greater infill.

Provincial government support for infill development could also take the form of less direct involvement through measures like educating stakeholders on the advantages of infill development, and the collection and promotion of best practices. Two respondents, the City of Nanaimo planner and the provincial elected official, spoke about these tactics as positive means to encourage infill at the local level. The City of Nanaimo planner suggested that this work could be accomplished through the formation of a new provincial agency directed to better define infill development, create and oversee policies governing financial incentive programs, and generally work to promote greater infill. Despite this suggestion, the City planner respondent was careful to note the relative importance of this work compared to provision of direct financial incentives, commenting that “financial leveraging is where the rubber hits the road” (City of Nanaimo planner).

Three low- or no-cost roles for the BC government were identified along with the above suggestions: changing provincial legislation and regulation; limiting available developable land; and improving facilitation and coordination. Three respondents suggested that provincial regulations affecting infill should be examined to ensure that the BC government was supporting infill through ensuring that sub-division rules, growth strategy planning, infrastructure planning and other areas of provincial jurisdiction reflected the values of increased density and infill development. The provincial elected official spoke about the influence that engineers have on city design, which resulted in roads and other infrastructure taking up more space than was required; he suggested that infrastructure standards should be re-examined with the goal of increasing density and providing more space for infill.

Two respondents submitted that the role of the BC government should include work to restrict the amount of available, developable land. The Regional District planner and the locally elected official suggested that one way to achieve this goal was to better restrict land from being removed from the Agricultural Land Reserve.^{lix} In addition to better

^{lix} The Agricultural Land Reserve (ALR) is a collection of lands on which agriculture is prescribed as the priority for land use, farming is encouraged, and non-agricultural purposes are restricted. The ALR protects approximately 4.7 million hectares of land suitable for agriculture in British Columbia, and is overseen by a provincial government agency (Agricultural Land Commission, 2015).

protections for agricultural lands, the locally elected official suggested the BC government create more restrictions on municipalities seeking to expand their urban containment boundaries.

“The BC government could be much more strict with things like changing of urban containment boundaries. Right now it’s easy to do that and shouldn’t be that easy.”
- local elected official

Though well addressed through past sections, three respondents raised new points on the ways that the BC government could improve coordination and facilitation. The Regional District planner suggested that the provincial government could work with lending and financing firms to promote infill projects to lower borrowing costs. The locally elected official proposed that intergovernmental communications could be improved to reduce disparities between municipalities. Finally, one citizens’ group respondent suggested that the provincial government could work better with developers to navigate treaty issues and the provincial approvals processes for certain, complex developments. He suggested that the BC government actively facilitate the process of obtaining approvals in areas of provincial jurisdiction such that developers were not left working in isolation, navigating each process on their own.

2.9 Better defining the Local Government Role in supporting Infill Development

In describing the local government role in promoting, enabling and assisting infill development, five respondents commented that planning and zoning were key tools for municipal governments.

“Local government should provide more flexibility on lot size and dimension, allow rear yard access and consider reducing some residential street widths – these are all ways that we eat up land unnecessarily.” - provincial elected official

This particular respondent also called for wider implementation of lane access to provide for carriage homes, which enables increased housing capacity on single lots. Other suggestions included density bonusing, more flexibility within zoning codes, and greater focus on citizen engagement through the planning process.

“Neighbourhood planning processes promote infill because they engage citizens in the planning process and moves infill along in the minds of residents....The City should be

actively fostering a creative development context for developers and citizens that proactively promotes densification without too many hurdles” - neighbourhood association respondent

One civil servant noted that policies to promote infill development should include measures to both encourage desired behaviours and discourage undesirable ones. A citizens’ group respondent disagreed with this, suggesting that only enabling measures be considered.

Consistent with responses to other questions, respondents identified a strong role for local government in communication and education work to promote infill development. Five respondents spoke about increasing or improving the City of Nanaimo’s work to promote infill development amongst citizens and developers. One of the citizens’ group representatives identified a cultural gap between the opinions of long-term residents who were against infill, and those newer residents who supported infill as a means of neighbourhood change. He said that this gap must be overcome to enable infill projects to move forward. One of the developers commented that the City needed to have the political fights necessary to ensure that infill moved forward, despite possible backlash. The locally elected official presented a different opinion, suggesting that education was needed to avoid conflicts:

“Residents sometimes perceive that the City is shoving development in their throats because some neighbourhoods have no interest at all. We need to improve education so people understand that we can infill without changing the nature of the neighbourhood.” - locally elected official

Similarly, the Regional District planner called for better citizen education about the benefits of living in existing areas, and suggested an information campaign to provide a better understanding of the costs to commuting versus living in an infill development.

Other suggestions included discussion of financial incentives, improved approval and variance processes, and research support. Though these responses are consistent with themes arising from previous questions, some new content was provided. On the issue of local government processes, the Regional District planner suggested that a priority track could be created to speed up approval processes for infill projects as such a measure would save money for developers while being a non-cost item for local government. The

same respondent suggested that local government should, as part of their responsibility to serve the public good, actively research the barriers to development and find options to overcome those barriers. She further suggested that local government could specifically assign staff time to infill projects to aid developers in finding ways to make infill projects economical.

It should be noted that one respondent believed the question presupposes infill to be universally positive.

“This question is written on the basis that infill is good, and it is up to local government to decide whether to promote infill or not. In Lantzville, for example, their limiting factor is the availability of water and it impacts infill ability. Lantzville might turn down multi-family developments based on the supply of water.” - civil servant one

Addressing the issues particular to the District of Lantzville, British Columbia, an incorporated municipality immediately north of Nanaimo, is beyond the scope of the research undertaken. Lantzville has unique challenges related to water that should have been better considered before the previously unincorporated improvement district became a municipality in 2003. Notwithstanding any specific challenges faced in certain municipalities, the generally positive nature of infill development was well established through discussion of accepted literature. An aggregate shortage of water is not, in and of itself, relevant to infill development specifically, as such a shortage would play a limiting role on any form of new development.

2.10 BC Role in Brownfield redevelopment

Respondents were asked to identify the role of the BC government in promoting, enabling or assisting brownfield redevelopment across the province. Six respondents identified direct funding of brownfield redevelopment projects as a key role of the BC government. Two central themes emerged from responses. The first was a suggestion that the BC government should establish a funding program to undertake direct remediation and redevelopment:

“The province needs to lower the cost barrier by taking on the liability, offsetting those costs, and going after the corporation responsible where possible.” - developer two

“The BC government needs to provide funding to fix contamination problems, not just funding to study the identify contamination.” - civil servant two

The second theme, recommended by three respondents, involved the provincial government taking a greater, and more direct role in remediating and redeveloping key or major brownfield sites. It was noted one that many of the larger contaminated sites, especially those on the waterfront, had unique challenges to remediation, and that current regulations made proper cleanup nearly impossible. Direct involvement by the province in redevelopment of such sites would allow for an appropriate risk assessment by the authority ultimately responsible for environment and human health. The scale of remediation required, and the need to shape remediation around the specifics of each site, led at least one respondent to conclude that provincial involvement and leadership was the key to such sites ever being redeveloped.

“Unless the province will take responsibility for the major historical waterfront brownfield sties, there will be no progress on these sites.... The only way to get these sites to the point of redevelopment is to have the province step in and take responsibility and authority for these sites....[The] province has already made the money to remediate these sites through their charges to the corporations at the time the sites were being polluted so they need to pay the costs of remediation. This applies to major and waterfront sites.”
- developer two

Three respondents spoke about possible changes in government regulation. One of the developer respondents suggested that remediation standards be more flexible and that duplication within the remediation process should be eliminated. He noted that developers were mandated to hire engineers to verify site clean-up standards, work that was then duplicated by BC government staff conducting the same studies to verify the developer's verification. One of the citizen's group respondents suggested that the BC government should do more to hold polluting companies accountable for site contamination during their operating years, and referenced the more robust regulatory regime in Europe as an example of improved standards to prevent site contamination. The City of Nanaimo planner spoke about the need to change liability regulations and related public policies as a means to support the redevelopment process.

Similar to responses on infill development, respondents also saw a facilitation role for the BC government in aiding the redevelopment of brownfield sites. Two respondents suggested existing work by the BC government on brownfield redevelopment should be better organized and made more effective through better intergovernmental coordination between key ministries, greater authority for the BC Brownfield Renewal Strategy as an agency of government, and by consistently housing brownfield redevelopment work in one ministry (rather than having authority over brownfield redevelopment move between departments, or split between ministries as had happened in the past). Four respondents recommended that the coordination role of government include information gathering and sharing. Suggested information for research and dissemination includes best practices, site history records, data on available federal programs, an inventory of available properties, instructions on how to have a property assessed, a user-friendly guide to remediation standards, site-specific information for such common brownfields as gas stations, and tool-kits for local governments. One of the citizens' group representatives suggested that the BC government promote specific, successful brownfield redevelopments to developers and site owners to better illustrate the development potential of contaminated sites.

2.11 Assessing the Local Government Role in Brownfield Redevelopment

Respondents were asked to identify the role of local government in assisting, promoting or enabling brownfield redevelopment, and as with previous questions on jurisdiction, many of the responses provided content covered in other questions. Despite this, several themes emerged that warrant comment, including the suggestion by four respondents that local government plays a role in compiling site histories for general access by developers considering redevelopment projects. Connected to this, respondents suggested that local government plays a facilitation role in aiding redevelopment processes and provide general information about common brownfield sites.

“Local government should be prepared to for inevitable inquiries and proposals that will come forward and should be ready to help developers with proper zoning bylaws, guidelines and speedy processes” – developer one

References were also made to a range of policies and programs consistent with recommendations on how local government could assist, promote or enable infill development. These include providing financial incentives through tax relief and development cost charge waivers, limiting greenfield land available for development, promoting this form of development to developers and investors, and educating the general public. Added to this list was the suggestion by two respondents that local government could reduce regulatory barriers, especially for redevelopments that would result in a renewed industrial use. Such a proposal would fall into the category of risk-based corrective action and would require support and regulation change from the provincial government. As one respondent noted, the City must conform to provincial environmental standards, which limits its flexibility in supporting redevelopment projects.

Despite the limited resources and relatively limited options for local government, two respondents called on the City to show greater leadership. One of the two citizens' group representatives commented that the City was often reluctant to take on new ideas and tended to follow examples set by other local governments due to a culture established by senior city officials. This respondent called on the City to be more progressive on brownfield redevelopment issues by considering the larger trends, examining issues through a wider lens, and moving creative ideas forward. A second respondent had more specific suggestions under the heading of leadership and recommended that the City directly redevelop brownfield sites. Noting that many of the brownfield sites in Nanaimo were too large and complex for most developers, this developer respondent suggested that the local government itself should directly buy, remediate, sub-divide and re-sell sites to bring existing brownfields into the marketplace.^{lx}

Unintentionally responding to these comments on leadership, the City of Nanaimo planner spoke about the success of the Terminal Trench project as a positive example of a pro-active local initiative. He noted that the site contamination study was a joint effort with the Downtown Nanaimo Business Improvement Association and that the resulting information would be provided to property owners and the City of Nanaimo. One of the

^{lx} The respondent did not provide any example of a jurisdiction using this tactic to encourage the redevelopment of brownfield sites.

City's civil servants provided comments that serve as a window into the paradigm under which local government works. He noted that the scale of action by local government was regulated by the scale of risk associated with brownfield sites and the level of citizen support.

“Any local government needs to work at the speed of their constituency; government can't lag behind, nor can it get too far out ahead” – civil servant one

2.12 Other Comments

Respondents were asked if they wished to make any further comments before the interview concluded and five respondents took the opportunity to share further thoughts. Generally these responses were either an expansion on points previously made, or comments that were beyond the scope of the research undertaken. A few comments were of note, however, and they included the suggestion by the Regional District planner that real estate agents needed to be better included as key stakeholders and comments by the elected local officials that Nanaimo was well ahead of other jurisdiction on supporting both infill and brownfield developments.

One of the two developer respondents spoke at length about the need to attach a narrative to development and planning work to successfully recruit support and interest in neighbourhood change.

“There is a reality in life about the power of the story and the meta narrative. Creating these is really critical to identify the opportunities and blockages that lay in front to people when they hit the ground. Creating the right narrative will set up a framework to help people and small businesses pick and develop the right lands.” - developer two

Another respondent saw value in citizen engagement at a different level and suggested that grassroots actions like picking up litter on vacant sites was an important component of resident engagement.

“Residents have an interested in what the neighbourhood can do to not feel so impotent in the face of these grand forces effecting the neighbourhood” - neighbourhood association respondent

The same respondent suggested that the City should also play a role in pursuing vacant site owners to clear any debris from their properties.

In addition to the other comments made by respondents when prompted, the elected official respondents raised two associated noteworthy issues, despite both being beyond the scope of the research undertaken herein. The locally elected official spoke about the need to create greater protections for riparian areas and commented that such areas were constantly under threat through the variance application process, which allowed developers to reduce riparian protection buffer zones when supported by an environmental assessment. He noted that the environmental assessment process was no longer conducted by government, but rather by private consultants hired and paid by the very developer applying for the variance. He suggested that variance applications were commonly supported by the privately funded professionals, and suggested that an inherent bias existed given that the assessments were bought and paid for by the very entity attempting to have the variance approved. This concern applied equally to all forms of development so was deemed beyond the scope of the research question.

The provincial elected official spoke at length about the inequality of demand between multi-family structures and single-family housing, and claimed that the inequity was a function of the ownership model rather than other factors. He reported that the common ownership model, strata-style developments, was increasingly seen as undesirable due to the lack of control experienced by individual owners. He commented that there were too few regulations on those managing strata complexes such that these developments were essentially “mini-municipalities” with their own set of regulations and services. Specifically, it was noted that under a strata system, an owner had limited control over the unit in which he or she lived, leading the respondent to conclude that “in many cases you are better off in a trailer park than a strata unit” (provincial elected official) because in a trailer park ownership extends to the dwelling unit. This respondent suggested that a system of multi-family housing that included freehold land title would alleviate many of the issues related to the strata ownership model. These comments do not relate specifically to infill development or brownfield redevelopment, though do have broad relevance in terms of densification and the development of multifamily housing, mixed-use commercial developments or strata-based commercial development.

3.0 Summary and Analysis

3.1 Infill Development and Brownfield Redevelopment: A means to urban reform in Nanaimo

The unanimous support for infill development and brownfield redevelopment among respondents contained a variety of themes and goals beyond simple filling in of vacant space within Nanaimo's borders. Respondents called for a more efficient style of development, moving from a traditional low-density suburban paradigm, to a more compact urbanism with greater transit efficiencies, a greater economy of scale for infrastructure investments, protections against speculators, and an improved civic life. These themes and goals are reflective, broadly, of the goals of multiple urban reform movements. Notwithstanding that these ideas may not be shared by the average civic voter, the citing of these ideals by those closest to land use decision-making are a clear indication that the necessary support for infill development exists among experts, and that their understanding reflects an informed opinion about the goals and objectives of infill.

Comments on brownfield development were decidedly less informed, lacking the same breadth and depth as those concerning infill. Two forms of brownfields in Nanaimo were identified: historic brownfields relating to Nanaimo's industrial past and its economic development; and commercial (commonly gas station) sites throughout the city. Discussion of brownfields in these terms is interesting as the common method of brownfield classification is based on level of contamination and associated redevelopment potential. Thinking of brownfield sites as either legacy industrial sites or commercial sites prompts a reconsideration of redevelopment priorities, market opportunities and contamination levels. For example, in Nanaimo, legacy industrial brownfields are in the south end of town, are large in size, have hosted a variety of known and unknown activities, and have shaped the development patterns in the surrounding neighbourhoods. Commercial brownfields, conversely, are small parcels of land disbursed throughout the city, often at major commercial hubs and close to residential development, on which a known, specific activity took place.

Removing commercial brownfield sites and setting them aside, it is easy to see the way in which the existence of the large, legacy brownfields of Nanaimo's south end has shaped years of residential development in north Nanaimo. Just as post-industrial development patterns across the globe reflected the segregation of residential

development from industrial activities, Nanaimo's boom of residential development to the north reflects the same trend. Considering the location of the northern mines around Northfield and Wellington, it is no surprise that suburban expansion in Nanaimo occurred beyond those sites. To this day residential development and industrial activity are not neighbours by design. If the City is resolved to address the issues of disproportionate development in north Nanaimo compared to south Nanaimo, as well as the associated social and economic disparities, it must redevelop the legacy brownfields located in the southern sections of the City.

3.2 Infill Development and Brownfield Redevelopment Potential in Nanaimo

Respondents' comments on infill development and brownfield redevelopment potential were mostly qualitative in nature. The majority quoted observable opportunities based on known sites, general knowledge of low densities and the ability to extrapolate opportunities based on zoning. When pushed to quantify the potential, several respondents commented on the City's capacity to produce an estimate, but none of the respondents was able to quote a number. This lack of quantitative data on the part of respondents is odd given their respective positions, the availability of the data, and the stated goals of both the Regional District and City of Nanaimo in regards to increased density.

On brownfield development more quantifiable data was available, specifically a collection of sites within the City of Nanaimo identified by the provincial government as contaminated. As noted in Section 2.3, the long list contained more than one hundred sites, which the City reduced to thirty-one based on criteria applied. This example provides a telling window into the disparities between estimates in the number of brownfield sites. Nanaimo has thirty-one brownfield sites according to the City of Nanaimo, yet more than one hundred according to the provincial government. The difference between these figures is based simply on the two jurisdictions' differing assessment of potential contamination, and the additional assessment of redevelopment potential applied by the City.

As noted in section 2.1 of Chapter 3, the definition of a brownfield has several variations, each having little to do with the presence of contamination (Greenberg et al., 2001) and instead focusing on development potential (Adams et al., 2010). As observed

in Nanaimo, this variation in what qualifies as a brownfield site can lead to different jurisdictions assessing conflicting numbers of brownfield sites within a common area. The example provided by Nanaimo underscores the need to develop a more accurate, precise and universal definition for brownfield sites, without which the number of these sites can be inflated or underrepresented for political, marketing or economic gain.

3.3 Barriers to Infill Development in Nanaimo

The two major barriers to infill development in Nanaimo identified by respondents were the poor economics of infill as compared to greenfield development, and the high level of citizen objection. The poor economics was expressed as a function of several factors working in unison to limit return on investment, including poor demand for infill units, high availability of greenfield lands within the urban containment boundary, low return on investment for infill projects, and the proximity of existing legacy brownfield sites that further suppress land value. Of particular note were the comments on the systemic subsidies provided to traditional low-density development and the suggestion that, should the real costs to service and support such sprawl development be factored into the price appropriately, infill housing would seem far less expensive. A further element affecting the economics of infill is Nanaimo's brand reputation compared to other communities to which those relocating to Vancouver Island might move, which has an effect on housing demand and value.

Respondent discussion of citizen objection to infill development focused on the rejection of greater urbanization and increased density. This rejection seems to include even fairly nebulous infill forms like the implementation of secondary suites, infilling vacant lots, and subdivision of large residential parcels. Citizen objection to infill appears to stem from a small number of individuals who raise the ire of a larger group with the specter of increased traffic, loss of neighbourhood character and possible decline in home values. Objection appears to arise even when the infill is in keeping with a community plan, which has undergone public consultation and approval, and reportedly causes a reactionary City Council to abandon previously agreed on principles and goals.

The official community plans and associated processes themselves were quoted as barriers to infill due to their restrictive nature on development, and due to the lack of implementation of policies to increase densification and infill. An official community

plan can serve as a restrictive document if it too closely prescribes particular outcomes that the market cannot support or afford. It can be a barrier of another kind when it calls for policies that Council either does not implement, or simply evades at its convenience. Given that both these cases were cited, it is difficult to determine whether the planning context in Nanaimo is too restrictive, not restrictive enough, or strikes the correct balance. What can be concluded is that among the respondents, there was disagreement on this topic, which in itself is a barrier.

Unlike most of the barriers reported by respondents, the existence of land claims issues is not a common barrier to infill developed quoted in the literature reviewed in Chapter 2. Several key court decisions have upheld Aboriginal title across British Columbia, including the Delgamuukw decision of 1997, and more recently the Tsilhqot'in decision of 2014. Whether Aboriginal title exists in Nanaimo due to these court decisions, or whether it exists as per the terms and conditions of the Douglas Treaties, the question of Aboriginal title throws land ownership into doubt. Though the First Nations Council Member respondent identified this issue as a barrier to infill development, it is likely a much greater barrier to greenfield development. In settling outstanding land claims, it is far simpler and less expensive to grant crown lands than attempt to expropriate existing parcels under privately held freehold title.

3.4 Barriers to Brownfield Development in Nanaimo

Like infill, economics is a chief barrier to brownfield redevelopment in Nanaimo. The low property values relative to the cost of bringing a brownfield site to market cannot produce the return necessary to generate private investment. Respondents noted an inability to properly assesses contamination, complexity of obtaining government funding, an absence of responsible parties to hold accountable for remediation cost, and lack of liability protection against the existence of residual contamination. Site notoriety was quoted as an additional barrier, which follows given Nanaimo's relatively small size and the likelihood that long-time residents would recall past land uses of high profile on very visible sites. The removal of contaminated material was noted as a barrier specific to Vancouver Island given the lack of necessary processing facilities on the Island, and the costly requirement to transport contaminated materials and soils to the mainland for disposal. Respondents suggested that the firm and one-size-fits all approach to

remediation standards constituted a further barrier to brownfield redevelopment in Nanaimo.

3.5 Good For Nanaimo?

In many jurisdictions infill development is synonymous with development. Vancouver, for example, is hemmed in by the neighboring jurisdictions and the ocean, and any growth must be achieved through infill or redevelopment. Jurisdictions such as Nanaimo are able to decide to expand their borders, meaning that infill is a choice based on cost and opportunity. The motivations for increased infill and for brownfield redevelopment expressed by respondents point to a series of economic and social issues created by continued expansion, over redevelopment and infill. Perhaps it is the manner in which cost and opportunity are assessed, on a project-by-project basis rather than against a broader social, economic and environmental context, but these past choices to expand rather than infill have created a low-density, inefficient suburban sprawl not capable of delivering highly sought after urban environments. So, perhaps it is not simply that infill development and brownfield redevelopment are good for Nanaimo, it is that continued sprawl and expansion outwards is not sustainable.

3.6 Existing Programs and Policies on Brownfield Redevelopment and Infill Development

Respondents had no knowledge of any provincial program or policy to support infill development, but had generally positive feedback on infill development work on the part of the City of Nanaimo. Changes to zoning codes, recent work to streamline development and permitting processes, the inclusion of densification and infill goals in the City's planning documents, and the approval of secondary suites were all presented as tangible examples of policy support for infill development by the City. The City's development cost charge deferral program for development in the Old City area, and the support provided for redevelopment and preservation of heritage buildings were noted by respondents as City programs that encouraged infill development. Respondents were quick to identify the shortfalls in these programs, noting that the City's approach was small scale, and failed to speak to the larger economic barriers to infill over greenfield development.

Respondents were generally aware of the provincial responsibility for encouraging and supporting brownfield redevelopment, and had a basic knowledge of the BC Brownfield Renewal Strategy. Opinion of the BC government's work on brownfield redevelopment was generally negative, with several respondents pointing to limited funding, lack of information about funding opportunities, and numerous hurdles to overcome in order to qualify for low level funding. Local government work on brownfield redevelopment in Nanaimo has focused on several projects in the Old City area, and in this way, the City's work on brownfields is neither policy-based, nor program based. Rather, the City appears to be seeking opportunities to assist in redevelopment work by either directly redeveloping legacy brownfield sites for use as public buildings, or facilitating the necessary site investigations to induce private investment in redevelopment. Respondents noted the existence of public opposition to the City's work on site investigations and commented that some landowners saw the City's work as interference in their property rights.

3.7 Overcoming the Barriers in Nanaimo

Respondents were clear that overcoming the barriers to infill and brownfield redevelopment involved creating a market for the development product at a price that produced the necessary return for redevelopers and investors. The market in Nanaimo and surrounding areas continues to center on single-family, suburban housing, and when buyers are not able to secure that product at a price point they can afford, they chose to move further afield when purchasing a different form of housing. Respondents suggested increasing demand by actively recruiting increased in-migration and targeting those demographics likely to seek an urban lifestyle.

Respondents suggested that financial incentives might offset market challenges, and help the city to target development strategically. Specifically, it was suggested that the current program of development cost charge waivers for redevelopment in the old city area be expanded to apply to a wider range of infill and densification projects; and that the City institute a revitalization tax credit system to support infill development. These financial incentives were seen as the necessary funding to enact the goals stated in the Official Community Plan.

Respondents were supportive of a range of educational and outreach tactics that could well be summed up as social marketing. Working to educate the market place on the advantages of infill units, demystifying the notion of an urban lifestyle, enlightening the community about the benefits of densification were all components of a range of suggestions on marketing. Along the same lines, respondents called for increased communication and facilitation between stakeholders and industry so that government, lenders, developers and active citizens could work collectively to better understand each others' perspective, and break down barriers caused by ignorance and misinformation.

In terms of policy changes, respondents called for continued modernization of planning regulations and processes. Smaller minimum parcel sizes, the ability to develop increased densities on odd shaped and panhandle lots, increased density bonusing, relaxed design standards and greater focus on neighbourhood congruity over fixed height, setback and other design standards were suggested. Developers spoke about the need to make the development and permitting process more user-friendly, with a renewed focus on providing service to the development community to save both time and money.

3.8 Overcoming the Brownfield Barriers

In addition to the recommendations to overcoming the challenges of infill development, respondents had further suggestions to overcome the additional barriers associated with brownfield redevelopment. Chief among these recommendations was the provision of direct funding to help shoulder the costs of remediation. Development cost charge waivers, tax breaks, and direct funding for remediation and project funding were among the specific suggestions put forward. It was noted by one respondent that such financial incentives as required to change the economics of brownfield redevelopment were difficult to support in a small town, with a relatively limited tax base. To address this issue, the respondent suggested the creation of a community fund into which industrial landowners would pay a fee based on the likelihood of their activities to create a brownfield property. Funds would be reimbursed to each landowner upon the transfer of their property provided no contamination was present, or used to cover remediation costs where contamination occurred.

Among the less expensive options recommended were the recruitment of larger scale developers with the ability to fund remediation, the creation of accurate and detailed site

histories to aid potential investors and developers, and the creation of a proactive integrated planning process to address existing brownfield sites. It was suggested that the provincial government take a stronger role by providing more direct funding, easing regulations for remediation where contamination is limited in extent or severity, and legislating reasonable liability limits to reduce risk to developers and investors. The coordination role of both municipal and provincial governments was discussed with the goal of having government bring together the resources, expertise and leadership necessary to deal with such a large, complex and costly social and economic issues.

3.9 Provincial Roles in Supporting Infill

Though there was disagreement on whether the BC government had a role in supporting infill development, or whether infill was exclusively under local government jurisdiction, the responses and suggestions about expanded provincial support for infill clearly point to the existence of a profound role for BC's government. Suggestions for a more robust provincial role in promoting and supporting infill varied from creating a new provincial agency, to small changes in the way public infrastructure dollars were awarded. Both financial and non-financial suggestions were put forward, and not all financial suggestions required increased investment.

Without significant increased spending, the province could focus its own infrastructure and capital investment to ensure that new development of government offices, social housing, and health and social service facilities were exclusively directed to infill sites. To address the ongoing, underlying subsidy to sprawl development, the provincial government could place restrictions on infrastructure funding to prioritize upgrades to areas of existing high-density development, rather than expansion of service to low-density areas on the periphery. Finally, and perhaps most inexpensive of all suggestions, the province could make it more difficult for municipalities to expand their boundaries, which a local elected official reported was all too easy under the current policy regime.

Other respondent suggestions like increased coordination between lenders, developers and government, or creating a clearing-house for information, do have merit and may serve a useful purpose. However, the literature suggests (Thornton et al., 2005 for example) that the City of Nanaimo Planner's comment on the need for financial leverage holds true and that the most successful policy or program options at the provincial level

should include the provision of funding, or the creation of financial opportunity. This need not require direct investment, but rather could be achieved through public policy, like the above noted restrictions to urban containment expansion, or by provisions to restrict the outflow of land from the Agricultural Land Reserve, as one respondent suggested.

3.10 Local Government Role in Supporting Infill Development

Respondents generally agreed that local governments should concentrate on assisting and encouraging infill development through a variety of zoning and planning mechanisms that would provide more flexibility within zoning codes to those engaged in infill development projects. Specific suggestions not previously raised by respondents included providing allowance for carriage homes, reducing the width of residential streets, and improving the process for variance applications. Respondents also encouraged local government to take on the marketing role by educating citizens on the need for infill development, and encouraging greater support for densification initiatives. Respondents identified a great deal of resistance to infill and densification as a barrier that the local government was responsible for overcoming. Another recommendation for local government consistent with the general area of planning was the creation of additional resources within the City's planning office to specifically assist those engaged in infill development, and the consideration of an expedited approvals process for infill projects.

3.11 Provincial Role in Supporting Brownfield Redevelopment

Recommendations for an enhanced role for the BC government in supporting and encouraging brownfield redevelopment centered on the provision of financial resources. Respondents suggested both funding for brownfield redevelopment projects, and direct government redevelopment of brownfield sites. The complexity of remediation and redevelopment of historical, coastal industrial sites was raised, as was the nature of such sites to have unique site-specific challenges. Direct government remediation was recommended as a way to enable the necessary customized implementation and interpretation of environmental legislation and regulation required for large and complex

brownfield sites, as well as to navigate the jurisdictional issues between federal, provincial, local and First Nations authorities.

Among the non-monetary suggestions were improved resources for developers, including access to site histories, best practice data, information about federal programs and funding, ‘how-to’ guides on site assessment, and tool-kits for certain type of brownfields. Respondents also recommended that the province consider making remediation standards more flexible, eliminate duplication in applying regulations, and lessening liability risk. One respondent suggested that the BC government should do more to hold the polluting parties responsible for site contamination, and attempt to prevent the creation of brownfield sites.

3.12 Local Government Role in Supporting Brownfield Redevelopment

In speaking about the local government role in brownfield redevelopment, respondents recommended similar action at the local level to that proposed on the provincial scale. The compilation and publication of site histories, reduction of regulatory barriers, providing information about processes and opportunities, and direct remediation and redevelopment of brownfield sites were all among recommendations put forward. Respondents suggested that the local government should attempt to limit greenfield land available for development and steer industrial projects towards existing brownfield sites with the hopes that remediation requirements would be lower for industrial re-use than redevelopment for commercial or residential purposes. Financial inducements were suggested as a means to encourage redevelopment, specifically development cost charge waivers and revitalization tax credits were recommended.

In addition to the above recommendations, comments were made about the need for the City of Nanaimo to show greater leadership and take a larger role in putting creative ideas forward for community consideration. Nanaimo has an industrial history and a legacy of brownfield sites that are disproportionately located in coastal south Nanaimo. The nature of contamination and its subterranean diffusion means that brownfield issues could apply to groups of properties in neighbourhoods surrounding brownfield sites, whether those particular properties had a past industrial use or not. The comments about leadership were based on an understanding of the nature of Nanaimo’s larger brownfield areas, and the belief that a strategy to encourage redevelopment on a site-by-site basis

may not be very effective. One respondent's discussion of the City of Nanaimo's Terminal Trench project stands as a response to the need for local government to think outside the box. By working collectively with business owners and with different levels of government, the City of Nanaimo has been able to create an assessment and redevelopment plan for a neighbourhood of brownfield sites that together have a common and unique history. This project stands as a great example of the type of direct government involvement required to deal with legacy brownfield sites and neighbourhoods.

Chapter 7: Conclusion

1.0 Infill Development

The history of Nanaimo's development following World War II is reflective of the common post-war city development patterns across North America as described by numerous scholars including Witold Rybczinski (2007), Richard Harris (2004), Dolares Hayden (2003), and Kenneth Jackson (1985), to name just a few. Contemporary suburbanization may have developed more organically in Nanaimo given the existence of small outlying communities just beyond the city's original footprint, and this history may explain the extent to which Nanaimo's development has been in the form of suburban sprawl. Historical rationale does not, however, change the reality that Nanaimo's development patterns have created the same series of environmental, economic and social challenges seen in other communities that also experienced rapid expansion of low-density, homogeneous single-family neighbourhoods.

Increased levels of infill development would, without doubt, be positive for Nanaimo. In Chapter 6, respondents endorsed the benefits of infill and its value to future development in Nanaimo with comments that reflected the social, environmental and economic benefits to infill development outlined in Chapter 2 (including CMHC, 2004; Farris, 2001; Felt, 2007; McConnell and Wiley, 2010; and Maryland Department of Planning, 2001, among others). Infill development benefits of particular relevance in Nanaimo include increased transit efficiency, improved return on public investment (increased tax base without increased servicing costs), improved housing mix, and the preservation of natural space and agricultural lands. Increased infill development would also contribute to the elimination, or at least the reduction of, historic socio-spatial inequities between the Old City and South Nanaimo districts, with their tracts of vacant and derelict sites, and the more prestigious suburban North Nanaimo.

Just as Nanaimo would benefit from the positives of infill development, it also hosts the common barriers to effective infilling. There exists in Nanaimo a strong public sentiment against densification and infill development, and a clear aversion by elected leaders to challenge political opposition. A review of Nanaimo's Official Community Plan reveals a clear agenda to limit sprawl and a mandate to work towards a increased

densities; however, respondents in Chapter 6 were quick to point out that local government leaders are prone to abandoning the Plan's principles when a conflict arises. The scope of this research does not provide for firm conclusions on the motivation behind public opposition to infill and densification in Nanaimo, but fear of neighbourhood change, a desire to maintain existing vacant lots as urban buffers and informal recreational space, angst at the specter of increased local traffic, and concern over possible housing value decline are most certainly amongst citizens' motivations.

Despite the breadth and depth of political objection to infill development, it is economics, and not politics, that seemingly limits effective infill development in Nanaimo. Respondents' comments in Chapter 6 clearly indicate that there is insufficient return on investment to justify mobilizing the necessary capital to undertake large-scale infill projects in Nanaimo under current market conditions. Contributing to the poor economic conditions is the limited market demand for infill units due to persistent popularity of single-family homes in suburban neighbourhoods, a limited supply of easily developable, affordable infill sites, and a readily available supply of affordable single-family housing options in Nanaimo and just beyond its borders.^{lxi} To make matters worse, the most affordable infill sites with the greatest amenity value, those close to the city core with a view of the ocean, are commonly associated with Nanaimo's industrial past, and carry the additional costs and risks associated with brownfield redevelopment.

It is important to note, however, that despite these barriers, infill development, by definition, has occurred in Nanaimo. Both because Nanaimo's urban containment boundary was set so far beyond the reach of existing development, and because the definition of infill development is quite fluid and adaptable, a diversity of development in Nanaimo can be counted as infill development. Many of these projects, however, have more in common with greenfield development than with infill, and have exacerbated the existing challenges of Nanaimo's sprawl development, rather than delivering the benefits traditionally associated with infill. Though the exact definition of infill development may be broad, the outcome of infill development is meant to be more than simply new

^{lxi} In 2014, the average price of a single-family house in Nanaimo was \$370,760 according to the Vancouver Island Real Estate Board (VIREB) (2015). Though this compares favorably to average prices in Victoria of \$594,800 (Victoria Real Estate Board, 2015), it remains higher than surrounding communities in the Cowichan Valley, Port Alberni, and Comox Valley at \$339,163, \$210,157 and \$359,437 respectively (VIREB, 2015).

development within a set border, or filling vacant land with whatever development the market demands. Infill development is a tactic used to build a more sustainable form and organization of development. Though Nanaimo has hosted some excellent infill development projects, like the Studio NA condominiums, or the multi-family components of the Hawthorne project, all too often development within Nanaimo's borders consists of filling gaps in the suburban fabric with more suburban sprawl. Such a development pattern will not achieve the stated goals of infill development, nor address the larger challenges facing our communities.

One such greater challenge of particular relevance in Nanaimo is its aging population. As of 2006, Nanaimo's population was older than both provincial and national averages, and the proportion of Nanaimo residents 65 years of age or older is predicted to grow to 25.8 per cent by 2016, up from 18 percent in 2006 (City of Nanaimo, 2010). Though immigration of seniors is relatively low (in fact it was -97 persons in 2009), the vast majority of new residents to Nanaimo have been 40 to 59 years of age, and this points to future increases in retirement-aged residents. The standard proportion of citizens in excess of 65 years of age was established by the United Nations at 7 per cent, and those populations featuring greater than 7 per cent of citizens over 65 are considered aging (McDaniel, 1986 in Hodge, 2008). Nanaimo's aging population has a vast array of planning implications.

Planning scholar Gerald Hodge (2008) wrote extensively about the growth of seniors within Canadian communities in his book *The Geography of Aging*. Planning for an aging population requires consideration of those resources and conditions necessary for seniors to retain their independence and this includes access to housing, transportation and community supports (Hodge, 2008). Seniors require housing that is designed to be safe and adaptable to the physical mobility challenges that may come later in life, and that varies by tenure and type, while remaining affordable (Hodge, 2008). Transportation requirements include a vast array of considerations including a senior's average maximum walking distance of 400 to 600 meters, the need for increased accessible transit options, the need for greater connectivity in design of driving routes, and the requirement that walking routes have paved sidewalks with senior-friendly grading (Hodge, 2008). Seniors need easy access to a number of basic commercial and health facilities in their

neighbourhood in order to facilitate their everyday lives, plus easy access to community resources, transportation services, and social, cultural and commercial amenities.

Hodge concludes that low-density, single land-use, post-war suburbs provide particular challenges to the ability of seniors to live independently due to their reliance on automobile transportation, and their pedestrian and transit unfriendliness, as well as their poor connectivity to services and amenities.

“In lower density situations, the tendency is to centralize facilities and services in fewer locations. This happens at both ends of the size spectrum: suburbs and rural regions. Low-density settlement, urban or rural, also means fewer people live nearby to provide direct household support or even informal assistance of neighbours. It also means longer distances to travel for mobile services such as home nursing and homemaker services” -Hodge, 2008:96

Hodge’s solution to these planning challenges is fairly simple: “[Locate] new housing within easy walking distance of local stores and services” (Hodge, 2008:266).

Nanaimo’s progress toward a more sustainable urban form is not disputed. The Official Community Plan lays the groundwork for greater infill development and the many associated benefits, and the responses of the diverse group interviews clearly indicate that support for infill exists among citizen groups, elected leaders, city staff, local planners and developers working in Nanaimo. Questions remain, however, about the pace of change and what mechanisms exist to ensure the vision of Nanaimo’s OCP is realized. When Nanaimo’s leadership bends to the political will of opposition to infill development, it places itself at risk of not meeting the very obvious and pressing future needs for a more efficient and compact community. Though there may not be a hard timeline for Nanaimo to realize the many commonly cited benefits of infill development, or a set deadline to avoid the understood social, environmental and economic costs and risks of sprawl development, there are very accurate figures on expected growth of Nanaimo’s senior population. This looming expansion of senior aged citizens will place enormous pressure on community resources unless Nanaimo is able to prepare for the needs of this growing demographic in advance. Accordingly, it is not simply sufficient for Nanaimo to plan for increased infill development, then sit back to let market forces adjust overtime to achieve that reality. Given the market conditions, the vast extent of

sprawl neighbourhoods, and the pressing need to prepare for a great expansion of its senior population, Nanaimo must take a more active approach.

2.0 Brownfield Redevelopment

Chapter 3 explored literature related to brownfields and reached a series of conclusions about the nature of brownfield sites and their potential redevelopment. Research on Nanaimo's brownfield sites provides further support for those conclusions. As in other jurisdictions, Nanaimo's legacy brownfield sites are the result of an economic activity that generated profit without covering the costs associated with the environmental damage caused by said activity. Abandoned and underused sites exist today in Nanaimo as an outcome of economic restructuring consistent with deindustrialization, as well as the natural boom and bust cycle of resource extraction. The costs associated with these former economic activities were not born by those who benefitted at the time, but have been passed on to Nanaimo's government and current citizens in the form of sites that cannot be redeveloped or reused without major investment beyond that which could be recovered in the current real estate market.

Though most of Nanaimo's largest brownfield sites relate to historical industrial activity, others are the outcome of lax environmental laws and private property rights that enable landowners to retire sites after a commercial or industrial use, and hold them as vacant and contaminated, provided contamination is contained. Nanaimo's most visible brownfield sites are more reflective of this latter category, and tend to be retired gas stations or other, similar commercial or light industrial sites decommissioned in recent years. These types of brownfield sites are commonly cleared of structures, fenced with temporary, industrial fencing, and sometimes feature a collection of refuse and rubble. Unlike historical sites that are often large and located in particular areas of a city or region, these small commercial brownfields are distributed throughout neighbourhoods and commercial districts, and, also unlike the larger historical sites, these brownfields often have known contaminants from an indefinable activity that took place in recent times.

Given all that is known about the negative outcomes of brownfield sites and the challenges of redeveloping those sites, and given the universal understanding of the issue demonstrated by respondents in Chapter 6, it seems odd that Nanaimo would allow

additional brownfield sites to be created. Nanaimo's economic shift away from traditional mining, forestry and fisheries industries has left the city seeking new investments from industries that could offer employment opportunities to Nanaimo's citizens. Under such a dynamic, and given the extent to which capital is mobile, Nanaimo is not in a position to apply greater regulation to activities that may result in the creation of a brownfield site, for the very reasons described by David Harvey (1989) in his depiction of jurisdictional entrepreneurship. Further, the regulation of environmental activity is under the jurisdiction of the government of British Columbia, and local government is limited in what action it could take even if the political will or economic latitude existed.

Chapter 4 explored British Columbia government's action to address the existence of brownfield sites and mitigate the challenges of brownfield redevelopment within the province. Consistent with neo-liberal ideology, the province's action on brownfields has been to focus on inducing redevelopment over applying regulation or oversight (Harvey, 2005). The analysis conducted as part of Chapter 4 concluded that the BC government's work on brownfield redevelopment falls far short of its stated goals, a conclusion supported by respondents' comments in Chapter 6. The government agency tasked with brownfield redevelopment work, Brownfield Renewal BC, provides few tangible benefits, and what small levels of funding it provides directly to redevelopment projects is not sufficient to induce redevelopment where it would not otherwise take place. The BC government's program is of little or no value to ongoing brownfield redevelopment activities in Nanaimo.

Despite a surprising lack of content on brownfield redevelopment in both the Regional District of Nanaimo Regional Growth Strategy and the City's Official Community Plan, brownfield redevelopment in Nanaimo is an active goal of local government. The construction of the Vancouver Island Conference Centre in 2008 and the ongoing work to assess contamination in the Terminal Trench area were both quoted as major brownfield redevelopment achievements by respondents in Chapter 6, along with the potential purchase of the CP rail lands just to the south of the old city area.^{lxii} These projects are

^{lxii} In June of 2013 a project to redevelop these sites began. Called the South Downtown Waterfront Initiative, the project brought together representatives from local government, citizens associations, the federally regulated Nanaimo Port Authority, as well as academic leaders from Vancouver Island University.

examples of the City of Nanaimo making real investments in brownfield redevelopment in the city, and thereby demonstrating their leadership on this topic.

They are also examples of direct public investment as a means to deal with legacy industrial brownfields and the challenge for Nanaimo is to leverage these public investments to generate private investments that will aid the city, and thereby taxpayers, in recovering funds invested. Though Nanaimo does have a revitalization tax credit program for redevelopment in the old city area, comments about that program and leveraged brownfield redevelopment were suspiciously non-existent among respondents comments about ongoing brownfield redevelopment in Nanaimo. One can conclude that the program has not been successful in inducing any noteworthy redevelopment of brownfield sites, and the ongoing existence of brownfield sites in the Old City Area as referenced by respondents would indicate as such.

Nanaimo must find ways to generate meaningful private investment in brownfield redevelopment. In constructing programs and policies to achieve this goal, it must also consider that for greatest efficiency and effectiveness, development and redevelopment should only be leveraged by public investment once, rather than twice. This means that, should Nanaimo make a sizable public investment to remediate a brownfield site and bring that site to market, it should not then need to make a second investment of public funds to induce infill development on that site. As a relatively small municipality, Nanaimo's financial capacity to double-subsidize a site, providing directly funding for both site remediation and infill development for the same piece of property, is limited. Even if affordability were not an issue, political objection to excessive taxpayer subsidies to private development surely would be. Consequently, Nanaimo must explore a range of other programs and policies to eliminate or reduce barriers to brownfield redevelopment that complement direct investment or subsidy programs. Such programs and policies should also consider interim uses for brownfield sites to relieve local residents of the negative affects of derelict sites, even if those sites cannot yet be fully redeveloped. Nanaimo must also take meaningful steps through planning, regulation and oversight to ensure more brownfield sites are not created.

Between June of 2013 and 2014 the Project Committee worked to develop a vision for the planned redevelopment with the support of the public.

3.0 Practical Suggestions for Moving Forward

Redeveloping and infilling Nanaimo's historic brownfield sites are major undertakings and as discussed above, require significant capital investment over a number of years. It is difficult to imagine that the scale and complexity of such an undertaking, along with the low market values of the resulting development, would allow redevelopment to occur without direct provincial government assistance and funding, similar to that provided for the redevelopment of Vancouver's northeast False Creek area. Ongoing projects to assess and remediate the Terminal Trench, as well as to redevelop areas of the Canadian Pacific Lands, are vital to the evolution of Nanaimo's south end and old city, and must form a key element to brownfield redevelopment in Nanaimo. Notwithstanding the needed work on these projects, there are other, more immediate and less complex steps that could be taken by the City of Nanaimo to improve both infill development and brownfield redevelopment across the City.

3.1 Advocating for Increased Provincial Support

A number of the public policies and programs outlined in Chapter 3 would be helpful in moving brownfield redevelopment forward in Nanaimo, and encouraging infill development in key areas of the City. However, without the necessary leadership from a higher order of government possessing the financial depth to support programs such as risk-based corrective action or liability limitations, Nanaimo is without the capacity to execute such tactics. Given the very poor performance of the BC government on brownfield redevelopment (outside of Vancouver), and the total lack of support for infill development by the province, Nanaimo should undertake work to lobby for increased support for both infill development and brownfield redevelopment from the BC government.

Advocacy for greater provincial support and funding for infill development and brownfield redevelopment would likely be exponentially more successful if Nanaimo worked collectively with other municipalities. Such cooperation could, and should be designed to open a dialogue on what BC's municipalities can accomplish by working together. Collective action on infill and brownfields might take any number of forms, from pooled funding for research to the harmonization of policies on derelict sites, such that jurisdictions are not pitted against one another and present a common public policy

regime to potential investors. Nanaimo should explore such opportunities, and if necessary, take a leadership role in bringing fellow municipalities together on these issues.

3.2 Taking NIMBYism Head On

Nanaimo must take steps to increase demand for multi-family housing, and to diminish opposition to infill development and densification. As noted by respondents, citizen political opposition is a major barrier to the implementation of more sustainable forms of development, and must be taken head on. Nanaimo's current model of citizen engagement is highly reactive: respondents spoke only of dealing with citizen responses to City decisions and actions; there was not mention of any existing communications plans, outreach strategies, public education initiatives designed to tackle NIMBYism, promote the City's development objectives, or education the public about the need for change.

Just as Nanaimo transitioned from an industrial town to a suburban city, the OCP foresees its further transformation to a multi-nodal, urban form. The planning process, with the associated public consultations, is designed to layout how such a transformation would take place, and express the necessary associated policies and goals of the process. The planning process, as it currently exists, does not produce a communications plan, nor an implementation plan, both of which ought to be developed to facilitate implementation of the OCP, and recruit the support of citizens and key stakeholders. This work could and should include the promotion of higher density developments to both recruit increased market demand among purchasers, and improve knowledge of infill development benefits and best practices among developers.

3.3 Subsidize Infill, Not Sprawl

One of the key points raised by respondents is the way in which current sprawl developments benefit from hidden subsidies that falsely deem greenfield development economically viable and fail to produce returns on investment for infill development. Some of this subsidy is built into broad societal structures like the ways in which commuting is subsidized by public roads and highways, but other subsidies like development cost charges, are under the direct authority of the City. The City should

investigate the claims made by respondents that Nanaimo subsidizes greenfield development, and the charge that the City loses money on sprawl development through hidden subsidies in the setting of development cost charges. If true, these subsidies should be eliminated and resources moved to supporting forms of infill development.

Respondents were very clear that Nanaimo's resources were limited, but that an effort should be made to financially support increased infill development where possible. Given the limited resources, it makes sense for investments in infill to be targeted to tactics that meet multiple objectives. Several respondents referenced the need to build greater densities along corridors; specifically those that correspond to high-frequency transit service. As noted by respondents, traditionally low land values in Nanaimo make the removal of existing structures and their replacement with units of marginally higher density not financially viable. Not only is this less likely to be true for major corridors, but corridors provide greater flexibility for the construction of commercial, mixed use, condominium and apartment construction. It would make sense for Nanaimo to use financial instruments like direct grants, development cost charge reductions and revitalization tax credits to induce greater multi-family development along transit routes.

3.4 Cleaning Up Nanaimo's Brownfield Sites

Many of Nanaimo's brownfield and derelict sites are aesthetically unpleasant. They are a blight on the urban landscape, they attract vandalism and dumping, and they send a clear message that the urban space is meant to be regarded as the end of a past activity, rather than the beginning of a new one. Whether hosting an interim use, such as the former gas station site at Turner Road used as community garden (Figure 7.1) or simply being cleared of debris and landscaped (Figure 7.2), these sites need to blend into the existing neighbourhood, rather than sticking out and drawing attention. Recognizing the effects on land value, public health, aesthetics and the associated negative stigma these sites create, other jurisdictions like Vancouver move very swiftly to convert decommissioned industrial and commercial activity to an interim use, rather than having a high-profile site sit vacant and derelict (Figure 7.3). To facilitate this initiative, the City could provide funding for site owners to clean up and beautify their sites through a direct grant or a revitalization tax credit. The City could also implement a tax on derelict sites to provide further incentives for landowners to act responsibly, and in the interest of their

Figure 7.1: Turner Road Community Garden, Nanaimo



This community garden is on a high profile, former gas station site in North Nanaimo. Photo by the author.

Figure 7.2: Former gas station site, Oak Street and 23rd Avenue, Vancouver



Seemingly unintentionally, this former gas station site has been allowed to grass over and is hemmed on two sides by tall trees. Also, vines have been allowed to grow along the fence, partially obscuring the refuse on the site. Aesthetically, this site is more appealing than many former gas stations sites, and is a good example of how such a sites could be improved with minimal landscaping. Photo by the author.

Figure 7.3: Interim use example, Yukon Street and 2nd Avenue, Vancouver



A former body shop and tire centre, this site was cleared between September 2014 and February 2015, and immediately converted into a community garden. The speedy conversion meant that the site did not sit vacant, minimizing any stigma that may have been applied to the property. Above photo sourced from Google Earth, lower photo by the author.

neighbours and neighbourhoods. Nanaimo does not have the authority nor the resources to clean up all of the brownfields within its borders; however, the City can and should work to reduce their impact on the surrounding neighbourhood, and present them as a venue for future investment.

Along with cleaning up former industrial sites, Nanaimo should ensure that no new brownfields are created. Despite the good intentions of respondents from all sectors, and the values expressed in the OCP, a short drive around the City's industrial areas provides a window into tomorrow's brownfields (Figure 7.4 and 7.5). Any one passing by these sites can observe the refuse, abandoned vehicles and equipment, and the absence of any remediation. These are not legacies of nineteenth century activities; these sites are operating currently or were decommissioned recently. Nanaimo should work to better enforce and strengthen existing bylaws on industrial activities and document areas of concern so polluters can be held accountable in the future. Further, as some of these industrial activities occur just beyond Nanaimo's borders (Figure 7.6 and 7.7), the City should work with the Regional District to ensure these same standards are being upheld on lands that will, inevitably, become part of the City in the future.

3.5 Supporting and Conducting Research

An interesting suggestion arising from the interviews was that the City work in cooperation with the local post-secondary institution, Vancouver Island University (VIU), to develop technological solutions to issues of contamination. Such research initiatives may be beyond the scale of VIU to undertake and the City to fund;^{lxiii} however, there are opportunities for research and development to take place none the less. The City could reach out to a number of post-secondary institutions already doing work on soil remediation or pollution control and make sites in Nanaimo available for study. A partnership with VIU could provide the necessary local expertise to carry out the required fieldwork. Such an undertaking would place Nanaimo on the forefront of research and

^{lxiii} In-depth research on soil remediation requires millions in funding and specialized technology. A recently funded research chair position at the University of Saskatchewan received \$2 million to study diesel and gasoline soil contamination (Federated Cooperatives Limited, 2015). Though it is possible that Vancouver Island University could make such investments, it is unlikely given the University's size and focus on teaching and learning.

Figure 7.4: Future brownfield example 1, Nanaimo



This fenced site features a variety of decommissioned vehicles and containers, some pictured above. The refuse on this site is partially obscured by unmanaged vegetation growing along the fence line. Photo by the author.

Figure 7.5: Future brownfield example 2, Nanaimo



On this active site the owner/occupant appears to be dumping on site with this collection of discarded equipment and materials piled by the roadside. Photo by the author.

Figure 7.6: Decommissioned mine site, Nanaimo River Road



This decommissioned gravel site is just south of Nanaimo and is both fenced and guarded by security. The mine site is not visible from the road, and security personnel prevent anyone who attempts to view the site. Photo by the author.

Figure 7.7: Active Mine Site, Nanaimo River Road



Though security prevents access to this site, it can be observed following a short hike. This expansive operation sits along the north side of the Nanaimo river, and is just south of the City's border. Photo by the author.

development on remediation and enable access to new technology that would benefit the City, the development community, and local researchers.

The suggestion of working more closely with the VIU may be more useful on aspects of infill development and brownfield redevelopment not associated with direct remediation or technological advancement. The University has a number of faculty and researchers who participate in studies of the history, planning and geography of the local area, and these individuals could be recruited to assist with the compilation of site histories and other, background information about past activities on key sites for infill and redevelopment. Further, with the creation of a Graduate School of Planning at VIU beginning in 2015, the City could work with faculty and graduate students to make Nanaimo a venue for advancement of infill development and brownfield redevelopment ideas, best practices and research.

4.0 Further Research

The research in this thesis opens several doors for further inquiry, and four topics are of particular note. First, greater research is needed on interim uses for brownfield sites. Commonly cited interim uses are parking lots and community gardens, and the literature suggested no options beyond these two. Remediation and redevelopment might be the ideal solution for every brownfield, but this is not always possible given the nature of a site and the cost of remediation. Having a series of possible interim uses would help remove the stigma of such sites, while also making better use of the land. Such interim uses could include a suggested design for development of green space, with accepted pro-forma landscape architectural standards for common types of brownfields. Perhaps there are flora options that could aid in the remediation process in some cases. More research on interim uses would be both interesting and useful.

Second, more research is needed on the financial sustainability of sprawl. Several respondents referenced the way in which sprawl is subsidized, and a corresponding lack of funding for infill and other forms of sustainable development, but there is no metric by which this is actually assessed. Quantitative work on this topic to either prove or disprove the claim would be very helpful. If proven true, such research could also identify the extent and form of subsidies to sprawl. Being able to quantify the ways in which sprawl is being subsidized would enable urban reform movements to make better arguments

about shifting those societal investments towards better forms of development, and applying a true cost to sprawl development projects.

The literature review on infill development noted the focus of existing literature on large metropolitan areas and identified a gap in research related to infill development and its implementation in small cities and towns. Though the research findings and recommendations herein could prove generalizable across communities that resemble Nanaimo in their size, orientation and history, smaller cities and towns may have different conditions and considerations related to such key factors as market forces, demographics and the scale of community involvement. More research is needed on how infill development and brownfield redevelopment can be mobilized in small cities and towns to achieve similar economic, environmental and social benefits as identified for their larger cousins, and how barriers to these forms of development are experienced in smaller communities.

The political and market challenges to increasing densification feature prominently in the literature, and are the major obstacles to infill development specifically. Respondents, who each made reference to the challenges of moving Nanaimo away from single-family, sprawl style development, echoed the literature's conclusions on the vastness of political objection as a major obstacle. This is not at all surprising given that current models of development benefit both active and passive marketing across many aspects of North American society. All too often the responsibility for communicating with citizens and stakeholders on urban and regional planning issues, and the need for changes in the way we plan cities, is left to local government planning departments; and this is across the range of local governments in North America, from small, simple jurisdictions like Nanaimo to large, more complex municipalities like San Francisco. More research is needed on how communications and social marketing can be incorporated into the planning process, and how urban reform ideas can be better promoted to citizens, decision-makers, and developers.

References

- Adams, D., De Souza, C. and Tiesdell, S. (2010). Brownfield Development: a comparison of North American and British Approaches. *Urban Studies*, 47(1) 75-104.
- Agricultural Land Commission. (2015). *Agricultural Land Commission Website*. Retrieved March 10, 2015 from <http://www.alc.gov.bc.ca/alc/content.page?id=650C876AD9904910B4807D9DCCB1F067>
- Alker, S., Joy, V., Roberts, P. & Smith, N. (2000). The Definition of Brownfield. *Journal of Environmental Planning and Management*, 43(1), 46-69.
- Baxter, J. (2010). Case Studies in Qualitative Research. In I. Hay (Ed.), *Qualitative Research Methods in Human Geography* (81-97). London: Oxford University Press.
- Baker, P., Sweeney, M. S., & McElroy, J. (2014). *Residents Calling it an Environmental Disaster: tailing pond breach at Mount Polley Mine near Likely, BC*. Vancouver, BC: Global News. Retrieved July 23, 2014 from <http://globalnews.ca/news/1490361/tailings-pond-breach-at-mount-polley-mine-near-likely-bc/>
- B.C. Brownfield Renewal. (2011). *The Basics of Brownfield Redevelopment; A guide for local governments in British Columbia*. Victoria, BC: Author.
- B.C. Brownfield Renewal. (2012a). *B.C. Brownfield Renewal; Basics*. Victoria, BC: Author. Retrieved May 13, 2012 from <http://www.brownfieldrenewal.gov.bc.ca/basics.html>
- B.C. Brownfield Renewal. (2012b). *B.C. Brownfield Renewal; Questions and answers about brownfield renewal*. Victoria, BC: Author. Retrieved May 10, 2012 from <http://brownfieldrenewalstrategy.gov.bc.ca/qa.html>
- B.C. Brownfield Renewal. (2012c). *B.C. Brownfield Renewal Strategy; Our strategy*. Victoria, BC: Author. Retrieved May 10, 2012 from <http://brownfieldrenewalstrategy.gov.bc.ca/strategy.html>
- B.C. Brownfield Renewal. (2012d). *B.C. Brownfield Renewal Strategy; financial incentives*. Victoria, BC: Author. Retrieved May 13, 2012 from <http://brownfieldrenewalstrategy.gov.bc.ca/financial.html>

- B.C. Brownfield Renewal. (2012e). *B.C. Brownfield Renewal; For local government*. Victoria, BC: Author. Retrieved May 13, 2012 from <http://brownfieldrenewal.gov.bc.ca/developers.html#resources>
- B.C. Brownfield Renewal. (2012f). *B.C. Brownfield Renewal; For developers*. Victoria, BC: Author. Retrieved May 13, 2012 from <http://brownfieldrenewal.gov.bc.ca/government.html>
- B.C. Brownfield Renewal. (2012g). *B.C. Brownfield Renewal; Remediation*. Victoria, BC: Author. Retrieved May 13, 2012 from <http://www.brownfieldrenewal.gov.bc.ca/remediation.html>
- B.C. Brownfield Renewal. (2012h). *A Community Resource Guide for Brownfield Redevelopment: Case studies*. Victoria, BC: Author.
- B.C. Brownfield Renewal. (2012i). *A Community Resource Guide for Brownfield Redevelopment: Project funding*. Victoria, BC: Author.
- B.C. Brownfield Renewal. (2012j). *BC Toolkit for Former Service Stations*. Victoria, BC: Author. Retrieved July 1, 2012 from <http://brownfieldsbc.com>
- B.C. Liberal Party. (2005). *Real Leadership, Real Progress for British Columbia; a proven plan for a golden decade*. Vancouver, BC: Author. Retrieved May 1, 2012 from <http://www.bcliberals.com/news/campaign-2005-archive/real-leadership,-real-progress/>
- B.C. Liberal Party. (2009). *Keep BC Strong; Proven leadership for BC's economy*. Vancouver, BC: Author. Retrieved May 1, 2012 from <http://www.bcliberals.com/media/FULLPLATFORM.pdf>
- Belshaw, J. D. (1994). Cradle to Grave: An examination of demographic behaviour on two British Columbian Frontiers, *Journal of the Canadian Historical Association*, 5 (1), 41-62.
- Benazon, N. (1995). Soil Remediation: a practical overview of Canadian Cleanup Strategies and Commercially Available Technology. *Hazardous Materials Management*, 7(5), 10-26.
- Bourne, L.S., (2001). The Urban Sprawl Debate: myths, realities, and hidden agendas. [Electronic version] *Plan Canada*, 41(4), 26–28.
- Burchell, R. W., Downs, A., McCann, B. & Mukherji, S. (2005) *Sprawl costs: Economic impacts of unchecked development*. Washington DC: Island Press

- Campagnolo, I. (2007). *Speech from the Throne; 3rd Session of the 38th Parliament of the Province of British Columbia*. Victoria, BC: Legislative Assembly of British Columbia. Retrieved May 1, 2012 from <http://www.leg.bc.ca/38th3rd/4-8-38-3.htm>
- Canadian Broadcasting Corporation. (2010) *Toxic Timeline*. Retrieved July 23, 2015 from <http://www.cbc.ca/news/canada/toxic-timeline-1.888186>
- Canadian Mortgage and Housing Corporation. (2000). *Implementing sustainable community development: Charting a federal role for the 21st century*. (Publication: Socio-economic Series 74) Retrieved November 12, 2010 from www.cmhc.ca
- Canadian Mortgage and Housing Corporation. (2004). *Residential intensification case studies: Municipal initiatives*. (Publication: Socio-economic 04-002) Retrieved November 12, 2010 from www.cmhc.ca
- Carter, T. (1997). Current practices for procuring affordable housing: The Canadian context. [Electronic version] *Housing Policy Debate*, 8(3), 593 - 631
- Catley, M., (2007). Presentation on the Proposed Development at 1200 Fry Road and 1560 and 1650 Island Highway. *Proceedings of the Nanaimo City Council Special Meeting of October 4, 2007*. Retrieved from https://www.nanaimo.ca/UploadedFilePath/Site_Structure/Corporate_Services/Corporate_Administration/2007_Public_Hearing_Minutes/PH071004M.pdf
- City of Nanaimo. (2008). *planNanaimo: Official Community Plan*. Retrieved December 13, 2012 from <http://www.nanaimo.ca/EN/main/departments/Community-Planning/OfficialCommunityPlan.html>
- City of Nanaimo. (2010). *Nanaimo Community Profile*. Retrieved December 20, 2010 from <http://www.nanaimo.ca/assets/Departments/Economic~Development/Why~Nanaimo/CommunityProfile.pdf>
- Cole, R., Bragado, N., Corbett, J. & Spowls, S. (1996). New strategies for promoting urban infill. [Electronic version] *Urban Land*, September 1996
- Community Charter, Statutes of British Columbia. (2003). Victoria, BC: Queen's Printer. Retrieved from BC Laws website http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03026_00
- Congress of the New Urbanism. (2010). *Charter for the New Urbanism*. Retrieved November 14, 2010 from <http://www.cnu.org/charter>
- Crown Land Administrative Division. (2012a). *Crown Land Restoration Branch; about us*. Victoria, BC: Ministry of Forests, Lands and Natural Resource Operations. Retrieved April 30, 2012 from <http://www.agf.gov.bc.ca/clad/ccs/>

- Crown Land Administrative Division. (2012b). *Crown Land Restoration Branch; B.C. Brownfield Renewal Strategy*. Victoria, BC: Ministry of Forests, Lands and Natural Resource Operations. Retrieved April 30, 2012 from http://www.agf.gov.bc.ca/clad/ccs/brownfields/renewal_strategy.html
- Crown Land Administrative Division. (2012c). *Crown Land Restoration Branch; Background on Brownfield Renewal*. Victoria, BC: Ministry of Agriculture and Lands. Retrieved April 30, 2012 from http://www.al.gov.bc.ca/clad/ccs/brownfields/renewal_strategy_background.html
- Crown Land Administrative Division. (2012d). *Crown Land Restoration Branch; Brownfields pilot projects-Ladysmith Harbour*. Victoria, BC: Ministry of Agriculture and Lands. Retrieved August 14, 2012 from http://www.al.gov.bc.ca/clad/ccs/brownfields/ladysmith_harbour.html
- Crown Land Administrative Division. (2012e). *Crown Land Restoration Branch; Brownfields pilot projects-Gas Works*. Victoria, BC: Ministry of Agriculture and Lands. Retrieved August 14, 2012 from <http://www.al.gov.bc.ca/clad/ccs/brownfields/gasworks.html>
- Crown Land Restoration Branch. (2012). *Brownfield Redevelopment Funding Program Guide*. Victoria, BC: Ministry of Forests, Lands and Natural Resource Operations.
- Danielsen, K. A., Lang, R. E., & Fulton, W. (1999). Retracting Suburbia: Smart Growth and the Future of Housing. *Housing Policy Debate*, 10(3): 513-540
- Delgamuukw v. British Columbia*, 1997 SCC 302 [1997] 3 SCR 1010
- De Souza, C., (2000). Brownfield Redevelopment versus Greenfield Development: a private sector perspective on the costs and risks associated with brownfield redevelopment in the greater Toronto area. *Journal of Environmental Planning and Management*, 43 (6) 831-853. Retrieved September 14, 2014 from <http://dx.doi.org/10.1080/09640560020001719>
- De Souza, C., (2006). Urban Brownfields redevelopment in Canada: the role of local government. *The Canadian Geographer*, 50(3), 392-407.
- De Souza, C., Wu, C. and Westphal, L. M. (2009). Assessing the Effect of Publically Assisted Brownfield Redevelopment on Surrounding Property Values. *Economic Development Quarterly*, 23(2), 95-110
- Dorsey, J. W. (2003). Brownfields and Greenfields: The intersection of sustainable development and environmental stewardship. *Environmental Practice*, 5(1), 69-76.

- Douglas, D. R., Blakely, E. J., & Kalamaros, A. E. (2003). Sustainable infill; Large-scale developments are providing a new form and a new take on sustainability. [Electronic version] *Urban Land*. May 2003, 60-69
- Doyle, J. (2010). *Audit of the Agricultural Land Commission*. Victoria, BC: Office of the Auditor General of British Columbia.
- Duany, A. (2008, January 16). *On the Edge: Latest views from Andres Duany* [video file]. Lecture Conducted from Simon Fraser University, Vancouver, BC. Retrieved from <https://www.youtube.com/watch?v=pIZ4z8u87pI>.
- Duany, A., Lydon, M., & Speck, J. (2010). *The Smart Growth Manual*. New York: McGraw-Hill.
- Duany A., Plater-Zyberk E. & Speck J. (2000). *Suburban nation: The rise of sprawl and the decline of the American dream*. New York: North Point Press
- Dunn, K., (2010). Interviewing. In I. Hay (Ed.), *Qualitative Research Methods in Human Geography* (101-138). London: Oxford University Press.
- Dyck, R. (2008). Provincial politics in the modern era. In Dunn, C. (ed.), *Provinces: Canadian provincial politics* North York, ON: University of Toronto Press (pp. 57-96).
- Essoka, J. D. (2010). The Gentrifying Effects of Brownfields Redevelopment. *The Western Journal of Black Studies*. 34(3), 299-315
- Farris, J. T. (2001). The Barriers to Using Urban Infill Development to Achieve Smart Growth. *Housing Policy Debate*, 12(1), 1-30.
- Federated Cooperatives of Canada. (2015). *NSERC, FCL invest \$2M for U of S Research*. Retrieved May 17, 2015 from https://www.coopconnection.ca/wps/portal/fclretail/FCLInternet/News/CoopNews?WCM_GLOBAL_CONTEXT=
- Felt, T. (2007). *Patching the fabric of the neighborhood: The practical challenges of infill housing development for CDC's*. Cambridge, MA: Joint Center for Housing Studies of Harvard University and NeighborWorks America
- Friends of Plan Nanaimo, (2007). Friends of Plan Nanaimo's Position on OCP Amendment Bylaw No. 6000.076 1200 Frew Road, 1560 and 1650 Island Highway S.; South Nanaimo Lands Development Project. *Proceedings of the Nanaimo City Council Special Meeting of October 4, 2007*. Retrieved from https://www.nanaimo.ca/UploadedFilePath/Site_Structure/Corporate_Services/Corporate_Administration/2007_Public_Hearing_Minutes/PH071004M.pdf

- Gidney N. (1978). From Coal to Forest Products: the changing resource base of Nanaimo, BC. [Electronic version] *Urban History Review*, 7 (1), 18-57.
- Giltz, L. (2007). Stimulating infill and brownfield development in the Land-of-Sky Region. Asherville, North Carolina: Land-of-Sky Regional Council and US Environmental Protection Agency. Retrieved November 11, 2010 from www.epa.gov/smartgrowth
- Grant, J. (2004). Canada's experience in planning for sustainable development. In Grant, J., Marcotullio, P. J., & Sorensen, A. (Eds.), *Towards sustainable cities: East Asian, North American, and European perspectives on managing urban regions* (pp. 147-160). Burlington, VT: Ashgate.
- Goldstein, M. (2003). New Brownfields Incentives Add to Diminishing Inventory of Developable Sites in South Florida. [Electronic version] *Real Estate Issues*, Summer 2003, 36-39.
- Government of British Columbia. (2008). *Management of Provincial Contaminated Sites Policy*. Victoria, BC: Author. Retrieved April 4, 2012 from http://www.agf.gov.bc.ca/clad/ccs/cabinet/mgmt_of_prov_contam_sites_policy.pdf
- Government of British Columbia (2011a). B.C. Brownfield Renewal. [web site] Available from <http://www.brownfieldrenewal.gov.bc.ca>
- Government of British Columbia (2011b). Ministry of the Environment; Environmental protection. Available from <http://www.env.gov.bc.ca/epd/main/ema.htm>
- Government of British Columbia. (2012). *Summary of Ministry Responsibilities*. Victoria, BC: Retrieved July 7, 2012 from <http://www2.gov.bc.ca/gov/theme.page?id=36AEE53A6FC100320499FECC00FD9934&WT.svl=Footer>
- Government of Canada (2008). Federal Contaminated Sites; Frequently asked questions. Available from http://www.federalcontaminatedsites.gc.ca/general_generale/faq-eng.aspx#faq17
- Government of Canada (2011). Department of Justice; Constitutional documents. Available from <http://laws.justice.gc.ca/eng/Const/FullText.html>
- Greenberg, M., Lowrie, K., Mayer, H., Miller, K. T. & Solitare, L. (2001). Brownfield redevelopment as a smart growth option in the United States. *The Environmentalist*, 21, 129-143.
- Greenberg, M., Mayer, H, Lowrie, K and Shaw, J. (2008). Industrial Decline and the Opportunities and Challenges of Brownfield Redevelopment. Community Investments, Summer 2008, 8-11.

- Grossman, B and Sundar, R (2003) Brownfields Revitalization Law: Incentives, exceptions and concerns. [Electronic version] *Real Estate Issues*, Winter Edition, 29-34.
- Gyourko, J. E. & Rybczynski, W. (2000) Financing new urbanism projects: Obstacles and solutions. [Electronic version] *Housing Policy Debate*. 11(3): 733 – 750
- Harvey, D. (1989). From Managerialism to Entrepreneurialism: The transformation in urban governance in late capitalism. *Geografiska Annaler, Series B, Human Geography*, 71(1), pp. 3-17.
- Harvey, D. (2010). *The Crisis of Capitalism*. [web video] Available from http://www.youtube.com/watch?v=qOP2V_np2c0
- Harvey, D. (2005). *A Brief History of Neoliberalism*. Oxford University Press: New York.
- Harris, R., (2004) *Creeping Conformity; How Canada became suburban 1900-1960*. Toronto: University of Toronto Press.
- Hayden, D.(2003). *Building Suburbia; Green fields and urban growth, 1820-2000*. New York: Vantage Books.
- Hayden, D. (2004). *A Field Guide to Sprawl*. New York: W.W. Norton and Company Inc.
- Hodge, G. (2008). *Geography of Aging*. Montreal: McGill-Queens University Press.
- Hodge, G. & Gordon, D. L. A. (2008). *Planning Canadian communities; An introduction to the principles, practice, and participants* 5th Ed. Toronto: Thompson Canada
- Jackson, K. T. (1985). *Crabgrass Frontier: The suburbanization of the United States*. New York: Oxford University Press.
- Jessop, Bob. (2002). Liberalism, Neoliberalism, and Urban Governance: A state-theoretical perspective. *Antipode*, 34(3), 452-472.
- Kacker, A. & Preuss, I. (2003) *Creating great neighbourhoods: Density in your community*. US Environmental Protection Agency and the Local Government Commission. Retrieved November 11, 2010 from www.epa.gov/smartgrowth
- Kelman, S. J. (2006). *Hazardous Legacy: Urban grey zones and Vancouver's False Creek redevelopment*. Unpublished doctoral dissertation, University of Victoria, British Columbia.

- Kirkwood, N. (2001). Why is there so little residential development of brownfields? Framing issues for discussion. Harvard University: Joint Centre for Housing Studies.
- Knox, P. and Pinch, S. (2010) Urban Social Geography (6th Ed.) Essex, UK: Pearson Education Ltd.
- Legislative Assembly of British Columbia. (2010). *British Columbia Speech from the Throne*. Retrieved July 6, 2012 from http://www.leg.bc.ca/_media/docs/LearningResources/FactSheets/English/SpeechFromTheThroneFactSheet-English.pdf
- LiveSmart BC. (2012). *LiveSmart BC homepage*. Victoria, BC: Government of British Columbia. Retrieved May 10, 2012 from <http://www.livesmartbc.ca/>
- Local Government Act, Revised Statutes of British Columbia. (1996, c. 323). Retrieved from the Queen's Printer BC website at http://www.bclaws.ca/Recon/document/ID/freeside/96323_00
- Local Government Department. (2012a). *Regional District Restructure*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from http://www.cscd.gov.bc.ca/lgd/regional/regional_district_restructure.htm
- Local Government Department. (2012b). *Municipalities*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from <http://www.cscd.gov.bc.ca/lgd/pathfinder-mun.htm>
- Local Government Department. (2012c). *Regional Districts*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from <http://www.cscd.gov.bc.ca/lgd/pathfinder-rd.htm>
- Local Government Department. (2012d). *Regional District Services*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from http://www.cscd.gov.bc.ca/lgd/regional/regional_district_services.htm
- Local Government Department. (2012e). *Regional District Infrastructure*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from http://www.cscd.gov.bc.ca/lgd/regional/regional_district_infrastructure.htm
- Local Government Department. (2012f). *Municipal Infrastructure*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from http://www.cscd.gov.bc.ca/lgd/municipality/municipal_infrastructure.htm

- Local Government Department. (2012g). *Municipal Planning*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved December 21, 2012 from http://www.cscd.gov.bc.ca/lgd/municipality/municipal_planning.htm
- Local Government Department. (2013). *Improvement Districts*. Government of British Columbia Ministry of Community, Sport and Cultural Development: Victoria, BC. Retrieved January 13, 2013 from <http://www.cscd.gov.bc.ca/lgd/pathfinder-id.htm>
- Maryland Department of Planning. (2001). *Models and Guidelines for Infill Development*. State of Maryland. Retrieved October 30, 2010 from www.planning.maryland.gov/pdf/ourproducts/.../modelsguidelines/infillfinal_1.pdf
- McConnell, V. & Wiley, K. (2010). *Infill development: Perspectives and evidence from economics and planning*. Washington, DC: Resources for the Future
- McDaniel, S. A., (1986). *Canada's Aging Population*. Toronto: Butterworths.
- Ministry of Agriculture and Lands. (2008). *Brownfield Renewal Creates Greener BC Communities* (News Release 2008AL0005-000259). Victoria, BC: Author. Retrieved April 30, 2012 from http://www2.news.gov.bc.ca/news_releases_2005-2009/2008AL0005-000259.htm
- Ministry of Agriculture and Lands and Capital Regional District. (2008) CRD and Province Partner to Clean Up Millstream Meadows. Victoria, BC: Ministry of Agriculture and Lands. Retrieved August 14, 2012 from http://www2.news.gov.bc.ca/news_releases_2005-2009/2008AL0012-000425.pdf
- Ministry of Community Services. (2008). *Revitalization Tax Exemptions; a primer on provisions of the Community Charter*. Victoria, BC: Author. Retrieved July 1, 2012 from <http://www.cserv.gov.bc.ca/lgd/infra/index.htm>
- Ministry of Environment. (2012). *Contaminated Sites 101*. Victoria, BC: Author. Retrieved July 1, 2012 from <http://www.env.gov.bc.ca/epd/remediation/cs101.htm>
- Ministry of Forests, Lands and Natural Resource Operations. (2011). *Brownfield Funding Helps Revitalize Communities* (News Release 2011FOR0025-000312). Victoria, BC: Author. Retrieved July 6, 2012 from http://www2.news.gov.bc.ca/news_releases_2009-2013/2011FOR0025-000312.htm
- Ministry of Forests, Lands and Natural Resource Operations. (2012). *Contribution Agreement*. Victoria, BC: Author. Retrieved July 1, 2012 from <http://brownfieldrenewal.gov.bc.ca/financial.html>

- Ministry of Forests, Mines and Lands. (2010). *The State of British Columbia's Forests*, 3rd ed. Victoria, B.C.: Forest Practices and Investment Branch Retrieved August 15, 2012 from www.for.gov.bc.ca/hfp/sof/index.htm#2010_report
- Mueller, G. R. (2005). Brownfields Capital-Unlocking value in Environmental Redevelopment. *Journal of Real Estate Portfolio Management*, 11(1), 81-92.
- National Vacant Properties Campaign. (2005). *Vacant properties: The true costs to communities*. Washington DC. Retrieved November 11, 2010 from www.vacantproperties.org
- Office of the Auditor General of British Columbia. (2002). *Auditor General says Government not Managing its Contaminated Sites Adequately*. Victoria, BC: Author. Retrieved April 4, 2012 from <http://www.bcauditor.com/pubs/2002/report5/managing-contaminated-sites-bc-provincial-lands>
- Paull, E. (2008). Energy Benefits of Urban Infill, Brownfields, and Sustainable Urban Redevelopment. Washington, DC: Northeast-Midwest Institute Center for Policy Initiatives.
- Pawlukiewicz, M. (2000). Infill development. [Electronic version] *Urban Land*, February 2000
- Peck, J. & Tickell, A. (2002). Neoliberalizing Space. *Antipode*, 34(3), 380-404.
- Perry, A. & Seager, A., (1997). Mining the Connections: Class, ethnicity, and gender in Nanaimo. *Social History*, 30 (59), 55-76.
- Peterson, J. (2002). *Black Diamond City: Nanaimo – the victoria era*. Vancouver: Heritage House.
- Peterson, J. (2003). *Hub City: Nanaimo – 1886-1920*. Vancouver: Heritage House.
- Peterson, J. (2006). *Harbour City: Nanaimo in transition – 1920-1967*. Vancouver: Heritage House.
- Point, S. (2008) *Speech from the Throne; 4th Session of the 38th Parliament of the Province of British Columbia*. Victoria, BC: Legislative Assembly of British Columbia. Retrieved May 1, 2012 from <http://www.leg.bc.ca/38th4th/4-8-38-4.htm>
- Porter, D. R., Blakely, E. J. & Kalamaros, A. E. (2003). Sustainable Infill. *Urban Land*, May 2003, 60-69.
- Presidio Trust. (2015). Presidio Trust Website. Retrieved March 24, 2015 from <http://www.presidio.gov/about/Pages/frequently-asked-questions.aspx>

- Regional District of Nanaimo. (2011). *Shaping our Future; Regional growth strategy*. Nanaimo, British Columbia. Retrieved December 20, 2012 from http://www.shapingourfuture.ca/downloads/rgs_bylaw_no_1615.pdf
- Rose, D. (2004). Discourses and experiences of social mix in gentrifying neighbourhoods: A Montreal case study. *Canadian Journal of Urban Research*, 13(2), 278 – 317. Retrieved October 30, 2010 from <http://proquest.umi.com>
- Rybczynski, W. (2007). *The Last Harvest*. New York: Simon and Shuster Inc.
- Sargent, T. (1994). *Infill in the marketplace: Alternatives to sprawl*. Smart Communities Network. Retrieved November 18, 2010 from www.smartcommunities.ncat.org/articles/infillalt.shtml
- Sheltair Group. (2007). *City of Nanaimo Land Inventory and Residential Capacity Analysis*. Retrieved December 13, 2012 from https://www.nanaimo.ca/assets/Departments/Community~Planning/Offical~Community~Plan~~~10~Year~Review/Background~Information/land_capacity_analysis.pdf
- Siikamäki, J and Wernstedt, K. (2008). Turning Brownfields into Greenspaces: Examining the barriers to revitalization. *Journal of Health Politics, Policy and Law*, 33(3), 559-593.
- Sommers, S. (2008). The Brownfield Problem: Liability for lenders, owners, and developers in Canada and the United States. *Colorado Journal of International Environmental Law and Policy*, 19(2), 259-291.
- Steinacker, A. (2003). Infill development and affordable housing: Patterns from 1996 to 2000. [Electronic version] *Urban Affairs Review*, 38, 492-508
- Strelieff, W. (2002). *Managing Contaminated Sites on Provincial Lands*. Victoria, BC: Office of the Auditor General of British Columbia.
- Stonebanks, R. (2000). #1 Mine Remembered. *Labour*, 45 (Spring 2000), 358.
- Thadani, D. A. (ed) (2010). *The language of towns & cities: A visual dictionary*. New York: Rizzoli
- Thaler, R. H., & Sustein, C. R. (2008). *Nudge: Improving decisions about health, wealth and happiness*. Yale University Press: New Haven, CT.
- Thornton, G., Banheusden, B. & Nathanail, P. (2005). Are Incentives for Brownfield Regeneration Sustainable? A comparative survey. *Journal for European Environmental Planning Law*, 2(5), 350- 374.
- Transportation and Growth Management Program. (1999). *The infill and redevelopment code handbook*. State of Oregon. Retrieved November 11, 2010 from www.epa.gov

- Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44, [2014] 2 S.C.R. 256
- Vallance S., Perkins H. C., & Moore K. (2005). The results of making a city more compact: neighbours' interpretation of urban infill. [Electronic version] *Environment and Planning B: Planning and Design* 32(5), 715 – 733
- Vancouver Charter, Statutes of British Columbia. (1953). Victoria, BC: Queen's Printer. Retrieved from BC Laws website
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/vanch_00
- Vancouver Island Real Estate Board. (2015). *2014 Annual MLS Sales Summary*. Retrieved July 28, 2015 from
http://www.vireb.com/assets/uploads/2014_annual_sales_summary_1939.pdf
- Victoria Real Estate Board. (2015). *Current Statistics: Victoria real estate market remains hot as spring trend continues into summer*. Retrieved July 28, 2015 from
<http://www.vreb.org/current-statistics>
- Wheeler, S. M. (2001). *Infill Development in the San Francisco Bay Area: Current Obstacles and Responses*. A paper presented to the Annual Conference of the Association of Collegiate Schools of Planning. Cleveland, Ohio

Appendix I - List of Interview Questions

1. Please describe your interactions with both infill development and brownfield redevelopment in Nanaimo?
2. Do you think that infill development and brownfield redevelopment are positive forms of development for Nanaimo? Why, or why not?
3. Do you think there is potential to increase the amount of infill development and brownfield redevelopment in Nanaimo? Can you quantify this potential?
4. What do you see as the major barriers to increasing infill development and brownfield redevelopment in Nanaimo?
5. Please describe all the programs and services that you know to be offered by the BC government, the Regional District and the City of Nanaimo to assist, enable, or otherwise promote infill and brownfield development.
6. How would you rank these programs and services in terms of their accessibility, quality and effectiveness?
7. What, in your opinion, could be done to increase the levels of infill development in Nanaimo?
8. What, in your opinion, could be done to increase the levels of brownfield redevelopment in Nanaimo?
9. What role should the BC government play in promoting, enabling or assisting infill development across the province?
10. What role should local government play in promoting, enabling or assisting infill development within local jurisdictions?
11. What role should the BC government play in promoting, enabling or assisting brownfield redevelopment across the province?
12. What role should local government play in promoting, enabling or assisting brownfield redevelopment within local jurisdictions?
13. Is there anything else you would like to add?

Appendix II - List of Respondents

Each of the respondents was provided the opportunity to remain anonymous and each of the ten respondents chose to be identified. Accordingly, the respondents were as follows:

Planner One:	Chris Scholburg, Planner, City of Nanaimo
Planner Two:	Lisa Bhopalsingh, Regional District of Nanaimo Senior Planner
Developer One:	Doug Bromage, President of InSight Developments
Developer Two:	Mark Holland, Vice President Development, New Monaco Enterprise corp.
Civil Servant One:	Andrew Tucker, Director of Planning, City of Nanaimo
Civil Servant Two:	Ian Howat, General Manager of Corporate Services, City of Nanaimo
Citizen:	Doug Hardie, South End Community Association Representative
First Nations Council Member:	Bill Yoachim, Snuneymux'w First Nation Council
Local Elected Official:	Fred Pattje, Member of Nanaimo City Council
Provincial Elected Official:	Ron Cantelon, Member of the Legislative Assembly for Parksville-Qualicum, 2005 to 2013