

# **From transit to development at Main Street SkyTrain Station**

**by**

**Andrew Trevor Jones**

B.A. Honours (Geography), Queen's University, 2008

RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF URBAN STUDIES

in the

Urban Studies Program

Faculty of Arts and Social Sciences

**© Andrew Trevor Jones 2012**

**SIMON FRASER UNIVERSITY**

**Spring 2012**

All rights reserved.

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

# Approval

**Name:** Andrew Trevor Jones  
**Degree:** Master of Urban Studies  
**Title of Thesis:** *From transit to development at Main Street SkyTrain Station*

**Examining Committee:**

**Chair:** Matt Hern, Lecturer, Urban Studies

---

**Anthony Perl**  
Senior Supervisor  
Professor, Urban Studies and Political Science  
Director, Urban Studies

---

**Karen Ferguson**  
Supervisor  
Associate Professor, Urban Studies and History

---

**Jeffrey Busby**  
External Examiner  
Senior Manager, Infrastructure Planning, TransLink

**Date Defended/Approved:** March 26, 2012

## Partial Copyright Licence



The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the right to lend this thesis, project or extended essay to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users.

The author has further granted permission to Simon Fraser University to keep or make a digital copy for use in its circulating collection (currently available to the public at the "Institutional Repository" link of the SFU Library website ([www.lib.sfu.ca](http://www.lib.sfu.ca)) at <http://summit/sfu.ca> and, without changing the content, to translate the thesis/project or extended essays, if technically possible, to any medium or format for the purpose of preservation of the digital work.

The author has further agreed that permission for multiple copying of this work for scholarly purposes may be granted by either the author or the Dean of Graduate Studies.

It is understood that copying or publication of this work for financial gain shall not be allowed without the author's written permission.

Permission for public performance, or limited permission for private scholarly use, of any multimedia materials forming part of this work, may have been granted by the author. This information may be found on the separately catalogued multimedia material and in the signed Partial Copyright Licence.

While licensing SFU to permit the above uses, the author retains copyright in the thesis, project or extended essays, including the right to change the work for subsequent purposes, including editing and publishing the work in whole or in part, and licensing other parties, as the author may desire.

The original Partial Copyright Licence attesting to these terms, and signed by this author, may be found in the original bound copy of this work, retained in the Simon Fraser University Archive.

Simon Fraser University Library  
Burnaby, British Columbia, Canada

## STATEMENT OF ETHICS APPROVAL

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

(a) Human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

(b) Advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

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

or

(d) as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

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

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

Simon Fraser University Library  
Simon Fraser University  
Burnaby, BC, Canada

## **Abstract**

Main Street station was designed and built in 1982 as the terminus of a demonstration line for the SkyTrain rapid transit system. This project examines the historical experience of Main Street station and how the station area has changed since 1984 when a long-term land-use and redevelopment plan was established. A conceptual framework applies transit-oriented development (TOD) theory to identify commonalities between the 1984 plan and the goals of TOD. The findings suggest that although the land-use plan intended to capitalize on the influence of the rapid transit station with location efficient and mixed-use zoning, development has not been as responsive to the presence of rapid transit as planners envisioned. Construction on the only major development project next to the station, City Gate, began nearly a decade after the introduction of rapid transit, while surface parking lots and vacant land remain elsewhere around the station. The analysis examines factors such as municipal support for the residential redevelopment of False Creek during the 1990s, market demand, land assembly and developer interest that influenced the implementation of City Gate. Finally, an assessment of the present day study area illustrates why successful transit-oriented development must reflect principles of good urban design. This project suggests that if the Main Street station area is to become a compact, walkable and vibrant community, it must have good connectivity, legibility and a high quality public realm.

**Keywords:** Transit-oriented development; rapid transit; urban form; land use planning; urban design; station area planning; East False Creek

# Dedication

To Mum and Dad

## **Acknowledgements**

I would like to first thank my supervisor, Anthony Perl, for his continual support in the completion of my research project. He has been an invaluable resource and guide throughout, and for this I am grateful. Many thanks also to Karen Ferguson, for providing her encouragement and perspective at the beginning of this process.

To all my instructors in the Urban Studies program – Matt Hern, Peter V. Hall, Meg Holden, Michael von Hausen, Anthony Perl and Karen Ferguson – thank you for your inspiration and enthusiasm. I am also grateful for the advice and assistance of Terri Evans during my time in the program.

Finally, to my friends and peers, thank you. Our many conversations about the city, school, and life, have elevated my experience in this program beyond what I could have imagined. I am also incredibly grateful for the unwavering support from my family, and for believing I would get it done.

# Table of Contents

Approval.....	ii
Abstract.....	iii
Dedication.....	iv
Acknowledgements.....	v
Table of Contents.....	vi
List of Figures.....	viii
List of Acronyms.....	x
<b>1. Introduction .....</b>	<b>1</b>
<b>2. Context.....</b>	<b>4</b>
<b>3. Research Question.....</b>	<b>9</b>
<b>4. Literature Review.....</b>	<b>11</b>
4.1. Transit-oriented Development.....	11
4.1.1. The impact of rapid transit on land use.....	15
4.2. The built environment as a factor in travel behaviour.....	19
4.3. The role of urban design principles.....	21
<b>5. Methodology.....</b>	<b>25</b>
5.1. Qualitative Interviews.....	25
5.2. Document Analysis.....	26
5.3. Qualitative urban design assessment.....	27
<b>6. History of the Station .....</b>	<b>30</b>
<b>7. Station Area Planning 1983-1986.....</b>	<b>41</b>
7.1. East False Creek Planning Policies 1983.....	43
7.2. East False Creek Policy Plan 1984.....	44
7.2.1. Compatibility of land uses.....	47
7.3. East False Creek FC-1 Guidelines 1986.....	50
7.4. Planning initiatives in East False Creek since 1986.....	53
7.4.1. Shifting planning boundaries.....	54
<b>8. Redevelopment around Main Street station since 1984.....</b>	<b>59</b>
8.1. City Gate.....	59
8.1.1. Vancity.....	64
8.2. Factors influencing the time period of redevelopment around False Creek.....	65
8.2.1. Market demand and land assembly.....	65
8.2.2. Reconciling the transit and development paradox.....	66
8.3. Interim land-uses.....	68



<b>9. Urban Design Assessment .....</b>	<b>70</b>
9.1. Discussion of Objectives.....	71
9.1.1. Character .....	71
9.1.2. Continuity and Enclosure .....	75
9.1.3. Quality of the Public Realm .....	77
9.1.4. Ease of Movement .....	80
9.1.5. Legibility.....	84
9.1.6. Adaptability .....	88
9.1.7. Diversity .....	89
9.2. Summary .....	92
<b>10. Conclusions.....</b>	<b>95</b>
<b>11. References .....</b>	<b>99</b>
<b>Appendices.....</b>	<b>104</b>
Appendix A: Map of Figures for Main Street Station Area.....	105
Appendix B: Timeline 1979-1990.....	106
Urban Design Assessment .....	107

## List of Figures

Figure 1 – Activity Intensity vs. Passenger Car Use in 58 higher-income cities (Newman & Kenworthy, 2006) .....	20
Figure 2 – Map of proposed Main Street Station locations (Author’s custom Google Map).....	32
Figure 3 – Main and Terminal south, Source: © City of Vancouver (City of Vancouver, 1980-1985) .....	33
Figure 4 – Main and Terminal north, Source: © City of Vancouver (City of Vancouver, 1980-1985) .....	34
Figure 5 – East False Creek FC-1 zoning district in 1984 (Author’s custom Google Map).....	42
Figure 6 – Main Street Station Site and LaFarge Concrete Plant, Source: © City of Vancouver (City of Vancouver, 1983) .....	48
Figure 7 – Drawing of Tower Form at specific heights (City of Vancouver, 1986a) .....	51
Figure 8 – Eastern Core Study Area (City of Vancouver, 2011).....	56
Figure 9 – City Gate Design Concept 1989 (City of Vancouver, 2003) .....	61
Figure 10 – City Gate Development .....	63
Figure 11 – Vacant land and abandoned building on Main Street south of Station (Source: © A. Jones) .....	73
Figure 12 – City Gate building frontage along west side of Thornton Park, April 20 2011 (Source: © A. Jones).....	74
Figure 13 – Impermeable design of station structure as it meets newer buildings on Main Street, east side, April 20 2011 (Source: © A. Jones).....	76
Figure 14 – Impermeable station structure and newer buildings along Main Street, west side, May 31 2011 (Source: © A. Jones).....	77
Figure 15 – Public realm, interior pathway in City Gate, April 20 2011 (Source: © A. Jones) .....	78
Figure 16 – Station plaza and public realm, May 31 2011 (Source: © A. Jones).....	79
Figure 17 – Station plaza furniture below entrance and facing Terminal Ave, June 4 2011 (Source: © A. Jones).....	80
Figure 18 – Intersection of Terminal Ave and Quebec St, facing south, May 31, 2011 (Source: © A. Jones).....	81
Figure 19 – Viaducts at north end of City Gate on Quebec St, transition zone to Chinatown and BC Place, April 20, 2011 (Source: © A. Jones) .....	82
Figure 20 – City Gate building frontage facing west along Quebec Street, no crosswalk, April 20 2011 (Source: © A. Jones) .....	83

Figure 21 – Left: Fine grained pedestrian pathways through City Gate; Right: the same east-west pathway where it meets Quebec Street on west side of development, April 20 2011 (Source: © A. Jones).....	84
Figure 22 –Access between Station entrance and City Gate, south side, May 31 2011 (Source: © A. Jones).....	86
Figure 23 –Access between Station entrance and City Gate, south side, June 4 2011 (Source: © A. Jones).....	87
Figure 24 – Access between station and City Gate, north side, April 20 2011 (Source: © A. Jones) .....	88
Figure 25 – East False Creek street frontage requirements for shopfront widths (City of Vancouver, 1986a) .....	90
Figure 26 – Unoccupied retail units in City Gate, April 20 2011 (Source: © A. Jones).....	91
Figure 27 – Unoccupied commercial unit on north side of station in City Gate, April 20 2011 (Source: © A. Jones).....	91

## List of Acronyms

ALRT	Advanced Light Rapid Transit
CABE	Commission for Architecture and the Built Environment
GVRD	Greater Vancouver Regional District
TAD	Transit-adjacent Development
TOD	Transit-oriented Development
UTA	Urban Transit Authority

# 1. Introduction

Main Street station was the first rapid transit station ever built for the Skytrain system in Vancouver, British Columbia. Located on the eastern edge of False Creek (known as East False Creek), it was originally designed as a demonstration station to showcase a new rapid transit technology that would eventually stretch across the region. During the World Exposition in 1986, Main Street station played an important transportation role as thousands of people used the station and rapid transit line to access the fair grounds. In the three years leading up to Expo, from 1983 to 1986, city planners were finalizing a redevelopment plan for East False Creek that included the land surrounding the transit station. The rezoning and land-use plan was intended to transform this industrial heart of the city into a vibrant and compact community linking other neighbourhoods around False Creek.

The new community would be concentrated around the existing rapid transit station and would have a mix of uses including higher density residential and commercial space. A development guideline with urban design requirements was also produced during this planning process because the City of Vancouver wanted to maintain good quality development and the compatibility of mixed residential and commercial uses in a high-density neighbourhood (City of Vancouver, 1986a). Both the redevelopment plan and urban design requirements were intended to guide long-term redevelopment (25 years) around the east end of False Creek. The introduction of rapid

transit and the area's proximity to downtown and adjacent residential neighbourhoods made it a promising location to promote higher density urban redevelopment.

This research project will examine how the area around Main Street station has changed since 1984 when the long-term plan for redevelopment was established. Specifically, the study area used for this project is within a 5 minute walking distance from the Skytrain station. A conceptual framework on the relationship between land use and transportation will be constructed using literature on transit-oriented development theory and urban design principles. This framework will guide an analysis of the history of planning for Main Street station and the East False Creek area. While planning for the station area began before any transit-oriented development schemes had been attempted in Vancouver, the analysis suggests that there are commonalities between the 1984 land use plan and the goals of transit-oriented development theory. These commonalities include concentrating higher density residential and commercial uses in close proximity to the station, providing a mix of uses, and ensuring a good quality (pedestrian prioritized) public realm. Within this conceptual framework, I also note that there is strong link between achieving successful transit-oriented development and urban design, which is predicated on physical form. If redevelopment around a transit station is to be considered "transit-oriented" it must promote its physical relationship through strong principles of urban design – including good legibility, connectivity and quality of the public realm.

I suggest that if Main Street station is to become a compact, walkable and vibrant community that encourages sustainable modes of transportation, it must perform well on seven objectives of urban design. A qualitative urban design assessment was conducted on the station area in order to determine how well it reflects these objectives. While this

assessment offers only an initial impression of the urban design quality, it illustrates why urban design principles are necessary for successful station area redevelopment and what improvements will be required for a walkable and vibrant community around Main Street station.

## 2. Context

A planning context for ALRT<sup>1</sup> development in Vancouver had been outlined in 1983 which stated the goal was to achieve a close proximity of related land uses in order to reduce future transportation investment and future growth in travel demand (City of Vancouver, 1983). The City recognized there was a relationship between transit and land use that could be mutually beneficial. The report suggested that by concentrating people and jobs around transit stations, it would promote ridership on the rapid transit line and reduce the need to invest in further transportation infrastructure, such as roads and highways. Most stations planned for downtown Vancouver were in areas with existing office and commercial development, but some, such as Main Street, were on the periphery of downtown in underdeveloped areas. The land surrounding False Creek was used primarily for heavy industry (steel and concrete) and as rail yard facilities, but leading up to, and after Expo 86, most of these industrial operations were relocating away from the city centre. This meant large tracts of vacant land were left bordering the downtown core and False Creek. In the period after 1986, the City was re-envisioning the role of False Creek as a high-density residential neighbourhood. Although a redevelopment plan had been proposed over a decade earlier by Marathon Realty (Punter, 2003), the City was about to open the door to a very large-scale residential

<sup>1</sup> The Skytrain technology was called Advanced Light Rapid Transit (ALRT).



redevelopment on this vacant land. The East False Creek Policy Plan (1984), City Gate rezoning bylaw (1990), and False Creek North Official Development Plan (1990) provided the foundation for extensive redevelopment around False Creek. However, as previously mentioned, this re-envisioning of False Creek North began over a decade before the 1990 Official Development Plan was approved by City Council.

In 1969, Marathon Realty, the property management division of Canadian Pacific Railway, proposed a development plan for their extensive land holdings around False Creek. This plan included nineteen, 200 meter towers set around the shores of the Creek in four distinct neighbourhoods. While rezoning was approved by City Council, the plan did not proceed because of a City requirement to provide subsidized residential space for low-income residents (Punter, 2003). By the late 1970s, Marathon had sold 71 hectares of land to the Provincial Government, which subsequently announced its use for Expo 86, delaying any major redevelopment plans. In 1984, the City had approved the first Policy Plan for redevelopment in East False Creek, which was not owned by the Province but bordered on the Expo lands. Shortly after Expo in 1986, the Province decided to sell the entire False Creek North site to investor Li Ka-shing, because “[it] considered that the sale of the property to the wealthiest man in Hong Kong could stimulate massive Asian investment in Vancouver real estate” and be a catalyst for future economic diversification (Punter, 2003, p. 194; Olds, 1995). Concord Pacific, the development company founded by the site’s new owners, worked with the City to devise a master plan for the entire northern shore of False Creek, and in 1990 the Official Development Plan was approved. This vision and successful implementation of urban transformation around the north shore of False Creek was being driven by Vancouver’s emergence into the global property market. Concord Pacific was financed through private equity generated in Hong Kong and therefore, “buildings and individual units in

[False Creek North were] designed, marketed, and financed in a manner which [catered] to residents of both Vancouver and Hong Kong...” (Olds, 1995, p. 1735).

On a much smaller scale, the development plans for East False Creek were nonetheless linked to this wider context of urban transformation around the north shore of False Creek. Although the policy plan for East False Creek was approved in 1984, it wasn't until 1989 when a rezoning and development application was approved by the City. Bosa Development Corporation proposed a high-density residential development (City Gate) on land stretching north from the Skytrain station, known as the Station/LaFarge site. During a Council Meeting in 1989, then Associate Director of Planning, Larry Beasley, stated that, “the proposed development on the Station/LaFarge site is an important opportunity to expand the City’s vision for the changing nature contemplated for the False Creek basin” (City of Vancouver, 1989). In other words, this residential development application for the eastern end of the Creek would fit naturally into the larger vision of urban transformation around the north shore of False Creek. The following year, in 1990, both the City Gate rezoning by-law and False Creek North Official Development Plan were enacted by the City.

By the time these land-use plans were approved by the City, the SkyTrain rapid transit system had been in operation for four years. The first phase of the Expo Line was officially opened on December 11, 1985 with service between downtown Vancouver and New Westminster. On January 3, 1986, the SkyTrain went into revenue service (BC Transit, 1986). By 1990, an extension to Surrey had been opened via the Skybridge across the Fraser River.

The decade of the 1990s was when most of the development occurred around Main Street station and the north shore of False Creek. The rezoning bylaw for City Gate in East False Creek permitted a maximum of 1,018 residential units to be built on land

extending north from the Skytrain station between Main and Quebec Streets (City of Vancouver, 1990). The Official Development Plan for False Creek North, in comparison, permitted up to 9,843 residential units to be built on the former Expo land around False Creek (City of Vancouver, 1990). The total land area of False Creek North was 80 hectares, stretching from the Burrard Bridge in the west to City Gate in the east. The total area of land owned by Concord Pacific was 67 hectares, and had a population of approximately 13,000 people by the end of the decade (City of Vancouver, 2003). While the overall size of redevelopment was much larger for False Creek North, the City Gate development next to Main Street station was a higher density project. City Gate was built on 3.7 hectares of land and had a density of 110 units per acre (upa), compared to Concord Pacific which had 50 upa by the end of the decade (City of Vancouver, 2003).

As redevelopment continued through the late 1990s, the City had to consider the transportation impacts of significant population growth. The Vancouver Transportation Plan (1997) identified ways to create more comfortable walking and cycling environments and to increase the share of non-motorized trips. Prioritizing walking, biking and transit over single-occupancy vehicles was a crucial step towards increasing their share of trips. In the decade after this report was published, walking trips had increased 44 percent, biking had increased 180 percent and transit trips were up 20 percent (City of Vancouver, 2007). One way that sustainable modes of transport can continue to increase is by planning neighbourhoods that are compact and explicitly cater to walking, cycling and transit. The City's Transportation Plan Update highlights the role of land-use in promoting these modes: "higher density neighbourhoods with easy access to shopping and work also promote alternative choices to car use" (City of Vancouver, 2007).

The Main Street station area today, represents an important concentration of transportation services. The Skytrain station is situated within a five-minute walking distance from Pacific Central Station, where VIA Rail, Amtrak and several bus coach lines offer regional and international transportation. There is frequent local bus service along Main Street that provides connections to both Pacific Central and Main Street station, and the Seawall to the west provides pedestrian and cyclist access to waterfront communities along False Creek. The station area's proximity to downtown, False Creek, and Mount Pleasant means it has the potential to be an important connecting link between these communities.

This relationship between land use and transit, as well as the correlation between successful station area development and urban design principles will be outlined in the literature review. It will reinforce the argument that compact urban form and higher density land use is associated with increased walking, cycling and transit use, and decreased car use. The literature also provides justification for why Main Street station area should be a compact, walkable and vibrant community and an assessment of urban design conducted later in this project will illustrate how successful it has been in this regard.

### **3. Research Question**

The research question behind this project is rooted in Main Street station's unique history of planning and the station area's potential to be a compact, walkable and vibrant community that supports sustainable transportation options with good urban design. Adopting the normative position that rapid transit stations are ideal locations to develop compact and complete communities, the research question asks, how has the area around Main Street station changed since 1984 when a long-term land use and redevelopment plan was established?

Station area planning documents published by the City of Vancouver (the East False Creek planning policies (1983), policy plan (1984) and FC-1 guidelines (1986)) are considered the original planning vision for land around the station and in the surrounding neighbourhood. The 1984 policy plan, specifically, establishes a long-term land use plan and rezoning schedule for East False Creek that was projected to occur over a twenty-five year period.

The objective of this project is to understand how the planning history of Main Street station has led to particular development and design outcomes. Were there circumstances that uniquely affected the planning and development around this station? What role, if any, has transit had in promoting land use decisions or generating urban design requirements? Literature is drawn from transit-oriented development theory, land-use and travel behaviour, and urban design principles to develop the argument that rapid transit stations are ideal places to develop compact, walkable and vibrant communities.

In order for the Main Street station area to be a compact and walkable community, it must perform well on specific principles of urban design. A qualitative assessment of urban design performance is conducted by the researcher around Main Street station. The assessment uses seven objectives developed by the Department of the Environment, Transport and the Regions (United Kingdom), and the Commission for Architecture and the Built Environment (see Chapter 4.3).

The research results suggest that while land use and urban design directions approved in 1984 provided the foundation for a community to grow around the station, the subsequent redevelopment did not happen as expected. This project does not attempt to exhaust a list of reasons why the station area did not transform as planners had expected, but several conditions for successful redevelopment are discussed.

## **4. Literature Review**

The following literature review draws on transit-oriented development theory and urban design principles to construct a conceptual framework for the analysis of historical planning documents and interviews related to Main Street station. In particular, I note there are strong commonalities between the planning goals of the East False Creek Policy Plan (1984) and the goals of transit-oriented development (TOD). These include concentrating higher density residential and commercial uses next to the Skytrain station, providing a mix of uses, and ensuring a high quality (pedestrian prioritized) public realm. I also note that there is a correlation between successful transit-oriented development and principles of urban design, which is predicated on physical form. A successful TOD promotes its physical relationship with the station using urban design principles such as legibility, connectivity and a high quality public realm.

### **4.1. Transit-oriented Development**

Transit-oriented development (TOD) theory encapsulates a way of thinking about building communities around transit stations. It is predicated on the belief that the station should be the focus of a TOD community and it identifies ways to promote this relationship between built form and transit. The concept emerged in the early 1990s in North America and was made popular by the Congress for the New Urbanism co-founders, Peter Calthorpe and Andrés Duany. A transit-oriented development reinforces the principles of New Urbanism by creating liveable and compact communities along rail

transit corridors that are pedestrian-friendly and encourage alternatives to low-density growth patterns (Calthorpe, 1993). More specifically, a successful TOD, “needs to be mixed-use, walkable, location-efficient development that balances the need for sufficient density to support convenient transit service with the scale of the adjacent community” (Dittmar & Ohland, 2004, p. 4). This definition incorporates the key goals of a transit-oriented development which are to provide a liveable community that also supports increased transit ridership.

A location-efficient development, one that is close to a transit station, will benefit from what is called the typical area of influence. This describes the physical distance that people are most likely to walk to access a transit station. The American Public Transportation Association has identified the typical areas of influence by transport mode. In the case of Main Street station, which is served by rapid transit, the core station area is where urban design and land-use would have the greatest influence on transit ridership. Providing that there are no barriers to access, such as station infrastructure or vehicle highways, the core area would have a radius of one third of a mile (half a kilometre) (APTA, 2009). Therefore, location-efficient development is in close proximity to a transit station with a walkable, pedestrian-friendly built environment and with enough density to support transit ridership. Mixed-use land development can also provide complimentary transit usage that is spread evenly throughout the day. Commercial and residential land uses tend to produce more trips during peak hours, and entertainment and retail generate off-peak trips (Cervero, 2007).

Since the popular adoption of the TOD concept throughout the 1990s, variations in the definition have emerged to describe the reality of redevelopment around transit stations. The integration of land use planning and transit is an underlying strategy for transit-oriented development; however attempts to apply the conventional TOD concept



can be challenging given the station area context. A transit-adjacent development is one that is physically close to transit but does not promote this relationship because it fails to provide functional connectivity (Cervero, Ferrell, & Murphy, 2002; Renne, 2009). This is usually due to poor station design or a lack of pathways that make it difficult for people to walk to access the station. Renne (2009) investigated a range of transit-adjacent developments along suburban rapid transit stations in San Francisco that were characterized by low densities, limited pedestrian access, and a dominance of surface parking. Although only Downtown Berkeley was most like the conventional TOD with high-density land uses and high-quality pedestrian environment, Renne suggests more station areas could move in this direction. Curtis (2008) studied the evolution of the TOD concept around suburban rail stations in Perth, Australia. In addition to the traditional high-density TOD model based around “walk on patronage”, a “transit-transfer” model has been used in low-density suburban stations where people are less likely to access the station on foot. High-quality rail-bus interchanges and park and ride facilities are used instead as a strategy for integrating land-use and transportation (Curtis, 2008). Another variation in the definition of a TOD is a transit joint development (TJD), which is usually a single, integrated project negotiated as a public-private partnership. There is an element of mutual benefit for a TJD, with the developer gaining transit accessibility and higher rents, and the public sector benefitting through shared construction costs and a ridership bonus (Cervero, Ferrell, & Murphy, 2002). Joint developments also provide value-capture benefits to the land-owner due to rezoning and density bonuses (Newman & Kenworthy, 1999).

These examples of variations in the TOD concept demonstrate the importance of context for successful station area redevelopment. The difference between a suburban and downtown station may have a strong influence on the type of redevelopment

strategy that should be applied so that the goals of TOD can be achieved. Given this challenge, determining whether a TOD strategy has been successful should be based on its actual performance (Dittmar & Ohland, 2004). A performance based goal goes beyond simply quantifying the attributes of transit-oriented development (i.e. density, population, zoning type) and suggests that they need to actually achieve what they advocate. For example, the ability to create a sense of place is not necessarily a quantifiable aspect of transit-oriented development, however, it provides an understanding of whether people are using the space as it was intended. In other words, place-making is about identifying whether the station area is a destination in itself, beyond just its functional role as a transit station.

Dittmar and Ohland's performance goals for TODs are achieved by applying urban design principles such as legibility, connectivity and a high quality public realm. A high-density residential project constructed next to a transit station does not promote a physical relationship without a legible and well connected built form. It will also lack vibrancy and a sense of place without a high-quality public realm and mixed uses to attract a variety of people. Therefore, the presence and performance of urban design principles will ensure the foundation for successful station area redevelopment plans.

The following sections in the literature review will examine the influence of rapid transit stations on land use and the travel behaviour of higher density, pedestrian-oriented communities. The former will illustrate that the introduction of rapid transit may have less of an impact on land use changes than other factors such as market influences. The latter will reinforce the argument that rapid transit stations are ideal locations to encourage compact and higher density development.

#### **4.1.1. *The impact of rapid transit on land use***

The impact of rapid transit on land-use and urban form is varied and determined by a multitude of factors. An early study analysed the impacts of transit systems in different cities and attempted to determine what factors influenced development (Knight & Trygg, 1977). In San Francisco, density bonuses were permitted for buildings providing direct access to downtown BART<sup>2</sup> stations, and in Toronto, pro-development public policies including the marketing of air rights<sup>3</sup> and density bonuses for subway stations significantly shaped urban form in the city. It was noted that Toronto was able to capitalize on their transit investment better than San Francisco because its transit authority had the ability to assemble land around stations and exploit its development potential. The authors conclude that, “transit-related growth seems more likely to occur in areas already ripe for development near a newly constructed transit station where some activity would probably have taken place even if the transit system had not been built.” This study rejected the premise that a new rapid transit system alone would be sufficient to stimulate development and revitalize a station area. Instead, it argued that government policies in support of station area development, the availability of developable land, a strong regional economy, positive physical location and compatible land-uses were necessary conditions to generate significant development impacts.

Cervero and Landis (1997) conducted a twenty-year evaluation of land-use and development impacts of the BART system in San Francisco. They cited an impact study conducted a few years after the system opened in 1973 which determined that BART

<sup>2</sup> BART is the acronym used for the Bay Area Rapid Transit system.

<sup>3</sup> The ability to build above the station or tracks is known as an air right.

had a small influence on urban development patterns around stations. The author's findings after their twenty year study also determined that land use changes around stations had been minimal and localised to downtown San Francisco. The availability of vacant land and strong municipal support in land assemblage and development incentives were important preconditions for the land use changes that did occur.

A study by Loukaitou-Sideris and Banerjee (2000) examined what they believed were the necessary antecedents to successful growth patterns around inner-city rail stations in Los Angeles. This study examined stations along the Blue Line corridor that connects downtown Los Angeles to downtown Long Beach, and passes through poor, marginalized communities in LA County. The authors noted that over the first nine years the line was open, very little development had taken place around stations despite ridership increasing dramatically. They argued that transit-oriented development schemes and urban design plans lacked an understanding of the process of implementation. This process must take into account the incentives, institutions, public-private partnerships, community participation and endorsement, timing, phasing and inter-agency coordination that are crucial to successful development.

The case of the Blue Line in Los Angeles highlights the importance of understanding and responding to the particular station context for successful development schemes. There can be social and economic barriers, such as a lack of developer interest or market demand, which must be considered when implementing transit-oriented development schemes. Although the Blue Line has seen increased ridership, it has not been successful at promoting positive change and development in the communities it passes through (Loukaitou-Sideris & Banerjee, 2000). Examining the historical context of Main Street station will offer insight into the factors that have contributed to its particular redevelopment pattern.

Using a transit-oriented development lens, Renne (2009) evaluated three stations in San Francisco to determine a range of built form and performance. As discussed in chapter 4.1, he makes a distinction between transit-oriented and transit-adjacent development, which is physically near transit but does not capitalize upon its proximity (Renne, 2009). The findings suggested that the downtown station was most successful as a transit-oriented development, had higher ridership, and was accessed primarily by non-auto modes of transport. The suburban station was closest to the transit-adjacent side of the spectrum because it was surrounded by parking lots, had poor pedestrian access, and office buildings that were not integrated with the station. A significant influence in development around transit stations is the real estate market. A report published by the Transit Cooperative Research Program noted that station-area development at suburban stations has been less intensive than downtown stations. A burst of downtown development activity in the 1970s and 1980s (particularly in Atlanta, Portland, San Francisco and Washington D.C.), and municipal support in attracting developer interest, such as San Diego's development organization (Centre City Development Corporation), were strong influences in station area redevelopment (Porter, 1997). However, suburban stations have lacked any significant "transit-focused" development. While the report credits Vancouver's regional town centres plan and a constrained geography for suburban transit-focused development, in San Francisco, the poor locational attributes of stations along former rail corridors and an emphasis on large park and ride facilities have discouraged station-related development (Porter, 1997).

This literature on the relationship between land use and rapid transit suggests that transit alone is not the most significant influence on development. There are external factors such as the real estate market, local planning policies and geographic

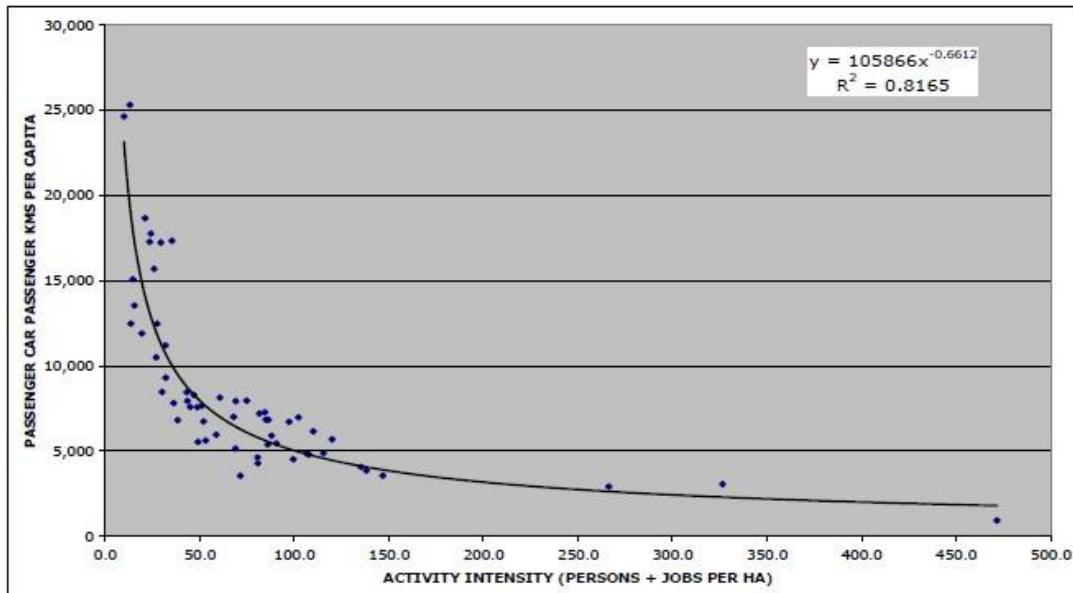
location that that strongly influence the patterns of growth around a station. The redevelopment that occurred around Main Street station was situated in a particular planning context that was linked to a larger vision of residential growth around False Creek. As was discussed earlier in Chapter 2, the City Gate rezoning application and the False Creek North Official Development Plan were both approved by City Council in 1990, because they fit within the particular planning vision for False Creek. The land-use and development patterns around the north side of False Creek and BC Place, however, were not directly influenced by the introduction of rapid transit. Although Stadium Skytrain station was already built by 1986, its area of influence adjacent to BC Place represented a small fraction of the total development area of North False Creek. Foreign investment generated by developer Concord Pacific and global marketing practices, especially to residents of Hong Kong, were key market influences on the development of North False Creek (Olds, 1995; Punter, 2003). Most of this development occurred without any rapid transit service until a Canada Line station was opened in 2009 in the new high-density residential and retail district known as Yaletown. This relationship between land-use planning, development and transit planning is disconnected because they don't always occur at the same time. In North False Creek, it was decades before rapid transit service was introduced to a high-density, residential community. The Main Street Skytrain station, in contrast, was built almost a decade before any redevelopment was started. This meant little could be done at the time the station was constructed to predict the timing of development and future integration requirements. Whereas, the Yaletown Canada Line station was integrated into an existing urban form of high density mixed uses.

## **4.2. The built environment as a factor in travel behaviour**

The literature on transit-oriented development provides best-practice guidelines for development around stations. At the core of the theory, however, is the notion of encouraging sustainable transportation through walkable, pedestrian-oriented design. Transit stations and transfers between various modes naturally create pedestrian activity. However, there is a relationship between the built environment and travel behaviour that can influence the mode of transport for work and non-work trips. As was mentioned previously, the urban design and land use of the core area around a station has significant influence on ridership (APTA, 2009). Newman and Kenworthy (1999) see the intensification of urban activity with the integration of transit as a viable strategy for reducing automobile dependence. They describe this concept of an urban village which is, “to create multimodal centers with mixed, dense land use that reduce the need to travel and that are linked to good transit” (Newman & Kenworthy, 1999, p. 144).

In Figure 1, the Newman and Kenworthy illustrate the statistical relationship between activity intensity (the number of people and jobs per hectare) and passenger car kilometres per capita. It shows that passenger car kilometres decline as activity intensity increases. The point at which there is a significant drop off of vehicle kilometres is around 35 people and jobs per hectare. This number reinforces the argument that density is required to support public transit, and that urban density can explain 96% of the variance in per capita transit use. The development of urban areas that concentrate density within a one kilometre radius pedestrian shed (ped-shed) should have 10,000 people and jobs to achieve significant reductions in automobile use (Newman & Kenworthy, 2006).

**Figure 1 – Activity Intensity vs. Passenger Car Use in 58 higher-income cities (Newman & Kenworthy, 2006)**



Several studies have examined the relationship between the built environment and travel behaviour. Using statistical tests that captured three built environment dimensions for fifty neighbourhoods in San Francisco, Cervero and Kockelman (1997) concluded that density, mixed land-uses and pedestrian-oriented designs generally reduced trip rates and encouraged non-auto travel. Density as a variable in travel demand was the strongest influence on personal business trips, while walking quality had a stronger influence in non-work trips. All three dimensions of built environment – density, diversity, and design – in combination produced a more meaningful impact on travel behaviour. In a previous study conducted on a smaller scale, travel behaviour in two different neighbourhoods in San Francisco was compared: Rockridge, a compact, mixed-use and walkable neighbourhood, and Lafayette, a low-density, post-World War II auto-oriented neighbourhood. Aside from the built environment of these two communities, they are very similar in terms of geographic region, both have BART



stations and they have comparable median household incomes (Cervero & Radisch, 1996). The survey results conducted with residents of the two neighbourhoods demonstrated that the modal share for non-auto forms of transport was higher in the compact and walkable neighbourhood of Rockridge. In other words, a pedestrian-oriented and compact built environment will promote sustainable forms of transport such as walking, cycling and transit even compared to less dense neighbourhoods that also have a rapid transit station.

Both the statistical research on activity intensity and the built environment demonstrate why rapid transit stations are ideal locations to encourage compact and higher density development. In the case of Main Street station, promoting sustainable transportation is dependent on these built environment factors. This literature justifies why Main Street station should be a compact and pedestrian friendly community, and an urban design assessment later in the project will determine whether the station area is successful in this regard.

### **4.3. The role of urban design principles**

Urban design is “the process and plans by which cities, towns, villages, and new communities are planned, designed and built” (von Hausen, 2011, p. 6). It is a comprehensive and multi-dimensional process that can be applied across many scales, from a single building to the street, the neighbourhood, city and then region. Urban design is therefore inherently contextual to the urban space in which it is being applied. The process of urban design relies on several fundamental principles that provide a framework and direction for design solutions.

In this project, seven urban design principles that were developed by the Commission for Architecture and the Built Environment (CABE, 2000) are used to assess the quality of urban design around Main Street station. These principles are common among any successful place, whether it is a street, neighbourhood or town. It was determined that good urban design can produce higher returns on investment, deliver accessible and inclusive amenities, improve the sense of safety and security, and create more energy efficient development (CABE, 2001). These seven objectives of good urban design used in this project are: character, continuity and enclosure, quality of the public realm, ease of movement, legibility, adaptability, and diversity. These are not specific to any place, but rather outline a general goal for achieving good urban design performance. They are also mutually reinforcing and have considerable overlap, and therefore cannot be considered discrete goals. While this specific urban design framework is used for analysing the Main Street station area, the principles are derived from a wider forum of urban design literature.

Perhaps the most powerful role of urban design is to ensure the continuity of urban experience, as argued by Ernest Sternberg (2000). This role is fundamental to, "...protecting, and restoring cohesive experiences of built form" across private and public spaces (Sternberg, 2000, p. 267). An urban design plan should not reflect the individual interests of a single developer or land owner, but rather it should apply a cohesive vision across public and private property boundaries (Sternberg, 2000). The urban designer, "must contend with the multiple forces that generate the built environment, primarily those of the private real estate market and secondarily government regulations aimed at policy objectives" (Sternberg, 2000, p. 266). For example, an architect working for a developer on a single building might have a particular design vision, but how that

building design fits into the wider context of street and neighbourhood is a question answered through an urban design framework. The consequences of not creating such a framework are buildings and spaces that serve a narrow, singular purpose, rather than supporting a continuous urban experience. Sternberg's integrative theory of urban design is based on the underlying principles of legibility (Kevin Lynch), good form (Camillo Sitte), and vitality (Jane Jacobs).

Good urban design relies on an arrangement of physical elements to create a sense of place. The visual perception of the built environment is what Kevin Lynch terms "imageability" – or the way people orient and make sense of their environment through basic physical elements (Lynch, 2007). By studying a person's mental image of the city, Lynch determined there were five unique physical elements that contribute to a sense of place: paths, edges, districts, nodes and landmarks. These elements are interchangeable and have varying levels of importance in an individual's mental image of the city. For example, a person driving a car might understand the road as a path for travelling along, but a person walking would see that same road as an edge or a barrier to movement. Lynch explains that we are continuously organizing and structuring our surroundings so, "when reshaping cities it should be possible to give them a form which facilitates these organizing efforts rather than frustrates them" (Lynch, 2007, p. 165). This basic and unconscious human behaviour has important implications for urban design by allowing us to foster a strong sense of place.

The work of Kevin Lynch in understanding how humans perceive the built environment provides a strong reason for urban design to prioritize human needs by creating people-oriented places. Poorly designed urban environments do not provide spaces for human interaction because they are not scaled to the human form. This

argument is prominent in anti-modernist planning and traditional town planning theorists such as Léon Krier. He suggests that the “social and cultural complexity of a city has necessarily to do with its physical and structural complexity and density” (Krier, 2007, p. 243). This means that the urban form of a city plays a fundamental role in facilitating the social and cultural interactions of people, which he argues is suppressed by the fragmentation of spaces in a large, modern city block. It is why the city block “cannot be established more precisely than the ideal height of the human body” – it should be small in length and forming many interconnected streets and urban spaces (Krier, 2007, p. 243). The rejection of modernist planning ideology was championed by Jane Jacobs in the early 1960s in New York City. Jacobs celebrated the vibrant neighbourhood streets of her hometown in the midst of large scale urban renewal schemes that were clearing so called blighted areas (Jacobs J. , 2007). The emphasis that Jacobs placed on a neighbourhood design that encouraged vitality through human interaction and community building was seminal in changing the way we approach principles of urban design and planning.

The principles of urban design discussed in this chapter are fundamental to creating successful places. If the Main Street station area is to be considered successful (i.e. compact, walkable and vibrant) it must also be a physical environment that reinforces and promotes these principles. The following chapter outlines the methodology used to explore the historical context of development around Main Street station and to develop a qualitative understanding of the built environment. Using the seven principles established by CAFE, this assessment establishes the overall success of urban design within the station area.

## **5. Methodology**

The research methodology is a multiple methods approach with data collected from qualitative interviews, document analysis, and direct observation of the study area. The research project is intended to be a longitudinal study of Main Street station over a period of approximately 25 years, therefore several methods were required to gather sufficient historical and present-day data. A multiple methods approach allows the researcher to analyse historical secondary data through document analysis and provide a comparison to the existing station using observational data. The methods chosen are complementary and encourage an in-depth understanding of this particular station over time.

### **5.1. Qualitative Interviews**

Qualitative interviews use guiding questions, but unlike a structured interview, remain open to the flow of dialogue (Babbie & Benaquisto, 2010). The data collected from interviews provided a historical context to the development and planning of Main Street station. This data was used in conjunction with document analysis to broaden the understanding of why there may have been barriers to development and what political and economic priorities existed within the region and municipality. The researcher sought expert opinions on the design of the station, the area's development potential and the historical politics of the 1980s when the station was constructed.

These interviews were conducted between February and October 2011, during and after a period of document analysis. Interview candidates were selected based on their expertise and professional history which would be relevant to studying Main Street station. A broad cross section of interviews was conducted with seven people, including a planner with the City of Vancouver, a real estate and urban land development expert, a former politician, and former planners with BC Transit and the Greater Vancouver Regional District.

The limitation of this method was a lack of response from some potential interview candidates. An effort was made to contact the developer of City Gate and a non-profit transportation advocacy group; however a lack of response meant that no interviews could be scheduled. Because the scope of this research dates back several decades, some of the original people involved in the planning and design of the station were not immediately available within the time period of research. However, given the amount and detail of historical documents, these limitations did not significantly impact the quality of the research or impede effectively answering the research question.

## **5.2. Document Analysis**

The analysis of secondary data related to Main Street station formed a significant part of the historical research. Documents were primarily collected from the City of Vancouver Archives, and included council reports, interdepartmental memos, meeting minutes and letters on file with the City Clerk. A keyword search in the Archives' online database generated individual publications such as the "East False Creek plans", as well as fonds that spanned several years. This search generated approximately a dozen individual fonds containing on average between 20 and 50 items. Within these locational

fonds were council reports, extracts from meeting minutes and other public records that related to the particular location of “Main and Terminal” and date range. The most relevant data started around 1980 and continued through to 1990, with the majority of planning and council documents generated in the middle of the decade. One particular fond contained solely council documents (those submitted to City Council) and included approximately 30 individual reports, letters and minutes that related to the “ALRT” and the area “Main and Terminal” between 1982 and 1986.

Some document research on light-rail transit was also carried out at the Metro Vancouver library in Burnaby. The Greater Vancouver Regional District produced the initial technical plan for a light-rail rapid transit system in 1979, yet very little besides the alignment was carried over in 1980 to the provincial project administrator. This research was conducted first as a way of determining how far back the Main Street station figured in the historical record.

Each page of the archived items was photographed and digitized – in total over two hundred raw files were processed. The planning reports published between 1983 and 1986 were then converted into a single digital file to facilitate later analysis. In addition to written documents, photographs and newspaper articles of the study area were collected from online indexes and the City of Vancouver Archives.

### **5.3. Qualitative urban design assessment**

A qualitative urban design assessment was chosen to illustrate the performance of urban design around the Main Street station area and to determine how well it achieves the ideal conditions of a compact, walkable and vibrant community. The assessment is

based on seven urban design objectives (principles) developed by the Commission for Architecture and the Built Environment (CABE, 2000). While this report was produced in the United Kingdom, the objectives put forward are based on an established literature of urban design principles and therefore relevant to designing any successful urban environment (see Chapter 4.3).

Direct observation was the primary data collection method for this urban design assessment. The observation visits were supplemented by online aerial photographs and Google Streetview images for additional analysis and to compare with observation data. Photographs were taken during the observation site visits of the pedestrian environment including buildings, public spaces and station access points. These photos were used to reinforce the research results by illustrating particular features and environments around the station.

Observation visits were conducted three times on April 20, May 31 and June 4 2011. The researcher spent approximately 20 to 30 minutes on site each visit to observe the physical environment in and around the station. All visits were conducted on foot and would involve walking through the City Gate development, around the station plaza and along arterial roads such as Main Street and Terminal Avenue. This could be completed in a 20 minute period, with additional time spent sitting in various public spaces around the study area. By spending time sitting in a public space, the researcher could observe details such as the points of access and how building structures related to the space. More than one visit was conducted so that a more accurate sense of feeling could be established about the spaces around the station. What did it feel like as a pedestrian to be walking next to a busy arterial road? Did the building designs create an unpleasant



pedestrian environment? These were questions that would be more accurately answered through several site visits.

The purpose of this method was to understand the physical environment and local context of the station, and did not involve observing the behaviours or actions of people. The scope of the research is intended to be a limited urban design assessment and did not require collecting specific data on people within the study area. Therefore, observation times were chosen with no particular sampling strategy in mind. The assessment is not an exhaustive list of strengths and weaknesses. It will provide an initial understanding of the physical environment around the station by identifying particular elements that fall under the seven design objectives. It is hoped that with this information a valid conclusion can be drawn about the quality of urban design of the Main Street station area. In order for the station area to achieve the performance goals of a transit-oriented development, and to be considered a compact, walkable and vibrant community, it must clearly reflect the principles used in the urban design assessment.

## 6. History of the Station

A pivotal moment in the history of Vancouver's transportation policies was the rejection of a downtown freeway system over forty years ago. A proposal in 1967 to open up expanding commercial development downtown with a new freeway (the route would have been along Main Street) was met with intense public opposition (Punter, 2003). By 1972, after several years of failed attempts to scale back and revise the proposal, "even the Downtown Business Association was favouring investment instead in rapid transit" (Punter, 2003, p. 25). The plans to build the freeway through Chinatown and along the waterfront were scrapped and a new political party, TEAM, was elected to council. A regional rapid transit system was envisioned soon after in 1975 by the Greater Vancouver Regional District (GVRD) as a tool for linking the Metrotown, New Westminster and Surrey town centres to downtown Vancouver (Cameron, 2011). This would be the first such system in the lower mainland closely integrated with regional land use planning (town centres) and transit planning. The GVRD had developed a detailed plan that set out the preferred alignment, station design and technical details of a light-rail (LRT) system. This plan also included the specific location and design of a station near Main Street and Terminal Avenue (GVRD, 1979).

While the GVRD had recommended a light-rail system that would be primarily at-grade, the Provincial Government, which took over the project, chose instead to proceed with a proprietary technology developed in Ontario that was called advanced light rapid transit (ALRT) (Stutt, 2011). The ALRT system would be run on an elevated guideway

for much of the alignment. It was a driverless technology that required an exclusive right-of way, and this could be most economically achieved by elevating the tracks along a guideway (Stutt, 2011).

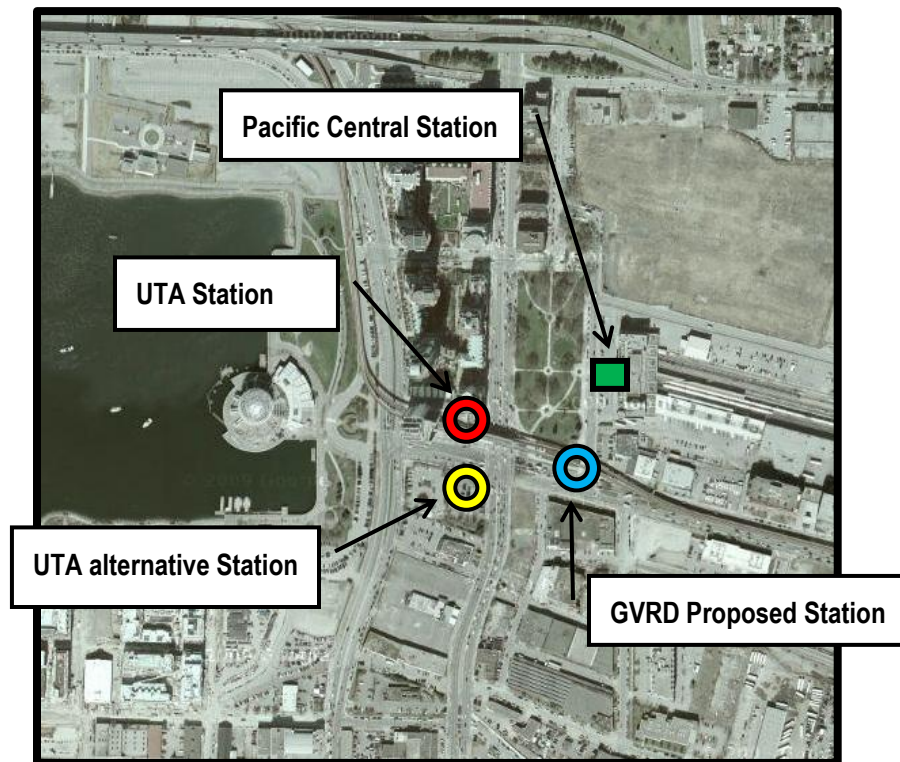
There were several implications for the Main Street station when control of the project was assumed by the Province. The GVRD had designed an elevated light-rail station for the centre median of Terminal Avenue, adjacent to Pacific Central Station (CN train station), and a track that would run at grade, east along Terminal Avenue.

An activity centre station is located on the aerial structure at Terminal Avenue adjacent to the CN VIA Rail/Amtrak station. This station will enable LRT passengers to transfer to and from the heavily travelled Main Street bus and it is also convenient to the transcontinental passenger train terminus and a proposed location for the inter-city bus terminal (GVRD, 1979).

However, on January 25, 1982, the provincial government announced that the Main Street station would be built on land on the northwest corner of Main Street and Terminal Ave (MacDonald, 1982). The decision to build a station at this site was the result of an agreement between the project manager (Urban Transit Authority) and the developer who owned the land (O&K Tract Developments). While there is no one clear and simple reason why the station location was moved from the original GVRD proposed site, a few probable reasons can be extrapolated from historical documents. It is important to note that the Province had a strict deadline to have the entire ALRT system operational for the 1986 Exposition (Harcourt, 2011), and so planning decisions were time sensitive (UTA, 1982). The Main Street station in particular was the first station ever built for a demonstration line in 1982. It was essentially an experiment to test the ALRT technology, determine what equipment and amenities would be required for stations, and to teach local contractors how to build the system. The purpose of a “pre-build” was

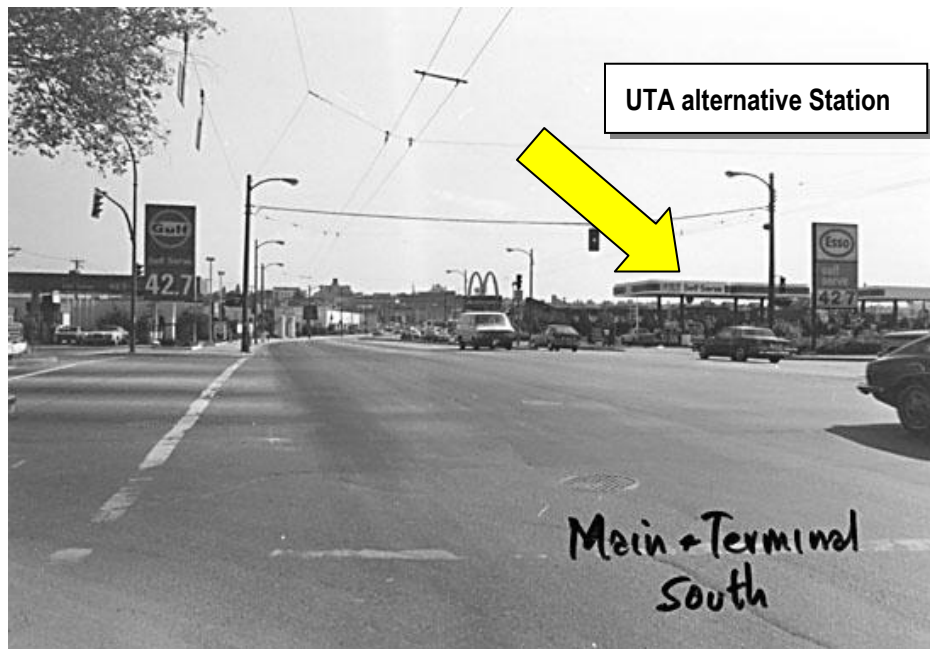
to learn critical information that could be used to generate lower competitive construction bids and ultimately save millions of dollars (UTA, 1982).

**Figure 2 – Map of proposed Main Street Station locations (Author’s custom Google Map)**



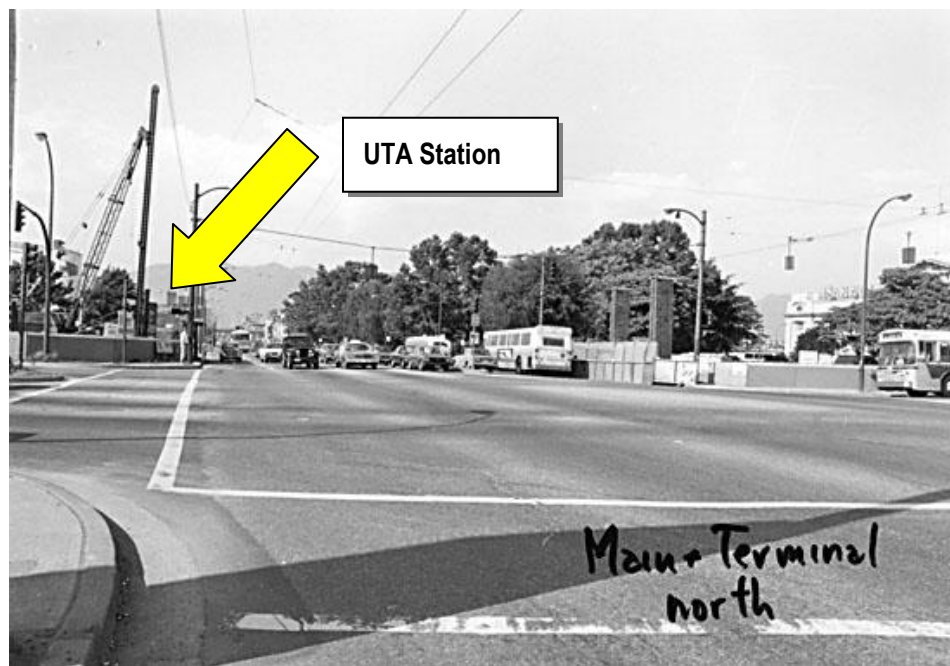
In the summer of 1981, the UTA began searching for alternate locations for a station because it was decided that the proposed GVRD station in the median of Terminal Avenue would block views, including traffic lines of sight, require the removal of trees and have poor bus passenger access (UTA, 1982). This reasoning against the proposed GVRD station was not substantiated by any report other than the one provided by the UTA.

**Figure 3 – Main and Terminal south, Source: © City of Vancouver (City of Vancouver, 1980-1985)**



A consultant, Richard Mann of Thompson Berwick Pratt, was hired in July 1981 by the UTA to examine alternate locations, and two in particular were recommended: the northwest corner of Main and Terminal, and the southwest corner of the same intersection (Figure 2 – Map of proposed Main Street Station locations). The “UTA alternative Station” site was owned by the City, however it was currently being leased by a gas station (Figure 3). The City and the UTA determined the buyout costs of the lease would be \$150,000 (approximately \$350,000 in 2011 dollars) and take 6-9 months to complete (UTA, 1982). This time and extra cost were not compatible with the project deadline or budget (UTA, 1982), and so an agreement was negotiated with Robert and Gerry Olma (of O&K Tract Developments); the owners of the “UTA Station” site (Figure 4) (MacDonald, 1982).

**Figure 4 – Main and Terminal north, Source: © City of Vancouver (City of Vancouver, 1980-1985)**



A resolution submitted to Vancouver City Council on February 1, 1982, recommended that the station be relocated to city-owned land on the southwest corner of Main Street and Terminal Ave. This resolution, moved by Alderman Eriksen and seconded by Alderman Yorke, suggested that “increased land values resulting from rezoning of transit station sites should benefit Vancouver taxpayers” (City of Vancouver, 1982).

A letter written by the UTA Project Administrator, Michael J. O’Connor, and dated February 4, 1982, argued the benefits of a station located on the northwest corner of Main and Terminal (UTA, 1982). The increases in land value would affect all four corners of the intersection of Main and Terminal, including City-owned property on the south side of Terminal Avenue. According to the UTA, there would be little or no added value by moving the station from the northwest corner to the southwest corner on city-owned land

– which was the intention of the proposed resolution. It was calculated that as a result of the adjacent ALRT station, a net gain in the range of \$10-\$15 million could be realised should the City wish to sell or develop their land (UTA, 1982). It was also noted that City land would remain unencumbered by the station or guideway foundations, suggesting it would be easier for redevelopment to occur

The City and transit users are thus getting for no extra expense a station that is: more convenient for passenger access and transfer; involves fewer pedestrian and bus movements at a busy intersection; [and] an integrated development that should be attractive and convenient (UTA, 1982).

This letter was written in response to the resolution submitted by Alderman Eriksen because the UTA strongly opposed the location change. Not only had significant station design considerations already been made for an integrated development with O&K Tract Developments, but the “pre-build” demonstration line was to be constructed that same year. This meant that Main Street station would have to be fully constructed by the end of 1982, and a change in location would have major cost and scheduling consequences (UTA, 1982). There was also, however, a mutual benefit to both the UTA and land-owner of the northwest site because of the deal that had been reached.

O&K Tract Developments owned the land on the northwest corner and agreed to sell the right-of-way through their property for \$1 and to coordinate a joint development with the station. As part of their agreement with the UTA, O&K Tract also agreed to pay \$2 for every constructed square foot of floor space, which could amount to approximately \$2 million. This fee was negotiated in part because of the expected increases in land value due to the presence of the rapid transit station, as well as the additional costs associated with building the station on this site (UTA, 1982). It also

meant that it was in the financial interests of the UTA, a provincial corporation, to not only preserve this deal, but see that the proposed development went through.

The provincial government are now in a form of partnership with the Olma brothers and their O&K company. The reason they're in partnership is that the larger the commercial development at that station site, the more UTA gets back at \$2 a square foot... (MacDonald, 1982, p. 8112).

The motion to relocate the station to the southwest corner, however, was defeated in City Council on February 9, 1982, by a vote of 8 opposed (including Mayor Harcourt) and only the original movers, Alderman Eriksen and Yorke, in favour (City of Vancouver, 1982). Construction on the station began in May 1982 after the UTA awarded an \$11.2 million contract to Commonwealth Construction Ltd of Burnaby, and was expected to be completed by December 10, 1982 (Globe and Mail, 1982).

The Main Street station site on the northwest corner was bought by Newco Investment Corporation, who retained Gerry Olma (previously of O&K) to manage their proposed development adjacent to the station (Carline, 1984). A memorandum dated January 13, 1984 from Associate Director of Planning, J.T. Carline, to Mayor and Council, clarified that the original payment deal from 1982 still existed. The fee was intended to be used by BC Transit (formerly the UTA) to improve integration with the adjacent development and other "improvements for the public good", but it would in fact only be generated by a site area that was two-thirds the size of the total development site, or 500,000 square feet (Carline, 1984). Based on the development being proposed by the new property owners, Newco Investment Corporation, the likely payment would be around \$1 million. Mr. Carline suggested that this money could be used to build a pedestrian overpass from the station to City-owned property west of Quebec Street, although BC Transit was under no obligation to spend the entire development fee on the



station and budgetary concerns would likely prevent such a plan coming to fruition (Carline, 1984).

Newco Investments was pursuing an integrated development with the station prior to Expo, and Vancouver City Council had granted a variance in development processing that allowed their proposal to be heard at the same time as the policy plan and rezoning were occurring. Mr. Carline's memo to council was written at the time that Newco was pursuing a development permit, and was intended to clarify the details of a "development fee" before the proposal was presented to the Planning and Development Committee on January 26, 1984. At this meeting of the Planning and Development Committee, Mr. Paul Merrick of Chandler Kennedy Architectural Group, project architects, presented the mixed use development plan that would be integrated with the station. It was to include a 356 room hotel with convention facilities, 250,000 square feet of office space, 94,000 square feet of retail space, 162,000 square feet of residential apartments and 30,000 square feet of recreational and social amenities. In total, the project would reach the maximum FSR for the site which was 5.0, according to Mr. Carline (City of Vancouver, 1984). At this presentation of the development proposal, Mr. Merrick "advised that as this project would become part of the ALRT station, it would be a gateway to False Creek and the downtown core from the east" in addition, "the proposal would act as a catalyst to further developments in the district" (City of Vancouver, 1984, p. 1). Newco never followed through with this proposal and the land adjacent to the station was sold in 1988 to Bosa Development Corporation. There is also no evidence that the development fee for the UTA (BC Transit) was carried over to the new land owner. This was a contractual agreement between the UTA and Newco Investments that was conditional on the construction of their specific project. The

subsequent development application from Bosa for the City Gate complex is discussed in Chapter 8.1.

The history of Main Street station suggests that time-sensitive decisions played a critical role in determining its current location and design. This time sensitivity was due entirely to a requirement to have the rapid transit system fully operational by the 1986 Exposition. While the original location proposed by the GVRD had a station that related better to Pacific Central Station and offered a shorter walking distance, there was little time between 1980 and 1982 when the “pre-build” demonstration line was constructed, to determine the necessary details of design, land-ownership and location. The pre-build station and track became a necessary component to the project because it would familiarize contractors with construction methods, generate feedback from the public on station amenities and ultimately save money when construction bids for the rest of the system were awarded. Main Street station was the “experiment”, and it required location and design decisions to be made in a short period of time so that it could be tested. Therefore, based on the information presented in this section, the decision to build the station on the northwest corner of Main and Terminal was the fastest, easiest and cheapest option given the time constraints. The original owners of the land (O&K Tract Developments) were willing to provide the right-of-way as well as a development fee to the UTA, negotiated due to the projected land-value increase and a proposed joint development. These factors contributed to a strong case on the part of the UTA for situating the station in its current location.

The implications of this history was that Main Street station served its role as a demonstration line and gateway station for Expo very well, however its long-term role as an integrated and multi-modal station were not well served. The design and construction

of the demonstration station preceded most of the planning and rezoning process, which was started in 1983 and formalized as a policy plan in 1984 (City of Vancouver, 1984). The station was also built with a mezzanine and escalator on the west side (Expo side) only, and a stairway leading directly to the platform on the east side was added as an afterthought (Rock, 2011). Ticket vending machines are located on the platform at the top of these stairs because there is no other place for them. This meant easy access to the Expo grounds on the west side, but without an established station entrance on the east side, access to Pacific Central Station and northbound bus routes on Main Street was very poor.<sup>4</sup> The joint development proposal from Newco Investments also did not proceed, although it was originally a key argument for locating the station on this site. While an adjacent development (City Gate) was eventually built around the station, the first buildings were not completed until a decade after the station was built.

This history reinforces the argument introduced earlier in this project that land-use planning and transit are often disconnected because they don't occur at the same time. The historical example of North False Creek shows how factors other than transit were influencing redevelopment. The history of Main Street station demonstrates that while a planning process, development proposal and transit station were seemingly integrated, factors such as a launch deadline and financial concerns propelled one priority (the station) ahead of the others. This is not to suggest that future redevelopment

<sup>4</sup> In a 2007 report, Translink described Main Street Station as one of the most deficient stations in terms of quality of access for all users. Because of the poor design with stair-only access on the east side and anticipated increased passenger volume due to future growth in Southeast False Creek, Translink has targeted this station for significant upgrades (Translink, 2007). As of 2011, funding has been approved for station upgrades at Main Street, which will include a new east station house and redesigned west entrance.

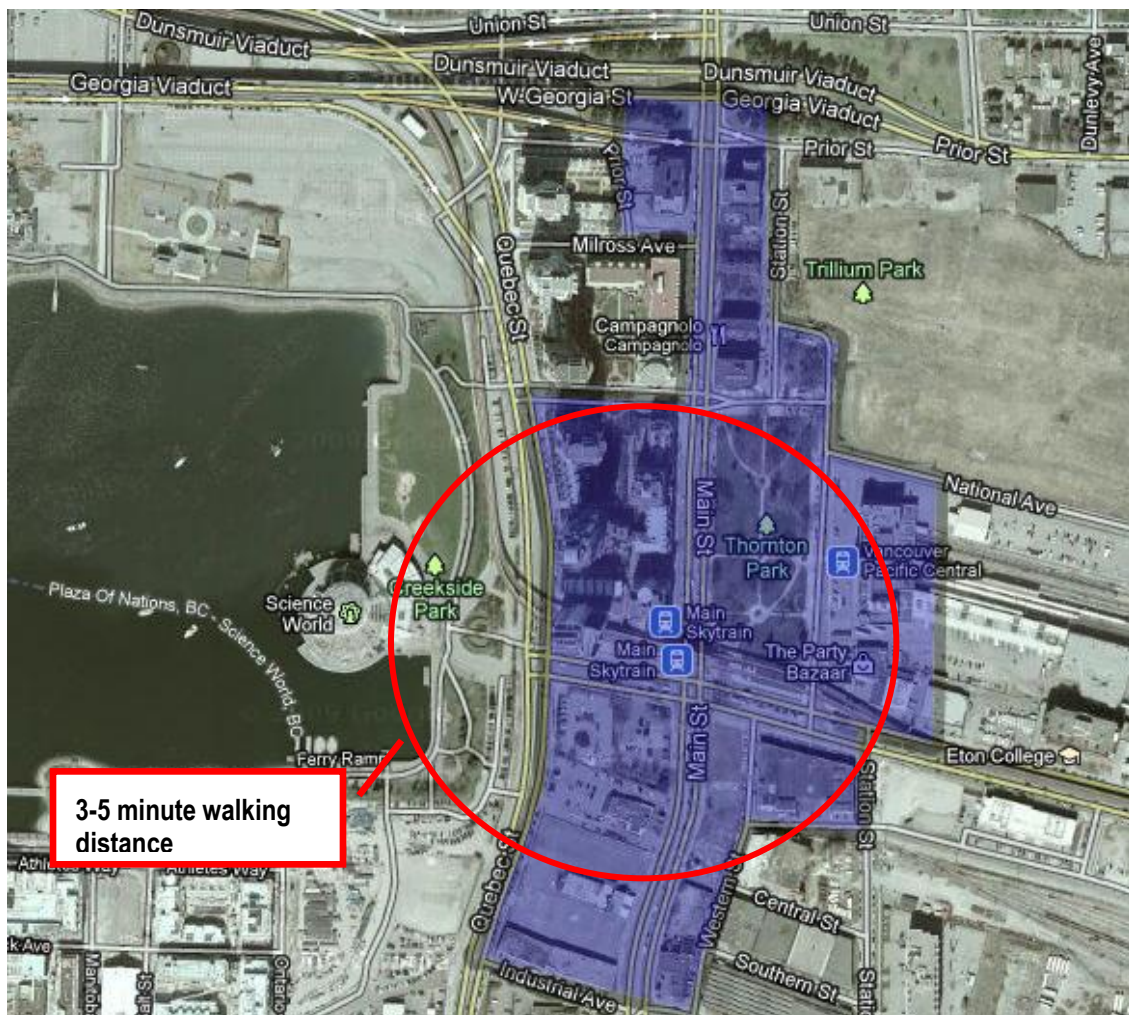
cannot effectively be integrated with the station using a transit-oriented development strategy, however it has meant that for nearly 10 years, the potential urban transformation of the area did not occur. The City underwent a period of planning between 1983 and 1986 for the East False Creek area which recognized the need to concentrate redevelopment around the station. The policy plan and rezoning that emerged from this planning process provided the foundation of a transit-oriented strategy for redevelopment.

## **7. Station Area Planning 1983-1986**

A period of planning and rezoning for the East False Creek area took place between 1983 and 1986, after the Main Street station was constructed. The first planning document released in September 1983 determined the boundaries the study area, which included the Main Street station area and outlined the planning policies to be used for future development and land-use decisions. These policies included the extent of mixed use development and retention of industrial operations, the urban form and character of East False Creek, and policies relating to movement such as arterial roads, transit and pedestrian improvements. A policy plan, approved by City Council in May 1984, initiated a large scale rezoning of land around the station. The plan was based largely on the 1983 planning policies document, and formalized the vision for a high-density residential neighbourhood around the station by creating the FC-1 district zoning schedule. The FC-1 designation replaced the M-1 industrial zoned land around the station and allowed for mixed-use commercial and residential development. The last planning document released in February 1986 was to “help achieve good quality development in the East False Creek area, and to ensure the compatibility of different uses (including residential) in a high-density mixed commercial use neighbourhood” (City of Vancouver, 1986a). This document was an urban design and development guideline that would ensure a mixed use neighbourhood character and a continuity of built form. The planning process for East False Creek had established some of the early design principles used in North False Creek, including a strong street enclosure, tapered buildings, protected view corridors and mitigation of traffic noise (Punter, 2003).

These three planning documents illustrate the vision for redevelopment in East False Creek and will guide the discussion on how the area has changed over time. At the end of this chapter, an analysis of recent planning initiatives in East False Creek will offer clues as to what factors have influenced development (or the lack of) around the station.

**Figure 5 – East False Creek FC-1 zoning district in 1984 (Author’s custom Google Map)**



## **7.1. East False Creek Planning Policies 1983**

The East False Creek planning policies (1983) report outlined general policies relating to the mixed use character, built form, and movement in the area. Using existing development influences and constraints, the report determined that this area was suitable for high density residential and commercial development over a long term period of 25 years. The BC Place development proposal, expansion of the adjacent Strathcona neighbourhood and extensive City land ownership around the ALRT station were considered positive development influences. The proposed redevelopment of BC Place land and the “desirable” Strathcona neighbourhood would put pressure to expand the residential opportunities in East False Creek. Other influences included the presence of the ALRT station at Main and Terminal which would improve accessibility to the area and park amenities such as Thornton Park that would provide a focus for intensive development around it (City of Vancouver, 1983). However, the presence of industrial operations, arterial streets and rail yard facilities were development constraints due to the high levels of noise they generated. Some industries, such as the LaFarge Concrete plant and rail yard operations would be incompatible with new residential development, although the City’s objective was also to maintain and encourage economically viable industries that provide jobs (City of Vancouver, 1983).

The report poses a question regarding future land-use: “Should the entire East False Creek area remain predominantly industrial, or should the development of other higher-intensity uses be encouraged in certain locations to achieve certain public objectives?” (City of Vancouver, 1983). The report recommended a policy that current compatible industries be retained and encouraged with new mixed-uses, and incompatible industries be concentrated on the south shore of False Creek. The

residential potential for East False Creek was strengthened by the development influences noted above and, according to the report, the value of land directly adjacent to the new ALRT station.

The public return from fixed investment in urban facilities (e.g. A.L.R.T. system) can be enhanced by locating higher density residential and other development near these facilities...In summary, residential development near to the A.L.R.T. Main Street station would increase ridership potential, assist the GVRD Livable Region Program (*sic*) concept of living close to work, contribute to a range of day and evening activity around the station, and would help to support other mixed commercial uses (City of Vancouver, 1983).

In addition to the economic benefits of residential development near the station, the City report indicated that it could improve ridership on the Skytrain system and would promote a range of activity around the station. This objective closely mirrors that of a transit-oriented development scheme which not only supports increased transit ridership (Cervero, 2007), but also promotes placemaking (Dittmar & Ohland, 2004).

Concentrating mixed land uses around the station would generate pedestrian activity and create a “distinct residential neighbourhood” (City of Vancouver, 1983). This distinctive character and sense of place is reinforced by people living around station as it evolves from the functional role of a station to a destination in itself. While the terminology of a transit-oriented development is not explicitly used, the goal of these planning policies is to leverage the positive benefits of concentrated development around transit.

## **7.2. East False Creek Policy Plan 1984**

Following the initial planning policies report (1983), the East False Creek Policy Plan was released in February 1984 by the City of Vancouver planning department. In



May of that year, City Council had approved a new FC-1 district zoning schedule for East False Creek that included land previously zoned M-1 industrial around Main Street Station. This new zoning designation provided the opportunity for mixed residential and commercial uses to be built in an area close to the station. The policy plan primarily incorporated the recommendations of the planning policies report (1983) and consulted stakeholder groups and the public before establishing this new zoning schedule. Some of the concerns raised by local groups and property owners included the importance of providing good pedestrian access from neighbouring communities, minimization of traffic and parking impacts from redevelopment, and the need to maintain established, viable industries and transportation facilities in the area (City of Vancouver, 1984).

Planners anticipated that redevelopment around the station would take several decades. The 1984 policy plan states,

As the transition period for change to this more intensely developed, multiple use character will likely take many years, and is somewhat uncertain in timing and duration, this plan is intended to guide development for some extended period of time (City of Vancouver, 1984).

Short, medium and long-term land use plans that included the station area at Main and Terminal were established. In the short-term (1-10 years) mixed-use residential and commercial land uses would be concentrated around the Skytrain station while industrial land would be retained on the south shore of False Creek and east in the rail yards. The land areas around the station were considered desirable with good views and amenity potential (City of Vancouver, 1983). Medium-term (10-25 years) optimum land use would increase the amount of residential between Main and Quebec streets as some major industries, including the LaFarge concrete plant, were expected to relocate. It was also expected that during the medium term, development of the BC Place land on the north

shore of False Creek (today part of the Northeast False Creek planning area) would be complete and approximately 1500 new residential units would be built (City of Vancouver, 1983). A long-term (25+ years) land-use strategy would utilize mixed-use development opportunities on former industrial land on the south shore of False Creek and potentially east on the rail yards.

The policy plan was a comprehensive planning document that established the desired form of development for East False Creek over a long-term period. The area was intended to redevelop as primarily commercial in character but with residential and compatible industrial uses as well. The buildings directly adjacent to the Skytrain station would be a “gateway” to the city and continuous built form along Quebec and Main Streets would provide a strong sense of visual enclosure for False Creek. The emphasis on a commercial character was likely a reflection of the concurrent proposal from Newco Investments to build almost 350,000 square feet of office and retail space compared to 162,000 square feet of residential apartments.

The commercial character was also considered an effective buffer to existing industrial operations and arterial roads in the area. The development application that was approved six years later for City Gate did not retain this emphasis on a commercial character and signalled a change in the city’s policy on downtown and False Creek development. By 1990, there was a clear intention to limit new office space and encourage residential development instead, particularly in the False Creek North planning area (City of Vancouver, 1990). The expedited relocation of the LaFarge Concrete plant, which is discussed in the following section, and removal of other industrial operations, was an opportunity to expand the potential residential uses around False Creek without significant compatibility issues. With the sale of the former Expo

land to a single developer and a massive residential redevelopment proposal, the City also had an opportunity to expand this vision of urban transformation around False Creek. In fact, the City Gate development and planning of Main Street station was in many ways an experiment for the subsequent redevelopment around the north shore of False Creek. The FC-1 guidelines produced in 1986 and construction of the first residential towers in City Gate were the pioneers in this process of urban transformation.

### **7.2.1. *Compatibility of land uses***

The compatibility of multiple land uses, particularly the extent of residential mixed with industrial uses, was a potential barrier to new development around Main Street station in the 1980s. The 1984 rezoning plan intended to retain existing industrial operations, including LaFarge Concrete, Sauder Industries and the Alco Steel plant, and then gradually introduce more residential and commercial uses over time (City of Vancouver, 1984). These industries were considered viable and generators of employment, therefore the City did not want to force these companies out of the area. The Greater Vancouver Regional District would not have opposed rezoning industrial land around rapid transit stations and would have in fact supported rezoning to residential land use (Cameron, 2011). The City of Vancouver was considering how to mix industrial with residential uses and the compatibility issues that would be created.

In the sub-area of Main and Terminal, around the Skytrain station, light industrial uses would be permitted provided that the use was compatible with the “mixed-use character of the area” (City of Vancouver, 1984). The impact of noise was one particular concern that arose from mixing residential and industrial uses. The Director of Planning reported in 1983 that “extraordinary measures” would be required to buffer residential development from industrial operations and office or hotel uses were more appropriate in

locations next to arterial streets (City of Vancouver, 1983). One of these industries was the LaFarge concrete plant on the northern portion of land adjacent to the ALRT station (Figure 6). The FC-1 rezoning intentionally excluded the concrete plant and planners expected that it would eventually be relocated as the area continued to redevelop. LaFarge was concerned, however, about the impact of noise from their equipment and vehicles on adjacent residential development and the potential complaints that would result. A letter written to the Council Committee on Planning and Development by the President of LaFarge Concrete's Pacific Region highlighted the company's concern with proposed residential development.

We wish to advise that we are not convinced that the residential housing can co-exist with our neighbouring industrial operation without conflict. We foresee problems with respect to the noise from our equipment, and the movement of our vehicles... (Dunsworth, 1984, p. 1).

**Figure 6 – Main Street Station Site and LaFarge Concrete Plant, Source: © City of Vancouver (City of Vancouver, 1983)**



The content of the 1984 Policy Plan suggests that the desirability of the Main Street station area and East False Creek for residential development would be significantly affected by its compatibility with existing industrial uses. The policy regarding industrial uses, however, was to retain and encourage those compatible and viable industries within the East False Creek area (City of Vancouver, 1984). A report on the housing potential in East False Creek produced a year later in 1985 by the Director of Planning reiterated that industrial sites in this area were only being considered for longer-term redevelopment.

...It should also be noted that this report does not suggest the relocation of viable industries in the area and their replacement with housing. Those industrial sites examined are mostly seen in a longer term redevelopment context. The timing for any relocation will depend on many factors, and such relocation would likely only take place to benefit the economic viability of particular industrial operations (City of Vancouver, 1985, p. 1).

In 1988, LaFarge sold the 2.2 hectare land parcel to Bosa Development Corporation, which later became the City Gate complex (Shaw, 1988). Other companies in the area had leases on City owned land and were not expected to move until at least 1989. These properties included the land on the south side of Terminal (gas stations), and land between Main Street and Quebec Street (Dockstader auto sales).

The following section will outline the development and urban design guidelines that city planners established for the new East False Creek FC-1 zoning. These guidelines were particularly important for ensuring the compatibility of mixed uses and the provision of a high-quality public realm that was pedestrian-friendly – key goals of successful transit-oriented development.

### **7.3. East False Creek FC-1 Guidelines 1986**

City Council adopted one final planning report related to the new zoning policy titled East False Creek FC-1 Guidelines on February 18, 1986. It has since been amended in 1992 and 1996. The purpose of these guidelines was, “to help achieve good quality development in the East False Creek area, and to ensure the compatibility of different uses (including residential) in a high-density mixed commercial use neighbourhood” (City of Vancouver, 1986a). The plan articulated specific guidelines for the neighbourhood and street character, views, building frontages and heights. While it was intended to be primarily commercial in character, residential and hotel uses were also encouraged.

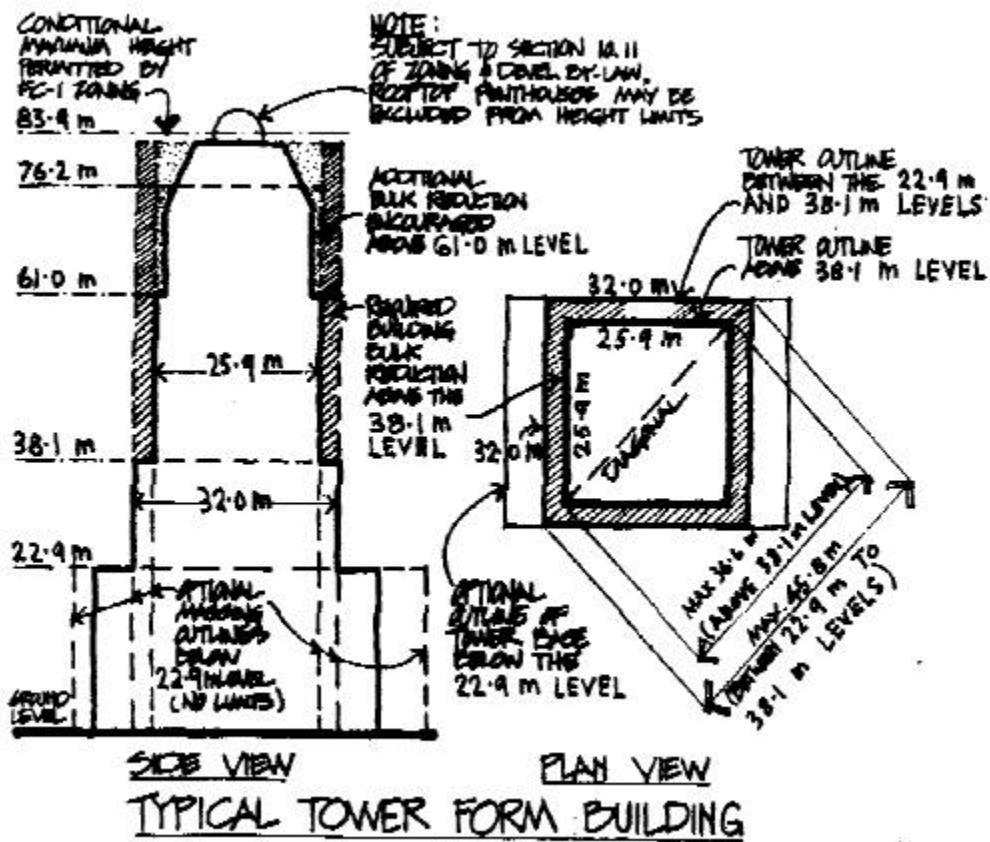
A variety of commercial uses would be focussed on Main Street, around Thornton Park and the Main and Terminal SkyTrain station location. Visitor and residential hotels are also encouraged. The proximity of the area to the False Creek waterfront and future B.C. Place eastern residential neighbourhood, and excellent views of the North Shore mountains and downtown, make certain locations desirable places to live (City of Vancouver, 1986a, p. 2).

The guidelines specify that buildings along Main Street should create a “strong, dual sense of enclosure” for eastern False Creek (City of Vancouver, 1986a, p. 2). A dual sense of enclosure would be achieved, “with medium-height buildings along Quebec Street and towers set back above” (City of Vancouver, 1986a, p. 8). At Main and Terminal, building heights should be a maximum of 83.9 meters and the diagonal distance across a building should be 43.9 meters. In comparison, the rezoning application approved for the City Gate complex several years later allowed building heights up to 94 meters (City of Vancouver, 1990). The highest buildings would be at the intersection of Main and Terminal to frame and emphasize the Science World dome as a

focal point. Tall buildings were required to taper, or terrace, as they increased in height to minimize bulky shapes and provide visual interest (Figure 7). This image illustrates the podium-style building which gradually tapers back as it increases in height. Any building above 22.9 meters in height would have to follow these design guidelines so that light penetration was maximized and scale was appropriate at street level.

Portions of buildings above 22.9 m should be stepped back a minimum of 6.1 m from the build-to lines in order to avoid an overwhelming scale on the street, as well as to admit more light (City of Vancouver, 1986a, p. 10).

Figure 7 – Drawing of Tower Form at specific heights (City of Vancouver, 1986a)



In order to minimize the impacts of noise from arterial roads and industrial operations, outdoor areas and bedrooms were to be oriented away from noise sources, doors and windows were to be sheltered and glass or high walls around outdoor decks and patios were provided. There was also a requirement that residential buildings meet the CMHC acoustic standards for noise within and outside buildings, which are 55 decibels for outdoor spaces and 35 for interior bedrooms (City of Vancouver, 1986a).

The FC-1 guidelines document became influential in future urban design requirements for downtown redevelopment. It established the principles of strong street enclosure and tapered tall buildings that were implemented in new development around north False Creek (Punter, 2003). City planners and designers were concerned about the quality of the pedestrian environment resulting from high-density development and the guidelines put forth in this document demonstrate this concern. For example, higher buildings “should be located and shaped to minimize shadowing impacts on adjacent public and private open space areas”. This was to allow sunlight to penetrate and thus create more enjoyable spaces. It was also encouraged that new development provide weather protection for pedestrians in the form of canopies on buildings because it was “important that pedestrians be adequately protected from the frequent occurrences of inclement wet weather” (City of Vancouver, 1986a, p. 5). This was an effort to ensure that the redeveloped area would be a pleasant and well designed place for people. An urban design assessment that follows in Chapter 9 will determine how the current physical environment compares to the one envisioned through these guidelines.



## 7.4. Planning initiatives in East False Creek since 1986

Unlike other Skytrain stations in Vancouver (Broadway, Nanaimo-29<sup>th</sup> Avenue, Joyce-Collingwood), Main Street did not have a dedicated station area plan. For example, the Broadway Station Area Plan intended to bring about the City's vision of maximizing the residential land-use potential around ALRT stations because, "with more people able to walk to ALRT, dependence on cars should decrease, thus reducing the number of auto commuters using City streets" (City of Vancouver, 1986b, p. 5). In addition the plan argued that, "increasing population around the stations will build ridership and contribute to the success of the ALRT and related public transit" (City of Vancouver, 1986b, p. 5). However, even though Broadway had a dedicated station area plan, the success of attracting higher-density, mixed used and integrated development has been limited. Other than downtown stations and the Joyce-Collingwood station, station area redevelopment plans in Vancouver have been largely unsuccessful. Station specific plans were not produced for downtown stations because there was substantial pre-existing office development. Instead, urban design guidelines were outlined for these stations that stated they should be integrated into the surrounding urban environment with connections to major office complexes (City of Vancouver, 1982). The high-density residential development that occurred around Joyce-Collingwood station was the result of a joint venture between the city and developer Concert Properties (Cameron, 2011). The City of Vancouver worked with Concert Properties to create a vision for redevelopment that included an amenity package for the community, lower parking requirements (1.35 versus 1.785 per unit) and 2700 residential units. Labelled a successful transit-oriented development by the Canada Mortgage and Housing Corporation, a key factor that enabled Collingwood Village to be planned as a TOD

station area was having a single developer and easy land assembly. The land around this station was previously industrial and rail yards which the City had deemed surplus, facilitating its assembly by the developer (CMHC, 2009). Concert was founded in 1989 by David Podmore and Jack Poole with a \$27 million funding partnership between the City of Vancouver, Province of British Columbia and union and pension funds (Concert, 2011). Concert, “is unusual, [Podmore] says, in that it builds and retains high-quality, new and affordable rental housing, the foundation of the company and its focus ever since (Peterson, 2000). The funding arrangement between municipal and provincial governments that established Concert came with a mandate to provide economically priced rental housing in British Columbia (Concert, 2011). The financial relationship between the City and developer would have provided strong motivation for seeing the successful implementation of Collingwood Village.

The context of Joyce-Collingwood station demonstrates that like Main Street station, there are circumstances other than rapid transit alone that will determine the success of redevelopment plans. The historical context of Main Street and Joyce-Collingwood station areas are similar in that they were both previously industrial areas and both experienced large, high-density residential developments (City Gate and Collingwood Village respectively). However, the East False Creek FC-1 planning boundary was not permanent and has gradually shifted over time. There was also a key difference between the viability of industrial land around both stations, which has impacted long-term redevelopment.

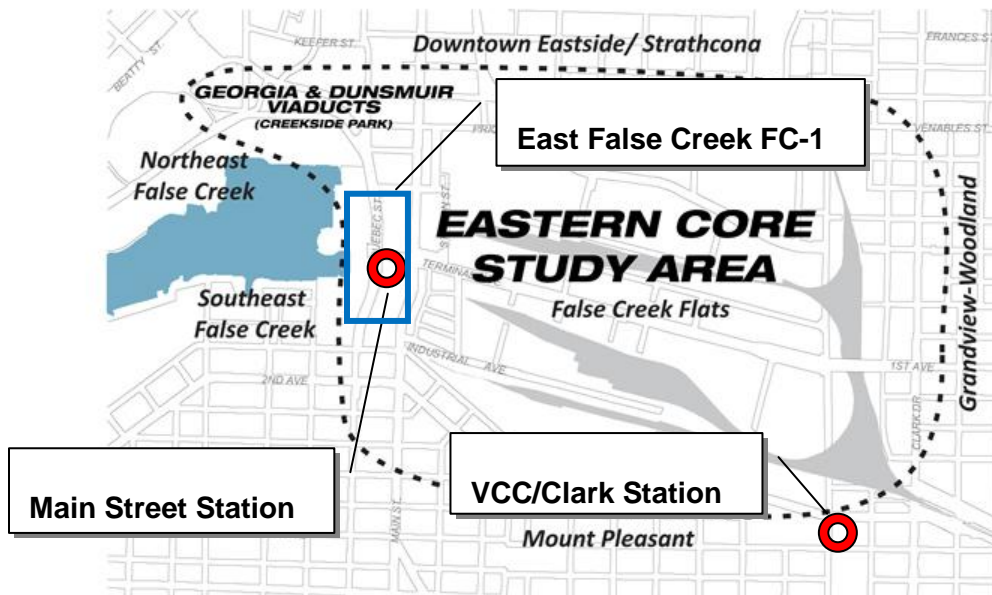
#### **7.4.1. *Shifting planning boundaries***

Over the last two decades, East False Creek and the Main Street station area have undergone changes to their planning boundaries. The land on the south side of

Terminal Avenue (adjacent to the station) has been incorporated into the Southeast False Creek Official Development Plan (2007) and further to the east of Main Street a planning area called the False Creek Flats was established for future high-tech uses. The first rezoning from industrial to high technology office uses was in 1999 on the eastern portion of the Flats along Great Northern Way. These areas were chosen specifically because they were close to existing or planned rapid transit, and this would reduce the number of employees commuting by vehicle (City of Vancouver, 2009). A 2009 policy report recommended broadening the permitted uses in the False Creek Flats area to include general office use as a way of intensifying employment near existing or planned rapid transit (City of Vancouver, 2009).

Most recently in 2011, the City began analysing the impact of removing the Georgia and Dunsmuir viaducts on a study area that reaches as far east as Clark Drive (City of Vancouver, 2011). Called the Eastern Core Study Area, it recognizes that the Viaducts and remaining undeveloped land in North False Creek are part of a larger transportation network and land use strategy that includes Main Street station and the False Creek Flats.

**Figure 8 – Eastern Core Study Area (City of Vancouver, 2011)**



Why have the original planning boundaries around Main Street station shifted since 1984? The East False Creek plan was the first redevelopment plan to be approved post-Expo, however unlike the Joyce-Collingwood development or the former Expo land on the north side of False Creek, there was not the same certainty around the future land-uses. At the time the Main Street station was constructed there were still viable industries, such as the Lafarge Concrete plant, that the City intended on protecting from rezoning.

It is recommended that only a portion of the Main/Terminal Sub-Area 2 which, except for the Lafarge Concrete and Greyhound Bus operations, is primarily commercial in character at the present time, be rezoned now to encourage further mixed-use development...Other industrial use properties within the study area on the south shore of False Creek west of Quebec, and mostly east of Main Street north of Industrial, should be maintained as industrial use zones... (City of Vancouver, 1984, p. 9).

The industrial land around Joyce-Collingwood station however, was deemed to be surplus, which gave the developer and City a clear intention of the area's future redevelopment.

The project was born from discussions between the developer and the City that identified surplus industrial lands adjacent to the newly built Joyce SkyTrain Station (CMHC, 2009).

The same viable industries also no longer existed on the north side of False Creek because the land had been assembled and sold as a single package to developer Concord Pacific. The developer had bought the land with the intention to redevelop it into a mixed residential and commercial community. As industrial companies began to shut down or decentralize and move away from False Creek, segments of land were left vacant and were consequently amalgamated into new planning areas. For example the land on the south shore of False Creek is regulated by the Southeast False Creek Official Development Plan (City of Vancouver, 2007) which includes some land from the original East False Creek FC-1 zoning district. This was a logical decision because the areas are directly adjacent to each other and share a common proximity to transportation networks and public amenities (Seawall, parks). The False Creek Flats area has also experienced a gradual de-industrialization since 1984 and educational, cultural and high-tech land uses have been introduced instead. While industrial operations were viable and worth preserving in 1984, the gradual shift away from heavy industries has meant that planners are now re-envisioning the boundaries and uses for this area. The Eastern Core Strategy (2011) that has emerged out of a discussion on the future of the viaducts is attempting to reconnect these isolated and underused areas back into the City.

Often considered as leftover or ambiguous parts of the City, re:CONNECT seeks to redefine these places in a way that transforms them into vibrant places and destinations in and of themselves (City of Vancouver, 2011).

This quote is taken from one of the planning principles guiding the study. By encouraging ideas such as “vibrant places” and “unique destinations”, its focus is on placemaking, which has been identified in both the literature and urban design assessment in this project as a key strategy for creating successful development around Main Street station.

Urban development expert and president of Urbanics Consultants, V. Philip Boname, believes the delay of redevelopment around Main Street station has likely been caused by these changing planning boundaries of East False Creek. Land owned privately and by the City has been held in abatement until a larger area plan is approved (Boname, 2011). The City Gate complex that was started in the early 1990s and completed in 2007 represents the largest redevelopment project around Main Street station, however, there are still significant areas of vacant land around the station and in the False Creek Flats. The following section will outline the scope of the City Gate redevelopment project before discussing the current urban environment around the station. A qualitative assessment of urban design in Chapter 9 will interpret this environment around the station and in the City Gate development.

## **8. Redevelopment around Main Street station since 1984**

### **8.1. City Gate**

In 1988, Nat Bosa of Bosa Development Corporation purchased 2.2 hectares of land that the LaFarge Concrete Plant had occupied. Bosa then acquired another 1.5 hectares of land from Bill Kerkhoff<sup>5</sup> on which the Main Street station was located (Shaw, 1988). This land was previously owned by Newco Investments, who had proposed in 1984 to develop an integrated hotel and office complex with the station. The failure of Newco to follow through on their development proposal meant that the land around the station was still vacant. Bosa now owned an eight acre parcel of land that stretched north from Terminal Avenue to Prior Street and was preparing to submit an application for a massive residential redevelopment.

The development application and rezoning by-law for City Gate was enacted by the City in 1990, and the site was rezoned to CD-1, or comprehensive development suitable for mixed residential and commercial uses. The permit allowed up to a maximum of 1,018 residential dwelling units including 25 percent dedicated for social

<sup>5</sup> Bill Kerkhoff has been president of Kerkhoff Construction Limited since 1977. His company developed and built several residential projects around False Creek including Harbour Cove and 1000 Beach. Kerkhoff also partnered with Hyundai Construction to build the Skytrain Bridge across the Fraser River between 1987 and 1989 (Kerkhoff, 2011).

housing. The total floor area granted for residential uses was 122,532 square meters (1.3 million square feet) (City of Vancouver, 1990). At ground level along Main Street would be retail and office uses (12,000 square feet) while residential would be located in five towers situated along the length of the property (Figure 10). The entire complex was constructed over a fifteen-year period, with the first residential towers completed in 1992 and the last in 2007. The largest commercial office space in the complex is the Vancity building (112,000 square feet), and was completed in 1995 (City of Vancouver, 2009). The development application for City Gate marked the beginning of a post-Expo transformation that was occurring at the same time in north False Creek. It was a very high-density project for the area, which now fully completed, is estimated to have a 3.8 FSR (floor space ratio) and 110 units per acre. The Southeast False Creek Official Development plan in comparison assigns an average 3.5 FSR to the entire area and a maximum building height of 64 meters at the southwest corner of Main Street and Terminal Avenue (City of Vancouver, 2007). The maximum allowable building heights for City Gate were increased from the FC-1 zoning requirements established in 1984. The CD-1 zoning approved in 1990 permitted building heights up to a maximum of 94 meters (City of Vancouver, 1990), which was higher than the 83.9 meters allowed in 1986. The decision in the Southeast False Creek ODP to drastically cap building heights at 64 meters stands in contrast to the City Gate towers.

The development application for City Gate was approved on the condition the developer would provide a public amenity package, similar to the one provided at Collingwood Village. Bosa Corporation contributed \$6 million to upgrade Thornton Park (City of Vancouver, 2009) as well as they built two daycare centres and three non-market housing projects that were turned over to BC Housing (City of Vancouver, 2003).



**Figure 9 – City Gate Design Concept 1989 (City of Vancouver, 2003)**

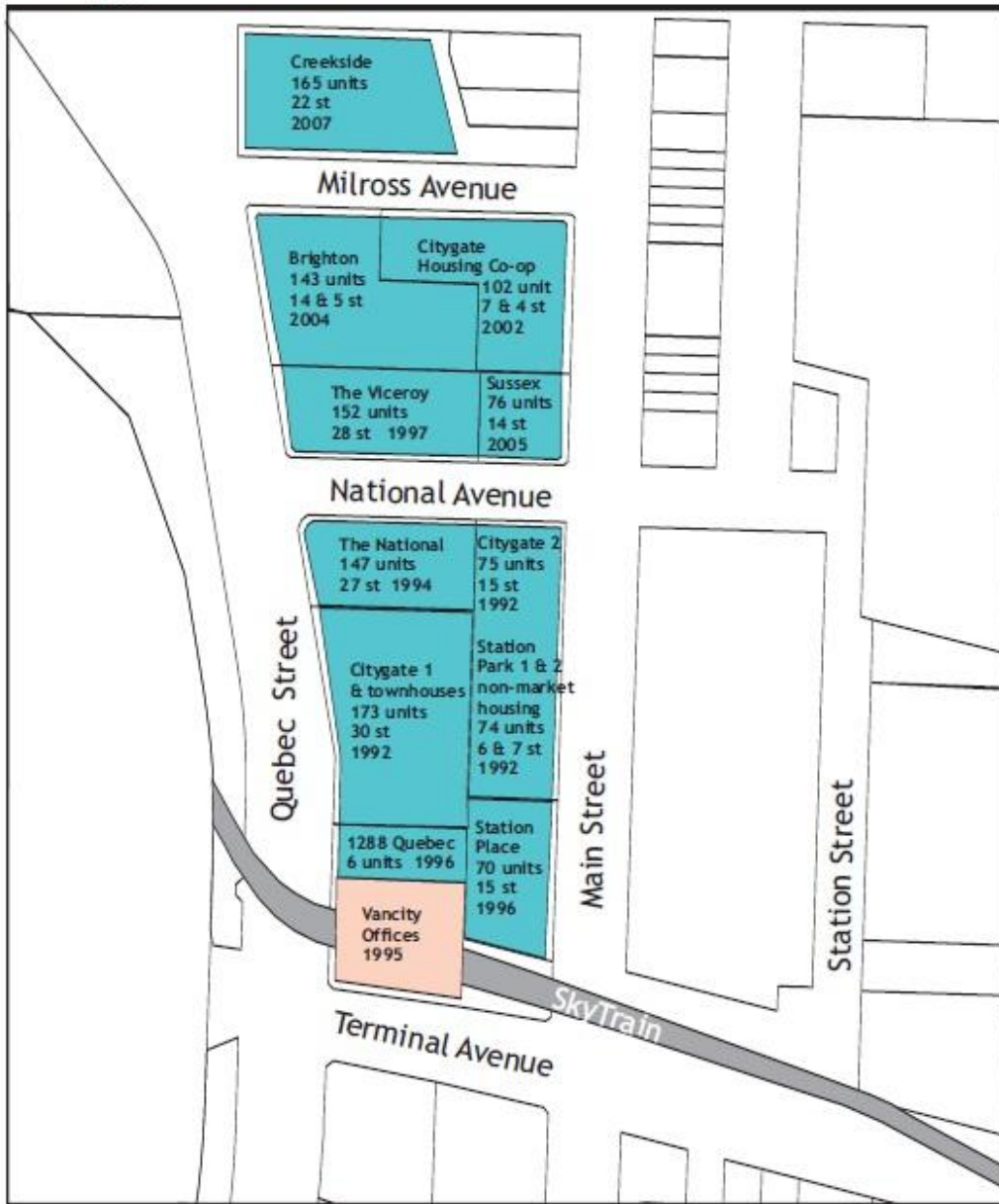


According to a Vancouver Sun article published in 1995, a 945 square foot unit in the Viceroy building was listed for \$198,800, while a 1700 square foot, three bedroom unit could be purchased for \$416,200. The project was marketed as “part of Vancouver’s new downtown” which was the “newest and most vibrant urban neighbourhood” (Whysall, 1995). This marketing vision was communicating that “downtown” was not only office buildings and the central business district, but a vibrant residential neighbourhood emerging along the shores of False Creek. In the mid-1990s there were many residential projects underway around False Creek as the area was gradually being transformed from an industrial centre to a new downtown neighbourhood. Concord Pacific Place was the largest redevelopment project at 166 acres and includes the Quayside, Roundhouse and Beach neighbourhoods. Further to the west is the Granville Slopes development

project that extends from the Granville Street Bridge to the Burrard Bridge. At 25 acres, the Granville Slopes was where some of the first residential buildings were constructed on the north side of False Creek (City of Vancouver, 2003). The City Gate development also featured some of the first condo projects completed in the 1990s and contributed to its marketing strategy as a new and vibrant urban neighbourhood.

Figure 10 – City Gate Development

# Citygate



City of Vancouver  
Planning Department  
July 2009

### **8.1.1. Vancity**

The president of Vancity during the early 1990s, Bob Quart, was positive and optimistic about opening the credit union's new headquarters at Main and Terminal. The building itself was constructed over the Skytrain guideway and directly adjacent to the station. It included "every possible environmental and energy saving feature" and underneath the tracks were two grassroots projects sponsored by VanCity, an alternative transportation centre and bike repair and rental shop (Hardin, 1996). The decision to locate away from the established banks downtown was a conscious one for Mr. Quart, "because of the uniqueness [of Vancity] in the marketplace, [it] would be better served with a site that's highly visible but sets us apart from the others as a different kind of financial institution" (Constantineau, 1992). The proximity of transit fit with the credit union's approach to "getting people out of their cars" and an interview with a former Vancity employee confirmed that there was limited parking provided which encouraged employees to use transit (Vancity, 2011). Mr. Quart also suggested the presence of Vancity "should attract more quality development to the Main Street corridor" (Constantineau, 1992).

The Vancity building is the largest commercial space in the area and based on the comments from President Bob Quart, its location in a developing neighbourhood and adjacent to public transit was in line with the corporate approach. However, the suggestion that Vancity would be a catalyst to further development is not supported by the arguments made so far about successful station-area redevelopment. There are many factors that influence redevelopment, including market forces and municipal support, and it tends to occur over a long period of time. A single building project is unlikely to be a redevelopment catalyst without these other contributing factors. The

following section will discuss the reasons why development was successful and occurred relatively quickly around some other parts of False Creek.

## **8.2. Factors influencing the time period of redevelopment around False Creek**

The period of time since the planning process began for the Main Street station area has been almost 30 years, while the City Gate project took 15 years to complete after the first building was constructed in 1992. In comparison, the False Creek North redevelopment took place in about the same length of time (15 years), yet it represented nearly eight times the number of housing units (City of Vancouver, 2003).

### **8.2.1. *Market demand and land assembly***

During the planning process of East False Creek in 1985, planners were aware of the potential redevelopment on the north shore of False Creek and around BC Place. In a report on the housing potential in East False Creek, the Director of Planning advises that new residential development will be in competition with development on BC Place land (City of Vancouver, 1985).

Given demand forecasts for multiple housing and anticipated BC Place supply proposals, it will probably take until the latter 1990's for the BC Place site to be absorbed by the market. (City of Vancouver, 1985).

The report confirms that the BC Place development should proceed before East False Creek, "because its land is assembled [and] can be serviced and marketed as a planned community with excellent amenities" (City of Vancouver, 1985). Land assemblage was a key factor to the success of the BC Place development on the north shore of False Creek. The former property manager for Marathon, V. Philip Boname,

suggests that having a large parcel of land already assembled by one owner (originally Marathon and subsequently Concord Pacific) facilitated future redevelopment around False Creek (Boname, 2011). As well, planning and design for the new neighbourhood around north False Creek began much earlier than around Main Street station – by 1974 Marathon had a development plan and Concord Pacific likewise had devised a master plan by the late 1980s. In an interview, former Mayor of Vancouver, Michael Harcourt, explained that no planning vision existed for the Main Street station area before the station was constructed. There was anticipation that the land around the Main Street and Stadium-Chinatown stations would be redeveloped over time, however, the primary impetus was to have the Skytrain system completed for Expo 86 (Harcourt, 2011).

### **8.2.2. *Reconciling the transit and development paradox***

The histories of redevelopment for North False Creek and East False Creek reveal a paradox with the impact of rapid transit on development. While most of North False Creek, owned by Concord Pacific, was successfully redeveloped and marketed as high-density urban community, the transformation of the Main Street Station area did not occur in the way it was envisioned. It is noted in the urban design assessment that follows (Chapter 9) that Main Street Station is still bordered by vacant land. Given that North False Creek and Yaletown did not have rapid transit service until 2009, when the Canada Line opened, there is reason to question the extent to which rapid transit has influenced decisions around urban redevelopment. Since the mid-1980s, a significant public investment in rapid transit and land-use rezoning plan existed in East False Creek; however the momentum of redevelopment shifted dramatically to the north and west of False Creek in the post-Expo (early 1990s) period. This shift happened with the sale of land to Concord Pacific after Expo, the approval of a rezoning and development

plan in 1990, and the gradual emergence of Vancouver into a global housing market. The former and latter factors are inextricably linked, as was discussed earlier (see Chapter 2 and Chapter 4.1.1) and may have provided the necessary factors for success – namely, the injection of foreign development capital and global marketing. The City Gate development that did proceed in East False Creek after 1990, however, was closely influenced by municipal support for the residential transformation of North False Creek. So even though the City supported redevelopment around Main Street station as a transit-oriented land use strategy, this historical trajectory suggests that there were necessary antecedents to successful growth that were not influenced by the presence of a rapid transit station.

It is also ironic that both the Main Street station and City Gate development were exercises in experimentation. The station was designed as a demonstration for the public and private contractors to learn about construction techniques and station amenities. Whereas the City Gate project represented one of the first, high-density residential tower communities along False Creek to incorporate a new design ideology. Many of the urban design principles established by the FC-1 guidelines in 1986 were replicated in the City Gate project and later with other developments in North False Creek. These principles, such as a slim tower form and strong street enclosure, were intended to mitigate the potential negative impacts of this new urban form on public and private spaces. Both of these experiments in transit and development, while novel for the City of Vancouver when they were built, still have significant deficits in design and community context.

The experience of both North False Creek and Main Street station suggests that successful redevelopment plans are not the outcome of a single factor, but rather the

combination of factors. For North False Creek, land assemblage, its location close to downtown (Boname, 2011), and municipal support in the form of rezoning, as well as the ability to service and market it as a planned community, contributed to its successful and relatively fast development.

### **8.3. Interim land-uses**

Planners expected the development of East False Creek to occur over time and therefore set out a policy on interim land uses. While the objective was to encourage interim uses that were preferable to vacant land, the policy does not recognize the potential to encourage a vibrant and walkable station area. The examples of allowable interim uses were: a parking area, gasoline service station, and storage yard (City of Vancouver, 1984). For the Main and Terminal sub-area, these uses could not “detrimentally affect or disrupt existing development” and could only be approved for a maximum of five years. Currently, City-owned land adjacent to the station is being utilized as a parking lot and some as vacant land surrounded by wire fence. Property between Main and Quebec Streets that is owned by McDonald’s Restaurants has been used for a drive-through restaurant since Expo in 1986. The City no longer supports drive-through restaurants as a suitable land-use, however, McDonald’s Restaurants does not want to see this land redeveloped, and as the owners of the property, are at an impasse with the City (Kuhlmann, 2011). The underutilized and auto-oriented interim land-uses around Main Street station negatively affect the area’s potential to be vibrant and walkable. Presently, there are several mixed use residential projects in this strip of land between Main and Quebec Street that have been approved and are underway. The



land is now part of the Southeast False Creek planning area, which has allowed developers to proceed with development applications.

The delay in creating a vibrant and walkable community around the station can be attributed to these interim-uses as well as the unpleasant and inaccessible public realm caused by busy arterial roads and parking lots. The urban design assessment that follows in Chapter 9 illustrates the detrimental effects of these auto-oriented land uses, particularly around the Main Street station area.

## 9. Urban Design Assessment

As the Urban Transit Authority was commencing planning for the Skytrain system and stations, the City of Vancouver delivered a preliminary list of directions for urban design around stations. Aware of the impact of a rapid transit station on the surrounding environment and the importance of the public realm, the directions were intended to provide a list of ideal planning scenarios for the stations in Vancouver. The following excerpt is from this urban design document produced in 1982 and illustrates the need to properly integrate the station with the surrounding streetscape.

A pedestrian environment requires efficient continuous and pleasant routes to both pedestrian oriented facilities as well as to links with other modes of transport. The provision of a rapid transit system is only the first step in establishing the dominant role of the pedestrian in urban areas (City of Vancouver, 1982).

The role of the pedestrian is given priority in the design and integration of the station and surrounding area. This priority is echoed in a subsequent statement regarding development:

Development in the vicinity of the new stations should be at the human scale along the sidewalks and should preserve the continuity of street wall, with frequent pedestrian access points (City of Vancouver, 1982).

These urban design directions produced in 1982 are largely replicated in the East False Creek FC-1 Guidelines (1986) for the area around Main Street Skytrain station. They articulated the importance of good urban design for creating a pedestrian friendly streetscape and offered guidelines for ensuring the mixed-use character of the area,

maintaining the visual interest of development through small street frontages, and providing high quality public and private spaces.

The following assessment will examine the present day station area in terms of its overall quality of urban design. It is based on seven objectives developed by the Commission for Architecture and the Built Environment (CABE, 2000) which are considered to have acceptability as attributes of good urban design. While a discussion of each of these objectives is based on the researcher's observation, a more in depth evaluation and analysis of the urban design performance of the station area is warranted. The purpose of this assessment is to determine an initial overall quality of urban design. The argument of this project is that if the Main Street station area is to become a compact, walkable and vibrant community it must clearly reflect the seven urban design objectives. Each of these objectives (or principles) of urban design can be mutually reinforcing and some can overlap. They are separated here for the purposes of assessment.

A detailed discussion of the observational data and urban design objectives is continued in section 9.1 below. The key strengths and weaknesses from this discussion are also provided in a table as an appendix.

## **9.1. Discussion of Objectives**

### **9.1.1. Character**

*“to promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development and culture” (CABE, 2000).*

The planning process during the mid-1980s encouraged the “creation of an attractive, consistent and high-quality streetscape throughout the area as one of the most important means of achieving a distinctive area character” (City of Vancouver, 1984). The character of a place is important for establishing a recognizable identity and sense of value. Development that follows the locally distinct character is likely to create a more enjoyable and valued place (CABE, 2000). The Main Street station area does not clearly promote a distinctive area character. Aside from the high-density City Gate buildings, the station is surrounded by vacant land, parking lots and abandoned buildings that do not reinforce a consistent, high-quality streetscape. Although heritage elements such as Pacific Central Station and Thornton Park existed before the station was built and offer a promising cue to the area’s past, new development and the Skytrain station do not reinforce these elements. There is also an opportunity to reflect the industrial heritage of the area by reusing or incorporating old structures such as warehouses and factory buildings. This strategy of reinforcing a distinct character through the reuse of industrial buildings is happening in new development around Southeast False Creek. The refurbished Salt Building in the Olympic Village site is an example of promoting a locally distinctive character through heritage elements. As the land south of the station continues to be redeveloped in the future, this strategy of incorporating existing heritage buildings into new development will produce a consistent and recognizable character. A current example of this in the area is the Opsal Steel building on East 2<sup>nd</sup> and Quebec Street, which is being developed by Bastion Development Corporation into a mixed use condominium project.

**Figure 11 – Vacant land and abandoned building on Main Street south of Station  
(Source: © A. Jones)**



Building materials and architectural style are not consistent or complementary to a heritage character; for example the glass façade of the Vancity offices contrasts with the brick and stucco construction of the City Gate towers and a futuristic glass and steel of the Science World dome (see Figure 11 and 12). While these buildings are architecturally varied, they do not reflect a consistent, locally distinct character. An urban design policy to integrate existing buildings and promote a consistent character in the 1986 FC-1 guidelines document consisted of a single paragraph that stated facade treatment and materials of new development should be related to existing older buildings by encouraging brick masonry and stone wall-facing (City of Vancouver, 1986a). As well, prior to this 1986 guidelines document, a recommendation was made by the Director of Planning that, “the character of Thornton Park as an ‘urban square’ would be emphasized by encouraging continuous, low-scale buildings on all its sides” (City of

Vancouver, 1983). This recommendation stands in contrast to the City Gate development application and subsequent tower and podium buildings that were constructed on the west side of Main Street, along Thornton Park. As is evident in Figure 12, these buildings are not “low-scale”, but rather much larger, imposing structures. They are, however, faced with brick at street level and tapered as they increase in height, which was encouraged in the 1986 guidelines.

**Figure 12 – City Gate building frontage along west side of Thornton Park, April 20 2011 (Source: © A. Jones)**



The Southeast False Creek ODP, which now includes land between Main Street and Quebec Street south of the station, has a more explicit strategy for creating neighbourhood character. The ODP specifies three distinct neighbourhood precincts, the workyard, shipyard, and railyard, each reflecting a particular historic use of the area (City of Vancouver, 2007). The creation of these precincts in fact represents one of

several urban design principles that were developed by City planners for the new Southeast False Creek neighbourhood.

### **9.1.2. Continuity and Enclosure**

*“to promote the continuity of street frontages and the enclosure of space by development which clearly defines private and public areas” (CABE, 2000).*

Buildings in the City Gate development provide a sense of enclosure around public and private spaces, particularly the walkways and green spaces between buildings. Residential entrances are accessible from these interior walkways and public spaces are overlooked by townhouse units. The retail ground units on the west side of Main Street, between Terminal and National Avenue form a continuous building frontage (see Figure 12). This building line was established in the FC-1 development guidelines in order to maintain a continuous and legible streetscape. However, it is only reflected in the development that has occurred, and beyond the City Gate buildings are vacant and undefined spaces.

The design of the Skytrain station structure has a significant impact on the continuity of the street frontage along Main Street and Terminal Avenue. Specifically, in Figure 13 and 14, where the station meets the newer development in City Gate, a blank wall and concrete structures create an impermeable facade which poorly relates to the street and disrupts the sense of continuity of the newer buildings. This lack of integration is because of a station design that is not adaptable or flexible. Based on the information in Chapter 8.1 (Figure 10), the Station Place building (visible in Figure 13 and 14) was constructed in 1996. This means when Main Street station was built, and for over a decade after, there was no directly adjacent development. The design of the station

therefore did not provide much flexibility for adaptation once City Gate was completed because the only entrance is on the south side along Terminal Avenue and not visible, or easily accessible, from the north side. The connection between the new City Gate development and the station is discussed in the subsequent section on legibility.

***Figure 13 – Impermeable design of station structure as it meets newer buildings on Main Street, east side, April 20 2011 (Source: © A. Jones)***





**Figure 14 – Impermeable station structure and newer buildings along Main Street, west side, May 31 2011 (Source: © A. Jones)**



### **9.1.3. Quality of the Public Realm**

*“to promote public spaces and routes that are attractive, safe, uncluttered and work effectively for all in society, including disabled and elderly people” (CABE, 2000).*

Within the City Gate complex there are a network of paths and green spaces that provide connections to buildings and the surrounding streets. This public space is enclosed by residential buildings, and the paths are linear so that a clear sense of orientation and legibility is maintained. The public realm is enhanced by mature landscaping and trees bordering pathways and public spaces. The photograph in Figure 15 shows a pathway in the City Gate development that is well landscaped with mature trees and offers a good sense of place.

**Figure 15 – Public realm, interior pathway in City Gate, April 20 2011 (Source: © A. Jones)**



There is a plaza around the entrance to the station and paved spaces between commercial, ground floor units in adjacent buildings. The station plaza has tiled artwork set into the sidewalk and is edged by mature deciduous trees along Terminal Avenue which creates an attractive space. However, the illegible design of the station, with the entrance elevated above street level (see Figures 16 and 17 of the station plaza and entrance), and no clear connection to adjacent development in City Gate (see Figures 22-24), has a negative impact on the quality of the public realm. The design of the station entrance and connecting spaces with elevation changes and stairways does not create good accessibility for those with impaired mobility, including the elderly. The noise from traffic on Terminal Avenue and Main Street, and sense of isolation from the rest of the city, also negatively impacts the enjoyment of this space. Both Terminal Avenue and Main Street are seven lane arterial roads that intersect at the Skytrain station. The safety

and comfort of pedestrians moving through public spaces and between transit modes can be put at risk by having to cross these busy arterial roads.

**Figure 16 – Station plaza and public realm, May 31 2011 (Source: © A. Jones)**





**Figure 17 – Station plaza furniture below entrance and facing Terminal Ave, June 4 2011 (Source: © A. Jones)**



#### **9.1.4. Ease of Movement**

*“to promote accessibility and local permeability by making places that connect with each other and are easy to move through, putting people before traffic and integrating land uses and transport” (CABE, 2000).*

The development around Main Street station has been isolated from adjacent neighbourhoods since the first residential buildings were constructed in the early 1990s. Industrial and vacant land to the south and the undeveloped BC Place land to the north have effectively cut off the Main Street station area from those neighbourhoods. Arterial roads, such as Main and Quebec Streets, and the Georgia and Dunsmuir viaducts, which surround the City Gate development, pose significant barriers to pedestrian movement. The implications on pedestrian connectivity are severe and were noted as early as the 1983 planning policies report:

The Georgia Viaduct presents a strong visual and psychological barrier between Strathcona/Chinatown and East False Creek, which discourages pedestrian movement (City of Vancouver, 1983).

The Policy Plan in 1984 suggested that improvements to pedestrian connectivity were inherently tied to future development. “Convenient pedestrian linkages to adjacent neighbourhood would also be established as the area redevelops” (City of Vancouver, 1984). The lack of redevelopment around the station and in areas such as northeast and southeast False Creek has meant that the pedestrian environment and connectivity remains poor. The images and discussion that follow will outline some specific examples of inconvenient pedestrian connections.

***Figure 18 – Intersection of Terminal Ave and Quebec St, facing south, May 31, 2011 (Source: © A. Jones)***



The intersection in Figure 18 is the closest crossing point to access the False Creek waterfront, Science World and the seawall from Main Street station. Facing south,

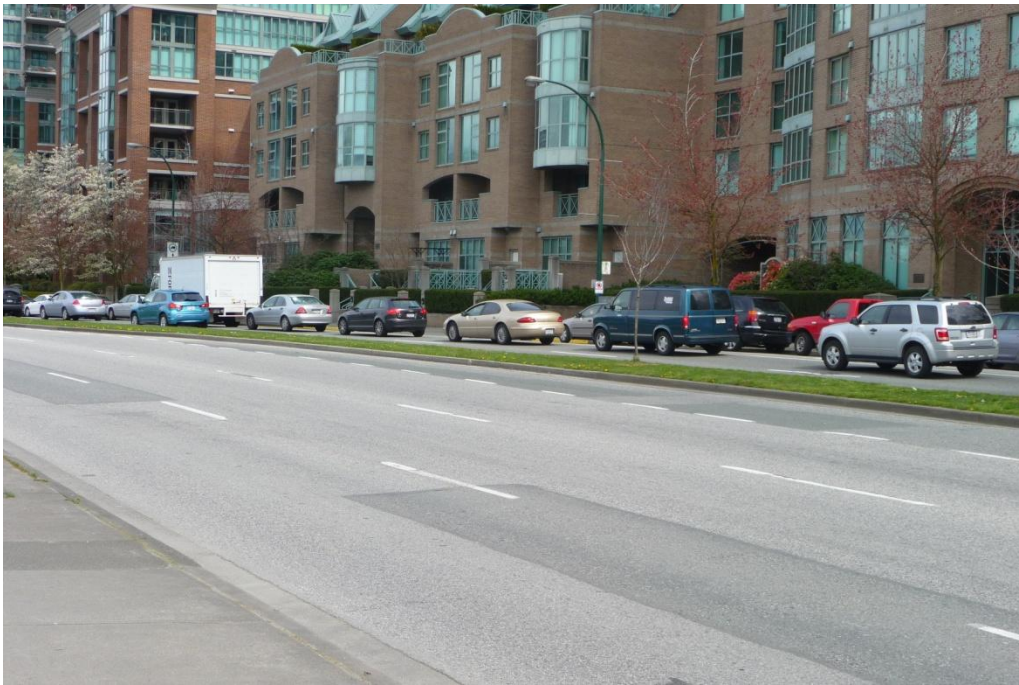
the image clearly shows the lack of redevelopment and dominance of arterial roads, in this case Quebec Street. The south side of the intersection is also missing a crosswalk, possibly due to the complicated turning signals for vehicle traffic, or the fact that there is little on the south side of the street that pedestrians would need to access. At the north end of the City Gate development along Quebec Street, Figure 19 illustrates the overwhelming presence of the viaducts and wide intersections. This is the point at which the City Gate community would transition into North False Creek and Chinatown. The area, unfortunately, is unpleasant and confusing due to the noisy vehicle traffic and wide, indirect pedestrian crossings.

***Figure 19 – Viaducts at north end of City Gate on Quebec St, transition zone to Chinatown and BC Place, April 20, 2011 (Source: © A. Jones)***





**Figure 20 – City Gate building frontage facing west along Quebec Street, no crosswalk, April 20 2011 (Source: © A. Jones)**



In Figure 20, the western side of the City Gate development is bordered by Quebec Street. This arterial street is typically 6 to 7 lanes wide and separates the residential buildings from the False Creek waterfront. This particular block in Figure 20, from Terminal Ave to National Ave, is approximately 210 metres (689 ft) long, which limits the connectivity for pedestrians. An ideal block length of around 240 ft would create more intersections and opportunities for pedestrians to cross while also lowering vehicle speeds and improving the quality of the street level environment (Sucher, 2007). Providing access and connectivity between the City Gate community and the emerging North and South False Creek neighbourhoods will require significant improvement to pedestrian prioritization.

Within the City Gate complex is a fine grained network of paths that provides access between buildings. There is a well-defined pedestrian route oriented east-west

through the development that connects Quebec and Main Street (Figure 21). However, at either side of this route there is no crosswalk to provide a continuity of movement beyond City Gate. In Figure 21, the fine grained path within City Gate is shown on the left, and the point at which it meets Quebec Street is shown on the right. People wanting to cross Quebec Street to access the seawall, park or the rest of North False Creek have to walk out of their way to either Terminal Avenue or National Ave.

**Figure 21 – Left: Fine grained pedestrian pathways through City Gate; Right: the same east-west pathway where it meets Quebec Street on west side of development, April 20 2011 (Source: © A. Jones)**



### **9.1.5. Legibility**

*“to promote legibility through development that provides recognisable routes, intersections and landmarks to help people find their way around” (CABE, 2000).*



This objective of urban design is based closely on the work of Kevin Lynch, who studied the way in which humans create mental images of the city. The term legibility is defined as “the ease with which [the city’s] parts can be recognized and can be organized into a coherent pattern” (Lynch, 2007). When it is applied as an urban design objective, legibility can be achieved through the careful arrangement of physical objects, such as landmarks and focal points that form visible routes and links between places (CABE, 2000). The integration between the station and adjacent development has poor legibility, primarily due to the lack of a clear, visible route and inflexible design of the station. There are also no indicators of what exists on the other side, and no focal point to draw people between spaces on either side of the station. The station was built almost ten years before the adjacent development, and its design does not relate well with the street level. A blank and uninteresting concrete wall forms the base of the station on the south side, visible in Figure 22, and a mezzanine level is not clearly visible from the street.

**Figure 22 – Access between Station entrance and City Gate, south side, May 31 2011 (Source: © A. Jones)**



Moving between the station entrance (which is on south side only) and the adjacent City Gate development requires people to walk underneath the Skytrain guideway and up a flight of stairs. There is no line of sight or visual landmark to indicate a route between the two spaces. It is dark and poorly lit underneath the station and guideway, and there is no retail activity or quality public space to attract people through into City Gate. Figure 24 shows the space on the north side of the station in City Gate which is empty and void of activity. The vacant retail units here are understandable (see Figures 26 and 27 for more images of this space), given how poorly it is integrated and connected with the surrounding area.

There are significant building landmarks around the station area including the Science World dome and Pacific Central Station. Science World provides a visual terminus to Terminal Avenue and acts as a point of orientation when exiting the station.

Thornton Park and Pacific Central Station are also visual landmarks that frame the eastern edge along Main Street. These elements are visible through the City Gate development. In particular, the top of Pacific Central Station is visible from Quebec Street looking through the east-west passageway (Figure 21) and offers a visual landmark for orientation. The pedestrian route along this axis is interrupted by the barriers of Quebec and Main Street, preventing continuous movement beyond City Gate.

**Figure 23 – Access between Station entrance and City Gate, south side, June 4 2011 (Source: © A. Jones)**



**Figure 24 – Access between station and City Gate, north side, April 20 2011  
(Source: © A. Jones)**



### **9.1.6. Adaptability**

*“to promote adaptability through development that can respond to changing social, technological and economic conditions” (CABE, 2000).*

This urban design objective requires a place to be flexible with changing social and economic conditions. The physical form should reflect a variety of building types and public spaces that should serve a range of uses, depending on how people live, work and use the place. The need for adaptable urban environments is closely related to the objective of diversity. Designing places with a diversity of building types, natural spaces and other public areas will ensure that it is adaptable over time. Von Hausen also

extends this urban design objective to an economic strategy that responds to market demand so as to provide a “broad foundation for businesses to flourish or change” (von Hausen, 2011, p. 61). Understanding the composition of the population and demand for certain types of businesses (i.e. supermarket, drug store, clothing store) will ensure that the development is economically sustainable and can adapt to changing conditions.

The Main Street station was not designed to be adaptable and its poor integration into the surrounding community has been discussed previously. Blank walls, an elevated entrance on the south side only, and no active frontage on the north side create a very poor surrounding environment. There is a Starbucks Coffee shop at one end of the station that opens onto the sidewalk, but there is little space for other uses around the station.

### **9.1.7. Diversity**

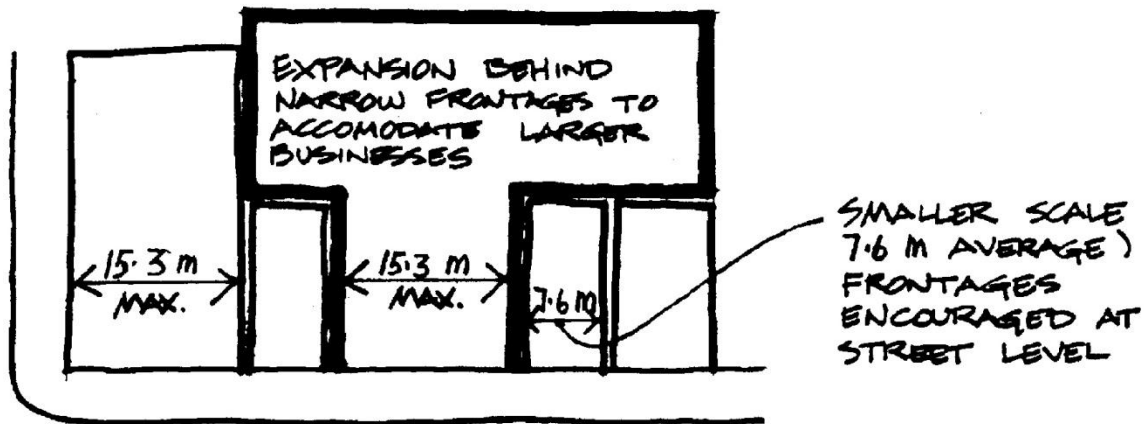
*“to promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs” (CABE, 2000).*

This objective is achieved through mixed-use development that will support diverse activity and cater to a wide demographic. Dittmar and Ohland (2004) say this is an essential goal for transit-oriented developments, and it is a principle of urban design to provide the physical conditions necessary to foster diversity.

The report from the Commission for Architecture and the Built Environment (2000) suggests that diversity can be encouraged by providing narrow plot frontages. This “can allow small-scale shopping and commercial activities to flourish and adapt to changing needs” (CABE, 2000, p. 32). In the East False Creek FC-1 Guidelines (1986), a similar requirement was established by limiting shopfront widths to a maximum of

15.3m, but an average of 7.6m was preferred. This would encourage smaller-scale commercial uses and visual diversity along Main Street.

**Figure 25 – East False Creek street frontage requirements for shopfront widths (City of Vancouver, 1986a)**



However, the diversity of retail and commercial uses in the study area is generally poor and many store fronts are unoccupied. There are several ground floor commercial units on the inside of the City Gate complex that do not face the street, but are approximately 10 meters from the Skytrain station (Figures 26 and 27). From the observational visits to the study area, these units appeared to be vacant. Further examination of other ground floor retail units around City Gate indicated that the overall economic health of this area is poor. The few occupied, street-facing units are temporary labour services. There is a viable Starbucks coffee shop underneath the station platform on one end of the station and another independent coffee shop under the Skytrain guideway.



**Figure 26 – Unoccupied retail units in City Gate, April 20 2011 (Source: © A. Jones)**



**Figure 27 – Unoccupied commercial unit on north side of station in City Gate, April 20 2011 (Source: © A. Jones)**



The reason for the poor economic health of the area is not directly associated with a lack of mixed-use buildings; however it may be more closely linked to its connectivity with the rest of the city. The observations of the station area illustrate the isolation of the City Gate development and its poor walking environment beyond the internal walkways of the residential buildings. This inability for people to walk comfortably and safely means less pedestrian traffic to support the viability of businesses. There is also no grocery store, aside from a convenience store located at the base of the Vancity building, within close walking distance of City Gate. In 2006 there were over two thousand residents in City Gate (City of Vancouver, 2009), and a grocery store for these residents would provide a strong anchor to generate economic spinoffs to other businesses.

## **9.2. Summary**

The assessment conducted at the Main Street station area has demonstrated several missed opportunities to achieve good urban design. The lack of a distinctive character and poor sense of continuity and enclosure stems in part from the undeveloped land around the station. The isolation caused by these large areas of vacant land and surface parking lots has also impacted the ease of movement, particularly for pedestrians. As was noted at the outset of this chapter, many of these urban design objectives overlap and have shared symptoms. For example, the impermeable and illegible design of the SkyTrain station, especially at street level, has made it difficult to adapt to changes in the surrounding environment. Continuity of newer development along Main Street is disrupted by the station footprint, and the



impermeable facade (concrete foundations and metal walls) not only make it difficult to navigate around, but also generally degrades the quality of the public realm.

The redesign plans for the station, with construction to commence in 2012, will significantly improve its accessibility and surrounding quality of public space. The west entrance mezzanine that restricts visibility through the station and into City Gate (see Figure 22 and 24) will be removed and replaced with an at-grade station house. This station house will include retail space facing Terminal Avenue, and the Starbucks coffee shop will be removed to create an entrance onto Main Street. These changes will serve to improve street level legibility of the station, and will improve the quality of public space by activating the Terminal Avenue frontage with retail units. The new east station house will replace the stairway leading to the platform with an escalator, retail unit and elevator (Evans, 2012).

There were some good urban design details observed in the City Gate development, specifically a sense of enclosure created by podium-style buildings and pedestrian pathways that are well-landscaped and offer a clear visual route. This ease of movement comes to an abrupt end when reaching the outer arterial roads. Both Main Street and Quebec Street are busy and noisy and offer few opportunities for pedestrians to cross to access the waterfront and North False Creek. As well, the viaducts at the north end of the study area create a visual barrier to pedestrian movement, and contribute to the isolation of the area.

Undeveloped and vacant land that is auto-oriented, and a station that is not well integrated into the streetscape and City Gate development, are the most significant factors contributing to the overall poor quality of urban design. The station area,

therefore, is not a vibrant and walkable community. It lacks the quality of public space and integration with the wider False Creek district that is necessary to generate vibrant pedestrian activity. Although examples of good urban design exist within newer development, there is no sense of continuation of these principles beyond the property boundaries of City Gate.

## 10. Conclusions

Main Street Station was originally conceived as a demonstration for what would be an entirely new transit technology in Greater Vancouver. This meant it had to be designed and built several years prior to when the full SkyTrain system would be in operation. The tight timeline for building the station and a completion deadline of 1986 for the entire system were key factors in the decision to locate the station at the northwest corner of Main and Terminal, because as the findings suggest, this was the fastest and most cost-sensitive option. Another factor in the decision to locate the station on this site was the possibility of integrating it with a mixed-use office development. Although this proposal provided the UTA with a fee payment from the developer and a mutual interest in seeing land around the station developed, a time deadline for completing the transit system pushed the station as a priority ahead of an integrated planning process.

The City planning process between 1983 and 1986 for East False Creek set out to transform the area into a high-density, residential community that was strategically oriented around Main Street Skytrain station. By intending to create a distinct neighbourhood character with dense mixed-use buildings that capitalized on the area's proximity to a transit station, the East False Creek policy plan was in essence an early transit-oriented development strategy. Although the TOD concept did not become popularized until the early 1990s, the benefits of providing related land-uses and good station integration were recognized a decade earlier during the East False Creek

planning process. However, the research provided in this study on how the Main Street station area has changed since 1984 illustrates why transit planning and development do not necessarily synchronise with each other. There are often reasons other than the presence of a rapid transit station that will have a greater influence on surrounding development.

The transformation of North False Creek and Collingwood Village at Joyce Skytrain station was influenced by the easy assemblage of industrial land, developer financing, market demand and clear municipal support for rezoning and redevelopment. These factors can also explain the success of the only major redevelopment project within a 5 minute walking distance of Main Street station, City Gate. The development application for City Gate was approved by the City at a time when the wider planning context of False Creek was being established as a primarily residential community. The eastern end of False Creek was included in this context and the City Gate application fit the long-term vision for development. The relocation of the heavy-industrial LaFarge concrete plant in the late 1980s also provided the opportunity for the developer to assemble a larger area of land, and to develop a residential project without fear of compatibility between land-uses. The municipal support for residential redevelopment of False Creek at the beginning of the 1990s, market demand and developer interest were contributing factors to the successful implementation of City Gate. By the time the first tower was constructed, Main Street station had existed for a decade. This history has illustrated why transit planning and development can become disconnected.

The City Gate project was the first experiment in high-density residential development for Vancouver and many of the guidelines established in 1986 are visible today. Tall towers presented a challenge for maintaining the quality of public spaces

because there was a high potential for wind and shadowing. Tall towers also had the effect of removing people from the street and creating what Jane Jacobs saw as the loss of human interaction and community building. However, by creating active building frontages at ground level with retail spaces in a podium style design, and by tapering the building as it increased in height, urban designers and planners intended to mitigate some of the negative impacts of tall, high-density communities. The result of which was to create high-quality public spaces that were vibrant and walkable.

This design model became standard policy throughout all development in North False Creek over the next two decades. While the buildings in City Gate generally replicate these original urban design guidelines, the success of the Main Street station area as a walkable and vibrant community that is integrated with transit has been detrimentally affected by its isolation from the rest of the City, the underdeveloped and auto-oriented land uses that still exist today, and a transit station that is inaccessible and poorly connected. It was illustrated in the urban design assessment that providing walkways and landscaping within City Gate created pleasant and highly legible spaces. However, there was no continuation of these urban design principles beyond the boundary of City Gate, especially around the Skytrain station and on the other side of arterial streets such as Quebec Street and Terminal Avenue. Understandably, most of this land on the south and north-west side of the station is vacant and therefore urban design principles can only exist on paper as a future vision. Thus, the underdeveloped land, in itself, has contributed to the lack of vibrancy and walkability around the station. The urban design assessment also revealed stark examples of auto-oriented design, including major arterial roads with limited pedestrian crossings, a drive-through restaurant, and abundant surface parking.

Today, the Main Street station area is awaiting significant redevelopment on vacant land to the south. This area is part of the Southeast False Creek Official Development Plan and it will eventually reconnect City Gate and Main Street station to the rest of False Creek. A proposal to remove the Georgia and Dunsmuir viaducts and reconnect the False Creek Flats with the downtown core would also have dramatic positive effects on the Main Street SkyTrain station area. By promoting the role of urban design principles to integrate transit and development within the wider neighbourhood context, Main Street station can become a vibrant, walkable and complete community.

## 11. References

- APTA. (2009). *Defining Transit Areas of Influence*. Washington, DC: American Public Transportation Association.
- Babbie, E., & Benaquisto, L. (2010). *Fundamentals of Social Research 2nd Edition*. Toronto: Nelson Education.
- Barling, A. (1993, March 20). Heart of the city: At the end of False Creek, community called Citygate will encompass 1,000 suites. *The Vancouver Sun* .
- BC Transit. (1986). Vancouver Regional Rapid Transit Project Quarterly. (8) . Vancouver: BC Transit.
- Bertolini, L. (1999). Spatial Development Patterns and Public Transport: The Application of an Analytical Model in the Netherlands. *Planning Practice & Research* , 14 (2), 199-210.
- Boname, V. P. (2011, August 22). Interview. (A. T. Jones, Interviewer)
- CABE. (2000). *By Design, Urban design in the planning system: towards better practice*. London, UK: Department of the Environment, Transport and the Regions and Commission for Architecture and the Built Environment.
- CABE. (2001). *The value of urban design*. London, UK: Department of the Environment, Transport and the Regions and Commission for Architecture and the Built Environment.
- Calthorpe, P. (1993). *The Next American Metropolis: Ecology, Community, and the American Dream*. New York: Princeton Architectural Press.
- Cameron, K. (2011, July 25). Interview. (A. T. Jones, Interviewer)
- Carline, J. (1984, January 13). Main and Terminal Development Proposal Review Process. *Memorandum* . Vancouver: City of Vancouver.
- Cervero, R. (2007). Transit-oriented development's ridership bonus: a product of self-selection and public policies. *Environment and Planning A* , 39 (9), 2068-2085.
- Cervero, R., & Kockelman, K. (1997). Travel Demand and the 3Ds: Density, diversity, and design. *Transportation Research Part D: Transport and Environment* , 2 (3), 199-219.

- Cervero, R., & Landis, J. (1997). Twenty years of the Bay Area Rapid Transit System: Land use and development impacts. *Transportation Research Part A: Policy and Practice* , 31 (4), 309-333.
- Cervero, R., & Radisch, C. (1996). Travel choices in pedestrian versus automobile oriented neighborhoods. *Transport Policy* , 3 (3), 127-141.
- Cervero, R., Ferrell, C., & Murphy, S. (2002). Transit-Oriented Development and Joint Development in the United States: A Literature Review. *Transit Cooperative Research Program* (Number 52).
- City of Vancouver. (1990, October). 101 Terminal Avenue By-law No. 6744. *CD-1 (264)* . Vancouver.
- City of Vancouver. (2009, September). City Gate Information Sheet. City of Vancouver Planning Department.
- City of Vancouver. (1989, October 19). Council Minutes. Vancouver.
- City of Vancouver. (1985, March 1). East False Creek - Housing Potential. *Report* . Planning Department.
- City of Vancouver. (1986a). *East False Creek FC-1 Guidelines*. City of Vancouver.
- City of Vancouver. (1983). *East False Creek Planning Policies*. City of Vancouver.
- City of Vancouver. (1984). *East False Creek Policy Plan*. City of Vancouver.
- City of Vancouver. (1982, February). Extract From The Minutes of The Vancouver City Council Meeting of February 9 1982.
- City of Vancouver. (1990). *False Creek North Official Development Plan*. City of Vancouver.
- City of Vancouver. (1980-1985). Main and Terminal north. CVA 772-1042. Vancouver.
- City of Vancouver. (1980-1985). Main and Terminal south. CVA 772-1039. Vancouver.
- City of Vancouver. (1983). Main Street Station Site and LaFarge Concrete Plant. CVA 780-493. Vancouver.
- City of Vancouver. (1983). Planning for the community and rapid transit: An overall planning context for ALRT development. Vancouver.
- City of Vancouver. (1984, January 26). Report to Council. Vancouver: Standing Committee of Council on Planning and Development.
- City of Vancouver. (2009). *Rezoning Policy for "High Tech" Site in the False Creek Flats*. City of Vancouver.



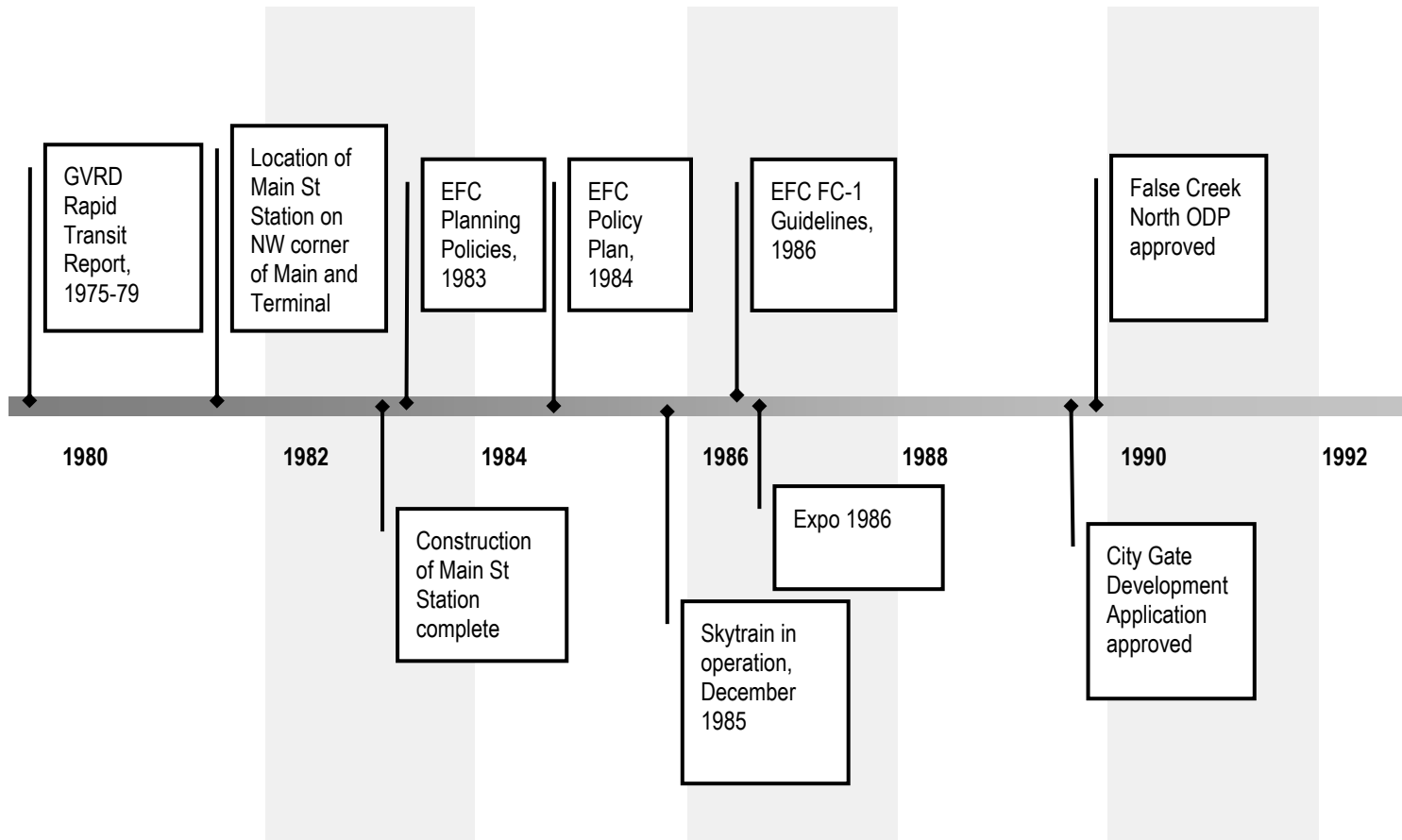
- City of Vancouver. (2007). *Southeast False Creek Official Development Plan*. Vancouver.
- City of Vancouver. (1983, September 12). Standing Committee on Planning and Development - Report from Director of Planning. Vancouver.
- City of Vancouver. (1986b). *The Broadway Station Area Plan Draft*. City of Vancouver.
- City of Vancouver. (2007). *Transportation Plan Update: A Decade of Progress*. Vancouver.
- City of Vancouver. (1982). *Vancouver ALRT Urban Design Directions*. City of Vancouver.
- City of Vancouver. (2003). *Vancouver's New Neighbourhoods: Achievements in Planning and Urban Design*. Vancouver.
- City of Vancouver. (2011). *Viaducts and False Creek Flats Planning: Eastern Core Strategy*. City of Vancouver.
- CMHC. (2009). Transit-Oriented Development Case Study: Collingwood Village. Canada Mortgage and Housing Corporation.
- Concert. (2011). *Corporate Details*. Retrieved December 30, 2011, from Concert Properties: <http://www.concertproperties.com/about/corporate-details>
- Constantineau, B. (1992, November 19). Main Street suits VanCity profile. *The Vancouver Sun*.
- Curtis, C. (2008). Evolution of the Transit-oriented Development Model for Low-density Cities: A Case Study of Perth's New Railway Corridor. *Planning, Practice & Research*, 23 (3), 285-302.
- Dittmar, H., & Ohland, G. (2004). *The New Transit Town: Best practices in transit-oriented development*. Washington, DC: Island Press.
- Downs, A. (2001). What does Smart Growth really mean? *Planning*, 67 (4), 20-25.
- Dunsworth, R. (1984, February 20). LaFarge Concrete. *Letter*.
- Evans, L. (2012, March 29). Renovation plans for Main Street Station. *Email Correspondence*. Translink.
- Gidney, N. (1996, April 27). Real Estate Plus - Predictions entertaining but scary for audience. *Times Colonsit*.
- Globe and Mail. (1982, May 1). Companies in the News Commonwealth. *The Globe and Mail*, p. B4.
- GVRD. (1996). Livable Region Strategic Plan. Greater Vancouver Regional District.

- GVRD. (1979). *Rapid Transit Project*. Greater Vancouver Regional District.
- Harcourt, M. (2011, June 9). Interview. (A. T. Jones, Interviewer)
- Hardin, H. (1996). *Working Dollars The Vancity Story*. Vancouver: Douglas & McIntyre Ltd.
- Jacobs, A., & Appleyard, D. (1987). Toward an Urban Design Manifesto. *Journal of the American Planning Association* , 53 (1), 112-120.
- Jacobs, J. (2007). Author's Introduction and The Uses of Sidewalks: Contact. In M. Larice, & E. Macdonald, *The Urban Design Reader* (pp. 80-92). New York: Routledge.
- Kerkhoff. (2011). *About Us*. Retrieved October 2011, from Kerkhoff Construction Ltd: <http://www.kerkhoff.ca/about-us.php>
- Knight, R. L., & Trygg, L. L. (1977). Evidence of land use impacts of rapid transit systems. *Transportation* , 6, 231-247.
- Krier, L. (2007). Houses, Palaces, Cities. In M. Larice, & E. Macdonald, *The Urban Design Reader* (pp. 231-250). New York: Routledge.
- Kuhlmann, T. (2011, February 10). Interview. (A. T. Jones, Interviewer)
- Loukaitou-Sideris, A., & Banerjee, T. (2000). The Blue Line Blues: Why the vision of transit village may not materialize despite impressive growth in transit ridership. *Journal of Urban Design* , 5 (2), 101-125.
- Lynch, K. (2007). The Image of the City. In M. Larice, & E. Macdonald, *The Urban Design Reader* (pp. 153-166). New York: Routledge.
- MacDonald, A. (1982, June 10). Debates of the Legislative Assembly. *32nd Parliament, 4th Session* . Hansard.
- Newman, P., & Kenworthy, J. (1999). *Sustainability and Cities: Overcoming Automobile Dependence*. Washington: Island Press.
- Newman, P., & Kenworthy, J. (2006). Urban design to reduce automobile dependence. *Opolis* , 2 (1), 35-52.
- Olds, K. (1995). Globalization and the production of new urban spaces: Pacific Rim megaprojects in the late 20th century. *Environment and Planning A* , 27, 1713-1743.
- Peterson, L. (2000, March 18). Concert stands behind its construction. *The Vancouver Sun* , p. I8.
- Porter, D. R. (1997). *Synthesis of Transit Practice 20: Transit-Focused Development*. Washington D.C.: Transit Cooperative Research Program.

- Punter, J. (2003). *The Vancouver Achievement*. Vancouver: UBC Press.
- Renne, J. (2009). From transit-adjacent to transit-oriented development. *Local Environment* , 14 (1), 1-15.
- Renne, J. (2007). *Measuring the Performance of Transit-Oriented Developments in Western Australia*.
- Rock, C. (2011, October 12). Email Correspondence. (A. T. Jones, Interviewer)
- Shaw, G. (1988, September 24). Bosa's classic rag-to-riches story was made of wood, nails and trust. *The Vancouver Sun* , p. B1.
- Sternberg, E. (2000). An Integrative Theory of Urban Design. *Journal of the American Planning Association* , 66 (3), 265-278.
- Stutt, J. (2011). *Planning the Expo Line: Understanding the technology choice behind Vancouver's first rail rapid transit line*. Vancouver: Simon Fraser University.
- Sucher, D. (2007). Getting Around from City Comforts: How to Build an Urban Village. In M. Larice, & E. Macdonald, *The Urban Design Reader* (pp. 391-404). New York: Routledge.
- Translink. (2007). *Expo Line Station Review: Needs and Priority Assessment*. Translink Planning Division.
- UTA. (1982, February 4). ALRT - Prebuild Section and Main Street Station. *Letter* . Urban Transit Authority.
- Vancity. (2011, March 21). Vancity. (A. Jones, Interviewer)
- von Hausen, M. A. (2011). *Dynamic Urban Design: Place, Process, And Plans*. Vancouver.
- Whysall, S. (1995, September 23). Modelling a bright new condo future: Presales: attractive features abound. *The Vancouver Sun* .

## **Appendices**





**Appendix B: Timeline 1979-1990**

# Urban Design Assessment

## Main Street Station Area, Vancouver

Urban Design Objectives	Performance Criteria	Strengths	Weaknesses
<b>1.Character</b>	a distinct sense of place responding to local context	Thornton Park and Pacific Central Station are heritage elements	variation of architectural style in City Gate, Skytrain station and Science World lacks distinctive identity
<b>2.Continuity &amp; Enclosure</b>	clearly defined, coherent, well enclosed public space	ground floor retail on Main Street forms continuous building line	undeveloped land around station provides no sense of enclosure and public space interrupted by busy arterial roads
<b>3.Quality of the Public Realm</b>	safe, attractive and functional public space	mature landscaping along pathways; artwork and trees along station plaza	noise of traffic from arterial roads and poor functionality and design of station entrance and surrounding space
<b>4.Ease of Movement</b>	an accessible, well connected, pedestrian friendly environment	interior of City Gate complex connected by foot paths; frequent Skytrain and bus service	auto-dominated and difficult to navigate on foot due to arterial roads surrounding development and station; not well connected to the rest of city
<b>5.Legibility</b>	a readily understandable, easily navigable environment	landmark buildings like Science World and Pacific Central provide visual orientation	no visual route between station and City Gate and illegible station design
<b>6.Adaptability</b>	flexible and adaptable public and private environments		station design cannot easily be integrated into adjacent development; public spaces lack flexible uses
<b>7.Diversity</b>	a varied environment offering a range of uses and experiences	small retail unit frontages along Main Street allows for diversity of businesses	many vacant commercial units around City Gate development; no grocery store or anchor tenant